Fixing Financial Crises in the Twenty-first Century

Edited by Andrew G. Haldane

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Financial crises have dogged the international monetary system over recent years. They have impoverished millions of people around the world, especially within developing countries. And they have called into question the very process of globalisation. Yet there remains no intellectual consensus on how best to avert such crises – much less resolve them. Policymakers stand at a crossroads.

This volume summarises and evaluates these issues, drawing on contributions by prominent international experts in the field. It considers whether the IMF may have actually fanned the flames of future crises through its lending decisions. It assesses the contribution made by private creditors in resolving past crises – and asks what mechanisms might best be used to involve private creditors in the future. It also assesses the merits of two recent competing blueprints for architectural reform – the so-called contractual and statutory approaches to crisis resolution.

These issues will shape the debate on the future of the international monetary system over the next decade and, probably, beyond. For although crises may always be with us, better public policy can surely help mitigate their future cost and incidence.

With an impressive array of internationally based contributors, this book will deserve a place on the bookshelves of economists and policymakers in both the official and private sectors.

Andrew G. Haldane is Head of International Finance at the Bank of England.

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27 Exchange Rate Dynamics
A new open economy macroeconomics perspective
Edited by Jean-Oliver Hairault and Thepthida Sopraseuth

28 Fixing Financial Crises in the Twenty-first Century
Edited by Andrew G. Haldane

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Contents

Figures

Tables

Contributors

Dr Amar Bhattacharya, *World Bank*

Dr Lorenzo Bini Smaghi, *Italian Treasury*

Mr Lee Buchheit, *Cleary, Gottlieb, Steen & Hamilton*

Professor Willem Buiter, *European Bank for Reconstruction & Development*

Dr Richard H. Clarida, formerly *US Treasury*

Dr William R. Cline, *Institute for International Economics*

Professor Jonathan Eaton, *New York University*

Mr Matthew Fisher, *International Monetary Fund*

Sir Edward A.J. George, formerly *Bank of England*

Dr Sayantan Ghosal, *University of Warwick*

Professor G. Mitu Gulati, *Georgetown University Law Centre*

Mr Andrew G. Haldane, *Bank of England*

Dr Simon Hayes, *Bank of England*

Dr Robert Kahn, *Citigroup*

Mr Mervyn King, *Bank of England*

Professor Kenneth Kletzer, *University of California at Santa Cruz*

Professor Leonardo Leiderman, *Tel Aviv University*

Professor Marcus Miller, *University of Warwick*

Dr John Murray, *Bank of Canada*

Dr Michael Mussa, *Institute for International Economics*

Mr Adrian Penalver, *Bank of England*

Professor Nouriel Roubini, *New York University*

Dr Victoria Saporta, *Bank of England*

Dr Nathan Sheets, *Federal Reserve Board*

Professor Hyun Song Shin, *London School of Economics*

Professor David Vines, *University of Oxford*

Dr Jeromin Zettelmeyer, *International Monetary Fund*

Preface

Financial crises are a clear and present danger to the international monetary system. They have impoverished millions of people over the past decade in emerging markets across the world. And they have called into question the very process of financial liberalisation and globalisation. Moreover, crises show no signs of abating moving into the twenty-first century – indeed, quite the contrary.

International public policy is struggling to keep pace with these developments. This is not through a lack of effort, for this has been considerable. It reflects the fact that there is no intellectual consensus on how best to avert crises, much less resolve them. Policymakers and academics stand at a crossroads – with international capital flows speeding past on either side of them.

It was against this backdrop that the Bank of England decided to host a conference in July 2002 on "The Role of the Official and Private Sectors in Resolving International Financial Crises". This involved experts from around the world, drawn from the official sector, the private sector, emerging markets debtor countries and academe. This volume draws together in one place the main contributions from that conference.

In addition to chapter authors, many others have helped along the road. Raxita Dodia and Neil Lane at the Bank of England have done sterling work in helping pull the manuscripts together; and David Clementi and Alastair Clark helped support the project throughout. Robert Langham and Terry Clague at Routledge and Carl Gillingham at Wearset have also proved invaluable at various stages of the project. To all of those who contributed to this volume, a great many thanks.

Part I

Introduction

1 Fixing financial crises in the twenty-first century

Andrew G. Haldane

1.1 International financial crises – past, present and future

International financial crises have been with us for as long as international financial markets. On some measures, however, the incidence of international financial crises increased in the last part of the twentieth century. Caprio and Klingebiel (1996) document 112 crises in 93 developed and emerging economies since the late 1970s.

Table 1.1 lists some of the systemic financial crises to have hit emerging market economies (EMEs) since the Mexican crisis in 1994/1995; it also shows the headline loan packages announced by the International Monetary Fund (IMF) to help resolve these crises. Crises have struck all parts of the emerging market world. Unlike lightning, they have sometimes struck twice. Argentina recently suffered the first systemic international financial crisis of the twenty-first century. Doubtless, it will not be the last. History, especially recent history, suggests that financial crises may have become part and parcel of the international financial landscape.

But it is not just the incidence of financial crises that has altered in recent years. So too has their nature. And as the nature of crisis has changed, the difficulty of resolving them has also escalated. For example, consider the evolution in the role of the IMF in resolving financial crises since its inception. The IMF was put in place after the Second World War

Table 1.1 Recent systemic emerging market crises

	IMF loans (SDR billion)	*IMF loans (% quota)*
Mexico 1995	12.1	688
Thailand 1997	2.9	505
Indonesia 1997	8.3	557
Korea 1997	15.5	1,938
Brazil 1998	13.0	600
Turkey 1999	15.0	1,560
Argentina 2000	16.9	800
Brazil 2001	12.1	400
Turkey 2002	12.8	1,330
Brazil 2002	22.8	752

to help redress current account imbalances among its member countries. That role persisted through until the 1970s and 1980s. Up until that point, financial crises were typically rooted in an inability of member countries to finance current account deficits, themselves often the result of fiscal or monetary policy profligacy by the official sector.

The 1990s, however, saw a sea-change. Capital account liberalisation in a number of EMEs exposed them, as never before, to the vicissitudes of international capital markets. Footloose international flows of funds magnified vulnerabilities and imbalances in the capital account, as well as the current account, of the balance of payments. The crises in Mexico in 1994/1995, across South-East Asia in 1997, Russia in 1998, Brazil in 1999 and 2002, and Turkey and Argentina between 2000–2002 were all sourced in the external *capital* account. We appear to have entered an era of capital account crisis (IMF 2002).

This new strain of crisis carries important implications for policy-makers. Capital account crises appear, if anything, to be even more virulent and costly than their current account cousins (Bordo *et al*. 2001). They involve stock adjustments in balance sheet positions, rather than flow adjustments in the balance of payments. This helps account for the greater depth and severity of capital account crises. It also helps account for their virulence. For stocks of capital can reverse direction at speed, as well as in size. According to the Institute for International Finance (IIF), capital flows to EMEs reached a high-water mark of almost $350 billion in 1996. In 2002, they stood at less than half that amount and are forecast to remain at these depressed levels for the next few years (Figure 1.1).

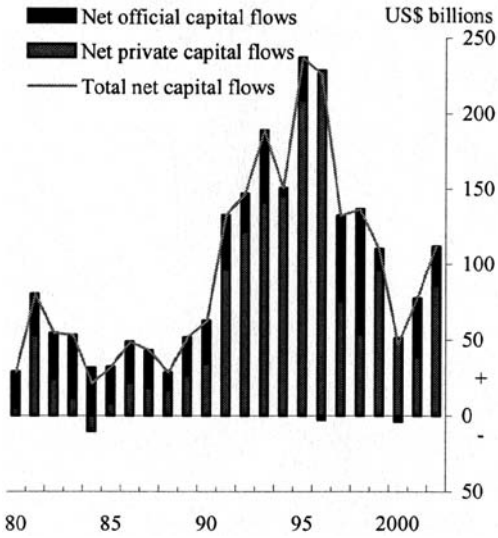

Figure 1.1 Capital flows to emerging markets (source: IMF World Economic Outlook).

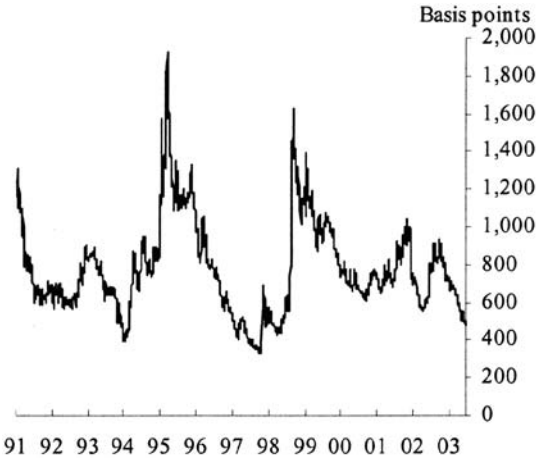

Figure 1.2 EMBI and EMBI global spread composite[a] (source: JP Morgan Chase & Co.).

Note
a EMBI index until 30 December 1997, EMBI global from then until present.

This volatility in the quantity of capital flowing to EMEs is also mirrored in its cost. Figure 1.2 plots the average cost of borrowing by EMEs, measured as a spread over "safe" United States Treasury bond yields. The volatility in this cost of capital is striking. For example, the Russian crisis in August 1998 caused the spread to rise by a factor of three, from around 500–600 basis points to over 1,600 basis points.

1.2 Resolving international financial crises – past, present and future

Explaining crises, *ex post*, is one matter. Devising policy plans to resolve these crises, *ex ante*, is quite another. Since the Mexican crisis, considerable policy effort has been put into the handling of international financial crises. This effort is often described under the ambitious umbrella heading of "Redesigning the International Financial Architecture". Some would see the initiatives currently on the table as somewhat less ambitious – more akin to plumbing and bricklaying than to architectural design (King 1999). But however described, the substantive public policy question is how we deal with crises that are more frequent, faster and more costly than in the past – that is, twenty-first-century capital account crises.

Broadly speaking, the official sector has pursued a two-pronged approach. A series of initiatives have been embarked on in an attempt to head-off crises before they strike – so-called "crisis prevention" measures. These are many and various (see, for example, Eichengreen 2002; Roubini and Setser 2003). But if one lesson has been learned above all others from

recent crises it is that macro-*prudential* fault-lines are just as likely to cause a financial earthquake as macro-*economic* ones.

Recent crises have been rooted in the excessive accumulation of short-term debt, fragile banking systems, over-exposed corporate sectors and unstable sovereign debt dynamics, just as much as monetary and fiscal policy mishaps. If financial liberalisation continues apace, we would expect this pattern to increase with time. In other words, financial imbalances may take on an increasingly prominent role in instigating and propagating financial crises.

In response, a large number of so-called standards and codes have been drawn up, setting out best practices in various fields of macro-economic and macro-prudential policy. These include efforts to improve the transparency of macro-economic (monetary and fiscal) policies. But, just as importantly, they include efforts to improve countries' macro-prudential policies – for example, efforts to ensure best practices in the financial regulatory and supervisory fields (for banks, insurance companies and securities houses); and measures to improve data, accounting and corporate governance (see Clark and Drage 2000).

The IMF, working alongside other international agencies, has been in the vanguard in assessing countries' compliance with these best practice codes and standards. Specifically, the IMF's Reports on the Observance of Standards and Codes (ROSCs) and the Joint IMF/World Bank Financial Sector Assessment Programmes (FSAPs) aim to provide a health check on countries' macro-economic and macro-prudential vulnerability. By the end of 2002, 343 ROSCs had been produced for 89 countries and 45 countries had completed FSAPs. Another 25 are in progress and a further 27 scheduled. Though there is further to go, progress has been tangible.

The fruits of this labour have been difficult to detect in the data. In a way that is inevitable, for we have no clean counterfactual telling us how crisis-prone countries would have been had they not undergone these health checks. Moreover, it is fanciful to think that crisis-detection could ever be so accurate as to remove entirely the potential for crisis. Indeed, to do so would probably be undesirable, as it would signal an over-zealous approach to international financial regulation. Nevertheless, there are some tentative indications that these attempts at greater transparency, and the accompanying acknowledgement of macro-vulnerabilities, may be beginning to pay dividends.

One straw in the wind comes from looking at the degree of dispersion in emerging market borrowing costs (Figure 1.3). These spreads were tightly compressed in the run-up to the Asian and Russian crises in 1997–1998. Currently, however, there appears to be a much greater degree of risk differentiation by the financial markets. Crisis prevention initiatives may have played some part in this encouraging development. Increasingly, too, it appears that rating agencies and other private sector bodies may be factoring crisis prevention initiatives, such as standards and codes, into their pricing decisions.

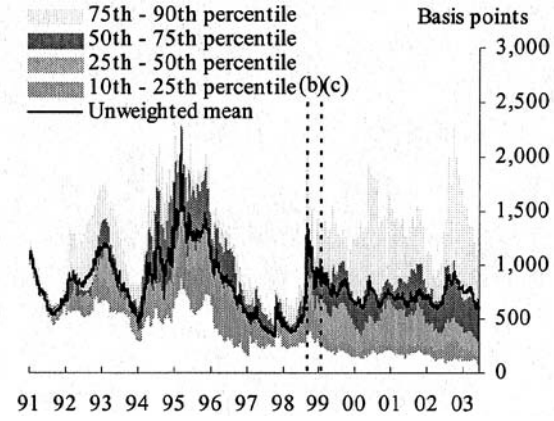

Figure 1.3 EME sovereign US$ bond spreads: distribution over time[a] (sources: JP Morgan Chase & Co. and Bank calculations).

Notes
a Unweighted cross-country distribution across components of the EMBI global index.
b Russian crisis – 17/8/98.
c Brazilian devaluation – 13/1/99.

The other strand of architecture initiatives has focused not on crisis prevention, but on "crisis resolution" – that is, mitigating the costs of crisis after they have struck. As with crisis prevention, there have been intense efforts by the official sector to make progress on this front, especially over recent years. And, as on the prevention side, these initiatives have been many and varied. Unlike on the crisis prevention side, however, progress has been rather less tangible. Why is this?

The short answer is – economics. Surveying the debate so far, there appear to be some fundamental analytical differences in people's preferred approach to tackling crises. These analytical differences are the motivating force behind, and the common thread running through, the remainder of this book. Overlaying these analytical differences are of course the usual panoply of other factors – politics (national and international), vested interests, institutional inertia, etc. But the focus of the remaining chapters is on the economics of the crisis resolution debate, retrospectively and prospectively. The chapters aim to track the evolution of the debate up to the present day, highlighting the key economic themes, issues and initiatives. And they attempt to provide a glimpse into where we might be headed next on the international financial architecture project.

We begin, however, with an overarching chapter by Sir Edward George (former Governor of the Bank of England) assessing progress so far on both the crisis prevention and crisis resolution strands of the debate. It surveys the landscape of recent architecture initiatives and so sets the scene for the detailed synopses of particular themes and issues that follow.

1.3 Why involve the private sector?

The IMF has played a pivotal role in the resolution of capital account crises. Recent IMF loan packages have ranged anywhere between $3 billion and $30 billion. The average size of IMF loans to all countries has risen from around $200 million during the 1980s, to over $2 billion entering the twenty-first century (Figure 1.4). By any historical metric, such as nominal GDP, the scale of IMF financing has dwarfed that in the past. And at the same time as the average size of loans has risen, the number of countries receiving them has fallen (Figure 1.5).

Large-scale official sector lending in response to financial crises has, of course, a long and distinguished intellectual pedigree, at least domestically. Bagehot (1873) first described the principles that should underpin such "last-resort" lending by a central bank to a domestic financial institution. These included that such lending should occur freely – indeed, in potentially unlimited amounts – against good collateral and at a penalty rate. Some have argued that there is a direct read-across to the management of international financial crises. Fischer (1999), in particular, proposes that the IMF could be turned into an international lender of last resort, furnishing an elastic supply of hard currency to countries in crisis. Indeed, based on past experience, it could be argued that the IMF has already played such a role, at least to some degree.

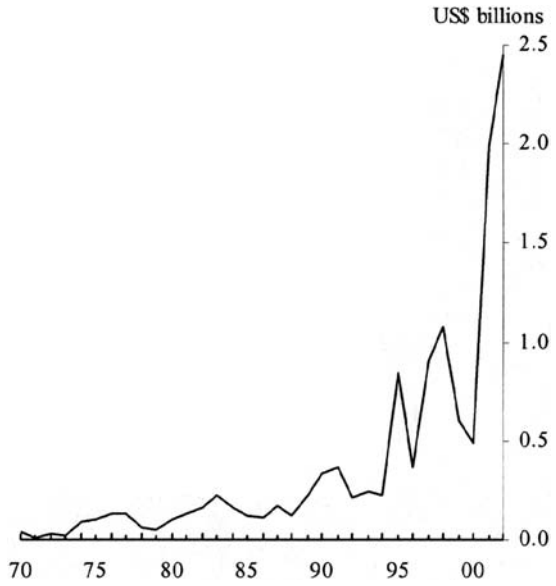

Figure 1.4 Average IMF loans[a] (sources: Gai and Taylor 2003 and IMF).

Note

a Average annual purchase from GRA (General Resources Account, excluding reserve tranche purchases) of those IMF member countries making a purchase in a given year.

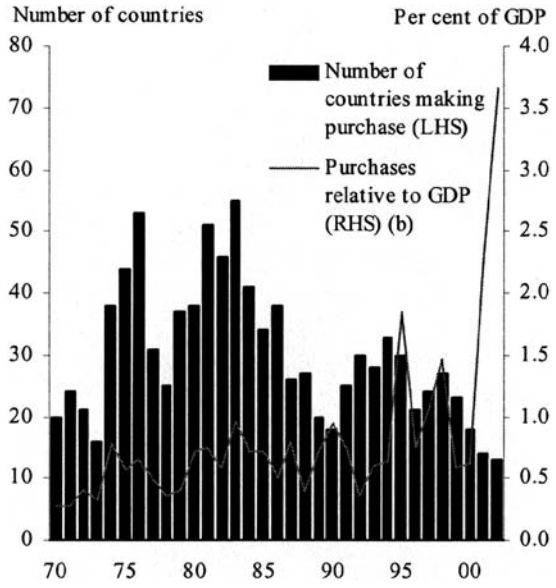

Figure 1.5 Number and size of IMF loans[a] (source: Gai and Taylor 2003, IMF and IMF World Economic Outlook).

Notes
a Purchase from GRA (excluding tranche purchases). Sample is those member countries for which purchase and GDP data are available.
b Sum of purchases of IMF member countries making a purchase in given year relative to their total GDP.

This approach has come up against stiff opposition. One obvious constraint is a practical one: could IMF resources keep pace with the mounting scale of international capital flows? Even a cursory glance at the numbers suggests that IMF resources have not, and most probably could not, do so. Between 1970 and 1996, IMF quotas rose by a factor of less than two in real terms. Over the same period, world trade volumes rose by a factor of over four and real private capital flows by a factor of over eight. Capital flows have outpaced the growth in IMF resources by a factor of four to one.

Put another way, the current usable resources of the IMF are less than $0.2 trillion. That compares with a stock of emerging market debt well in excess of $2 trillion. If we were to add in domestic capital flight, the stock of assets that might potentially flee EMEs could easily be double that amount. So however the cake is cut, it seems most unlikely that the IMF could ever be resourced on such a scale that it could serve as a credible, and potentially unlimited, last-resort lender.

But there are also behavioural grounds for questioning the logic of last-resort lending. One role of public policy is to guard against distortions to risk-taking incentives – so-called moral hazard. Liquidity intervention in

financial crises may potentially fall foul of that critique. Specifically, it may encourage excessive risk-taking, either on the part of the debtor ("debtor moral hazard") and/or private creditors ("creditor moral hazard"). In assessing the efficacy of public policy intervention, these moral hazard costs need to be weighed against the benefits of liquidity provision.

Part 2 of the book considers such a cost–benefit evaluation. Michael Mussa (Institute for International Economics and formerly Chief Economist at the IMF) critically examines the empirical and conceptual evidence on the degree of moral hazard potentially induced by large-scale IMF loans. Mussa argues that much of the focus on international moral hazard may be misplaced, as the distorting effects of IMF loans are likely to be quantitatively unimportant provided the IMF acts in accordance with its Articles of Agreement. Why? Because the IMF offers loans to countries rather than grants. Moreover, historically at least, these loans have almost always been repaid in full. So the subsidy to countries and their creditors implied by IMF intervention is unlikely to be large enough quantitatively to have adversely affected debtor and creditor risk choices. Certainly, such a potential pecuniary gain is likely to be dwarfed by the pecuniary losses the debtor and its creditors face as a result of crisis.

William Cline (Institute for International Economics and formerly Chief Economist at the IIF) reaches a similar conclusion from a slightly different direction. If official lending is constrained, then the burden of adjustment following a crisis must instead be borne by private creditors – there will be so-called private sector involvement (PSI) in crisis resolution. Some degree of PSI, Cline argues, is of course desirable. Private investors should bear the consequences of their risk choices. But the watchword of official sector PSI policy should be "voluntary". Involuntary attempts to inflict losses on private creditors carry large deadweight costs for the debtor, in the form of insolvent banking systems, a slow return of private capital, etc. These costs dwarf the costs of IMF-induced moral hazard. So, based on a cost–benefit calculus, Cline argues, the IMF should always err on the side of official sector lending when resolving crises, rather than impose solutions on private sector creditors.

This view of the competing arguments is by no means unchallenged. First, as Mussa describes in his chapter, recent years may have seen the emergence of a new type of moral hazard – what he calls "geopolitical" moral hazard. The official sector may seek to bail-out countries for strategic rather than economic reasons, using the IMF as a conduit. Mussa believes this risk to be a real one, which has risen over recent years.

Second, some of the empirical evidence on moral hazard reaches a less sanguine view on its potential importance (see, for example, Haldane and Taylor 2003). International bail-outs have, on occasions in the past, depressed borrowing spreads (Dell'Arricia *et al*. 2002). They have also helped deliver excess returns to international creditors, over and above that which can be explained by reductions in the likelihood of crisis (Haldane and Scheibe 2003). And as the international safety-net has

expanded, there is some evidence that debtor countries may have become less vigilant in addressing incipient vulnerabilities (Gai and Taylor 2003). All of these stylised facts are consistent with a degree of moral hazard having been induced by large-scale IMF lending. So, empirically at least, the jury remains out on the moral hazard question.

Third, as John Murray (Bank of Canada) describes in his commentary on Mussa, the case for restraint in official sector lending policies does not stand or fall on moral hazard. The case can equally be made on uncertainty grounds. Unpredictability about the lending response of the official sector may inhibit accurate risk-pricing by the private sector and may stymie policy risk-management by debtor countries. Against this backdrop, Murray makes the case for stricter limits on access to official financing. Access limits would serve as self-denying ordinance for the official sector, curbing the potential for discretion in official sector lending policy to disrupt the international financial system (Haldane and Kruger 2001; Council on Foreign Relations 1999).

The international community has recently taken to heart this desire for greater discipline in official lending policies. In April 2002, the Group of Seven (G7) countries committed themselves to strengthening IMF access policy. And in September 2002, the IMF's Executive Board agreed new criteria and procedures to accompany any decision to grant access to IMF resources above normal lending limits (of 100 per cent of a country's quota annually and 300 per cent of quota cumulatively).

These are steps along the road to establishing a framework of "constrained discretion" in the resolution of financial crises. Too often in the past, exceptional lending has become the rule – what Sir Edward George calls "damaging confusion" as distinct from "constructive ambiguity". The newly agreed IMF access framework ought, at the margin, to help ensure restraint and consistency in the IMF's lending practices, while at the same time allowing the IMF flexibility to deal with genuinely exceptional events. Ultimately, however, the proof of this particular pudding will be in the eating, when the new access framework is put to work in live cases.

1.4 How to involve the private sector?

If official sector lending is one side of the crisis resolution coin, then private sector involvement (PSI) is the other. PSI can come in a variety of shapes and forms: catalytic reflows of private sector finance – as in Mexico in 1994/1995; voluntary agreements to rollover interbank credit lines – as in Korea in 1997 and Brazil in 1999; market-based bond exchanges – as in Pakistan and Ukraine in 1999, Ecuador in 2000 and Uruguay in 2003; and comprehensive restructuring of external debts, perhaps accompanied by exchange controls – as in Russia in 1998 and Argentina in 2002/2003.

In 2000, the G7 developed countries set out a set of principles and tools decribing how future crises would be resolved. This became known as the "Prague framework". The framework defined the circumstances under

which different types of crisis resolution tool might be brought into play. It distinguished three types of crisis. First, temporary payments problems that could be resolved through some combination of official monies and its accompanying catalytic impact on private capital flows. Second, more serious, but still temporary, payments problems whose resolution may involve more radical tools – for example, bond exchanges and voluntary rollover agreements with creditors. And third, permanent disruptions to payments capacity whose resolution called for a comprehensive writing-down of debts. Cline's chapter provides a taxonomy of these various PSI concepts and an empirical quantification of them in past cases. This evidence addresses the positive question – what form has PSI taken in past crises?

A second, and more difficult, normative question is – what form *should* PSI take in dealing with crises? Part 3 of the book addresses that normative question. Analytically at least, it is useful to consider separately crises of two types: liquidity crises and solvency crises.[1] Liquidity crises are typically rooted in co-ordination failures among short-term creditors. One example of this phenomena is a "country run" – the failure of short-term creditors to rollover loans to an otherwise solvent country (Chang and Velasco 1999). These failures may result in the premature liquidation by creditors of otherwise viable projects – premature because, had creditors not chosen to foreclose, the project would have succeeded. So, like bank runs, these phenomena can be value-destroying.

Solvency crises, by contrast, occur when a country is unable to meet its payments, irrespective of the actions of short-term creditors. So resolving solvency crises calls for the writing-down of (short- and long-term) debt in net present-value terms. Securing such a write-down is, however, rarely straightforward in a sovereign context. Unlike for companies or banks, there is no over-arching framework, or set of principles, for reorganising the financial affairs of an over-indebted sovereign. As a consequence, sovereign solvency crises can also give rise to potential co-ordination problems among creditors, with attendant welfare costs.

In practice, this neat separation between liquidity and solvency crises is rarely so precise. The distinction is murky even when applied to a non-sovereign entity, such as a company or a bank. But in a sovereign context the difference is even harder to judge. A sovereign cannot be liquidated, unlike a company; its management cannot be changed, unlike for a company; and its revenue stream, and hence solvency, is largely in its own hands as a result of its policy choices, unlike for a company. So rather than a hard and fast liquidity/solvency distinction, it may make more sense to think of a spectrum of possible crisis situations facing a sovereign, ranging from insolvency at one end to illiquidity at the other. In these situations, the official sector needs a plurality of tools for dealing with crises at different points along the spectrum.

The chapters by Nouriel Roubini (New York University) and by Andrew Haldane, Simon Hayes, Adrian Penalver, Victoria Saporta (all

Bank of England) and Hyun Song Shin (London School of Economics) – hereafter HHPSS – take the solvency/liquidity nexus as their starting point. For liquidity crises, both chapters identify a disjunction between academic theory and policy practice. For example, the analytics of liquidity crises point towards a bipolar view. The best policy response to a liquidity crisis is either a full "bail-out" of the country by the IMF – in effect, the IMF serving as international lender of last resort; or it is a full "bail-in" of private sector creditors – the imposition of a temporary payments suspension or standstill on creditors, with no official money.

Each of these corner solutions can, subject to certain assumptions, be shown to be the most efficient means of dealing with a temporary payments problem in a country. Partial bail-outs or partial bail-ins, by contrast, are incapable of offering the necessary assurances to creditors to resolve liquidity crises. Indeed, partial bail-outs/ins might be counterproductive to crisis dynamics for just this reason (Zettelmeyer 2000).

That is the theory. The contrast with policy practice could hardly, however, be more stark. For example, revealed preference seems to suggest that 100 per cent bail-ins and 100 per cent bail-outs have not been viewed by the official sector as equally efficient substitutes when dealing with liquidity crises. In practice, the resolution of some cases has had similarities with a 100 per cent bail-out approach – for example, Mexico in 1994/1995, some of the South-East Asian crisis countries in 1997 and Turkey, Brazil and Uruguay in 2002. But few, if any, have involved the polar-opposite solution – a temporary cessation of payments without any accompanying official money.

Roubini and HHPSS consider this conundrum. Part of the explanation may lie in fears about the adverse side effects of payments suspensions on capital markets. If investors perceive a greater risk of them being locked into a country, they may be faster in running for the door as risks escalate. This "rush to the exits" in anticipation of a standstill could itself bring forward the likelihood of liquidity crisis, rather than lessen it (Lipworth and Nystedt 2001). Investors might also respond by constraining the flow and/or raising the cost of capital to EMEs. The IMF, in particular, have used these arguments as justification for using quantitative restrictions on capital flows only as a last resort measure (IMF 2002).

Yet these arguments may tell only part of the story. As HPSS discuss, there may be countervailing forces at work in capital markets. Standstills are intended to stabilise expectations by preventing the drain of liquidity that might otherwise damage a country's longer-term prospects. They guard against Peter being paid ahead of Paul purely because his claim falls due first, so helping preserve inter-creditor equity. This is likely to be beneficial for creditors in general, and for longer-term creditors in particular. Anticipating these better prospects, longer-term investors are, in turn, likely to act as a stabilising force. Adverse side effects on capital prices, flows and maturities may be offset by the neutralising impact of these long-term investors.

Only greater experience with payments suspensions will tell us what their precise impact on capital market dynamics might be. As long as IMF resources remain finite and falling in relation to private capital flows, however, then orderly payments suspensions may see greater use in the future than they have so far in the past. And, perhaps, the spillover effects from them will be more benign than some have feared. The limited degree of financial spillover from the Argentine payments suspension in 2001 may signal a new dawn.

A second area of difference between academic theory and policy experience is that many recent liquidity-type crises have been resolved using intermediate rather than corner solutions. Partial bail-outs and accompanying partial bail-ins of private creditors have become the norm. The crises in Korea in 1997, Brazil and Pakistan in 1999, Ukraine and Ecuador in 2000 and Turkey in 2001 all involved some judicious mix of official financing and partial PSI. These solutions seemed to "work" in practice. Why not in theory?

Perhaps, as with much of the recent literature on the international architecture, crisis experience is running ahead of academic theory. Three generations of models of crisis have been developed over the last 30 years. In each case, a new generation of theory emerged in response to crisis, rather than in anticipation of it. Most recently, work by Morris and Shin (2003) and Corsetti *et al.* (2003) shows that partial bail-out solutions are capable of bridging financing gaps and resolving crises. Specifically, official money can "catalyse" policy adjustment action by the debtor and may, as a result, induce private creditors to roll-over loans.

But as Morris and Shin discuss, the window of opportunity for such catalytic effects is a narrow one. Too much official money and policy incentives are blunted, not sharpened. Not enough official money and these incentives are unaffected. So calibrating just the right amount of official money to catalyse capital flows is fraught with problems. Past crisis experience would seem to bear out that message. In few recent cases have the anticipated catalytic effects been forthcoming (Cotarelli and Gianninni 2002). For that reason, the catalytic finance doctrine has of late been held up to critical scrutiny.

What is perhaps most striking from all of this evidence, however, is the relative lack of guidance that theory has been able to provide on appropriate tools for handling liquidity-type crises. The corner solutions are perceived as impractical. But the middle ground may be equally fragile. Against that backdrop, the somewhat inconsistent public policy approach adopted when dealing with past crises of this type is perhaps not so surprising. This is clearly an area where further refinement of academic and policy apparatus is of paramount importance. It is a missing foundation of the international financial architecture.

In many respects, the debate over the resolution of *solvency* crises has been more animated, and has made more progress, over the past few years. That debate has been given momentum by crisis experience in

Russia in 1998 and, most recently, Argentina in 2002. In both cases, the sovereign defaulted on (some or all of) its debts to the private sector, with catastrophic implications for real and financial activity in the countries concerned. Both countries experienced a sharp contraction in GDP and a banking crisis, the after-effects of which are still being felt.

The resolution of solvency crises is, almost by definition, likely to involve the sovereign defaulting on some or all of its payments to creditors and a writing-down in the value of those debts in net present-value terms. Both such actions give rise to potential co-ordination problems both among creditors, and between the debtor and its creditors collectively. For example, a sovereign in default may face the risk of litigation by creditors, who seek to attach the sovereign's assets to cover the face value of their obligations. Or a small majority of creditors may vote against ("holdout" from) a restructuring deal, thereby disrupting progress on resolving a debt problem. Alternatively still, there may be deadlock between the debtor and some or all of its creditors in agreeing a suitable haircut for the debt.

Various initiatives have been tabled for resolving some of these problems. But the two which have perhaps attracted the most practical interest are collective action clauses (CACs) in bond contracts, and the Sovereign Debt Restructuring Mechanism (SDRM), first proposed by Anne Krueger of the IMF in 2001 (Krueger 2001). These two initiatives have been dubbed, respectively, the contractual and the statutory approaches to debt restructuring. Parts 4 and 5 of this book consider in turn each of these proposals.

1.5 Contractual approaches to debt restructuring

Accompanying the rise in the scale of borrowing by EMEs over the last 30 years has been an equally striking shift in the composition of these flows. Bond issuance by EMEs has taken off. Since 1980 it has risen at an annual average rate of around 25 per cent (Figure 1.6). At end-2000, the stock of emerging market bonds stood at $500 billion, which is roughly on a par with the stock of medium and long-term emerging market syndicated loans.

There are many potential benefits of international bonds as an instrument over, say, syndicated loans – for example, the greater dispersion of credit risk around the international financial system and the presence of a deep and liquid secondary market. The successful experience with the Brady plan at the end of the 1980s, when defaulted developing country loans to banks were exchanged for securities (Brady bonds) in a number of EMEs, is ample evidence of these benefits.

But this dispersion of risk around the system also carries some potential costs in the event that international bonds need to be restructured – that is, in solvency crises. Some of these costs are administrative – for example, the inconvenience of calling and holding meetings of diffuse creditor groups. Others are more substantive – for example, achieving consensus on proposals to restructure the debt among creditors with potentially

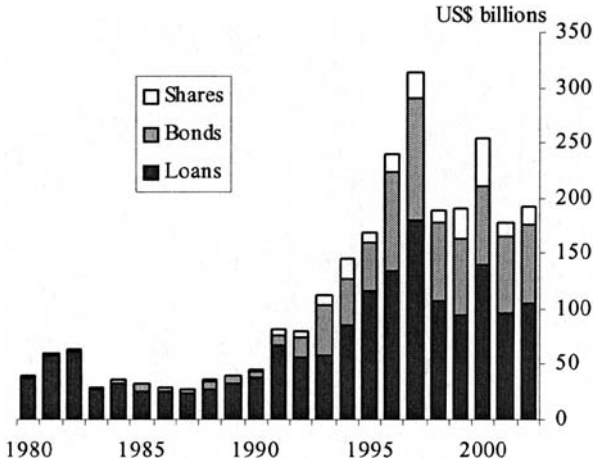

Figure 1.6 Gross issuance by emerging markets.

disparate preferences. Either way, these problems are not unique to sovereigns nor to emerging market countries. The same problems have beset companies issuing bonds for many years.

The chapter by Lee Buchheit (Cleary, Gottlieb, Steen and Hamilton) and Mitu Gulati (Georgetown University) explores this sovereign/corporate analogy, by considering the debate at the end of the nineteenth century over optimal corporate restructuring mechanisms in the UK and the USA. In a corporate context, the UK went down the contractual route by including within corporate bonds CACs which facilitated restructuring – for example, clauses which allowed a qualified majority of creditors to change the financial terms of the bonds (see Dixon and Wall 2000). The USA, on the other hand, pursued a statutory course, which ultimately resulted in Chapter 11 bankruptcy procedures for companies. Indeed, in the USA, the Trust Indenture Act of 1939 explicitly forbade companies from issuing bonds containing CACs.

Those corporate conventions in US and UK law have carried across to sovereign bond issuance right up to the present day. Specifically, bonds issued under UK law have tended to include CACs, whereas equivalent bonds issued under US law have not. Among EMEs, bonds issued under English law have accounted for between one-third and a half of total issuance over recent years (Dixon and Wall 2000). That suggests a sizeable chunk of international EME bonds are unlikely to contain CACs.

It is this stylised fact that explains the drive by the official sector over recent years to encourage the wider use of CACs in international sovereign bonds – the subject of Part 4 of the book. An initial proposal on the inclusion of CACs in bonds was made in Eichengreen and Portes (1995), whose findings were given official sector backing in the Rey Report (1996) by the Group of Ten (G10) industrialised countries. Up until recently,

however, there has been relatively little evidence of official sector exhortations to include CACs having had much impact on issuing behaviour.

One of the reasons for this may have been concerns among EME issuers about the increased cost of borrowing with bonds which included CACs. For example, it has been argued that the inclusion of CACs may, at the margin, make debtors more willing to default on their debts. Private creditors would demand a higher cost of borrowing in equilibrium if they perceived this to be a risk. Against this, CACs should boost recovery values in the event of default, by facilitating orderly restructuring. This would tend to lower borrowing costs. Which of these competing effects dominates is an empirical question. Significantly, existing empirical evidence does not point towards a significant risk premium in bonds issued with CACs, compared with those without. This is certainly the case for low-risk borrowers (Eichengreen and Mody 2000), but also potentially for higher-risk borrowers as well (Becker *et al*. 2001).

Over the past couple of years, the degree of official sector impetus behind CACs has intensified, with the US Treasury (Taylor 2002) and the G7 (2002) both prominent supporters. Indeed, a working group of the G10 was convened during 2002 to devise model CACs, which might form an industry standard. At around the same time, a group of seven private sector organisations began devising their own model clauses.[2] Subsequent to this, a number of EMEs have issued international bonds under New York law that have included CACs. The bond issued by Mexico in February 2003, which included CACs modelled on the G10 clauses, resolved the first-mover problem. And since then, countries including Brazil, Uruguay, South Africa and Korea have followed suit. So on the CACs front, we have gone from ideas to words (draft clauses) and, most recently (and encouragingly), from words to actions. Unlike in other areas of the crisis resolution debate, progress has been speedy.

A common theme from the chapters by Buchheit and Gulati and by Kenneth Kletzer (University of California) is that, used creatively, CAC provisions can replicate most, if not all, of the features of formal bankruptcy arrangements. For example, stays on creditor litigation, superpriority of new financing for the debtor during a workout and the cram-down of creditors through majority action provisions can all be replicated with contractual apparatus. As Kletzer's chapter demonstrates, the last of these provisions is particularly useful, as it neuters the incentives of creditors to hold-out from a restructuring agreement. This rent-seeking behaviour is amplified with the unanimity provisions typically contained in bond contracts issued under US law.

One technical difference that does exist between CACs and, say, statutory apparatus is the capacity to aggregate across instruments of different types. For example, CACs are typically included on a bond-by-bond basis, so allowing a vote on restructuring to occur on a bond-by-bond basis. In principle, it may be preferable to have majority voting provisions which aggregate across all instruments. Indeed, the Uruguayian bond exchange

in June 2003 contained clauses which allowed for some degree of aggregation across the exchanged instruments. But the number of instruments was in that case relatively small – three.

To take a countercase, in Argentina there are around 150 different types of bond, issued across eight different legal jurisdictions, with perhaps approaching 400,000 end-investors. In these situations, there is a tangible risk of a restructuring deal being held hostage to the outcome of a vote by any one group of bondholders. This has been termed the "aggregation problem". It has been used by some to support the case for the statutory approach, under which all claims would be aggregated and homogenised for voting purposes.

The chapters by Buchheit and Gulati and by Kletzer suggest that this aggregation problem may be surmountable even with existing contractual tools. Buchheit and Gulati point towards the role that could be played by class action procedures in aggregating claims. These procedures already operate in US courts and have, in practice, been able to achieve a high degree of creditor homogenisation. Significantly, such class action procedures have recently been used by German and Italian retail investors during Argentina's debt deliberations.

Using a theoretical model, Kletzer demonstrates that the self-interested actions of multiple bondholders can resolve the aggregation problem without the need for third-party intervention. Specifically, it will typically be optimal for multiple bondholders to appoint a private trustee to act collectively on their behalf in the event of a restructuring. No supranational agency is required to resolve aggregation problems. A similar refrain has been heard from private sector creditors (IIF 2002). Again, there is evidence from the Argentine work-out of creditors being able to successfully co-ordinate their actions around a set of appointed trustees.

Taking these chapters together, a strong case could be made for persisting with the contractual approach to debt restructuring, not least given the success on implementation so far. This echoes the message from Roubini's chapter, which argues that many of the differences between CACs and the SDRM may be more apparent than real. That complementarity has also been recognised by the official sector. Through 2002, they proposed that work on the contractual and statutory approaches should proceed in parallel, as part of a twin-track process (G7 2002). But why bother with a statutory approach at all if CACs can do as good a job? Part 5 of the book addresses that question.

1.6 Statutory approaches to debt restructuring

Sovereign bankruptcy proposals have a long intellectual history, stretching back to Adam Smith (Rogoff and Zettelmeyer 2002). But relatively little practical progress has been made in formalising bankruptcy procedures for countries over this period, despite periodic calls for action. The last two years have probably seen more practical progress on this front than the

preceding two centuries. A concrete proposal was tabled by the IMF in 2001 – the SDRM. Since then, there have been several incarnations of the SDRM proposal. The first vintage suggested placing the IMF centre-stage in many of the mechanism's key decisions (Krueger 2001). A second vintage placed most of the key decisions in the hands of creditors and the debtor instead (Krueger 2002).

Each of these proposals met with widespread criticism, however, in particular from the private sector (see, for example, IIF 2002). These criticisms are manifold. But, at root, the private sector fear that the balance of bargaining power between a sovereign debtor and its creditors is already skewed heavily in the direction of the debtor. Sovereigns are, after all, sovereign. So any further tilting of the scales, which further diluted creditor rights, would risk a collapse of private capital flows to EMEs (Shleifer 2003). Perhaps with this fear in mind, few EME issuers have so far been attracted by the SDRM proposal either.

Despite this criticism, the official sector tasked the IMF to come up with a concrete proposal for the SDRM for consideration at the time of the IMF–World Bank spring meetings in April 2003. The tabled proposal did not, however, gather the support of the requisite 85 per cent of the IMF's Executive Board necessary to amend the IMF's Articles of Agreement to put in place the SDRM. So the formal proposal has been held in abeyance since then, while other (contractual and voluntary) avenues have been pursued.

It is nonetheless worth assessing the merits of an SDRM (or SDRM-like) proposal from first-principles. All good ideas have their day – and the SDRM debate has, if nothing else, whet the appetite of international monetary reformers. The historical evolution of corporate bankruptcy law is also illuminating. This was introduced in many countries in the face of stiff opposition by creditors and/or corporates and only after decades of messy corporate workout experience. No one these days seriously questions the desirability of corporate insolvency procedures in principle, though they may disagree on the details of a particular insolvency regime in practice.

One reason why bankruptcy procedures have, with time, come to be accepted by creditors and debtors is that they are perceived as having helped guard against important externalities of various kinds. By definition, such externalities cannot be resolved by the self-interested actions of atomistic agents. A supranational agency and accompanying legal infrastructure is required. As Willem Buiter (European Bank for Reconstruction and Development) quips in Chapter 14: "The state or its supranational counterpart has no effective substitutes, be it the invisible hand or the inaudible negotiator."

The chapters by Jonathan Eaton (New York University) and by Marcus Miller and Sayantan Ghosal (University of Warwick) identify several externalities that might justify the creation of such a supranational agency. For example, if underpinned by international statute, it may have greater

powers of enforcement of decisions over creditors and debtors; it might better be able to mitigate debtor incentives to default capriciously (debtor moral hazard); it might have the capacity to correct the effects of socially inefficient private contracts; and it may have superior information to – or more objective incentives than – private creditors and the debtor in helping secure an efficient and expeditious workout.

In practice, enforcement of decisions over sovereigns is always likely to be far more problematic than in a corporate context. Nevertheless, there may be ways an international court could boost the value of the (pecuniary or reputational) collateral backing international lending, thereby supporting capital flows. For example, Eaton proposes that sovereigns could be asked to place some of the proceeds of any loan in an escrow account, which could be remitted back to creditors in the event of default. Bankruptcy courts could help encourage countries to put in place structural policy measures, over and above what they otherwise would have done. And a supranational agency may also be able to reinforce reputational incentives – for example, by blowing the whistle on sovereigns who default strategically, either through announcements or by refusing to lend to them. As Miller and Ghosal discuss, these actions would mitigate the risk of debtor moral hazard and would help exert some degree of leverage or enforcement over otherwise sovereign decision-making.

There may also be an informational role for a supranational agency to play. Most of the debate so far – certainly, in the context of the SDRM – has focused on potential co-ordination failures among creditors. Less attention has been paid to co-ordination failures that might arise between the debtor and creditors collectively. This may provide a further rationale for supranational intervention.

Information asymmetries between debtors and creditors may prevent an efficient bargaining solution being reached (Haldane *et al.* 2003). If a central agency can resolve these informational frictions, it can help achieve an efficient bargaining solution – that is, fewer stand-offs between creditors and the debtor and shorter delays in reaching agreement (see, for example, Haldane *et al.* 2003). The decade-long workout of the Latin American debt crisis in the 1980s, and the lengthy ongoing renegotiaton of Argentina's debt, suggests that the scope for such stand-offs is considerable.

At present there is little, if any, quantitative evidence on the importance of these various creditor/debtor externalities in practice. Once established, this evidence would need to be weighed alongside the practical costs of putting in place a supranational bankruptcy procedure. And, of course, political-economy factors are likely to be at least as important as economic motives when devising an international bankruptcy court. For example, who would serve as judge (and jury and executioner)? The IMF, a debtor-club, is generally felt to be poorly placed to serve that role. But if not the IMF, then who? The governance of a supranational body would need careful consideration given its potential distributional impact on debtors and creditors. That is an important task for future research.

1.7 The road ahead

Strengthening the international financial architecture is destined to proceed at glacial pace – perhaps, if we are lucky, with the occasional lurches forward as initiatives serve as a beacon for renewed action. Progress over the last few years has followed precisely this pattern. But where does this leave us for the future? The final chapters in Part 6 of the book present the views of four experts on this question: Matthew Fisher (IMF); Lorenzo Bini Smaghi (Italian Treasury); Richard Clarida (formerly of the US Treasury); and Mervyn King (Governor of the Bank of England).

There is near-consensus on the need for restraint in the availability of official resources to help resolve capital account crises. The idea of an international lender of last resort is one which attracted some support, especially towards the end of the twentieth century. But its day appears to have come and gone. Discipline has become the watchword of official lending policy. A strengthened framework for IMF access policy was agreed by the IMF's members during 2002. The new framework raises the bar for countries wishing to obtain exceptional access to IMF resources, by requiring a higher burden of proof and putting procedural safeguards in place.

How will this new policy be applied in practice? Only time will tell. Without the backstop of limits on official finance, however, it is hard to see how much progress can be made on other architecture initiatives. The balm of official finance will always be too attractive an option for debtors to pursue other, more difficult, options voluntarily. Lending limits serve as an incentive mechanism for the debtor to put in place prompt corrective action, be it macroeconomic policy adjustment, debt exchanges or comprehensive debt restructuring. In short, access limits are a *sine qua non* of a robust and disciplined international financial architecture.

Progress towards agreeing and, ultimately, including CACs in sovereign bonds has been considerable over the past few years. That is good news. CACs help in sovereign debt crises where much of the debt is in the form of international bonds which needs restructuring or rescheduling. Plainly, however, that is only a subset of the crisis cases we have seen over recent years and can expect to see in the future. For example, arguably, CACs would have been of little use in resolving the East Asian crises, nor in Turkey and Brazil in 1999. CACs are no panacea. They are one instrument (among many) to be used for one particular type of crisis (among many). So where are the remaining gaps?

What the existing crisis resolution process perhaps lacks, above all else, is an overarching superstructure; if only for that reason, the "architecture" metaphor is a good one. By "superstructure" we mean a set of rules or principles that guide the actions and expectations of the various players in the crisis game – the official sector, private creditors and the debtor. Without those presumptions, the crisis resolution process is doomed to remain ad hoc and uncertain. Debt workouts will remain a free-for-all, with attendant costs for all.

The SDRM is one model for such a superstructure. The underpinning for the process is, in this case, provided by international statute. But at least as important as the underpinning is the substance of the SDRM proposal – an articulation of the processes that would govern sovereign debt workouts, including decisions on the scope of the debt and the voting and verification of claims. In effect, the SDRM provides a cookbook for sovereign debt restructuring. There are other recipes for organising a workout, some potentially better, some worse. But no recipe at all – retaining the status quo – seems like an unsavoury prospect.

Given that the SDRM has for the present time been mothballed, what alternative superstructures exist? Over recent months, the idea of a Code of Good Conduct for sovereign debt workouts has begun to attract some attention, both within official sector circles (for example, Sir Edward George's chapter and Banque de France 2003), and within the private sector (IIF 2003). The rationale for such a code is that it could help provide stronger presumptions about the expected behaviour of different parties in the event of a payments problem; it would set out a "roadmap" of best practices.

Such a code would have a voluntary, rather than statutory, underpinning. That would be both its biggest advantage and its biggest disadvantage. Advantageous because it would, at least in principle, be easier to reach agreement among debtors, creditors and the official sector on what, *ex ante*, constituted good faith and best practices during a workout. Disadvantageous because it would be easier for debtors, creditors and the official sector to circumvent the code*, ex post*, in the event of a crisis.

With time, of course, even a voluntary code might usefully condition expectations and behaviour if it were seen to have teeth. Indeed, these teeth could be sharpened with various carrots and sticks. For example, it could be decided that a debtor would need to be complying with the code's good faith principles to be eligible for official financing from the IMF. In terms of next steps, these will involve, first, drawing up the code, balancing the competing interests of debtors, creditors and the official sector; and, second, putting in place incentives to ensure compliance with the code.

One of the attractions of the code idea, alongside its practicality, is that it could be designed to cover a wider range of payments problems than, say, the SDRM. The latter is designed exclusively for the case of comprehensive restructuring of sovereign debt – the third case identified in the Prague framework. A code could also be designed to serve a useful role in the event of less severe payments problems – the first two cases identified in the Prague framework. For example, it could help in the initiation of an early dialogue between the debtor and its creditors as payments problems mount. More generally, a code could be thought of as a portmanteau set of principles, embracing many potential crisis situations (liquidity crises, solvency crises) and many potential crisis resolution instruments (CACs, standstills, debt exchanges, etc.). Viewed as such, it could become a central plank of the international architecture.

Even with lending limits, CACs and a code in place, however, it could be argued that there are other missing links in the architecture that might usefully be forged. Among a potentially very long list, four are mentioned here.

First, some have recently made the case for a debt forum, to play an overseeing role when sovereigns hit payments problems (for example, Hubbard 2003). The precise functions of the forum are open to debate, but in principle these might embrace the administration of claims and, potentially at least, adjudication in disputes between creditors and the debtor. A voluntary forum of this type would be a natural adjunct to the voluntary code of good conduct. While not a fully-fledged bankruptcy court, a forum could act as an objective, supranational overseer of the workout process. The precise role, responsibilities and composition of such a forum warrants further consideration.

Second, there would still appear to be a lacuna in the set of tools available to the official sector in dealing with liquidity or pseudo-liquidity crises. As most capital account crises in the real-world fall under this heading, this gap is a significant one. What we lack in these situations is knowledge of when different types of instruments are likely to prove effective. When, for example, can we expect a catalytic response from private capital – if, indeed, ever? When might voluntary rollovers of bank loans or temporary payments suspensions help resolve crisis? And when should capital or exchange controls be invoked? All of these are open analytical questions. Without the comfort blanket of official finance, answers to these questions have never been more pressing. They call for more analytical work on the foundations of capital account crises and the functioning of capital markets before, during and after crises.

Third, most of the focus so far has been on resolving sovereign payments problems. But many recent crises have been sourced in the private rather than the official sector – for example, the South-East Asian crises in 1997, the Turkish crisis in 1999 and the Uruguayian crisis in 2002. A particular dilemma arises when sovereign sustainability problems coincide with banking sector difficulties – for example, as in Argentina and Turkey in 2002. In those situations, the sovereign cannot credibly lend a helping hand to a suffering banking system. So what other options are available? IMF financing is one. But with that off the table, we are left looking at more decisive solutions, such as deposit haircuts and asset restructuring. The costs and benefits of those various options are just beginning to be debated. They need to be addressed as a matter of priority, as this strain of hybrid banking/sovereign crises appears to be a virulent one.

Fourth, the dynamics and sequencing of debt workouts merit further investigation. The current sequencing of a workout involves the IMF agreeing a programme with a country, the Paris Club next agreeing a rescheduling of bilateral official credits, with the private sector going last in the game in writing-down its own debt. In addition, comparability of treatment works asymmetrically across the different sets of creditors. The

IMF has preferred creditor status and hence never suffers a write-down in the face value of its obligations. Bilateral official credits can be written-down, but are done so conditional on at least as great a haircut being taken by the private sector. So this is a sequential, asymmetric bargaining game.

It is possible to envision a very different type of bargaining game, one that is multilateral and simultaneous rather than sequential and asymmetric. It might involve decisions on appropriate debt write-downs being agreed collectively among creditors, rather than by the IMF. It could involve private creditors having more of a say about the parameters of IMF programmes. And, conceivably, it could also involve a dilution of the preferred creditor status of the IFIs. These would be seismic steps. But the greater the proportion of private versus official debt owed by emerging markets, the greater will be the push from the private sector to have at least a seat at the table when payments problems arise.

This is a long shopping list. It will take years, if not decades, to make progress on all of these fronts. Moreover, in many ways architectural reform is having to hit a moving target. Crises are dynamic. So the official sector is playing a perpetual game of catch-up with crisis events to avoid fighting the last war. The word crisis in Chinese comprises two syllables meaning "danger" but also "opportunity". Financial crises in the twenty-first century are unlikely to provide a shortage of either.

Notes

1 Using the taxonomy from the Prague framework, the first two types of crisis situation would be liquidity crises and the third solvency crises.
2 Emerging Markets Trading Association, Institute of International Finance, International Primary Market Association, The Bond Market Association, Securities Industry Association, International Securities Market Association and Emerging Markets Creditors Association.

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2 Breaking the crisis cycle in emerging market economies

Sir Edward A.J. George

I want to focus on the prevention and handling of crises specifically affecting EMEs. This is a debate which has been going on in both official and private financial circles now for many years – certainly very intensively since the Mexican crisis of 1995. And whatever our other preoccupations, it is very important that we should not take our eye off that ball.

2.1 Crisis prevention

We have in fact made a good deal of progress – though we sometimes lose sight of that – on crisis prevention. In particular, a great deal of work has been done to produce codes of good practice on data dissemination, on the sequencing of moves towards capital account liberalisation, on transparency of monetary and fiscal policies, and on the framework of financial and supervisory policies. The IMF has played a leading role, alongside other international agencies, in developing and assessing these codes and standards.

Tangible progress has also been made on international and domestic debt and liquidity management, in the Financial Stability Forum Working Group on capital flows; on core principles for effective banking supervision, in the Basel Committee on Banking Supervision; on core principles for systemically important payment systems, in the Basel Committee on Payments and Settlement Systems; on accountancy standards, in the International Accounting Standards Committee; on auditing practices, in the International Federation of Accountants; on cross-border insolvency law, in the UN Commission on International Trade Law; and on corporate governance, in the OECD.

The emphasis now has to be on *implementation* by national authorities of these best practice guidelines, with the help where necessary of the international community. And although that cannot happen overnight, the emphasis must also be on transparency and validation of progress towards implementation in individual countries. Taken together, all these initiatives should contribute to greater stability at the international level. But they should also help lenders and investors to monitor compliance at the national level and to become more discriminating in their assessment of

the risks of lending to, or investing in, one country as against another. This, in turn, will dampen potential volatility and, at the same time, give the countries stronger incentives to move towards best practice.

2.2 Crisis resolution

The much more difficult area of debate is about what should happen when problems begin to emerge, as they inevitably will. And here, too, there has been some coalescence – both within and between the official and private sectors – around some general principles. It is generally accepted, for example, as an essential starting point that debt contracts are to be honoured. It is now generally accepted, too, that private sector creditors are responsible for their lending and investment decisions and cannot expect to be bailed out in a crisis by the unlimited official support of a debtor country. And it is generally accepted also that difficult situations are best addressed through co-operative solutions between the debtor country and its creditors, ideally building on effective dialogue established in advance.

But we are all still trying to work out how these interactive principles are best put into policy practice. Of course, to a degree that will depend upon the circumstances of any particular case. I do not think that anyone has argued for hard and fast – one-size-fits-all – rules, though it was at one time suggested that this was the case. It has certainly not been our position at the Bank of England. What we have argued – and continue to argue – is that we need to develop some kind of *presumption* of what debtor countries and their creditors might realistically expect when a storm begins to blow, because those expectations will influence their behaviour in the meantime.

2.3 A presumptive framework

There are three particular aspects of a presumptive framework on which, in my view, more work needs to be done. They are: first, the framework for dialogue between debtor countries and their creditors; second, "normal" access limits to IMF support and the conditions for exceptional access; and third, the principles and procedures that should apply in extreme situations in which a country is not able to honour its contracts. Let me say a few words on each of these issues in turn.

On the question of dialogue, I am bound to say that I continue to be puzzled that the major private sector creditors do not themselves take more initiative in seeking to establish, during the good times, an ongoing dialogue with the larger international borrowers, drawing their own conclusions if a borrower is reluctant to engage with them. I would have thought they would recognise such a relationship as being in their own long-term interest. Exploring that possibility would help to clarify some of the obvious sensitivity issues – which also apply in the context of creditor dialogue with the IMF – relating to the tension between confidentiality and insider information.

A more immediate issue for the official sector is IMF access policy or presumptive limits on IMF lending to individual member countries. I emphasise *presumptive* limits. I have always recognised the need for an element of discretion in exceptional circumstances. But since 1995 the IMF has, in crisis situations, offered credit facilities amounting to seven times quota in the case of Mexico, three times quota in the case of Russia, five times quota in the case of Thailand and Indonesia, six times quota in the case of Brazil and Argentina, and nineteen times quota in the case of both South Korea and Turkey. That to my mind is not constructive ambiguity; it is damaging confusion. Debtor countries have no real idea of the scale (or conditionality) of the help they can reasonably expect from the Fund. And private creditors do not have a sound basis on which to assess risk sensibly. We usually think of access in the context of crisis management. But presumptive limits on access are fundamental to crisis prevention because without them both countries and their private creditors are liable to take excessive risks in the hope that they will be able to "game" the Fund into bailing them out if things go wrong. We urgently need a clear framework of presumptive limits to persuade borrowers to face up to hard policy choices before the situation gets out of hand, and the private creditors to make a more objectively based assessment of risks.

We also need firmer guidance on two other issues. First, the kind of progressive conditionality (including debt sustainability, policy adjustment action by the debtor and the financial contribution that would be looked for from the private sector) that a borrowing country should expect as it moves through successive tranches within the presumptive limits. Second, the sort of exceptional circumstances that might justify going beyond the presumptive limit, and the procedures that would apply before such exceptional access would be considered.

I should say that we are making quite good progress on these access issues in the G7 and the IMF, and I hope that we will be able to move further in implementing this strengthened policy framework in live cases in the period ahead.

We have made considerable progress, too, on the third question – the principles and procedures that should apply when a debtor country simply cannot meet its obligations. The last thing that anyone wants is to make default a soft option for the debtor – though I think one can in fact exaggerate the risk of that: no debtor country is likely to enter into default lightly, knowing that once it has lost its credit status it may be years before it can be regained. But in extreme situations, where default is genuinely unavoidable, there clearly are potential advantages for committed private sector creditors – and for the official community – in an orderly suspension of external debt payments. These standstills provide time for negotiations to ensure equitable treatment of creditors and properly considered policy action by the debtor, rather than the hastily considered unilateral action that we saw in the tragic case of Argentina.

In fact, there has been good progress in recent months – through effective collaboration between the official and private sectors – on the market-based approach of Collective Action Clauses (CACs). I hope that we will soon begin to see their increasing incorporation into debt contracts – following Mexico's lead – to the point where committed lenders begin to ask themselves why a borrower would *resist* their inclusion. That would be a major step forward.

But it would not be a *comprehensive* solution, covering the aggregation of different forms of debt and providing broader inter-creditor equity. This is essentially why the proposal has been made for a more all-embracing, statutory approach to sovereign debt restructuring – the SDRM. I think it is widely accepted that there are some formidable questions that need to be explored before the SDRM can be developed into a detailed, practical, proposition. It would raise real questions about the relationship between domestic and external debt, and between private and official creditors. And it would, even then, take a long time before it could be translated into the necessary amendment of the IMF Articles of Agreement and international law. But that is not a reason for not continuing to explore it together in parallel with pursuit of the market-based CAC approach.

In the meantime, what we certainly need in my view is to develop a set of good practice guidelines or principles for situations where debt restructuring becomes inevitable, on what would constitute "good faith" behaviour by debtors in their treatment of creditors. We need that in a non-statutory regime. And we would need it, too, if we conclude that the risks of free-riders running for the exit or seeking to attach assets in a grab race are becoming such that we have to move to an SDRM approach, notwithstanding the practical difficulties of doing so.

So can we break the crisis cycle for EMEs? I think my answer is that we must continue to try. But it is work that will never be completely done.

Part II

Why involve the private sector?

3 Reflections on moral hazard and private sector involvement in the resolution of emerging market financial crises

Michael Mussa

3.1 Introduction

Beginning with the Tequila crisis of 1995, the past decade has seen a remarkable number of very damaging financial crises affecting most of the world's emerging market economies. The list now includes Mexico and Argentina in 1995, Indonesia, Korea, Malaysia, the Philippines, Thailand, and (to a lesser extent) most other Asian emerging market countries in 1997–1998, Russia in 1998, Brazil in 1998–1999, Argentina and Turkey in 2000–2003, and Brazil in 2002–2003, as well as many smaller emerging market countries that have endured crises during the past decade. This remarkable series of crises has rightly focused intense concern on what can be done to lessen the likelihood of, and reduce the damage from, such crises in the future.

One of the most important issues in this regard has been the perception that past efforts to deal with such crises utilising programmes of policy adjustment and packages of international support organised by the International Monetary Fund have, in fact, made the problem worse. The mechanism for this purported perversity is "moral hazard". Specifically, the accusation is that expectations of official international support to assist emerging market countries facing external payments difficulties induces these countries and their private creditors to be less prudent than they should be in taking on risks because they believe that, if adversity strikes, the official international community will help to bail them out of their difficulties.

If such moral hazard is a substantial problem, then the solution presumably involves making sure that borrowers and their creditors do more, and expect to do more, to contain and correct the damage when adversity strikes. Because emerging market borrowers generally suffer substantial economic damage in a financial crisis, while at least some private creditors (particularly short-term creditors of banks and of the sovereign) are often seen to escape with limited losses, much of the emphasis in recent discussions of this issue has focused on more efficient and effective mechanisms for involving private creditors in avoidance and resolution of emerging market financial crises. This is reflected in extensive discussions during the past few years, in many official fora, of better mechanisms of "private sector involvement" (PSI).

In this chapter, I will reflect upon the issue of the moral hazard supposedly arising from expectations of so-called "IMF bail-outs" and on its implications for the need for better means of private sector involvement. My main point concerning moral hazard is that this problem – as usually presented – has been vastly exaggerated. Provided that IMF financial support is provided in accord with the principles embodied in its Articles of Agreement, such support does not provide a "bail-out" either of emerging market borrowers or their creditors. Accordingly, while enhanced PSI may well be useful and desirable to contain more effectively the risks and damage from emerging market financial crises, including greater involvement of private creditors in absorbing losses from such crises, it is not needed to correct the misperceived problem of moral hazard from so-called IMF bail-outs.

On the other hand, two important problems that involve the technical economic concept of moral hazard (but not the popular conception) do merit more serious consideration. First, the automatic presumption of the IMF and the official international community is that the senior officials of the government in power in a country are the legitimate representatives of that country and are committed to pursue that country's national interest. But senior government officials are really agents for the citizens of their country. These agents do not personally bear most of the consequences of their decisions as public officials; and, quite generally, citizens do not fully understand or appreciate the consequences of decisions that are made in their name, particularly in complex issues of economics and finance. Thus, we have a classic example of what is referred to in the economic literature as "the principal/agent problem". In the context of an actual or potential financial crisis, the interests of the agents may diverge quite substantially from those of their principals. Delaying a crisis for a few weeks or months, perhaps until after a critical election, may be very much in the interest of officials in power, even if the ultimate risk of a crisis is not much reduced and the likely damage if a crisis ultimately ensues is substantially increased. For officials in power, failure is failure, and from their personal perspective a truly catastrophic failure may not be all that much worse than a more modest one. For the IMF and the international community, this principal/agent problem poses the difficulty that the standard procedure of avoiding actions or statements that might provoke a crisis and, especially, providing financial assistance that may only help to delay a crisis may serve the interests of government officials in power, but may be inconsistent with broader interests of the citizens of the country concerned.

Second, there is an important principal/agent problem that concerns the role of the IMF's main shareholders and creditors in influencing the activities of the institution. National governments, including legislatures such as the US Congress, have agreed to make substantial resources available for use by the IMF in providing temporary balance of payments assistance to its member countries, with the understanding that these resources will be

used in accord with the principles embodied in the IMF's Articles of Agreement. In practice, however, the IMF's general resources can be, and sometimes have been, made available to countries for reasons and in circumstances that are, at best, somewhat difficult to reconcile with these principles. Russia during the mid-1990s and Turkey today stand out as cases where very large amounts of IMF resources were committed in circumstances where "balance of payments need" was questionable and where the quality of the adjustment programme (weak in Russia, strong in Turkey) may not have entirely justified the magnitude of IMF financing (at the top of traditional limits for Russia, well above all previous standards for Turkey). Geopolitical considerations, outside of the mandate of the IMF, played a role in decisions to proceed with large-scale IMF support in these cases. Principal/agent problems may arise in such cases because the specific officials that weigh the geopolitical considerations in such cases are not the same as the broad government institutions responsible for approving IMF funding. Also, there should be some concern that the general resources of the IMF, which are supplied by a wide range of members, may sometimes be used for reasons beyond their agreed purposes – something that is surely not good governance. Moreover, if something goes seriously wrong in one of these geopolitical cases, specifically if a country receiving large IMF loans is unable to repay, then serious and embarrassing questions will likely arise about who should take responsibility for (and pay for) these difficulties.

Before turning to these specific points, it is relevant to note that enhanced mechanisms of PSI do not, in any obvious way, provide means for helping to resolve either of these two instances of principal/agent problems. The IMF and the official international community must decide whether and when it is appropriate to deny further financial assistance even if this may provoke an earlier crisis, rather than support efforts of incumbent officials that may only delay a crisis at the expense of seriously increasing its likely magnitude. Private creditors cannot be expected to make such judgements for the official sector. Similarly, the IMF's principal shareholders, with the knowledgeable acquiescence of other members and key IMF officials, must decide when, and take responsibility for, cases where important geopolitical considerations motivate IMF lending in circumstances or at levels beyond those consistent with the normal principles, practices and policies of the institution. Indeed, it would be an exceptional perversity to suggest that private creditors should be called upon to accept large-scale losses to bail-out the public sector from bad loans that it has made largely because of geopolitical considerations.

3.2 The general concept of moral hazard

Moral hazard is a pervasive phenomenon that affects virtually all interactions among different economic agents. Indeed, economists have analysed dozens, if not hundreds, of variations of this phenomenon which arise in

many situations where different economic agents possess asymmetric information.

The classic example of moral hazard is in insurance – the field that gave the name to the concept. When an insurer writes an insurance policy, say for fire insurance, he takes on responsibility for two theoretically distinguishable categories of risk: the real hazard arising from risks that are beyond the control or influence of actions by the insured; and the moral hazard arising from actions that the insured might take in light of the fact that he is insured. In an extreme case of moral hazard, the insured might overstate the value of his property and then arrange for its destruction to collect the insurance. In a less extreme case, the insured might exert less effort and expense to control risks to his property because he knows that losses will be covered by insurance.

If the insurer could costlessly monitor all of the relevant actions of the insured, moral hazard would not be a problem in insurance (as there would be no asymmetric information problem). The insurer would simply charge a premium that properly reflected any actions by the insured that affected the risk to which the insurer was exposed, as well as any other factors which affected the level of risk. In practice, however, premiums cannot be efficiently manipulated with this degree of refinement, and some element of moral hazard normally infects most insurance. Typically, the insured, rather than the insurer, pays for the cost of moral hazard; in order to remain profitable, the insurer needs to charge premiums that take adequate account of the effects of the moral hazard to which the insurer is exposed. There is, however, an economic inefficiency; for the insured, the cost in higher premiums that must be paid to accommodate moral hazard is greater than the benefit that the insured may expect to derive from exploiting moral hazard. This, in turn, implies that insurers have competitive incentives to find efficient means of containing and controlling moral hazard so that they can sell the types of insurance coverage that customers wish to purchase at the lowest possible premiums. Mechanisms for achieving this include co-insurance (or deductibles) and premiums linked to levels of risk.

It should be emphasised that in the case of insurance (and in most other situations where moral hazard is an issue), the desirable economic objective is not to eliminate or minimise risk or even to eliminate or minimise risk associated with moral hazard. Real hazards exist in the world, and many otherwise desirable activities bring with them greater such hazards. The function of insurance is to enable risks to be spread efficiently among those who (at an appropriate price) are willing to bear them. The existence of a reasonably efficient insurance system will, in many instances, lead to a higher and (all things considered) more desirable level of risk, as it enables those who see substantial benefits from activities that bring greater risks to pursue these activities while paying others an appropriate premium to bear some of the risk. With respect to moral hazard, which itself generates economic inefficiency, the desirable objective is to reduce

it to the extent that is economically efficient. In general, efforts to contain and control moral hazard involve costs (e.g. from monitoring the activities of the insured or from effective reductions in insurance coverage due to higher co-insurance) and an efficient balance needs to be struck between these costs and the benefits of reducing inefficiencies associated with moral hazard. Indeed, in most insurance situations, the only way to completely eliminate moral hazard would be to prohibit insurance altogether – to throw the baby out with the bath water.

Another important example of the general phenomenon of moral hazard widely discussed in economics – and relevant to subsequent discussion in this paper – arises in the "principal/agent problem". In the standard statement of this problem, a risk-neutral principal has to rely on the unobservable activities of a risk-averse agent to generate a return that depends on the agent's efforts (from which the agent derives disutility), as well as on unobservable random factors. If the principal could observe the agent's efforts, the solution is simple: the principal pays the agent a non-random wage to compensate for the disutility of supplying the level of effort that maximises the expected return of the activity net of the wage. The risk-neutral principal appropriately bears all of the risk; and the risk-averse agent appropriately bears no risk.

But, if the principal cannot observe the agent's effort (a situation of asymmetric information), the first-best solution is not available. A second-best solution is for the principal to pay a random wage based on the observable return of the activity. Because the agent knows that the return is correlated with the level of effort, he will be motivated to supply effort by this linkage. But the agent is left bearing some risk because the return also depends on random factors. The result is that the agent supplies less than the first-best level of effort, and both the agent and the principal are worse off (in terms of expected utility) than under the first-best solution.

This distortion (due to asymmetric information) away from the first-best solution in the principal/agent problem is another example of the general phenomenon of "moral hazard". As in the insurance example, both the principal and the agent have incentives to find means of reducing the moral hazard problem by, for example, making it easier for the principal to monitor directly the efforts of the agent. Also, as in the insurance example, failure to achieve a first-best result because the moral hazard arising from asymmetric information cannot be eliminated does not imply that the second-best solution is worse than nothing.

3.3 Moral hazard from IMF financial support

The case of insurance provides a useful – if not entirely exact – analogy for discussion of the moral hazard potentially associated with financial support provided by the IMF to members facing financial crises. Indeed, the language used to describe the purpose of IMF financing in the Articles of Agreement suggests some form of insurance mechanism.

> To give confidence to members by making the general resources of the Fund temporarily available to them under adequate safeguards, thus providing them with opportunity to correct maladjustments in their balance of payments without resorting to measures destructive of national or international prosperity.
>
> (IMF Articles of Agreement, 1944)

For the mutual benefit of all of its members, the IMF was established to facilitate an open system of international trade and an efficient system of international payments. It was clearly recognised that countries adopting relatively open policies towards international trade (and to capital movements that help finance international trade) expose their economies to greater risk from external financing difficulties. The availability of IMF financing was intended to encourage countries to undertake those risks – for their own benefit and for the general global good. This was to be done by assuring that official financing would be available to countries facing external financing difficulties to assist them with policies to correct these difficulties, without resorting to measures (such as trade restrictions, competitive depreciations or excessive domestic deflation) that would unduly damage their own economies or the rest of the world.

Unlike standard insurance, IMF members are not charged premiums for their rights to call on IMF financing in the event of external financing difficulties. But this does not mean that the potential availability of IMF financial support is free insurance that encourages excessive and inappropriate risk-taking. Unlike standard insurance, IMF financial support does not compensate members for their losses when adversity strikes. Instead, IMF financial support is a loan, usually of three-to-five-year maturity, that must be repaid with interest. This loan is usually subject to IMF conditionality which is designed to assure that balance of payments difficulties are corrected in a manner consistent with the IMF's principles and that the IMF's loan will be repaid in a timely manner. The function of this loan is to provide liquidity that enables a country to resolve its external financing difficulties with less actual economic damage than would otherwise be feasible. Thus, reduction of damage, not compensation for damage, is the purpose of IMF financial support.

This distinction is of fundamental importance. If IMF financial support was a gift provided to compensate countries and/or their creditors for the damage suffered in a financial crisis, then expectations of the availability of such gifts would presumably encourage economically inappropriate risk-taking through the moral hazard effect of these expectations. But loans that must be repaid (with appropriate interest charges) are not "bailouts", the expectation of which encourages such moral hazard behaviour. Indeed, the requirement that IMF financial support must be "temporary" and must be subject to "adequate safeguards" (of timely repayment) is the critical guarantee that IMF financial support will not generate such moral hazard problems. Instead, the function of IMF financial support is to

reduce both real and moral hazard – specifically, the real and moral hazard that, in the absence of IMF liquidity support, would result from countries resorting to measures destructive of national and international prosperity in order to address their external financing problems. Thus, provided that IMF financial support is supplied in accord with the principles of its Articles of Agreement, it cannot be a source of moral hazard generating bail-outs – that accusation is fundamentally bogus.

Moreover, the seemingly logical argument that IMF financing generates moral hazard because it encourages risk-taking is also fundamentally bogus. Indeed, as with much insurance, the availability of IMF financing is intended to encourage desirable risk-taking – specifically, the risk-taking that is inherent in a more open and liberal system of international trade and payments. Only to the extent that IMF financing encourages risk-taking beyond that which is economically efficient and desirable is there reason for concern about moral hazard.

3.4 The popular misconception about IMF moral hazard

Aside from the fact that virtually any form of insurance tends to generate some moral hazard, what accounts for the widespread misconception that IMF financing generates huge problems of moral hazard that explain, to a considerable extent, the frequency and severity of recent emerging market financial crises?

An important part of the answer is simply that most people believe that IMF financial support really is a bail-out for countries that get into financial difficulty – not a loan that must be repaid with interest. This goes together with the widespread (and not entirely unjustified) view that much foreign aid is a waste of money; and IMF financing is simply seen as another form of such waste. Of course, the better informed critics of the IMF know that this is not true; but some take advantage of the popular misconception to advance their arguments. This is particularly true of right-wing critics who tend to believe that, in the absence of official interference, private capital markets work nearly perfectly. Reconciling this view with the remarkable series of costly financial crises is a lot easier if one perceives a great deal of official intervention that plausibly explains market imperfections – ignoring the inconvenient fact that official intervention is in the form of loans rather than gifts.

Without relying on such sophistry, a respectable argument can be made that expectations of IMF support induce some moral hazard behaviour because there is a significant subsidy element in IMF support. Specifically, the argument is that the interest rate charged for IMF financial support is far too low and this provides a substantial subsidy that compensates borrowers and/or their creditors for undertaking excessive risks that materialise in financial crises. This argument is supported by the fact that the interest rate on IMF financing (the IMF rate of charge) is far below the interest rate at which virtually any country receiving IMF support can

borrow in private international credit markets, if they can borrow in these markets at all.

On the other hand, the security which the IMF has for its lending to members is much better than that enjoyed by private creditors. While private creditors have taken substantial losses on loans to a number of emerging market countries, very few countries have defaulted on their loans from the IMF or gone into prolonged arrears. This reflects the special status of the IMF as an international financial institution and as a preferred creditor that gets repaid even when other creditors are not fully repaid. Because the IMF has this special status and enjoys much better security for its loans than private creditors, it is economically appropriate for the IMF's rate of change to be well below interest rates charged by private creditors and for the IMF to be willing to lend even in circumstances where private creditors would not lend. Indeed, this is entirely consistent with what we observe in efficiently functioning private credit markets where interest rates on well-secured credits are often well below interest rates charged by unsecured creditors, and where many borrowers that may obtain secured credit (by home mortgages, for example) may not have much access to unsecured credit.

Does this imply that the implicit subsidy in IMF financing is practically non-existent? In my view, that would be going too far. There is some risk that IMF loans will not be repaid, or that they will be repaid only because other official creditors agree to write-down the values of their claims so that the IMF can be repaid. However, in view of the relatively limited problems of default (or prolonged arrears) on IMF loans throughout the history of the institution, it would be implausible to argue that the present value of the implicit subsidy on IMF loans is a substantial fraction of the face value amount of IMF loans. Indeed, as argued later in the chapter, even if the IMF ignored the injunction in its Articles to lend only in conditions where the security of repayment is very high, it is not plausible that the present value of the subsidy element in IMF loans could be as large, on average, as one-fifth of their face amount.

In this extreme case of lack of fidelity to the Articles, how much moral hazard might be generated by IMF lending? Specifically, how much of an inducement might this provide to imprudent behaviour for emerging market countries that might lead to costly financial crises? The clear answer is that, even at the extreme of impropriety in IMF lending (leading to the maximum average subsidy due to risks of lending losses for the IMF), the inducement to countries to undertake the risks of financial crises cannot be very important. This is because the costs of such crises are many times greater than the maximum implicit subsidy in IMF lending. Specifically, in the Mexican crisis of 1995 and the Asian crises of 1997–1998, the countries that received large-scale IMF assistance suffered cumulative economic losses (relative to trend) for the four years following the initiation of these crises of between 20 per cent and 80 per cent of their respective annual real GDPs. Official financial assistance from the IMF and other

sources was generally well below 10 per cent of annual GDP, implying that the implicit subsidy associated with such financing was less than 2 per cent of annual GDP and, on average, covered well below 10 per cent of countries' economic losses. Even if the receipt of such implicit subsidies was fully anticipated (which is questionable), it is absurd to suggest that such expectations motivated these countries to undertake substantial risks of the highly damaging financial crises that actually engulfed them. The moral hazard associated with arson for profit is important when the insured expects to be compensated for more than the value of their loss, not when the insured expects to absorb over 90 per cent of the loss themselves.

3.5 Creditor moral hazard

After the initial round of debate following the Mexican crisis, most devotees of the moral hazard argument recognised that it was difficult to argue that expectations of the benefits of IMF financing significantly influenced emerging market countries to undertake the risks that might lead to damaging financial crises. Emphasis shifted to the argument that imprudent lending by the creditors of emerging market countries was encouraged by expectations of IMF financial support – so-called "creditor moral hazard". This argument was appealing because, while the countries experiencing financial crises clearly suffered large losses, some of their private creditors were able to escape with limited losses; and the liquidity made available through IMF financing helped to facilitate these escapes. Moreover, for those who believe that private capital markets function more or less perfectly in the absence of public sector intervention, the creditor moral hazard explanation of emerging market financial crises helped to rationalise the obvious market failures in these crises as caused by public sector intervention. The obvious cure was to end this public sector intervention and rely instead on enhanced PSI. The arguments for creditor moral hazard were also appealing to those who saw private capital markets as imperfect and emerging market countries as important victims of these imperfections. For them, the solution was to help the countries facing crises by imposing more of the cost on private creditors.

Basic economic theory, however, implies that these concerns about creditor moral hazard arising from expectations of IMF financial support are illogical. If there is any true "bail-out" associated with IMF financial support, the amount of this bail-out is not increased by arguing that it is the creditors of an emerging market country rather than the country itself that effectively receives this bail-out. Indeed, the bail-out, if any, must somehow be shared between the country and its creditors. As previously argued, if the principles of the IMF's Articles of Agreement are followed assiduously (with no defaults or an IMF rate of charge that fully reflected any default risk for the IMF), then IMF financing would not supply resources to pay for any bail-out of anyone. Thus, with fidelity to the Articles, there can be neither bail-outs of countries nor of their creditors.

Arguably, however, the principles of the IMF Articles of Agreement are not maintained exactly, and there is a relatively modest implicit subsidy element in IMF financing. This implicit subsidy probably does encourage a correspondingly modest degree of moral hazard in the combined behaviour of emerging market borrowers and lenders, with the proceeds of the bail-out split between them.

But the fundamental principle that "there is no free lunch" applies in the generation of moral hazard just as it does everywhere else in economics. The prospective availability of IMF financing cannot generate more moral hazard than it is expected to pay for. That amount is the subsidy element in IMF financing, not the total amount of such financing (most of which needs to be repaid, together with appropriate interest charges).

Indeed, the moral hazard arising from the implicit subsidy potentially available in IMF financing is a rational, equilibrium phenomenon. The assumption of rational economic behaviour, which is embodied in the concept of moral hazard, implies that from the perspective of their own interests, a borrower does not engage in imprudent borrowing, and a lender does not engage in imprudent lending. Their behaviour is entirely prudent, given their reasonable expectations of receiving some share of the subsidy implicit in IMF financial support. The equilibrium level of borrowing and lending – which must be the same – is larger than is economically appropriate because the potential subsidy artificially encourages prudent borrowers and lenders to take on some additional risks for which they do not expect to be fully responsible.

The distortionary costs from these moral hazard effects of the potential subsidy cannot exceed, and are generally less than, the amount of the expected subsidy. The principal reason for this is that the benefits of the implicit subsidy will not only apply to the additional capital flows that are motivated by the subsidy.[1] Instead, the benefits are likely to be spread over all capital flows (at least within those categories of flows that do benefit). Also, the distortionary cost of additional capital flows induced by expectations of the implicit subsidy is generally smaller than the magnitude of any such flows. This is because additional flows beyond the appropriate equilibrium amount are not all economic waste, but only imply waste to the extent that their cost exceeds their true economic value.

Assessment of the possible role of creditor's moral hazard as an important cause of recent emerging market financial crises should also take account of the fact that losses to external investors have generally been quite large and that investors in emerging markets anticipate substantial risks associated with such investments. Neither of these facts establishes that there has been no moral hazard effect from expectations of bail-outs financed by the potential subsidy element in IMF financing; but they both point strongly to the conclusion that this effect cannot be very important.

Specifically, while the first fact is consistent with the notion that the subsidy in IMF financing has helped to protect external investors from

losses in emerging market financial crises, it also clearly shows that not much such protection has been provided. Losses by external investors in the various emerging market crises of the past decade run into the hundreds of billions of dollars. So far, the IMF has been repaid, with interest, most of the financial support it provided in various crises, and no significant arrears cases have yet developed for those countries that have IMF credit outstanding (although some of the most recent cases may raise this concern). Thus, the amount of the implicit subsidy in the IMF support provided in the crises of the past decade cannot plausibly have been more than a few per cent of the losses suffered by external investors in these crises.

The second fact – that external investors anticipate substantial risks (even taking account of any benefits expected from the implicit subsidy in potential IMF financing) – is readily apparent in how financial markets price investments in emerging markets. Perhaps the clearest evidence is from the interest rate spreads on international bonds issued by emerging market sovereigns. During the past decade the EMBI index of these interest rate spreads (over US treasuries) has averaged above 600 basis points – a spread that has generally been about 100 basis points above the average for junk bonds in the US domestic credit markets. Clearly, even for sovereign debts (which are generally regarded as the best quality emerging market credits), investors see very substantial risks. Perceived risks are surely larger for most non-sovereign credits. The pricing of portfolio equity investments in emerging markets also indicates high levels of assessed risk. Perceived risks for foreign direct investments are more difficult to assess but may be presumed to be of the same order as for portfolio equity investments. There is no doubt that in all asset categories, investors perceive very substantial risks in emerging markets.

By how much, at the upper bound, might anticipations of the implicit subsidy in IMF financing affect the perceived risk of investing in emerging markets? Total IMF financing potentially available to emerging markets probably does not exceed about $150 billion. The present value of the implicit subsidy is not plausibly more than 20 per cent of potential IMF financing or about $30 billion at the upper bound.[2] Spread over more than a trillion dollars of external investments in emerging markets, the maximum implicit subsidy amounts to less than 3 per cent, as an upper bound. Converting this into the effect on the annual yield on a hypothetical 20-year credit (with a base yield of 10 per cent absent the effect of the subsidy), the effect is to reduce the yield by about 25 basis points. This may be compared with an average interest rate spread for sovereign emerging market credits of over 600 basis points. Thus, even under the assumption of maximum misbehaviour by the IMF, with the intent of creating the greatest potential amount of moral hazard, with all of the benefits accruing to private creditors, the effect on the behaviour of investors in emerging markets cannot be very large.

If one assumes that benefits from the maximum implicit subsidy are not spread broadly across all investments in emerging markets, but are mainly

concentrated on sovereign credits and external credits to emerging market banking systems (totalling more than $500 billion), the effect of the maximum implicit subsidy on the sovereign yield spread is no more than about 50 basis points – again compared with an average actual spread of over 600 basis points. Again, even on this more restricted base of credit to emerging market countries, the maximum plausible effect of IMF financing through creditor moral hazard cannot be very large.

Moreover, this maximum plausible effect of IMF financing on creditor moral hazard arises only if the IMF misbehaves in such a manner that it effectively seeks to maximise the moral hazard effects arising from its financial support. If instead the IMF behaves faithfully in accord with the principles of its Articles of Agreement and avoids providing financing in circumstances where risks of repayment are significant, then the implicit subsidy in IMF financing must be far less than the assumed maximum of about $30 billion. Assuming that private market participants expect that the IMF will adhere faithfully to its Articles, the effect of IMF financing on creditor moral hazard should be essentially trivial.

3.6 Moral hazard and geopolitical concerns in IMF financing

Even if moral hazard arising from IMF financing cannot generally be an important problem in emerging market financial crises, are there specific circumstances where it may be a particular problem? Two such circumstances may be identified, each of which arises when the IMF fails to behave in full accord with the principles embodied in its Articles of Agreement – to impose adequate safeguards to assure that IMF loans can be repaid in a timely manner, and to require that the adjustment policies designed to correct payments imbalances do so in a manner consistent with the IMF's purposes and without unnecessary damage to national or international prosperity.

One of these circumstances is likely to arise when IMF lending is motivated to a significant degree by the geopolitical concerns of the IMF's leading members, rather than by the economic considerations that are supposed to weigh in decisions concerning IMF financing. In such situations, IMF financial support tends to be unduly large and the conditionality for such support may be rather weak and rather poorly enforced. This can give rise to larger than normal risks that the IMF may not be repaid on a timely basis and to the broader risks that policy adjustment actually implemented under the IMF programme may fall short in other important respects.

IMF support for Russia before the August 1998 crisis was, in my view, a clear instance of this problem. In word and deed, the official community sent many signals that, for geopolitical reasons, Russia was a special case and would receive official support to help avert a crisis at a level and in circumstances where other "normal" countries would not receive such support. Private capital flows to Russia, including private lending to the

Russian government (such as purchases of Russian GKOs), were encouraged by the official sector as a critical means for helping to finance Russia's transformation to a market-oriented, democratic society. If serious problems arose, Russia's private creditors generally expected, and received official encouragement to expect, that generous official support would be provided. Private creditors generally recognised that there were significant risks from lending to Russia, as reflected in rising interest rates on Russian GKOs and other debt instruments before the August 1998 crisis. But, because of Russia's geopolitical importance, official support was widely expected to help contain these risks to an extent well beyond that which might be justified on purely economic grounds. In particular, despite repeated instances where the Russian government failed to meet the performance criteria specified in the IMF-supported adjustment programme of 1996–1998, IMF financial support for Russia continued with only occasional and brief interruptions when programme criteria were modified to accommodate the laxity in the Russian government's adjustment efforts. With good reason, private investment in Russian government securities was referred to as "the moral hazard play".

On the other hand, official support for Russia had a finite limit, and this limit turned out to be below that anticipated by many private investors in Russian securities. This is confirmed by the fact that the sudden revelation that official support for Russia would not be as generous as many had anticipated produced a shock wave in world markets for financial instruments of emerging market countries. The implication is that unreasonable expectations of private investors about prospects for official support, as well as (rational) moral hazard, played some role in inducing imprudent private investment in Russia. Undoubtedly, however, moral hazard arising from reasonable expectations of unusually generous official support for Russia was also important before the August 1998 crisis.

Subsequent to that crisis, a sharp increase in world oil prices, which gave a substantial boost to Russia's export and tax revenues, together with economic recovery aided by the large real depreciation of the rouble, enabled Russia to repay most of its IMF loans without any new IMF lending. Thus, the *ex post* result was that the IMF did not incur any losses or arrears problems from its Russian exposure. This, however, does not imply the absence of any risk to the IMF in extending about $20 billion of loans to Russia in the years before the August 1998 crisis. For geopolitical reasons, unusual risks were undertaken by the IMF in the case of Russia; but they did not, in this case, turn into an embarrassment. Nevertheless, the fact that Russia has repaid the IMF on time is another important demonstration of the principle that IMF loans are loans and not grants. Thus, while there was a greater than usual problem of moral hazard arising from the IMF's involvement with Russia, the magnitude of this problem was – even in this case of geopolitical importance – limited by the important principle that IMF loans must be repaid.

Turkey at present is another important case where geopolitical considerations play a significant role in motivating exceptionally large IMF support. Undoubtedly, Turkey has a very strong stabilisation and reform effort which includes a primary government surplus of over 6 per cent of GDP and the adoption of many key structural reform measures; and Turkey would normally merit large IMF support. Because Turkey's quota in the IMF is particularly small relative to its economic importance, IMF lending significantly beyond the normal cumulative limit of 300 per cent of quota can reasonably be justified. But commitment of IMF loans up to 2,900 per cent of quota – almost ten times the normal limit – is without precedent in the history of the IMF. Clearly, Turkey's geopolitical importance, which has been heightened in the context of the war on terrorism, has influenced decisions to provide a truly extraordinary level of IMF support.

Moreover, while Turkey has a very strong adjustment programme, it also has (for an emerging market country) a very high level of debt and faces high servicing costs on the privately supplied component of this large debt. Absent large infusions of relatively low-cost official finance (primarily from the IMF) and expectations of future infusions that have helped to keep private debt servicing costs down, Turkey's debt dynamics would be explosively unstable. With continued strong implementation of Turkey's adjustment programme and with good luck, a debt crisis and private debt restructuring may be avoided. However, even if this is accomplished without further substantial commitments of IMF support, the IMF will be left with a very large loan exposure in Turkey. It is difficult to see large future increases in private capital flows that will enable Turkey to pay off these IMF loans as they come due. This problem will be even greater if IMF lending to Turkey is further augmented during the next year or so in order to ward off financial crisis. Thus, the IMF may well have little alternative but to roll over most of its large Turkish exposure for an extended period, in violation of the principle that IMF financial support should be "temporary". And, if things go badly in Turkey, there must be at least some risk that either the IMF will need to write-down some its own exposure or will need to rely on bilateral official credits to replace IMF lending and absorb some losses through interest subsidies or principal write-downs.

Implicit understanding that these options are on the table because of Turkey's geopolitical importance presumably has some influence on the behaviour of Turkey's private creditors. They are willing to lend more to Turkey and on more favourable terms than would be the case if Turkey were a normal country whose potential for IMF financial support was consistent with the principles that usually constrain the availability of such support. For Turkey today, as for Russia in the mid-1990s, there is surely some moral hazard arising from reasonable perceptions of IMF lending driven by geopolitical considerations – generating a level of moral hazard beyond that normally associated with IMF financing.

Indeed, in cases of geopolitical importance, the official sector may be quite happy with the moral hazard effect of expectations of official financing on the behaviour of private investors. Surely in the case of Russia, the official sector was pleased with and sought to encourage private investment in that country. In Turkey at present, the official sector would clearly like to see private capital stay in the country on the best possible terms.

Does the generation of some moral hazard in cases like Russia and Turkey imply that, all things considered, IMF lending in such situations is a mistake? Not necessarily. Generation of some moral hazard is one of the costs of IMF financing that is significantly motivated by geopolitical considerations. But, all things considered, geopolitical considerations do matter. It clearly was important for the international community to support Russia's efforts to transform itself into a market-oriented, democratic society and to give meaningful and visible expression to this support to the Russian government and people. Similarly, especially in present circumstances, it is important to the international community to support Turkey's strong efforts at economic stabilisation and reform and to avoid a damaging financial crisis. In view of its mandate and principles, the IMF may not be ideally suited to provide international support in such cases. But it is the primary instrument that is available.

Nevertheless, it is important to recognise that when geopolitical considerations weigh heavily, the IMF tends to be diverted from the principles that normally govern its provision of financial support. One of the consequences is likely to be greater potential for generating moral hazard than is normally the case with IMF financing. In this regard, it is somewhat peculiar that loud complaints about the moral hazard of IMF financing are often voiced in normal cases where this problem is probably trivial, but little or nothing is said (especially by government officials) in those cases where the problem is potentially more important.

3.7 Indirect moral hazard

Another circumstance where IMF financing may contribute to moral hazard problems to a greater than usual extent is when such support facilitates policies and actions from the officials of a country receiving support that are not plausibly in the best interests of that country. Here, the moral hazard problems do not arise directly from IMF financing, but rather come indirectly from the moral hazard problems generated by the activities of national governments that receive IMF support.

From the perspective of the technical criteria of economic efficiency, the policies of all governments tend to fall short of those that would maximise the economists' concept of general welfare (in the sense of Pareto optimality). In particular, many government interventions that seek to ameliorate losses by some members of society at the expense of the general taxpayer generate moral hazard that results in distortionary costs for society as a whole. This tends to be particularly a problem with the

policies with which national governments typically respond to financial crises. Specifically, in a financial crisis, widespread failure of financial institutions or of non-financial businesses typically generate huge economic losses. Governments attempt to ameliorate the risks and adverse effects of financial crises by policies that shelter individuals, financial institutions and businesses from losses – at the expense of the general taxpayer. This includes *ex ante* policies such as deposit insurance, as well as *ex post* bail-outs. The result of these policies is typically to generate a good deal of moral hazard – because people rationally anticipate that some risks that they undertake will be partially subsidised by the general taxpayer. Indeed, studies have shown that in responding to financial crises, national governments often incur very large costs (on the order of 10 per cent to 30 per cent of annual GDP and sometimes larger); and private economic agents must, to some extent, anticipate that they may be the beneficiaries of this governmental largesse.

Arguably, IMF financial support (even without any subsidy element) may provide national governments with liquidity that enables them to implement such policies in some circumstances where the denial of IMF support would compel another course of action. In this way, IMF support may be said to contribute indirectly to moral hazard that is the direct consequence of the policies of the national governments that receive IMF support. Before condemning IMF support as the cause of massive problems of indirect moral hazard, however, it is essential to recognise two key points.

First, national policies that generate some moral hazard – which is ultimately paid for by national taxpayers – may be the best available course of action in responding to a financial crisis. Indeed, very desirable policies that ameliorate the risks and damage of financial crises – at some expense to the general taxpayer – must, almost inevitably, generate some significant moral hazard. The task for policy is to deal effectively with the real hazards of financial crises without generating excessive amounts of moral hazard. Correspondingly, the relevant issue for IMF support is not whether it facilitates national policies that generate some moral hazard, but whether it supports generally sound policies to deal with a financial crisis.

Second, national governments pursue many policies that generate significant problems of moral hazard whether or not these governments receive or expect to receive IMF financial support. In fact, many countries (including industrial countries) that are not candidates for IMF support have suffered severe financial crises and have pursued policies with substantial moral hazard problems. For countries that do receive IMF support, of course, it is appropriate that IMF conditionality should press national governments to adopt more constructive policy responses – responses that, among other things, may tend to generate less moral hazard at the national level. However, it would be absurd to attribute to IMF financing the responsibility for the moral hazard problems in the

policies generally implemented by national governments, whether or not these governments receive IMF financial assistance.

Problems of indirect moral hazard that do merit attention are those that are linked, in some significant way, to IMF financing. Probably the most important problems of this kind tend to arise when a country is moving towards a financial crisis. The government in power usually struggles desperately to avoid the crisis. In doing so, governments often act in ways that delay the crisis (perhaps until after an election) in the hope that somehow a crisis may ultimately be avoided, but at the cost of severely increasing the damage if a crisis actually ensues. Such "gambling for resurrection" is also a common phenomenon when private businesses get into difficulty – and there too it often ends in costly failure. The reason government actions may be perverse in such situations is that the interests of the government diverge from the general national interest. If a crisis is avoided, all is well; but a really bad crisis is not necessarily all that much worse for a government that is likely to lose power even with a less damaging crisis. Also, when struggling to avoid a crisis, the perceptions of government officials about the likelihood of success tend to become overly optimistic. Indeed, in the midst of a fight to forestall a crisis, the mode among key government officials often tends towards a patriotic fervour that only victory is possible, and anyone who warns of the risks of defeat is seen almost as a traitor.

Gambling for resurrection often involves running down a country's foreign exchange reserves, increasing external borrowing (especially short-term borrowing), forward selling of foreign currency, conversion of domestic-currency debt into foreign-currency debt, shortening the maturity of the debt, stuffing domestic financial institutions with government debt, or other similar operations. Sometimes such operations succeed in warding off a financial crisis. But often they fail, with the consequence that the crisis is more difficult to manage. So long as such activities utilise only a country's own financial resources, there is probably no reasonable alternative but to leave the decision about when to pull the plug to that country's national authorities. The IMF and the international community may advise privately that a government should cut its losses and devalue or seek some form of debt restructuring. The international community also should and does encourage adoption of standards of transparency of government financial operations that make some forms of gambling for resurrection more difficult. But it is unreasonable to expect that the IMF should seek to precipitate a financial crisis by publicly announcing its concerns about the wisdom of a government's efforts to avoid a financial crisis.

Silence, however, is not criticism; and public expressions of confidence in a government's stabilisation efforts are inappropriate when such confidence is not substantively warranted. More importantly, when the IMF is providing financial support to a country or such support has been requested, the IMF has an affirmative obligation not to allow its support to be wasted in futile efforts to avoid a crisis that is probably unavoidable. Of

course, it is difficult to judge precisely when a government no longer has a realistic chance of avoiding a damaging crisis. But this difficulty does not lessen the responsibility of the IMF to make such judgements, taking account of the tendency for governments to delay too long and to engage in desperate and unwise measures in last-ditch efforts to avoid a crisis. Indeed, it is a key task of IMF conditionality – which may require devaluation or debt restructuring as a condition for IMF support – to guard against wasting of IMF resources in misguided efforts to forestall a crisis.

3.8 Implications for private sector involvement

What does all of this imply for efforts to enhance private sector involvement in efforts to avoid and resolve emerging market financial crises? There are two main implications. First, much of the ranting and raving of recent years about the need for enhanced PSI to address the critical problem of moral hazard arising from IMF financing is fundamentally nonsense. Provided that the IMF behaves in accord with the principles in its Articles of Agreement, this is not the real problem. Second, there is a critical problem that enhanced PSI needs to address. The past decade has witnessed a remarkable series of financial crises that have done great damage to emerging market countries and to external investors in these countries – and such crises appear likely to be a continuing problem. Enhanced PSI needs to address this real problem, not on the false diagnosis of moral hazard problems arising from IMF financing.

Comparison between what is typically done to help resolve potential and actual financial crises at the national level, versus the international level, reinforces understanding of these two key points. At the national level, governments often step in to help to avoid and resolve financial crises. The mechanisms of intervention often include bail-outs for those who take losses in a financial crisis. Unlike IMF financial support, these bail-outs are not usually loans that must be repaid with interest; they are outright gifts or loans likely to be forgiven, where the cost is ultimately borne by the general taxpayer. These government actions usually do help to avoid and/or resolve financial crises and generally help to reduce the total damage from such crises – in addition to their effect in redistributing part of the cost to the general taxpayer. But because people rationally anticipate that national governments will supply bail-outs, ultimately paid for by the general taxpayer, significant problems of moral hazard are created.

In contrast, at the international level true bail-outs are not a significant part of the mechanism for dealing with actual or potential financial crises. In accord with the principles of its Articles of Agreement, the IMF may provide loans to countries facing actual or potential international payments difficulties, but only under safeguards that adequately assure that these loans will be repaid. The taxpayers of the countries that supply IMF resources do not ultimately pay for the temporary financial assistance provided by the IMF. Instead, they are paid interest on the resources supplied

to the IMF. Accordingly, unlike the activities of national governments, it is not possible for IMF financing to generate much moral hazard, beyond the modest amount that may be associated with the implicit subsidy in IMF financing. But, while moral hazard is not a significant problem associated with the IMF's efforts to deal with financial crises at the international level, the mechanisms that it has available for this purpose are also far less powerful than those typically employed at the national level to contain and control the real hazards of financial crises.

Clearly, the international community has little enthusiasm for adopting the national approach to dealing with financial crises at the international level. The appropriate level of the IMF's total resources is a matter for debate. But the members of the IMF, especially the usual suppliers of IMF resources, do not want to create a mechanism for providing true bail-outs, where the taxpayers in the countries supplying IMF resources would ultimately pay the cost of the bail-outs. Another approach is needed at the international level if financial crises are to be made less frequent and less damaging.

This approach requires better means of organising co-operation between emerging market countries and investors in these countries so that they may both reap the benefits of less frequent and less damaging financial crises – with the official international community assisting in organising this co-operation. Thus, enhanced PSI should not be thought of as an effort to force investors in emerging markets to accept larger losses in financial crises in order to allay largely false concerns about creditor moral hazard. The losses for everyone involved in emerging market financial crises are already very large, and the fundamental objective must be to make these losses smaller.

Notes

1 In the traditional price theory analysis of the effects of a subsidy in an ordinary product market, the distortionary cost of the subsidy is measured by the triangle-shaped region between the supply curve and the demand curve and between the original (undistorted) equilibrium point and the equilibrium determined under the subsidy. The amount of the subsidy is measured by the entire rectangular region corresponding to the rate of subsidy multiplied by the amount transacted under the subsidy. The rectangle measuring the amount of the subsidy includes, and is generally much larger than, the triangle that measures the distortionary cost of the subsidy.

2 The creditor countries of the IMF have been very concerned whenever IMF lending has given rise to potential credit losses. Special mechanisms have been established to build up reserves (or contingency accounts) to absorb potential losses from loans that have gone into prolonged arrears – over and above the IMF's general and special reserves. In addition to its reserves and contingency accounts, the IMF has an implicit reserve reflecting the excess of the market value of its gold holdings above their book value. The total value of all of the IMF's reserves is around $30 billion. It is inconceivable that its members would allow the IMF to undertake credit risks that exceed (or even come close to) $30 billion.

4 Comments on "Reflections on moral hazard and private sector involvement in the resolution of emerging market financial crises"

John Murray[1]

4.1 Introduction

Michael Mussa has written a convincing and useful chapter on the questionable logic surrounding parts of the PSI debate. His two principal conclusions can be summarised as follows. First, the problems that are commonly associated with moral hazard and "excessive" IMF lending are greatly exaggerated. Second, two different, and perhaps more pernicious, forms of moral hazard can nevertheless arise whenever the IMF deviates from the principles embodied in its Articles of Agreement.

Mussa argues that large IMF programmes have not encouraged reckless behaviour on the part of creditors or debtors. The sizable costs that each group has borne in the recent string of crises, coupled with the limited relief that they can reasonably expect from any official financing in the future, both work against this popular but flawed perception. Problems can nevertheless arise from two other related sources. These occur, in the first instance, whenever the IMF is encouraged to lend for geopolitical rather than economic reasons. Another, equally troubling situation arises when countries with evidently unsustainable debts are given emergency assistance.[2] Although policymakers in the affected countries should, in principle, act in the best interests of the people they represent, this does not always occur in practice. Instead of initiating a prompt and orderly restructuring of their country's debts, policymakers often delay the day of reckoning as long as possible, "gambling for resurrection".

The major policy implication that Mussa draws from all this is that "greater involvement of private sector creditors in absorbing losses from such crises – beyond the substantial amount which already occurs – is not needed to correct the popularly perceived problem of moral hazard from so-called IMF bail-outs". Greater emphasis should instead be given to following existing guidelines and lending official money only when appropriate. Since I agree with most of what Mussa has said, there is little that I can offer by way of useful criticism or comment concerning his main arguments. Moral hazard, at least as commonly perceived, does not seem to provide a very convincing rationale for enhanced PSI. Rather than dis-

cussing Mussa's arguments head-on, therefore, what I would like to do is approach the issue from the opposite direction and briefly review some questionable aspects of the case for *public* sector involvement.

4.2 Possible justifications for public sector involvement

The first question that defenders of the present system must answer is why private creditors and sovereign debtors cannot be left to resolve their own problems. Why, in other words, is there any need for public sector involvement? The answer to this question is usually couched in terms of assumed market imperfections and externalities, and often parallels the sorts of arguments that are put forward to justify the lender-of-last-resort function in a domestic context. Information asymmetries, collective action problems, and the absence of a formal debt restructuring mechanism all contribute to a situation in which individual behaviour potentially leads to socially destructive outcomes. Solvent countries are attacked unnecessarily, while insolvent countries face inordinate restructuring costs, and occasionally infect innocent neighbours. Timely policy advice and the prompt provision of emergency financing, according to this argument, should be able to reduce, if not eliminate, many of these problems and produce superior outcomes – or so the proponents claim.

The various ways in which public sector financing might contribute to a more stable international environment and a more effective process for crisis prevention and resolution can be grouped under the following five headings.

War chest

The existence of a sizable pool of emergency financing could serve as a useful deterrent to would-be speculators. Knowing that official funds are available to deserving countries could prevent unwarranted runs on countries that are suspected of having a temporary liquidity problem but are otherwise believed to be solvent, thereby avoiding the unnecessary damage caused by speculative attacks.

Temporary bridge

Official financing could also serve as a temporary bridge, sustaining economic activity in the recipient country until corrective policy actions have been put in place and have had time to work. Global economic welfare could also be enhanced to the extent that official financing reduces the chances that more harmful remedies will be put in place, such as the imposition of costly trade barriers.

Catalytic agent

The beneficial effects of official lending are often expected to extend well beyond any direct relief that it might provide. An important element of the IMF's crisis resolution strategy rests on the belief that official support can act as a critical catalyst for other, private sector, financing, thereby restoring investor confidence and moderating – if not reversing – the outflow of private capital.

Emergency relief

The emergency relief role for official financing is similar to the temporary bridge function described above, but occurs after a crisis has hit and a country has stopped servicing its debt. It is designed to ensure that critical public services and economic activities are maintained, and in this way preserves the debt servicing capability of the country in the future. Both debtors and creditors can benefit from debtor-in-possession financing – or "lending-into-arrears" – provided the money is not misdirected and is instead used to achieve a sustainable solution.

Positive signal

The final role that has been identified for public sector financing concerns its signalling function. Public money is occasionally used to indicate official approval for the debtor's actions once a debt standstill has been declared (i.e. that they are seen to be negotiating in good faith) or perhaps to pass judgement on a proposed debt restructuring programme. Advancing public money, even while the country is in arrears, is believed to lend greater credibility to the IMF's assessment, since it is willing to take a financial stake in the final outcome.

Although each of these arguments has some intuitive appeal, and has been used to support different elements of the current lending strategy of the IMF, closer examination of the theory and practical experience surrounding this strategy reveals a number of awkward features.

4.3 Potential risks with the present strategy

The first thing that I would note is that experience with the lender-of-last-resort function in a domestic context has not always been encouraging. Difficult judgements are often required in the midst of a crisis regarding the true state of individual institutions, as well as the systemic risks that might attend any decision to let an insolvent institution fail. *Ex post*, many positive assessments concerning the presumed solvency of a troubled bank or other financial institution have been found to be overly optimistic, leading to much larger losses in the end. As difficult as these judgements are, however, they pale in comparison with those involved in sovereign

debt crises. Domestic supervisors should be able to make reasonably informed judgements about the true value of a financial firm, owing to their preferential access to information and the (relatively) contained nature of the problem. The comparative advantage of the IMF, on the other hand, in making such determinations for countries is far more limited. Indeed, it is not obvious that the IMF has any absolute or comparative advantage in predicting the likely consequences of a large-scale macro crisis. In addition, unlike domestic lenders-of-last-resort, the IMF is unable to take collateral, replace management, or directly influence the country's decision-making as a means of ensuring success.

Establishing a sizable emergency reserve could serve as an effective deterrent to unwarranted speculative attack and help prevent financial crises. In order to be effective, however, the reserve would have to be large, available on demand, and widely publicised. The fact that the IMF's Contingent Credit Line (CCL) has not attracted any applicants is testament to the problems associated with making it practicable, as well as the obvious limitations that the IMF faces in trying to play this pre-emptive role. Unlike central banks, the IMF does not have access to a printing press and unlimited amounts of financing. Nor should it under the circumstances. Given the inherent complexity and uncertainty involved in crisis management, and the absence of any direct control over the process, extending an unlimited commitment to troubled clients would be extremely risky.

A stronger case can be made for IMF financing serving as a temporary bridge once the crisis appears unavoidable. Such financing provides a useful breathing space, allowing corrective policies to be put in place and softening the effects of capital flight. The principal risk, as several authors have noted, is that the emergency support will inhibit rather than encourage necessary policy adjustments.[3] The receiving countries may simply use it to delay the day of reckoning in a gamble, as Mussa has suggested, for "resurrection". Recent evidence based on a re-examination of IMF programmes over the past several years appears to bear this out. In many instances, official financing, instead of speeding recovery, has tended to both exacerbate the initial problem and postpone the eventual turnaround.[4]

Similar problems can arise with regard to the IMF's catalytic role. Gauging sustainability and determining the appropriate blend of adjustment and financial relief is clearly difficult. It is not simply a matter of identifying the necessary policy measures, but assessing a country's willingness to implement them. Even if a country's situation is judged to be sustainable, success of the programme usually hinges on an early restoration of investor confidence and a quick reversal of capital outflows. IMF financing can be used to "seed the clouds", but rainmaking in these situations is often a risky business. There is no easy formula for calculating how much money might be necessary to trigger this catalytic reaction, or how much policy adjustment must be included to make the programme credible.

The IMF's emergency financing activities also face serious practical problems. One criterion that is supposed to be satisfied before the IMF

can consider lending-into-arrears is evidence that additional financing is necessary for the success of the programme. (Debtor-in-possession financing of this sort only makes sense if it is value-enhancing.) However, once a country has stopped servicing its debts, it has already secured a sizable measure of financial relief. Moreover, trade credit is almost always available, even under the most difficult circumstances, owing to its secured nature – provided the country is seen to be negotiating in good faith. Indeed, negotiating in good faith is the other major condition that must be satisfied before the IMF can lend-into-arrears (LIA). But as long as the country is negotiating in good faith and receiving relief from other sources, LIA should not be necessary (a sort of Catch-22).

The only financing function that remains, therefore, is signalling. However, this too might represent a questionable use of official money. If the IMF wants to signal approval for a debt standstill or indicate that the country is negotiating in good faith, an easier approach would be to simply issue a press release. Putting money behind your words might strengthen the signal, but only if the money is truly at risk. Given the IMF's preferred creditor status, any risk exposure that it incurs is likely to be limited. In this sense, the decision to lend is rather gratuitous.

4.4 More on the risks of catalytic financing

Catalytic financing, as noted earlier, is a key element of the current, voluntary approach to crisis resolution. The IMF provides a little seed money (or, at times, a lot), in the hope that it will induce a much larger shift in private sector financing and investor sentiment. This is clearly a high-risk strategy, however, since it is extremely difficult to determine how much official money might be required to perform this loaves-and-fishes miracle, or whether the situation is in fact remediable. Fine judgements are often needed with regard to sustainability, and there is a natural tendency on the part of officials to err on the side of optimism. Strict conditionality is also frequently imposed in an effort to improve the odds. However, some critics have suggested that the resulting policy prescriptions are in many cases overly harsh, and represent a type of "super conditionality" that subsequently undermines the chances of success.

Catalytic financing is designed to minimise the costs of crisis resolution by avoiding unnecessary defaults and the significant welfare losses that they impose on both borrowers and lenders. But is this approach actually less painful than the alternatives? Would more money necessarily make it more effective? Are the costs of a standstill and debt restructuring as large as some observers have assumed?

4.5 An alternative strategy[5]

A detailed review of the more than 70 financial crises that have occurred since the early 1970s reveals the following stylised facts regarding how the

crises unfolded and were eventually resolved.[6] First, in those instances when debt negotiations and restructurings were required, the process usually unfolded with remarkable speed and efficiency once the negotiations began. Second, access to international capital markets was restored within a surprisingly short period of time, and there was no discernible difference between those countries that had restructured their debt and those that had managed to avoid it. Third, the long-run economic costs incurred by countries that initiated debt restructurings were often smaller than those incurred by countries that either managed to avoid default with significant IMF assistance or simply delayed restructuring until all other avenues had been exhausted.

Collective action problems, asset grabs and rogue creditors did not seem to pose the sorts of serious problems that defenders of the present system typically suggest. Creditors, spanning a broad range of asset categories, appear to have had little difficulty organising themselves once a standstill had been declared and the debtor made it clear that no additional money would be forthcoming. Asset grabs and court challenges were also the exception rather than the rule, and were almost never successful in the sense of attaching assets or seizing sovereign property. Finally, rogue creditors seldom if ever created serious impediments to the workout process. Nor did they add materially to the costs of the workout process on those occasions when they presented a more serious challenge. In other words, the costs and complications that are typically associated with standstills and debt restructurings appear to have been greatly exaggerated.

There is reason to believe that many of the difficulties that arise because of a "race for the exits" and the lack of creditor co-operation can be resolved with an informal and unilaterally declared standstill, which serves as a kind of circuit-breaker. The destructive self-interest that otherwise characterises individual creditor behaviour is replaced by a shared realisation that the only way to maximise returns is to co-ordinate and work towards a preferred collective solution. Considered negotiation among interested parties typically results in a much better outcome for both debtors and creditors than another "throw of the dice" with borrowed public money.

The key to getting negotiations started, however, is to remove the possibility of further IMF advances. As long as there is a chance that extra money will be provided, it is in the interests of sovereign debtors and private creditors to stretch the process out and avoid negotiations. Although an immediate restructuring might be in the collective interest of the country and its creditors taken as a group, self-interest frequently prevails and prevents the emergence of a welfare-improving solution. In order to achieve these preferred solutions, it is first necessary to limit the IMF's role as a lender-of-last-resort.

Some observers have suggested that such a minimalist approach to IMF financing will only be feasible if it is matched with a formal set of bankruptcy arrangements, similar to those that exist in most industrial countries for commercial bankruptcies. While such arrangements might be appealing in theory, the need for them may be far more limited than is

commonly assumed. It is important to note, in this regard, that many of the problems that domestic bankruptcy legislation is designed to overcome are absent in the case of a sovereign debtor. There is no need, for example, to get court approval for a standstill – the sovereign can simply declare it. The surprising thing is that countries do not do it more often. It is also difficult, as noted earlier, for private creditors to engage in a destructive asset grab, since it is virtually impossible to attach the sovereign's assets. Cram-downs are also unnecessary, since rogue creditors have a strong incentive to see the negotiations proceed. It is only once the negotiations have effectively concluded that rogue creditors can hope to lever some extra returns out of anxious debtors. Even this "wait and strike" strategy is subject to difficulties, however. Exit consents and the high costs associated with legal challenges typically mean that the strategy seldom works, and that the expected net returns are relatively small.

Collective Action Clauses could be helpful in facilitating the debt restructuring process, but, as suggested above, are not absolutely necessary. Indeed, in some recent negotiations, countries elected not to activate these clauses even though they had been included in their bonds. Pakistan and Ukraine, for example, evidently found it more efficient just to proceed without them. This is not to say that the adoption of CACs should not be encouraged. Evidence indicates that they do no harm (in the sense of adding to the costs of emerging country debt), and may actually do some good on certain occasions. In other words, there is no reason not to use them. The Sovereign Debt Restructuring Mechanism that has been proposed is a somewhat different matter. Questions have been raised concerning not just the need for such formal arrangements, but the difficulties that they might create in terms of forfeited sovereign rights, the enhanced power of the IMF and the added frictions that could result between different creditor classes.

4.6 Critical elements and major advantages of the new strategy

Many of the problems described above, and also highlighted in Mussa's chapter, have a common origin. They are a consequence of the imprecise criteria and uncertain procedures that characterise the IMF's current lending practices. While this opacity is often regarded as a virtue, and defended in the name of "constructive ambiguity", its real effects are seldom so salutary. Sovereign borrowers regularly delay necessary workouts in the hope of a last minute bail-out, while overly generous packages add to the ultimate debt burden, and biases within the IMF's decision-making process often undermine the principle of equal access. Clear, presumptive limits on the amount of public sector financing that is available to countries, both individually and collectively, would go a long way towards eliminating these problems – provided the limits were tight enough.

The normal limits of IMF financing should be large enough to offer some deterrence from unwarranted speculative attacks, as well as provide some meaningful short-term relief once a crisis hits. The existing norms of 100 per cent of quota in any one year, and 300 per cent of quota cumulatively, would appear to be broadly acceptable in this regard. Exceptional financing, in contrast, should be truly exceptional and available only after clear criteria and rigorous procedures have been met. Deserving candidates should not simply be judged *potentially* sustainable; they should instead be viewed as *clearly* sustainable. There should also be some possibility of systemic failure across international financial markets if exceptional assistance is not forthcoming. In short, the exceptional access bar should be set much higher.[7] The main problem, in most cases, is not a lack of official money or the absence of a formal mechanism for debt restructuring, it is simply inadequate motivation on the part of all stakeholders to do the right thing. Once the restructuring process gets started, the rest takes care of itself. The trick is getting it started.

One of the impediments to more timely action is the promise of additional IMF money, and the time inconsistency problem that this creates. Another is inadequate recognition and acceptance within the official community of the useful role that informal standstills can play in an international context. As long as standstills are regarded as "nuclear" in nature, and something to be avoided at all costs, countries will continue to use them only as a last resort.

A more benign and laissez-faire approach to crisis resolution would, in my view, yield five significant advantages vis-à-vis the present strategy. First, it would shift responsibility for resolving crises back to creditors and debtors. Second, it would lend greater clarity and certainty to the resolution process. Third, it would avoid unnecessary delays and inequities in the crisis resolution process. Fourth, it would minimise the need for arbitrary and difficult judgements by the official community. And fifth, it would limit the need for public sector involvement. By better aligning the incentives of all participants, it would not only make the resolution process more efficient and equitable, it would also help minimise the likelihood of a crisis. Creditors and debtors, knowing the end-game, would have clear incentives to behave more prudently and proactively.

Tightening the criteria and procedures associated with exceptional financing might not be sufficient to ensure this preferred outcome, however. In order to promote greater discipline on the part of the IMF, it might be necessary to contemplate an even more extraordinary measure – putting more of the IMF's money at risk. Instead of preserving its preferred creditor status, the IMF would be asked to accept *pari passu* treatment on many of its claims, giving the IMF a more meaningful stake in the outcomes of its decisions and enhancing its credibility. Although this would be an extreme solution, it would clearly encourage greater discipline in the IMF's surveillance and lending activities, and minimise the sort of moral hazard behaviour identified by Mussa.

Notes

1 The views expressed in this chapter are those of the author. No responsibility for them should be attributed to the Bank of Canada.
2 The first situation, involving geopolitical bias, should perhaps be viewed as a subset of the second, as opposed to a substantively different problem.
3 Richard Lipsey once observed that the problem with giving people room to breathe was that they tended to use it to breathe – and little else.
4 See Barro *et al.* (2002).
5 Many of the ideas that are presented in this section are described in greater detail in a joint working paper by the Bank of England and the Bank of Canada (see Haldane and Kruger 2001).
6 See Bingham (2002).
7 Goldstein (1999) lays out a number of useful criteria and procedures for ring-fencing exceptional financing at the IMF.

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5 Private sector involvement in financial crisis resolution

Definition, measurement and implementation

William R. Cline[1]

5.1 Introduction

Emerging markets have experienced a long succession of crises in the past seven years, posing major challenges for international policy. Eight major financial crises (Mexico 1995; Thailand, Indonesia and South Korea 1997; Russia 1998; Brazil 1999; Argentina and Turkey 2001) and four notable minor ones (Ecuador, Pakistan and Ukraine 1999–2000; Uruguay 2002) have affected economies accounting for about 52 per cent of total external debt of emerging market economies.[2] Credit markets have gone from boom to bust in terms of aggregate net lending, although direct investment has held up relatively well and, for a number of sovereigns, market access has remained intact, while for other important borrowers it has been restored.

One of the most controversial issues in international policy on crisis resolution has been how to achieve "private sector involvement" (PSI). This chapter seeks to synthesise what has been learned about PSI, and review the main issues that remain in dispute. It proposes relevant definitions for different types of PSI, compiles some broad-brush measurements of how much has occurred, and evaluates which types are beneficial, which are deleterious, and when. First, however, it is useful to review the conceptual framework for financial crisis resolution in emerging markets.

5.2 Framework

Whether consciously or not, in practice international policymakers have adhered to an analytical framework that runs along the following lines.

- Temporary official support, often on a large scale, can be appropriate to promote stability and a return of private market confidence, when the country is experiencing a liquidity crisis but is undertaking proper policy adjustments.
- It is important to maintain a functioning international capital market for developing countries, because private capital by far exceeds the potential of official development assistance in the task of global development.

- The nature of support should be such as to avoid undue creation of "moral hazard" that could subsequently lead to excessive private sector lending.

I have argued (Cline 2000, 2001) that the corresponding economic theories underlying this framework are those of Bagehot (1873), on intervention, and Eaton and Gersovitz (1981), on the functioning of private lending to sovereigns. The first principle calls for Bagehot-style forceful public sector intervention when the country in crisis is solvent but illiquid.[3] The rationale for official support is that a solvent debtor will be in a position to repay the official sector and temporary support can help avoid default and its resulting severe damage to the country's economy (and possibly, for larger cases, the international financial system).

The second and third principles comprise two objectives that must be adroitly balanced in designing responses, in light of the Eaton–Gersovitz insight that sovereign lending lacks physical collateral. Too lopsided a public sector imposition of default losses on the private sector would impair future private capital flows by sending the signal that countries can default painlessly thanks to official international political agendas, destroying the quasi-collateral of default pain. Too generous an approach would cause moral hazard.

5.3 Definition

"PSI" has been the 1990s equivalent of "bailing in the banks" in the 1980s. At the operational level, the issue is one of concern that the public sector does not have enough funds to cover both a country's current account deficit and its capital account deficit resulting from an exodus of private lenders. At the political level, the issue has been one of public perceptions of what is fair, and in particular public outrage that the official sector might be "bailing out" private lenders. In the 1980s, the programmes of debt rescheduling and concerted new lending provided a response to political critiques of official support for debt crisis resolution: namely, that in fact the banks were being bailed *in*. In the 1990s, the PSI initiatives have sought to address the same goal in a new environment in which not only is bank lending just a part of the total, but also in which, in some key cases, more rapid turnarounds in market confidence have been feasible.

The IMF summarises PSI as follows (IMF 2001b):

> By involving private creditors and private enterprises in crisis-fighting, the international community aims to limit both moral hazard (the perception that international rescues encourage risky investments) and a "rush for the exits" by private investors during a crisis . . . [as well as to] . . . have the burden of crisis resolution shared equitably with the official sector. . . .
>
> Agreements for the maintenance of exposure on short-term bank

> credit have been achieved both voluntarily and through the application of moral suasion by central monetary authorities. In addition, international sovereign bonds have been restructured through voluntary debt exchanges.
>
> [A] broad consensus has emerged among IMF member countries on the need to seek private sector involvement in the resolution of crises, while providing for flexibility in the form of involvement ... [PSI] can, in some cases, be achieved primarily on the basis of the Fund's traditional catalytic role in restoring spontaneous private capital inflows.... [W]here greater assurance is needed ... [it may require] ... concerted private sector involvement. [The key issues include] estimating the size of the financing requirements, the prospects for a spontaneous return to capital market access, the availability of tools for securing appropriate private sector involvement, the impact on the country's future cost of borrowing, and the possible impact of spillover effects on other countries.

This official synopsis of PSI is similar in spirit to the approach recommended in Cline (2000): private creditors should be involved in the crisis resolution process on as voluntary a basis as possible given the circumstances. In this way, the country's chances for future market access will be maximised. Fortunately, the Greek alphabet has a character "psi". It may be used, with appropriate subscripts, to denote the various types of private sector involvement that may usefully be distinguished. The following enumeration of PSI categories is broadly in descending order of degree of voluntariness.

1 *Spontaneous lending* – The most voluntary form of PSI is the spontaneous reflow of lending upon restoration of confidence (ψ_{spon}). The prototype is the case of Mexico in 1994–1995. As discussed below, it is part of broadly defined PSI, but not of the narrower concept of PSI confined to forced and/or concerted action or swaps designed to address pending crisis.
2 *Foreign direct investment* – During the financial crises of recent years, net inflows of direct investment have held up remarkably well, rising from $92 billion in 1996 to a peak of $150 billion in 1999 before easing to an average of about $137 billion in 2000–2001 (IIF 2002). When an economy is in crisis, the continued inflow of direct investment can be a key source of stability, comprising an important source of voluntary flows under the broad (but not the narrow) definition of PSI (ψ_{fdi}).
3 *Maintenance of bank credit lines* – Next most voluntary is the (relatively) informal agreement of major international banks to maintain short-term interbank and trade credit lines at a given level (ψ_{stcl}). The most conspicuous recent case was that of Brazil in the second quarter of 1999.
4 *Medium-term conversion of bank credit lines* – A more formal conversion of short-term international bank claims into one-to-three-year

notes, as was done in South Korea in early 1998, represents a still relatively voluntary mode but one involving more exertion of moral suasion and concertation among lenders (ψ_{mtcnv}).

5 *London Club rescheduling* – The classic PSI in the early phase of the 1980s debt crisis was the rescheduling of bank claims (including medium-term) to longer maturities at par and with interest rates above LIBOR (ψ_{LCresc}). This has not been used in the 1990s. Its scope is lesser than in the 1980s, in part because of the smaller share of syndicated bank claims (and larger share of bond claims), and perhaps as well because of the lesser dominance of book-value valuation and greater incidence of mark-to-market valuation even among major banks. The shift towards asymmetrical stakes is also likely to have reduced the scope for this mechanism, away from the early 1980s situation in which loans to Latin America comprised a large share of bank capital towards much lesser bank vulnerability today.

6 *London Club concerted lending* – One step beyond bank claim rescheduling is an accompanying round of "new money" lending that increases exposure by enough to pay some portion of the interest due (ψ_{LCcl}). Used in the mid- to late-1980s, this instrument seems even less likely to be germane today than simple London Club rescheduling, given the present asymmetry in vulnerability of bank lenders and sovereign borrowers.

7 *Bond exchange maintaining value* – The mechanisms discussed so far have referred to bank claims. Increasingly, however, external debt of emerging markets owed to private creditors has been in the form of bonds. There have been two types of PSI involving bonds in recent years. The first may be named an exchange maintaining value (ψ_{bemv}). The cases of Pakistan in 1999, Ukraine in 2000, and especially Argentina's megaswap in June 2001, are in this category. In these exchanges, the sovereign sets forth an offer that involves an exchange of existing bonds for new ones bearing longer maturities, and at interest rates that are not lower than the original interest rates. The offers involve lesser or greater degrees of voluntariness; the Pakistan and Ukraine offers had a take-it-or-leave-it nature, whereas the Argentine swap involved more consultation with bondholders and a much larger fraction of holders who held on to their original claims. In principle, these exchanges do not involve debt forgiveness.

8 *Bond restructuring through collective action clauses* – The modality that has been at the centre of much of the discussion on international financial architecture so far has been absent in actual PSI. This is the restructuring of existing bonds (as opposed to "exchange") by a supermajority vote of holders (ψ_{brcac}). This can be done in bonds issued in the United Kingdom, which typically contain such clauses, but not in bonds issued in New York, which typically have been interpreted to require 100 per cent bondholder approval for restructuring. Ironically, in the two cases where this could have been done, those of Pakistan

and Ukraine (with bonds issued under UK law), it was not. The reason appears to have been concern that the convening of enough bondholders to constitute a qualified majority would precipitate inter-bondholder consultation, leading instead to "acceleration" (Buchheit 2000). (Note that the placement of this instrument above the next two does not necessarily make it more voluntary; the degree of voluntariness will depend on the severity of the "haircut" sought, if any, and the degree of debtor co-operation perceived by creditors in the restructuring negotiations.)

9 *Brady bond debt reduction* – Returning to bank claims but turning to more involuntary arrangements, a form not used since the early 1990s is the Brady bond exchange of reduced claims bearing some form of collateral enhancement to replace existing claims (ψ_{BBR}). This instrument has not featured in the resolution of crises of recent years, and Ecuador's default on its Brady bonds in 2000 has likely devalued this potential vehicle by eroding its credibility as a superior claim.

10 *Bond exchange with forgiveness* – Turning back to more contemporary experience and to bonds, relatively involuntary bond PSI has involved exchanges conferring partial forgiveness (ψ_{bewf}). The salient cases have been those involving the Russian GKOs (treasury bills) and former Soviet debt to banks, defaulted on in 1998, and Ecuador's Brady and other sovereign bonds, defaulted on in September 1999. Effective losses on the GKOs were extremely high (on the order of 90 per cent). After protracted London Club negotiations, some $32 billion in former Soviet debt was exchanged for $20 billion in long-term bonds in an agreement in February 2000. In Ecuador, a unilateral exchange offer with very short allowed response time exchanged approximately $6 billion in Brady- and Euro-bonds at an effective loss of about 40 per cent in January 2000 (World Bank 2002, vol. 1, pp. 145, 148). In both of the latter two cases (as in the Pakistan and Ukraine cases) "exit consent" clauses largely vitiating the claims of any holders not accepting the exchange were employed to help achieve high participation.

11 *Officially approved standstill* – Often, discussions of financial architecture feature the idea of an IMF-approved (or otherwise officially sanctioned) standstill in which, temporarily, the country would not be expected to service its debt pending some restructuring agreement (ψ_{oas}). The IMF's Article VIII.2.b on authorised exchange controls is sometimes cited as a vehicle that could be used for this purpose, although this clause is inconsistent with a sovereign's suspension of payments on its own external debt since it is designed to address private payments impeded by government-imposed exchange controls sanctioned by the IMF for macroeconomic reasons. An initial standstill is also part of the Krueger (2001, 2002) proposals for an international bankruptcy mechanism. To date, there have been no instances of formal officially approved standstills, although the IMF's

broad support to Ecuador's default and arrears was a close approximation.

12 *Outward capital controls* – In principle, a government could force PSI through controls on outward capital flows (ψ_{OCC}). This could be done by imposing controls on amortisation of existing external debt by the private sector, while not defaulting on its own debt. Capital controls on portfolio equity could also be applied, as was done by Malaysia during the East Asia crisis. Controls restricting the outflow of capital by residents have been much more common.

13 *Default and arrears* – Finally, private sector creditors can be forced to participate in the form of not being allowed to collect payments coming due when a debtor country defaults (ψ_{daa}). This was the case in much of Latin America in the late 1980s, Indonesia with respect to claims on the private sector in 1998 and after, Russia and Ecuador in 1999, and Argentina at present. This form of PSI is the most damaging to the country's credibility for subsequent capital market access and usually to confidence and economic conditions at the time of the default (as has been dramatically demonstrated once again after Argentina's default in January 2002).

5.4 Measurement issues

1 *Broad versus narrow PSI* – Having enumerated the modalities of PSI, we may turn to measurement. A revealing dimension of measurement definition is whether the concept is broad enough to encompass voluntary inflows prompted by adjustment measures or is narrowly confined to concerted and/or forced measures implemented on the verge, or at the height, of the crisis itself. Private support that occurs only as the consequence of public sector suasion or coercion, for example through an actual or threatened standstill, is clearly within the confines of what has been called PSI. However, there are strong grounds for also including in a "broad" version of PSI private reflows that occur voluntarily after policy adjustment and temporary official support have begun to rebuild confidence.

An intermediate form of PSI, most aptly included in the narrow concept, can occur when there are collective action dynamics that can be implemented to marshal support even without public sector pressure. In principle, where there is a limited number of large private creditors, they may find it in their joint interest to provide support because of the recognition that if each cuts and runs, none will be able to extricate its capital. Voluntary arrangements to maintain short-term credit lines are the closest to this market-strategic action and are appropriately included in the narrow concept of PSI even when they are not forced upon the banks by the IMF or other industrial country authorities. Similarly, extensive market-based swaps on a voluntary basis, undertaken by the sovereign because of concern about a

pending crisis situation, belong in the category of "narrow" PSI as well (e.g. the mid-2001 Argentine megaswap).

2 *Time period* – Another key issue is whether to measure private flows solely during the crisis or over the crisis cycle. A central feature of voluntary PSI is that, when successful, it will tend to be minimal during the height of the crisis, but substantial in the form of return flows once the crisis of confidence has been stemmed. In this framework public sector capital is a balance-wheel that enters during the crisis but is replaced by renewed private flows after the crisis. On this basis, for the period before, during and after the crisis, private flows will show a U-shaped profile, while public flows will show that of an inverted U (as in the cases of Mexico, South Korea and Brazil; see Cline 2001).

The proper time dimension for measuring broad PSI would seem to be the period of the crisis and a reasonable subsequent period, for example the crisis year and the following year or two. (Including private flows prior to the crisis would seem doubtful, as excessive pre-crisis inflows may be part of the problem rather than part of the solution.) The difficulty for policymakers is that, in the early stages of the crisis, it will require a judgement as to whether and how much private capital will return one and two years down the road, and a corresponding judgement on the probability of restoring confidence through temporary official support and prospective policy adjustments. As for the narrow measure of PSI, the relevant time horizon is the period immediately preceding and extending through the duration of the crisis.

3 *Net versus gross* – Attention has tended to focus on net capital flows in examining the role of the private sector in financial crises. For example, it is well known that net bank flows to the five East Asian crisis economies (Thailand, Indonesia, South Korea, Malaysia and the Philippines) swung sharply from large inflows in 1996 to large outflows in 1997–1998. The IIF estimates are +$62.7 billion in 1996, falling to −$21.2 billion in 1997 and −$36.1 billion in 1998 (IIF 1999b). For the purposes of evaluating private sector involvement, however, it is the *gross* inflows that convey a more meaningful story. The reason is that the avoidance (or substantial reduction) of amortisation otherwise due will comprise a key private sector participation in crisis resolution, even if there is no net new lending. Indeed, it has been almost 20 years (since the Baker Plan phase of the Latin debt crisis) since the private sector has been expected to contribute net new lending in a crisis rather than merely minimise or avoid net outflows owed according to amortisation terms.

Consider the case of South Korea. Most would agree that the $22 billion conversion of short-term bank claims to one-to-three-year bonds in early 1998 comprised a prototypical form of PSI. But as these claims would have otherwise been payable in the short-term, a "net" measurement basis would conclude that there was zero (or large

negative) PSI from this arrangement. It is the gross ($22 billion) magnitude, then, rather than the net, that reveals the amount of private sector "effort" that was successfully mobilised to address the crisis.

4 *Individual- or multi-country* – One approach to policy on PSI would be to seek its presence in each case where public sector intervention becomes necessary to achieve crisis resolution. An alternative approach would be to consider the broad pattern across several crisis cases, and to "give credit" for PSI overall based on intensive private sector participation in some cases despite little PSI (at least during the crisis year) in others. One interpretation of events is that there has been an oscillation between insistence on PSI in some individual cases and acquiescence in its absence in others. Thus, after relatively formal PSI in South Korea in early 1998, the severity of forced PSI through default in Russia in August of that year may have facilitated a public sector acceptance of no formal PSI for Brazil in late 1998 and only a moderate and informal version in Brazil in early 1999. Then there appears to have been a swing back to greater insistence on formal PSI in 1999–2000 in the cases of Pakistan, Ukraine and Ecuador.

Cognisance of multi-country patterns over time appears to have been complemented by contemporaneous multi-country PSI balancing. By late 2000, there were large new support programmes for Argentina and Turkey. Whereas there were large headline numbers on voluntary PSI for Argentina ($20 billion out of a total rescue package of $40 billion), for Turkey there was no PSI requirement. As discussed below, Argentina's intended PSI was more than fulfilled by mid-2001 in the megaswap, and then turned comprehensive and involuntary by outright default by the end of 2001. The broader point, however, is that in practice policymakers appear to have increasingly recognised that a multi-country "pattern" approach is sufficient if the objective of PSI is to minimise moral hazard and share the burden of emergency support. If there were concerns about a lack of capacity for official financing, there could still be a case for insistence on individual-country PSI even if the multi-country pattern has been adequate. So far, however, with the availability of the IMF's Supplementary Reserve Facility, insufficient funding capability has not been the constraint (as most dramatically illustrated in the case of Turkey, as discussed below.

5 *External versus domestic* – The great bulk of the discourse and analysis on sovereign crises tends to focus on external debt, but increasingly it is domestic public debt that is at the heart of the issue. This in turn raises the question of whether the "P" in PSI is meant to include the domestic private sector or just the foreign private lenders. The proper answer would seem to be that it should include both. Indeed, a general principle of PSI in its more involuntary forms would seem to be that there should be symmetrical treatment of foreign and domestic creditors. Otherwise a government will earn a bad reputation in inter-

national capital markets as being more concerned about short-term domestic political advantage than about the country's longer-term international borrowing capability.

5.5 Measurement results

With these definitions of the various types of PSI, it is possible to compile estimates on the record of PSI in the principal crisis cases of recent years. Table 5.1 presents the narrow measure of PSI, which excludes business-as-usual as well as post-crisis private financing. The important spontaneous reflows to Mexico after its 1995 crisis are thus excluded from the table. The table categorises the "type" of PSI as voluntary, quasi-voluntary and involuntary. Voluntary PSI refers to the market-based debt swaps in Turkey and Argentina through mid-2001 (ψ_{bemv}). The mildest form of quasi-voluntary involvement (QV1) refers to the maintenance of bank short-term credit lines (ψ_{stcl}). An intermediate form (QV2) comprises formal conversion of short-term bank credit lines to medium-term bonds (ψ_{mtcnv}). The most severe form of quasi-voluntary participation (QV3) is the exchange of government bonds for obligations with no overt reduction in value but under circumstances involving considerable arm-twisting (still formally ψ_{bemv}).

The array of more involuntary mechanisms includes first the relatively limited debt restructurings in Thailand (IV1), which involved significant loss of value (no prototype is listed above).[4] While the limited restructurings themselves were involuntary, it should be emphasised that, from a broader perspective, Thailand's management of the financial crisis was market-friendly. There was no attempt to impose widespread restructuring, and the government's own debt did not come into question. Next in severity (IV2) are the cases of suspension and restructuring involving moderate losses (e.g. in the range of 30 per cent), of the prototype "ψ_{bewf}". More severe still are the cases of restructuring with deep forgiveness (still formally ψ_{bewf}). The restructuring of Russia's treasury bills (GKOs, OZFs) on terms that for foreigners involved deep losses was in this category. Argentina's end-2001 default is provisionally placed at IV2 in the expectation that the ultimate forgiveness involved will be intermediate rather than deep, but could transit to IV3.

The total amount of narrowly defined PSI as enumerated in Table 5.1 comes to approximately $240 billion, a large sum by any measure. If the nearly $40 billion of PSI associated with the Argentine suspension of payments on external debt in early 2002 is excluded (and this amount omits the $8 billion foreign and $22 billion domestic claims already swapped in mid-2001 to avoid double-counting), the remaining $200 billion is still large.

Of the total, $118 billion is classified as either voluntary or quasi-voluntary, while $120 billion was involuntary (including the Argentine suspension). This is an important pattern, as it indicates that, even when a

Table 5.1 Narrowly measured PSI in principal crisis cases ($ billions)

Crisis episode	*Amount*	*Type*	*Comments*
Thailand 1997	4	IV1	Restructured debt of 56 intervened finance companies
Indonesia 1997–1998	25	IV2	Arrears, restructurings on external debt of private corporations (est.)
Korea 1998	22	QV2	Short-term inter-bank claims converted to three-year paper
Russia 1998	14	IV3	Restructured GKOs and OZFs with large present value loss (November 1998)
	32	IV2	Restructured Soviet era debt to London Club banks, significant present val. loss (February 2000)
Brazil 1999	25	QV1	Voluntary maintenance of bank credit lines
Ecuador 1999	6	IV3	Restructured Brady and Eurobonds in August 2000; present val. loss of about 50%
Turkey 2000–2001	8	V	Swap of short-term Turkish Lira debt into longer-term dollar and Lira debt June 2001
Argentina 2001–2002	30	V	Megaswap of government bonds, for longer maturities, June 2001
	33	QV3	Domestic-holder restructuring, November 2001[a]
	39	IV2	Suspension of payment on external debts to private creditors, December 2001[b]
Total	238		Including Argentine suspension
	199		Excluding Argentine suspension

Source: IIF (1999); Cline (2000); IMF (2001a); World Bank (2002); author's estimates.

Notes
a Excludes $22 billion domestic holdings in June 2001 megaswap.
b Excludes $8 billion swapped by foreign holders in June 2001 megaswap.
V: voluntary; QV: quasi-voluntary; IV: involuntary; Severity: 1 = mild to 3 = severe.

narrow definition of PSI is used, about half of the total has successfully been mobilised on a voluntary or quasi-voluntary basis. PSI does not always or even usually have to be mandated to the private sector by the public sector, as recognised in the IMF synopsis of the spectrum of approaches cited above.

If a broader interpretation is taken of PSI, incorporating spontaneous capital flows even during, but especially soon after each crisis, the totals are considerably larger and the predominant mode even more clearly voluntary. Appendix Table A5.1 based on capital flow and debt data compiled by the World Bank indicates that for six major countries with crises in 1995–1999 (Mexico, Thailand, Indonesia, South Korea, Russia, Brazil), the total of public sector new disbursements in the year of the crisis ($t0$) amounted to $113 billion, while private bank, bond and other credit disbursements were actually slightly larger, at $117 billion.[5] During the two

years following the crisis outbreak (*t*1 and *t*2), the expected pattern of a sharp decline in public disbursements relative to private was attained, with public disbursements at $29.7 billion and private at $129.4 billion, of which $36.5 billion was in reschedulings or amounts forgiven. (These totals are understated as they do not include Brazil 2001, for which World Bank data are not yet available.) For the three-year period, gross private lending disbursements or restructurings were thus substantially higher than public disbursements ($247 billion versus $143 billion).

Figures 5.1 and 5.2 show for the individual countries the same patterns of relatively comparable private and public disbursements in the crisis year, with far higher private than public disbursements in the two years following the crisis. Figure 5.1 additionally shows the somewhat surprising phenomenon of larger private than public disbursements even in the crisis year in Russia and Brazil.

In sum, even if the narrow definition of PSI is employed, the magnitude of private sector involvement has been very substantial, especially counting the massive default of Argentina. If a broader definition is used including voluntary flows and a three-year cycle beginning with the crisis year, the amount of PSI has been even larger. The amount would be larger still if direct foreign investment flows were added. Moreover, on this broader definition (even without direct investment), private sector involvement has substantially exceeded public sector involvement.

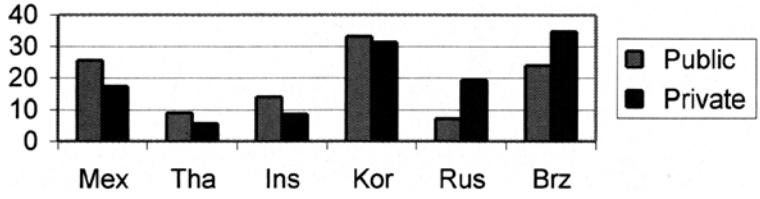

Figure 5.1 Private and public disbursements, crisis year *t*0 ($ billions).

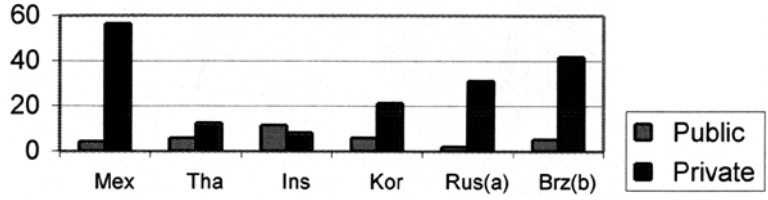

Figure 5.2 Private and public disbursements, years *t*1, *t*2 ($ billions).

Notes
a Private includes $29 billion in rescheduling and forgiveness.
b *t*1 only.

5.6 Desirability

A fundamental policy question is whether PSI is even desirable. The answer depends on the type of PSI and the circumstances in which it is applied. Where, on both political and economic grounds, the country has a very strong prospect of underlying solvency but faces temporary liquidity problems, forceful public sector support even without any formal ("narrow") PSI is probably preferable. In particular, the action adopted in the Mexican case was correct even with the benefit of hindsight. The alternative of forced rescheduling of Tesobonos would unnecessarily have spoiled Mexico's credit reputation and hindered its economic recovery in the late 1990s. Where the political economy is solvent but liquidity problems remain even after a strong show of official sector support, in part because the magnitudes of short-term debt are simply too large, application of still relatively voluntary but non-spontaneous PSI will be appropriate: co-ordinated maintenance of short-term credit lines by banks (Brazil in 1999), or conversion of short-term bank claims into medium-term (South Korea in 1998). It is less likely that, in the latter types of circumstances, it will be particularly helpful to take recourse to bond exchanges with maintenance of value, because usually bond amortisation schedules are sufficiently spaced over a series of years that their magnitudes in the immediate horizon will not be the primary problem.

At the opposite extreme, where a country is highly likely to be insolvent, some of the types of PSI towards the involuntary end of the spectrum will be necessary, while others should still be avoided. The difference is basically between those forms that involve negotiation and mutual consent of creditors and the debtor, and those that are unilateral. The consensual forms include rescheduling of bank claims (or exchanges for bonds) and restructuring with a negotiated amount of forgiveness. The primary non-co-operative form is unilateral default.

Table 5.2 shows the combinations of PSI types with country circumstances that will usually be appropriate. Two forms are omitted as no longer relevant: concerted "new lending" by banks (ψ_{LCcl}) and Brady Bond forgiveness (ψ_{BBR}). The table also notes that certain types of PSI should be avoided if possible even under circumstances of insolvency. One is unilateral default and extended arrears. Another is outward capital controls. The distinction "unilateral" is important, however, as arrears could in principle be approved by a majority of creditors to ensure uniform treatment during the interim before formal restructuring. Unilateral defaults, in contrast, will do greater damage to the country's credibility for future capital market access.

The instrument of the officially sanctioned standstill is also listed as generally undesirable, albeit with a question mark. If the case is one of solvency, a standstill will unnecessarily impair credit reputation and confidence.[6] If the case is one of insolvency, it is unclear how much practical improvement can be secured by official blessing of a standstill as opposed

Table 5.2 Desirable PSI type under alternative circumstances

Situation	*PSI type*
Strong prospective solvency	ψ_{spon}, ψ_{fdi}, ψ_{stcl}, ψ_{mtcnv}
Intermediate solvency	ψ_{stcl}, ψ_{mtcnv}, possibly ψ_{bemv}
Insolvency highly likely	ψ_{LCresc}, ψ_{bewf}, ψ_{brcac}
Memorandum: generally undesirable	ψ_{daa}, ψ_{OCC}, (ψ_{oas}?)

to temporary arrears. At the least, this instrument should be limited to circumstances where the creditors broadly agree that the country is making a best-faith negotiating effort, and themselves welcome a standstill as a source of corralling non-participants. Otherwise there will be a perceived official sector bias in favour of extracting a better deal for the debtor, which in turn undermines the Eaton–Gersovitz underpinnings of the sovereign lending market.

In the light of Table 5.2, we may consider the scorecard for the types of PSI that have actually occurred in the crisis episodes listed in Table 5.1. High scores would go to the cases of Thailand (because of the broadly cooperative approach and very narrow application of restructuring), South Korea, Brazil and, arguably, Turkey. Lower scores would go to the cases of Russia and Ecuador, because even though their instances might be argued to have been insolvencies (warranting ψ_{bewf}), the unilateral manner in which the defaults and extended arrears were adopted (ψ_{daa}) was undesirable. Indonesia also merits, at best, a passing grade. Its insolvency was not of the sovereign but of the corporate sector, but its arrangements for workout proved seriously deficient, in considerable part because of the absence of forceful domestic bankruptcy arrangements. As for Argentina, the discussion below argues that a high score is warranted for the effort to restructure debt on a voluntary basis, and a low score is appropriate for the unilateral default adopted when a new government succeeded the one forced out of office.

5.7 Moral hazard?

Some would argue that even where there is a strong case for solvency, the public sector should insist that there be a relatively formal private sector commitment of lending to complement emergency official sector support, because otherwise there will be moral hazard. In view of the moribund status of emerging market lending (net credit flows by banks and through bonds and other private credit instruments have fallen from an average of $153.2 billion annually in 1995–1997 to −$0.9 billion in 1998–2001, and −$16.5 billion in 2001 (IIF 2002b)), by now it should be clear that whatever degree of moral hazard has been present in official support programmes has been negligible in terms of inducing subsequent excessive private sector lending.

Formal analyses of this issue are tending to come to this same conclusion. Zhang (1999) conducts statistical tests explaining country spreads in emerging markets. He finds that, after taking account of indicators of creditworthiness as well as global capital market conditions as proxied by spreads for US high-yield corporates, the dummy variable for post-Mexico moral hazard has the wrong sign and is statistically insignificant. Lane and Phillips (2000) use graphical analysis of lending spreads to examine whether various instances of IMF intervention induced lower borrowing costs and find no evidence of generally greater moral hazard after the Mexico crisis (albeit with ambiguous patterns consistent with moral hazard prior to the Russian default). Kamin (2002) applies statistical tests to emerging market spreads and also finds no evidence that access to credit has eased relative to the pre-1995 period. He also notes that there is some evidence credit was exceptionally easy in mid-1996 through to mid-1998, but emphasises that this was short-lived and may have been associated with "market exuberance". His tests for countries receiving large-scale IMF support similarly show no evidence that geo-politically and economically important countries pay lower spreads than explained by their economic variables.

5.8 Diagnosing solvency

Matching the PSI type to the circumstance does of course require an official sector judgement on whether the country is fundamentally solvent or insolvent. This is no easy decision, but most would agree that the distinction is fairly clear between, for example, a South Korea and an Ecuador. Several points are important to take into account in judging solvency.

First, experience has increasingly underscored the importance of political coherence in sustaining solvency. Political upheavals were critical in the defaults of Russia, Indonesia and Argentina. Riots and deaths forced a change in government in the latter two cases.

Second, it is important to avoid the trap of a self-fulfilling prophecy in diagnosing insolvency based on contemporaneous market pricing. In particular, at times of market nervousness about a country, the country-risk spread on its secondary market can soar to 1,000–2,000 basis points or more. If solvency is then evaluated using these interest rates, almost any moderate amount of public sector debt will tend to look unsustainable. This is exactly the obverse of Japan's extraordinarily high public-debt-to-GDP ratio combined with its extraordinarily low interest rate. Some more "normal" interest rate (e.g. a risk spread of say no more than 700 basis points) is the appropriate basis for judging solvency, on the reasonable grounds that once the temporary liquidity crisis is overcome market rates will ease. Moreover, typically, the country will have an actual average interest rate on its existing stock of debt that is far below the current crisis-environment spread.

Third, if one believes that default carries extremely severe economic

disruption and long-lasting adverse reputational consequences, it will generally be more socially beneficial to make a Type I error (diagnosing and treating the case as one of solvency when in fact it is insolvency) than a Type II error (imposing default and forgiveness treatment in a case where, in fact, solvency could have been sustained).

Fourth, and for the same reason, under acute uncertainty it may well be desirable to provisionally treat the case as one of solvency simply to preserve the option of the chance of escaping default, even if this chance seems somewhat below 50 per cent. As developed below, the conditions under which default should instead be entered into preventatively require a relatively high probability of eventual default combined with relatively high incremental damage to the country from delaying default. The decision of international policymakers to throw Argentina one last lifeline in August 2001 can be understood within this framework.

The third and fourth considerations do raise the question of IMF solvency. If the IMF leans towards Type I errors, over time it might accumulate losses. In practice, however, the IMF enjoys a preferred creditor status. If it does provide support to a country that nonetheless subsequently finds it necessary to default, the strong likelihood based on past experience is that the country will soon be back into orderly servicing of its IMF obligations even if it finds it necessary to seek restructuring from its private creditors. Nor is preferred status merely a matter of custom. Its underpinning is the fact that it is only the IMF and the other International Financial Institutions that have historically been willing to provide enough new financing (or more) to cover debt service coming due to them, in crisis circumstances.

The late-2002 impasse between Argentina and the IMF does not fundamentally alter this diagnosis. Of course, if over the next two years or so it were to transpire that a critical mass of large debtors (such as Argentina, Brazil and/or Turkey) were in prolonged arrears to the IMF, there would be a far greater case for shifting the weighting towards Type II rather than Type I errors in the lender of last resort decision.

5.9 The recent crises

As this chapter is written, there are three major and one minor crisis cases raising issues of public policy on crisis resolution: Argentina, Turkey, Brazil and, on a smaller scale, Uruguay. It is beyond the scope of this chapter to provide a full analysis of these cases, but some summary views would seem indispensable to a consideration of the evolution of the PSI debate.

1 Argentina – The crisis in Argentina began in the fourth quarter of 2000, triggered by the resignation of the vice-president in the coalition government and in the context of severe recession in 1999 and 2000. By December 2000, the IMF had agreed to increase the existing programme by about $6.7 billion to a total of $13.7 billion (500 per cent of IMF quota).

The government planned some $10 billion in borrowing from local banks, which included affiliates of major international banks; $3 billion from pension funds; and $7 billion in maturity-stretching debt swaps. In announcing the programme, IMF Managing Director Horst Koehler highlighted this substantial PSI by welcoming "private sector ... support on the order of US$20 billion" (IMF 2000a). Together with anticipated support of $2.5 billion each from the World Bank and Inter-American Development Bank and $1 billion in bilateral support from Spain, the IMF and private sector support amounted to a headline total of $40 billion. With half coming from the private sector, this seemed like a prototypical case of major lender-of-last-resort action coupled with commensurate PSI.

The financial rescue briefly seemed to function, as the Argentine sovereign spread (Argentine component of the JP Morgan EMBI+) fell from a high of 880 basis points in November 2000 to 665 basis points by February 2001. There then ensued a new round of political destabilisation, however, that featured a brief attempt by a new finance minister (Lopez Murphy) to implement sharp fiscal adjustment, followed almost immediately by his replacement by Domingo Cavallo, renowned for his success in ending hyperinflation in the early 1990s. At this point policy was on the horns of a dilemma. Financial markets abroad were insisting on both growth and fiscal adjustment to restore confidence in public debt sustainability. Cavallo swung the pendulum briefly towards growth with certain sectoral stimulus measures. He successfully implemented a megaswap stretching out public debt, but made a serious mistake in April by announcing that the peso would be shifted to a basket of 1:1 each with the dollar and euro once these two currencies crossed paths again (and until then a trade tax-rebate scheme would make up the difference). Whatever its economic merits, this plan undermined confidence by calling into question the lynchpin of the Argentine economic model, the "convertibility" currency board parity with the dollar. Confidence was further undermined by the forced exit of central bank governor Pedro Pou.

The megaswap completed at the beginning of June 2001 exchanged about $30 billion, or about half of the government bonds eligible, for new bonds with maturities in 2006 and after and with various grace period and step-up interest rate features. The exchange was voluntary, although the greater scope for moral suasion on domestic holders such as pension funds meant that its subscription was primarily by residents (some $22 billion). Importantly, the fiscal costs were limited, as the effective average interest rate on the new instruments was only modestly higher (about 11.7 per cent compared to the original 10 per cent on the bonds exchanged), despite by then a 16 per cent secondary-market interest rate. Only the secondary-market value of a bond was counted in the value accepted for exchange and the price of the new bond for purposes of the exchange was also at the discounted secondary market value.[7]

Consummating a large exchange without paying a sharply higher interest rate was possible, first, because of the moral suasion on domestic

holders, and second because many foreign holders confronted with the disappearance of much of the outstanding stock of a given bond were inclined to exchange rather than be left holding an "orphan" bond with much less liquidity. In effect, the megaswap comprised a positive-sum cooperative game of large holders who were able to overcome the "prisoners' dilemma" problem of non-communication by virtue of the government's co-operation with, and organisation of, the leading domestic holding institutions.

The best way to examine whether the swap was favourable is to compare the cost of the swap against the potential macroeconomic gain from improved liquidity. The swap reduced payments due by $8 billion through to end-2002 and by $16 billion through to end-2005 (*Financial Times*, 5 June 2001).[8] There was a perception at the time that the increased liquidity gave Argentina much-needed breathing space.[9] Discounting at 10 per cent, the swap increased the discounted present value of the debt by one-sixth, or by $5 billion for the $30 billion exchanged.[10] In 2002 alone, Argentina's GDP fell by about 15 per cent, or $45 billion, as a consequence of the default and devaluation. So it requires no more than a judgement that the megaswap reduced the probability of default-cum-devaluation by 11 per cent to arrive at the conclusion that the operation was beneficial. This is a reasonable assumption and this probabilistic cost–benefit approach leads me to conclude that the megaswap was favourable for Argentina.[11]

Unfortunately, and perhaps in part because the megaswap was misunderstood by many to have sharply increased the fiscal burden of the debt, within a month market reaction had deteriorated. The actual launch of the "convergence" quasi-dual exchange rate mechanism in mid-June may have contributed to exchange rate uncertainty. The critical development was that, by July, the outflow of bank deposits and reserves accelerated, as bank deposits fell 7 per cent in a single month. The government responded in mid-July with a dramatic "zero deficit" programme that had as its centrepiece a 13 per cent reduction in government salaries, which was to continue and be adjusted on a monthly basis to whatever rate was required to achieve a zero deficit.

It was at this point and on the strength of both the megaswap and the severe fiscal adjustment commitment that the government appealed to the IMF for additional support. In late August the IMF announced an additional $8 billion in support, of which $5 billion was available immediately, but early use of the remaining $3 billion was contingent on some form of debt restructuring reducing the interest burden. Mussa has argued that the August IMF programme was a tragic mistake and that, at this point, Argentina instead should have been told to default (Mussa 2002). This judgement hinges on an assessment of the inevitability of default, which was by no means clear. The new fiscal tightening had, in fact, been applied in July and early August and there was a significant chance that the IMF support coupled with the megaswap and the zero deficit plan could begin

to reduce the secondary market spreads once again from their prohibitive levels. In fact, spreads did temporarily ease from 1,600 basis points to 1,400 basis points by end-August.

By late November 2001, the government successfully exchanged some $55 billion in domestic holdings of government bonds for loans at 7 per cent and collateralised by tax revenue. Losses in the October legislative elections and the continuation of political difficulties with the provincial governors' acceptance of fiscal adjustment, however, contributed to uncertainty and a continued drain on deposits and reserves. This eventually precipitated the government's early-December limits on withdrawals from bank deposits. In effect, the government was honouring the exchange rate commitment by reneging on the commitment to the public's access to bank deposits. This, in turn, contributed to an environment in which rioters (some encouraged by elements of the political opposition) took to the streets. When the riots caused 22 deaths, President de la Rua and Economy Minister Cavallo resigned. To the end they had sought to honour their pledge to neither default nor devalue. But the interim President Adolfo Rodriguez Saa immediately defaulted on external debt, and his successor Eduardo Duhalde in early January devalued and floated the peso. Duhalde then adopted such populist measures as converting dollar deposits to pesos at 1.4 pesos per dollar while requiring that banks accept conversion of their dollar loans to pesos at 1 peso per dollar.

During the course of 2002 the Argentine catastrophe continued. Output for 2002 is expected to fall by 15 per cent or more. Cumulative price increases in 2002 have been only about 40 per cent, sharply below what might have been anticipated from the 250 per cent rise in the peso price of dollars and reflecting the severe recession and the decline in liquidity associated with the bank freeze. The key question is whether a severe intensification of inflation can be avoided as deposits are partially released and partially converted to long-term bonds.

Some would argue that the Argentine case proves that countries should default earlier, and that an international bankruptcy mechanism is needed to help them do so. My interpretation is instead that the Argentine case underscores the difficulty of making the solvency/insolvency diagnosis, and in particular shows its sensitivity to political unravellings. The catastrophic outcome associated with the default and devaluation, moreover, may be read at least as appropriately (more so, I would argue) as painful evidence that the default was indeed damaging and therefore that the successive attempts to avoid it during the course of 2001 were worth trying.

A final word on Argentine solvency as it looked in 2001, especially by July. It is beyond the scope of this chapter to provide an in-depth analysis of this issue. The key points, however, are the following. First, Argentina had been hit by a convergence of severe external shocks. Brazil's crisis in 1999 depressed a key export market. The surge of the dollar against the Euro pulled up the peso against the currency of Argentina's most important regional market. Falling commodity prices hit Argentine export earn-

ings, even though by 2000 rising oil export prices reversed the decline in the terms of trade in the previous two years. Second, in the run-up to the 1999 presidential elections, then-President Menem engaged in fiscal loosening as he sought constitutional change to permit a third term, and then-governor of Buenos Aires Eduardo Duhalde unleashed a spending spree in his bid for the presidency. Third, the debt-to-GDP ratio had risen far more than cumulative deficits, because of "skeletons" (such as court awards to victims of the "dirty war") and incorporation of provincial debts. Fourth, the economy was in a prolonged recession.

All of these factors meant there had been temporary deterioration that tarnished but did not fundamentally reverse Argentina's mid-1990s record of star economic reformer. There was every reason to believe that the temporary external shocks would reverse in time and that with renewed fiscal discipline – already begun in 2000 by the de la Rua regime – and a cyclical recovery in the economy, the debt/GDP ratio could be stabilised. By July 2001, although the secondary-market spreads on Eurobonds had soared to unsustainably high levels (1,600 basis points), there was also good reason to believe that, by then, the proximate cause was the rapid pace of bank deposit and external reserve losses, and that by a show of force by sizable additional external support, this self-fulfilling downward spiral could be reversed as confidence in the adequacy of external reserves was restored.

In short, there was still a case for solvency even by July 2001. On the other side, there was a seemingly inexorable mounting of opinion in international financial markets that the combination of the currency board, the recession and the fiscal deficits (even if cyclical) were a recipe for no recovery in growth and hence eventual unsustainability of debt. For public policy, there was ample room for both Type I error (falsely identifying solvency) and Type II error (falsely identifying insolvency). Even with the benefit of hindsight, the international community took the appropriate step in August 2001 by leaning in the direction of a Type I error, because the consequences of default were potentially so drastic, as we now know.

2 Turkey – In December 1999, Turkey embarked on a stabilisation programme to end its status as the last major emerging market economy with persistent high inflation (averaging 75 per cent annually during 1988–1999 (IMF 2001a)). The programme centred on a pre-announced exchange rate path (with intent eventually to float) as anchor, privatisation and fiscal adjustment. As interest rates fell sharply while inertia remained in inflation, domestic demand surged in 2000 and the current account swung into deficit. Pressure on the banking system (characteristic of sharp disinflation) contributed to failure of an important bank in November 2000, and turmoil in the interbank market then led to a rapid reserves loss. By late December the IMF substantially expanded its support by $7.5 billion, from the original $3.8 billion, to a total of $11.3 billion. In February 2001, a renewed round of pressure on reserves, in part attributable to a sharp division between the Prime Minister and the President and more generally

doubts about commitment to structural reform, forced the government to float the lira.

In the face of renewed crisis, by May 2001 the IMF expanded its programme by $8 billion, to a total of $19 billion. Increased World Bank commitments by $2 billion complemented the package. The new programme was premised on major new commitments on privatisation (especially of the telecoms sector) and banking sector recapitalisation and reform. Through the next several months, market concerns persisted, however, as high interest rates increasingly posed questions about the sustainability of government debt. The events of September 11, 2001 then aggravated the situation, affecting tourism earnings, export markets and international capital market conditions. By early February 2002, the IMF increased its commitment yet again under a new programme amounting to $16 billion, of which $3 billion was the remaining amount from the previous programme. After deducting approximately $7 billion in repayments to the IMF in 2001 and early 2002, this brought total IMF support to $25 billion, or about 17 per cent of 2001 GDP.

PSI in the Turkish case has been limited to a sizable ($8 billion) market-based swap of short-term for longer-term government debt (Table 5.1). The May 2001 programme announcement referred to "voluntary private sector involvement, in line with the authorities' strong preference for market solutions" (IMF 2001c). The combination of market uncertainty, the voluntary approach and especially the structure of foreign lending meant, however, that there was a large rundown in foreign bank claims during 2001 – by about $8 billion (IIF 2002a, p. 8) – that contributed to pressure on external reserves despite the large IMF support.[12] There are both structural economic reasons and geopolitical reasons for the lack of greater PSI.

The economic reason is related to the source of the problem, which has primarily been one of public debt sustainability rather than an external transfer problem, coupled with the fact that the public debt was primarily owed to domestic banks and residents rather than foreign private creditors. Turkey has tended to run a balanced current account (except in the stabilisation growth spurt of 2000). Its external debt is relatively low (net external debt deducting reserves was about 18 per cent of GDP in 2000–2001).

The problem of domestic government debt, in contrast, has been severe. Public debt amounted to 80 per cent of GDP at end-2001 (valuing GDP at year-end prices), up from about 50 per cent in 1999 and 2000.[13] The central challenge has been the race between high real interest rates, which cause the public debt to snowball, and sufficient fiscal adjustment and privatisation sales to halt the upward spiral in the public debt burden. About three-quarters of public debt (excluding debt owed to the IMF, technically by the central bank) is held by the domestic banks and other residents, rather than by non-residents.

Large domestic bank holdings of government debt, rather than direct foreign holdings, have placed inherent limits on the amount of PSI. As the

IMF became the purchaser of government debt, the result was to displace domestic bank holdings of government debt. This reduction in assets led to a corresponding reduction in liabilities, which was carried out by the domestic banks by repaying foreign banks and investors who were primarily investing indirectly in government paper through Turkish bank intermediaries. Moreover, because the government provides a full guarantee on Turkish banks, there is a Catch-22 for PSI. Any losses imposed by the government on holders of its debt through forced restructuring would have an adverse impact on the banking system which the government in turn is obliged to support.

The geopolitical reason for limited PSI is that Turkey has been considered strategic, especially after the events of September 11. This has meant that the official sector was inclined to act decisively rather than to delay support and make it conditional on more formal PSI. The unique political profile of Turkey helps explain how its IMF support reached 17 per cent of GDP, far above the 8 per cent maximum commitment (not fully disbursed) in the case of Argentina.

In early November 2002, Turkey elected the Islamist Justice and Development Party (AKP) with a strong parliamentary majority. The central political-economic issue has been whether a new round of political unravelling would derail chances of success in the race between real interest rates and debt stabilization through fiscal adjustment and privatisation. The decisive AKP victory, and the party's broad support of the commitments to and strategy of the IMF programme, thus offer hope for a favourable outcome. The IMF and international community have a large stake in Turkey's success, as Turkey is the IMF's largest debtor.

3 Brazil – In mid-2002, Brazil faced mounting financial pressures that led to a new round of large official support. As the polls in the second quarter began showing a strong front-runner position for leftist Luiz Ignacio Lula da Silva ("Lula") in the campaign for the October elections, financial markets abruptly shifted their view on Brazil from strong support to great scepticism. By mid-July, the Brazil Eurobond spread had surged from about 850 basis points to about 1,500 basis points, and the spread subsequently rose above 2,000 basis points. Attention focused once again on the trend in Brazil's government debt-to-GDP ratio (a great source of concern at the height of the early 1999 crisis). Net of external reserves and central bank holdings of government debt, the net debt/GDP ratio rose from 33 per cent in 1996 to 49.5 per cent in 1999–2000, spurred by the devaluation in early 1999, as part of the debt is in dollars and another part is indexed to the dollar. The ratio rose still further to 53 per cent at end-2001, reflecting the 2001 recession. These increases have also reflected incorporation of "skeleton" debts previously not recognised. High domestic interest rates mean a large primary surplus is necessary to avoid a ballooning of the debt. The mid-2002 weakness in the currency, related to election uncertainties, meant that the ratio was in the range of 58 per cent by end-June and reached 64 per cent at the end of September.

As for external debt, Brazil actually shows a lower burden now than in many past years when gauged against the export base, though not if measured against the depreciation-shrunk dollar value of GDP. As of end-June 2002, external debt net of reserves stood at $171.7 billion. Exports were weak in the first half of 2002, at 13.1 per cent below a year earlier, but they then began to respond to the strong exchange rate incentive and by July–October stood 16.6 per cent above the level of a year earlier. For 2002 as a whole, exports should be about the same as in 2001, placing the ratio of net external debt to exports of goods and services at 254 per cent. This is far below the 398 per cent reached in 1983 when international interest rates were also far higher, making the interest burden even larger. It is also below the 325 per cent in 1991, the recent peak of 345 per cent in 1999, and also lower than the 295 per cent reached in 2000 – a year when the market was comfortable enough with the external debt burden to accept spreads of only 500 basis points.[14]

As Williamson (2002) points out, 68 per cent of net external debt is owed by the private sector, not the government. Although net external debt relative to GDP has surged with the sharp depreciation of the real (to about 50 per cent at an exchange rate of 3.5 reais per dollar), this ratio is likely to decline at least part way back towards the end-2001 ratio of 32 per cent if the post-election recovery in the currency persists.[15]

There have been two central questions about Brazil in the recent past. The first is whether the existing levels of internal and external debt are unsustainably high even for an optimum government and economic team.[16] The second is whether Lula would follow a populist path that would destabilise financial conditions. After Lula won the runoff election in late October 2002, Brazilian markets began to show a rise in confidence in view of his market-friendly comments and repeated statements of commitment to fiscal equilibrium.[17] With renewed confidence, there could eventually be a major moderation in the still high spreads and a significant further recovery in the currency, permitting at least an arrest in the upward climb of the debt ratio and, more likely, some reduction from its recent level.

In early August 2002, the IMF announced agreement with the Brazilian authorities on a $30 billion support programme, of which $3 billion was to be available by September, $3 billion in November, and another $24 billion in 2003. The agreement also reduced the IMF's target for net international reserves from $15 billion to $5 billion, freeing $10 billion for exchange market intervention. The delay of the bulk of the new support until 2003 was designed both to provide a strong incentive for the new government to adhere to the programme and, by implication, to limit the IMF's potential exposure in the event of a severe political derailing. Lula's continued commitment to the IMF's fiscal targets has been crucial to the initial favourable market trends after his election. So far there has been no formal PSI in the most recent Brazilian difficulties, even with the launching of a new large rescue package. No doubt the government considered

possible efforts to mobilise formal PSI counterproductive as they could send a signal to the markets that claims could suddenly face restructuring. There were indications that short-term credit lines had fallen off (by some 30 per cent according to some press reports), placing severe liquidity constraints on the private sector. In late August 2002, however, leading international banks offered their support for Brazil in a meeting in New York with central bank head Arminio Fraga, and pledged informally to maintain (but not necessarily restore) outstanding trade credit lines (*Financial Times*, 27 August 2002). Nonetheless, this commitment appears to have been considerably less concrete (for example, with respect to horizon and monitoring) than that undertaken by the foreign banks in early 1999.

4 Uruguay – Finally, the case of Uruguay provides additional information on the trend in crisis resolution strategy. In the face of severe contagion from Argentina's default and devaluation, which particularly affected the banking sector, in March 2002 Uruguay entered into a agreement with the IMF for $0.8 billion. As pressures continued, the government reached agreement with the IMF to increase the programme to $2.28 billion on June 25, after floating the exchange rate and committing to further fiscal contraction. Even though the programme was large relative to the size of the economy (12 per cent of GDP), there was no reported element of PSI. This would suggest that the official community saw the case as one appropriate for lender of last resort intervention to deal with temporary contagion effects. In early August, this interpretation received strong confirmation by the addition of another $0.5 billion to the support programme. Further expansion was accompanied by the closure of four private banks and a maturity stretch-out for dollar time deposits in public banks. The US Treasury provided a $1.5 billion bridging loan from its Exchange Stabilisation Fund pending release of IMF funds. Considering that Uruguay is non-systemic, these steps seemed to mark a turnaround in philosophy at the US Treasury from early rhetoric opposing large international financial rescues (even though in practice it had already approved such support for Turkey and Argentina) towards a position giving greater recognition to the lender of last resort function.

5.10 Relation to the bankruptcy debate

The issue of PSI is at the core of the recent move in official thinking towards reconsideration of international bankruptcy mechanisms and arrangements for collective action clauses in bond contracts. In November 2001, the IMF's First Deputy Managing Director Anne Krueger outlined a mechanism for sovereign bankruptcy in which the IMF would play a central role, including in determining when a standstill and call for bankruptcy measures should be approved (Krueger 2001). In April 2002, Krueger released a revised proposal centred more on creditor–debtor control of any bankruptcy negotiating mechanism, with a more auxiliary role for the IMF. Both proposals, however, reflected her view that nations

often wait "too long" before seeking debt restructuring. A parallel public sector concern has been that, in the absence of a sovereign bankruptcy mechanism, the official sector is faced with the Hobson's choice of providing large bail-out financing or letting a country founder in disorderly default.

A key consideration in thinking about bankruptcy mechanisms is whether they are consistent with the Eaton–Gersovitz underpinnings of a functioning international capital market for sovereign lending. The problem is that if capital markets obtain the impression that debt difficulties will be taken to some form of international bankruptcy court, in which it is likely that the international official sector will take an active role in settlement, the result will be that investors think the cards are stacked against private creditors, whose interests are commercial whereas the interests of sovereigns inherently reach the political sphere. If so, then the risk is that private creditors will reduce their lending to emerging markets, demanding higher credit risk premia, not only for countries that become enmeshed in bankruptcy but also (albeit to a lesser degree) for other countries.[18] The shift from Krueger's first to second formulation appears in part to have reflected an effort to address this underlying concern, but it is unclear that it can in fact be effectively removed. There is of course the additional problem of how the national legislative approvals (including for amending the IMF Articles of Agreement) could be achieved, which was one reason the Group of Ten rejected the bankruptcy approach in its 1996 report (G 10 1996). Moreover, as Truman (2002) has emphasised, the SDRM does not deal with cases where the problem is primarily debt owed by the private sector, or even with sovereign debt when it has been issued under domestic rather than international law and as such would have been of direct relevance in only one case (Argentina) out of the eight major crisis episodes beginning with Mexico in 1995.

The alternative approach that has also attracted attention is the "contractual" strategy of achieving widespread clauses for qualified majority approval of rescheduling in sovereign bonds (collective action clauses or CACs). This is as opposed to the "statutory" approach of bankruptcy-type legislation. US Undersecretary of the Treasury John Taylor has proposed that incentives for private sector adoption of CACs be considered by the official community (Taylor 2002). These could include the requirement for such clauses as part of IMF conditionality in country programmes, and/or lower borrowing rates for IMF funds for countries doing so. Although Taylor suggests that the latter might induce countries to swap existing bonds for ones with CACs, the incentive for the country to do so could be insufficient to elicit much response.[19]

The operational question is whether PSI, on an ad hoc basis, varying with the circumstances of the crisis, can be an effective substitute for (or actually a superior alternative to) either a move towards more widespread CACs, or a bankruptcy mechanism with either a lesser or greater

degree of IMF centrality. The empirical record summarised in Table 5.1 and Appendix Table A5.1 suggests that, in practice, quite a bit of PSI has been mobilised. Of course, if it is an official sector objective to put an end to large-volume lender-of-last-resort (LLR) intervention, then something more forceful than ad hoc arrangements, each as voluntary as possible under the circumstances, could become necessary. It is unlikely that the CAC route would suffice if official LLR were to be eliminated, in part because proximate bond maturities are not usually the primary problem. Instead, with the LLR function largely removed, it would become more likely either that one of the bankruptcy versions would be required or that there would be a greater incidence of defaults that could have been avoided with temporary support. In either case, there would likely be an adverse effect for emerging market economies directly (damage from defaults that could have been avoided) and indirectly (from erosion of future creditor confidence and capital flows to emerging markets).

5.11 When should a sovereign default?

Because the PSI debate within policy circles has recently evolved in the direction of sovereign bankruptcy arrangements, it seems especially relevant to conclude this review with an examination of the circumstances under which it might behoof a government to default. The current policy context for this question is summarised in the following argument: "countries with unsustainable problems wait too long before confronting the inevitable" (Krueger 2001). The proposition is that default can be less damaging for the country if it is adopted early – essentially a "pre-emptive default" argument.

This argument can be (minimally) formalised as follows. Suppose there are two periods when the government can default. The time gap between them is sufficiently modest (say one year maximum) and the other stakes sufficiently large that the question of usual time discounting (e.g. at a social time preference rate) can be ignored as second-order. Denote the losses from default (associated with general disruption of the economy, including from social disorder associated with irate holders of government debt as in the current Argentine case) as L_1 if the government defaults in period 1 and L_2 if it defaults in period 2. There is no loss if the government manages to escape default.

Now suppose that the probability that the government will be forced to default in period 2 is p_{d2}. Define the benefit of preventive default as B_{prd}. This benefit will equal the expected loss that would occur waiting until period 2, minus the known (probability = 1) loss of pre-emptively defaulting in period 1, or:

$$B_{prd} = p_{d2}L_2 - L_1. \tag{5.1}$$

If we define β as the ratio of the economic damage defaulting in period 2 to that defaulting in period 1, or $\beta = L_2/L_1$, then

$$B_{prd} > 0 \text{ only if } p_{d2}\beta L_1 > L_1, \text{ or } p_{d2}\beta > 1, \tag{5.2}$$

which requires that

$$p_{d2} > 1/\beta. \tag{5.3}$$

For example, if in June 2002 one believed that there was a 70 per cent probability that Brazil would be forced to default by the end of 2003, then it still would have been attractive for Brazil to default immediately – rather than waiting – only if the likely economic damage from a default 18 months later were 1/0.7 or 1.43 times as great as the damage from defaulting immediately. If the probability of default in period 2 is only 50 per cent, then it will be advisable for the government to hold out as long as possible rather than adopting preventive default, so long as the damage done by defaulting in period 2 is less than twice the damage done by defaulting immediately.

Although the proposition that $\beta \gg 1$, or "waiting too long" sharply increases the ultimate pain from default (so that $L_2 \gg L_1$), seems increasingly fashionable, there would seem to be little historical evidence to support it. Brazil adopted pre-emptive default in early 1987 under Finance Minister Dilson Funaro, and subsequently reversed the decision after finding it costly to trade credit and economic activity. The notion that Argentina's 2002 trauma could have been far smaller if the government had defaulted in mid-2001 is speculative at best. Even done six months earlier, the default would have meant the collapse of the exchange rate, the inevitability of a bank freeze and the consequential social tensions. The adroitness of managing these shocks could clearly have been better in the absence of some of the populist mistakes of the Duhalde government, but the conceptual issue is whether a government of identical expertise would have been able greatly to reduce the damage by defaulting earlier.

The key point here, however, is that even if the damage of waiting for a forced default is greater than defaulting pre-emptively, the difference between the two outcomes must be sufficient to outweigh the chances that default can be avoided by holding out for better times rather than defaulting immediately. It is by no means clear that the required condition ($p_{d2} > 1/\beta$) will generally be met even for governments increasingly at risk of default.

5.12 Conclusion

This chapter has identified the principal modalities of private sector involvement (PSI) in crisis resolution, prepared calculations of the amounts that have actually occurred in the principal crises of recent years

and examined the issues involved in judging the desirability of PSI. It has also sought briefly to link this issue to the recent debate on sovereign bankruptcy mechanisms and to explore the conceptual issues associated with the related question of when a sovereign should default.

The principal findings include the following.

- The conceptual underpinning of crisis resolution remains Bagehot's rule for LLR intervention (solvency versus illiquidity) and the Eaton–Gersovitz theory on the need for default pain as quasi-collateral in the absence of physical collateral.
- Consistent with this framework, the best approach to PSI remains an ad hoc one in which the form of PSI sought in each case is the most voluntary possible under the circumstances, in order to maximise future access to capital markets.
- Using narrow definitions, approximately $240 billion of PSI has been secured in the eight principal crises beginning with Thailand in 1997 and running through to Argentina in 2002.
- When more broadly defined as new disbursements over a three-year cycle beginning with the crisis year, PSI in the six major crises since 1999 amounted to $247 billion, which overshadowed cumulative public sector disbursements of $143 billion.
- There have been pendular swings in official sector assiduousness in securing PSI. After its absence in Mexico and mild presence in South Korea and Brazil, PSI was heightened to a more aggressive objective in such cases as Ecuador in 2000. There have also been contemporaneous differences in required PSI, best illustrated by the large headline PSI for Argentina and the absence of significant PSI for Turkey in the end-2000 financial rescues. There was also no PSI requirement in the most recent cases of Uruguay and Brazil. These swings in PSI policy likely reflect three factors: differing judgements from case to case on the degree of spontaneous capital flow revival possible; learning-by-doing on when to insist on PSI; and recognition of multi-country patterns that give "credit" for large PSI in one case and thereby reduce the need for PSI in another, without reducing the public sector signal seeking to dispel moral hazard.
- Argentina has revealed both the scope for very large quasi-voluntary PSI with the megaswap of mid-2001 and for large but deleterious involuntary PSI with the payments suspension in December 2001. The analysis here, moreover, rejects the critique that the megaswap and the additional round of IMF support that followed it were serious mistakes.
- Both the collapse of net lending to emerging markets in 1998–2001 and recent formal analyses suggest that concerns about moral hazard – a prime motivation for official sector emphasis on PSI – have been exaggerated.
- The massive total PSI in Argentina (at the end of the day on an involuntary basis) may underscore to the official sector that, at least for the

time being, the private sector has by no means escaped without bearing its share of the burden in financial crises. This may in turn help explain the absence of a PSI requirement in the latest round of substantial expansion in the already large official support to Turkey and the large support for Uruguay (in proportionate terms) and Brazil (in absolute terms).

- For the public sector, the critical decision continues to be a judgement on whether the country is solvent or insolvent, and thus whether LLR support should be provided or instead the country should pursue involuntary PSI. It is increasingly clear that political coherence is a vital determinant of solvency, as in most of the adverse outcomes (Russia, Indonesia, Argentina) it was a political collapse that precipitated default.
- At the same time, "crisis level spreads" in the secondary bond market can be a misleading gauge in calculating debt sustainability, as they can easily reach levels that could not be sustained indefinitely but can quickly drop once confidence is restored.
- Recognising this dynamic, the discussion joins the current debate on Brazil by maintaining that, although the spreads recently facing Brazil have been unsustainably high, they are likely to continue their post-election drop and the exchange rate is likely to rebound somewhat further, obviating the need for recourse to debt restructuring (under the assumption that Lula adheres to his pledge of fiscal prudence).
- For policy purposes, moreover, the official sector will usually do better to lean towards a Type I error (providing support when it turns out there is insolvency) rather than a Type II error (failing to provide support when the country could have been solvent). The basic reason is that the damage from default can be severe, as now being witnessed in the Argentine case.
- Similarly, an analysis of "when to default" shows that the currently fashionable view that countries should not "wait too long" to default implies a rather stringent set of conditions which may often not be met, even if the chances of eventual default are better than even. The reason is that as long as there is a substantial probability of non-default in the second period, it can require a relatively large increment in the damage from waiting as opposed to defaulting in the first period for the probability-weighted benefit of early default to exceed the cost. Yet there is little empirical evidence that the time-slope of default cost is severe. Thus, it would be difficult to demonstrate that an Argentine default in mid-2001 could have avoided many of the shocks that accompanied the 2002 default.

Notes

1 For comments on an earlier draft, I thank without implicating Leonardo Leiderman, Michael Mussa, Nouriel Roubini, Edwin M. Truman and John Williamson.

2 Calculated from World Bank (2002). This estimate is for end-1997 and refers to total external debt of all developing countries, less that of low-income countries other than China, India, Indonesia and Pakistan.
3 Bagehot's original formulation was for central bank intervention in support of banks under its jurisdiction. By analogy, the principle of socially beneficial public sector intervention on a temporary basis has been applied internationally to sovereign financial crises, as indeed it was in the 1980s in response to the Latin American debt crisis (Cline 1995, p. 92).
4 These were deposits in finance companies subjected to bankruptcy recovery or conversion, at a "haircut", to government-backed paper.
5 Even though the public figure is augmented to include late-1997 IMF support in Indonesia and South Korea and full-1998 official disbursements in the case of Brazil, despite dating of the main crises in the subsequent year in each case.
6 Thus, Roubini (2002) appropriately casts doubt on the relevance of the argument that under certain assumptions a "bank holiday" or forced standstill is fully equivalent to lender of last resort support. Essentially the required assumptions (no uncertainty, no risk aversion, full recognition that the problem is pure illiquidity rather than insolvency) are unrealistic.
7 The most direct comparison between interest costs of the old and the new bonds may be made on about $10 billion in straight-interest global bonds originally maturing in 2009–2017 and 2019–2030, exchanged for $10.7 billion in global bonds due to mature in 2018 or 2031 (Ministry of Economy 2001). The average interest rate on the original bonds was 11.2 per cent and, on the exchange bonds, 12.1 per cent. So there was an increase in the annual interest burden by about one-sixth, taking account of the increment in principal and interest. This increase was far less than implied by the secondary market rate of 16 per cent, which would have imposed a 43 per cent increase in interest costs ($16/11.2 = 1.43$). The text figure of 11.7 per cent applies the one-sixth increment to the full swap.
8 Mussa (2002, p. 40) places the initial savings somewhat lower at $12 billion. He also states that, after 2005, the swap increased total payments by $66 billion, but this calculation exaggerates by failing to take account of the additional payments that would have occurred from switching to longer maturities even at unchanged interest rates from the original bond terms.
9 The *Financial Times* (5 June 2001) reported that "Argentina's mammoth bond swap was given a good reception yesterday as international investors and analysts shared the view that the success of the dollar 29.5 billion operation was a first step towards further reform of the economy to enable a resumption of economic growth".
10 This present value calculation is based on the $10 billion fixed coupon swaps referred to in note 7.
11 In contrast, Mussa (2002) criticises the swap as unduly costly. He states that "interest rates for the Argentine swap of 16 percent . . . were not consistent with positive growth of the Argentine economy or with debt sustainability" and refers to the terms as "onerous" (p. 41). Unfortunately, this could give the false impression that the average interest rate on the replacement debt was 16 per cent, whereas it was only 11.7 per cent, as noted in the text. Mussa has clarified in private communication that he did not mean to imply the average interest rate on the replacement debt was 16 per cent. Instead, his analytical approach is to determine what discount rate was necessary to make the present value of the change in the stream of payments equal to zero. This discount rate, which is a very different thing from the new average interest rate, turns out to be 16 per cent. Mussa does not clarify what discount rate he would have considered acceptable. As indicated in the text, I consider a more appropriate evaluation to be a cost–benefit comparison taking account of the reduced probability of

default and depression at the macroeconomic level. The narrower focus on the internal rate of return on the swap itself is penny-wise and pound-foolish, as it completely omits the most important benefits: restoration of confidence and avoidance of economic collapse.

12 External reserves, excluding gold, fell from $22.5 billion at end-2000 to $18.9 billion at end-2001 (IMF 2002).

13 With high inflation, it is necessary to inflate during-year GDP to end-year prices. Otherwise the end-year public debt will be exaggerated relative to during-year GDP.

14 Cline (1995, p. 320); Central Bank of Brazil (2002); IMF (2002).

15 Brazil's GDP averaged $770 billion annually in 1995–1998 when the *real* was overvalued, and $540 billion in 1999–2001 after the early 1999 devaluation; but it stands at only about $340 billion at the early-November 2002 exchange rate of about 3.5 reais per dollar.

16 My colleague Morris Goldstein has taken the position publicly that there is a 70 per cent chance Brazil will be forced to default by the end of 2003. I agree instead with my colleague John Williamson (2002), who has stressed that the debt is sustainable if the recent adverse dynamics of self-fulfilling prophecy can be reversed.

17 The *real* appreciated about 8 per cent from its low point prior to the election to the beginning of November 2002 and spreads on the "C-bond" fell from about 2,300 basis points to about 1,800 basis points.

18 The alternative notion that the private sector would actually welcome more formal bankruptcy mechanisms to reduce uncertainty, sometimes heard from especially official sector experts, is I believe misconceived. For evidence to the contrary, see Chamberlin (2002).

19 Taylor's "slightly lower charges on IMF borrowing" would have to be multiplied by the volume of potential IMF lending and the probability it would be needed, on the one hand, and compared to the likely boost in spreads on the new exchange instruments of a likely much larger volume of outstanding bonds, along with associated underwriting fees. In most cases it seems unlikely the cost–benefit calculus would come out favourable to the country. But the more fundamental problem is that most governments are loath to signal to the market that they are thinking about ways to ease restructurings, lest they provoke unjustified doubts about their willingness to pay. Moreover, the popular reading of Eichengreen and Mody (2000) – apparently the "recent empirical work" referred to by Taylor – to the effect that bonds with rescheduling clauses are little (if any) more costly than those without is I believe a misinterpretation of their findings (see Cline 2001).

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Appendix Table A5.1

Table A5.1 Private and public sector disbursements to crisis economies (medium- and long-term, $ millions)

Country and crisis year	t*0*	t*1*	t*2*	t*1* + t*2*
Mexico (1995)				
Public	25,566	2,465	1,751	4,216
IMF	12,142	0	0	0
Multilateral	2,669	2,090	1,514	3,604
Bilateral	10,755	375	237	612
Private	17,354	28,971	27,482	56,453
Banks	8,234	7,137	12,031	19,168
Bonds	7,902	20,891	14,885	35,776
Other priv. cred.	1,218	943	566	1,509
Rescheduled	0	0	0	0
Reduced/ forgiven	0	0	0	0
Total	42,920	31,436	29,233	60,669
Thailand (1997)				
Public	9,053	2,501	3,400	5,902
IMF	2,477	678.25	273.46	952
Multilateral	1,062	1,142	1,118	2,260
Bilateral	5,514	681	2,009	2,690
Private	5,705	9,632	2,903	12,535
Banks	3,343	5,312	2,895	8,207
Bonds	2,319	300	0	300
Other priv. cred.	43	20	8	28
Resch. or reduct.	0	4,000	0	4,000
Reduced/forgiven	0	0	0	0
Total	14,758	12,133	6,303	18,437
Indonesia (1998)				
Public	13,997	7,151	4,428	11,580
IMF	8,758[a]	1,382	1,122	2,505
Multilateral	2,369	2,557	1,650	4,207
Bilateral	2,870	3,212	1,656	4,868
Private	8,683	5,609	2,641	8,250
Banks	4,566	2,285	2,285	4,570
Bonds	500	0	350	350
Other priv. cred.	315	24	6	30
Rescheduled	3,302	3,300	0	3,300
Reduced/forgiven	0	0	0	0
Total	22,680	12,760	7,069	19,830
Korea (1998)				
Public	33,272	4,522	1,509	6,031
IMF	27,400[b]	0	0	0
Multilateral	4,844	1,067	37	1,104
Bilateral	1,028	3,455	1,472	4,927
Private	31,445	8,673	12,702	21,375
Banks	1,050	4,407	7,781	12,188
Bonds	6,395	3,878	4,866	8,744
Other priv. cred.	0	131	55	186
Rescheduled	24,000	257	0	257
Reduced/forgiven	0	0	0	0
Total	64,717	13,195	14,211	27,406

Table A5.1 Continued

Country and crisis year	t*0*	t*1*	t*2*	t*1* + t*2*
Russia (1998)				
Public	7,247	1,215	738	1,953
IMF	5,326	0	0	0
Multilateral	1,293	561	574	1,135
Bilateral	628	654	164	818
Private	19,384	1,612	29,469	31,081
Banks	6,615	1,021	204	1,225
Bonds	11,607	0	75	75
Other priv. cred.	1,162	591	221	812
Rescheduled	0	0	17,369	17,369
Reduced/forgiven	0	0	11,600	11,600
Total	26,631	2,827	30,207	33,034
Brazil (1999)				
Public	23,977	5,256	n.a.	n.a.
IMF	8,760[c]	0	n.a.	n.a.
Multilateral	11,520[c]	4,468	n.a.	n.a.
Bilateral	3,697[c]	788	n.a.	n.a.
Private	34,844	41,858	n.a.	n.a.
Banks	24,958	30,510	n.a.	n.a.
Bonds	9,866	11,336	n.a.	n.a.
Other priv. cred.	20	12	n.a.	n.a.
Rescheduled	0	0	n.a.	n.a.
Reduced/forgiven	0	0	n.a.	n.a.
Total	58,821	47,114	n.a.	n.a.
Six countries[d]				
Public	113,111	23,111	11,827	29,681
IMF	64,862	2,061	1,396	3,456
Multilateral	23,757	11,885	4,893	12,310
Bilateral	24,492	9,165	5,538	13,915
Private	117,415	96,355	75,197	129,694
Banks	48,766	50,672	25,196	45,358
Bonds	38,589	36,405	20,176	45,245
Other priv. cred.	2,758	1,721	856	2,565
Rescheduled	27,302	7,557	17,369	24,926
Reduced/forgiven	0	0	11,600	11,600
0	230,526	119,466	87,024	159,375

Source: World Bank (2002); IMF (2001); IIF (1999).

Notes
a Includes $3 billion in late 1997.
b Includes $11 billion in late 1997.
c Includes 1998.
d Excludes Brazil 2001.

6 Comments on "Private sector involvement in financial crisis resolution: definition, measurement and implementation"

Leonardo Leiderman

Private sector involvement (PSI) in financial crises resolution is certainly one of the central practical and policy topics in the current thinking about the international financial system. William Cline's chapter is very useful as it not only reviews the many issues that are under debate, but also derives some estimates of PSI, starting with the Thai crisis of 1997. Using a narrow definition, the result is that approximately $240 billion were drawn in that context. There can be no doubt that this is a substantial amount which, when put together with official support, delivers an even higher amount of funds aimed at the resolution of these crises.

6.1 What should be the framework for the analysis?

In my view, it would be highly desirable to move one step ahead in the analysis and place PSI and official support within the more general context of debt dynamics and of "adjustment policies required for crisis resolution". Dynamic debt sustainability calculations are, in my view, the main tool being used by the typical emerging market investor in assessing the risk/return trade-offs associated with sovereign debt. Within that framework – which is basically the one discussed by Cline in the context of solvency – crises arise when the country becomes insolvent, or when under reasonable parameters of policy and of the economy's performance, the ratio of debt to GDP can be predicted to be increasing with time.

Within that dynamic framework, crisis resolution would mean having a set of interventions or adjustments at the present time such that, from then on, solvency is regained. Put differently, for crisis resolution these adjustments have to alter something quite fundamental in the key factors entering the debt dynamic analysis – i.e. current and expected future paths of fiscal primary surpluses, the country's growth rate and real interest rate, or the initial debt level – in a way that makes public debt dynamics sustainable. PSI and official support are certainly two major factors in that adjustment, but there are others of no less importance, such as adjustments in

the levels of fiscal spending and taxation, policies to promote growth, and so on.

In my view a hypothetical country where, instead of relying on official support or PSI as defined in the chapter, public spending – say on education or health – is reduced and/or taxes are raised in an attempt to increase the primary surplus, and thus make the debt dynamics more credible, is a country where there would be a sizeable amount of "private sector involvement in crisis resolution". Yet such involvement would not be included in the PSI definition used in the chapter. Viewed in this broader context, private sector involvement can indeed reach enormous magnitudes.

6.2 A different perspective on the Argentine crisis and megaswap

Given that Cline draws quite heavily in the chapter on the Argentine crisis and reaches some important conclusions from it on the PSI issue (especially in the context of the June 2001 megaswap), it is well to provide a somewhat different view of the crisis. Taking part in the Wall Street analysis and discussions during the time of the Argentine episode provided me with what I hope will be useful insights for the debate.

By the end of the first quarter of 2001, market participants became increasingly concerned about Argentina's debt dynamics. Accordingly, the Wall Street consensus was that Argentina's public sector was too big, that it was crowding out private sector investment and consumption, and that a fiscal adjustment of about 2–3 per cent of GDP would be required to regain sustainability. Given the large size of the public sector, it was repeatedly emphasised that implementing the fiscal adjustment by reducing public spending would be more beneficial for growth than having one additional round of rises in taxes. This was precisely the plan of the newly appointed finance minister, Mr Lopez-Murphy, but unfortunately there was weak political support within government for these measures. This led to the minister's resignation and the appointment of Mr Cavallo as the new finance minister.

Let me reiterate and leave no doubt on that critical time and event for Argentina. The Wall Street consensus view at the time was that the needed adjustment was of about 2–3 per cent of GDP in the form of spending cuts. As far as I can tell, had Argentina undertook such an adjustment, the whole crisis could probably have been avoided. Even in the third quarter of 2001 – when foreign exchange reserves were being depleted – there was still a case for restoring Argentina's solvency with a proper fiscal adjustment.

Argentina's crisis, in my view, was mainly a case of cumulative policy mistakes. Instead of addressing the fiscal problem directly, Mr Cavallo aimed at using fiscal policy instruments to provide more incentives for growth. His idea was that supply-side measures had very good potential for raising the country's economic activity, which in turn would improve

the fiscal accounts, lower the real interest rate and provide for more sustainable debt dynamics.

It is in this context that he also announced that the peso would be shifted to a basket rather that to a 1:1 relation to the US dollar, something that, given the trend of US dollar appreciation at the time, would probably have helped improve Argentine competitiveness in the short term. The market properly interpreted this as saying "the Minister wants to change the currency regime to provide more flexibility", which in turn triggered the start of deposit and capital outflows from Argentina. Interestingly, up to that point most analysts were dealing with various options for restoring solvency, while still preserving the 1:1 convertibility regime used by Argentina in the 1990s. The mere announcement of the plans about a shift to a basket moved Argentina to a "double D" discussion: default and devaluation.

Then came the megaswap of June 2001, which Cline characterises as favourable to Argentina. Cline's view is that the megaswap considerably improved Argentina's liquidity position and thus reduced the probability of default-cum-devaluation. In his opinion, the megaswap was a good example of PSI, in this case delivered mainly by moral suasion of domestic bondholders.

However, the market (and my own) view was quite different. When market participants were asking themselves whether this operation did improve Argentine debt dynamics, in a solvency or present-value sense, the answer was negative. The interest rates offered in the swap were too high to ensure Argentina's debt sustainability. Accordingly, the megaswap failed not because of a market misunderstanding, but because it did not address the crucial issue of the fiscal adjustment needed to restore sustainability.

For the megaswap to have been successful, it would have had to be accompanied by a substantial cut in public spending – but that did not happen. Moreover, the megaswap (and the relatively high interest rates associated with the new bonds) gave the impression that the authorities were starting to treat domestic bondholders differently from foreign bondholders, and this certainly increased the degree of Argentine aversion at that time for emerging market global investors.

In the end, after a whole year of policy mistakes and errors in the diagnosis of the Argentine economic problem, by the domestic authorities and the IMF, the country went through the worst possible exit of social and political crisis, default and devaluation.

6.3 Conclusion

While I find the positive review and quantifying of PSI issues in Chapter 5 to be very useful, I believe one should be very cautious about the normative conclusions as to what works and what does not. As the foregoing discussion of the Argentine episode illustrates, the whole assessment of

whether it would be desirable for the authorities to take the risks of Type I error (providing support when it turns out that the country is insolvent) or those of a Type II error (failing to provide support when the country could have been solvent) is one that, in my view, goes beyond the analytical framework underlying the chapter.

Part III

How to involve the private sector?

7 Private sector involvement in crisis resolution and mechanisms for dealing with sovereign debt problems

Nouriel Roubini

7.1 Introduction

In the last decade, many emerging market economies experienced a currency and/or financial/banking crisis (Mexico, Thailand, Indonesia, South Korea, Russia, Brazil, Ecuador, Turkey and Argentina, to name the main ones). In each one of these crises, in addition to sharp falls in asset prices and economic activity, the crisis country faced a large external (and sometimes domestic) financing gap that was the result of a combination of large pre-crisis current account deficits and large reversals of capital flows ("sudden stops", "capital inflows reversals", short-term government debt rollover crises and/or liquidity runs on the banks' domestic or cross border short-term liabilities). These facts support the new view that the financial crises in the past decade have been mostly "capital account" crises (or "sudden stop" crises) having to do with balance sheet stock imbalances (maturity, currency and capital structure mismatches) rather than just traditional flow imbalances.

While one would ideally want to prevent crises from occurring in the first place, once one occurs the central issue becomes one of crisis management and resolution. And once an external financial gap emerges in a crisis, one of the main policy issues is how to fill it. Domestic policy adjustment and a painful economic contraction may lead to a reduction or reversal of the current account deficit, but large capital outflows (and the unwillingness of investors to rollover short-term claims on the country, its government and its residents) usually imply that the financing gap will remain large. Thus, in addition to the role of the country's adjustment, there are two ways to fill such a gap: official financing (or "bail-outs") by IFIs and other official creditors, or private financing in the form of "bail-ins" of private investors, also referred to as private sector involvement (or PSI) in crisis resolution. This bail-in can take various forms along a spectrum going from very coercive to very soft forms of PSI: at one coercive extreme are defaults on external (and domestic) claims (Ecuador, Argentina, Russia); in the middle are debt/suspensions and standstills, semi-coercive debt exchange offers and semi-coercive rollover agreements (Ukraine, Pakistan, Korea, Indonesia, Thailand); on the softer end of the

PSI spectrum are semi-voluntary rollover agreements and other mild forms of PSI (Brazil in 1999, Turkey in 2001) or outright bail-outs with little PSI (Mexico in 1995, Turkey more recently).

Indeed, the issue of bail-ins versus bail-outs – or private sector involvement in crisis resolution – is the most controversial question in the debate on the reform of the international financial architecture. While there is broader agreement on measures for crisis prevention, there is much more disagreement about how to approach crisis resolution. Even the definition of the problem has been debated with different terms used over time to characterise the issue at stake: bail-in, burden sharing, private sector involvement in crisis resolution, constructive engagement of the private sector, private sector contribution to resolution of capital account crises, etc.

And, apart from the formal definitions, the substantial questions have been hotly debated: will PSI help to resolve crises or lead to a severe reduction of financing to emerging market economies? When to do bail-ins and when to do bail-outs or a combination of both? Is moral hazard a serious issue? Should we introduce collective action clauses into bond contracts or move to an international bankruptcy regime? Should PSI be concerted/coercive or semi-voluntary/catalytic? When should access to official (IMF) resources be exceptional in size and when should it be normal? Should debt suspensions/standstills be part of the crisis resolution toolkit? Should capital/exchange controls be used as part of crisis resolution? These are all highly controversial questions on which there is a wide range of views.

One should also observe that, while the Asian crisis led to the perception that capital account crises were the result of vulnerabilities in the private, rather than public sector balance sheet, sovereign debt problems have been central to most of the currency and financial crises of the past decade, especially in Mexico, Russia, Brazil, Ecuador, Pakistan, Romania, Ukraine, Turkey, Argentina (and most recently again Brazil). Also, sovereign debt problems are central to the debate on the desirability of PSI in cases such as Nigeria and Côte d'Ivoire. Thus, the perception that recent capital account crises are private sector crises, rather than sovereign ones, is incorrect. And even in the case of Asia where public deficits and debts were not the initial trigger of the crisis, balance sheet imbalances of the private sectors (the financial and banking system especially) became implicitly or explicitly sovereign liabilities when governments decided to guarantee private sector external liabilities. And in some cases, such as Indonesia, the severity of the economic crisis following the financial crisis led to the emergence of a large stock of sovereign domestic and foreign debt that partly turned a private sector crisis into a sovereign one.

More recently, the debate on PSI has centred on the issue of the appropriate mechanism to be used to ensure orderly sovereign debt restructurings when this becomes unavoidable. While recent sovereign bonded debt restructuring cases (Pakistan, Ecuador, Ukraine and Russia) have been successfully completed with the use of unilateral exchange offers (at times

complemented by the use of exit consents), many have expressed dissatisfaction with this approach. There are two alternative mechanisms that could provide an alternative restructuring regime: first, a "contractual approach" where collective action clauses (CACs) are introduced in most bond contracts and used to achieve bonded debt restructurings.[1] Second, a new "statutory approach" where an international bankruptcy regime for sovereigns is created and used to achieve sovereign debt restructurings. The latter regime – which has been suggested in past decades by a number of authors – has been recently proposed again by Anne Krueger, the first Deputy Managing Director of the IMF, in a series of speeches and public statements (Krueger 2001a, 2001b, 2002).[2]

So one of the new policy questions is when sovereign debt restructuring becomes necessary, what is the appropriate regime that allows orderly restructuring, while safeguarding the balance of rights of both creditors and the debtor? Is it better to continue with the market-based status quo regime where exchange offers have been used to do bonded debt restructuring? Or should we move to the wholesale use of collective action clauses? Or should we consider creating an international bankruptcy mechanism such as the one proposed by the IMF?

The issue of international bankruptcy regimes has taken on even greater importance after the decision by Argentina in 2001 to default on its sovereign debt. Since a new international bankruptcy regime does not yet exist, and collective action clauses are not contained in most of the international bonds issued by Argentina, is it going to be possible to achieve an orderly bonded debt restructuring in Argentina by using status quo techniques, such as bonded exchange offers? Or will the restructuring process be long, costly, protracted and disorderly given the heterogeneity of the claims and the creditors? In part, the desirability of a new international bankruptcy regime will depend over the long run on how messy, delayed and disorderly the Argentine debt restructuring turns out to be.[3]

The G7 doctrine and framework for PSI policy has also evolved over time. After the Asian and global crisis of 1998–1999, the G7 and the IMF undertook a process of reform of the international financial architecture that had two components – crisis prevention and crisis resolution. In the context of crisis resolution, the G7 evolved over the 1999–2001 period towards a tentative consensus, the "Prague Framework", that was agreed at the autumn 2000 meetings of the IMF in Prague. But this framework left many difficult issues open, such as what to do in large, systemically important "liquidity" cases. Thus, all of the G7 have expressed a desire to improve this framework. Moreover, while the previous US administration (under Rubin and Summers) had leaned towards a case-by-case, constrained discretion approach that allowed for the option of providing large IMF packages when necessary, the new US administration took, at least rhetorically, a harder official stance against large IMF "bail-out" packages.

In this regard, the new US position came closer to that of other G7

members (especially the UK, Canada and Germany) who also favoured clearer rules to limit the ability of the IMF to provide exceptional finance to countries in crisis. But progress by the G7 and the IMF towards defining a new and clearer PSI framework has so far been limited.

Moreover, against the background of the official rhetoric of "no more bail-outs" and not having American "carpenters and plumbers" taxes pay for the bail-out of poor-performing emerging market economies, the reality of the new political and strategic interests of the USA and the other G7 countries has emerged. Even before September 11, 2001, but more so afterwards, the US tendency to support financial aid to countries that are considered as friends, allies or otherwise strategically or systemically important (Turkey, Pakistan, Indonesia and possibly Brazil) has clearly emerged, more strongly even than during the previous administration. Even in the case of Argentina, where IMF support was eventually cutoff leading to the sovereign default of this country, political considerations have been dominant: the August 2001 augmented package was pushed for political rather than economic reasons. And political considerations are likely to become even more important in decisions about official lending in the new global geo-strategic security climate.

Thus, the current official PSI policy framework of the G7/IMF is in partial disarray, as it has several gaps and gives confused signals on many crucial issues. Specifically, there is:

- a large gap between the new official rhetoric of no bail-outs and the continued practice of politically motivated bail-outs;
- fuzziness of the official framework on important issues such as when exceptional access versus normal access to IMF resources is warranted, whether PSI should be voluntary or coercive, and what to do about systemically important countries that may be too-big-to-fail;
- an open debate on whether one should follow a "contractual" versus a "statutory" approach to sovereign debt restructurings.

This chapter will thus address the broad open issues in PSI theory and policy and the debate on the alternative mechanisms for sovereign debt restructurings. Section 7.2 will start with a review of what PSI is and its logic, and PSI policy in the 1990s versus the 1980s. Section 7.3 will offer an analytical framework to understand the logic of PSI and the relative merits of bail-ins versus bail-outs; we will take a novel approach by stressing the need to be clear about the economic arguments justifying official sector intervention in crisis resolution. Section 7.4 will present a discussion of the pros and cons of the three alternative approaches to sovereign debt restructuring (contractual versus statutory versus market-based status quo). Section 7.5 will discuss the open issues in the G7/IMF PSI framework. Section 7.6 will present some concluding remarks.

7.2 Basic issues in private sector involvement in crisis resolution

What is PSI?

The main issue in PSI policy is what to do when there is a crisis in an emerging market and there is a potentially large external financing gap even after domestic policy adjustment by the crisis country. In principle, there are three options.

First, a large "bail-out" in the form of an official support package filling most or the entire financing gap (where the term "bail-out" is loosely, and somewhat improperly, used to describe large official loan packages). Given the size of external financing gaps, this implies exceptional or high access financing packages from the IMF/IFIs. Ideally, the IMF support will be catalytic – that is, the country's policy adjustment together with IMF financing, in amounts large but *ex ante* smaller than the financing gap, will be able to restore investors' confidence and market access so that, *ex post*, the financing gap not filled by the IMF resources will be filled by private capital reflows.

Second, a full bail-in of private investors (debt rescheduling or restructuring) with little provision of official financing. Debt suspensions, standstills and/or default followed by debt reduction may be warranted in cases where the country's debt path is unsustainable and the country is effectively "insolvent" by some criteria. Significant macro-policy adjustment and reforms are also essential in these cases to restore confidence and growth prospects.

Third, a combination of official financing, "appropriate" forms of PSI and policy adjustment by the crisis country. In this third case, if IMF financing in amounts that are "normal" (rather than "exceptional") and country adjustment are not likely to restore investors' confidence and market access at sustainable interest rates, the form of PSI is more likely to be somewhat coercive or concerted rather than being soft and catalytic (as in the first case).

Rationale for PSI

The rationale for PSI is pretty straightforward. First, if there is a crisis, it is likely that there will be an external financing gap even after policy adjustment by the country; second, official support can help to fill the gap but not fully; and third, exceptional financing is not only infeasible but also undesirable, as large bail-outs may lead to creditor and debtor "moral hazard". Given this, there is a need for "appropriate" forms of PSI that will help to fill the external financing gap.

Trade-offs in PSI approaches

There is an inherent trade-off between the amount of bail-in versus the amount of bail-out, for a given external financing gap: more of one means less of the other. Ideally, one would want to keep official support to the minimum necessary (to avoid moral hazard), but also to avoid more coercive forms of PSI (as they may negatively affect private flows of capital to emerging markets).

But there is some tension, or even contradiction, in this view. Smaller IMF packages may mean more PSI and more PSI of a more coercive form, while less coercive PSI may mean the need for larger official packages. The new US administration faces a similar tension between the hawkish views of some (such as those represented on the Meltzer Commission who preferred no more large bail-outs and more restructurings and defaults) and the Wall Street, national security and foreign policy interest groups (who tend to prefer bail-outs to bail-ins).

PSI in the 1980s versus the past decade

The 1980s developing countries' debt crisis had its own PSI (suspension of payments on syndicated bank loans, concerted loan rollovers and new money) and eventually led to debt reduction (the Brady Plan). So what is new in the 1990s? First, the instruments (bonds and short-term interbank lines rather than syndicated medium- and long-term bank loans); second, the creditors (bondholders in addition to banks); and third, the debtors (private debtors in addition to sovereign ones). In the 1980s, the challenge was to restructure medium- and long-term syndicated bank loans to the sovereign. In the last decade, the challenge has been to restructure both sovereign and private bonds as well as short-term interbank lines.

There are a number of flawed arguments on how easy PSI was to do in the 1980s versus the 1990s. It has been argued that, in the 1980s, it was easy to restructure loans of a small number of homogeneous regulated banks pliant to forbearance, while in the 1990s it would be impossible to restructure bonds (without collective action clauses) held by thousands of creditors. It is also often argued that it would be hard to restructure interbank lines as investors would rush to the door before the concerted rollovers could be arranged. But the reality of the last decade has instead been that there has been lots of PSI, both through bond restructurings and interbank rollover arrangements.

In the 1980s, PSI was often not that easy to arrange as there were collective action problems of: co-ordinating many different creditors; hundreds of banks with different interests; holdout problems, especially among smaller banks; and non-homogeneous syndicated loans that had to be restructured into more homogeneous instruments. Conversely, experience over the past decade has been that sovereign bond restructurings are possible even without collective action clauses (CACs); see the

cases of Pakistan, Ukraine, Russia, Ecuador (and hopefully Argentina in the near future) and, less successfully, Romania; and that the bail-in of interbank lines is also possible: see South Korea, Indonesia, Thailand, Russia, Brazil and, somewhat unsuccessfully, Turkey.

In general, the 1990s crises were addressed with a combination of partial bail-outs and bail-ins, despite the superficial perception among some that international financial crises were mostly dealt with through large "bail-outs". More recently, the increasing hawkishness of the official sector on the PSI issue has been associated with several cases of coercive "bail-ins" and sovereign defaults (Russia, Ecuador and Argentina for defaults; Pakistan and Ukraine for coercive bonded debt restructurings).

These episodes of bonded debt restructuring and default have led to a debate on the appropriate regime or mechanism to achieve orderly debt restructuring. But before we discuss appropriate mechanisms to deal with (sovereign) debt problems, it is useful to consider more formally the analytical and economic arguments on the relative merits of bail-ins versus bail-outs.

7.3 An analytical scheme for the analysis of bail-ins versus bail-outs

In this section, I will discuss the analytical underpinnings and logic of PSI and analyse what economic theory suggests on the relative merits of bail-ins and bail-outs. In doing this, I will take a somewhat novel approach. Most of the policy work on PSI starts from the assumption that, once a financial crisis occurs, official financing will be a main source to fill the external financing gap, while PSI and bail-ins may or may not be added to the crisis resolution programme. I will take the opposite approach. I will start by assuming that we are in a world where official creditors do not exist and consider what happens when a financial crisis occurs and the debtor (either the sovereign and/or the private sector of the country) has to service a debt due to foreign private creditors. In such a world, if capital outflows or roll-offs of debt occur, there is by definition no official creditor that can provide finance while private creditors exit the country. If the country does not have enough liquid reserves to service its debt, some form of bail-in or PSI or not-fully-voluntary debt reprofiling will have to occur by definition.

We next consider market failures or externalities that would prevent socially efficient (*ex ante* and *ex post*[4]) debt restructurings or market-based resolutions of debt servicing difficulties. Once these market failures are identified (such as self-fulfilling bank runs or panic-driven debt rollover crises), the case for official finance can possibly be made and the issue of how much "bail-out" should be provided can be meaningfully addressed. So we will start from a world where crises necessarily lead to bail-ins and then make the case for why, when and how much official finance may lead to more orderly and socially efficient crisis resolution.

Crisis resolution with and without official lending

Consider a world where there are essentially three players (we will introduce a fourth – official creditors or the IMF – at a later stage of the analysis): a debtor country government that borrows from domestic and international private agents; the private sector of the debtor country that is also borrowing from private international creditors; and a group of private international creditors.[5]

What are the sources of debt servicing problems in this world? A sovereign debtor may have difficulties in servicing its domestic and external debt because of bad shocks, i.e. poor economic fundamentals. A sovereign debtor may also not service its debt because of unwillingness to pay (given the existence of sovereign immunity), i.e. opportunistic default. A sovereign may opportunistically default both in good and bad states of the world. A variant of this opportunistic default is the case where, after receiving a foreign loan, the sovereign debtor decides to exert poor policy effort (high consumption and low investment when the loan was originally meant to finance investment; or weak economic reform policies) so that the likelihood of a bad shock occurring rises. Both of these cases are a variant of the moral hazard problem: once the loan is received, the creditor can only partly observe the behaviour of the borrower and cannot control its actions (policies, default decisions, etc.). Indeed, the theoretical literature on sovereign debt in the 1980s (starting with Eaton and Gersovitz 1984) stressed the importance of opportunistic default on sovereign debt.

With opportunistic default and moral hazard, access to debt/borrowing is more restricted (relative to a case where such unwillingness to pay is not an issue) unless there are reputational mechanisms that can sustain debt repayment and/or punishment costs associated with default when the borrower is able to pay (see Eaton and Fernandez 1995 for a survey). Given such informational asymmetries, limited enforcement problems (partial sovereign immunity) and the possibly counterbalancing effects of reputation and punishment cost, an optimal amount of borrowing will be determined. In this world, the cost of default (output costs, trade costs, cutoff from international capital markets) is the price that has to be paid to minimise the risk of opportunistic default. These costs are stressed by those (like Dooley 2000) who are concerned about reforms that would make sovereign default too easy (such as more orderly debt restructuring arrangements) in a world with debtor moral hazard: the result could be less lending to emerging markets.

In the world just described, debt servicing difficulties may also arise from creditor co-ordination problems. The simplest case is one of a panic-driven creditor run (Sachs 1984 and many other models of self-fulfilling runs[6]) when there is short-term debt in excess of liquid assets. The run may occur both in good and bad states of the world and in states where the debtor is exerting good or bad policy effort. For the moment, assume that moral hazard is not a problem so that nature is the only source of uncer-

tainty. Then, co-ordination-failure-based liquidity runs are costly both in cases where there is a bad state of the world and a good state of the world. When the state of the world is good, a run causes severe costs in the form of real liquidation/bankruptcy costs. If creditors could be convinced to rollover such debt, these costs could be avoided altogether. Even in bad states of the world where the debtor needs to reduce its debt burden, co-ordination failures may induce *additional* avoidable bankruptcy costs on top of the real costs of the bad shock. The simplest way to avoid these costs is for creditors to accept the unavoidable economic cost due to bad shocks, but to rollover their liquid claims that are experiencing a run.[7]

Co-ordination failures and self-fulfilling runs can also occur when moral hazard is an issue. In those cases, the debtor may have an opportunistic incentive to default in some states of the world and/or an incentive to exert less economic effort. But even in those situations, a self-fulfilling creditor run cannot be ruled out.

The existence of such creditor co-ordination failures is one of the main justifications for an international lender of last resort (ILOLR), as long as such co-ordination failures cannot be easily resolved in the absence of an ILOLR.[8] Of course, as discussed in detail below, such liquidity support may induce debtor or private creditor moral hazard. Thus, the benefits of avoiding self-fulfilling runs have to be weighed against the costs deriving from such distortions.

There are other potential justifications for an IMF-style institution and its role as a lender in a crisis situation.[9] First, even when the debtor has an incentive to exert poor policy effort and opportunistically default, the official creditor can control/monitor policy effort (via IMF conditionality-based lending) and thus provide liquidity that reduces avoidable liquidation costs or the excessive – socially inefficient – economic/policy adjustment that would occur in the absence of official finance.[10]

Second, IMF liquidity support could prevent the international spread of financial crises (crisis contagion) that can occur if systemically important countries experience a crisis. In this sense, the IMF may have the same role as a domestic lender of last resort (or deposit insurance) in avoiding the spread of bank runs.[11] This argument in favour of IMF lending is a variant of the lender of last resort role of the IMF in liquidity runs. Moral hazard deriving from too-big-to-fail distortions is obviously an issue to be kept in mind when considering such a role.

Let us consider in more detail the first justification for the existence of an official creditor like the IMF – the need for an ILOLR to avoid self-fulfilling or panic-driven liquidity runs. Let us assume first that there are no debtor or private creditor moral hazard problems; we will introduce these distortions later. In the absence of such an ILOLR, if a run occurs when the debtor is in a good state of the world, the appropriate solution is a voluntary rollover of the debt that avoids the liquidation/bankruptcy costs. If such a rollover cannot be achieved, socially inefficient liquidation costs will occur. If a run occurs when the debtor is in a bad state of the

world and there is no moral hazard, the right approach is for creditors to take a haircut (equivalent to the amount of insolvency of the debtor in the bad state) and avoid the additional liquidation costs deriving from a disorderly liquidation of the illiquid assets of the debtor. If such a partial rollover is not achievable, again socially inefficient liquidation costs will result which are above the unavoidable costs deriving from the bad shock.

What would be the market solution to a liquidity run when there is no ILOLR? There are several options: securing liquidity in pure liquidity cases; sovereign debt suspensions/standstills; debt rollover agreements; holding enough liquidity (foreign reserves) to avoid a run; private contingent credit lines; and debt rollover options. Let us consider these solutions in more detail.

Securing liquidity in pure liquidity cases would appear to be the first and best way to deal with a liquidity run. If the crisis is due to a pure liquidity run and there is no doubt that the sovereign is solvent, the country should be able to receive new liquidity (loans) from private international creditors to avoid a run. In an international context, there is plenty of international liquidity (liquid assets) that can be provided by the markets (inside liquidity in the system). Thus, if the country is not able to receive such liquidity support, there must be some uncertainty about the fundamentals of the country and whether the country is truly solvent. This point is important for the discussion of an ILOLR: it is often argued that, in liquidity cases, a full ILOLR is warranted. But if the country does not receive private international liquidity support, the case may not be one of pure liquidity and thus a full ILOLR may not be warranted either.

In general, it is not obvious that there are "pure" liquidity cases. Formally, a country may not be insolvent in the sense that its debt servicing problems are caused by sudden illiquidity (lack of market access and unwillingness of creditors to roll over credits), but even such a country may have weak fundamentals and serious policy shortcomings. Indeed, it is hard to believe that a country with fully sound fundamentals and policies would become illiquid and subject to self-fulfilling speculative runs. Even in theory, if fundamentals are strong enough, such multiple equilibria runs can be ruled out, as weak fundamentals are necessary for an economy to be in the multiple equilibria region. Empirically, all observed cases with something close to an illiquidity problem were characterised by fundamental or policy weaknesses. In cases like Mexico, South Korea, Brazil and Indonesia, that are conceptually closer to being an illiquidity problem, some serious macro, structural or policy shortcomings certainly played a role in triggering the crisis.[12]

Moreover, even if a pure panic were to lead to a run in a pure liquidity case and, for some reason, the borrower has no access to new private liquidity, there is another solution that is equivalent to an ILOLR – a debt standstill/suspension. In particular, while in such pure liquidity cases one could make the argument that a "full bail-out" is the right policy, one could as well argue that the alternative policy of a "full bail-in" is as desir-

able, efficient and optimal.[13] Indeed, if there is no uncertainty, no risk aversion and there is a pure liquidity run, both the full bail-out and the full bail-in are equivalent solutions to the collective action problem faced by investors.

Paradoxically, in these pure liquidity cases, the bail-in solution may be superior to the bail-out one. The threat of a full bail-in solution is sufficient to sustain *ex ante* the good equilibrium of "no run" without having to resort to such a threat *ex post*. In fact, if all agents know that, if and when a run occurs, the debtor will introduce standstills and/or capital controls to avoid the run, the incentive to run will disappear. Thus, the threat of a full bail-in is *sufficient* to rule out the bad run equilibrium and, *ex post*, no run will occur and the threat will not be exercised.[14]

This conceptual superiority of the full bail-in solution is, however, extremely fragile in practice. For example, if the case under consideration is not one of pure illiquidity but one in which some policy shortcomings lie behind the illiquidity; or if there is some uncertainty about the fundamentals and the policy response to the crisis; or if creditors are risk-averse, then the dominance of a "full bail-in" solution will break down. When fundamentals are weak and uncertain and agents are risk-averse, they will react to the expectation or threat of a bail-in by rushing to the front of the queue. And in this way a bail-in may imply real costs and financial losses to investors. Indeed, the fundamental problem with any solution that represents partial or full bail-in is that it may actually trigger a crisis earlier or even trigger a crisis that would not otherwise have occurred in the absence of such a policy.[15,16]

What about other market solutions to liquidity runs? Debt rollover agreements suffer from the same problems as the provision of liquidity during a panic; if there are doubts about solvency, lenders will not provide loans. They may also be hard to arrange as there is a collective action problem among creditors. Countries could hold enough liquidity (foreign reserves) to avoid a run by accumulating large balance of payment surpluses for a while (as South Korea has done after the 1998 crisis to build a "war chest" of reserves). But this solution begs the question of why there is a maturity mismatch in the first place. Also, holding reserves equal or in excess of short-term debt is very costly in opportunity cost terms. And borrowing liquid reserves with longer-term loans is hard and costly for most emerging market debtors. Private contingent credit lines may also be hard to arrange and may not provide net new financing if creditors can roll-off other exposures to the country. There is also a moral hazard problem as they may lead to risky policies being pursued in the first place.[17] Debt rollover options, if appropriately priced in the market, are just another way of saying that countries should not borrow too much at short-term maturities.[18]

The implications of moral hazard and unwillingness to pay

Let us consider next how the discussion changes once we introduce moral hazard. When the debtor can strategically default (as in Dooley and Verma 2001) or affect its solvency through its actions/efforts (as in Kumar *et al.* 2000), there must be punishment mechanisms to reduce such distorted incentives for the debtor. Dooley and Verma (2001) show that the costs of renegotiating debts should not be too low. Otherwise, opportunist sovereigns may use debt suspensions too often and the flow of capital to emerging markets will shrink in equilibrium. This means that default costs (output costs in the case of Dooley and Verma (2001), or trade sanctions costs or cutoffs from international lending in other models) are necessary to support international lending to emerging markets when lenders cannot distinguish between default due to inability rather than unwillingness to pay. Compared to the case where lenders can distinguish between the two types of default, the maximum sustainable amount of foreign debt is lower.[19] Thus, debt restructuring must be costly to reduce opportunistic defaults, but not too costly as there are cases of inability to pay (insolvency) where orderly restructuring would benefit all parties. This result has implications for the debate on the international bankruptcy court (or the IMF's SDRM). It suggests that, if such reforms make the decision to default less costly to the debtor, the flow of capital to emerging markets may shrink, thus hurting debtors.[20]

In Kumar *et al.* (2000), where moral hazard from unobserved effort is the distortion, short-term debt provides a punishment mechanism: it imposes costs on the debtor country that are related to outflows of short-term capital that take place in bad states of the world. Issuing short-term debt allows the debtor to signal commitment to fiscal discipline. Here, the probability of a bad state is affected by borrower effort. In equilibrium, the existence of short-term debt affects the amount of effort undertaken because it increases the cost to the debtor of a bad state.

How does the existence of an official creditor (and international lender of last resort) affect the strategic game between private creditors and sovereign debtors and the desirability of an ILOLR? This is a most complex question that has been addressed by a number of authors: see Bulow and Rogoff (1988b), Rogoff (1999), Wells (1993), Klimenko (2001), Bhattacharya and Detragiache (1994), Spiegel (1996), Paasche and Zin (2001), Kumar *et al.* (2000) and Dooley and Verma (2001).

In general, the case for an international lender of last resort is severely weakened when there is moral hazard, as such support exacerbates moral hazard distortions. Take the Diamond–Dybvig model. Without an ILOLR, panic-driven runs may occur, but the existence of a lender of last resort (or mispriced deposit insurance) creates moral hazard ("gambling for redemption" games) when the bank owners do not put enough capital into the bank. Thus, liquidity support leads to moral hazard even if it can prevent liquidity runs. In a closed economy set-up, such a moral hazard

distortion can be reduced through incentive-compatible deposit insurance, capital adequacy regulation and the overall supervision and regulation of the bank. And, in the event that financial distress occurs, the central bank or regulatory authority has the power to seize the bank, change its management, restructure it, merge it with other banks or even liquidate it.

In an international context, the moral hazard distortions deriving from the existence of an ILOLR may be exacerbated. The effects on the incentives of the debtor ("gambles for redemption") are similar to the closed economy set-up if the ILOLR support is implicitly or explicitly subsidised. But the distortion to debtor's incentives is smaller if IMF support is in the form of loans that do not have a subsidy element. The provision of ILOLR implies that the official lender can distinguish between runs due to inability to pay versus those due to an unwillingness to pay. If, however, such an informational advantage does not exist, bail-in solutions may be socially superior to bail-out solutions.[21] Moreover, in an international context, the powers of a domestic regulator are not available: sovereign debtor countries with sovereign immunity cannot have their assets seized, and nor can they be merged or closed down.[22] Thus, the tools available in an open economy to reduce moral hazard distortions are more limited.[23]

On the other hand, the empirical evidence on moral hazard (both debtor's and creditors') in international lending is extremely thin. For example, Jeanne and Zettelmeyer (2001) show that domestic taxpayers, rather than the IMF/IFIs or creditors, pay for the costs of official support packages. Thus, the idea that emerging market economies borrow too much and follow reckless economic policies in expectation of being bailed out by the IMF has little basis. The idea that countries would willingly follow policies that lead to currency, banking and financial crises and possible default in expectation of a bail-out is not supported by the evidence. The costs of crises are severe and crises lead (good and bad, democratic and autocratic) policymakers to be removed from power.[24] It is also true, however, that while a sovereign may not deliberately follow reckless policies to get IMF support, its policies may at the margin be biased towards risky and unsound behaviour (lower effort) if there is some expectation of external financial support.

Dooley and Verma (2001), Kumar *et al*. (2000), Gai *et al*. (2001) and Ghoshal and Miller (2002) discuss the role of an ILOLR (or official creditor lending) in models with moral hazard and/or opportunistic default. In Kumar *et al*. (2000), self-fulfilling runs can also occur because of "sunspots", even in good states of the world. Thus, there is a trade-off between the disciplining role of short-term debt and its role in increasing the probability of self-fulfilling runs. Also, since there are moral hazard distortions, full insurance in the form of an ILOLR is not optimal as it negatively affects debtor country effort. So there is a trade-off between the role that the ILOLR plays in preventing panic-driven runs and the moral hazard that its existence creates. These authors show that IMF conditionality is a solution to this problem. If IMF lending is conditional on policy effort that can be effectively monitored by the IMF, runs can be avoided

while ensuring good effort. However, such an equilibrium requires a "carrot" (a reduction in debt in the bad state, i.e. a bail-in) in addition to the "stick" (IMF conditionality). In the Dooley and Verma (2001) model where opportunistic default is an option, anticipated and unconditional lending (insurance) by official creditors leads to moral hazard, subsidises capital inflows before the crisis and intensifies capital account reversals and output losses once a crisis occurs.

Another important issue is whether the official lender has enough information to be able to distinguish crises due to pure panic runs from those due to insolvency, or from those due to opportunistic default. The pros and cons of an ILOLR when there are asymmetries of information are studied by Spiegel (2001). Gai *et al.* (2001) model the IMF as reducing the costs of disorderly adjustment following debt servicing difficulties in a model where ability to pay is affected by debtor moral hazard distortions. The IMF role is more likely to be beneficial if the IMF can make an accurate assessment of the country's policy efforts. If the IMF makes mistakes, the reduction in the costs of crisis to the debtor will lead, in equilibrium, to a lower amount of lending.[25] Ghosal and Miller show that, if the nature of the crisis (insolvency versus opportunistic/moral hazard-driven default) cannot be assessed by the official creditor, there is a case for "constructive ambiguity". Official liquidity support should be provided with probability less than one to reduce the moral hazard distortion.

The presence of official creditors also affects strategic interactions between sovereign debtors and their private creditors, an important issue whenever debtors and private creditors bargain on how much to reduce external debt. Bulow and Rogoff (1988b) modelled this strategic interaction between three sets of players: sovereign debtors, their private creditors and official creditors. In their model, private creditors know that official creditors care about flows of international trade and cannot credibly commit not to be involved in debt restructuring negotiations. Thus, in equilibrium, creditors charge sovereign debtors lower loan spreads than they would have done in the absence of official creditors. The existence of official creditors increases the moral hazard distortion in sovereign lending.[26] In Bhattacharya and Detragiache (1994), the existence of a multilateral lender such as the IMF strengthens the credibility of official creditor governments not to bail-out a sovereign that has defaulted. Corsetti *et al.* (2003), Dasgupta (1999) and Corsetti *et al.* (2002a) also discuss the role of informational asymmetries in models where a private or official (such as the IMF) agent is large – in terms of its financial resources – relative to a group of atomistic private agents. Some of these contributions are discussed further below.

On the possibility of "middle solutions" in semi-liquidity cases

In many recent semi-solvent liquidity cases (such as South Korea and Brazil), the policy response has been a combination of policy adjustment,

official money and PSI, with the relative weights being different in different circumstances. Indeed, effectively, the official response to these liquidity cases has been based on the view that a combination of adjustment, catalytic official money and appropriate PSI (a partial rather than a full bail-in) can be successful in preventing a wider crisis, restoring confidence and market access and returning the country to a path of recovery and growth.

Conceptually, however, this "middle" solution has been intellectually challenged as not being feasible. Some observers such as Paul Krugman and Mervyn King have argued that only corner solutions are feasible in these liquidity cases: either there is an international lender of last resort with enough resources to engineer a full bail-out and avoid a disruptive run; or, at the other extreme, a full bail-in is necessary (that locks in all assets and prevents domestic and foreign creditors from trying to turn short-term claims into foreign assets). According to this view, a partial bail-in would not work because, as long as the economy is in the multiple equilibria region, locking in some creditors and assets (but not all) would lead the others to run to avoid being locked in next. Conversely, a partial bail-out would not work either because, as long as the financing gap is not eliminated, the multiple equilibria problem is not solved and agents will rush to the exits to claim limited foreign reserves, including those provided by the official support. Thus, conceptually, it is argued that the "middle" solution may not be feasible.

Indeed, the Krugman–King hypothesis is supported by some theoretical work. Zettelmeyer (1999) and Jeanne and Zettelmeyer (2001) formalise this hypothesis by showing that partial bail-outs are bound to fail in models where illiquidity may lead to self-fulfilling crises. Such partial bail-outs (or bail-ins) would not avoid a bad equilibrium because, as long as the size of this support is not large enough to fill the financing gap, the possibility that agents will coordinate on the bad equilibrium cannot be ruled out. Worse still, partial bail-outs will imply that the greater the official support, the larger the reserves loss if a run occurs. Why? Because the operating constraint on the size of the run is the amount of official reserves (including those provided by the bail-out package); thus more support in this case means only a larger run on reserves. Goldfajin and Valdes (1999) make a similar point on the ineffectiveness of partial bail-outs, though they do not provide a proof of such statement in their model of self-fulfilling runs.

This theoretical ineffectiveness of "middle solutions" stands in stark contrast to the PSI philosophy that catalytic official money, domestic policy adjustment and partial and appropriate bail-ins or PSI may indeed succeed, even when such a three-pronged solution does not formally fill *all* of the external gap. This difference between the theoretical analysis (that supports the "corner" solutions) and actual policies and case studies (that support the view that "middle" solutions can be successful) can be bridged as follows. In multiple equilibria models, as long as the financing gap is not

completely filled via a full bail-in or full bail-out, the possibility of a self-fulfilling run cannot be ruled out. The economy may end up in a bad equilibrium if those who are not bailed-in decide to rush to the exits. Moreover, in the multiple equilibrium region, there is nothing (apart from "sunspots") that can nail down the probability that the economy will end up in a bad equilibrium. In existing models, this probability is indeterminate. In reality, however, domestic policy choices, official support and the amount of bail-in *do* affect such a probability.

The argument for a "middle" solution is based on the view that domestic policy adjustment will reduce the probability of a run, as the debtor government can credibly commit to reducing the imbalances that created the risk of a run in the first place; that the amount of official support can also affect the probability of a run, as more official money means that the size of the remaining gap is proportionally reduced; and that appropriate PSI may also reduce the probability of a run, by leading some investors and asset classes to stay in (through voluntary and/or concerted rollover) and inducing others (who are not subject to a bail-in) not to run by restoring confidence.[27] Quite recently, Corsetti *et al.* (2002a) and Morris and Shin (2002) have developed an analytical model of the IMF's catalytic finance role where middle solutions can work. Such models use game-theoretical approaches where the multiplicity of equilibria of most self-fulfilling run models is eliminated through a "global games" approach.

Recent work on the trade-off between ILOLR and moral hazard and the IMF's "catalytic" approach

A number of authors have recently started to study the trade-off between the need for an international lender of last resort to avoid liquidity runs and the moral hazard that such support may trigger. These authors have also analysed the conditions under which the IMFs "catalytic approach" is likely to succeed (Corsetti *et al.* 2002a; Morris and Shin 2002).[28] The catalytic approach implies that, provided a crisis is closer to illiquidity than to insolvency, a partial bail-out granted conditional on policy adjustment by the debtor country can restore investors' confidence and voluntary lending and therefore stop destructive liquidity runs.

Corsetti *et al.* (2002a) extend current analytical models of the ILOLR and moral hazard in a number of directions. First, most papers analyse an ILOLR in models following Diamond and Dybvig (1983), interpreting crises as a switch across instantaneous (rational-expectations) equilibria, but ignoring or downplaying macroeconomic shocks or any other risk of fundamental insolvency. In contrast, Corsetti *et al.* (2002a) develop a model where a crisis may lie anywhere along a spectrum going from pure illiquidity to pure insolvency (as in Allen and Gale 2000a). Thus, they present a more realistic specification of an open economy where fundamentals, in addition to speculation, can cause debt crises. Specifically, the framework draws on the literature on global games, developed by

Carlsson and van Damme (1993) and Morris and Shin (1988). As is well known, in global games the state of the economy and speculative activity is not common knowledge among agents. With asymmetric information, there will be some heterogeneity in speculative positions even if everybody follows the same optimal strategy in equilibrium. Moreover, the precision of information need not be the same across individuals. Arguably, global games provide a particularly attractive framework to analyse the co-ordination problem in financial markets at the onset of a crisis.

Second, many of the contributions drawing on Diamond and Dybvig downplay the issue of moral hazard. The few contributions that do discuss moral hazard distortions generated by liquidity provision cannot give strong analytical support to their conclusions. The reason is that, in models of multiple equilibria, the results of comparative static analysis depend on which equilibrium is selected. There is no endogenous mechanism that leads agents to select one equilibrium over the other(s). In contrast, in global-games models, the co-ordination mechanism is endogenous, and (provided that the precision of private signals is sufficiently accurate relative to public signals) the equilibrium is unique. These models can therefore be used to perform comparative static analysis (as well as the normative analysis of optimal official liquidity support), tracing out the effect on government behaviour of various assumptions about IMF size, the structure of incentives, the precision of information and other parameters of the model. The conventional wisdom is that official finance exacerbates the moral hazard problem. The novel result from this analysis is that, under some circumstances, the existence of official liquidity assistance can give a debtor country the right incentives to implement policy adjustment.

Third, in the context of global games and the literature on the ILOLR building on them (see Morris and Shin 2002, but also the closed-economy model by Goldstein and Pauzner 2002 and Rochet and Vives 2002), official financial institutions are modelled as large players whose behaviour is endogenously derived in equilibrium. Many of the new analytical insights stem from this feature of the model. In specifying the preferences of its shareholders, Corsetti *et al.* (2003) model a "conservative" IMF in the sense that it seeks to lend to illiquid countries, but not to insolvent countries.

Fourth, the models take domestic expected GNP as the natural measure of national welfare. This may differ from the objective function of the domestic government because of the (political) costs of implementing reforms and adjustment policies. They analyse the impact on the welfare of domestic citizens of alternative intervention strategies by the IMF.

Fifth, the framework of global games allows them to assess the role of IMF information precision in strengthening the IMF's influence on private investors' strategies and government behaviour. In general, a better-informed IMF reduces the aggressiveness of private speculators, and

therefore lowers the likelihood of a crisis. The role of information precision in catalytic finance, however, becomes much more important when the IMF can strategically signal its position to the market, e.g. it can choose to move before private investors. Some results on signalling by Corsetti *et al.* (2003) and Dasgupta (1999) suggest that there is an equilibrium in which the IMF has a much stronger impact on market behaviour by moving before private investors. As in Dasgupta (1999), an IMF with sufficiently precise information can induce strong herding behaviour – private fund managers disregard their private information and make their portfolio choices conditional on the IMF move, rolling over their debt if the IMF makes liquidity available to the country and withdrawing otherwise.

Sixth, these frameworks provide a useful starting point for a number of extensions of the analysis, such as a study of the optimal size of IMF interventions and the desirability of the preferred creditor status of IMF loans. In the model, the IMF will optimally set the size of liquidity support so as to minimise the likelihood of default, assessing the relative importance of illiquidity versus moral hazard distortions. Numerical simulations show that the IMF will tend to choose large contingent funds. Increasing the complexity of the model to encompass risk aversion may make the IMF more conservative. A similar consideration applies when assessing the desirability of the preferred creditor status of the IMF. If IMF loans are senior in relation to private creditors, all other things being equal, the IMF will be more willing to intervene, thus reducing the likelihood of a crisis. On the other hand, private investors stand to lose more in the event of default. They will therefore be less willing to rollover their debt, increasing vulnerability to crisis. The model fully accounts for the first effect, and provides a framework for a heuristic discussion of the second. A fully-fledged analysis would require a more general approach to specifying the preferences of both the IMF and private investors.

These models shed light on possible channels through which IMF catalytic finance may work, i.e. conditions under which (and channels through which) the presence of contingent liquidity provision makes international investors more willing to rollover their loans to a country rather than roll-off and run. When fundamentals are sound enough, catalytic finance can work. Yet catalytic finance does not and cannot work when the macroeconomic outlook is hopelessly weak. The model also emphasises the possibility that liquidity assistance does not necessarily produce moral hazard distortions. Rather, under some circumstances, it may turn out to be the key for well-intentioned governments to undertake appropriate policies. In other words, by insuring against liquidation costs caused by self-fulfilling speculation, the IMF could raise the expected gains from reform, therefore making them more attractive relative to their costs.

Morris and Shin (2002) reach similar conclusions on the potential success of the IMF's catalytic approach in a stylised one-period model; Corsetti *et al.* (2002a) instead articulate their analysis in a multiperiod

bank-run framework. Moreover, the latter authors model explicitly the payoffs of the IMF and domestic policymakers, showing how the equilibrium allocation depends on the incentive structure faced by the main players (private and public). They show how this approach can account for a number of realistic features of the international financial architecture. It is reasonable to expect that this literature will soon have further important developments as regards both theory and policy analysis.

Operational implications for crisis management

What does the above analysis suggest for the appropriate mix of policy adjustment, official support (bail-outs) with conditionality and appropriate PSI (bail-ins) in crisis resolution?

In general, the possibility of a self-fulfilling run does not justify a full bail-out solution to financial crises, especially since most crises are caused by a combination of weak fundamentals and poor policies. These fundamentals trigger the panic, market over-reaction and excessive outflows of capital that exacerbate the consequences of the crisis. But the provision of official liquidity support, in addition to policy adjustment and appropriate forms of PSI, may contribute to solving financial crises in an orderly way, helping restore economic stability and growth. Such provision of official liquidity is more warranted (and its optimal size is larger) when a country is suffering from an illiquidity crisis.

Crises in emerging markets cannot be reduced to a simple dichotomy between illiquidity and insolvency cases. They are distributed on a continuous spectrum going from pure liquidity cases, to solvent but illiquid countries with policy weaknesses, to countries with more serious macro and structural problems who may be solvent if reform/adjustment occurs but that have lost market access and face large debt servicing problems, to cases closer to insolvency.

In cases closer to a "pure" liquidity crisis, a solution closer to a full "bail-out" is warranted, even if economic theory suggests that a full bail-in (a standstill to break the panic) could work just as well. While some (see Sachs 1995) may argue that, even in the cases of liquidity runs, one could use capital controls, standstills, debt suspensions and debt reprofiling/restructuring as a way to prevent such panics, this approach would be seriously counterproductive and destabilising in practice. In a world with uncertainty, risk aversion and imperfect policy credibility, expectations of a standstill may trigger an early and destructive "rush to the exits".[29] Thus, at least for cases closer to illiquidity runs, there is a broad intellectual and policy consensus that large IMF loans, rather than standstills and forced rollover, may be the way to resolve such crises. This is also the way central banks use lender of last resort liquidity support, rather than bank holidays (deposit freezes), to deal with pure liquidity runs and panics.[30] This does not mean that the amount of official support should be equal to the (potentially very large) external financing gap. In cases closer to the

illiquidity corner of the crisis spectrum, the IMF's "catalytic" approach is most likely to succeed: a large official package (that is, in size smaller than the potential external financing gap) will restore investor's confidence and market access, so that the remaining part of the external financing gap is filled by voluntary private capital flows. And if a country's fundamentals are so good that it pre-qualifies for a CCL type of facility, the mere existence of such a facility may actually prevent the run from starting in the first place.

When the policy problems that trigger the crisis are more serious, but the country is still essentially solvent but illiquid, a greater policy adjustment is needed to restore policy credibility and investors' confidence. Large and exceptional official financing (conditional on policy change) may be required and be warranted, but soft forms of PSI (like foreign investors' commitment to maintain interbank lines in Brazil in 1999) may also be needed to avoid a rush to the exits. In this modified catalytic approach, a combination of policy adjustment, official finance and appropriate soft PSI will, in due time, restore confidence and market access.

When the country's policy problems are more severe, it has lost market access and is facing large debt-servicing obligations (as in Ukraine and Pakistan) and/or a run on its official or private short-term liabilities (the interbank lines in South Korea), a more coercive reprofiling/restructuring of external liabilities will become inevitable; hence the need for more concerted or coercive forms of PSI in these cases. These are cases where the country may be solvent (conditional on appropriate reforms), but has lost market access and is unlikely to regain it in the short run. In these cases, policy adjustment is the most important response to restore credibility; official finance may help but it should be at normal, rather than exceptional, levels and highly conditional on policy change. Thus, the remaining financing gap will have to be filled by semi-coercive forms of PSI (such as the bonded debt restructurings in Pakistan and Ukraine). When elements of panic are important in these cases (on top of the fundamental problems triggering the crisis) because of short-term debt roll-off problems (as in South Korea), large official finance (but again in amounts short of the financing gap) could be justified in addition to policy adjustment and semi-coercive forms of PSI.

In cases that are closer to the insolvency corner of the spectrum (Ecuador, Russia, Argentina), further official finance before a default is counterproductive as it postpones the necessary adjustment and debt restructuring. The country will have to suspend payments on its external sovereign (and possibly private) liabilities and a debt reduction will be necessary. Even in these cases, policy adjustment and appropriate reforms are essential (even more so, as the crisis is triggered by severely weak economic and policy fundamentals) to restore stability and growth. PSI will need to be coercive as default will require a reduction in the value of external liabilities. While policy adjustment and bail-ins are central in these insolvency cases, there is still room for some official lending, in amounts that are not exceptional. First, conditionality-based lending may give "carrots" or incentives to pursue the painful policy adjustment

process. Second, even after default and adjustment, the country may have a flow constraint; it may need to run a small current account deficit (to avoid an even more painful contraction of imports and economic activity) and/or a small budget deficit (while it is cleaning up its medium-term fiscal house) to avoid an excessive economic contraction. Since there is no market access in these default cases, these flow needs can only be filled by the official sector. Of course, such official support should be highly conditional on policy and economic adjustment.

Thus, our analysis suggests that different combinations of domestic economic and policy adjustment, conditionality-based official lending (bail-outs) and PSI (or bail-ins) will be appropriate depending on the nature of the crisis.

Official lending could also be justified to avoid international contagion (the international equivalent of systemic bank runs) when systemically important countries experience a crisis. But all of the caveats on the limits of an ILOLR (especially moral hazard issues and asymmetric information on the nature of the crisis) again apply in the case of contagion. And the lessons from the banking literature on the distortions created by blanket guarantees of "too-big-to-fail" banks also apply. While contagion and systemic risks may justify, at the margin, more official lending than in cases where such effects are not at stake, optimal policy may require some degree of "constructive ambiguity".

The analysis also implies that liquidity cases should be dealt with on a case-by-case basis: no simple or rigid rules can or should be applied and all relevant factors may have to be considered to decide whether and how much PSI should be applied. Moreover, some degree of "constructive ambiguity" may have to be maintained in this regime to provide the appropriate response to specific cases and avoid expectations of systematic bail-outs.

7.4 Alternative debt restructuring regimes: the debate on "contractual" versus "statutory" versus "status-quo" approaches to debt restructuring

Recently, the debate on the reform of the international financial architecture has centred on the issue of the appropriate mechanism or regime to ensure orderly sovereign debt restructurings. While recent sovereign bonded debt restructuring cases (Pakistan, Ecuador, Ukraine and Russia) have been successfully completed with the use of unilateral exchange offers (at times complemented by a system of carrots and sticks such as exit consents to ensure successful deals), many have expressed dissatisfaction with this "market based" status quo approach. Also, the recent default by Argentina suggests that we need to reconsider the issue of optimal debt restructuring regimes. And recently, Anne Krueger, the First Deputy Managing Director of the IMF, has proposed the creation of a "sovereign debt restructuring mechanism" (SDRM) that would have many of the features of an international bankruptcy regime.[31,32]

The question is whether we need an institutional change in the international financial system that would lead to a new way of providing for orderly sovereign debt restructuring. When sovereign debt restructuring becomes necessary and unavoidable, what is the appropriate regime that provides an orderly restructuring, while safeguarding the balance of rights of both the creditors and the debtor?[33] Is it better to continue with the "market based" status quo regime where exchange offers have been used to do bonded debt restructurings? Or should we move to the wholesale introduction and use of collective action clauses (a "contractual approach")? Or should we consider creating an international bankruptcy mechanism (or "statutory approach") such as the one proposed by the IMF?[34]

Each of these three approaches to sovereign debt restructuring has pros and cons. One way to think about the relative merits of these three regimes is to first ask what are the market failures that may prevent an orderly and efficient restructuring of sovereign debt when such orderly restructuring is beneficial to both debtors and creditors? One can think of several externalities that prevent orderly restructurings, but three of them are crucial and centre around collective action problems among creditors.[35,36]

1 The "rush to the exits". As a sovereign debt crisis is unfolding, creditors may try to rush to the exits and cause a disorderly crisis that has real and avoidable costs, as in liquidity or rollover runs. But, as discussed below, a debt suspension/standstill (including capital/exchange controls and/or deposit freezes) may avoid such a destructive reaction.
2 The "rush to the courthouse" externality. While a unilateral debt standstill may take care of the inefficiencies of a "rush to the exits", such a standstill may cause a "rush to the courthouse". Creditors may start litigation and this can become a serious problem if creditors can attach assets. But as discussed below, there are important differences between the corporate paradigm and the sovereign one on this matter, as the ability of creditors to seize/attach sovereign assets is very limited.
3 The "free rider", "holdout" or "rogue creditor" problem. This is an important obstacle to orderly restructuring. In situations where unanimity may be required to restructure debt, minority holdout creditors may scuttle a restructuring that is advantageous to the majority of creditors. While the unanimity problem can be sidestepped with exchange offers, the holdout problem may potentially remain serious. If a holdout does not accept the offer and then receives (via post-deal litigation or its threat) the full amount of his/her claims, while those who accept the offer receive a lower amount than their full claim, there is a strong incentive to hold out ("free riding"), with the consequence that an otherwise mutually advantageous deal may fail. If

this co-ordination problem among creditors cannot be solved, a disorderly and costly workout may be the outcome, even if it would have been in the interests of all creditors to achieve a co-operative solution. In this regard, the ability to have a restructuring plan approved by a majority of creditors which is binding on the entire creditor body (a "cram-down" or majority enforcement provision) would solve this holdout externality.

In addition to these three collective action problems among creditors, any efficient restructuring mechanism has to deal with a fourth potential market failure on the side of the debtor.

4 The "rush to default" or the debtor's incentive to engage in "opportunistic defaults". As the literature on sovereign debt suggests, a default decision may not be due to "inability to pay" but to "unwillingness to pay". There is always the possibility of opportunistic default given that a sovereign benefits from sovereign immunity. Thus, an efficient international debt workout mechanism needs to trade-off two objectives: not to make workouts too costly, as default may at times be due to inability to pay; but not to make workouts too easy either, as otherwise the temptation to have opportunistic defaults may increase.

I will first analyse how the three regimes address the three collective action problems of creditors, before addressing the question of the "rush to default".

Collective action problems

Supporters of a new statutory regime[37] or international bankruptcy mechanism stress the fact that, while the above collective action problems have always existed, they have become more severe in the past few years given developments in international financial markets.

In the 1980s, most sovereign debt was held in the form of medium and long-term syndicated bank loans. The covenants on these loans included sharing clauses and other limits to initiation of litigation that made the "rush to the courthouse" problem less serious. They also had implicit or explicit majority clauses that helped to deal with holdout banks. Moral suasion, deriving from repeated interaction among banks, was also more likely to rein in holdouts. In the 1990s, most of the flows to emerging market sovereigns have taken the form of bonds. The number, heterogeneity and differences of interest of this wider group of creditors makes the holdout problem much more severe.

The emergence of new bond creditors with no ongoing relations with the debtor or other creditors also suggests that the presence of aggressive holdouts ("vulture" creditors) who are willing to pursue their claims in court may have increased. Indeed, the recent Peru–Elliott case is seen as a

major threat to orderly debt restructuring, as the creditor successfully pursued a litigation strategy and ended up being paid in full.

In summary, the variety of claims (bank loans of various maturities, different types of bonds under different legal jurisdiction, with or without collective action clauses) and types of creditors (retail investors, investment and commercial banks, real money funds, hedge funds and other highly-leveraged aggressive creditors, dedicated emerging market funds and cross-over investors) makes the collective action problem of coordinating the interests and actions of such a heterogeneous world of claims and claimants almost impossible. If this view is correct, a new international bankruptcy mechanism could facilitate an orderly restructuring. The main advantage of such a mechanism is that it would solve the three collective action problems by: allowing a suspension of debt payments that stops the "rush to the exits"; imposing a "stay of litigation" following the debt suspension that is legally binding on all creditors and thus prevents disruptive litigation (the "grab race"); and allowing for a majority vote on a restructuring agreement that is binding on all creditors, thus eliminating the "free riding" or "rogue creditor" problem.

Supporters of the second option,[38] the "contractual approach" (the universal introduction and use of collective action clauses in bond and debt contracts), would argue that most of the benefits of the "statutory approach" could be obtained with the use of collective action clauses (CACs). Such clauses do not usually allow individual bondholders to start litigation (litigation has to be agreed by a majority of creditors) and/or include sharing clauses that reduce the benefits of being a holdout and litigating. Also, CACs typically include majority "cram-down" clauses, so that an agreement reached by a majority of creditors is binding on all holdouts, thus solving the free-rider problem. Thus, in principle, all of the collective action problems that prevent an orderly restructuring could be solved with the use of CACs. And relative to an international bankruptcy regime, the contractual solution could be more market-friendly, relying on voluntary agreements being reached between the sovereign debtor and its creditors.

It is important to note that the sovereign debt restructuring regime proposed by the IMF (at least its last incarnation, see Krueger 2002) would not be substantially different from a contractual approach, as it would be "creditor-centred" rather than "IMF-centred". Specifically, the latest SDRM proposal would give creditors all the rights related to approving an initial stay of litigation (and its continuation) and a restructuring deal that would be binding on minority holdout creditors.

Supporters of the "statutory" approach would counter-argue that the statutory solution is superior to a contractual regime for several reasons. First, there is a transitional problem as many outstanding bonds, mainly those issued under New York law, do not have CACs. So even if new bonds included them, the past stock of outstanding bonds would not have them.

Second, under traditional CACs, the vote to start litigation or cram down is taken bond-by-bond, rather than by a majority of all creditors in the asset class. So holdout problems and litigation problems may re-emerge if a majority of bondholders in one issue decides not to co-operate. While one could conceive of super-clauses that would imply a super-majority vote by all creditors in a particular credit class, these clauses do not exist so far and are not likely to be introduced in a uniform way any time soon.

Third, while collective action clauses could be eventually included in all bond covenants, many other claims on the sovereign (banks loans, various other credit instruments) would not have them. Over time, financial innovation may lead to the creation of new financial instruments, such as various credit derivatives, that may not include such clauses. The statutory approach has the advantage that, regardless of what current and future claims on the sovereign are, they would all be included in the restructuring mechanism and would be subject to the same overall majority vote to initiate or withhold litigation and to approve a restructuring agreement.

Fourth, achieving uniformity of CACs (their wording and interpretation) in different legal jurisdictions may be very hard to achieve. Messy, costly and protracted legal issues of interpretation and adjudication may result. A uniform international bankruptcy regime would codify a standard set of rules, case law and interpretations.

While some of these difficulties could be surmounted under a contractual approach through the use of super-clauses, arbitration and other meta-clauses, such a beefed-up contractual approach ends up coming very close to a creditor-centred statutory one.[39]

Supporters of the status quo regime[40] start from the observation that, while ideally a "statutory approach" or a "contractual approach" would solve these collective action problems, they are both unlikely to emerge. The USA will not agree to having an international legal regime over-rule US security laws and its protection of creditor rights; many emerging markets may resist the bankruptcy regime based on a concern that it would make it easier for the IMF to cutoff lending to crisis countries; and the other G7 (while being in principle more sympathetic to the idea of an international bankruptcy regime)[41] will not aggressively push for it. A "contractual approach" is also unlikely to make progress as, while rhetorically supported by the G7/G10 since the time of the Rey Report in 1996, there is no system of carrots and sticks to ensure that both creditors and debtors include CACs in new bond issues. Thus, if neither the statutory nor the contractual approach are likely to make progress in the foreseeable future, one has to try to make the most of the status quo regime to achieve orderly restructuring. In this regard, recent experience suggests that bonded debt restructurings are feasible and have been successfully achieved, even in the presence of hundreds or thousands of heterogeneous creditors in Pakistan, Ukraine, Ecuador and Russia.

Moreover, the collective action problems emphasised by many may be

exaggerated in reality. First, any sovereign faced with a "rush to the exits" can stop it with a unilateral debt suspension. Thus, this collective action problem already has a solution available under the current status quo. It is true that a debt suspension, in the absence of a stay of litigation, may lead to a "rush to the courthouse". But the collective action problem of a "rush to the courthouse" is not in any case severe for sovereign debtors.

This "rush to the courthouse" is certainly important and severe in a corporate bankruptcy context, where rushing to litigate may allow a creditor to attach assets. Thus, bankruptcy regimes such as Chapter 11 or 7 prevent such a grab race through a stay of litigation once the debtor has applied for bankruptcy protection. The stay is mostly about protecting creditors' rights (to avoid the unfairness of some creditors attaching assets to the disadvantage of other creditors) in a corporate context.

In a sovereign context, the "rush to the courthouse" is much less of a problem as sovereign immunity implies that creditors have trouble finding assets worth rushing to claim. The ability to attach assets via early litigation is severely limited. In fact, there is a scarcity of assets under the jurisdiction of foreign courts that can be potentially attached. And, indeed, there is little evidence of a rush to litigate in sovereign debt crises when a country has suspended debt payments.

If the "rush to the exits" and the "rush to the courthouse" are not real problems, one is left with the "holdout" friction as the main collective action problem that cannot easily be resolved in the absence of majority cram-down clauses. But even the free rider problem (and the related litigation threat) has not been as severe as initially thought. There are plenty of sensible ways to overcome and minimise the rogue creditor problem without majority cram-down clauses. Here are ten reasons why the holdout problem is not a big one in practice.

First, the unanimity problem can be bypassed with the use of unilateral exchange offers. While these offers do not eliminate the holdout problem, they allow for a majority of co-operative bondholders to accept new bonds with new payment features even when the old bonds required unanimity to change their terms. Indeed, in cases where there were thousands of bondholders (Ukraine, Pakistan, Ecuador and Russia) such unilateral exchange offers have had overwhelming success, with 99 per cent plus of creditors accepting the offer.

Second, "exit consents", which change by majority vote the non-financial terms of the bond covenant, have been successfully used (in Ecuador) to dilute the benefits of being a holdout. Third, a system of carrots (sweeteners in the form of cash, collateral release and seniority upgrades) and sticks (the threat of default, *ex post* use of CACs, exit consents) has been used, and can be used, to ensure a successful completion of deals.

Fourth, the "holdout" problem is predicated on the assumption that, in a debt restructuring, a creditor that holds out would receive a financial benefit that is greater than they would receive by participating in an

exchange offer. But in all recent debt exchanges (Pakistan, Ecuador, Ukraine and Russia) creditors have enjoyed mark-to-market gains of 20 per cent to 30 per cent on average. Such gains increased the likelihood that the offer would be accepted by a majority of creditors.

Fifth, litigation is costly (especially for small creditors); some creditors (the small retail ones) are more risk averse than others and the outcome of litigation is uncertain; and some have a high rate of time preference and may not want to wait for the delay costs of protracted litigation. Thus, a majority of creditors are likely to rationally accept an offer that is mark-to-market neutral or slightly positive, rather than holdout and incur the costs and risks of litigation.

Sixth, large financial institutions that have ongoing business relations with a sovereign debtor (for example, through the franchise value of their commercial banking operations) are unlikely to hold out and fight. They may actually be the catalytic agent that would apply moral suasion on holdouts and, if necessary, bribe them into accepting a deal. The desire to gain the large fees/commissions involved in a successful deal leads the intermediaries to design workout packages that minimise such "deal risk".

Seventh, the holdout problem can be minimised through side payments ("bribes") offered by creditors who have a lot to gain from a successful deal; or by the debtor (that *ex post* buys out a limited number of holdouts); or by official creditors (via extra amounts of official finance that provide enhancements and/or sweeteners to a deal).

Eighth, the Elliott–Peru decision was, from a legal standpoint, highly controversial and unusual and, most likely, its logic would not stand if challenged in other legal cases. A legal doctrine that interprets the "pari passu" clause as allowing a holdout to block payments to creditors that have accepted an exchange offer is very likely to be successfully challenged in court.

Ninth, creative variants of the status quo regime of exchange offers can be designed to provide market-based orderly restructurings that reduce the risks of litigation and/or free riding.[42] Tenth, rogue creditors and vulture funds are often part of the solution rather than the problem. Low risk-aversion vultures tend to buy low, when default has occurred and debt prices have collapsed and get large mark-to-market gains from a successful deal. Thus, they may accept an exchange offer rather than litigate. For example, Elliott Associates who successfully sued Peru, held Ecuadorian debt but decided together with 99 per cent plus of creditors to accept an exchange offer rather than holdout as the offer provided significant mark-to-market gains. Morover, even "rogue creditors" who will eventually sue will not jeopardise the completion of an exchange offer. Only after a majority of creditors have accepted a deal will a rogue creditor have the incentive to litigate and attempt to obtain their full claim.

Thus, while one cannot fully solve the free rider problem in the absence of a majority cram-down clause, there are creative ways to minimise its risks and consequences under the current market-based status quo.

Indeed, recent experience has shown that holdout problems have not prevented the successful achievement of orderly bonded debt restructurings. In most cases, the status quo may still work and allow successful exchange offers, with the holdout problem becoming only a post-deal nuisance.

"The rush to default" problem

In a world where countries benefit from sovereign immunity and creditors have very limited ability to attach sovereign assets, there is always a possibility that a sovereign would "opportunistically" default. As a result, a restructuring that is too "easy" or "orderly" may not be socially efficient. Indeed, given the pervasiveness of sovereign immunity, the appropriate costs (in terms of loss of access to international capital markets, output and trade losses) that creditors can impose on the debtor are an important component of a well-balanced regime that minimises the moral hazard of opportunistic default. But while default that is too easy may not be efficient, a disorderly default (triggered by an inability to pay) can impose losses that are socially inefficient and thus can hurt both the debtor and creditors. Thus, subject to the caveat that defaults should not be too easy, an orderly debt restructuring should allow countries with unsustainable debt profiles to restructure their liabilities.

How would the three restructuring regimes deal with the "rush to default" issue? Supporters of the status quo regime would argue that the "rush to default" is not a big issue in the first place. According to this view, even in the current regime with limited sovereign immunity, sovereigns have strong incentives not to opportunistically default, as such action has severe reputational and financial costs in terms of protracted loss of access to international capital markets and output and trade losses.[43] A healthy and balanced regime is similar to the current one, where the incentives of the sovereign to default opportunistically are already limited by the consequences and costs of such default. Thus, making it easier for the debtor to default via a statutory regime may tip the balance in favour of debtors and trigger opportunistic default that would ultimately reduce the ability of emerging markets to access capital markets.

At the other extreme, a well-designed SDRM regime would have safeguards against the abuse of this protection by opportunistic debtors. In one variant of the SDRM, access by the debtor to the SDRM's legal protection would be conditional on an IMF assessment that the country had an unsustainable debt position. Without having passed such a sustainability test, the country would not receive legal protection. In another variant, a majority of creditors would take the decision on whether to approve or extend a stay of litigation.

Under the contractual approach, opportunistic defaults could again be addressed by the threat of litigation on the part of a qualified majority. Unlike the current status quo, where any creditor can start legal action if they so desire, under the contractual approach the decision to start litiga-

tion would be made by a majority of creditors (to avoid disruptive litigation by a small minority).

7.5 Open issues in the G7/IMF PSI policy framework

The G7 and IMF dialogue on the appropriate PSI framework continues. While recently the greatest attention has been given to the debate on SDRM versus CACs, the overall G7/IMF framework is still vague on many other aspects of PSI, especially in cases short of pure "insolvency". Since most PSI cases in the past (and likely in the future) will be in this grey area, there is a need to clarify the nature of PSI policy in these cases. In this regard, there is some dissatisfaction with the vagueness of the Prague Framework on many important issues and the 2001 Genoa Summit did not achieve a new consensus or framework.

The appropriate crisis resolution and PSI approach depends on the nature of the financial crisis

In principle, what is the optimal approach to crisis resolution and PSI in different crisis episodes? In general, as discussed in detail in section 7.3, the answer depends on the nature of the crisis: the appropriate form of PSI and the amount of access to IMF resources depends on where a country falls in the continuous spectrum going from pure liquidity cases to pure insolvency cases.

But many open issues remain. First, how to distinguish between illiquidity and insolvency? Most cases are in a grey region where illiquid countries have serious macro and structural problems and countries that look insolvent may not have undertaken serious reform and adjustment. Second, is a full bail-out appropriate in cases closer to the illiquidity corner? Conceptually, one may think of using appropriate PSI (beyond the soft PSI used in cases where the catalytic approach is attempted) even in these cases. Third, the willingness to attempt debt restructurings or concerted PSI becomes weaker in cases where the country is large and systemically important for economic and/or political reasons. In these cases, there is a political bias towards providing exceptional finance. How to restrain these political biases towards bail-outs? Fourth, when is exceptional access warranted and when should the IMF provide normal access? Fifth, when should PSI be catalytic (soft) and when should it be concerted?

Optimal policy in liquidity cases and cases of systemically important countries

The right policy for "liquidity" cases is complex. In principle, the full bail-out and full bail-in solutions are equivalent. But real liquidity crises are different from the abstract ideal as there is uncertainty, risk aversion and policy and macro problems in countries subject to a run. Illiquid countries

typically have serious macro and/or structural problems. This is why "appropriate" PSI, in addition to policy adjustment and appropriate amounts of official financing, is necessary to address liquidity crises. At the same time, the threat of a coercive bail-in in liquidity crises risks a "rush to the exits" and other destabilising outcomes.

The hardest open issue in PSI policy is what to do when a large, systemically important country gets into trouble. Ideally, a combination of policies would be the appropriate response: policy adjustment on the part of the country, especially when this is not a pure liquidity case; large but not exceptional official financing (to prevent moral hazard); and "appropriate" forms of PSI.

In the best cases, one would hope that the "catalytic" approach would work. But the catalytic approach is less likely to succeed when the crisis country has serious policy problems and uncertain policy credibility. Thus, more concerted forms of PSI may become necessary in these cases of liquidity with serious macro/policy imbalances. Moreover, when large systemic countries suffer macro and policy problems, the issue emerges of how large access to IMF resources should be and whether large access should be conditional on "concerted" forms of PSI.

However, there is a big gap between the public rhetoric about no more big bail-outs and the political-economy reality of specific cases. When a large, systemically important country gets into trouble, political pressure to bail-out this country is common. The recent episodes in Argentina and Turkey confirm that bail-outs are more common than bail-ins. All of these programmes have been long in official support and quite short in their PSI elements. Only when the Argentine situation became clearly unsustainable, after two large support packages in December 2000 and August 2001, was IMF support eventually cut off. Note that based on standard measures of debt sustainability, Argentina and Turkey were in a worse condition than, say, Ukraine or Pakistan. While in Ukraine and Pakistan a debt restructuring at below market rates was forced, in Argentina and Turkey there was no meaningful PSI. The Argentine megaswap of bonds occurred at market rates, while in Turkey large official support allowed a rollover of domestic debt at very high, market-determined real interest rates and a roll-off of cross-border interbank lines. Debt suspension ended up occurring too late in Argentina.

This leaves open the question of whether the bar for declaring when a large country is insolvent has been set too high. The answer is probably yes. The incentives to bail-out large countries stem from several factors. First, these countries tend to be systemic and there is often concern about potential international contagion (Mexico, South Korea, Russia, Argentina and Brazil). Second, they are often subject to a liquidity run, despite also having fundamental weaknesses; thus, some exceptional package may be part of the initial optimal policy response. Third, they are often geo-strategically, politically and/or militarily important (Mexico, Turkey, South Korea and Russia).

In conclusion, semi-liquidity cases in large systemic countries are always difficult and complex. Ideally, a combination of policy adjustment, large but not exceptional financing in most cases and appropriate forms of soft PSI should restore confidence and market access. Large catalytic official money may be better when the country is closer to a pure liquidity case and large access is highly likely to restore confidence and market access.

These cases may, however, be the exception rather than the rule. Smaller official money packages and concerted PSI will be better when macro problems are more severe and prospects of restoration of investors' confidence and market access are not high. In some cases, large access may be warranted even if restoration of market access is unlikely. But in these cases, large access should be associated *ex ante* with concerted PSI. Some degree of "constructive ambiguity" will also be necessary to avoid moral hazard and "too-big-to-fail" distortions. In general, it is very hard to have mechanical rules in these complex cases. A lack of rules may lead to "destructive ambiguity", but rigid rules ("PSI whenever exceptional money is provided") may be even more destabilising. Given the political biases towards providing high access in large systemic cases, the conditions under which such exceptional access will be provided, and whether PSI should be catalytic or concerted, should be spelled out more clearly than currently.

Standstills

The main argument in favour of coercive bail-ins and standstills on external debt payments in liquidity or semi-liquidity cases is that they solve the collective action problem of the investors' rush to the exit. But standstills also have several potentially destabilising shortcomings. They may lower long-run lending and capital flows to emerging markets. They may lead to a "rush to the exits" (as in the case of anticipated capital controls). They may lead to international financial contagion (see the Russia/Malaysia contagion to emerging markets in the summer of 1998). Partial standstills on sovereign claims may not be enough, as private claims may run too. In this event, exchange and capital controls will be needed. But standstills on private claims are hard to arrange and there is also the risk of "asset stripping" (as in Indonesia).

There are also a number of complex legal issues to be addressed when thinking of legally binding stays on litigation after a standstill. The IMF's Article VIII.2.b is not likely to be amended to allow this to happen given current G7 views on this issue. A court-enforced "stay of litigation" after a debt suspension is unlikely to occur in the absence of such an amendment. The IMF's "lending into arrears" policy may be useful and appropriate, but it will not formally prevent litigation if creditors decide to take their case to court.

The creation of an SDRM would allow standstills with a stay of litigation, but the likelihood that the IMF's SDRM proposal will be enacted is

very small. Also, the SDRM would most likely apply to cases of outright insolvency, while the idea of officially sanctioned standstills is to provide a tool for early restructuring even in cases where solvency is not at stake.

Given these problems with standstills, supporters of these solutions need to address the risks of a systematic use of them more carefully. While standstills may become necessary in some extreme cases (one can even interpret some concerted PSI solutions such as the interbank rollover in South Korea as being conceptually close to a standstill) and they have been officially sanctioned as a tool of last resort, their use should be infrequent and not linked via a mechanical rule to the provision of official finance. Otherwise, the risk of a "rush to the exits" would be serious. But while rigid rules specifying *ex ante* when standstills should occur may end up being destabilising, their *ex post* discretionary use may be appropriate at times.

Degree of coercion in PSI

The G7 PSI doctrine has stressed the importance of voluntary, rather than coercive, solutions to crises whenever these are feasible. Some go as far as saying that there should never be coercion in the approach to PSI, but this option is not realistic. Experience shows that market access may not be restored, especially when a country with significant problems, policy uncertainty and lumpy external debt payments gets into trouble. Thus, more concerted forms of PSI that imply effectively some degree of coercion will become necessary. Hoping otherwise is not realistic.

Involvement of the official sector in PSI solutions

A laissez-faire approach, where the official sector decides how many resources to provide and lets debtors and creditors work out the remaining gap, may not be appropriate, especially in large systemic cases where provision of low access will trigger a run. As the South Korea case shows, an involvement of the official sector in concerted forms of PSI may become necessary to resolve collective action problems and allow orderly workouts. Similarly, in cases where bonded debt restructuring becomes necessary, the official sector has an important role to play for a number of reasons and laissez-faire solutions are not appropriate.

First, restructuring deals should be consistent with medium-term debt sustainability; failure to ensure that would jeopardise the programme and official resources. Second, since official support is always at stake and since programmes often require a restructuring of bilateral Paris Club claims, the official sector cannot ignore the process, terms and outcomes of a private workout. Third, collective action problems are prevalent both in bonded debt and bank rollover cases; the official sector may contribute to solving such problems in constructive ways. Fourth, the official sector has to decide when lending-into-arrears is appropriate; this amounts to an effective decision on whether a formal or informal standstill or debt

payment suspension is appropriate. Thus, the official sector cannot just pretend that its role is to determine the amount of official finance and then let the debtor and creditors work out their claims.

This suggests that IMF programmes should be clearer about their PSI conditions and the consequences of failing to implement adequate PSI. The monitoring of PSI in IMF programmes should be more systematic and the consistency of programme assumptions about private financing with medium-term debt sustainability should be appropriately fleshed out.

7.6 Conclusion

The debate on the appropriate form of PSI and alternative mechanisms for dealing with sovereign debt problems and achieving orderly restructurings is still wide open. Economic analysis suggests that the appropriate combination and mix of domestic policy adjustment, official lending (bail-out) and private sector involvement (bail-in) to resolve crises depends on the nature of the crisis. Thus, an eclectic case-by-case approach to PSI is appropriate, where discretion is constrained by principles, criteria, guidelines and an objective assessment of the nature of the crisis and the debt sustainability of the country.

While such a constrained discretion approach is the most appropriate one and dominates rigid and mechanical rules, there is ample scope for improving and clarifying the current fuzziness of the official G7/IMF framework and the continued political biases in bail-out policies. A clearer access policy is needed that clarifies when exceptional versus normal access should be provided, while leaving room for some discretion and "constructive ambiguity". This access policy should be guided by a careful assessment of the debt sustainability and financeability of the country in crisis. In this regard, the consistency of IMF programme assumptions about private financing with medium-term debt sustainability should be significantly improved. The PSI framework should be clearer about when PSI should be catalytic and voluntary and when more concerted and coercive forms of PSI are instead necessary. Also, IMF programmes should be clearer about PSI conditions and the consequences of failing to achieve appropriate PSI.

Regarding debt restructuring mechanisms, the three regimes discussed in the chapter (contractual, statutory, market-based exchanges) provide different creative solutions to the collective action problems inherent in debt restructurings. While the statutory approach provides in principle the cleanest way to solve in a consistent and coherent way all the collective action problems involved in an orderly restructuring of sovereign bonds, it has no chance of being implemented in the near future given the political difficulties – especially in the USA – of amending the IMF's Articles of Agreement and given the substantial objections to it. The contractual approach has some appeal, being more market-based, but transitional problems and incentives to implement it are not easily surmountable. That

said, the recent decision by Mexico to introduce collective action clauses (CACs) in its New York law external bonds gives hope that, over time, contractual changes to bonds providing majority action may become more common.[44] Thus, for the time being, working with the status quo remains the dominant option. I have argued that the current, market-based regime (or non-regime) can be used to address many collective action problems and provide for orderly restructurings.

In part, the verdict on the appropriate debt restructuring regime will depend on experience with the Argentine restructuring. This is a most complex case given the heterogeneity of both the claims and the claimants. If the Argentine debt restructuring becomes messy, disorderly, protracted and causes avoidable loss of economic value that hurts both the debtor and creditors, the political pressure to reform the current approach and move towards the adoption of an international bankruptcy regime will increase. If instead the creative use of exchange offers with various carrots and sticks achieves orderly restructurings, the incentives to create a new statutory regime will be permanently buried. In either event, there is now some momentum towards a contractual approach. The G7 and the G10 firmly support the introduction of CACs in bonded debt issues under New York law. And the recent example of Mexico suggests that collective action clauses may be progressively introduced into a larger fraction of external bonded debt.

Notes

1 This "contractual approach" based on CACs, long supported by a number of academics, has recently received the support of John Taylor, the Under Secretary for International Affairs at the US Treasury (Taylor 2002a, b). Support for the progressive introduction of CACs in bond contracts can also be found in other official reports, like the Rey Report issued after the Mexican peso crisis and in several past G7 communiqués.

2 The policy debate on the SDRM versus CACs reached a conclusion in the spring of 2003. While the IMF and some European countries strongly supported the SDRM, the US administration effectively vetoed this proposal and strongly pushed for a CACs/contractual approach. Thus, the SDRM appears, for the time being, to have little chance of being implemented. See Roubini and Setser (2003) for a recent discussion of the SDRM versus CACs and the political feasibility of alternative approaches to debt restructuring.

3 See Roubini (2001a, b) on the currency and debt restructuring challenges faced by Argentina.

4 The distinction is important as solutions that are *ex post* efficient, such as providing official finance to reduce the costs to debtors and creditors of crises, may be inefficient *ex ante* if they distort incentives to borrow (the moral hazard problem).

5 For the time being, we do not discuss debt servicing difficulties of private sector borrowers. As long as a domestic bankruptcy regime is well established, debt problems of such agents can be dealt with through this regime. But there are several caveats. Often debtor governments assume/guarantee the external liabilities of private borrowers, as in the case of banks in Asia or Turkey most recently. The policy decisions of the government can also directly (through

capital controls) and indirectly (through tax levies, regulations, poor policies) affect the ability of private debtors to pay. This is what Tirole (2002) refers to as the dual-agency problem.

6 Many of these open economy models of bank or debt runs (such as Chang and Velasco 1999 and Cole and Kehoe 1998) are international variants of the Diamond and Dybvig (1983) and Bryant (1980) models of bank runs.

7 As shown by Allen and Gale (2000a) in a model of fundamental-based bank runs, even if we rule out the pure self-fulfilling equilibria and a bank crisis is triggered by real fundamental shocks, in equilibrium a fundamental run will occur and this will trigger extra and avoidable liquidation costs. See Chui *et al.* (2000) for a model of self-fulfilling runs where there is an important role for poor fundamentals in triggering the run.

8 See Sachs (1995) for an argument in favour of an ILOLR along such lines. Indeed, in the Diamond–Dybvig model, a full lender of last resort or even a government guarantee of deposits – deposit insurance – is able to prevent self-fulfilling bank runs. Jeanne (2000) shows that global welfare is increased through ILOLR intervention. Moral hazard issues are finessed in the ILOLR model of Jeanne and Wyplosz (2001).

9 In this chapter we do not discuss the fact that many other market failures may justify the existence of other forms of official finance (not related to crisis resolution), such as the development finance provided by institutions such as the World Bank and other MDBs.

10 There is a large literature on the arguments for IMF conditionality, several of which studies are based on the better ability of the IMF to monitor and enforce good policy behaviour by debtor countries; see Guitan (1995), Marchesi and Thomas (1999), Kumar *et al.* (2000) and Khan and Sharma (2001). The lending is subject to "conditionality" to ensure repayment of the loans, as standard finance and agency theory would suggest (see Kahn and Sharma 2001 for this justification of "conditional" IMF lending). In principle, totally market-based regimes, where private creditors could impose such policy conditionality on a debtor in crisis to ensure debt servicing, could be designed. In practice, such attempts have failed in the past, in part because of collective action problems among private creditors. Thus, the need to delegate this role to a separate institution like the IMF. Tirole (2002) refers to it as "delegated monitoring" in situations of a common agency. We will assume in this chapter that the IMF can provide such delegated monitoring even though there is an open debate on this issue. Diwan and Rodrik (1992) assume that the IMF has a comparative advantage in enforcing conditionality; this advantage implies that the value of a debt reduction agreement between debtors, private and official creditors is increased.

11 See Gorton and Winton (2002) for a recent survey of contagion in bank crises. Goodhart and Huang (2000) show that an ILOLR can prevent international bank runs (contagion) but their model does not consider the issue of moral hazard.

12 And in the bank run literature, in addition to models of panic driven runs such as Diamond and Dybvig, there are also plenty of models of bank runs and crises driven by fundamentals: see Allen and Gale (2000a), Jacklin and Bhattacharya (1988) and Gorton (1987) to name but three.

13 Such standstills are the international equivalent of bank holidays in the case of a run on a solvent bank. A credible bank holiday avoids the collective action problem (the sequential service constraint or "first-come-first-served" rule) that triggers the run in the first place.

14 Indeed, Diamond and Dybvig (1983) suggest that a temporary debt suspension (bank holiday) is the optimal policy to prevent multiple equilibria runs.

15 One can argue that hair-triggers (liquidity runs) by creditors are the response

of creditors who want shorter maturities so they can get out at par (indeed, hair-triggers in secondary markets for long-term instruments are not as damaging). As suggested by Jeanne (1999) and Jeanne and Wyplosz (2001), the maturity of external debt is endogenous and may serve as a discipline mechanism. But if debtors believe that short maturities increase the risk of liquidity crises, and if liquidity crises are costly, debtors have countervailing incentives to lengthen maturities. One should maybe accept that there will always be some risk of shortening maturities (that can lead to liquidity runs) and that this threat can be compensated by policy action by debtors to lengthen maturities.

16 This point is familiar from economic theory: while "unexpected" capital controls may prevent a speculative attack and run on a currency, "anticipated" controls may actually trigger a run or make it occur earlier than otherwise, as creditors rush to the door to avoid the controls and the risk of being locked in. This "rush to the exits" effect is also the main potential drawback of any semi-coercive PSI policy: if creditors anticipate partial or full bail-in they may try to avoid it by unwinding their position before the policy is implemented.

17 We will discuss below in more detail how moral hazard affects the arguments about the need for an ILOLR or other market mechanisms to avoid runs.

18 Note also that while short-term debt is a source of potential liquidity runs, it can also work as a disciplining device for fiscally deviant countries and in situations where moral hazard is an issue. See Jeanne (2000) for a model where short-term debt is endogenously determined and works as a discipline device. His point is important as it suggests that mechanical policy recommendations, such as "avoid borrowing at short-term maturities" beg the question of why, in equilibrium, short-term debt emerges. Thus, imposing policy solutions from above, such as lengthening debt maturities, may lead to a reduction of lending in the first place.

19 In the optimal contract, default sanctions are imposed with a probability less than unity, as some defaults are due to inability to pay and some to unwillingness and lenders cannot distinguish between the two; if such information asymmetry was not an issue, sanctions would not be imposed in the true insolvency cases.

20 This is a variant of the view of those who believe that coercive PSI will shrink the amount of lending to emerging markets.

21 In a closed economy bank run context, Wallace (1988) showed that an optimal debt suspension policy (increasingly tighter caps on deposits as a run starts) dominates a lender of last resort policy (in the form of deposit insurance) unless the lender of last resort has superior information on the nature of the run.

22 Historically, this seizure solution to sovereign debt problems was actually available. In previous centuries when "gunboat diplomacy" was the rule, defaulting sovereign countries could be taken over by creditor governments and their assets, or tax authorities, seized to ensure the servicing of external debts.

23 In the corporate finance jargon of Tirole's (2002) analysis, the problems faced by both corporate and sovereign debtors are the limits to pledgeable income that can be used as effective collateral for borrowing. Sovereign immunity makes this problem even more serious for sovereign borrowers.

24 A side implication of this observation is that Bulow's (2002) aversion towards lending by the IMF/IFIs (the IMF should not make loans) because it induces gaming between debtors and private creditors does not have a strong factual basis.

25 Such informational problems for the IMF are also discussed by Dooley and Verma (2001).

26 Wells (1993) analyses how the presence of an official creditor affects the bargaining game between a sovereign debtor and its private creditors in an asym-

metric information debt reduction game, an issue that is relevant for the debate on the IMF's SDRM proposal. An IMF policy of "lending into arrears" is more efficient than one of "no lending into arrears". The former policy leads to more efficient bargaining as delay times are reduced, and the benefits of IMF transfers go to the debtor. In this chapter, the IMF is an exogenous source of funding rather than a strategic player in the game. Klimenko (2001) shows that the market power in trade of a debtor country affects its bargaining power in debt restructuring games involving official and private creditors. Also, he shows that if the official lender is a strategic player rather than a passive source of funds, the debtor is better off in a lending into arrears regime, not because its bargaining power increases relative to the private creditor, but because its power increases relative to the IMF. Variants of the games where the IMF is a passive provider of funds rather than a strategic player are the papers on the "debt buyback" debate (see Bulow and Rogoff 1991) where the controversial issue was whether debtors or creditors obtain most of the surplus deriving from IMF-financed debt buyback schemes.

27 Note that the middle solutions that have worked best have been those with most financing, such as Mexico in 1995 and South Korea at the end of 1997. This is especially true if the crisis is primarily one of liquidity. In the case of Indonesia, initial disbursements were much smaller than in South Korea and one can thus argue that this may have contributed to the deepening of the crisis. However, policy problems and the lack of commitment to adjustment and reform were also more serious in Indonesia, a factor that can explain the failure of the original rescue package and the deeper crisis experienced by this country. Similarly, the first South Korea package (early December 1997) did not work, in the sense of preventing a deepening of the crisis, because of a combination of the official package being too partial (in terms of disbursements, and uncommitted resources), not enough commitment to sound policies and reform before the presidential elections and the inherent desire of smaller creditors to exit.

28 See Cottarelli and Giannini (2002) for an empirical study of the IMF's catalytic approach.

29 See Frankel and Roubini (2001) and Roubini (2000, 2002b) for various arguments against standstills as a tool to prevent runs.

30 Even the views of Jeffrey Sachs on the issue of IMF loans in liquidity cases appear to have changed over time. While in his 1995 paper he made the argument that the IMF should become an international lender of last resort to deal with liquidity crises, he then argued that, even better than large bail-out packages, liquidity runs could be addressed by turning the IMF into an international bankruptcy court with the power to declare standstills and restructure sovereign debts and thus avoid the destructive effects of a "rush to the exits". But his later analysis of the Asian crisis as being driven mostly by self-fulfilling liquidity runs suggested again that large IMF liquidity packages would be necessary to deal with such destructive panics. Hence, his later support, within the work of the Meltzer Commission, for turning the IMF into a quasi-ILOLR that would lend very large amounts to well-behaved countries that experienced liquidity runs, panics and contagion.

31 Krueger (2001a, b, 2002). After a long debate, the G7 agreed in the spring of 2003 that the SDRM/statutory approach was not politically feasible given that it would require an amendment of the IMF's Articles of Agreement; also many have expressed doubts on the desirability of the SDRM approach and suggested that most of the goals of the SDRM can be achieved in a contractual setting. Thus, it has been agreed that priority should be given to the CAC/contractual approach. See Roubini and Setser (2003) for these latest policy developments.

32 Sachs (1995) was an early advocate of an international bankruptcy court for sovereign debtors, while his current contributions concentrate on the debt crisis and the debt reduction needs of low income countries. See Rogoff and Zettelmeyer (2002) for a survey of the literature on sovereign bankruptcy ideas.
33 When debt becomes unsustainable and the country has to restructure its sovereign (and possibly private sector) external liabilities, it is in principle in the interests of all parties to have an *orderly* debt restructuring process, one that can minimise losses of value that are socially inefficient and allow the country to adjust and return to a sustainable debt path. Thus, subject to the caveat that defaults should not be too easy (to prevent opportunistic defaults), an orderly debt restructuring should be the objective of an international regime.
34 I discuss these issues in more detail in Roubini (2002b, c).
35 See Sachs (1995) for an early statement of these market failures as the basis for the need for an international bankruptcy regime.
36 In Roubini (2002c) I discuss a number of other potential market failures in addition to the four discussed in my remarks here. Specifically, I consider the "rush to the exits" and the "rush to the courthouse" on non-sovereign claims (and the ensuing need for capital or exchange controls); the risk of debtor actions (such as preferential treatment of some creditors) that damage creditor interests; the risk of asset stripping by the debtor; and how to provide senior private "new money" (debtor in possession (DIP) financing) during a default. Sachs (2002) states that, in addition to the collective action problem among creditors, another motivation of bankruptcy law is to provide a "fresh start" to insolvent debtors, i.e. avoid situations of "debt overhang" and provide some fairness, in addition to efficiency, to the workout process. I interpret this "fresh start" as the need to provide debt workouts that are beneficial to both debtors and creditors when a disorderly, costly and lengthy workout would lead to a loss of value that is not beneficial to either side. Thus, the issue is which regime (statutory, contractual or market-based) can provide such an orderly workout. See also Roubini and Setser (2003).
37 See Krueger (2001a, b, 2002).
38 See Eichengreen (1999), Taylor (2002a, b).
39 The main difference remains that a statutory approach requires an amendment of the IMF's Articles of Agreement or an international treaty, while the contractual approach could evolve over time without such a radical institutional change. But even a contractual approach would require changes in legislation in some major legal jurisdictions.
40 Roubini (2002b).
41 See the very cautious endorsement of the idea of an international bankruptcy regime in the February 2002 communiqué of the G7 Finance Ministers.
42 See, for example, the recent JP Morgan proposal by Bartholomew and Stern (2002).
43 There is a broad literature on reputational mechanisms and which type of costs of default are able to sustain an equilibrium without opportunistic default. See, for example, Bulow and Rogoff (1989a) and Wright (2001b).
44 See Roubini and Setser (2003) for a recent discussion.

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8 Comments on "Private sector involvement in crisis resolution and mechanisms for dealing with sovereign debt problems"

Amar Bhattacharya

Much of the chapter by Roubini is a very useful survey of the analytical foundations of the crisis resolution and private sector involvement (PSI) debates. But I do have some points which I want to add by way of a new perspective.

The chapter divides the PSI debate into three parts: crisis prevention, crisis response and crisis resolution. An innovative feature in the approach taken in the chapter is that, instead of looking at what private sector involvement should be, it starts out by looking at a world without the official sector. I think that is very instructive because it highlights clearly the kinds of market failures that you have to deal with and asks what kind of combination of interventions from the public and private sector are needed.

But before turning to crisis resolution, I want to talk a little bit about private sector involvement in crisis prevention. This is an area where there has been a lot of progress, in particular in terms of adoption, assessment and implementation of international standards. We have also seen a lot of progress in terms of the emphasis placed on improved transparency. And we have seen progress in terms of surveillance by the IMF and by others – for example, in terms of an emerging consensus on exchange rate arrangements that are less risk-prone.

Much of this effort, though, has been confined to the official sector. There has been relatively little engagement with the private sector in these discussions, with a few notable exceptions in the international standards area. So one question that I would pose is: what kind of involvement would we like to see of the private sector at the crisis prevention stage? For example, I would argue that better market incentives are absolutely central if standards and codes are going to have an impact on debtor country behaviour. To date, although there has been some progress, it has not been nearly enough. The official sector needs to ask itself what role they see standards and codes playing in guiding future private sector lending decisions through market incentives.

Second, let us consider private capital flows. The contradiction here is not that there is too much capital flowing to emerging markets, but that there is too little. Yet, given the variance in capital flows, there is a serious question about whether coming to this trough of water is really worth it

for many emerging markets. If the rigours of borrowing from capital markets (compared with, say, foreign direct investment) are so great, is it worthwhile? It is instructive here to look at the cases of India and China, who are no paragons of virtue in terms of their policy framework, fiscal sustainability and adherence to standards and codes. They are large markets that have been relatively closed to capital market flows – and hence have avoided crisis. Will adherence to standards and codes and enhanced surveillance ever be sufficient to prevent the kinds of devastating crises that we have seen over recent years? And if not, does this lead one to lower the bar in terms of capital market liberalisation?

Private capital flows are now five times official flows to emerging markets. But the private capital flows that are financing current account deficits are less than one-fifth of the total. So one question is: do we need such a large volume of private capital flows in the first place? And what kinds of insurance mechanism are needed to prevent the sudden stops and reversals that have been associated with these flows? Although there are clearly benefits to private capital flows, the latest spate of crises should at least cause us to rethink the balance of benefits and costs of capital account liberalisation.

Much of the chapter is focused on the issue of bail-ins versus bail-outs. An important point in the chapter is that these are symmetric propositions. The tougher one is on bail-outs, the more corrosive will be bail-ins. Based on that proposition, the chapter considers three options – pure bail-outs, pure bail-ins and a combination of limited bail-outs with appropriate PSI and policy adjustment on the part of the country. It argues for a case-by-case approach, given differences in initial conditions and in market circumstances – that is, the old principle of constructive ambiguity. Although the term has recently come under attack, the chapter lays out some fairly compelling analytical foundations for that approach.

But I believe that there are two fundamental dilemmas or problems that this approach has to face. One is the issue of spontaneous or catalytic financing; and the other concerns payments standstills and the unknown territory they take you into.

On catalytic financing, the chapter observes "the key to determining the approach that you take is based on a determination between whether the crisis is a liquidity or an insolvency crisis". The problem with that determination is that it is very much affected by expectational shifts and risk-aversion. In the kinds of situation we have seen, we are not looking at something which is a short-term decision about illiquidity versus insolvency. Instead, there is often a protracted period of judgement about essentially knife-edge situations. Indeed, I would argue that Argentina was in that kind of situation during much of the period after the Tequilla crisis in 1994.

There are also inherent asymmetries in the expected policy response by debtor countries. One of the reasons for the market to discount official financing is that they are not just looking at credible policy responses at a point in time, but at everything going right policywise over a long period

of time so as to make things sustainable. Markets rightly discount the probability of that happening.

Risk-aversion is also central. There was no fundamental change in the fiscal balance of Argentina between 1998 and 2000, but the market's view of the fiscal balance did change and this led to a problem of risk premia. The risk premia associated with relatively short-maturity debt can be just as much a problem as a massive withdrawal of private capital. Look at the debt ratios of Argentina in the mid-1990s. They were high but they were not impossible. It was risk premia that took Argentina from dangerous terrain into impossible terrain. Yes, there was a fiscal problem, but it was the risk premia associated with the fiscal burden that added to the problems of Argentina.

Therein lies a problem with the spontaneous or catalytic approach. Unless you are able to reduce risk premia quickly, official lending simply adds fuel to the fire. Why? Because it replaces flexible, private sector debt with inflexible, senior official debt. It is true that official money is always paid back by the country. But by adding to the pile of debt, official lending may make things worse rather than better if it does not reduce uncertainties and risk premia quickly.

The flip side of this is that if you set presumptive limits on access to IMF resources we have to live with debt standstills and the uncertainties associated with them. I do not believe the debtor moral hazard issues associated with standstills are that great. Indeed, one of the reasons why we have had protracted problems is because governments have been *unwilling* to enter that terrain, rather than *too willing*. But there are also some fundamental operational issues concerning debt standstills that are discussed in the chapter.

In closing, let me just make a couple of points about the sovereign debt restructuring mechanism, or SDRM. As the chapter correctly points out, there are alternative ways of solving the three main market failures of a "rush to the door", a "rush to the courthouse" and the "free-rider problem". But I believe there are two additional issues which are quite important for emerging markets that need to be grappled with.

First, does the SDRM deliver a predictable set of institutional arrangements? If you look at corporate debt workouts, the reason why the London approach rules are being replicated all over the world is because they create a predictable framework for workout arrangements between debtors and creditors. In the case of sovereign debt workouts, having more predictable institutional arrangements is absolutely key. The problem with the status quo is that it leaves such institutional arrangements in limbo. But would the SDRM do any better?

The second aspect is the incentives to bring both debtors and creditors to the table following default. The importance of bankruptcy law is not that everybody goes to court, but that it acts as a huge incentive to bring debtors and creditors together. It is not clear whether similar incentive mechanisms would operate under the current SDRM proposal.

9 Binding-in the private sector

Andrew G. Haldane, Simon Hayes, Adrian Penalver, Victoria Saporta and Hyun Song Shin[1]

9.1 Introduction

Over recent years, there has been an intense debate on the reform of the international financial architecture. Several competing reform plans have been tabled. Some of these are "big ideas" requiring new, supranational institutions – or at least an adaptation of existing institutions. For example, in 1999 Stanley Fischer, then first Deputy Managing Director of the IMF, set out a blueprint for an International Lender of Last Resort, with the IMF at its centrepiece (Fischer 1999). In 2001, Anne Krueger (2001), newly-appointed first Deputy Managing Director of the IMF, set out an alternative plan for a sovereign debt restructuring mechanism (SDRM), or surrogate international bankruptcy court. These big ideas would require far-reaching institutional and statutory change.

Alongside these "big ideas" are several smaller ones. For example, some have argued for the greater use of collective action clauses (CACs) in bond – and possibly other loan – contracts to facilitate debt restructuring (Eichengreen and Portes 1995; Rey 1996; Taylor 2002). Others have proposed presumptive limits on official finance in combination with periodic suspensions of payments (Council on Foreign Relations 1999; Miller and Zhang 1999; Haldane and Kruger 2001). These smaller ideas would typically require less far-reaching reform.

Many of these competing plans do, however, have at least one common feature – they envision a temporary standstill on debt repayments by the country and an accompanying binding-in of private sector creditors. To clarify terms up front, we define a "standstill regime" as comprising two generic features:

- a breach of the financial contractual terms of a debt contract between a debtor(s) and its creditors, typically the temporary suspension of payments;
- the binding-in of creditors during the period of that breach of contractual terms, to prevent individual creditors imposing externalities on other creditors and on the debtor.

Within this generic definition, there is considerable scope for differences in the precise form of a standstill regime and the circumstances in which it is invoked. Some examples illustrate.

At one end of the spectrum, the Krueger (2001, 2002) SDRM model envisages a temporary suspension of payments and associated stay on litigation during the process of agreeing to restructure sovereign debt. The model has three key features. First, it is a statutory mechanism. Second, it is designed to facilitate the writing-down of debt – relevant for so-called solvency cases. And third, it aims to guard against the externality of disruptive litigation, by binding-in holdout creditors.

At the other end of the spectrum, the Haldane and Kruger (2001) model also envisages a temporary suspension of payments. But its key features differ. First, it is a non-statutory approach. Second, it is not designed for the writing-down of debt, but more as a means of enforcing rollover of short-term debt – relevant for so-called liquidity cases. Third, it aims to guard against the externality of a run on a sovereign's assets, by binding-in short-term creditors.

Some versions of the CAC approach (e.g. Taylor 2002) envisage clauses in bonds that also allow for a temporary standstill on payments.[2] This approach is contractual. It is designed either for the writing-down (in solvency cases) or the reprofiling (in liquidity cases) of debt. And it aims principally to mitigate litigation risk, resulting from recalcitrant hold-out creditors.

Although these three policy prescriptions differ in important respects, each can be rationalised using existing models of crisis. The next section considers the welfare–theoretic case for a regime of standstills in dealing with international financial crises. It develops a generic model of crisis, which nests liquidity and solvency crises as special cases. In all these cases, crisis is rooted in a collective action problem among creditors – although the precise collective action problem is different for different types of crises.[3] In the most general form of the model, both types of crisis are possible and the crises themselves interact in important ways. We have "grey zone" crises. These externalities generate inefficiencies, which are damaging to creditors and debtors alike.

The model is then used to explore the welfare benefits of some of those policy proposals outlined above, which are designed to address these inefficiencies. Rather than "bailing-in" the private sector, the proposals are better described as an attempt to "bind-in" the private sector, to guard against collective action problems. This yields welfare benefits for all.

We demonstrate how policies for binding-in creditors can eliminate welfare losses in both liquidity and solvency crises. But our analysis also uncovers some interesting interactions between liquidity and solvency crises, which have important implications for the appropriate design of crisis management policy. A key result is that creditors' willingness to rollover debt (and so the likelihood of a liquidity crisis) depends in part on their expected payoff should the debtor eventually be forced to default. If

a disorderly debt restructuring process is perceived to damage creditor value, this increases the likelihood of a liquidity run even when the debtor is fundamentally solvent. Thus, there is an important sense in which mechanisms designed to aid debt restructuring may have a direct impact on the likelihood of liquidity crises. But we also argue that orderly restructuring per se is not sufficient to remove the possibility of a liquidity run. First, because liquidity crises still occur even if inefficiencies in the debt restructuring process are eliminated; there is then a case for payment suspensions to help deal with these crises. And second, because if the creditors' bargaining hand is weakened by some feature of the workout process, their expected payoff might be lower even if the more orderly process leads to a higher level of output in total. This highlights the importance of having credible mechanisms for maintaining creditor value as part of any restructuring procedure. The latter may be more easily achieved through a formal SDRM approach than through changes to debt contracts.

Section 9.3 considers the other side of the coin. It assesses some of the arguments used against a standstill regime, using empirical and theoretical evidence. Section 9.4 concludes with some thoughts on next steps in the redesign of the international financial architecture.

9.2 A model of sovereign financial crisis

We begin by sketching a canonical model of sovereign crisis, which nests "pure liquidity" and "pure solvency" crises as special cases.[4] Potential policy measures have been proposed which address these special cases. This chapter demonstrates that the effects of policy intervention are more complex when interaction between liquidity and solvency crises is considered.

There is a single debtor and a continuum of creditors. The debtor can be thought of as a sovereign borrower and the creditors as a set of international lenders. The debtor invests in an investment project that takes two periods to complete. The project is financed with overseas borrowing of one unit which is fixed. The returns to the investment project depend on the outcome for some random productivity shock ($\theta \sim N(\mu, \sigma^2)$).

Two types of debt contract are available to the debtor: short-term debt, which offers creditors the option of withdrawing their funds after one period; and long-term debt which locks creditors into the project until its completion at the end of the second period. Denote the share of short- and long-term debt in total debt as (p) and ($1-p$) respectively, also exogenously determined. Each creditor receives a noisy private signal (γ^i) about the state of fundamentals ahead of the first period, which is different across creditors (indexed i):

$$\gamma_i = \theta + \epsilon_i \tag{9.1}$$

where $\epsilon_i \sim N(0, \eta^2)$. Having observed this signal, short-term creditors have the option to "rollover" to the end of the second period, or to "flee". If creditors choose to "flee" they receive gross principal plus interest net of an exit tax, c – that is, they receive $(1 + r_s)(1 - c)$, where r_s is the short-term interest rate. For simplicity, short-term creditors who rollover are assumed to receive the same return as long-term creditors; so creditors rolling over receive $(1 + r_l)$ where r_l is the long-term interest rate at the end of the second period.

Creditors who "flee" after the first period impose costs on the debtor. The debtor is forced to liquidate assets that would otherwise have usefully contributed to the investment project. This cost is larger, the higher is the proportion of short-term creditors who "flee", denoted f. So liquidity crises in this model manifest themselves as a failure of short-term creditors to rollover their loans into the second period. And this, in turn, has a cost for second-period output.

Given the above structure, the net return of the investment project (y^N) to the debtor at the end of the second period can be written generically as:

$$y^N = y^G(\theta, f) - R_L \tag{9.2}$$

where the first term denotes gross output (y^G) at the end of the second period, and the second term denotes gross repayments to creditors in the second period ($R_L \equiv (1 + r_l)(1 - fp)$).[5] Note that gross output from the project is an increasing function of productivity (θ) and a decreasing function of the proportion of "fleeing" creditors (f).

We assume that default is triggered by the debtor's inability to pay, rather than unwillingness.[6] So the solvency condition is $y^N > 0$. If that solvency condition is violated, the debtor and its creditors need to reach a restructuring agreement to write-down the value of the debt. The precise form of the debt instrument will influence the expected returns to the creditors from the restructuring. We assume as a baseline that long-term debt comprises bonds issued under New York law, which we take as shorthand to describe a debt contract that upholds an individual creditor's right to sue for repayment, regardless of the actions or interests of other creditors. The restructuring game in this model begins with the debtor making an exchange offer to each creditor of (Θ) per unit of debt, which would reduce the present value of the debtor's second period obligations by a fraction $(1 - \omega)$, where $0 < \omega < 1$, so:

$$\Theta = \omega(1 + r_l) \tag{9.3}$$

Creditors vote on this offer and decide whether to "accept" or to "holdout" and sue for full repayment. Denote the proportion of holdout creditors by h. We assume creditors that "holdout" from a restructuring offer impose a *direct* cost on net output and this cost is rising in the number of "holdouts". This can be thought of as the cost of creditor litigation

against the sovereign following a default event. Having learned the outcome of the vote, the debtor decides whether to expend adjustment effort (denoted a). Adjustment effort serves to increase net output following.[7] So total output of the project, y, is a function y (θ, f, a, h). But adjustment effort also carries a cost to the debtor, $c(a)$, which is increasing in effort, $c'(a) > 0$. In effect, the debt exchange offer, if accepted, serves as a means of giving the debtor time to put in place remedial policy measures.

The timeline of moves in the game is shown in Figure 9.1. In effect, the model can be decomposed into two sub-games. The first part involves a rollover decision by (short-term) creditors, which gives rise to the potential for a "liquidity crisis". The second involves a restructuring decision by (long-term and "non-fleeing" short-term) creditors in the event that full contractual payments cannot be made, which gives rise to a "solvency crisis". As will be discussed below, the equilibrium in both sub-games is sub-optimal owing to collective action problems among creditors. These inefficiencies are individually important but the interaction between these inefficiencies is as important for policy design.

The payoff matrix for creditors is summarised in Figure 9.2. Short-term creditors can choose to either "stay" or "flee" at period 1. If they "stay", then second period returns will depend on whether the debtor "repays" or "defaults". If the debtor "defaults", the returns to the creditor depend on whether they "accept" the offer or "holdout". And if they "holdout", they receive a pro-rated share of net output, after creditors accepting the offer have been paid off.

Liquidity crises

The main inefficiency in the "liquidity crisis" game is the cost of premature liquidation of projects. As outlined above, creditors receive a private signal, γ_i, about the future productivity of the project, θ. In some cases, future productivity will be so bad that the project will not be profitable even if all short-term creditors rollover. This "fundamental insolvency" point is denoted θ^*. At the other extreme, future productivity can be so high that the project is profitable even if all short-term creditors flee. This "fundamental solvency" point is denoted θ^{**}. If γ_i was a perfect signal, we

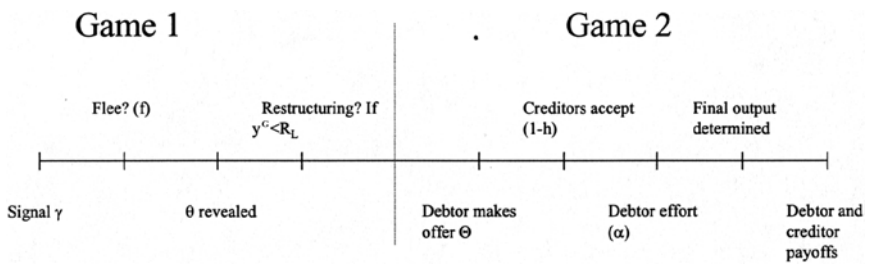


Figure 9.1 Timeline.

		Debtor		
		Repay	Default	
Creditor	Flee	$(1+r_s)(1-c)$	$(1+r_s)(1-c)$	
	Stay	$1+r_l$	Accept	Θ
			Holdout	$\text{Min}\{(1+r_l),(y^G-(1-h)(1-fp)^{\Theta}/h(1-fp)\}$

Figure 9.2 Payoff matrix to creditors.

would have multiple equilibria between θ^* and θ^{**}. If there is a noisy private signal but with sufficient precision, there is a unique trigger value of the fundamentals, $\hat{\theta}$, lying between θ^* and θ^{**}. A proof of this based on Chui *et al.* (2002) and setting $p=1$ to focus on the short-term debt case is presented in Appendix 9.1. At $\hat{\theta}$, just enough creditors receive a signal that causes them to believe that a sufficient number of other creditors will flee to tip the debtor into insolvency. There is a welfare loss between $\hat{\theta}$ and θ^* because if all the creditors who flee could be made to stay, the project would still be profitable enough for all creditors to receive full payment.

Solvency crises

There can also be inefficiencies in the restructuring process, particularly with New York law bonds.[8] These derive from the costs of holdout creditors who sue to extract any surplus and who, in turn, reduce the incentives for the debtor to exert adjustment effort. This reduces the volume of output in the second stage and, crucially, limits the size of the offer the debtor can feasibly make to creditors. In Appendix 9.2 we demonstrate that there will always be some creditors who holdout in equilibrium under New York law bonds. This will have accompanying welfare costs, measured by a suboptimally high number of holdout creditors and a suboptimally low amount of adjustment effort by the debtor. Bonds using the simplified case of $p=$ O with collective action clauses are potentially able to offset these restructuring inefficiencies.

"Grey zone" crises

Although the two stages of a financial crisis can be analysed separately, it is unlikely in reality that countries will experience either a pure liquidity or a pure solvency crisis. Moreover, even in cases where, with hindsight, it might be possible to draw such a conclusion, it is often difficult to make this assessment as the crisis is unfolding. Most crises appear to operate in the "grey zone" between pure liquidity and pure insolvency. The source of this uncertainty is twofold.

First, even liquidity crises are often rooted in concerns about potential solvency. The greater the uncertainty about future solvency, the greater the scope for a liquidity crisis. Second, potential recovery value for

creditors in the event of default is often dependent on actions taken by the debtor country itself – for example, structural adjustment effort. But whether the debtor will put in that effort is unknown.

In the hybrid model, liquidity and solvency problems interact in important ways. The greater the potential for a liquidity crisis, with its attendant output costs, the greater the probability of the sovereign finding itself in a solvency crisis, with its associated costs. And the greater the potential costs of a restructuring agreement, the greater the likelihood of short-term investors wishing to flee. In other words, the two aspects of creditor co-ordination failure – the rollover friction (f) and the holdout friction (h) – now interact to aggravate the overall welfare loss. That accords with most empirical evidence, which tends to find strong support for a statistical link between liquidity crises and subsequent default and debt restructuring (e.g. Detragiache and Spilimbergo 2001).

Combining the solvency and liquidity dimensions to crisis alters the trigger point at which creditors flee in the first stage. Denote this trigger point in the hybrid model, $\tilde{\theta}$. In the New York law scenario discussed above (and detailed in Appendix 9.2), creditors receive a pro-rated share of no-effort output. The more inefficient the restructuring process, proxied by a higher number of holdout creditors, the lower the recovery value to creditors in the event of default. *If* a solvency crisis reduces the recovery value to creditors, it can be shown that $\tilde{\theta}$ lies to the right of $\hat{\theta}$ (the trigger value for fundamentals in a pure liquidity crisis) as illustrated in Figure 9.3. There are two behavioural channels driving this result. First, a lower expected return in the event of default alters the point at which the marginal cost and marginal benefit of fleeing are equilibrated for short-term investors.[9] Second, there is a strategic effect as investors, recognising that other investors are more likely to flee, adjust their own behaviour accordingly. Taken together, these two channels have the effect of making investors more trigger-happy: they will choose to flee at a higher level of fundamentals ($\tilde{\theta} - \hat{\theta}$) than they would have done if the solvency inefficiency did not exist.

Welfare costs and policy discussion

We can now measure the welfare costs resulting from the co-ordination failures in the combined model of "grey-zone" crises. We use expected output as our measure of welfare. If short-term creditors only failed to rollover at the "fundamental insolvency" point, and there were no restructuring inefficiencies, then total output (our measure of welfare) would trace $y(\theta, 0, 0)$ until θ^* before dropping to $y(\theta, 1, 0)$. We ignore the adjustment effort argument, a, for convenience. More formally, in a world with no co-ordination failures expected output is given by:

$$E(y)_{NCF} = \int_{-\infty}^{\theta^*} y(\theta, 1, 0)\phi(.)d\theta + \int_{\theta^*}^{+\infty} y(\theta, 0, 0)\phi(.)d\theta \tag{9.4}$$

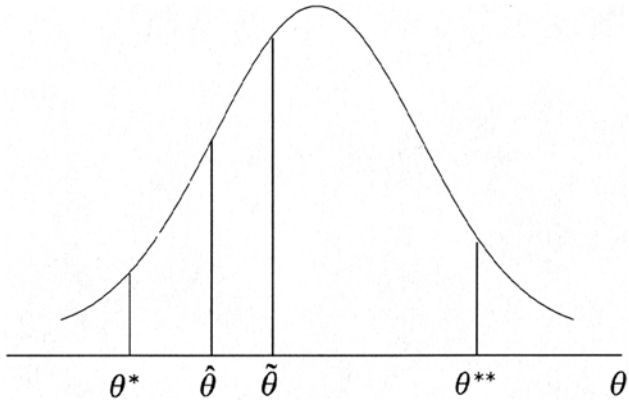


Figure 9.3 Incidence of crises.

where $\phi(.)$ is the density function of the fundamental variable θ. Expected output in an environment where there are co-ordination problems at both the rollover and at the restructuring phases is given by:

$$E(y)_{CF} = \int_{-\infty}^{\hat{\theta}} y(\theta, f(\theta), h^*)\phi(.)d\theta + \int_{\tilde{\theta}}^{+\infty} y(\theta, f(\theta), 0)\phi(.)d\theta \tag{9.5}$$

A measure of the welfare cost of co-ordination failure is given by the difference between Equations (9.4) and (9.5) which can be written as:

$$\begin{aligned} E(y)_{NCF} - E(y)_{CF} = & \int_{-\infty}^{\theta^*} [y(\theta, 1, 0) - y(\theta, 1, h^*)]\phi(.)d\theta \\ & - \int_{-\infty}^{\theta^*} [y(\theta, f(0), h^*) - y(\theta, 1, h^*)]\phi(.)d\theta \\ & + \int_{\theta^*}^{\infty} [y(\theta, 0, 0) - y(\theta, f(\theta), 0)]\phi(.)d\theta \\ & + \int_{\theta^*}^{\tilde{\theta}(h=h^*)} [y(\theta, f(\theta), 0) - y(\theta, f(\theta), h^*)]\phi(.)d\theta \end{aligned} \tag{9.6}$$

The first term of the above equation reflects the expected loss from co-ordination failures at the restructuring phase (the risk that creditor returns will be lower in the event of restructuring due to holdout creditors); the second two terms reflect the expected loss from co-ordination failures at the rollover stage (the risk that co-ordination

problems would discourage investors from rolling over, thus causing the debtor to default in states of the world where the debtor is not fundamentally insolvent); and the last term reflect expected losses from the interaction between co-ordination problems at the rollover and restructuring phases. These three types of welfare loss provide a justification for public policy intervention. Our next task is to look at policy measures that might address each of these types of loss. But before doing that, there are several general policy conclusions that can be drawn from the welfare decomposition in Equation (9.6).

First, there is an important sense in which policy proposals to deal with solvency issues – such as CACs and the SDRM – have a direct bearing on the likelihood of liquidity crises. As we have discussed, fears of a disorderly restructuring and lower returns to creditors increase the likelihood of a liquidity crisis. In that sense, orderly debt restructuring proposals can help mitigate the costs of liquidity crisis. This is an important rationale for continuing with work on this front.

Second, orderly debt restructuring proposals, by themselves, will not fully remove the welfare costs of crisis. The costs of a pure liquidity run remain. Liquidity-based crisis resolution tools, such as temporary payments suspensions, would garner the welfare benefits defined by the second and the third terms in Equation (9.6). The liquidity/solvency interaction terms can be addressed either by liquidity or solvency-based public policy measures. In that sense, liquidity-based crisis measures and solvency-based measures are substitutes. But they are not perfect substitutes. Both sets of crisis-resolution measures would need to be in place to mitigate, in a comprehensive fashion, the costs of crisis defined in Equation (9.6). For that reason, the two sets of measure are better seen as complements than as substitutes.

Third, the relative weight to put on various crisis resolution mechanisms will depend on which of the welfare wedges in Equation (9.6) is likely to be the most important in practice. Eichengreen (2000) argues that solvency crises are more prevalent than liquidity crises in practice. The model presented suggests that such a separation may be difficult to make in practice. A key parameter in the more general model is the proportion of short-term debt, p. It can be shown that a rise in short-term debt has two effects. First, it shifts θ^{**} – the point of fundamental solvency – to the right. Higher short-term debt increases the chance of a country finding itself unable to meet contractual payments. But, second, an increase in short-term debt also causes $\hat{\theta}$ to shift to the right. A higher proportion of short-term debt increases the vulnerability of a country to liquidity crisis, as we might expect. So the net effect of increasing short-term debt is to increase the aggregate costs of crisis, but in particular the costs of liquidity crisis. Or, put differently, the larger the proportion of short-term debt, the higher the premium that should be placed on measures to resolve liquidity, rather than solvency, crises (and the greater the importance of putting in place crisis resolution measures in general).

Dealing with liquidity crises

To forestall liquidity crises, domestically as well as internationally, three types of intervention are typically discussed. First, last-resort lending by some supranational agency, such as the IMF (internationally) or a central bank (domestically). If there were a fully-credible expectation that the IMF would fill completely any financing gap resulting from a failure of short-term creditors to rollover, then a liquidity crisis would never materialise in the first place. All of the welfare loss of creditor co-ordination failure would be removed; the first-best would obtain (Chui *et al.* 2002). A sovereign liquidity crisis, then, is just like a bank run and can be tackled with the same instruments.

A second means of achieving the same end is a suspension of payments, or standstill, in the event of a failure by short-term creditors to rollover.[10] Provided it were fully credible, a forced rollover of debt would also defuse incentives to run and secure the first-best. A standstill is as efficient as last-resort lending in forestalling a sovereign liquidity crisis. This equivalence between last-resort lending and payments suspensions on *ex post* efficiency grounds is well-known in a banking context (Diamond and Dybvig 1983; Rogoff 1999). The same logic carries across in a sovereign liquidity context (Chang and Velasco 2001). There are two reasons for believing, however, that standstills may offer something over and above last-resort lending in the event of liquidity crisis.

First, this equivalence breaks down if the offer of potentially unlimited official lending is less than perfectly credible – for example, because there are limits on official lending. In that event, payments suspensions would be strictly preferred on efficiency grounds, provided they are applied time-consistently (Miller and Zhang 1999).[11] In practice, official lending is limited. Official monies have less than fully filled the financing gaps facing even the larger, systemic countries. If there are expectations that last-resort lending is limited, then liquidity crises will not be forestalled – and could even be induced. That would suggest the need to focus on other tools for dealing with liquidity crises, such as standstills.

Second, last-resort lending carries potential moral hazard risks, for both debtors and creditors. These risks should not be overstated. The empirical evidence on moral hazard is, at best, ambiguous. And, theoretically at least, lending at a market interest rate in the face of a liquidity crisis should not induce moral hazard (Haldane *et al.* 2004). If, however, IMF financing is at a subsidised rate, moral hazard becomes at least a possibility.

To date, payment suspensions have not been the preferred tool of the official sector. We have seen instances of partial suspensions, as with the rollover arrangements agreed with international banks in South Korea in 1997 and Brazil in 1999. But these were only introduced after official monies had been put up. That reluctance to use standstills in liquidity

cases may reflect concerns about their potentially adverse side-effects on capital markets, which are discussed in Section 9.3.

A third potential official sector response is the accumulation of liquid foreign currency reserves by the country itself. For example, a number of Asian economies have accumulated substantial foreign currency reserves in the past few years and are consequently much less susceptible to the kind of liquidity crises some of them experienced in 1997. Such a policy basically means that a domestic authority (usually the central bank) can provide lender of last-resort funds in foreign currency. Chui *et al.* (2002) demonstrate that a higher level of liquid reserves reduces the probability of both fundamentals and belief-driven liquidity crises, with associated improvements in welfare. But as Chui *et al.* note, this welfare analysis does not take into account the potentially high opportunity cost of holding reserves (which are typically held in the form of low-yielding assets). Also, this comparative static result does not capture the potential behaviour of debtors and creditors were a country to have an explicit *policy* of covering short-term foreign currency debt with official reserves. The latter would introduce moral hazard into the borrowing decisions of private domestic debtors, leading to excessive levels of short-term foreign currency debt and exacerbating the inefficiency of liquidity crises. Self-insurance might be effective in preventing liquidity crises, but has the potential to be inefficient.

Dealing with solvency crises

We now consider public policy measures directed at the inefficiencies associated with restructuring – low adjustment effort by the debtor and an inefficiently high number of holdout creditors. We consider two measures: collective action clauses, which place restrictions on the number of holdout creditors; and an international bankruptcy court, which has some of the same features as the SDRM.

In Appendix 9.2 we demonstrate that switching from New York law bonds to English law bonds with collective action clauses alters the incentives of the debtor to exert effort. A more comprehensive analysis of these issues can be found in Haldane *et al.* (2003). Under New York law, the debtor has no incentive to exert effort because even if a large proportion of creditors are prepared to accept a restructuring offer, holdout creditors can capture the results of this additional effort. In equilibrium, creditors receive an equal share of no-effort output. Under English law bonds, provided the debtor makes an offer satisfactory to a sufficient number of creditors to exceed the collective action voting threshold, this becomes binding on all creditors. By fixing the amount of the new obligation, the debtor has an incentive to exert effort because it keeps the residual. As there is now more output to be shared, the debtor could feasibly offer creditors a higher recovery value than under New York law.

Collective action clauses can generate a Pareto improvement by eliminating the inefficiently high number of holdouts and inefficiently low level of effort. Figure 9.4 shows the range of feasible aggregate offers, $y(a, h)$, that could be made by the debtor to creditors. It is bounded above by $y^G(a^*, 0)$ and below by $y^G(0, 1)$. Where the offer lies within this range – and hence the equilibrium sharing of the surplus – will depend on the relative bargaining strengths of the debtor and the creditors. Those bargaining powers will, in turn, depend on the relative costs facing the debtor and creditors in the event of the collective action clause threshold not being reached[12] and the level of the threshold itself. Appendix 9.2 shows that switching to bonds with collective action clauses and a judicious choice of voting threshold can secure greater returns in the event of a solvency crisis to *both* creditors and the debtor. But as Figure 9.4 also illustrates, it is possible that the expected offer and outcome for creditors is worse under collective action clauses than pre-restructuring output, $y^G(0, 0)$ or output under New York law, $y^G(0, h^*)$, if their bargaining strength is sufficiently weak. If creditors collectively have weak bargaining power, they may feel they are better off taking their chances and litigating individually. This may be one of the factors explaining the reluctance of some private creditors to countenance the inclusion of such clauses in international bonds; they may weaken their bargaining hand. This is despite the fact that the clauses themselves boost aggregate welfare.

One key design issue is the choice of an appropriate binding-in threshold in collective action clauses. This has recently been a point of debate between the private sector and the official sector, with some within the private sector favouring a higher majority restructuring threshold (e.g. EMCA 2002). Although not modelled here, it is easy to see why this would be a point of contention between the private sector and debtors. For a given distribution of costs of not reaching a restructuring agreement, a higher voting threshold is likely to correspond to a higher offer to secure that threshold – and hence more of the surplus being taken by creditors versus debtors.

An international bankruptcy court operating through an SDRM could act as a central planner in the model. It could require that the debtor expend optimal effort, $a = a^*$ – for example, as a precondition of any IMF lending. And it could constrain creditors from holding out, $h = 0$ – for example, by preventing creditors litigating against the sovereign following an offer. Enforcement of these outcomes by a supranational agency could, at a minimum, replicate the results of switching to bonds with collective action clauses. Crucially, the SDRM also adds one additional degree of freedom. The bargaining power of the debtor and creditors under collective action clauses is, to a significant extent, determined by the voting threshold. This is fixed *ex ante* by what is written in the contract. But this threshold could be inefficient once the value of θ is realised. This is important for welfare in the hybrid – "grey zone" – version of the model.

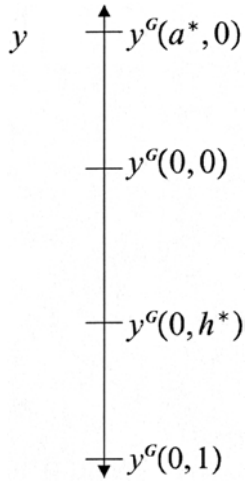


Figure 9.4 Output post-restructuring.

Dealing with "grey-zone" crises

In a model of a pure solvency crisis, centralised (bankruptcy court) and decentralised (contractual) approaches to restructuring debt are, in most cases, isomorphic in their effects on social welfare (Appendix 9.2). An appropriately-designed contract, defining a critical threshold of holdout creditors, could secure the first-best, as could a bankruptcy court. The precise division of this welfare gain or surplus is largely a distributional issue between debtors and creditors, provided the debtor can be induced to exert optimal effort.

That result changes in a model of hybrid liquidity and solvency crises. In this model, rules on the sharing of the surplus have a bearing on creditors' willingness to run. The greater the slice of the pie creditors can be assured in the event of a debt restructuring, the greater is their willingness to stay when confronted by an adverse shock – that is, the lower the probability of a liquidity crisis. Against these creditor incentives need to be balanced the incentives of the debtor. For, if too great a share of the surplus is distributed to the creditors, their incentives to exert optimal effort may be blunted. In other words, there is a trade-off in the incentives facing debtors and creditors and in the liquidity and solvency parts of the game.

To see this more formally, let β be the share of the surplus, $s(a, h)$, taken by creditors in the event of a restructuring, with the debtor receiving $(1 - \beta)$. The planning problem is then to maximise aggregate output:

$$y(\theta, f; a, h) = y(\theta, f(\beta s(a, h)); a((1 - \beta)s(a, h)), h(\beta s(a, h))) \tag{9.7}$$

by choice of β, the sharing parameter. Note now that this sharing parameter positively affects the incentives to rollover (f) on the part of the creditor, but negatively affects incentives to exert adjustment effort (a) on the part of the debtor. The optimal β will seek to balance these competing incentives of debtors and creditors so as to maximise aggregate output.

Whereas, in the pure solvency game, welfare was invariant to the precise sharing rule, in the general model this is no longer the case. The first-period incentives of the creditor need to be weighed. This strengthens the hand of those who have argued for a centralised approach to the restructuring of debt, with some supranational agency – a bankruptcy court – overseeing the process. They could ensure an optimal splitting of the surplus to ensure welfare is maximised. The assurance that a bankruptcy court stood in the background, ensuring fair play in the event of default, would provide assurances to creditors in the first period. And the court would also ensure that, in the event of default in the second period, the debtor was offered enough to induce them to exert optimal effort.

It is unclear that a decentralised approach could deliver such an outcome. The division of the surplus is then determined by the debtor's and creditors' relative bargaining strengths. These need not necessarily accord with the balance of incentives necessary to maximise welfare. The same point, put more generically, is that debt contracts cannot be written *ex ante* over the future adjustment effort. Even if this could be done, through some equity-like instrument, this *ex ante* contract is unlikely to be *ex post* efficient. So while decentralised solutions, such as collective action clauses, may help resolve a holdout problem, they may not be capable of securing a first-best.

This same issue arises in the context of the debate on the SDRM. Under that model, there is an unresolved issue about who decides whether a restructuring offer made by the debtor to the creditors is a fair one – that is, whether it is consistent with sustainability. The Fund-lite SDRM model of Krueger (2002) foresees a majority of creditors playing a determining role. Such an approach would run into the same problem as CACs. The framework presented here suggests that the Fund (or some other agency)-heavy SDRM model might be a preferred approach, as it guards against the potential *ex post* inefficiencies of a bargaining or contractual approach.

This conclusion does not follow inevitably. It relies on the bankruptcy court being able to arbitrate over a^* at least as well as creditors and debtors. If this is not the case, then the centralised solution may no longer be optimal. For example, some have questioned whether the IMF can best play that role, given that it is both a preferred creditor and has the debtor as one of its members. These may lead it to understate a^* or the offer made to creditors. The model makes clear why private creditors were averse to the IMF-heavy SDRM model when it was first mooted.

9.3 Costs of standstills

Standstill mechanisms are not without their critics (e.g. Institute of International Finance 2002). These criticisms are multi-faceted. But three of the more compelling arguments concern the potentially adverse side-effects of standstills on international capital markets (e.g. Lipworth and Nystedt 2003). Specifically, it has been argued that a standstills regime may: (a) prompt debtors to default strategically or perhaps even capriciously – a debtor moral hazard; (b) result in a rise in the cost of capital for emerging markets, with an associated contraction of capital flows; and (c) result in investors moving down the maturity spectrum, thereby increasing the probability of crisis – a "rush for the exits".

These criticisms should not be taken lightly. For example, by construction, these potentially adverse effects on emerging capital markets would not have shown up in the model developed in Section 9.2. That model focused on the *ex post* efficiency effects of policy intervention to resolve liquidity and solvency crises. It did not assess the *ex ante* effects of these interventions on optimal capital structure. In particular, the model took the quantity of capital flows, the cost of capital and the mix between short- and long-term lending as fixed. We now consider a (different) set of theoretical models and empirical evidence that relax in turn each of these restrictions.

Debtor moral hazard

As the model in Section 9.2 made clear, a standstills regime can improve the *ex post* efficiency of debt workouts and hence lower the costs of crisis. Some have argued, however, that this is only one side of the welfare story. The reason is that the output costs of default can be interpreted as a market disciplining device, offsetting debtor's incentive to default strategically (Eaton and Gersovitz 1981). In other words, costly default is quasi-collateral for the creditor (Cline 2000; Dooley 2000). Architectural measures to reduce the cost of default erode this quasi-collateral backing lending, thereby reducing lenders' willingness to supply credit in the first place. So there is an *ex ante* efficiency loss – or debtor moral hazard – to set against the *ex post* efficiency gain of standstills. In these models, the first effect often dominates the second, such that the net effect of standstills is negative from a welfare standpoint.

This trade-off between *ex ante* moral hazard and *ex post* efficiency is a neat framework within which to consider the welfare implications of various crisis management tools. But how far can we go in calibrating this trade-off? In particular, how great is debtor moral hazard risk? There are two reasons – one empirical, one theoretical – for thinking that debtor moral hazard may not be as acute as some have suggested.

Empirically, the costs of sovereign default appear in many recent cases to have been high, sometimes punitively so. A recent IMF paper (2002)

assesses the sovereign defaults in Ukraine, Pakistan, Ecuador and Russia. The costs of these defaults, in terms of foregone output and the fiscal cost of recapitalising banks, were in most cases very high. And in addition to these direct costs are the indirect costs of loss of market access, as none of the four restructuring countries have regained market access.

Sovereign default experience is consistent with this evidence. Figure 9.5 plots the number of sovereign bonds that have been in default annually since 1830. By historical standards, sovereign defaults are currently at very low levels – even more so if we were to control for the increasing number of countries over the period. Figure 9.6 plots sovereign defaults over the past 25 years, broken down by type of investment. The number of countries in default has been in decline since around 1990, despite the huge increase in the stock of international bonds and in the number of countries accessing international capital markets over this period. Taken together, this empirical evidence does not suggest that debtor moral hazard has been pervasive in the recent past.

But even if it were, there are good theoretical reasons for believing the default-as-quasi-collateral model may be a partial description of the real world. The reason is that it ignores the potential oversight role of the IMF or other independent surveillance agencies. They can help distinguish "bad luck" and "strategic" default and can punish those defaulting strategically. The punishment mechanisms for strategic default would be partly pecuniary (no IMF lending) and partly reputational (an adverse IMF signal). In this way, the IMF could exert discipline over the debtor. In this role, the IMF is acting as "signalman", in addition to its conventional role as "fireman". It acts as a delegated monitor of the international capital market. The better the IMF's surveillance, the better able it is to play this monitoring role.[13]

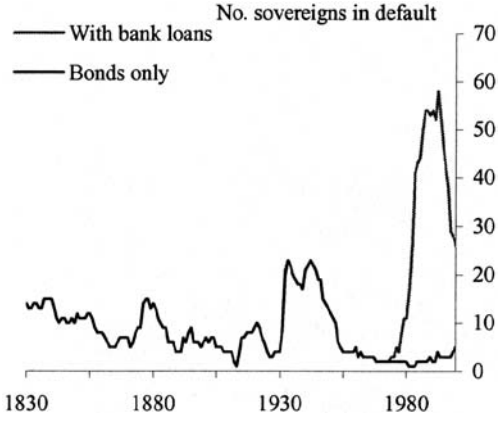


Figure 9.5 Incidence of sovereign default.

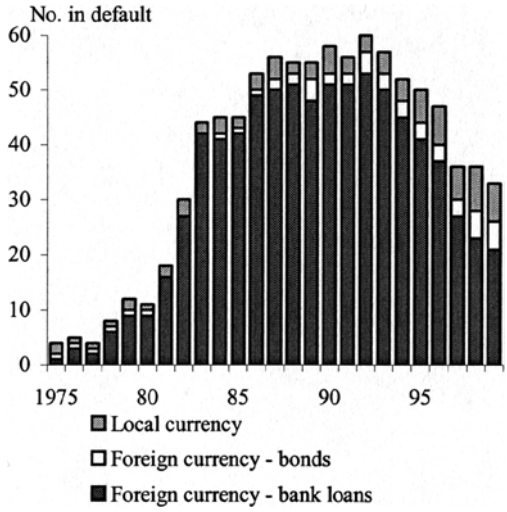
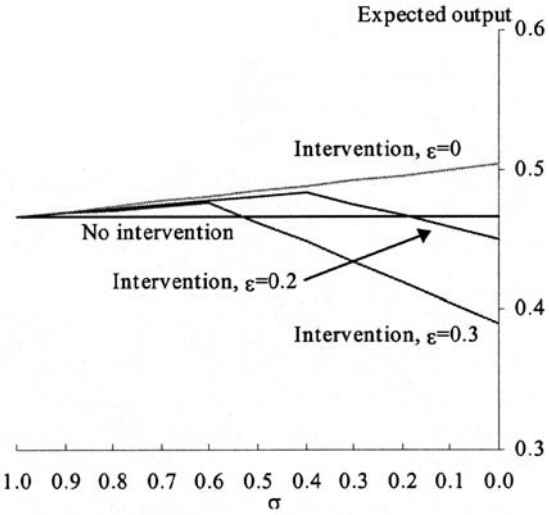


Figure 9.6 Recent incidence of sovereign default.

Gai *et al.* (2002) have recently formalised this game between profit-maximising creditors, strategically defaulting debtors and the IMF as a delegated monitor, building on the insights of Dooley (2000) and Bolton and Scharfstein (1996). They reach two illuminating conclusions. First, officially sanctioned standstills, which lower the *ex post* costs of default, need not necessarily lower *ex ante* lending. Why? Because official discipline can, to some degree, substitute for market discipline, provided the IMF are competent at distinguishing bad luck and strategic default. Second, even if lending is lower in a standstills regime, it is still possible – indeed likely – that aggregate welfare will be higher. In other words, gains in *ex post* efficiency from standstills more than compensate for the loss of *ex ante* discipline.

The second result is illustrated in Figure 9.7. This is based on a calibration of the Gai *et al.* (2002) model.[14] Welfare is measured up the *y*-axis. Along the *x*-axis, σ measures the extent to which the IMF is able to mitigate the lump sum efficiency costs of crisis – for example, by lending-into-arrears, enforcing debt work-out guidelines, etc. So $\sigma = 1$ indicates that the IMF has no impact in mitigating these costs; and $\sigma = 0$ indicates that the IMF is able to offset these costs completely. The rays in Figure 9.7 illustrate the effects of standstills on welfare for varying degrees of IMF competence in distinguishing bad luck and strategic default. Specifically, ϵ indexes the probability of the IMF sanctioning a strategic (rather than a bad luck) default – that is, making a mistake.

For low values of ϵ (high quality surveillance), standstills are unambiguously welfare enhancing, the more so the greater the extent to which the IMF is able to mitigate the *ex post* efficiency costs of crisis. Official



(a) Other parameter values are as follows: λ=0.5, ρ=0.05, θ=0.75, α=0.6.

Figure 9.7 Welfare gains from standstills.

discipline substitutes for market discipline – *ex ante* moral hazard is held in check – while debtors and creditors benefit from lower *ex post* efficiency costs. At higher values of ϵ (lower quality surveillance), this result can flip over. Standstills may lower welfare. They are more likely to do so the better the IMF is at mitigating the efficiency costs of crisis. Why? Because a fallible IMF, which is good at cutting the costs of crisis, takes us back to a Dooley (2000) world of frequent strategic default by debtors. Debtors will be more willing to cheat if the payoffs from cheating are high and the risk of being caught is low. It is clear from Figure 9.7, however, that the IMF needs to make significant sanctioning mistakes for standstills to reduce welfare – and only then for low values of σ. So overall, this simple calibrated model strongly suggests that standstills are likely to be welfare enhancing, provided the IMF serves as a competent default monitor. Debtor moral hazard is averted provided the IMF polices the international capital market.

Capital flows

Any assessment of the impact of payments suspensions on the (price or quantity) of emerging market capital flows faces a basic identification problem: we have no clean counterfactual experience of a regime with periodic and predictable standstills. Notwithstanding those caveats, what empirical and theoretical evidence do we have?

On the empirical side, the South Korean crisis in 1997 and the Brazilian crisis in 1999 provide two potential case studies of the effects of payments suspension. In both cases, a voluntary or quasi-voluntary agreement to rollover short-term interbank loans was made with international banks. In both cases, capital market confidence returned rapidly. South Korean and Brazilian dollar debt spreads over US Treasuries fell by 177 bp and 1085 bp respectively over the subsequent 12 months.

Equally, the South Korean and Brazilian cases offer only mixed support. The standstills were accompanied by large official sector packages and policy reform, each of which may have contributed as much or more than standstills to the resumption in confidence. Experience in Turkey during 2000–2001, where a similar rollover agreement was tried and failed, supports that alternative explanation.

Some of the concern about emerging market capital flow effects is no doubt motivated by the 1980s experience. During that "lost decade", there was an effective lock-out of emerging markets from international capital markets following default. Most analyses suggest that this was, in part at least, a reflection of the concentration of credit risk on commercial banks' balance sheets at that time (Lindert and Morton 1985). Today, there is a much greater dispersion of credit risk across financial institutions, partly because of the growth in the international bond market. Indeed, in many respects, the pattern of international intermediation today more closely resembles the 1930s than the 1980s. And interestingly, the evidence from the 1930s – a time of widespread sovereign default – offers some comfort. A number of studies have concluded that GDP, borrowing premia and future market access were little different between defaulters and non-defaulters following the 1930s debt crisis (Lindert and Morton 1985; Eichengreen 1985).

More recent econometric evidence, looking at the determination of international sovereign spreads, paints a similar picture. It finds no significant effect of previous default experience on the cost of emerging market borrowing (e.g. Eichengreen 2000). Moreover, it suggests that instruments that facilitate debt workouts tend to lower borrowing costs, rather than raising them. The best-known work is by Eichengreen and Mody (2000) and Becker *et al.* (2001), which assesses the effects of the introduction of collective action clauses. The second study suggests that these clauses tend to lower (or at least not raise) borrowing costs along the entire credit spectrum.[15]

In a less well-known piece, Eichengreen (2000) assesses the effects of contractual provisions for an automatic litigation stay on emerging market corporate bond prices. It finds that the inclusion of these stay provisions significantly lowers the cost of emerging market borrowing. In other words, investors value the safe harbour of a stay over the associated costs (loss of liquidity, debtor moral hazard, etc). Of course, we need to be careful in reading across from contractual stays to statutory or informal ones, and from corporate to sovereign bonds. Nonetheless, the evidence is strongly suggestive that stays do not appear historically to have impacted

negatively on the cost of emerging market borrowing – indeed, if anything, the evidence is to the contrary.

What light can theory shed on these pricing or capital flows effects? Two recent theoretical models have aimed to assess the potential effects of a forced rollover of short-term debt on debt prices (Shin 2001) and debt quantities (Martin and Penalver 2003), at long and short maturities. The second paper develops a model similar in spirit to that in Section 9.2. A debtor borrows to fund an investment project, using short- and long-term loans. The determination of the quantity and price of short- and long-term loans is now, however, endogenous to the regime, not fixed in advance. In particular, the cost and quantity of capital is affected by whether the regime permits standstills – that is, the orderly rolling over of short-term debt in the event of crisis.

Standstills have two effects. First, they deprive short-term creditors of liquidity on a temporary basis. Short-term creditors demand compensation through higher short-term interest rates. Second, they confer higher recovery values on debt in the event of default. This benefits longer-term investors who, in turn, demand less compensation through lower long-term interest rates. The net effect is that standstills cause a disinversion – or "tilt" – or the yield curve, relative to the counterfactual no-standstills regime. Figure 9.8 illustrates this, for one parameterisation of the Martin and Penalver model.

In Shin (2001) a similar term structure tilt occurs. But, in addition, there is the potential for an inward shift in the term structure, with short as well as long rates falling because of the ameliorating effect of standstills on creditor co-ordination problems. Taking these two papers together, it is unclear whether the cost of capital for the debtor would rise or fall in the standstills regime. Certainly, there is no reason theoretically to believe that the cost of capital for emerging markets will necessarily rise should payments suspensions become part of the furniture.

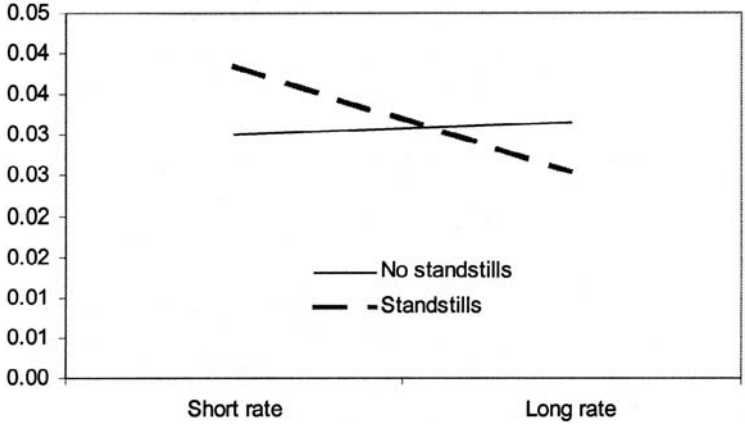


Figure 9.8 Effect of standstills on yield curve.

These term structure shifts may give rise to a third effect. They may result in a shift in the composition of capital flows, away from (more expensive) short-term debt and towards (cheaper) long-term debt. As with the price effect, the net impact of standstills on the total quantity of capital flows could go either way; theoretically, there should be no presumption that aggregate capital flows will fall. But the compositional effect will, by itself, have an impact in extending the duration of debt and thereby potentially reducing a debtor's vulnerability to crisis.[16] Martin and Penalver (2003) illustrate that, even if expected output is lower under a regime of standstills, welfare could well be higher as a result of the improved capital structure and the resulting lower incidence of crisis.

"Rushes for the exit"

In the models above, standstills raise the cost and reduce the quantum of short-term capital. Some commentators have suggested, however, that standstills may have the opposite effect, reducing the maturity of debt and bringing forward the timing of crises (Lipworth and Nystedt 2001). The argument runs that investors may have an incentive to position themselves to flee if they fear being caught up in a payments suspension. Standstills may result in trigger-happy investors. Anecdotal evidence from the South Korean, Brazilian, Argentinian and Turkish crises is sometimes invoked. In each case, the maturity of credit lines was cut in anticipation of payments problems.

This experience is far from compelling evidence against standstills, however, the essence of which is orderly suspension, rather than disorderly default. And, significantly, there has, to our knowledge, until recently been no formal modelling of the "rush for the exits" phenomenon. A recent paper by Gai and Shin (2003) attempts to fill that gap. They model the "rush for the exits" as a pre-emption game among creditors. A debtor undertakes an N-period investment project. Creditors choose where within the maturity spectrum from periods 1 to N they would like to lie, with the longest maturity asset being equity. The fruits of the investment project, which are taken by equity-holders should the project survive the course, depend on the outcome of some fundamental shocks and on the maturity structure of debt – the shorter the maturity, the greater the probability of crisis. If a crisis occurs, creditors are forced to "take a haircut".

Creditors in the game face two conflicting incentives. First, there are incentives to be first in the queue – the shortest possible debt maturity – as that allows creditors to escape the losses associated with crisis. But, against this, if all creditors move to the shortest possible maturity, this maximises the chances of crisis, without any accompanying gain for any individual creditor. In this event, some creditors would choose a lengthier maturity – for example, by holding equity – and hope that fundamentals will turn out positive. The balance of these two effects gives rise to a non-degenerate term structure of debt.

What, in this model, is the impact of an orderly payments suspension? This has two effects on creditors' choice of debt maturity. First, it gives rise to a temporary liquidity loss to those caught by the suspension. Other things being equal, this would lead them to shorten maturities – the "rush for the exits". But, second, it serves to boost recovery values in the event of a crisis. This has both a direct effect in increasing incentives to hold longer-term debt, the returns to which are now higher. But it also gives rise to an indirect strategic effect, as higher recovery rates reduce the incentive to engage in pre-emption in the first place.

Calibration of the Gai and Shin model suggests the following implications of a regime of temporary payments suspension. First, if suspensions are short-lived and have a modest positive effect on recovery values, they are unlikely to seriously affect the maturity structure of debt. Second, longer-lived standstills do have the potential to affect debt maturities, with a hollowing-out of middle maturities as investors move either to the very short or the very long end of the term structure. Even in this worst-case, however, the effect of suspensions on the average duration of debt and on the probability of crisis is ambiguous. There should be no presumption that the "rushes for the exit" effect will always win out. There are important countervailing forces that need to be weighed which reduce incentives to flee and lower crisis probabilities. In a well-designed standstills regime – one with short duration and a significant boost to recoveries – these positive countervailing effects are very likely to dominate. Standstills would not induce a scramble for the door but, rather, would provide assurances to investors that they stand to benefit by sitting still.

9.4 Where next?

A number of recent architectural reform proposals envisage a standstill mechanism, to be invoked either prior to and/or immediately following default, together with accompanying measures to bind-in creditors. This chapter has evaluated the conceptual case for some of these proposals. In a theoretical model of crisis, we find that temporary payments suspensions accompanied by the binding-in of creditors have a potentially welfare-enhancing role to play, both pre- and post-default – that is, in both liquidity and solvency crises.

The welfare implications of liquidity standstills and solvency standstills depend on the specifics of the crisis in hand. Indeed, a standstill used in either a liquidity or solvency crisis helps importantly to mitigate some of the costs associated with the other type of crisis. This follows from the fact that, in the general case of the model, no crisis is strictly liquidity or solvency based. Rather, crises are a combination of the two effects. Standstills are a welfare-effective means of dealing with these "grey zone" crises.

Some of the criticisms typically made of standstills – in particular, their effects on the structure of capital markets – were also assessed. There are good reasons for believing that, appropriately-designed, the judicious use

of payments suspensions would not have seriously adverse effects on capital markets.

In terms of practical policy implications, the chapter suggests the need to continue working actively on orderly standstill mechanisms, at both the illiquidity and insolvency stages. The official community has recently considered the merits of the SDRM and the greater use of CACs. Both would help at the insolvency stage, with associated welfare benefits – though there may be inefficiencies associated with the bargaining dimension to the contractual approach. Rather less impetus has been put behind promoting the more widespread use of standstills in tackling liquidity or pseudo-liquidity crises. Since, arguably, most crises are "grey zone" rather than pure insolvency crises, this suggests the current division of official sector labour may not be optimal.

9.5 Appendices

Appendix 1: liquidity crises

To highlight the implications of a liquidity crisis, we consider a simplification of the basic model. First, we assume that all debt is short-term ($p = 1$). Second, we assume that in the event of a second-period default, the return to creditors is known with certainty *ex ante*. We set this return to a constant non-negative rate $\delta \leq (1 - c)(1 + r_s)$.[17]

These assumptions serve to partial out the solvency sub-game. Nonetheless, it is useful expositionally to define the zone for fundamentals (θ) below which the debtor would find itself insolvent (solvent), irrespective of the actions of short-term creditors: what we might call "fundamental insolvency" ("fundamental solvency"). These threshold values for fundamentals solvency, θ^* (θ^{**}), are the solution to:

$$0 = y(\theta^*, 0) - (1 + r_l) \tag{9.8}$$

$$0 = y(\theta^{**}, 1) - (1 + r_l) \tag{9.9}$$

If θ is known with certainty, there are multiple equilibria within the fundamentals zone (θ^*, θ^{**}). This is then a second-generation crisis model in the spirit of Obstfeld (1996). One problem with models of this type is that is it impossible to conduct comparative static welfare analysis given the multiplicity of equilibria.

The set-up of our game side-steps that problem by assuming some degree of imperfection in the θ-signal reaching investors. As Morris and Shin (1998) have shown, if signals are sufficiently precise, there then exists a unique equilibrium of the imperfect information game.[18] In fundamentals space, denote this unique equilibrium $\hat{\theta}$. This defines the value of fundamentals below which a liquidity run would commence and the debtor would be forced to default on its debt. It can be shown to lie between θ^* and θ^{**}, as illustrated in Figure 9.9.

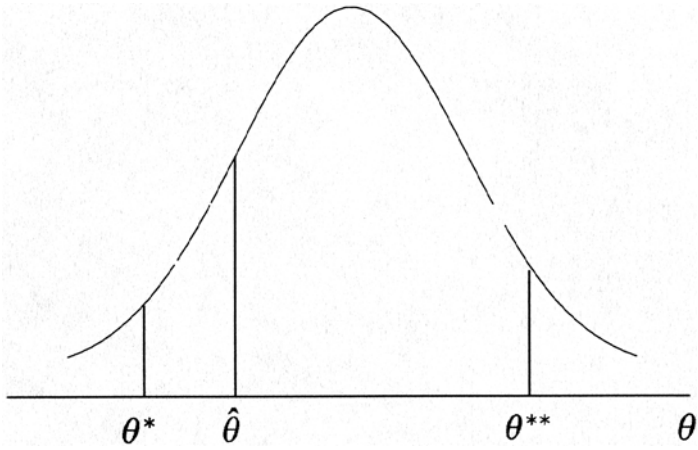


Figure 9.9 Welfare loss of liquidity crises.

In what follows we sketch out the derivation of this equilibrium (along similar lines to Chui *et al.* 2000) and we consider how it is affected by an exogenously-imposed change in the recovery rate δ. To keep the analysis tractable, we first assume that

$$y = \theta - fk$$

in the event of default and $y = \theta$ otherwise. We denote by f the proportion of creditors who flee and by $k > 0$ the marginal cost of destruction to output caused by a single fleeing creditor (providing that enough investors flee to cause default in the first place).

Under these assumptions the fundamental insolvency and solvency thresholds defined generically in Equations (9.8) and (9.9) above are now given by:

$$\theta^* = (1 + r_l) \tag{9.10}$$

$$\theta^{**} = (1 + r_l) + k \tag{9.11}$$

As in Chui *et al.* (2002), we posit that the aggregate strategy is a rule of action which depends on whether the signal of the fundamental is below a threshold level $\hat{\gamma}$. The aggregate strategy $v(\hat{\gamma})$ is an indicator function which takes the value of zero if $\gamma \geq \hat{\gamma}$ and takes the value of one, otherwise. This implies that the proportion of investors who flee given the aggregate strategy is given by:

$$f[\theta, v(\hat{\gamma})] = \int_{-\infty}^{\hat{\gamma}} 1.\phi(\gamma|\,\theta)d\gamma = \Phi\left(\frac{\hat{\gamma} - \theta}{\eta}\right)$$

where $\Phi(.)$ denotes the cumulative density function for a standard normal random variable and $\phi(.)$ denotes the standard normal density function.

At the equilibrium switching point, two conditions need to be met. First, the proportion of creditors who flee must be such that the solvency constraint binds. We refer to this condition as the "solvency condition". The solvency condition is given by:

$$\hat{\theta} - (\hat{\theta}, \hat{\gamma})k = (1 + r_l) \tag{9.12}$$

which can be rewritten as:

$$\hat{\theta} = (1 + r_l) - kf(\hat{\theta}, \hat{\gamma}) = \theta^* + (\theta^{**} - \theta^*)\Phi\left(\frac{\hat{\gamma} - \hat{\theta}}{\eta}\right) \tag{9.13}$$

The second condition is that, at the switching point, the marginal creditor must be indifferent between fleeing and staying. We refer to this condition as the "indifference condition". This condition says that the expected payoff from staying if a country defaults plus the expected payoff from staying if the country repays must equal the payoff from fleeing (which is known with certainty at the time). Formally, the indifference condition is given by:

$$\delta\int_{-\infty}^{\hat{\theta}} \phi(\theta|\hat{\gamma})d\theta + (1 + r_l)\int_{\hat{\theta}}^{\infty} \phi(\theta|\hat{\gamma})d\theta = (1 + r_s)(1 - c) \tag{9.14}$$

Given the normality of the underlying random variables, we know that the distribution of θ conditional on the signal $\hat{\gamma}$ is normal. Using Bayes rule, we can compute the mean and variance of θ conditional on $\hat{\gamma}$ as:

$$m_{\hat{\gamma}} = \frac{\mu\eta^2 + \hat{\gamma}\sigma^2}{\eta^2 + \sigma^2} \tag{9.15}$$

$$\sigma_{\gamma}^2 = \frac{\eta^2\sigma^2}{\eta^2 + \sigma^2} \tag{9.16}$$

respectively. We can therefore rewrite the indifference condition (9.14) as:

$$\delta\Phi\left(\frac{\hat{\theta} - m_{\hat{\gamma}}}{\sigma_{\gamma}}\right) + (1 + r_l)\left[1 - \Phi\left(\frac{\hat{\theta} - m_{\hat{\gamma}}}{\sigma_{\gamma}}\right)\right] = (1 + r_s)(1 - c)$$

which, in turn, is equal to:

$$\frac{\sqrt{\eta^2 + \sigma^2}(\hat{\theta} - m_{\hat{\gamma}})}{\sigma\eta} = \Phi^{-1}\left(\frac{(1 + r_l) - (1 + r_s)(1 - c)}{(1 + r_l) - \delta}\right) \tag{9.17}$$

Equations (9.13) and (9.17) are two equations in two unknowns: $\hat{\theta}$ and $\hat{\gamma}$. Writing (9.15) in terms of $\hat{\gamma}$ and substituting the result in (9.13) we obtain:

$$\hat{\theta} = \theta^* + (\theta^{**} - \theta^*)\Phi\left[\frac{\eta}{\sigma}\left(\frac{\hat{\theta} - \mu}{\sigma}\right) - \frac{\sigma^2 + \eta^2}{\sigma^2 \eta}(\hat{\theta} - m_{\hat{\gamma}})\right] \tag{9.18}$$

Substituting (9.17) into (9.18), we obtain an expression:

$$\hat{\theta} = \theta^* + (\theta^{**} - \theta^*)\Phi\left[\frac{\eta}{\sigma}\left(\frac{\hat{\theta} - \mu}{\sigma}\right) - \frac{\sqrt{\eta^2 + \sigma^2}}{\sigma}\Phi^{-1}\left(\frac{(1 + r_l) - (1 + r_s)(1 - c)}{(1 + r_l) - \delta}\right)\right] \tag{9.19}$$

As signals become more informative, $\eta \to 0$ and

$$\hat{\theta} = \theta^* + (\theta^{**} - \theta^*)\left(\frac{(1 + r_s)(1 - c) - \delta}{(1 + r_l) - \delta}\right) \tag{9.20}$$

From (9.20) it is easy to see that $\hat{\theta}$ falls in the zone between θ^* and θ^{**}, as illustrated in Figure 9.9.

Differentiating (9.20) with respect to δ we get:

$$\frac{\partial \hat{\theta}}{\partial \delta} = (\theta^{**} - \theta^*)\left[\frac{(1 + r_s)(1 - c) - (1 + r_l)}{((1 + r_l) - \delta)^2}\right] \leq 0 \tag{9.21}$$

It is clear from (9.21) that, for sufficiently informative signals, an increase in the recovery rate in the event of default, δ, shifts the equilibrium switching point, $\hat{\theta}$, to the left, causing, therefore, the zone of fundamentals within which inefficient liquidity crises can occur to shrink.

Appendix 9.2: Pure solvency crises

Here we study a pure solvency crisis by assuming that there is no short-term debt ($p = 0$, so there is no rollover part of the game) and that the debtor is unable to meet contractual payments ($y^N < 0$). We consider two cases. First, we assume that there are no provisions – contractual or procedural – that prevent an individual creditor from taking legal action to enforce their contractual claim, even if all other creditors reach agreement with the debtor on a restructuring deal – the "New York law" scenario. Second, we look at what happens if there exists some mechanism for binding-in minority creditors such that they are forced to accept a deal struck between the debtor and other creditors so long as a pre-specified super-majority of creditors is willing to accept the debtor's offer – the "English law" scenario.

The New York law scenario

Finding that available resources are insufficient to meet all contractual claims, the debtor offers to pay creditors an amount $\Theta \equiv \omega(1+r_l)$, where $0<\omega<1$. Those accepting the offer receive it in full. Those who hold out receive a pro-rated share of residual output – that is, output after accepting creditors have been paid – up to a maximum of their contractual claim. The payoff to holdout creditors is therefore:

$$Min\{(1+r_l), (y^G - \omega(1+r_l)(1-h)/h)\} \tag{9.22}$$

The outcome of this restructuring game is socially inefficient. Specifically, it results in an inefficiently low amount of adjustment effort on the part of the debtor, and an inefficiently high number of holdout creditors. As a result, aggregate welfare is considerably lower than the first-best and, indeed, may be even lower than pre-structuring output.

To see these points, note that the payoffs to accepting and holding-out from the offer are equal when:

$$\omega(1+r_l) = (y^G - \omega(1+r_l)(1-h))/h \tag{9.23}$$

implying:

$$\omega(1+r_l) = y^G \tag{9.24}$$

An important characteristic of this equilibrium is that all available output is distributed to creditors. This means that, were the debtor to expend effort, thus increasing the level of output, all of this increment would accrue to creditors. Because effort is costly ($c'(a)>0$), in equilibrium the debtor will expend no effort. Creditors will anticipate that debtor effort will be zero at the time they decide whether to holdout or accept an offer. So long as the debtor's offer is large enough to beat the worst-case scenario – where adjustment effort is zero and all creditors close out, $y^G(0, 1) < \omega(1+r_l)$ – in equilibrium we must have $0<h<1$. $h=0$ cannot be an equilibrium, since if all creditors were to accept the offer an individual creditor could obtain the full payout $(1+r_l)$ by holding out. Similarly, if all creditors were to hold out ($h=1$), an individual creditor could do strictly better by accepting the offer of $\omega(1+r_l)$. Since h is non-zero in equilibrium, there will be some degree of output destruction.

The equilibrium incidence of holdouts (h) is given as the solution to:

$$\omega(1+r_l) = y^G(0, h) \tag{9.25}$$

The precise proportion of holdouts will depend on the choice of offer by the debtor, ω. In other words, Equation (9.25) suggests a range of equilibria, described by $\{h, \omega\}$ pairs. Higher offers, ω, result in a lower incidence

of holdouts in equilibrium, h. In all of these equilibria, however, there is an inefficiency because the debtor will expend no effort (all of the output is acquired by creditors in equilibrium), and some output will be lost through the disruptive efforts of holdout creditors.

English law scenario

Now consider a device, such as a collective action clause or similar provisions for binding-in creditors when a sufficient proportion of the creditors have accepted the offer. In this case, the socially optimal outcome can be achieved.

Let $\hat{h}$ be the critical proportion in the binding-in clause, which we take to be exogenous. That is, if $h \leq \hat{h}$, then the offer by the debtor is imposed on all creditors, including those that have voted against it. Let $\hat{\omega}$ be the offer coefficient that solves:

$$y^G(0, \hat{h}) = \hat{\omega}(1 + r_l)$$

We then have the following propositions. First, if the debtor offers $\hat{\omega}(1 + r_l)$ or more to each creditor, then the weakly dominant action for a creditor is to accept the offer. There is no equilibrium in which the offer fails to be implemented.

In other words, if the offer is at least $\hat{\omega}(1 + r_l)$, then a creditor can do no better than to accept the offer. To see this, consider the optimal choice across all levels of h. If $h > \hat{h}$, then the binding-in clause does not apply, and the proposal fails. Since $\omega(1 + r_l) < (1 + r_l)$, the debtor anticipates that total output is used up in paying the creditors and so exerts zero adjustment effort. Thus, the payoff to a creditor who has voted against the offer is $y^G - \omega(1 + r_l)(1 - h)/h$. But, by construction, this is lower than $\hat{\omega}(1 + r_l)$. Thus, if $h > \hat{h}$, then a creditor would have done strictly better by accepting an offer of $\hat{\omega}(1 + r_l)$. This also shows that there can be no equilibrium in which the offer does not garner the critical level of support to be implemented. Now, suppose that $h \leq \hat{h}$. Then the binding-in clause kicks in, and the offer of $\hat{\omega}(1 + r_l)$ is imposed on all creditors. Hence, a creditor is indifferent between voting for or against the offer. Gathering all strands of the argument together, we have the conclusion that, whatever is the value of h, a creditor cannot do worse than to vote in favour of the offer.

The fact that accepting the offer is a weakly dominant strategy indicates that the binding-in clause is effective in eliciting the co-operative actions of the creditors. Strictly speaking, however, there are other equilibria than the one in which every creditor accepts the offer. This is because the co-operative outcome can be sustained even when a small proportion of the creditors reject the offer, provided that $h \leq \hat{h}$. On the other hand, this multiplicity of equilibria is innocuous, since the outcome in terms of allocation and adjustment effort is identical across all equilibria.

The outcome in which the offer is implemented turns out to be more robust still. The notion of equilibrium is with reference to individual

deviations. However, the outcome in which the offer is implemented turns out to be robust to any collective deviation by a sub-coalition of creditors. In other words, it is coalition-proof. The argument is straightforward, since the equilibrium argument above has been in terms of the incidence of rejection h. Any coalition that deviates and rejects the offer will either make no difference to the outcome (when $h \leq \hat{h}$), or will make the coalition strictly worse off (when $h > \hat{h}$). Thus, the equilibrium in which everyone accepts the offer also turns out to be coalition-proof.

In any equilibrium, the offer receives enough support to be implemented. This means that any surplus from the adjustment effort by the debtor is received by the debtor. This elicits the socially efficient level of adjustment effort a^*. To see this more formally, note that the payoff to the debtor when the offer is implemented is:

$$y^G(a, 0) - \omega(1 + r_l) - c(a)$$

This is maximised when

$$\frac{\partial}{\partial a} y^G(a, 0) = c'(a),$$

which yields the socially efficient level of adjustment effort a^*.

Notes

1 The views are not necessarily those of the Bank of England. We are grateful for the comments of Prasanna Gai, Charles Goodhart, Robert Kahn and Jean-Charles Rochet.
2 See also Buiter and Siebert (1999).
3 As Buchheit and Gulati (2004) point out, once a debtor comes under financial pressure, relations between creditors become important.
4 The liquidity crisis component of the model is based on Chui *et al.* (2002).
5 Payments to short-term creditors not rolling over after the first period are assumed to be already deducted from gross output realised in the second period.
6 We therefore rule out the prospect of a strategic default. This possibility is considered in Section 9.3.
7 Alternatively, adjustment effort could be assumed to be exerted between periods one and two. That would not alter radically the dynamics of the game.
8 The impact of different legal arrangements on the incentives of creditors and the debtor and resulting inefficiencies are discussed in Appendix 9.2.
9 Appendix 9.1 contains a proof for this in the case of a constant and known recovery rate.
10 In the model, this can be simulated by letting the exit tax, c, approach unity.
11 Wallace (1988) also shows that standstills may be preferable to last-resort lending unless the authorities have superior information on the nature and extent of the banking crisis (see Giannini 2002).
12 The higher the relative costs faced by debtors in this event, the lower their bargaining power and hence the higher the offer which would need to be made to creditors in equilibrium; and vice versa, if the relative costs of a failed offer are felt most by creditors. These costs are not modelled explicitly here but are considered in Haldane *et al.* (2003).

13 Spiegel (2001) develops a model in which an international lender of last resort has less information than private creditors but is able, through judicious use of the interest rate charged, to implement a separating equilibrium between good and bad outcomes and support welfare improving intervention.
14 Other parameter values are discussed in Gai *et al.* (2002).
15 Eichengreen and Mody (2000) suggest that CACs may lower borrowing costs for higher-rated borrowers and raise them for lower-rated borrowers.
16 On the theory, see Chang and Velasco (1998); and on the empirical evidence, Bussiere and Mulder (1999).
17 For the purposes of this example, it is also assumed that the amount recovered in the event of default is exogenous to the model, i.e. it is not funded by the country's available resources.
18 Subject to some further restrictions on parameter values – see Chui *et al.* (2002).

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10 Comments on "Binding-in the private sector"

Robert Kahn[1]

Chapter 9, by Haldane *et al.*, is a very good one. What I want to do, though, is touch on a few of the ideas and key assumptions in the chapter, which I think take you to policy conclusions. In doing so, I will try to give a private sector perspective with reference to some of the specific deals that have gone on.

One thing I appreciated in this chapter was the effort to be fair to the SDRM. We know the Bank of England's perspective on these issues. They have a preference as a matter of policy for collective action clauses and more disciplined rules of engagement in dealing with the resolution of crises. Events subsequent to the drafting of the chapter have shown policy to have moved in their preferred direction. Prospects for an imminent adoption of the SDRM have receded, while collective action clauses have been introduced with little apparent cost to the issuer. Bank of England staff can rightly feel gratified. But I would not "write-off" the SDRM forever – policy initiatives can and often do return to the stage after a period of germination. Consequently, the effort by the authors to be balanced and recognise the potential roles for the SDRM at the insolvency stage gives the chapter enduring value.

The chapter is also actually rather orthodox in that it highlights the continued role for the IMF as a supporter of reform and adjustment effort. Recent years have seen a variety of criticisms of the IMF's role, both from the left and right, but the authors see no sensible alternative. The chapter, nonetheless, highlights potential incremental areas for improvement in IMF surveillance. I agree.

What I liked best about the chapter is the focus on the "grey-zone". Most of the cases, certainly the most troubling ones, are those where the solvency and liquidity issues are unresolved and where the interaction of those two forces is important. Even though I think Turkey could work its way out of its debt problems, if they implement and sustain the right economic policies, others will disagree. Certainly, in a period of substantial political and regional uncertainty, it will be difficult to convince the sceptics. That difference of view is a very important part of the dynamics of the market. Indeed, ultimately, it may affect the policy actions of the Turkish government and the response of investors.

We obviously do deal with country cases that are much clearer. The Moldova restructuring in 2002–2003 is a reasonably clear-cut example of an insolvency case. That case was made easier by the small amount of the debt to be restructured (about $40 million) and the limited number of creditors. The single bond also had a collective action clause. But I do think one of the factors that helped complete the negotiations in a timely fashion was an acknowledgement by all that Moldova faced a very long-term challenge in meeting its debt payments. Even though creditors would like to be paid in full and on time, banks were willing to rollover the payment for six months to allow time for a medium-term restructuring to be negotiated in the context of an IMF-supported arrangement. While some might disagree, I would argue that comparability of treatment in the broad sense was achieved. That is a case where I do not think you need any new architecture. The problem is taking care of itself. But those are not the really important cases. The important ones are the grey-area cases.

This leads me to the first of the points I want to make about the assumptions in the chapter – modelling the costs of a disorderly restructuring process. In the chapter, these are modelled as insufficient policy effort by the debtor and the premature liquidation of projects. In the private sector, there is a lot of debate and disagreement about what the costs of a disorderly restructuring process are. I think that is part of the reason why you hear not $n + 1$ but probably $(n + 1)^2$ views from the private sector.

Let me use Ecuador as an example. During the time Ecuador was in default, I split my time between the IMF and the private sector, so I was probably implicated on both sides. On the surface, one might argue that Ecuador seemed to fit the chapter and its assumptions, as a country that was not able to pay. The crisis occurred through a banking sector collapse that then led to a protracted period of chaos during which the authorities were unable to reach agreement with their external creditors on payments. Ultimately, it took one-and-a-half years from the time at which the banking sector imploded until they agreed a programme with the IMF and went forward with a restructuring deal with external creditors. On the face of it, here was a clear example where, if we had had some sort of bankruptcy procedure in place, it might well have made the process easier. Certainly there are still a lot of differences of viewpoints among the private sector about whether the deal that resulted was too generous, or not generous enough. But I think the critical point here is that Ecuador, through most of that process, had extraordinary difficulty in building a domestic consensus for policy reform.

During that time, the IMF was confronted by numerous proposals from the Ecuadorians for financing. But I think that it is fair to say that there was never an entirely coherent programme adequately financed on which the government and the IMF could have moved forward. A successful conclusion had to wait until the Ecuadorian political process had generated the consensus for reform. Once the Ecuadorians did come forward with a

solid programme, I think the IMF moved very quickly to support it and a debt exchange was done on the back of that. I do not think the lack of an SDRM or the use of collective action clauses in this context would have led to a more orderly restructuring process. It was a disorderly adjustment and political process. That is the part of the market that says, "don't fix it if it ain't broke" – and though I do not always agree with that, I think it is a solid strand of thinking in the private sector.

Since that time, we have had the Uruguay restructuring and Nigerian buyback, among other cases. By and large, these deals have been done relatively easily. Free-rider problems were not overwhelming impediments to either deal. I would not rule out the free-rider problem increasing over time, reminiscent of the experience with the process of sovereign debt restructurings through bank advisory committees between 1982 and 1987. But I would argue that, overall, recent restructurings have been largely successful. I know some in the public sector wish that these deals had been more generous to debtors. But it is unclear that there has been a case where a disorderly private sector restructuring has prevented an otherwise solid adjustment programme from being implemented.

Second, the SDRM and the rules of the game. The issue of the multi-stage restructuring process was well illustrated by the Ivory Coast case. If creditors feel they are being handed a *fait accompli*, it is very hard to get a majority to agree to a restructuring deal. The SDRM has a similar problem in that there is a great deal of suspicion that creditors may be disadvantaged. This creates an aversion to entering into any such process in the first place. I think that the "Fund-lite proposal" was an attempt to address this problem, because it considers explicitly the multiple roles the IMF would play both in design and implementation of the mechanism. I think that was a step forward. The IMF was putting itself in a very conflicted position under the "Fund-heavy" versions of the SDRM, by trying both to control the rules of the game as well as ensuring their full participation in any workout.

There is still frustration under the current system in the way the IMF sets the balance of payments gap, with the Paris Club coming second, thus leaving any residual gap to be filled by the private sector. Many people in the private sector find it a bit disengenuous of the IMF to step back and say they do not actually tell the country what to do, and that it is really up to the debtor to negotiate with its creditors. In an ironic sense, the lack of transparency about the current process may actually help creditors. Going to more rigid rules, creditors could get a worse outcome as a trade-off for getting more transparency. I think the chapter's models are helpful in thinking through these issues.

There is also an assumption in the chapter's model that all creditors get the same outcome. This is a perfectly reasonable assumption for modelling purposes. But inter-creditor equity, even within a group, is a substantial issue for the private sector. I think this was seen in the Ecuador case, where the views of the large institutional funds were different from the

hedge funds, which were very different again from the sell-side. I think Argentina is another very good example of this problem.

The timing of default is important for the distribution of rents across the private sector. In the case of Argentina, with the benefit of hindsight we can say that decisions by the government in 2001 (supported by the IMF) that were aimed at putting off the default that eventually occurred came at the cost of a substantial weakening of the financial system. This meant that when the crash happened in December 2001, the costs were disproportionally borne by that sector. To the extent that you think this experience sets the tone for the future, contagion may come from sources of fixed capital, particulary in the financial system. These financial institutions may well respond more quickly to bad news in the future to manage down gross positions and cross border exposure, blurring the traditional distinction between what is "hot money" and what is not. Risks, stress testing and risk scenarios are coming back with a vengeance now. Rather than base cases and where we think the five-year debt/GDP ratios are going, we are much more concerned with scenarios which may play out in crisis situations and how property rights allocate rents across creditors. I would say this is a way to push the model forward.

Let me finalise by taking the opportunity to give my views on the lessons from the SDRM/CAC debate. We in the private sector were in a little bit of a turmoil during the debate over SDRM versus CACs. Throughout, most investors viewed the SDRM as unlikely to go forward, if for no other reason than our judgement that the US Treasury would ultimately be unwilling to go to Congress with any bill that would change the Articles of Agreement of the IMF. Nonetheless, many found the debate damaging, fearing that it was being used as a threat point to bully investors into unneeded restructurings. The case that an SDRM was essential at this point was never convincingly made. And the level of distrust between parties was too high. In this regard, I think the decision to move the SDRM to a backburner is the right one.

Conversely, I have never felt that there was substantial opposition to CACs, for all their limitations. And perhaps recent experience has borne out that view (though it will be interesting to see if bonds with CACs carry premiums when global liquidity conditions become less favourable). But throughout the debate I was struck by the variety of views in the market. If you talk to those at senior levels in financial institutions, I think you will broadly get an understanding that anything that disciplines the process by binding-in free riders can be positive if done well. However, those that do the deals were less supportive, which I believe reflected competitive pressures to offer investors the best possible terms. Certainly, there was perceived to be a stigma effect of being the first mover. I think this episode offers a lesson in the importance of the official sector finding some way to bring people together and subsidise that first move, whether it is through conditionality or some other mechanism. This will involve co-ordinating with senior people in the private sector to try to create some sort of new

standard. Nothing in the subsequent success of CAC issuance undermines that conclusion.

Note

1 Managing director in the Emerging Market Research Department of Citigroup Global Markets. The views expressed in this chapter are the author's own and not necessarily those of Citigroup.

Part IV

Contractual resolution of financial crises

11 Sovereign bonds and the collective will

Lee C. Buchheit and G. Mitu Gulati[1]

11.1 Overview and summary

Multicreditor debt instruments such as bonds and syndicated bank loans are uncommon legal arrangements. In most contracts, the parties know each other's identity beforehand, and they make a conscious decision to enter into a legal relationship. In a multicreditor debt instrument, the borrower's identity is of course known by each investor, but what the investors do not know – what they often never know – is the identity of each other. Bond investors are like the patrons in a theatre audience: each one has decided to see a particular play on a particular night, but none has any idea who he or she will be seeing it with. If you wish to carry the analogy further, the tradable nature of bonds means that fellow patrons are constantly leaving and entering the theatre throughout the performance.

Now this promiscuous grouping of investors in a bond issue is not troubling as long as you believe that the only important relationship here is that between the debtor and each separate investor. Look at a bond issue close enough, this theory contends, and you will see that it breaks down atomically into hundreds or thousands of bilateral contracts between the bond issuer and each investor; the appearance of an investor group or syndicate is just that, an appearance, with few practical or legal implications. This view assumes, of course, that all bondholders are the passive recipients of payments from the issuer and that the behaviour of any one bondholder is a matter of indifference to the other bondholders.

And so it may be, but only until things go wrong. It is when the bond issuer runs into financial difficulties that the actions of any one bondholder can dramatically affect the interests of all the other lenders. For example, if each holder has the unfettered discretion to accelerate its bonds following an event of default, to commence a lawsuit and attach the borrower's assets, to force a foreclosure on collateral or to push the borrower into bankruptcy, the other bondholders may then find that their own options in dealing with the situation are dangerously curtailed. Non-litigious bondholders, however large their majority, are thus at the mercy of their most ruthless colleagues. Visible financial strains on the bond issuer will thus

bring out a *sauve qui peut* response from some bondholders. Grabbing a borrower's assets ahead of one's fellow bondholders may reveal an underdeveloped fraternal instinct, but it probably makes good business sense; there usually is little left for the hindmost creditor.

By the late nineteenth century, many bond issuers and investors had come to believe that bondholder co-operation in a distressed situation was highly desirable. In those days, bankruptcy generally meant liquidation and liquidation often meant recoveries by the creditors (particularly the unsecured creditors) of only a small portion of what they were owed. Allowing a single bondholder to force a liquidation of the debtor or, very nearly as bad, giving such a holder the leverage to compel other investors to buy him out on preferential terms in order to forestall liquidation, was therefore something that many bondholders felt should be avoided.

The problem had several interrelated aspects. How could the "grab and run" instinct of each bondholder be kept in check long enough to permit a co-ordinated workout to the ratable benefit of all creditors? How could the majority of bondholders ensure that their collective judgement about the terms of such a workout would be binding on all bondholders? Finally, how could the majority neutralise the ability of dissident creditors to force a preferential buyout of their claims as the price of not putting the debtor into liquidation?

Three solutions suggested themselves. First, change the bankruptcy laws to shield a debtor from hostile legal actions while a reorganisation and rehabilitation of the debtor's affairs is carried out. Second, add contractual provisions to the underlying bonds that would, in times of financial difficulties for the issuer, permit a majority or supermajority of the bondholders to direct the course of a negotiated workout and constrain any maverick elements within the bondholder group. And third, engage the equitable powers of civil courts to supervise a negotiated debt rearrangement while protecting both the borrower and the majority creditors from exploitation by dissident minorities.

At various times during the late nineteenth and early twentieth centuries, all three solutions were tried. In England, starting in the late 1870s, contractual provisions now known as "majority action clauses" began to appear in bonds and related trust deeds governed by the law of England. These clauses allowed a supermajority of bondholders to agree to reduce the amount due or to defer a payment date under a bond. Such a decision, once approved by the specified majority of holders, was binding on all bondholders, even those who did not vote in favour of the change.

For the reasons discussed below, majority action clauses were only incorporated into a small percentage of bonds issued under the law of a US jurisdiction in the period 1880–1920. The preferred American solution at this time was something known as an "equity receivership". Under this procedure, a group of creditors approached a civil court with a request that the court use its equitable powers to appoint a receiver for a

financially distressed company (usually a railroad), while the various stakeholders in the company negotiated the terms of a debt rearrangement.

By the 1920s, however, the equity receivership technique began to fall into disfavour. In 1933 (for railroads) and 1934 (for industrial companies) the US Congress enacted amendments to the Bankruptcy Act that facilitated corporate reorganisations under the supervision of a bankruptcy judge. These amendments were the predecessor of the current Chapter 11.

One hundred years on, the financial community is again confronted with a remarkably similar problem. A sovereign bond issuer of the early twenty-first century is in much the same spot as the distressed corporate or railroad bond issuer of the early twentieth century. Court-supervised workouts in a bankruptcy proceeding are not possible for sovereign borrowers today, just as they were not available for most corporate issuers in the early part of the last century. Purely voluntary bond workouts then, as now, were messy, time-consuming and open to exploitation by holdout creditors. The consequences of not finding a satisfactory workout mechanism – liquidation for the old corporate issuer and economic paralysis for the modern sovereign issuer – are equally devastating for both debtors and creditors.

In the search for measures that will facilitate orderly sovereign debt workouts, modern commentators are coming up with proposed solutions that are strikingly similar to the ones that engaged the attention of their predecessors a hundred years ago. The merits of including majority action clauses in sovereign bonds as a method of neutralising the holdout creditor are being proposed in some circles today, just as they were in the 1920s and 1930s in the context of corporate bonds. In addition, like the reformers of a hundred years ago who proposed changes to the US bankruptcy law to permit large corporate bond issuers to reorganise their capital structure with the approval of most (but not necessarily all) of the creditors, some modern observers of the emerging market debt scene are suggesting the establishment of a new international bankruptcy regime that would be applicable to sovereign debtors. Indeed, this proposal is sometimes described as a "Chapter 11 for countries". Finally, under appropriate circumstances there may be civil procedures available in US federal courts that will accommodate a creditor-led, but court-supervised, sovereign debt workout.

11.2 Objective

We believe that it is difficult to assess the merits of new approaches to emerging market sovereign debt problems, such as the establishment of a supranational bankruptcy regime, without a clear understanding of just how far sovereign debt workouts can be facilitated by the contractual provisions that already exist in most sovereign bonds or could be managed through existing procedures in civil courts. The history of sovereign debt restructuring over the last 20 years has, after all, been primarily a story of muddling through. Whatever the fate of the more ambitious proposals to

change the current system, the world will almost certainly have to muddle through for at least another few years before those changes are implemented. This means, in practical terms, using the tools we already have to promote orderly workouts. Perhaps it also means using those tools more creatively and more confidently.

Against this backdrop, this chapter will focus on four questions.

- What contractual provisions now exist in sovereign bonds that could promote a voluntary restructuring of those instruments?
- How far can these provisions be pushed in order to mimic important features of a domestic bankruptcy regime such as protection from disruptive litigation while a workout is underway?
- What legal doctrines may constrain the use of these contractual provisions for this purpose?
- What procedures may be available in US federal courts to oversee and implement a restructuring of a foreign sovereign's bond indebtedness?

The interesting issue of how documentation practices for sovereign debt instruments might change in the future to facilitate collective creditor response to a debt problem is beyond the scope of this chapter.

11.3 Collective decision-making provisions

Bonds issued by both corporate and sovereign borrowers in the early nineteenth century rarely contained provisions that contemplated collective decision-making by the bondholders. Each bond was a freestanding debt instrument; its terms could not be changed without the consent of its holder, and, if not paid when due, each holder was free to pursue her individual remedies against the issuer. The instruments did not require a holder to consult with, much less to act in concert with, fellow bondholders before, during or after a default.

Although this approach ensured that each bondholder's claim against the borrower could not be deranged without that bondholder's consent, it also had the consequence of forcing financially distressed corporate borrowers into bankruptcy (which in those days meant liquidation). The bondholders, acting as a group, lacked the legal power to agree to a temporary deferment of their claims or a partial reduction in the amounts due under the bonds in order to preserve their debtor as a going concern from whom payments, even if late or less than originally stipulated, could be expected. Of course, individual bondholders were always free to give the borrower some reprieve on their own claims, but they could not compel their fellow bondholders into similar acts of generosity. Thus, the indulgence of a few or even a majority of bondholders only enabled the more stiff-necked creditors (upon whom the cognomen "holdout" was

bestowed) to be paid in full and on time. This was, is and ever shall be the "holdout creditor problem" in a debt workout.

English majority action clauses

By the second half of the nineteenth century, this rigid legal structure for bonds came to be regarded in England as contrary to the interests of most bondholders. Corporate borrowers experiencing temporary liquidity problems were being forced into liquidation when they might have been saved by a simple deferment or a reduction of the creditors' claims. Holdout creditors could use this threat of liquidation to extract preferential settlements at the expense of the debtor and the other creditors. In response, the London market began to include in corporate bond issues, or the related trust deeds, a contractual provision (now often called a "majority action clause") that permits a supermajority of bondholders voting at a bondholders' meeting to accept adjustments to the terms of the bonds, including changes to payment terms. Such adjustments, once accepted by the required supermajority of bondholders, are then binding on all holders regardless of whether an individual holder voted for the change.

The man who claimed paternity for English majority action clauses was Francis Beaufort Palmer. He announced the year of the clause's birth as 1879.[2] An English barrister practising in the last quarter of the nineteenth century, Palmer was the influential author of *Company Precedents* (a book of UK corporate form documents that went through 17 editions between 1877 and 1960). Palmer's majority action clause must have caught on quickly because, in the 1881 edition of his book, Palmer annotated his first form of majority action clause with the following explanation:

> It is by no means uncommon now to insert [majority action] provisions . . . in a debenture trust deed, enabling the majority to bind the minority in respect of various matters. . . . Now it sometimes happens that a company which has raised a large sum on debentures falls into temporary difficulties, and, though a large majority of its debenture holders may be willing to give time or make some reasonable arrangement, a minority decline to concur, and, in the result, the company is forced into liquidation. The insertion of [majority action] provisions . . . meets this inconvenience, and may save the majority from the tyranny of the minority.[3]

Majority action clauses are now a regular feature of both corporate and sovereign bonds governed by the law of England.[4] Although one occasionally finds some minor drafting differences, the terms of these modern English clauses would be instantly recognised by Palmer. A description of a modern English-style majority action clause appears as Appendix 11.1 to this chapter. It permits changes to the payment terms of a bond with the

consent of persons representing 75 per cent (by amount) of the bonds voting at a bondholders' meeting that meets certain quorum requirements.

American amendment clauses

A similar dilemma faced US bond issuers of the late nineteenth century. An issuer confronting temporary liquidity problems could always seek the voluntary consent of its bondholders to defer or reduce payments, but only at the risk of inviting exploitation by holdout creditors. Bankruptcy was an option, but a terminal one. Not until 1934 did US bankruptcy law contain effective procedures for a "reorganisation" of corporate debts that would save a company from liquidation and safeguard it against preferential demands by a few dissenting creditors.[5] The English solution to this dilemma – widespread use of majority action clauses in corporate bonds and indentures – did not, however, win great support in the United States during this period.[6]

The initial resistance to the use of majority action clauses in US bonds did not reflect a concern about the validity of the clauses. Rather, it resulted from a worry that a provision permitting a post-issuance change to payment terms might impair a bond's status as a negotiable instrument under the Negotiable Instruments Law (NIL). A negotiable instrument, as defined in the NIL, had to contain "an unconditional promise or order to pay a sum certain in money . . . [and] be payable on demand, or at a fixed or determinable future time. . . ."[7] With this cloud over their status as negotiable instruments, the New York Stock Exchange was reluctant to list bonds containing majority action clauses, and major bond issuers and their underwriters resisted the clauses for this reason.[8]

In light of this reluctance to employ majority action clauses, Yankee ingenuity came up with another solution to corporate debt workouts in the form of a procedure known as an equity receivership. This involved seeking the intervention of a court to appoint a receiver for a financially distressed borrower (the technique was particularly popular for down-on-their-luck railroads, of which there were many) while the debtor and the various classes of creditors negotiated a plan of reorganisation. At the end of the process, assuming agreement among most creditors could be reached, the company's assets were sold – invariably to a new enterprise formed by the creditors of the old company – and life would go on under a different corporate skin. Non-participating creditors could expect, at best, to receive their pro rata share of the liquidation value of the old company's assets and thus prospective holdout creditors were strongly encouraged to join the party.[9]

By the late 1920s, however, even the proponents of the equity receivership technique began to have second thoughts about its continued utility.[10] Negotiating such a reorganisation could take a long time; dissenting creditors could and often did object to a plan, thereby causing further delays; the reorganisations were usually controlled by corporate insiders; and the

lawyers and bankers involved in the process extracted large fees. Moreover, when the new Securities and Exchange Commission (SEC) came into existence in 1934, one of its first mandates was to examine the equity receivership process from the standpoint of fairness to the investors. The SEC did so, at extravagant length, and produced a highly critical, multivolume report of its findings.[11]

Growing disenchantment with equity receiverships cast a more appealing light on the potential use of majority action clauses to effect a "reorganisation by contract" of a company's debts. Advocates of majority action clauses in US bonds urged the same rationale as had their English counterparts: if the supermajority of bondholders are given the ability to adjust payment terms when the issuer runs into financial difficulties, a liquidation or an expensive equity receivership could be avoided.[12] Moreover, the clauses prevented a minority of bondholders from extorting a preferential settlement by threatening liquidation of the company or delaying a reorganisation.

The SEC, however, did not count itself among the fans of wider use of majority action clauses to solve the holdout creditor problem. As part of its general investigation of reorganisations and bondholder protective committees in the mid-1930s, the SEC also looked at how majority action clauses had been used in the relatively small percentage of US bonds that contained such clauses. Although the SEC acknowledged that the arguments in favour of using majority action clauses to facilitate corporate debt reorganisations had merit, the Commission concluded that these clauses had sometimes given rise "to abuses and problems which must be faced if the interests of security holders are not to be made subordinate to the desires and conveniences of the dominant group".[13] The SEC seemed particularly concerned that bond majority action clauses could be abused by corporate insiders. By buying up or otherwise controlling a majority of a distressed company's bonds, for example, the equity owners could vote to suspend or reduce payments on the bonds, thus allowing value to move down the corporate chain to the equity holders – an inversion of the normal priorities in a corporate bankruptcy by which a company's debt holders are paid off before the equity holders.[14]

In response, the SEC proposed, and Congress enacted in 1939, section 316(b) of the Trust Indenture Act (TIA).[15] This section (known as the "voting prohibition") prohibits any reduction in the amount due under a publicly issued corporate bond without the consent of each affected bondholder. Section 316(b) makes a small concession to majority action clauses by authorising short deferments of payment dates (up to three years) with the consent of holders of at least 75 per cent of the bonds.

The same year that the SEC was established, 1934, also saw an important amendment to the US Bankruptcy Act. A new procedure, known as Section 77B (the predecessor of the modern Chapter 11), was added to the Act in order to facilitate corporate debt reorganisations under the supervision of a bankruptcy court.[16] Thus, when the SEC set its cap against using

majority action clauses to effect debt rearrangements with the consent of only a majority or supermajority of creditors, it did so in the sure and certain knowledge that a corporate debtor and its creditors now had another viable option – a reorganisation in bankruptcy subject to the supervision of an impartial referee in the form of the bankruptcy judge.[17] This option had not been available to most corporate debtors in prior periods. The voting prohibition requirements of the TIA have, since 1939, governed the drafting of the amendment clauses in publicly-issued corporate bonds and indentures in the United States.

Although the TIA is not applicable to foreign sovereign bonds issued in the United States, the amendment clauses included in such sovereign bonds have almost invariably followed the TIA-driven approach to amendments.[18] The amendment clause found in most sovereign bonds issued under the law of a US jurisdiction permits amendments or modifications to the instrument with the consent of holders of 51 per cent (or sometimes 66.6 per cent) of the bonds, *except* that the consent of *each* affected bondholder is required to defer a payment date, reduce any amount of principal or interest due under the bond, change the currency of payments, or take certain other enumerated actions. An example of such a clause appears as Appendix 11.2 to this chapter. A minority of emerging market sovereign bonds issued under the law of a US jurisdiction employ a more abbreviated amendment clause (see Appendix 11.3) that requires the unanimous consent of affected creditors to change the "terms of payment" of the bonds.

American drafting conventions for amendment clauses in sovereign bonds may be explained by the familiarity of US investors with "unanimous consent" amendment clauses in corporate issues; it may evidence a conscious preference on the part of American investors for bonds that are more difficult to restructure (in the theory that this wards off casual requests to restructure); or it may have just been the product of the drafting momentum so well known to every practising corporate lawyer (the last corporate bond indenture becoming the model for the next sovereign bond indenture). Significantly, however, the reasons that led to the demise of majority action clauses in US corporate bonds after 1939 are not applicable to sovereign bonds issued in the United States. For a sovereign issuer, there is no bankruptcy alternative, either by way of a reorganisation or a liquidation. In this sense, the position of a sovereign issuer and its creditors today is much closer to that of a corporate borrower before the 1934 amendments to the bankruptcy law that facilitated corporate debt reorganisations. Moreover, the SEC's concern about the possible abuse of majority action clauses to subvert the normal priorities in a bankruptcy (debt paid out first, equity last) is not relevant to a sovereign borrower that cannot go bankrupt and, in any event, has no equity holders.

Acceleration clauses

Bonds issued in the international markets by emerging market sovereigns typically require a vote of 25 per cent of the outstanding bonds in order to accelerate unmatured principal following an event of default. This practice follows the general rule for corporate bonds issued in the United States.[19] There are exceptions to this rule. In bond issues using a trust indenture (as opposed to a fiscal agency agreement), the trustee often retains the discretionary power to accelerate following the occurrence of an event of default. Also, the common practice in emerging market sovereign bond issues that are registered with the SEC (so-called "Schedule B" issues) is to give individual holders the right to accelerate their own bonds following certain events of default such as a missed payment or, in some issues, the declaration of a debt moratorium by the sovereign issuer. This right of individual acceleration is not, however, a common feature of sovereign bonds issued in the Eurobond market.

Many, but not all, sovereign bonds give the holders of a majority or supermajority of the bonds the ability to reverse a prior acceleration of the issue if all events of default have either been cured or waived. Such a de-acceleration can usually be accomplished with the approval of holders of 50 per cent of the securities, but some sovereigns have agreed to a higher level of up to 75 per cent in their bond issues.[20]

The ability to rescind a prior acceleration through a collective action of the bondholders can have great tactical significance for a sovereign borrower that seeks a restructuring of the bonds. Following Ecuador's 1999 default on its Brady bonds and Eurobonds, for example, one series of the Brady bonds (the "Discount Bonds") was accelerated by holders of 25 per cent of that series.[21] Eleven months later, Ecuador made an offer to exchange its outstanding Eurobonds and Brady bonds for new instruments that conveyed a substantial measure of debt relief to Ecuador. This offer was conditioned upon a rescission of the acceleration of the Discount Bonds (a step that required the approval of holders of 50 per cent of that issue), and, as part of the closing of the exchange offer, such a de-acceleration was in fact accomplished.[22]

Enforcement restrictions

Where sovereign bonds are issued under a trust indenture (the US practice) or a trust deed (the English practice), an individual holder's right to bring a legal action against the sovereign issuer will be significantly curtailed. In English trust deeds, only the trustee has the power to enforce the instrument, and individual bondholders cannot act independently against the issuer unless the trustee, having been so instructed by a specified percentage of bondholders, fails to commence an enforcement action.[23] Any recoveries by the trustee must be shared pro rata among the bondholders.[24]

American trust indentures operate somewhat differently. As a result of an express requirement of the TIA (applicable to corporate issues but normally followed in sovereign issues as a matter of drafting convention), each bondholder has an unqualified right to bring an individual enforcement action to recover his share of any amounts of principal and interest not paid on their respective due dates.[25] Apart from this individual right to recover overdue amounts, however, only the trustee has the right to pursue other remedies, including the important right to sue for accelerated amounts.[26] Similar to an English trust deed, individual bondholders will not recover the ability to pursue these other remedies unless the trustee, after having been instructed by holders of at least 25 per cent of the bonds and offered satisfactory indemnification, fails to commence an enforcement action for a specified period (usually 60 days) after notice from the bondholders.[27]

All of this said, most foreign sovereign bonds issued in the US market do not use a trust indenture or appoint a trustee to represent the economic interests of the bondholders.[28] The more popular approach has been to issue such bonds using a fiscal agency agreement. A fiscal agent is the agent of the bond issuer itself. Accordingly, fiscal agency agreements do not concentrate enforcement rights in the fiscal agent; each bondholder retains those rights in respect of her own bonds, including the right to sue for accelerated amounts.

11.4 Legal constraints on the use of collective decision-making provisions

Historical summary

To summarise, the historical evolution of majority decision-making provisions in corporate and sovereign bonds issued in the United States proceeded roughly as follows.

- 1880–1920 Majority action clauses were used in only a minority of bonds issued in the United States, mainly as a result of concerns about the effect of such clauses on the negotiable character of the instruments.

  Chapter 11-type bankruptcy procedures that neutralise the holdout creditor problem were not yet available for most debtors.

  The homegrown substitute remedy was a technique known as an equity receivership. This process, although cumbersome and expensive, permitted a negotiated workout plan to be developed under a degree of court supervision.
- 1920s–1930s Equity receiverships came under increasing criticism. Majority action clauses gained in popularity as a

means of facilitating "contractual reorganisations" while avoiding the holdout creditor problem.

A bankruptcy reorganisation procedure was added to the Bankruptcy Act in 1933 (for railroads) and 1934 (for industrial companies). This was the predecessor of Chapter 11.

The SEC was established in 1934 and promptly began an extensive investigation into all of the prevailing techniques for implementing debt rearrangements, including equity receiverships and the use of majority action clauses. The SEC found serious defects in each technique and recommended that corporate debt workouts be handled under the new Chapter 11-type bankruptcy reorganisation procedure, with the benefit of court supervision.

Taking this recommendation, the US Congress in 1939 proscribed the use of majority action clauses in corporate bonds issued to the public in the United States, thus effectively forcing large corporate debt readjustments into the new bankruptcy reorganisation process.

- 1940–Present American-style amendment clauses (which preclude modifications to the payment terms of bonds without the consent of each affected bondholder) became a uniform feature of bonds, including sovereign bonds, governed by the law of a US jurisdiction.
- 1999–2001 Following several sovereign bond defaults in the late 1990s, the official sector began to encourage the broader use of majority action clauses in emerging market sovereign bonds to facilitate orderly debt workouts, but neither the sovereign debtors nor the private sector investors showed much enthusiasm for the idea at the time.

  In August 2000, Ecuador used its American-style amendment clauses to modify the non-payment terms of its Brady and Eurobonds in order to discourage holdout creditors in an exchange offer. Expressions of praise and outrage, depending on the source, inevitably followed.[29]

Throughout most of this period, no one spent much time debating the merits of majority action clauses in sovereign bonds issued in the international capital markets. Until about the middle of the twentieth century, the law of most countries, including the United States and the United Kingdom, would not permit a sovereign to be sued in foreign courts without the sovereign's consent.[30] Thus, sovereign bonds – despite their

appearance as legally binding undertakings – did not give bondholders effective legal remedies in national courts. Elaborate procedures for amending the bonds in the face of the sovereign issuer's liquidity difficulties must therefore have seemed a bit superfluous.

By the time these immunity rules were formally changed to permit bondholders to sue sovereign bond issuers (1976 in the United States[31] and 1978 in Great Britain[32]), emerging market sovereigns were no longer borrowing to any significant extent in the bond markets; the commercial banks had, with astonishing munificence, replaced bondholders as the principal private sector creditors to these sovereigns. The debt instrument of choice during this period was the syndicated commercial bank loan agreement. The bankers famously came to regret their generosity. Starting in 1982 and lasting through to the early 1990s, syndicated bank loans to many emerging market sovereign borrowers were repeatedly rescheduled and eventually partially written off.[33]

In the 1990s, bond investors flooded back into the financing vacuum for emerging market sovereigns left by the bruised retreat of the commercial banks.[34] The forms of the bonds used in this latest round of capital market borrowing by sovereign issuers were, however, a legacy of corporate issuer bond documentation as it had evolved in different countries. The bonds typically contained certain kinds of collective decision-making provisions (such as the need for holders of 25 per cent of the bonds to approve an acceleration), but – consistent with the drafting conventions that had evolved in the United States after 1939 – the payment terms of sovereign bonds issued in the United States could not be amended without the unanimous consent of the bondholders. Bonds governed by the law of England, on the other hand, continued to use the majority action clauses so favoured by English bond drafters and investors.

Then, the defaults started again. Pakistan, Ukraine, Ecuador and the Ivory Coast all approached their bondholders during 1999–2001 seeking a restructuring of bonds issued in the international markets.[35] At the time of this writing, Argentina has embarked on the largest sovereign bond default in history. Attention has thus once again returned to the question of how orderly bond workouts, this time for sovereign issuers, can be arranged.

Intercreditor duties

Collective decision-making provisions are intended to allow the creditors within any one bond or loan syndicate to implement their collective will in the handling of a debt workout. Stated differently, the purpose of these provisions is to protect the lenders as a group against the damage that could result from maverick creditor actions against the borrower and its assets. They also safeguard both the borrower and the other lenders against efforts by maverick creditors to extract preferential settlements as the price for their co-operation in a workout.

The provisions are thus designed to prevent the "tyranny of the minority"[36] in a multicreditor debt instrument. Inevitably, however, they open up the possibility of correlative abuse – oppression of minorities by the majority creditors. The American legal doctrines that have attempted to delineate the boundary between the permissible and impermissible use of collective decision-making provisions in multicreditor debt instruments can best be understood in the historical context described above.

Phase one: acknowledgement

When majority action clauses first began to appear in a limited number of American bonds in the late nineteenth century, they were intended to give a corporate bond issuer and its majority creditors an alternative to liquidation of the debtor in bankruptcy should the need arise. In exercising their powers under these clauses, however, the majority creditors were assumed to have a duty – sometimes even described as a fiduciary duty[37] – to act in the best interests of all the bondholders. This was how the law was developing in England (where the clauses had first appeared) and American judges were prepared to follow that lead.[38]

A leading case of this era, *Hackettstown National Bank* v. *D.G. Yuengling Brewing Co.*, for example, invalidated an attempt to use a majority action clause to postpone payments due on a corporate bond in light of what the court construed as "a corrupt and unwarranted exercise of the power of the majority" bondholders.[39] The *Hackettstown* decision contained strong language suggesting that lenders in a multicreditor debt instrument owe each other fiduciary duties.[40] When challenged, the use of majority action clauses in a variety of corporate debt rearrangements during this period received careful scrutiny by US courts, and actions taken pursuant to these provisions were sometimes invalidated if the court found bad faith or abuse on the part of the majority creditors.

Phase two: flowering

Most corporate debt workouts during this era (around 1880–1920), however, were not affected by the use of majority action clauses in the underlying bonds. Rather, they were carried out through the equity receivership technique described above. Therefore the litigation and commentary of the day dealing with intercreditor duties in debt rearrangements arose primarily in the equity receivership context. Significantly, intercreditor duties in these affairs were understood to run both from the majority to the minority creditors and vice versa.[41] The contemporary literature suggests, for example, that courts would look with disfavour on speculators who purchased their bonds (presumably at a discount) while the reorganisation was underway and then tried to hold up completion of a plan that enjoyed broad support among the other creditors.[42]

Predictably, the lion's share of the litigation involved complaints by minority creditors that a proposed equity receivership treated them unfairly. The equity receivership process, as it had evolved over this period, relied heavily on the implicit co-operation of corporate insiders and friendly creditors. Courts were therefore prepared to entertain complaints by minority creditors that a resulting plan of reorganisation may have been too generous to the insiders. These complaints grew in volume as the proponents of equity receiverships in the 1920s searched for more efficient methods of discouraging holdout creditors by, for example, leaving non-participating creditors with a distastefully small recovery at the end of the process. Interestingly, although the issue was hotly debated in the legal journals by some of the most prominent practitioners of the equity receivership art, no consensus was reached as to whether the equitable powers of the supervising court extended to the point of being able to force non-assenting creditors to participate in a reorganisation that enjoyed broad creditor support and struck the court as inherently fair.[43]

Phase three: erosion

Things began to change dramatically after the amendment of the Bankruptcy Act in 1934 to add the predecessor of Chapter 11, and after the passage of the TIA in 1939 that prohibited the use of majority action clauses in publicly-issued corporate bonds. The availability of a bankruptcy reorganisation procedure meant that minority creditors who felt themselves aggrieved by the terms of a voluntary debt rearrangement could obtain the supervision of a bankruptcy judge by forcing the process into a bankruptcy reorganisation.[44] Accordingly, there was less and less of a need to infer broad intercreditor duties in the workouts of multicreditor debt instruments as a means of countering tyrannical minorities or oppressive majorities.

Also, the abrupt discontinuance of majority action clauses in US bonds after 1939 meant that courts were no longer confronted with complaints by minority bondholders that their claims against the debtor were being improperly reduced or deferred without their consent. The US law of intercreditor duties as it applied to majority action clauses was thus arrested after 1939. This is not to say that American-style amendment provisions in multicreditor debt instruments were never the subject of legal scrutiny. They were, but increasingly in the syndicated bank loan context.

The modern US law in this area has turned distinctly hostile to the notion of implied intercreditor duties in multicreditor debt instruments, particularly in instruments that involve sophisticated parties and carefully detailed, arm's-length agreements.[45] Of equal importance, where the multicreditor debt instrument contains an express collective decision-making provision, US courts have been reluctant to entertain a claim that the majority's use of the provision should be encumbered by vague intercreditor duties.[46]

Intercreditor duties in sovereign debt instruments

If we are correct in our speculation that the availability after 1934 of a bankruptcy reorganisation procedure for corporate debtors meant that US courts no longer needed to rely on doctrines of implied intercreditor duties to enforce fair play among minority and majority creditors in a negotiated corporate debt workout, this raises the interesting question of whether, for sovereign debtors that still do not have a Chapter 11 safety net, the older view of intercreditor duties has some continuing vitality. The question was put squarely before a US federal district court in 1995 in a case captioned *CIBC Bank and Trust Co. (Cayman) Ltd.* v. *Banco Central do Brasil*.[47] A group of related (non-bank) entities held a position in the Multiyear Deposit Facility Agreement (MYDFA) in which the Central Bank of Brazil was the borrower and the Federative Republic of Brazil was the guarantor. The MYDFA was in the nature of a large syndicated loan: it had been the contractual vehicle through which Brazil's public sector debt had been restructured in 1980s. In 1992, Brazil asked all MYDFA holders to exchange their claims under that instrument for one or more series of new bonds (the choice of the type of new bond to be at the election of each creditor) issued by the Federative Republic of Brazil. The owners of this position accepted Brazil's request for the full amount of their exposure under the MYDFA. Brazil subsequently attempted to amend its offer by requiring creditors to take a minimum allocation of certain types of the new bonds. The owners declined to accept this mandatory reallocation and consequently they were excluded from participating in the bond exchange. The legal title to this position was subsequently transferred to CIBC Bank and Trust Co. (Cayman) Ltd.

Just prior to closing the exchange, however, Brazil instructed one of its state-owned banks, Banco do Brasil (BdB), to withdraw from the exchange a principal amount of MYDFA debt slightly larger than that held by CIBC, thus leaving BdB with a majority position in the MYDFA. When CIBC attempted, after the exchange, to accelerate the unmatured principal due under the MYDFA (an action requiring the consent of holders of at least 50 per cent of the outstanding amounts), BdB used its MYDFA voting power to block the acceleration. CIBC then sued in the Southern District of New York.

Citing *Hackettstown* and other authorities, CIBC argued to the court that BdB was in an openly collusive arrangement with the MYDFA debtor (the Central Bank of Brazil) and guarantor (the Federative Republic of Brazil) and that BdB's vote on the question of acceleration should therefore not be counted. Among other things, CIBC contended, BdB had breached its obligation of good faith and fair dealing to its fellow creditors. Although this was indeed the lesson of *Hackettstown*, the *CIBC* court elected to treat this case strictly as a matter of contract interpretation: the MYDFA itself did not disenfranchise a creditor who was affiliated with

the debtor and the court declined to read such a disenfranchisement into the contract on the grounds of implied intercreditor duties.[48]

CIBC involved a syndicated loan and the collective decision-making provision at issue in the case was majority voting for acceleration.[49] If sovereign bonds issued under the law of a US jurisdiction begin to incorporate English-style majority action clauses that permit write-downs of principal or interest claims, however, limiting judicial scrutiny to the four corners of the contract may not always make sense. Under those circumstances, we believe that a modern US court would not refuse to hear a challenge to the legitimacy of a majority's decision to reduce or defer payments due under the instrument when the facts show a collusive or corrupt oppression of the minority bondholders by the majority. Because the clauses themselves do not offer any guidance or standards for deciding when a majority may have acted improperly, courts would presumably apply olfactory tests very similar to those used by their late-nineteenth-century brethren. Unless courts are prepared to supervise the operation of majority action clauses in cases where non-assenting minority bondholders can show an abuse by the majority, as courts were willing to do when the clauses last appeared in American bonds 70 years ago, these clauses will not prosper as a tool for achieving creditor-led sovereign bond workouts. We are not suggesting that a decision of a supermajority of bondholders taken pursuant to a majority action clause should be overturned lightly, nor should a court substitute its own view about what might be in the bondholders' best interest for what the holders themselves have, as a group, decided. But where a majority or supermajority cannot articulate a commercial justification for its action, a judicial inquiry into motives may be warranted.

The treatment of sovereign bonds containing American-style amendment clauses, however, is likely to be quite different. These clauses do not permit an involuntary reduction of amounts due under a bond or deferment of payment dates. Thus, the minority bondholders' complaint must be that some other, less drastic amendment or action sanctioned by the majority should be invalidated. The very limited law that has developed in the area of amendments to corporate bonds suggests that such complaints will be hard to sustain.[50] When the clauses say that any modification is permitted with the consent of only a specified majority of bondholders, apart from certain specifically enumerated amendments that require unanimous approval, American courts will examine the challenged amendment with an eye on whether – in a real-world sense – it is tantamount to one of the modifications requiring unanimous bondholder consent.[51] This is more in the nature of a traditional inquiry into whether the form of a party's behaviour under a contract should be permitted to override the substance of its action. Courts will not, we believe, approach disputes about American-style amendment clauses from the standpoint of implied intercreditor duties. There is no reason to do so, and the modern tendency of US courts to respect the black letter of a financial contract is very strong.

For a sovereign debtor, of course, this prediction is both good and bad news. Good, in the sense that the validity of majority-approved amendments to non-payment terms are likely to be respected. Bad, in the sense that a US court is unlikely to read into a bond containing an American-style amendment clause an implied duty on the part of minority bondholders to acquiesce in the wishes of the majority for a financial restructuring of the instrument.

11.5 Collective decision-making provisions in sovereign debt workouts

Objectives

How far can collective decision-making provisions in sovereign bonds be used to facilitate debt workouts? Another way of asking this question is to inquire whether, and to what extent, these clauses can be used to replicate the important features of a bankruptcy code, such as the "international bankruptcy regime" applicable to sovereign borrowers that has been discussed, off and on, for many years.[52] As articulated by its proponents, the principal objectives of an international bankruptcy system would be:

- to shield the sovereign debtor from disruptive litigation by individual creditors while the debt workout is underway (the "automatic stay" feature);
- to ensure that a debt restructuring plan that is acceptable to the large majority of creditors will bind any dissenting minority (the "cram-down" feature);
- to facilitate the sovereign's ability to attract new financing from private sector sources during the workout period (the "debtor-in-possession" or "DIP financing" feature); and
- to permit a greater level of co-ordination among the different types of creditors (banks, bondholders, bilateral creditors, trade creditors and so forth) caught up in a sovereign debt problem (the "co-ordination" feature).

Can current collective decision-making provisions achieve some of these objectives? We begin by discussing the limitations of the provisions and then elaborate on the scope of using them.

Limitations

The collective decision-making provisions currently used in sovereign bonds have some important limitations if one looks to them as the exclusive tool for expediting debt workouts. First, these provisions – even the most liberal English-style majority action clauses – operate only within the four corners of the bond containing the clauses. They therefore cannot be

used to address the co-ordination problem across bonds. Some other method, as yet undiscovered or at least unutilised, will be needed to encourage closer co-ordination among the various groups of creditors such as the Paris Club, trade creditors, multilateral creditors, and so forth.

Second, it is in the very nature of collective decision-making provisions that they operate by a vote of the majority or supermajority of the bondholders. One prospective holdout creditor, or a small group of similarly-minded creditors, can therefore effectively control the tactical use of these clauses by acquiring a blocking position of bonds. For example, if such a creditor controlled 25 per cent of the bonds of one issue, it could single-handedly cause the acceleration of that bond, although perhaps at the risk of seeing the acceleration later reversed by a vote of 50 per cent of bondholders. Similarly, a 25 per cent holding will ensure that an English-style majority action clause could not be used to restructure the instrument without the concurrence of that 25 per cent holder. Even amendments to the non-payment terms of a US bond can be blocked if the holdout acquires 34 per cent (in bonds that set the voting level for modifications to non-payment terms at 66.6 per cent) or 50 per cent (in bonds that require only majority approval of such a change) of the outstanding bonds of that issue.

Third, because collective decision-making provisions operate only bond-by-bond and do not reach out to affect other bond syndicates or other types of creditors, a sovereign debtor must separately convince each bond syndicate to go along with the deal. Stated differently, in a negotiated sovereign debt restructuring (unlike a corporate reorganisation under Chapter 11), all similarly-situated creditors do not vote as a class, and thus soliciting the "collective will" of creditors in a sovereign context really means seeking action by separate creditor groups under separate debt instruments. We discuss below one idea for a procedural mechanism for homogenising similarly-situated sovereign bondholders in order to replicate Chapter 11-style class voting.

Fourth, an active sovereign borrower will have placed its bonds in a number of jurisdictions around the world. As a matter of convention, the documentation practices in some of these markets (the German retail investor market is one example) discourage any form of collective decision-making clauses in bonds.[53]

Finally, the unanimous consent requirement in American bonds means that a determined holdout creditor will ultimately have a claim for the principal and interest due to her under the bond. Amendments effected by the majority of the bondholders may remove the acceleration remedy or strip financial covenants out of the bond but, in the end, they cannot involuntarily reduce the amount of a holdout's claim against the issuer or postpone a scheduled payment date.

Within these limitations, however, collective decision-making provisions can go at least part of the way towards replicating the features of a domestic corporate bankruptcy.

Cramdown

The best example of a provision that permits a contractual cramdown on dissenting minority bondholders is an English-style majority action clause.[54] As discussed above, this is precisely what the clause was designed to do. A 75 per cent vote of bondholders attending a meeting that satisfies quorum requirements can reduce or defer payments due under the bond containing this provision, and that decision will bind any non-assenting holders.

Two countries, Pakistan and the Ukraine, have sought a restructuring of their English law bonds in recent years. Pakistan, in an exchange offer that closed in December 1999, elected not to use the majority action clauses in its bonds to cram down holdouts, reportedly because it feared that calling meetings of bondholders might produce a less agreeable outcome such as an acceleration.[55] The Ukraine, in an exchange offer that closed in February 2000, circumvented this problem. By accepting the Ukraine's exchange offer, each holder of an English law bond automatically gave a proxy to the exchange agent to vote at a subsequent meeting of bondholders in favour of modifications to the old bonds that brought them into line with the payment terms of the new bonds being offered in the exchange.[56] The result? Holdouts faced the prospect of being left with an amended illiquid old bond that paid out no earlier than the very liquid new bond being offered in the exchange. The Ukraine could compel this outcome as long as it achieved at least a 75 per cent acceptance of its exchange offer for each old bond.

For sovereign bonds with American-style amendment clauses, an involuntary reduction or deferment of claims will not be possible as a result of the unanimity requirement in the amendment clauses. Nevertheless, prospective holdouts can be encouraged to participate in a deal that enjoys the support of most other bondholders by the prospect of holding old bonds that have been amended by the majority holders in a variety of disagreeable ways (short of changing the amount or due date of a payment due under the old bond) just prior to the closing of the exchange offer. We have discussed this technique of seeking "exit consents" in a prior article and we will not repeat that discussion here.[57] The technique can be useful in convincing the fence-sitting bondholder to come along with the majority. Only one sovereign bond issuer, Ecuador (August 2000) has made a tactical use of exit consents in a restructuring of bonds containing American-style amendment clauses.[58] Whether US courts will find some exit amendments to be impermissibly severe on the holdouts remains an open issue: there are no reported cases in the United States that discuss the validity of the technique in the sovereign context, and only a few in the area of corporate bond exchanges.[59]

Automatic stay

The automatic stay protection in a US corporate bankruptcy is intended to stop individual creditors from taking actions, such as lawsuits or set-offs, that could prejudice the eventual reorganisation of the debtor's affairs. Of course, the legal ability to cram down a plan of reorganisation on dissenting creditors in a corporate bankruptcy means that the automatic stay protection is needed only during the period before the reorganisation becomes effective.

The situation is different in a sovereign debt workout. The threat of disruptive legal action while a restructuring is underway is certainly present in the sovereign context, although holdout creditors have traditionally waited for a sovereign to complete its restructuring with other creditors before launching a legal attack. But without a sure ability to cram down a deal on holdout bondholders, the sovereign debtor must worry about maverick creditor litigation both before *and* after completion of a restructuring with the other bondholders.[60]

Collective decision-making provisions can provide significant protection against maverick lawsuits while the workout is in progress. The customary requirement that holders of 25 per cent of the bonds in a particular issue consent to an acceleration of the unmatured principal gives a measure of protection because most bondholders will not wish to sue just for their share of one or two missed payments. Of equal importance, however, is the ability of a simple majority (in most bonds) to rescind any prior acceleration as part of a final workout. The discontented bondholder who is thinking of pursuing independent legal remedies must therefore face the possibility that, after months of expensive litigation, the sovereign debtor will reach an agreement with the majority of its bondholders, the acceleration will be reversed, and the litigant creditor will be left with a claim only for its share of any payments that remain unpaid after the settlement. This can be a powerful disincentive to the commencement of lawsuits before a restructuring has been concluded.

Finally, in the case of sovereign bonds issued pursuant to a trust deed (in England) or a trust indenture (in the United States), the restrictions contained in those instruments on enforcement actions by individual bondholders can provide a significant degree of protection against maverick lawsuits while a restructuring is in progress. In effect, holders of 25 per cent of the bonds must instruct the trustee to begin an enforcement action for accelerated principal and, even then, any recovery by the trustee will be shared pro rata among all the holders. This is not a regime conducive to maverick lawsuits. As noted above, however, only a minority of foreign sovereign bonds issued in the United States have employed a trust indenture structure.

DIP financing

We propose to consider in somewhat more detail the question of whether existing collective decision-making provisions in sovereign bonds can be used to replicate the debtor-in-possession financings that are a regular feature of Chapter 11 reorganisations for corporate borrowers in the United States. DIP financings are credits extended to a company (with bankruptcy court approval) *after* it has entered into the Chapter 11 process to allow the company to continue its business operations while the plan of reorganisation is being worked out.[61] In order to encourage lenders to extend new credit, the law treats these loans as an administrative expense of the bankruptcy and they enjoy a legal priority over other claims against the debtor.[62]

Now consider the position of a sovereign borrower, the hypothetical Republic of Ruritania, that encounters temporary difficulties in servicing its existing external debts. Ruritania does not have a Chapter 11 option. Thus, its choices boil down to (1) seek emergency financial help exclusively from official sector institutions such as the IMF, or (2) approach its private creditors for a restructuring of their outstanding credits to the country.

Each alternative has drawbacks. Official sector lenders are increasingly reluctant to pour fresh money into a country only to see those funds flush out again to repay, in full and on time, private sector creditors. On the other hand, a full restructuring of private sector credits, quite apart from the damage that this may do to the country's long-term credit standing and financing prospects, may in fact be too drastic a remedy for a liquidity-driven problem. A restructuring would involve permanent deferments or reductions in amounts owed to private creditors. If the liquidity problem can be resolved quickly, a restructuring will have unnecessarily imposed permanent damage on private creditors.

Technique

As an alternative to a permanent restructuring of private sector claims, could Ruritania obtain the equivalent of a DIP financing from a group of private lenders in order to tide the country over until its liquidity problems are resolved? This money would presumably come in together with fresh funds from the official sector institutions.

Such a financing would naturally be very difficult to arrange, and even if arranged would be prohibitively expensive, unless the new lenders could be assured of a legally enforceable priority over existing Ruritanian debts owed to private sector creditors. The question, then, is whether Ruritania could convince a critical mass of its existing creditors (and we will assume that these are bondholders holding bonds with American-style amendment clauses of the kind set out in Appendix 11.2) voluntarily to subordinate themselves to a specific new financing (let us call it the "New

Loan") that would be used to continue payments on Ruritania's existing bonds during an interim period, thereby avoiding the need for a restructuring of those debts.

Legal analysis

From a legal perspective, such a request from Ruritania would amount to a proposal that the *pari passu* clause in Ruritania's existing bonds (the clause ensuring that the bonds will not be subordinated to any new creditors) be amended to permit a subordination of each existing bond syndicate to the New Loan. The terms of a subordination would confirm the agreement of the existing bondholders that the New Loan creditors will enjoy a senior status. The subordination would not release or discharge the sovereign's obligation to make payments on its existing bonds; it would merely evidence an intercreditor arrangement giving the New Loan seniority over the old bonds (or any instruments that may be exchanged for those bonds).[63] The agent or trustee for the New Loan would be given the power to enforce the terms of this subordination.

Could an amendment providing for such a targeted subordination be accepted by the majority of bondholders in each existing bond syndicate with the effect that any non-assenting holders in that syndicate will also be bound by the terms of the subordination? As noted above, most amendment clauses in emerging market sovereign bonds issued under the law of a US jurisdiction have an Edenic character: one may eat from any tree in the garden, or modify any provision of the bond, with the approval of only a majority (sometimes 66.6 per cent) of the holders *except* that certain specifically enumerated amendments require the consent of each affected bondholder. So the analysis first looks to see whether a targeted subordination falls within the list of unanimous consent amendments. Does it change a payment date on the old bonds? No. Does it reduce the amount of principal or interest due under the old bonds? No. Does it change the currency in which the old bonds are payable? No. Does it alter the voting percentages of the old bonds? No.

What a targeted subordination *may* do is make it less likely that Ruritania will, in fact, be able to make the payments due on its existing bonds because it will now be obligated to pay the New Loan as a matter of legal priority. But the amendment clauses in Ruritania's bonds do not make modifications of this kind the subject of unanimous consent. The best analogy may be to amendments to financial covenants such as negative pledge clauses. By amending a negative pledge restriction to permit Ruritania to pledge an asset to secure another creditor, the bondholders may have impaired their own ability to be paid because the proceeds from any sale of that asset will naturally go first to the secured creditor. The bondholders would presumably not consent to such a modification unless they believed that giving this flexibility to Ruritania (i.e. the ability to raise fresh money on a secured basis) was a risk worth taking. Most American-

style amendment clauses leave this kind of judgement at the discretion of the majority of the bondholders.[64]

Commercial analysis

The commercial justifications for Ruritania's bondholders to accept a targeted subordination to the New Loan may be compelling. The New Loan (together, perhaps, with new official sector funds) would be intended to avoid a default on Ruritania's outstanding obligations while the country's liquidity problems are being addressed. The worst-case scenario for the existing creditors is therefore one in which Ruritania's financial difficulties persist and a restructuring becomes inevitable down the road, notwithstanding the New Loan. But in analysing whether to accept the targeted subordination, the choice for existing creditors is the possibility of a restructuring tomorrow versus the certitude of a restructuring today.

Assuming that the proceeds of the New Loan are committed to the continued servicing of Ruritania's outstanding debts, the existing bondholders will receive payments that they might otherwise have been asked to forgo or defer in a restructuring. The risk for the existing bondholders, of course, is that should a restructuring eventually become necessary, the financial terms of that restructuring will, to some degree, be harsher as a result of the addition of a legally senior claim (the New Loan) to Ruritania's debt stock. One aspect of the financial question is whether the benefit of receiving continued debt service payments while the New Loan is being disbursed outweighs the incremental severity of restructuring terms should a restructuring prove unavoidable.

Finally, in the absence of a targeted subordination and a New Loan from private sector sources, Ruritania, if it is to avoid a compulsory restructuring, would look to borrow from international financial institutions such as the World Bank and the IMF. Even if those lenders were prepared to be the sole providers of new funding (and there is reason to doubt whether, in light of the well-publicised reluctance of official lenders to perpetuate the practice of financial bail-outs, they would be), those institutions claim for themselves a de facto senior creditor status. Thus, either way, the bondholders would be faced by a larger component of senior debt should a restructuring become necessary down the road.

11.6 Procedural options for achieving majority control of a sovereign debt workout

Earlier, we discussed the tactical limitations of the use of collective decision-making clauses. Importantly, these limitations include a continued (even if reduced) vulnerability to holdouts, as well as high transaction costs resulting from the need to implement independent restructurings for each outstanding bond issue. Embedded in the US Federal Rules of Civil Procedure, however, may lie an as-yet unexplored

method for dealing with certain kinds of sovereign debt workouts that could avoid both problems. This solution is potentially available today for sovereigns whose bond indebtedness is governed by the law of US jurisdictions and contains a submission to the jurisdiction of US courts.

The equity receivership technique of the late nineteenth and early twentieth centuries evolved over time to meet what the debtors and bondholders of the day saw as a pressing need. Debt rearrangements for corporate and railroad borrowers were occasionally necessary. There was no bankruptcy procedure in place at the time that would accommodate such a workout (short of liquidation) and prevent exploitation by dissident creditors. The equity receivership solution engaged the equity powers of a US court to shield the debtor from piecemeal asset foreclosures while the stakeholders negotiated and implemented the terms of a rearrangement.

Those equity powers still exist in US courts. Indeed, the Federal Rules of Civil Procedure (FRCP) contain a provision, Rule 66, allowing for the appointment of receivers "in accordance with the practice heretofore followed in the courts of the United States".[65]

The true successor to the old equity receivership technique, however, may lie in the federal class action procedures. FRCP 23 contains the rules for the commencement, certification and settlement of class actions in US federal courts. The prerequisites to a class action in a federal district court are set out in FRCP 23(a):

> One or more members of a class may sue or be sued as representative parties on behalf of all only if (1) the class is so numerous that joinder of all members is impracticable, (2) there are questions of law or fact common to the class, (3) the claims or defenses of the representative parties are typical of the claims or defenses of the class, and (4) the representative parties will fairly and adequately protect the interests of the class.[66]

In addition, pursuant to FRCP 23(b), an action may be maintained as a class action if any of the following criteria are satisfied:

(1) the prosecution of separate actions by or against individual members of the class would create a risk of

   (A) inconsistent or varying adjudications with respect to individual members of the class which would establish incompatible standards of conduct for the party opposing the class, or

   (B) adjudications with respect to individual members of the class which would as a practical matter be dispositive of the interests of the other members not parties to the adjudications or substantially impair or impede their ability to protect their interests; or

(2) the party opposing the class has acted or refused to act on grounds generally applicable to the class, thereby making appropriate final

injunctive relief or corresponding declaratory relief with respect to the class as a whole; or

(3) the court finds that the questions of law or fact common to the members of the class predominate over any questions affecting only individual members, and that a class action is superior to other available methods for the fair and efficient adjudication of the controversy.[67]

In class actions based on FPCP 23(b)(3) above, individual members of the class may "opt out" of the class and pursue their individual remedies.[68] If the class is certified under FRCP 23(b)(1) or (b)(2), however, the action – and any eventual settlement – will bind all members of the class.[69] These are sometimes referred to as mandatory class actions.

The supervising court has very broad powers to issue orders to ensure the procedural fairness of the action to all members of the class.[70] In addition, a class action cannot be dismissed or compromised without the approval of the court, and notice of any such dismissal or compromise must be given to all members of the class.[71]

If it is to avoid the holdout creditor problem, a class action commenced for the purpose of restructuring sovereign bond indebtedness would need to be certified as a mandatory class action under FRCP 23(b)(1) or FRCP 23(b)(2). One rationale for certifying mandatory class actions under Rule 23(b)(1)(b) is that claimants would otherwise be competing for a "limited fund" of assets.[72] Unless treated as a class, the first litigants may deplete the fund and substantially impair the interests of the less agile litigants. This rationale may apply to a sovereign borrower whose "limited fund" is the pool of scarce foreign exchange resources from which all future external debt service payments will need to be made. In the absence of mandatory class certification, some litigious creditors may succeed in grabbing these assets or compelling a preferential settlement of their claims by the sovereign. Either way, the pool is diminished to the detriment of all other creditors. In addition, because sovereign borrowers are unlikely to have on hand resources sufficient to pay in cash the full amount of even compromised claims, these cases may seek declaratory or injunctive relief requiring the borrower to issue new securities in exchange for existing bonds, rather than just monetary damages.[73]

To date, a limited number of class actions have been brought by indenture trustees under corporate bonds to obtain court approval of a proposed settlement with bondholders, even when the indenture contained a provision (as required by section 316(b) of the TIA) that prohibited the bondholders themselves from voting to impair the right of non-assenting fellow bondholders to receive full and timely payments.[74] The theory of these cases has been that section 316(b) does not promise that a bondholder's claim will *never* be impaired; it only promises that any such impairment will be subject to judicial scrutiny and supervision.[75] Such scrutiny and supervision is available in the context of the class action

itself.[76] Class actions have also been commenced by one or more holders of corporate bonds, as class representatives, in order to ensure that a negotiated settlement with the issuer will bind all other bondholders.[77]

To our knowledge, this technique has never been used to effect a general debt rearrangement for a foreign sovereign bond issuer.[78] We are aware of one case, however, *Hirshon* v. *Bolivia*,[79] in which two holders of bonds issued by Bolivia brought a class action in the US District Court for the District of Columbia for recovery of the amounts due under the bonds following a prolonged default. The plaintiffs sought certification of the class under FRCP 23(b)(3) (which permits class members to opt out). Approximately one year after the action was filed, the plaintiffs reached a settlement with Bolivia calling for the bonds to be redeemed at 33 per cent of outstanding principal. The plaintiffs argued that the settlement terms were reasonable in light of the risk that the plaintiffs might be unable to collect on a judgment, even if they were successful at trial.[80] Class members were given one month after notice of the proposed settlement to opt out of the class. The court then conducted a fairness hearing and approved the settlement.[81]

Restructuring sovereign bond debt through a mandatory federal class action could achieve these objectives:

- the class action would displace individual lawsuits against the debtor (at least in the United States);
- all similarly-situated bondholders would be treated as a single class, thus allowing them to express a view on any proposed settlement as a homogenised class, rather than bond-syndicate-by-bond-syndicate; and
- any debt rearrangement that is worked out between the sovereign and the bondholders may be submitted to the court for approval and, if approved, would bind all bondholders.

Conducting a sovereign bond workout under the auspices of a US federal class action would inevitably raise a number of novel legal and practical issues. For example, would the foreign sovereign borrower consent to the process? Who would be appointed as representatives of the bondholder class? A class action would only be feasible for a sovereign debtor that had issued a significant percentage of its bonds in the United States or where the bonds contained a choice of US law and submission to the jurisdiction of US courts. To the extent that the natural geographical focus of a sovereign debt workout is in some other country, class action litigation in the United States may be in no one's interest.

Also, could a sovereign's non-US law bonds be brought within the class action and made subject to a settlement? Would the G7 governments encourage their local courts to refrain, on grounds of comity or otherwise, from entertaining separate lawsuits or giving inconsistent judgments if lawsuits are brought outside the United States by holders of non-US law

bonds? Even if non-US law bonds are included, should the chosen foreign law applicable to those bonds guide the US court, or could one confidently predict that the law applicable to claims for money due but not paid is sufficiently similar across most jurisdictions so as to justify the US court applying its own law?[82]

How would a court deal with other categories of creditors such as the Paris Club, the multilateral lenders, or trade creditors that could not easily be included in a class action? Perhaps the court would decide that it could not approve any settlement of a bondholder class action as "fair, adequate and reasonable"[83] until it had received confirmation that other creditor groups had also agreed to moderate their own claims on the sovereign's foreign exchange reserves going forward or, in the case of the multilateral creditors, agreed to augment those reserves through new lending.

Apart from jurisdictional issues, any use of the class action mechanism to facilitate a sovereign debt workout will have to take into account the mandates of the Supreme Court's recent pronouncements in *Ortiz* v. *Fibreboard Corp*.[84] and *Amchem Products, Inc.* v. *Windsor*.[85] In each of these cases, the Court expressed concern that lawyers and lower courts had pushed the class action mechanism in mass tort cases far beyond its original purpose. Among other things, the Court said that lower courts, in deciding whether to certify a class, should be especially wary where the class action was either "non-opt-out" or "settlement only".[86] Underlying the Court's decisions in both cases was a concern about the potential for collusion in class actions.[87] More specifically, the concern was with opportunistic class counsel who might put their own interests in fees above those of the class members.

11.7 Conclusion

This chapter has had four principal objectives. First, we have tried to demonstrate that considerations of collective decision-making have been present in the design of most bond contracts or implicit in the legal system since the late nineteenth century, although the manner in which the collective action has been implemented has changed over time. Second, the relatively diluted version of collective decision-making provisions in US bonds does not reflect a public policy prejudice against majoritarian debt rearrangements; it is rather the result of historical developments that effectively forced such workouts into the bankruptcy courts (where, in fact, supermajority creditor control is now enshrined). Third, even existing collective decision-making provisions in sovereign bonds may give considerably more scope for majority creditor influence in a sovereign debt workout than some may suppose. If used confidently and creatively, these clauses can be used to mimic, to varying degrees, features of a corporate bankruptcy such as automatic stays, cramdowns and DIP financings. Finally, it may be feasible to engage the equity powers of US federal courts in the oversight of some sovereign bond workouts with the result

that the bondholders can be homogenised into a single voting class, and any court-approved compromise of the action will bind all members of that class.

This raises the question, however, of how to explain the market's ambivalent reaction to prior suggestions that contractual provisions such as majority action clauses become a standard feature in sovereign bonds. The official sector, starting in 1998 after the Mexican and Asian devaluation crises, strongly urged emerging market sovereign borrowers to consider including these provisions in their international bonds,[88] but neither the sovereign issuers nor their institutional investor creditors showed much interest in the idea at the time.[89]

We believe that there are a number of reasons for this resistance to the inclusion of majority action clauses in sovereign bonds.

- For so long as sovereign borrowers and their creditors nurtured the expectation of receiving an official sector bail-out, they saw no advantage in embracing debt instruments that could permit a consensual restructuring without the need for a bail-out. The ready availability of bail-outs, despite repeated verbal warnings from the official sector that bail-outs were no longer on offer, virtually guaranteed that sovereign debtors and their creditors would not give the official sector an easy way out.
- Some sovereign borrowers worried that including these provisions in their bonds would raise the cost of the borrowings. Empirical research, however, has produced varying results.[90]
- Bond issuers and underwriters are in the business of selling bonds, not preparing for future restructurings. Majority action clauses are thus viewed in the same light as prenuptial agreements: extraordinarily useful at the end, but distinctly unromantic at the beginning, of a relationship. Bond underwriters, who (they hope) will not be there when the end comes, are natural proponents of this view.
- Some sovereign borrowers may have gone so far as deliberately dilute to the protections offered by even the conventional forms of collective decision-making provisions as a visible demonstration to the market that the bridge to a future restructuring had been burnt. This bit of bravado will be regretted, of course, if it becomes necessary to start crawling back over the charred timbers of that bridge.
- A concern was occasionally expressed that contractual provisions facilitating an orderly restructuring of the debt would only invite casual requests to restructure.[91] Dilute the horror of a sovereign debt restructuring, this theory contends, and you will have more frequent restructurings.

We believe that the market's bashfulness about securing and employing mechanisms that will ensure majority creditor control of future sovereign debt workouts is misguided. The presence or absence of majority decision-

making provisions in bonds does not influence a sovereign's decision to embark on a restructuring. The cost and the consequences – political, social and financial – of a generalised debt restructuring are typically so high that no sovereign takes this step lightly. Indeed, if history teaches any lesson, it is that sovereigns often delay taking necessary debt management measures until a point when the severity of those measures is needlessly aggravated. In today's world, the institutional (mark-to-market) investors in sovereign bonds share fully in the horror of a sovereign debt meltdown. The greater risk to these investors does not lie in the threat of casual defaults; it lies in the prospect of messy and ill-defined workout procedures that leave assets languishing on the lenders' books at default levels for long periods of time and invite exploitation by opportunistic creditors.

Appendix 11.1

Description of English-style majority action clause

Meetings of Noteholders, modification and waiver

The Agency Agreement contains provisions for convening meetings of Noteholders to consider matters relating to the Notes, including the modification of any provision of these Conditions or the Deed of Covenant. Any such modification may be made if sanctioned by an Extraordinary Resolution (as defined below).

The quorum at any such meeting for passing an Extraordinary Resolution shall be two or more persons holding or representing a clear majority of the principal amount of the Notes for the time being outstanding, or at any adjourned meeting two or more persons being or representing Noteholders whatever the principal amount of the Notes for the time being outstanding so held or represented, except that at any meeting the business of which includes consideration of proposals, *inter alia*, (i) to modify the maturity of the Notes or the dates on which interest is payable in respect of the Notes, (ii) to reduce or cancel the principal amount of, or interest on, the Notes, (iii) to change the currency of payment of the Notes, or (iv) to modify the provisions concerning the quorum required at any meeting of Noteholders or the majority required to pass an Extraordinary Resolution, the necessary quorum for passing an Extraordinary Resolution shall be two or more persons holding or representing not less than 75 per cent., or at any adjourned such meeting not less than 25 per cent., of the principal amount of the Notes for the time being outstanding.

"Extraordinary Resolution" means a resolution passed at a meeting of the Noteholders duly convened and held in accordance with the provisions contained in these Conditions and the Agency Agreement by a majority consisting of not less than 75 per cent. of the persons voting thereat upon a show of hands or if a poll shall be duly demanded then by a majority consisting of not less than 75 per cent. of the votes given on the poll. An

Extraordinary Resolution passed at any meeting of Noteholders will be binding on all Noteholders, whether or not they are present at the meeting.

Appendix 11.2

Description of US-style amendment clause: version one

Modifications, amendments and waivers

With (i) the affirmative vote, in person or by proxy thereunto duly authorised in writing, of the holders of not less than 66% in aggregate principal amount of the Notes then Outstanding represented at a meeting duly called and held as specified above, or (ii) the written consent of the owners of 66% in aggregate principal amount of the Outstanding Notes, the Republic and the Fiscal Agent may, upon agreement between themselves, modify, amend or supplement the terms of the Notes or, insofar as affects the Notes, the Fiscal Agency Agreement, in any way, and such holders may make, take or give any request, demand, authorisation, direction, notice, consent, waiver or other action provided by the Fiscal Agency Agreement or the Notes to be made, given or taken by holders of Notes: *provided*, *however*, that no such action may, without the consent or affirmative vote of the holder of each Note affected thereby: (A) change the due date for the payment of the principal of, or any installment of interest on, any Note, (B) reduce the principal amount of any Note, or the portion of such principal amount which is payable upon acceleration of the maturity of such Note, or the interest rate thereon, (C) change the currency in which any payment in respect of any Note is payable, (D) reduce the proportion of the principal amount of the Notes the vote or consent of the holders of which is necessary to modify, amend or supplement the Fiscal Agency Agreement or the terms and conditions of the Notes or to make, take or give any request, demand, authorisation, direction, notice, consent, waiver or other action provided thereby to be made, taken or given, or (E) change the obligation of the Republic to pay Additional Amounts (as defined below). Any such modification, amendment or supplement shall be binding on the holders of Notes.

Appendix 11.3

Description of US-style amendment clause: version two

Modification

The Republic may modify any of the terms or provisions contained in the Bonds in any way with the written consent of the holders of not less than 51% in principal amount of the Bonds at the time outstanding, *provided*

that (i) if any such modification would change the terms or currency of payment of the principal amount of or interest on any Bond or the amounts thereof or affect the rights of holders of less than all the Bonds at the time outstanding, the consent of the holders of all the Bonds affected thereby is required and (ii) if any such modification would reduce the aforesaid percentage needed for authorisation of such modification, the consent of the holders of all outstanding Bonds is required.

Notes

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2 FRANCIS B. PALMER, COMPANY PRECEDENTS 122 (8th edn 1900).

3 FRANCIS B. PALMER, COMPANY PRECEDENTS 271 (2nd edn 1881). By 1900, Palmer allowed himself a distinctly self-congratulatory tone: "Majority provisions have now been adopted in hundreds of cases and their usefulness is generally acknowledged", Palmer wrote, "indeed, the draftsman who omits to insert [a majority action clause] runs the risk of being accused of neglecting the best interests of the debenture or debenture stock holders" PALMER, *supra* note 1, at 123.

4 See Liz Dixon and David Wall, *Collective Action Problems and Collective Action Clauses*, Financial Stability Review, June 2000, at 142, 145 ("Provisions for bondholders' meetings and majority action clauses are routinely included in bonds governed by English law . . .").

5 For a brief description of this history, see DAVID SKEEL, DEBT'S DOMINION 105–107 (2001); see also Charles Jordan Tabb, *The History of the Bankruptcy Laws in the United States*, 3 AM. BANKR. INST. L. REV. 5 (1995).

6 On the evolution of these clauses in England and the United States, see De Forest Billyou, *Corporate Mortgage Bonds and Majority Clauses*, 57 YALE L.J. 595 (1948); Charles H. Haines, Jr., *Corporations – Modification Provisions of Corporate Mortgages and Trust Indentures*, 38 MICH. L. REV. 63 (1939); Howard J. Kashner, *Majority Clauses and Non-Bankruptcy Corporate Reorganization – Contractual and Statutory Alternatives*, 44 BUS. LAW. 123 (1988); Robert Swaine, *Reorganization of Corporations: Certain Developments of the Last Decade*, 27 COLUM. L. REV. 901, 927 (1927); Note, *The Rights and Remedies of the Bondholder Under Corporate Bonds and Indentures*, 27 COLUM. L. REV. 579, 580–587 (1927) (explaining the rationale for using collective action provisions and the level of judicial scrutiny that courts gave to these clauses).

7 UNIF. NEGOTIABLE INSTRUMENTS LAW § 1(2)–(3) (1896), 3B U.L.A. app. I at 507 (1992).

8 See Billyou, *supra* note 5, at 597.

9 One of the best descriptions of the equity receivership process can be found in VII SEC. AND EXCH. COMM'N, REPORT ON THE STUDY AND INVESTIGATION OF THE WORK, ACTIVITIES, PERSONNEL AND FUNCTIONS OF PROTECTIVE AND REORGANIZATION COMMITTEES 10–60 (1937–1940). For a description of equity

receiverships that sets them in the context of developments in U.S. bankruptcy law, see SKEEL, *supra* note 4. For other materials discussing the equity receiverships of this period, see DOUGLAS BAIRD AND THOMAS JACKSON, CASES, PROBLEMS, AND MATERIALS ON BANKRUPTCY 960–964 (2nd edn 1990); 1 SILVESTER E. QUINDRY, BONDS AND BONDHOLDERS: RIGHTS AND REMEDIES § 341(c), at 457 (1934); TABB, *supra* note 4, at 21–24; Arthur H. Dean, *A Review of the Law of Corporate Reorganizations*, 26 CORNELL L. Q. 537 (1941); Jeffrey Stern, Note, *Failed Markets and Failed Solutions: The Unwitting Formulation of the Corporate Reorganization Technique*, 90 COLUM. L. REV. 783 (1990). For a contemporary judge's perspective on the development of equity receiverships, see *Warner Bros. Pictures* v. *Lawton-Byrne-Bruner Ins. Agency Co.*, 79 F.2d 804, 810–812 (8th Cir. 1935).

10 See James N. Rosenberg, *An Open Letter Containing Proposals for Amendment of the Bankruptcy Act so as to Aid in Combating the Depression*, 19 VA. L. REV. 333, 334 (1932) (an amendment to the bankruptcy law "[m]ust cut out, root and branch, the present red tape and waste of [Equity] Receiverships").

11 I-VIII SEC. AND EXCH. COMM'N, REPORT, *supra* note 8.

12 RALPH A. MCCLELLAND AND FREDERICK S. FISHER, JR., THE LAW OF CORPORATE MORTGAGE BOND ISSUES 818–822 (1937) (recommending a form of majority action clause for U.S. bonds that permitted adjustments to payment terms with the consent of holders of 90 per cent of the bonds). See also VI SEC. AND EXCH. COMM'N, *supra* note 10, at 145–151.

13 VI SEC. AND EXCH. COMM'N, *supra* note 10, at 150.

14 See Mark J. Roe, *The Voting Prohibition in Bond Workouts*, 97 YALE L.J. 232, 250–252 (1987).

15 Trust Indenture Act of 1939, ch. 411, 53 Stat. 1172 (codified as amended at 15 U.S.C. § 77ppp (2000)).

16 See TABB, *supra* note 4, at 28.

17 *See* UPIC & Co. v. Kinder-Care Learning Ctrs., Inc., 793 F. Supp. 448, 453 (S.D.N.Y. 1992) ("The Securities [and] Exchange Commission was undoubtedly aware that requiring unanimity in bondholder voting – rather than mere majority action – would frustrate consensual workouts and help induce bankruptcy. And convinced that insiders or quasi-insiders would damage bondholders, the Commission welcomed this prospect").

18 See Albert S. Pergam, *Eurobonds: Trustees, Fiscal Agents and the Treatment of Default*, *in* ADAPTATION AND RENEGOTIATION OF CONTRACTS IN INTERNATIONAL TRADE AND FINANCE 335, 337–338 (N. Horn ed., 1985) (discussing the effect of the TIA on the drafting of indentures that do not need to be qualified under the TIA).

19 See AM. BAR FOUND., COMMENTARIES ON MODEL DEBENTURE INDENTURE PROVISIONS § 5–2, at 217–219 (1971).

20 See, e.g., Fiscal Agency Agreement between the Republic of Argentina and Bankers Trust Company, as Fiscal Agent, dated as of October 19, 1994, at 19 (establishing a 75 per cent threshold for rescinding an acceleration).

21 See Lee C. Buchheit, *How Ecuador Escaped the Brady Bond Trap*, INT'L FIN. L. REV., Dec. 2000, at 17, 18.

22 Republic of Ecuador, Offering Circular dated July 27, 2000, Offer to Exchange U.S. Dollar Denominated Step-Up Global Bonds due 2030 and 12% U.S. Dollar Denominated Global Bonds due 2012, at pages 12–13.

23 See Andrew Yianni, *Resolution of Sovereign Financial Crises – Evolution of the Private Sector Restructuring Process*, FIN. STABILITY REV., June 1999, at 78, 81.

24 *Id*.

25 See Marcel Kahan, *Rethinking Corporate Bonds: The Tradeoff Between Individual and Collective Rights*, 24 N.Y.U. L. REV. 1040 (2002).

26 See UPIC & Co. v. Kinder-Care Learning Ctrs., Inc., 793 F. Supp. 448, 454

(S.D.N.Y. 1992); see also Jackson Nat'l Life Ins. Co. v. Ladish Co., 1993 U.S. Dist. LEXIS 1785 (S.D.N.Y. Feb. 18, 1993) (suggesting, but not deciding, that only trustee can sue for accelerated amounts).

27 See AM. BAR FOUND., *supra* note 18, § 5–7 at 232–233.

28 See Dixon and Wall, *supra* note 3, at 142, 145 ("[t]rustees are still unusual in sovereign issues").

29 See Felix Salmon, *The Buy Side Starts to Bite Back*, EUROMONEY, April 2001, at 46, 58–59.

30 See LEE C. BUCHHEIT, HOW TO NEGOTIATE EUROCURRENCY LOAN AGREEMENTS 140 (2nd ed. 2000).

31 Foreign Sovereign Immunities Act of 1976, Pub. L. No. 94–583, 90 Stat. 2891 (codified at 28 U.S.C. §§ 1330, 1602–1611 (2000)).

32 State Immunity Act, 1978, 26 Eliz. 2, 33 (Eng.), *reprinted in* 17 I.L.M. 1123.

33 See John Clark, *Debt Reduction and Market Reentry Under the Brady Plan*, FED. RES. BANK N.Y. Q. REV., Winter 1993–1994, at 38, 41–45.

34 See Daniel K. Tarullo, *Rules, Discretion, and Authority in International Financial Reform*, J. INT'L ECON. L. 613, 624 n. 24 (2001) (noting the move by sovereigns to bond financing in the 1990s).

35 For discussions of these defaults, see Michael Buchanan, *Emerging Markets: Bailing-Out the Nigerian Bail-In*, GOLDMAN SACHS, Sept. 5, 2001, at 17–18; Barry Eichengreen and Christof Ruhl, *The Bail-in Problem: Systematic Goals, Ad Hoc Means* (NBER Working Paper 7653) (April 2000); Int'l Monetary Fund, *Involving the Private Sector in the Regulation of Financial Crises – Restructuring International Sovereign Bonds*, Jan. 11, 2001, at http://www.imf.org/external/pubs/ft/series/03/; Peter B. Kenen, *International Financial Architecture: What's New? What's Missing*, 118–120 (2001), available at http://www.iie.com/publications/ files/chapters_preview/335/4iie2970.pdf; see also Lee C. Buchheit and G. Mitu Gulati, *Exit Consents in Sovereign Bond Exchanges*, 48 UCLA L. REV. 59, 64 n. 13, 82 n. 83 (2000).

36 Francis Palmer uses this phrase. See *supra* text accompanying note 2.

37 See, e.g., Haines, *supra* note 5, at 67.

38 See Billyou, *supra* note 5, at 596–597 (describing the applicable law in England and Canada and noting that modifications in the United States were subject to similar restrictions in terms of court scrutiny); Note, *supra* note 5, at 594–86 (stating that majority bondholders were assumed to be acting in the best interests of the bond class, but suggesting that the courts were especially concerned with collusive arrangements between the debtor and the majority creditors).

39 74 F. 110, 114 (2d Cir. 1896).

40 *Id*. at 112–113.

41 See, 1 QUINDRY, *supra* note 8, at 452. Quindry wrote:

> In announcing the disposition of courts of equity in considering reorganization plans, it has been said that the court will not allow minority bondholders to be disregarded or unfairly treated in such a plan, yet on the other hand, it will not lend its aid to a scheme by a minority bondholder of holding up a fair reorganization solely as a means of obtaining greater value or more favorable terms for his bonds than are to be given by the plan to the great majority of the bondholders.

Id. (quoting *Palmer* v. *Bankers' Trust Co.*, 12 F.2d 747 (8th Cir. 1926)).

42 Like Quindry, Robert Swaine also quotes the language from *Palmer* on how courts will not support a minority bondholder's attempt to exploit the equity receivership process:

> [A] . . . court of equity . . . will not lend its aid to a scheme by a minority

> bondholder of holding up a fair reorganization, solely as a means for obtaining greater value or more favorable terms for his bonds than are to be given by the plan to the great majority of the bondholders. Especially is this true if it should appear that the minority bondholder has bought his bonds pending the reorganization and for the purpose of speculating thereon.

Swaine, *supra* note 5, at 923 (quoting *Palmer*, 12 F.2d at 754, and also citing *Guar. Trust Co. of New York* v. *Chicago M. & St. P. Ry.*, 15 F.2d 434, 443 (N.D. Ill. 1926), and *Jameson* v. *Guar. Trust Co.*, 20 F.2d 808, 815 (7th Cir. 1927)).

43 The debate was between James Rosenberg and Robert Swaine and took place in the pages of the Columbia Law Review. See James N. Rosenberg, *Reorganization – The Next Step*, 22 COLUM. L. REV. 14 (1922); Robert Swaine, *Reorganization – The Next Step: A Reply to Mr. James N. Rosenberg*, 22 COLUM. L. REV. 121 (1922). An Eighth Circuit decision, *Phipps* v. *Chicago R.I. & P. Co.*, 284 F. 945 (1922), handed down subsequent to the Rosenberg/Swaine interchange, was in line with Rosenberg's argument (which was that courts *did* have the power to impose a reorganization solution on a dissenting minority), but the matter was never decided by the Supreme Court. On *Phipps* and the debate generally, see Arthur H. Dean, *A Review of the Law of Corporate Reorganizations*, 26 CORNELL L.Q. 537 (1941); *James N. Rosenberg, Phipps* v. *Chicago R.I. & P. Co*., 24 COLUM. L. REV. 266 (1924); James N. Rosenberg, *Reorganization Yesterday Today Tomorrow*, 25 VA. L. REV. 129 (1938).

44 See Wilber G. Katz, *The Protection of Minority Bondholders in Foreclosures and Receiverships*, 3 U. CHI. L. REV. 517, 517 (1936) ("[T]he problem as to the type of protection, if any, to which [minority creditors] are entitled . . . is worth attempting in spite of the fact that probably a large majority of current reorganizations are brought about through proceedings under Section 77B of the Bankruptcy Act.").

45 See *Banque Arabe et International D'Investissement* v. *Maryland Nat'l Bank*, 819 F. Supp. 1282, 1296 (S.D.N.Y. 1993).

> [I]n the case of arms length transactions between financial institutions, no fiduciary duty exists unless one was created in the agreement . . . [and] there is no automatic, status-based fiduciary duty created [in] the transaction.

Id. (internal citations omitted). For similar language, see also *First Citizens Federal Sav. & Loan Ass'n* v. *Worthen Bank & Trust Co.*, 919 F.2d 510, 514 (9th Cir. 1990); *Aaron Ferer & Sons* v. *Chase Manhattan Bank*, 731 F.2d 112, 122 (2d Cir. 1984); *Banco Urquijo, S.A.* v. *Signet Bank*, 861 F. Supp. 1220, 1249–1250 (M.D. Pa. 1994); *Banco Espanol de Credito* v. *Sec. Pac. Nat'l Bank*, 763 F. Supp. 36, 45 (S.D.N.Y. 1991).

46 See *First Nat'l Bank Ass'n* v. *Canadian Imperial Bank of Commerce*, 1995 U.S. Dist. LEXIS 12105 (D. Minn. June 9, 1995), where a group of banks in a syndicate entered into a standstill agreement with the borrower following a missed interest payment, the court rejected one bank's argument that the majority was obliged to declare a default. See also *Yucyco, Ltd.* v. *Republic of Slovenia*, 984 F. Supp. 209, 221 (S.D.N.Y. 1997) (rejecting a minority creditor's claim that an agent was obliged to declare an event of default and accelerate the debt – where the agreement required consent from the majority creditors to accelerate); *New Bank of New England* v. *Toronto-Dominion Bank*, 768 F. Supp. 1017, 1021–1022 (S.D.N.Y. 1991) (rejecting one lender's argument that the majority was obliged to accelerate as a result of its "implied obligation of good faith" to a fellow lender where a majority of the lenders did not vote to accelerate the debt despite the occurrence of an event of default).

47 886 F. Supp. 1105 (S.D.N.Y. 1995).
48 *Id*. at 1118.
49 *Id*. at 1107.
50 See Buchheit and Gulati, *supra* note 34, at 70–74 (describing cases that analyse the validity of majority amendments made to U.S. corporate bonds).
51 See *Federated Strategic Income Fund* v. *Mechala Group Jamaica Ltd.*, 1999 WL 993648 (S.D.N.Y. Nov. 2, 1999). In this unpublished decision, the court was asked to construe an American-style amendment clause in a bond indenture that listed, as changes requiring unanimous bondholder consent, any change that would reduce the principal amount of a bond *or* impair a bondholder's right to institute suit for enforcement of payment. The amendments at issue sought to move the corporate debtor's assets to another company (not an obligor on the bonds) and to eliminate certain guarantees for the bonds. The defendant argued that these amendments, because they did not expressly affect the payment terms of the bonds, required only majority bondholder approval. The court disagreed:

> Taken together, these proposed amendments could materially impair or affect a holder's right to sue. A holder who chooses to sue for payment at the date of maturity will no longer, as a practical matter, be able to seek recourse from either the assetless defendant or from the discharged guarantors. It is beyond peradventure that when a company takes steps to preclude any recovery by noteholders for payment of principal coupled with the elimination of the guarantors for its debt, that such action does not constitute an "impairment" or "affect" the right to sue for payment.

Id. at *7.
52 See Ann Krueger, International Financial Architecture for 2002: A New Approach to Sovereign Debt Restructuring (Nov. 26, 2001), at http://www.imf.org/external/np/speeches/2001/112601.htm. For prior versions of this proposal, see David Suratgar, *The International Financial System and the Management of the International Debt Crisis, in* DEFAULT AND RESCHEDULING (David Suratgar ed., 1984). See also BENJAMIN COHEN, DEVELOPING COUNTRY DEBT: A MIDDLE WAY (1989); THOMAS KAMPFFMEYER, TOWARDS A SOLUTION OF THE DEBT CRISIS: APPLYING THE CONCEPT OF CORPORATE COMPOSITIONS WITH CREDITORS (1987); Benjamin Cohen, *A Global Chapter 11*, 75 FOREIGN POL'Y 109 (1989); Christopher G. Oechsli, *Procedural Guidelines for Renegotiating LDC Debts: An Analogy to Chapter 11 of the U.S. Bankruptcy Reform Act*, 21 VA. J. INT'L L. 305 (1981); Kunibert Raffer, *Applying Chapter 9 Insolvency to International Debts: An Economically Efficient Solution with a Human Face*, 18(2) WORLD DEV. 301 (1990); Steven L. Schwarcz, *Solving Debt Restructuring: A Bankruptcy Reorganization Approach*, 85 CORNELL L. REV. 956 (2000); Michel Camdessus, Capital Flows, Crises, and the Private Sector, Remarks to the Institute of International Bankers (Mar. 1, 1999), at http://www.imf.org/external/np/speeches/1999/030199.htm; Marcus Miller and Joseph Stiglitz, Bankruptcy Protection Against Macroeconomic Shocks: The Case For a "Super Chapter 11" (Apr. 15–16, 1999) (unpublished paper presented at the World Bank Conference on Capital Flows, Financial Crises, and Policies), at http://www.worldbank.org/research/interest/confs/past/paps15-16/milrstig. pdf; Jeffrey Sachs, Do We Need an International Lender of the Last Resort?, Graham Lecture at Princeton University, April 20, 1995, at http://www2.cid.harvard.edu/hiidpapers/intllt.pdf.
53 Interestingly, the German Government has confirmed that, under German law, "no legal impediments exist to incorporate collective action clauses into the bonds of foreign issuers … provided that the debt restructuring serves to

safeguard the joint interests of all bondholders." Bundesministerium der Finanzen, Statement by the German Federal Government on the admissibility of including collective action clauses in foreign sovereign bond issues subject to German law, dated Feb. 14, 2000, ¶6.

54 Consistent with practice in the sovereign debt area, we loosely use the term "cramdown" to mean that a dissenting creditor is being forced to agree to a debt restructuring. Under U.S. bankruptcy law, dissenting creditors within a class can be forced to consent to a restructuring as long as there is approval from two-thirds of the class in amount and a majority of the claims in number, but this is *not* what is referred to as a "cramdown". Instead, a "cramdown" occurs when the plan of reorganization binds a dissenting *class* of creditors (which can occur under certain circumstances). For more on the subject of cramdowns under U.S. bankruptcy law, see Kenneth N. Klee, *All You Ever Wanted to Know About Cram Down Under the New Bankruptcy Code*, 53 AM. BANKR. L.J. 133, 134 (1979), and Kenneth N. Klee, *Cram Down II*, 64 AM. BANKR. L.J. 229 (1990).

55 See Int'l Monetary Fund, *supra* note 34, at 5, 30–31 (describing the Pakistan restructuring).

56 *Id*. at 6, 31–33 (describing the restructuring for Ukraine).

57 See Buchheit and Gulati, *supra* note 34.

58 See Buchheit, *supra* note 20, at 20.

59 See Buchheit and Gulati, *supra* note 34, at 78–82.

60 Some commentators have suggested that the threat of litigation by holdouts is being exaggerated. See Michael M. Chamberlin, Remarks of EMTA Executive Director, The IMF's Sovereign Bankruptcy Proposal and the Quest for More Orderly Workouts (Jan. 29, 2002), at http://www.emta.org/ndevelop/rider7.pdf; Institute for International Finance, *Summary Report on the Work of the IIF Steering Committee on Emerging Markets Finance* at 12 (1999), available at http://www.iif.com/verify/data/publications/ip:scemf001.pdf. Other observers believe that holdouts pose a serious threat to the sovereign debt workout process. See Gabrielle Lipsworth and Jens Nystedt, *Crisis Resolution and Private Sector Adaptation*, 47 IMF STAFF PAPERS 188, 211 (2001), available at http://www.imf.org/external/pubs/ft/fandd/2001/06/lipworth.htm.

61 11 U.S.C. § 364(b) (2000).

62 See DAVID L. BUCHBINDER, FUNDAMENTALS OF BANKRUPTCY, A LAWYER'S GUIDE 342 (1991).

63 For a discussion of the various types of subordinations, see Dee Martin Calligar, *Subordination Agreements*, 70 YALE L.J. 376 (1960).

64 The version of the American-style amendment clause contained in Appendix 11.2 to this Article, however, arguably precludes an amendment involving a voluntary subordination because it refers generally to changes in "terms of payment".

65 FED. R. CIV. P. 66.

66 FED. R. CIV. P. 23(a). The analogy between class actions and bankruptcy has been drawn by a number of prominent commentators. See, e.g., Stephen Yeazell, *Collective Litigation as Collective Action*, 1989 U. ILL. L. REV. 43, 46–47 (1986).

67 FED. R. CIV. P. 23(b).

68 See Bryant B. Edwards *et al*., *Mandatory Class Action Lawsuits as a Restructuring Technique*, 19 PEPP. L. REV. 875, 905 (1992).

69 *Id*. at 898–904.

70 FED. R. CIV. P. 23(d).

71 FED. R. CIV. P. 23(e).

72 See 5 JAMES WM. MOORE *ET AL*., MOORE'S FEDERAL PRACTICE § 23.42[2][a] (3rd edn 1999) (describing the "limited fund" basis for certification as a non-opt-out class under Rule 23(b)(1)(B)).

73 See *id*. § 23.43 (generally discussing injunctive or declaratory relief under Rule 23(b)(2)); see also Edwards *et al*., *supra* note 67, at 907–908.

74 See, e.g., *Centerre Trust Co.* v. *Jackson Saw Mill Co*., 736 S.W.2d 486 (Mo. Ct. App. 1987) (involving a declaratory judgment action brought by trustee under Missouri class action rules where court affirmed a judgment approving a settlement and making the settlement binding on all bondholders).

75 See *MBank Dallas* v. *LaBarge, Inc.*, No. 86 C 9583 (N.D. Ill. Dec. 29, 1986) (unpublished Findings of Fact, Conclusions of Law and Order). The trustee, under a defaulted debenture issue, brought a mandatory class action for a declaratory judgment to approve a settlement of the claims. The court found that the settlement did not deprive debentureholders of their right to sue for payment within the meaning of section 316(b) of the TIA, saying:

> This lawsuit is a suit . . . for enforcement of the right to receive payment of principal and interest . . . The Proposed Settlement will constitute the best available payment of such principal and interest, and the Court has subjected the Proposed Settlement to judicial scrutiny. Individual lawsuits by Debentureholders at this time would circumvent the best interest of the Debentureholders as a whole and interfere with the rights of all holders and would lead to a race to judgment and quite possibly, to a reduced recovery for all Debentureholders.

Id. at 19–20. But see *Cont'l Assurance Co.* v. *Macleod-Stedman, Inc*., 694 F. Supp 449, 456 (N.D. Ill. 1988) (indicating that non-opt out class action could not be used to avoid the TIA's requirement of unanimous noteholder consent to changes in payment terms, but plaintiff subsequently withdrew its request for class certification).

76 This theory has its critics. See Richard L. Epling, *Are Rule 23 Actions a Viable Alternative to the Bankruptcy Code?*, 23 SETON HALL L. REV. 1555 (1993) (arguing that Rule 23 is a procedural rule that cannot override Section 316(b) of the TIA, a federal substantive law).

77 See, e.g., *Kemper Investors Life Ins. Co.* v. *Las Colinas Corp.*, No. 88C 9162 (N.D. Ill. July 21, 1989) (unpublished Findings of Fact, Conclusions of Law and Order) (describing suit brought by investor individually and as class representative of defaulted secured notes; court certified the case as mandatory class action and approved a negotiated settlement binding on all noteholders); *Harry and Jeanette Weinberg Found., Inc*. v. *Alleco, Inc*., No. 91–2641 (8th Cir. 1991), *appeal dismissed sub nom*., *Croyden Assoc*. v. *Alleco, Inc*., Bankr. L. Rep. (CCH) ¶ 74,710 (1992) (dismissing appeal of district court's order to certify debentureholders as a class and approve a class settlement).

78 In *Carl Marks Co*. v. *Union of Soviet Socialist Republics*, plaintiff holders of Imperial Russian Government bonds brought an action as class representatives of holders of different series of the bonds. 665 F. Supp. 323 (S.D.N.Y. 1987). A default judgment against the USSR was entered but later vacated for want of subject matter jurisdiction. *Id.* at 349.

79 C.A. No. 1.95CV1957 (D.D.C. 1995), *post-settlement challenge dismissed*, 979 F. Supp. 908 (D.D.C. 1997).

80 Plaintiffs' Memorandum in Support of Final Approval of the Proposed Class Action Settlement at 7, *Hirshon*, C.A. No. 1.95CV01957 (D.D.C. 1995).

81 *Hirshon*, 979 F. Supp. at 910. While this Article was in the editing process, two class actions have been commenced against the Republic of Argentina by separate groups purporting to represent holders of defaulted Argentine bonds. See *Allan Applestein TTE FBO D.C.A. Grantor Trust* v. *Republic of Argentina*, 02 CV 4124 (filed May 31, 2002, N.Y.) and *H.W. Urban Gmbh, D. and*

H. Urban Foundation v. *Republic of Argentina*, 02 CV 5699 (filed July 22, 2002, N.Y.). Neither class has as yet been certified.

82 See Arthur R. Miller and David Crump, *Jurisdiction and Choice of Law in Multistate Class Actions After* Phillips Petroleum Co. *v.* Shutts, 96 YALE L.J. 1, 57–67 (1986).

83 See Edwards *et al*., *supra* note 67, at 911 (stating that commentators agree that this is the test for court approval of a settlement).

84 527 U.S. 815, 821 (1999).

85 521 U.S. 591, 622 (1997).

86 See *Ortiz*, 527 U.S. at 846–847.

87 See John C. Coffee, *Class Action Accountability: Reconciling Exit, Voice, and Loyalty in Representative Litigation*, 100 COLUM. L. REV. 370, 370–372 (2000) (discussing the Court's concerns in *Ortiz* and *Amchem* about the possibility of collusion); William B. Rubenstein, *A Transactional Model of Adjudication*, 89 GEO. L.J. 371, 380 (noting the Court's repeated expressions of concern in both *Ortiz* and *Amchem* about the adequacy of class counsel's representation).

88 See Group of Seven, *Strengthening the International Financial System and the Multilateral Development Bank*, at http://www.g7.utoronto.ca/g7/finance/fm010707.htm (July 7, 2001); Int'l Monetary and Fn. Comm. of the Bd. of Governors of the Int'l Monetary Fund, Communiqué (Apr. 29, 2001), at http://www.imf.org/external/np/cm/2001/010429b.htm; Group of Seven, Declaration of G-7 Finance Ministers and Central Bank Governors (1998), at http://www.imf.org/external/np/g7/103098dc.htm; Group of Ten, *The Resolution of Sovereign Liquidity Crises* (May 1996), at http://www.bis.org/publ/gten03.htm. See, e.g., BARRY EICHENGREEN, TOWARD A NEW INTERNATIONAL FINANCIAL ARCHITECTURE (1999); BARRY EICHENGREEN AND RICHARD PORTES, CRISIS? WHAT CRISIS? ORDERLY WORKOUTS FOR SOVEREIGN DEBTORS (1995); Lee C. Buchheit, *A Lawyer's Perspective on the New Financial Architecture*, 14 J. INT'L BANKING L. 225 (1999), reprinted in THE REFORM OF THE INTERNATIONAL FINANCE ARCHITECTURE 237 (Rosa Lastra ed., 2001); Lee C. Buchheit, *The Collective Representation Clause*, INT'L FIN. L. REV., Sept. 1998, at 9; Lee C. Buchheit, *Majority Action Clauses May Help Resolve Debt Crises*, INT'L FIN. L. REV., Aug. 1998, at 13; Lee C. Buchheit, *Changing Bond Documentation: The Sharing Clause*, INT'L FIN. L. REV., July 1998, at 17; Dixon and Wall, *supra* note 3; Tarullo, *supra* note 33, at 667–672; Tobjorn Becker *et al*., *Bond Restructuring and Moral Hazard: Are Collective Action Clauses Costly?*, at http://www.imf.org/external/pubs/ft/wp/2001/wp0192.pdf (2001); Barry Eichengreen and Ashoka Mody, *Would Collective Action Clauses Raise Borrowing Costs?* (NBER Working Paper No. 7458) (2000); Eichengreen and Ruhl, *supra* note 34.

89 See Richard Portes, *The Role of Institutions for Collective Action*, in MANAGING FINANCIAL AND CORPORATE DISTRESS, LESSONS FROM ASIA 47, 48 (Charles Adams *et al*. eds, 2001) ("[M]arket participants ... appear to reject ... any effective action by the official community to promote collective action clauses ..."); Int'l Monetary Fund, *Resolving and Preventing Financial Crises: The Role of the Private Sector* (Mar. 26, 2001), at http://www.imf.org/external/np/exr/ib/2001/032601.htm (observing the failure of the markets to adopt collective action clauses in New York law bonds).

90 One study suggested that majority action clauses raise spreads for low credit quality borrowers and lower them for high quality borrowers. See Eichengreen and Mody, *supra* note 87. Several other studies, however, concluded that the choice of U.S. or English governing law in sovereign bonds (used as a proxy for the presence of majority action clauses) showed no statistically significant differences in pricing. See Dixon and Wall, *supra* note 3, at 146–149.

91 But see Andy Haldane, *Private Sector Involvement in Financial Crisis: Analytics*

and Public Policy Approaches, FIN. STABILITY REV., Nov. 1999, at 184, 196 (suggesting that collective action clauses could – if they were perceived as insuring against a disorderly grab for assets – actually lower the cost of sovereign bond finance). Investors who hold this view would presumably be distressed to learn that in 1937 the SEC recommended that a stated percentage of the fees paid to the underwriters of sovereign bond issues be deducted and held to defray the costs of future sovereign bond restructurings. See V SEC. AND EXCH. COMM'N, *supra* note 10, at 746.

12 Comments on "Sovereign bonds and the collective will"

Nathan Sheets[1]

I very much enjoyed reading the rich and diverse chapter by Buchheit and Gulati. My comments will focus on just two of the chapter's lines of argument: first, the notion of intercreditor duties and its implications; and second, the issue of why debtors and creditors have been reluctant to incorporate collective action clauses into emerging market sovereign debt contracts.

12.1 Notion of intercreditor duties

Chapter 11 provides a helpful historical discussion of the US experience with majority action clauses. Corporate bonds containing such clauses were issued over a period that began in the 1880s and ran through until the early 1930s. The chapter also traces the accompanying development of the notion of intercreditor duties. Courts at that time expected majority bondholders to treat minority bondholders fairly and in good faith. The courts were equally unsympathetic to efforts by minority creditors to holdout for more favorable terms than were fairly and reasonably being given to the majority. The courts seemed to imply that creditors had something approaching a fiduciary responsibility to each other. The chapter notes, however, that following the establishment of formal bankruptcy arrangements, beginning in the mid-1930s, there was "less and less need to infer broad intercreditor duties," as aggrieved parties had recourse to the bankruptcy process; more recently, "US law in this area has turned distinctly hostile" to the notion of intercreditor duties.

Drawing on this historical episode, Buchheit and Gulati pose the following question: if majority action clauses were included in emerging market sovereign debt issued in the United States, might US courts reconsider notions of intercreditor responsibility among holders of such debt, given that there is no formal bankruptcy facility for sovereign debtors? In discussing this question, they offer the following observation:

> Unless courts are prepared to supervise the operation of majority action clauses in cases where non-assenting minority bondholders can show an abuse by the majority, as courts were willing to do when the

> clauses last appeared in American bonds 70 years ago, *these clauses will not prosper as a tool for achieving creditor-led sovereign bond workouts* (p. 200; italics added).

This line of argument merits some comment and consideration. First, the extent to which qualified majorities would actually abuse the prerogatives granted under collective action clauses remains an open issue. One troubling scenario – and the issue apparently in play in the CIBC case detailed in the Buchheit and Gulati chapter – is that entities under the (explicit or implicit) control of the debtor government could gain control of a qualified majority stake in some debt instruments. Debtor governments could use this majority position to treat remaining bondholders unfairly. To the extent that this or other abuses were orchestrated by debtor governments, however, the international official community might have some power to curb such behavior through the auspices of the IMF. Specifically, to qualify for IMF lending into arrears, a country is expected to be negotiating with its creditors in "good faith." It might arguably be a violation of this good faith requirement for a country to move forward with a restructuring that treated inequitably – or radically disadvantaged – a minority of its bondholders. Put in the form of a question, it might be asked to what extent could the IMF (given its current range of powers and expertise) proxy for judicial intervention to protect the rights of a minority of creditors, if the courts were hesitant to intervene? Is the requirement that creditors negotiate in good faith relevant in such a scenario?

Second, if exploitive majorities are thought likely to be a major problem in a world with collective action clauses, can the scope for exploitation by majorities be mitigated simply by setting a relatively high voting threshold for majority action? For example, thresholds for changing the financial terms of bonds could be set at 80 percent, 85 percent, or even 90 percent, so that relatively small constituencies of aggrieved creditors would have power to block the restructuring. More generally, is it possible to choose a voting threshold that is sufficiently high that it protects the legitimate rights of minority creditors but that, at the same time, is sufficiently low that it does not give holdout creditors undue scope to frustrate legitimate restructurings? Is it possible for us to calibrate the threshold in a way that effectively balances these competing objectives? Or will intervention by the courts (or the Fund) also be necessary?

Third, two strikingly different conceptions of minority creditors are now in play. Perhaps as an aftershock from *Elliott* v. *Peru* and other recent cases, much of the ongoing debate in the international community has focused on the need to develop mechanisms to bind minority creditors. Dissenting minorities are referred to as holdouts, mavericks or renegades. In contrast, the Buchheit and Gulati chapter notes that much of the US experience with majority action clauses a century or so ago was focused on protecting deserving minority creditors from exploitive majorities.

In summary, given what we know about emerging market debt markets,

the investors holding this debt, and the existing institutional backdrop, we should play through a variety of scenarios, carefully assessing the likelihood of disruptive minorities (and the potential harm done by them) against the likelihood of exploitive majorities (and the potential harm done by them). The features of the collective action clauses that are eventually included in emerging market debt contracts should reflect the outcome of such an analysis.

12.2 Why have debtors and creditors been hesitant to adopt collective action clauses?

Why have emerging market debtors and their creditors been hesitant to adopt collective action clauses (CACs) in recent years, notwithstanding some encouragement from the official sector?[2] It is frequently and convincingly argued that such clauses would provide greater clarity about how bond restructurings will be conducted. In addition, the presence of collective action clauses would enhance the set of mechanisms and tools that are available to conduct restructurings. This, in turn, would help make restructurings more expeditious and, perhaps, less costly. Given these benefits, widespread implementation and use of CACs would likely allow the international financial system to be more resilient and robust to crises.

Nevertheless, it might still be asked whether, in practical terms, collective action clauses will really make much difference. The answer, I believe, is that these clauses, while certainly not a magic bullet, will incrementally improve the ability to manage and resolve emerging market crises. In addition, the evidence from recent cases, although limited, is instructive. First, CACs helped facilitate Ukraine's debt exchange. Second, it is possible that creditors' recollections of Ecuador's debt exchange would be more positive if CACs had been included in Ecuador's debt and if the exchange had been effected through CACs, rather than through the blunter tool of exit consents. Third, most observers agree that the prospects for an Argentine debt deal would be (at least) a little brighter if a larger share of Argentina's debt had CACs.

The reasons debtors and creditors have been hesitant to adopt CACs are a function of the complex and varied incentives that they face. On the debtor side, there seems to be a first-mover problem. Strong sovereign borrowers have been unwilling to include these clauses in their debt. They believe that the probability that they will need such clauses is very low, and they fear that the market will require an additional premium to hold their debt once CACs are included (although the jury is still out on this point). However, if only weak borrowers include CACs in their debt, CACs will, in fact, be a signal of vulnerability. Thus, adoption of these clauses by a broad group of emerging market debtors is necessary to mitigate adverse signaling problems.

Creditor reluctance to accept CACs appears to have reflected several factors. First, the threat of messy, complex restructurings may not be com-

pletely unpalatable to creditors, if the prospect of such outcomes serves to decrease the probability of default and, thus, to increase the probability of repayment. In addition, by accepting collective action clauses, creditors would give up drafting conventions that allow them to have an unconditional financial claim on the sovereign debtor. In its place, creditors would hold more flexible instruments that could be adjusted in accordance with the will of a qualified majority of bondholders. In evaluating this trade-off, creditors must weigh the probability that they will be caught in a minority position against the advantages flowing from the increased flexibility of instruments with collective action clauses. Inertia has probably also been a factor in the reluctance to accept CACs. Both creditors and debtors are familiar and comfortable with the current features of sovereign debt contracts. Becoming equally familiar with the workings of the new clauses would probably require time and resources and, given the initial lack of familiarity, might be viewed as entailing some up-front risks.

Thus, while neither debtors nor creditors appear to be vehemently opposed to these clauses, the case for adoption, in their view, has not yet been compelling. That said, it seems that neither group has fully internalized the public goods aspect of such clauses or the positive externalities that might flow from implementation. Specifically, as such clauses are incorporated into debt contracts and tools are put in place to better manage and resolve emerging market crises, the international financial system itself would become more stable and efficient. This should help foster an environment in which capital can flow to emerging market countries in increased quantities, and an environment in which there are an increased number of attractive investment opportunities. The contribution of collective action clauses toward achieving these ends may only be incremental, but any step forward would be helpful.

Given this situation, there seems to be a strong case for the official sector to continue to intensify its efforts to encourage the adoption of these clauses. The following are some thoughts as to what can be done.

Strong advocacy

Recent efforts by the US Treasury and others in the official sector have raised the prominence of collective action clauses in the ongoing discussion of reforms to the international financial architecture. Focused efforts to advocate the virtues of collective action clauses and to persuade debtors and creditors to adopt these clauses should be continued.

A collaborative process

The exact type of clauses that should be included in debt contracts and the specific language that should be included in those clauses have not yet been fully resolved. In addressing such issues, the official sector should be as open, collaborative and responsive to the needs of creditors, debtors

and market makers as possible. A corollary is that, although an open and collaborative process for devising these clauses will not guarantee that they are accepted by market participants, a non-transparent and unresponsive approach to devising these clauses, or an approach that is seen as being dominated by one constituency, might very well create skepticism – or even antagonism – toward these efforts and doom this initiative before it even gets off the ground. That said, the private sector itself is extremely heterogeneous. Even if the official sector makes conscientious efforts to seek ideas from many quarters and to respond to those ideas, it will probably be impossible to please everyone.

Financial incentives for debtor countries to adopt CACs

The IMF and potentially even the Multilateral Development Banks should be encouraged to provide multiple, complementary incentives for countries to include CACs in their new debt issues. For example, the Fund could vary access to certain facilities based on whether the country has adopted CACs. A number of other possibilities should also be explored. (Denying all access to Fund resources for countries that fail to adopt these clauses seems overly severe and, frankly, not credible.)

It is true, however, that these incentives and encouragement from the official sector will only go so far. Ultimately, emerging market debtors and their creditors must themselves be convinced of the value of collective action clauses. There seems to have been some progress in this regard in recent months.

12.3 Some concluding thoughts

In conclusion, I will briefly address two arguments that are sometimes leveled against CACs. First, some have noted that, in order for CACs to be fully effective, they must be included in the entire stock of an emerging market country's debt. While the inclusion of CACs in all outstanding debt is the ultimate objective, this "ideal" should not stand in the way of incremental progress. The near-term challenge – which is not inconsequential – is to focus on drafting clauses and getting those clauses into newly issued sovereign debt. Once the market has accepted and become comfortable with such clauses in new debt issues, the expense of a debt exchange designed to incorporate CACs into the entire stock of a country's debt would be reduced significantly. Moreover, even if CACs are included only in the flow of newly issued debt, the stock of debt without CACs would decline over time as old instruments mature. The complete transformation of the stock of debt through this mechanism would take many years, but the official sector's initiative with CACs – like its other initiatives in the area of crisis prevention and management – should be viewed as a long-term endeavor.

Second, it has been argued that the usefulness of CACs is fundament-

ally limited since they would probably apply to only a single debt issue and would not aggregate *across* debt issues or legal jurisdictions. In response, two observations should be put forward. First, the ability to bind bondholders on an issue-by-issue basis is significant, and would certainly support efforts to manage and resolve crises. Second, whether or not a clause can be written that aggregates across debt instruments and/or jurisdictions remains very much an open issue. It is sometimes further argued that, even if such "aggregation clauses" could be written, creditors would have concerns about having their claims aggregated with those of other creditors who may have qualitatively different types of claims. What is often overlooked, however, is that creditors would probably have similar concerns about being aggregated under a sovereign bankruptcy facility. For this reason, it might be fruitful to consider in greater detail how issues of aggregation are handled in the context of domestic bankruptcy arrangements. It would also be fruitful to consider the scope for relatively narrow approaches to aggregation – for example, aggregating a single class of creditors (e.g. bondholders) within a single legal jurisdiction (e.g. New York). Such an approach might be feasible, might raise fewer concerns among investors, and would still significantly strengthen the ability to deal with emerging market debt crises.

Notes

1 The views expressed in this chapter are solely the responsibility of the author and should not be interpreted as reflecting the views of the Board of Governors of the Federal Reserve System or of any other person associated with the Federal Reserve System.
2 It is important to note that these clauses are already standard fare in emerging market debt instruments issued in the United Kingdom.

13 Sovereign bond restructuring

Collective action clauses and official crisis intervention

Kenneth M. Kletzer[1]

13.1 Introduction

The emerging market financial crises of the last decade have prompted widespread concern about the adequacy of the present international financial architecture to maintain a stable international economy. Recently, attention has focused on the framework for the renegotiation and restructuring of developing country debt. Prolonged and costly sovereign debt renegotiations are widely taken as evidence of inefficiencies in international financial markets that should be addressed by institutional innovation. The possibility that these result from the inability of various creditors to co-operate effectively in debt restructurings has been a concern for many years in many debt crises. Market participants, academics and policymakers have offered a variety of explanations and proposed solutions for collective action failures between lenders in the resolution of sovereign debt problems.

The most recent debates reinvigorate the argument that international bankruptcy procedures are needed to co-ordinate the actions of creditors with diverse interests and information to restructure debts and achieve the timely resolution of debt crises. Recent proposals by Haldane and Kruger (2001) and Krueger (2002) suggest that the IMF plays a prominent role in the reorganisation of sovereign debt obligations. The restructuring of sovereign debt under such proceedings would require the aggregation of debt claims, paralleling corporate reorganisation under Chapter 11 of the United States Bankruptcy Code. Schwarcz (2000) and Miller and Stiglitz (1999) offer other recent proposals to apply bankruptcy reorganisation procedures to sovereign debt. The United States Treasury (Taylor 2002) has counterargued that the creation of a role for the IMF in convening debt reorganisation tribunals is unnecessary.

Another approach to reform are proposals that collective action clauses be required or encouraged for sovereign bond lending. The case for collective action clauses is argued by Eichengreen and Portes (1995) and Eichengreen (1999). Essentially, these proposals argue that bonds issued under UK governing law, which include collective representation and majority action clauses, are more readily restructured to the mutual

advantage of creditors and debtors than are bonds issued in the United States under the State of New York. Collective action clauses allow bondholder trustees (for example, a bondholder assembly) to modify the repayment terms of bonds subject to the approval of a qualified majority of bondholders (typically, those holding a supermajority of the outstanding debt). By contrast, the unanimous consent of all bondholders is required to revise the terms of repayment (amounts and timing) of a corporate bond issued under New York State law. This allows an opportunity for "vulture funds" to seek a privately favourable outcome by holding a bond restructuring hostage. The US Treasury response weighs in favour of the adoption of collective action clauses to neuter this risk.

Several authors have discussed the implications of collective action clauses and the capacity of strategic behaviour by small bond funds to gain under unanimous consent rules.[2] Bonds issued under New York governing law can include covenants that are modifiable by a qualified majority of bondholders and have financial value to bondholders, but do not directly concern the terms of repayment. Using such covenants, a majority can accept an exchange of new bonds for the old bonds after rewriting provisions that do not directly affect the amount and timing of repayments. Such "exit consents" can reduce the secondary market value of the bonds held by bondholders that do not participate in the exchange and were used, for example, in the restructuring of Ecuadorian Brady bonds. Buchheit and Gulati (2000) explain how exit consents can be used for restructuring sovereign bonds issued under US governing law. Roubini (2000), for example, argues that collective action clauses are unnecessary because bond exchanges in recent cases (Ecuador, Ukraine and Pakistan) allowed restructuring by a supermajority of bondholders. These cases, however, may lead issuers, bondholders and underwriters to close off this opportunity by incorporating unanimous consent requirements into all bond convenants in new bond issues.

This chapter analyses the incentives of multiple creditors to collectively renegotiate a country's debt in a formal model of sovereign debt renegotiation. The welfare case for collective action clauses is also developed using the model. The formal game-theoretic model of Kletzer and Wright (2000) provides a framework for analysis and arguments. In this model, a sovereign debtor seeks to smooth consumption over time against stochastic national income. The institutional structure of the model is transparent. Unlike much of the debt literature, there are no implicit assumptions regarding the enforcement of contracts that are not derived as part of the equilibrium. In Kletzer and Wright (2000), sovereign immunity protects borrowers from confiscation of resources inside national borders and lenders are always free to choose whether to participate in any transaction. There are no exogenous, external means of enforcement, but lending and repayment are sustainable in an equilibrium which imposes no constraints on renegotiations of any kind. In this chapter, a seniority provision is introduced both for expositional convenience and to introduce collective action problems.

Respect for the sovereign immunity of the borrower and the ability of any lender to choose whether to provide resources to the borrower at any time, restrict credit transactions in the model economy. Given these self-enforcement constraints, there are efficient equilibria for payments between the debtor and her creditors that can be interpreted in terms of simple bond contracts subject to *ex post* renegotiation. The simple model provides the mutual gains from debt renegotiation that motivate the analysis. In the model, renegotiation is welfare improving and increases the level of lending to the sovereign borrower.[3] The constrained efficient equilibria of the model economy provide the benchmark for the welfare comparisons and arguments made in this chapter.

In the absence of transactions costs, collective action clauses support efficient renegotiation in the model of sovereign debt. However, unanimity clauses give rise to a type of rent-seeking behaviour in bond restructurings that leads to inefficient equilibria of the model. Unanimity clauses do not generally support efficient outcomes in this environment because there are incentives for holdouts in renegotiations. The last bondholder can always gain at the expense of the others and competition to be last can lead to protracted negotiations between bondholders and the debtor. Lending and repayment are consequently inefficient compared to the outcomes attainable under collective action clauses. The model is also used to demonstrate conditions under which multiple lenders internalise the mutual gains from collectively renegotiating sovereign debt. This result implies that, as long as each lender holds a sufficiently large share of the total debt, then each lender has an incentive to come to the bargaining table. A simple example suggests that a sufficiently large share for this purpose may be a small percentage of the total debt.

The approach taken is Coasian in spirit. Achieving efficient outcomes under collective action clauses depends on the costs of forming a qualified majority and renegotiating the debt. In the absence of transactions costs, unanimous consent clauses are a source of inefficiency in renegotiation that can be eliminated by collective action clauses. Introducing renegotiation costs will reduce the welfare attainable under either collective action or unanimous consent. Reversing the welfare ranking of the two contract forms, however, would require the formation of a qualified majority to be more costly than achieving unanimous consent, which seems to be a peculiar presumption.

An additional conclusion is that the establishment of bankruptcy tribunals in which all of a sovereign's debts are aggregated and restructured together may be redundant if collective action clauses were adopted for all sovereign bond issues. I argue that the mutual gains from renegotiation for the holders of different bonds issued by a given debtor provide the incentive for the formation of councils of bondholder representatives (representing the qualified majority) without intervention. This suggests that the establishment of a sovereign debt restructuring mechanism (SDRM) under the auspices of an international institution may be more than is

needed to create an environment for renegotiations that are efficient, within the constraints of sovereign immunity. This conclusion is also sensitive to the Coasian assumption of costless renegotiation. If renegotiation between the holders of different bonds is costly, then the formation of private bondholder councils and collective restructuring of sovereign bonds will be inefficient. This could be a greater problem when bonds are issued in different legal jurisdictions. In this case, the creation of a SDRM that aggregates debts could improve welfare (or not) over the universal adoption of collective action clauses.

Two papers, Eichengreen and Mody (2000) and Becker *et al.* (2001), seek to determine whether collective action clauses affect interest spreads on sovereign bonds. The first paper finds significant empirical evidence that these clauses do affect interest differentials using primary market spreads, while the second shows contradictory findings using secondary market yields. The arguments in this chapter that collective action clauses can yield welfare benefits unattainable under unanimous consent clauses do not include a prediction regarding bond spreads. One reason is that more is lent under collective action clauses. Bond spreads should incorporate the risk premium for renegotiation which happens more readily under collective action clauses. Alternatively, under unanimity clauses, bond spreads should incorporate a risk premium for delays to settlement and repayment when renegotiation does occur.

Other policy proposals have been made for reforming the international financial architecture in the wake of the emerging markets crises of the last decade. These include universal debt rollover options (Buiter and Sibert 1999), standstills (for example, as proposed by Haldane and Kruger 2001), official guarantees, contingent credit lines, lending-into-arrears and so forth. These proposals address problems of financial crises that might benefit from an infusion of liquidity or a suspension of demands for repayment as contracted. The current chapter addresses debt problems that will not go away with delay. The debt renegotiations considered here arise because the contractual obligations of the borrower exceed the amount that the government is willing to pay in present value. Some may wish to label these solvency problems, but the level of repayments is determined by debtor willingness-to-pay as defined succinctly by Wallich (1943) and given analytical meaning by Eaton and Gersovitz (1981). Papers that analyse standstills, debt rollover options and other interventions to avoid financial and currency crises in emerging market economies include Chui *et al.* (2000), Gai *et al.* (2001) and Miller and Zhang (2000), in addition to Buiter and Sibert (1999).

The repeated game model of sovereign debt of Kletzer and Wright (2000) is first summarised. The equilibria of this model are used as the benchmark for discussing how the introduction of exogenously enforced seniority rights of creditors vis-à-vis each other affect debt renegotiation. Under such seniority privileges, the renegotiation of debt between two lenders and among bondholders under unanimous consent and qualified

majority consent is compared. The formalism is limited so that the arguments focus on explaining how strategies for a debtor and creditors can be constructed (or not) that implement an efficient equilibrium. The chapter explains how unanimity leads to a simple war of attrition game between lenders and directs readers to the well-known literature on these games for the characteristics of equilibrium. The possible extension of the model to allow for imperfect information and the robustness of the qualitative results to such extensions is discussed before the conclusion.

13.2 A model of sovereign debt renegotiation

A model of sovereign debt in which foreign borrowing serves to smooth the consumption of the debtor country is used to illustrate the effects of institutional innovation. This model is based on Kletzer and Wright (2000) which is also used in Eaton and Kletzer (2000) and Wright (2001).[4] The borrower is risk averse and realises a stochastic income each period. The borrower faces a pool of risk-neutral potential lenders. At any time, the borrower can choose to leave the international credit market and consume her endowment for every period thereafter. The debtor's endowment cannot be seized by foreign creditors, so that any repayments are made voluntarily by the borrower. The borrower only makes payments to foreign creditors if it is in her best self-interest, looking forward to the future equilibrium relationship with the lenders. This assumption is consistent with the observation that debtors hold very few off-shore assets (as a proportion of debt) that might be seized by foreign creditors and may avoid seizure by repatriating such assets in anticipation of debt repudiation.

The borrower seeks to maximise expected utility given by:

$$U_t = u(c_t) + E_t \sum_{s=t+1}^{\infty} \beta^{s-t} u(c_s), \tag{13.1}$$

with respect to the consumption plan, $\{c_t, c_{t+1}, \ldots\}$, in each period t. The discount factor, β, lies between zero and one, c_t is restricted to be non-negative and $u(c)$ is strictly concave and increasing. The condition $\lim_{c \to 0} u'(c) = \infty$ is imposed for simplicity. The borrower's income consists of a stochastic endowment of a single non-storable good. The borrower can always assure that her utility is at least as great as the autarky expected utility realised by consuming her income each period into the future,

$$U_t^A(y_t) = u(y_t) + E_t \sum_{s=t+1}^{\infty} \beta^{s-t} u(y_s). \tag{13.2}$$

In any equilibrium, the sovereign immunity constraint,

$$u(c_t) + E_t \sum_{s=t+1}^{\infty} \beta^{s-t} u(c_s) \geq u(y_t) + E_t \sum_{s=t+1}^{\infty} \beta^{s-t} u(y_s), \tag{13.3}$$

must hold for all t.

The borrower's income in any period can be one of N finite number of values given $y^1 < y^2 < \ldots < y^N$, where $y^1 > 0$ and $y^N < \infty$. It is also assumed that this income is independently and identically distributed across time, although all the arguments made in this chapter carry over to the case in which y_t follows a Markov chain. The borrower's current income realisation, y_t, is known when any decisions are made at time t.

Any lender seeks to maximise the expected present value of net transfers from the borrower,

$$\Pi_t = \tau_t + E_t \sum_{s=t+1}^{\infty} \beta^{s-t} \tau_s, \tag{13.4}$$

where τ_t is the net payment received from the borrower in period t. With a single lender, $\tau_t = y_t - c_t$. The lender only makes new payments to the borrower if the expected present value of the future returns are positive. For example, a lender will only buy a new bond issued by the debtor if the net expected present value of the bond is non-negative. This implies that the lender's participation constraint,

$$\Pi_t \geq 0,$$

holds at all times in equilibrium. That is, a lender only makes a net payment to the borrower if doing so is in his or her best interest looking forward into the entire future relationship with the borrower. For simplicity, the discount factor for the lender is assumed to be the same as for the borrower. This assumption is relaxed in the model of sovereign debt dynamics of Eaton and Kletzer (2000) but does not affect the implications drawn here.

There are gains from intertemporal trade between the borrower and any lender in this model. In the first-best allocation, the borrower's consumption would be fully smoothed over all dates and possible income realisations (states of nature). In this case, lenders would fully insure the borrower against income fluctuations. However, for a positive discount rate, the first-best solution may violate either the sovereign immunity constraint for the borrower or the participation constraint for a lender in some states of nature.

Self-enforcing equilibria of this economy are perfect equilibria of the implied repeated game in which the borrower or any lender can make a non-negative transfer of resources that is less than or equal to its current endowment. For the case of a single lender, these are found by first converting the borrower's utility into her surplus over autarky as

$$V_t = [u(c_t) - u(y_t)] + E_t \sum_{s=t+1}^{\infty} \beta^{s-t}[u(c_s) - u(y_s)] \tag{13.5}$$

$$= [u(c_t) - u(y_t)] + \beta E_t(V_{t+1})$$

so that the sovereign immunity constraint is simplified to

$$V_t \geq 0$$

for each possible income realisation at time t. The perfect equilibria are the sequences of transfers that lead to consumption sequences that satisfy the constraints, $V_t \geq 0$ and $\Pi_t \geq 0$, for all dates t in all possible states of nature. These are characterised in Kletzer and Wright (2000).

In an equilibrium, the net payments made by the lender or by the borrower at date t are contingent upon the history of income realisations up to and including date t,

$$\omega_t \equiv (y_1, \ldots, y_t),$$

and on the past history of actions by each agent. Kletzer and Wright show that all possible equilibrium consumption paths can be found by first finding the efficient perfect equilibria. These can be found by solving the dynamic programming problem:

$$V_t(\Pi_t, \omega_t) = \max\{[u(c_t) - u(y_t)] + \beta E_t V_{t+1}(\Pi_{t+1}, \omega_{t+1})\} \tag{13.6}$$

subject to

$$y_t - c_t + \beta E_t \Pi_{t+1} \geq \Pi_t, \tag{13.7}$$

$$V_{t+1} \geq 0, \text{ for each } y^1, \ldots, y^N, \tag{13.8}$$

and

$$\Pi_{t+1} \geq 0, \text{ for each } y^1, \ldots, y^N, \tag{13.9}$$

where the maximisation is taken with respect to the sequence of consumptions, $\{c_s\}$, and of lender surpluses, $\{\Pi_s\}$, for $s \geq t$. Consumption in the solution satisfies the Euler condition,

$$u'(c_t) = u'(c_{t+1})(1 + \varphi_{t+1}(\omega_{t+1})) - \psi_{t+1}(\omega_{t+1}), \tag{13.10}$$

where $\varphi_{t+1}(\omega_{t+1}) \geq 0$ and $\psi_{t+1}(\omega_{t+1}) \geq 0$ are the state-contingent Lagrange multipliers on the constraints, $V_{t+1} \geq 0$ and $\Pi_{t+1} \geq 0$, respectively. If any of these constraints are binding, consumption cannot be fully smoothed across all states of nature between periods t and $t+1$. When the bor-

rower's constraint is binding for a particular income realisation, y^n. For date $t+1$, the borrower's consumption will be higher in that state for date $t+1$ than it is in period t. This is because the borrower is not willing to pay more in date $t+1$ in state y^n when the alternative of permanent autarky is available to him or her. If the lender's constraint binds in some state, y^n, for period $t+1$, then the borrower's consumption will be lower in that state for $t+1$ than it is in period t. In this case, the lender would prefer to abandon this relationship rather than paying more.

The solution for the efficient perfect equilibria has several important properties. First, only if the common discount rate is sufficiently small will full consumption smoothing be possible. However, for reasonable parameters for the coefficient of variation for debtor income and the discount rate, credit transactions are feasible and achieve partial smoothing of the borrower's consumption. In this case, consumption in period t depends upon current income, y_t, and on lagged consumption, c_{t-1} (see Kletzer and Wright 2000 for details). For any efficient perfect equilibrium consumption path, the borrower's consumption in state, y^n, on any date will satisfy

$$\underline{c}^n \leq c \leq \bar{c}^n,$$

where $\underline{c}^n \leq y^n \leq \bar{c}^n$. The bounds $\underline{c}^n$ and $\bar{c}^n$ are both increasing with y^n. Furthermore, $\underline{c}^1 = y^1$ and $\bar{c}^N = y^N$. The interpretation of $\underline{c}^n$ is that if $c_t = \underline{c}^n$ in equilibrium, then the borrower realises the same utility as she would if permanent autarky had been chosen. Similarly, if $c_t = \bar{c}^n$, then the lender's surplus, Π_t, is zero.

A two-state example illustrates the equilibrium and can be used as a basis for subsequent arguments. Let borrower income take on two possible states, $y^1 < y^2$, in any period with constant probabilities, p and $1-p$, respectively. The autarky utility for the borrower is:

$$U_t^A = u(y_t) + \frac{\beta}{1-\beta} Eu(y), \tag{13.11}$$

which is increasing in current income, y_t. Consider the steady state of an efficient equilibrium with partial smoothing. In this case,

$$u'(\bar{c}^1) > u'(\underline{c}^2), \tag{13.12}$$

$$V(y^2, \underline{c}^2) = u(\underline{c}^2) - u(y^2) + \frac{\beta}{1-\beta} E(u(c) - u(y)) = 0, \tag{13.13}$$

$$\Pi(y^2, \underline{c}^2) = y^2 - \underline{c}^2 + \frac{\beta}{1-\beta} E(y - c) > 0 \tag{13.14}$$

and

$$V(y^1, \bar{c}^1) = u(\bar{c}^1) - u(y^1) + \frac{\beta}{1-\beta}E(u(c) - u(y)) > 0, \tag{13.15}$$

$$\Pi(y^1, \bar{c}^1) = y^1 - \bar{c}^1 + \frac{\beta}{1-\beta}E(y - c) = 0. \tag{13.16}$$

The borrower's sovereign immunity constraint is binding in the high state, while the participation constraint for the lender is binding in the low state. That is, the borrower realises zero surplus in the high state of nature, while the lender's surplus is exhausted in the low state. In the high endowment state of nature, the borrower is repaying debt, while in the low state the lender is making a new consumption smoothing loan.

The Euler condition implies that any efficient perfect equilibrium converges to this steady state. For example, if the long-term relationship between the borrower and lender begins with an initial loan made under free lender entry, then the initial surplus for any lender should be equal to zero. In an efficient perfect equilibrium, the borrower's consumption in the first period if her income is y^1 equals $\bar{c}^1$, and the borrower receives a payment (called a loan) from the lender. If borrower first-period income is y^2, then the borrower's first-period consumption equals y^2, and the borrower neither receives nor makes a payment. The first time that borrower income equals its lowest value, y^1, a loan is made and the equilibrium for debtor consumption and payments between the debtor and creditors is in the steady state.[5]

The efficient self-enforcing equilibrium can be implemented using simple one-period contracts with free entry. Each contract specifies a loan made by a lender in state y_t, ℓ_t, and a state-contingent repayment schedule for period $t+1$, denoted R_{t+1}. The net transfer to the borrower in period t equals $\ell_t - R_t$, which depends on current income and past income only through lagged consumption (which is previous period income plus the previous period net transfer) in equilibrium. In the steady state of the two-state example, ℓ_t is only a function of y_t and R_{t+1} depends on y_t and y_{t+1}. The contract satisfies:

$$-\ell_t + \beta E R_{t+1} = 0. \tag{13.17}$$

The borrower's consumption is given by:

$$c_t = \ell_t - R_t + y_t. \tag{13.18}$$

Substitution into the expression for the lender's value,

$$\Pi(y_t, c_{t-1}) = y_t - c_t + \beta E_t \Pi(y_{t+1}, c_t), \tag{13.19}$$

leads to:

$$\Pi(y_t, c_{t-1}) = y_t - c_t + \beta E_t \Pi_{t+1} = R_t + E_t \sum_{s=t}^{\infty} (-\ell_s + \beta E R_{s+1}) = R_t. \qquad (13.20)$$

The state-contingent repayment is simply the total lenders' surplus for an efficient self-enforcing equilibrium. Therefore, the repayment for a sequence of contracts that implements the constrained optimum is positive in the two-state example for $y_t = y^2$ and zero for $y_t = y^1$. In the steady state,

$$R(y^2) = \frac{\bar{c}^1 - y^1}{\beta(1-p)} \text{ and } R(y^1) = 0. \qquad (13.21)$$

Taking the discount rate, $\frac{1}{\beta} - 1$, to be the risk-free opportunity rate of interest for the lender, the interest rate spread on this loan is equal to:

$$\rho = \frac{1}{\beta(1-p)} - \frac{1}{\beta} = \left(\frac{p}{1-p}\right)\frac{1}{\beta}. \qquad (13.22)$$

This sketch of the analysis of efficient self-enforcing equilibrium payments between the borrower and any number of lenders illustrates the gains from renegotiation of simple loan contracts. State-contingent repayments can be interpreted as outcomes of the *ex post* renegotiation of a simple loan contract that specifies principal, ℓ_t, and maximal repayment, $\overline{R}_{t+1}$.[6] If the renegotiation of simple loan contracts were not possible, then any equilibrium lending arrangement would be restricted to those that provide the lender with surplus, $\Pi(y_t, c_{t-1})$, that is not contingent on y_t. This is not possible for any efficient perfect equilibrium, so that a restriction on renegotiation can only allow inefficient perfect equilibria to be realised. There are mutual gains from allowing *ex post* renegotiation of standard debt contracts in this economy.

In the consumption smoothing model, the gains from renegotiation are the gains from state-contingent contracts with a risk averse agent who has risky income. In the repeated trade sanctions model of Bulow and Rogoff (1989a), there are also gains from renegotiation with stochastic income. The equilibrium payment made in the Nash bargaining solution varies with the gains from trade. If a debt contract is restricted so that the same payment is made in every state of nature, then this payment will be the minimum of the borrower's payments in the bargaining equilibria for each state. Allowing state-contingent repayments increases the surplus for the lender in all but the lowest state. The initial loan is the amount the lender pays for the right to impose trade sanctions, so that higher expected surplus leads to a higher loan. For an impatient but risk-neutral sovereign, this raises welfare.

13.3 Seniority rights and renegotiation

The set of all perfect equilibria for the basic consumption smoothing model of sovereign debt contains any equilibrium that satisfies the sovereign immunity constraint for the borrower and participation constraints for lenders. An equilibrium that is efficient within this set can only be improved upon if the participants can be externally bound to make payments to one another that they would prefer not to make (that is, they cannot abandon the relationship for autarky at any time). Any such restriction requires either some loss of borrower sovereignty over his or her own borders or the forcing of payments by creditors. Neither is considered here.[7] An efficient self-enforcing equilibrium provides payoffs for each agent that are on the frontier of the surplus possibility set of all self-enforcing equilibria in each possible sequence of income realisations. The properties of the efficient equilibria can be used to assess whether a constrained efficient equilibrium can be achieved under a particular institutional arrangement. The equilibria that are feasible when restrictions are placed on recontracting will be in this set, but they may no longer be on the efficient frontier.

The remainder of this chapter considers restrictions on the renegotiation of debt contracts intended to represent bond convenants binding between creditors which are enforced by creditor country governments. Specifically, I consider how the enforcement of seniority rights across creditors and the use of collective action clauses can affect the outcome of renegotiation. Although there are many ways to model bargaining between the borrower and lenders during renegotiation, any renegotiation equilibrium will be in the set of all self-enforcing equilibria. The strategy used here is to identify some characteristics of possible perfect equilibria under alternative institutions that govern debt renegotiation. Rather than study specific bargaining models, the approach is to show whether bond convenants can allow a constrained efficient equilibrium outcome. This approach is Coasian in spirit.

In the bare-bones institutional structure of the consumption smoothing model of sovereign debt, any mutually beneficial renegotiation is possible given any history of the relationship between the borrower and lenders. Nothing impedes mutually beneficial renegotiation. The main point of Kletzer and Wright (2000) is to demonstrate that an efficient perfect equilibrium path can be supported by an equilibrium for the repeated game that is renegotiation proof when there are many possible lenders. This requires the construction of punishments for deviations from the equilibrium path of payments that are also constrained efficient. The interpretation of the punishment of the borrower for deviation from the equilibrium payments path is that the borrower faces a short-lived moratorium on new capital inflows. This moratorium ends as soon as the borrower makes a payment yielding all of the current surplus looking forward to the new equilibrium relationship to the lenders. Kletzer and Wright (2000) prove

that a threat of permanent autarky is unnecessary, as well as incredible, and that credible punishment threats are immune to interference by new lenders. The proof of the second result relies on common knowledge in the repeated game. However, the information requirements for the proof are that every lender observes the obligations of the borrower to every other lender, the borrower's income and the actions of every other lender. The important requirement is that the repayment terms of loan contracts and any renegotiations of them can be learned by other (actual or potential) lenders.

An informationally thrifty way to implement equilibrium is through the exogenous enforcement of seniority privileges between creditors. With fully state-contingent contracts subject to the self-enforcement constraints, simple seniority rights support an efficient perfect equilibrium.[8] Seniority privileges, however, may be problematic when accompanied by restrictions on renegotiation of conventional bond contracts.

A simple stylised case with one-period loan contracts and a seniority privilege is used. The seniority privilege ensures that if the borrower reneges on a loan payment, the lender can interfere with future payments to subsequent lenders. In the two-state example, suppose that the borrower reneges on repayment to his or her current creditor in state y^2 at time t and a new lender makes a new loan. The existing lender can attach his or her claim to any payments from the new lender in period $t+1$. This reduces (or eliminates) any returns to the entrant, so that a new lender cannot offer a loan that implements an efficient equilibrium. Part or all of the surplus that could be realised in the continuation of the consumption smoothing relationship has already been taken by the existing creditor who does not need to pay anything more to receive a positive share of the surplus. A new lender can only realise a gain equal to the additional surplus in the relationship beyond that already owed to the existing creditor. In the steady state of an efficient equilibrium for the two-state example, the borrower realises zero surplus in state y^2 at time t by making the equilibrium repayment. If he or she reneges, the current lender continues to claim the repayment, $R(y^2)$, against any repayments that might be made. The borrower will never repay more than $R(y^2)$ (doing so would leave him or her worse off than autarky). New lenders cannot realise any return from a loan given the seniority of existing debt, so that they should lend nothing. By refusing to repay, the borrower can consume all of her income, y^2, at time t, but will at best realise zero surplus in either state in period $t+1$. Therefore, the borrower has no incentive to renege in this state.

Suppose that the lender refuses to renegotiate in state y^1 (in the steady state of the example, the borrower's state-contingent payments are zero when income is y^1). The borrower's surplus can only be negative if she pays the lender in state y^1, so the borrower should let the debt obligation carry forward to the next period. The borrower only makes payments in the future, however, if looking forward in equilibrium at the time, her

surplus is non-negative. If the lender simply rolls over a constant, or interest accumulating, repayment obligation, then the borrower receives nothing in the low income state until the debt is paid off. The borrower can credibly hold the lender's surplus to zero so that the lender never gains by refusing to renegotiate in the low income state or provide new net funds in this state. In a renegotiation-proof perfect equilibrium, the lender will only be paid, at most, the constrained efficient equilibrium amount. In the example, this equals zero in the low income state and equals the lender's opportunity cost inclusive of risk premium in the high income state.

Deviation from the net transfers for the constrained efficient equilibrium are not proof to renegotiation of the strategies of the borrower and lender when the seniority privilege locks the borrower and a single lender into a relationship. The mutual gains from the constrained efficient equilibrium for this economy assure that, however complicated the sequence of loans and rollovers, the net payments made in equilibrium will match the constrained efficient state-contingent ones. Once the seniority privilege creates a bilateral relationship, achieving an efficient perfect equilibrium path depends only on the capacity of the two participants to take advantage of the mutual gains from intertemporal trade. These gains can be realised at the outset, so if a single actor can provide sufficient resources for smoothing the borrower's consumption up to the sovereign immunity and participation constraints, the seniority privilege helps attain an efficient self-enforcing equilibrium.

The seniority privilege can solve a problem of lender entry in the event that the borrower defaults, but it can also create a problem of lender exit in this model of sovereign debt. This is the problem that lenders may not act as a single agent, but rather as dispersed bondholders who can choose to exit from a long-term relationship even though they continue to hold senior claims. The same type of problem arises with multiple bond issues held on non-overlapping or imperfectly overlapping sets of creditors.

The co-ordination problem can be illustrated in an example with two lenders and the single borrower. As a consequence of the history of the endowment and simple accumulation of debt on conventional terms, let the sum of the face value of the two lenders' loans, R_A and R_B (for lenders A and B, respectively), exceed the maximum amount that the borrower will repay in any perfect equilibrium; this is $R(y^2)$. Recall that this is equal to the maximum lender surplus in any perfect equilibrium in the high income state. For single-period loan contracts with free entry, $R(y^2)$ is the total repayment made in equilibrium under renegotiation. Along with paying $R(y^2)$, the borrower receives a new loan earning zero expected profits for lenders in the high income state. The borrower only pays this much if she expects to receive the efficient net transfer (equal to $\bar{c}^1 - y^1$) when the low income state occurs in period $t+1$. If the lenders refuse to relinquish their total claim, R_A plus R_B, which exceeds $R(y^2)$ in present value, then the borrower must pay less than $R(y^2)$ to avoid realising negative surplus. Anticipated refusals to renegotiate lead to inefficient self-enforcing equilibria.

First consider the borrower's response to a refusal to renegotiate by both lenders. The borrower can refuse to pay either lender, or pay one and not the other. By satisfying the debt claim of one lender, say lender A, the borrower still needs to settle the remaining (and now senior) claim of lender B which has a face value in excess of $R(y^2)$ and the amount paid, R_A. If R_A is less than $y^2 - \underline{c}^2$, the borrower can consume more in the high income state today in exchange for consuming less than $\bar{c}^1$ in the low income state in the future. Since $\bar{c}^1$ is no greater than $\underline{c}^2$, paying off one claim in full but not the other must reduce the risk-averse borrower's utility in a subsequent self-enforcing equilibrium. This reduction in consumption smoothing implies that even if renegotiation between the borrower and lender B in period $t+1$ is efficient, the borrower utility can only be reduced by paying R_A in period t in state y^2 and dealing with the remaining debt, R_B, later. Because the efficient equilibrium gave the borrower zero surplus in the high income state, any such inefficient equilibrium must give the borrower negative surplus at time t. The best that the borrower and lender B can do if the borrower pays R_A to lender A in the high income state is to immediately settle lender B's debt for $R(y^2) - R_A$ at time t. Therefore, whenever the borrower prefers autarky to paying the face value of her debts, there is an incentive to renegotiate all of the borrower's debt rather than selectively repay individual loans, leaving the rest to renegotiate later.[9]

Next, consider a case in which one of the lenders (let this be lender B) refuses to renegotiate while the other lender renegotiates with the borrower. It was noted above that if both lenders insist on receiving the present value of the respective face value of their loans, the equilibrium will not be constrained efficient. Therefore, when the high income state occurs, there will be efficient perfect equilibria that can give each lender a higher return while holding the borrower's surplus to zero. In this case, lender A may be able to increase its payoff by renegotiating unilaterally. In this case, lender A's maximal surplus will equal the difference between the total efficient surplus in the relationship ($R(y^2)$ in the example) and the amount that lender B can be assured of in the continuation of the game.[10] The continuation surplus for lender B is bounded above by the face value of its loan R_B. For example, if $R(y^2)$ minus R_B exceeds the equilibrium payoff to lender A when both lenders are intransigent, then lender A can gain by unilaterally forgiving the difference between $R_A + R_B$ and $R(y^2)$.

The possibility of unilateral debt renegotiations can be motivated using a simple extensive form game of renegotiation between each lender and the borrower. In this game, either lender can unilaterally offer to accept a lower repayment, while the other refuses to renegotiate. A lower repayment can be observed as a combination of net repayments and new bonds. What matters is the equilibrium present value of the creditor's offer. The borrower accepts or rejects offers, but because this game is embedded in the repeated game, the borrower never accepts less surplus than she realises in equilibrium for the repeated game. Let the efficient equilibrium

total lender surplus at time t be $\Pi_t = \Pi(y_t, c_{t-1})$ and the total face value of the debt accumulated be R_t. The borrower holds the lenders' total surplus to Π_t. In these negotiations, the discount factor is given by $e^{-\delta\Delta t}$ (let $\delta = -\log\beta$) where Δt is the time interval between rounds of creditor offers. Either lender can choose not to participate in any round. One equilibrium is that the lenders proportionately share in efficient debt renegotiation which gives lender A and lender B the payoffs, $(1 - x_t)\Pi_t$ and $x_t\Pi_t$, respectively, where $x = R_B/R$. If lender A renegotiates unilaterally, lender A's equilibrium payoff is $\Pi_t - xR_t$ and lender B's payoff is R_B. Suppose these payoffs satisfy,

$$\Pi_t - x_t R_t > e^{-\delta\Delta t}(1 - x_t)\Pi_t,$$

and

$$e^{-\delta\Delta t}x_t\Pi_t > \Pi_t - (1 - x_t)R_t.$$

The first inequality implies that lender A will be better off making an offer to reduce its debt to $\Pi_t - x_t R_t = \Pi_t - R_{Bt}$ if lender B does not participate, over waiting one round for co-ordinated renegotiation. The second inequality says that lender B will not unilaterally renegotiate. It also implies (with a little algebraic manipulation) that the total loss for the lenders from delaying agreement, $\Pi_t(1 - e^{-\delta\Delta t})$, is less than the gain to lender B from holding out, $R_{Bt} - e^{-\delta\Delta t}x_t\Pi_t$. For $R_t > \Pi_t$, lender A can gain by renegotiating when lender B holds out if the debt held by lender B is a sufficiently small share of the total debt. Lender B will be better off holding out. The condition for the share of B's loans in the total for this case is:

$$\frac{1 - e^{-\delta\Delta t}}{R_t/\Pi_t - e^{-\delta\Delta t}} \geq x_t = \frac{R_{Bt}}{R_t}.$$

For example, if $e^{-\delta\Delta t} = 0.99$ and the debt overhang, R_t/Π_t, is 1.2, then lender B must hold less than 5 per cent of the total debt.

The possibility of a successful holdout in efficient debt renegotiations arises when one of the two lenders holds a sufficiently small share of the total debt. In this case, the small lender will be able to take unilateral advantage of the seniority privilege. If neither lender is small, then either lender can only gain when they renegotiate jointly. Because there are mutual gains from renegotiation, an efficient self-enforcing equilibrium can be achieved in the consumption smoothing model of sovereign debt as a bargaining equilibrium for the three party repeated game as long as neither lender is small enough to take unilateral advantage of the seniority privilege. The threat to insist on a higher payment is only credible for a small lender; essentially the seniority privilege makes the large lender hostage to the small one.

These arguments imply that, in the full information case, seniority privileges can enable rather than inhibit mutually beneficial debt renegotiation. Efficiency among the set of self-enforcing equilibria is achieved because the seniority privilege allows a single lender to form a permanent relationship with the borrower. Although a sufficiently small lender may have an advantage over a large lender when the face value of debt rises above the expected net present value of repayments because of relending, rollovers and reschedulings, this advantage should be priced into the terms of small and large loans. Holding out does not seem to create problems with two lenders, but it can, as discussed in the next section, when there are many potential small lenders with seniority rights, as arises under bond lending with unanimous consent clauses.

The particular model of sovereign debt renegotiation used here assumes perfect information. In the steady state of an efficient perfect equilibrium for the two-state example, the borrower receives a loan and all of the surplus in the relationship in the low income state. In an efficient renegotiation in the low income state, therefore, the lenders simply forgive the entire debt so that new loans can be made. In this case, unilateral renegotiation and holding out can only yield zero payoffs in equilibrium. This case, though, may trouble some readers. If the assumption that the borrower's income is the borrower's private information is made in the model of Kletzer and Wright (2000), it can be shown that the borrower never receives a net transfer in debt renegotiations in an efficient self-enforcing equilibrium. Under this assumption, new lending does not take place in the same period as debt renegotiation.

13.4 Bond restructuring

Renegotiation under unanimous consent

It was argued that with the single small lender, an efficient self-enforcing equilibrium that is renegotiation-proof can still be achieved under seniority rights. The seniority rights of the small lender, however, create an opportunity for conditional rent-shifting, by which I mean the redistribution of surplus from the large lender to the small lender after particular events. An important qualitative difference arises when there are many potential "small" lenders all seeking these rents.

Revision of the repayment terms of sovereign bonds issued under State of New York governing law typically require the unanimous consent of all bondholders. However, other terms of bonds issued under New York law can often be revised with the consent of a qualified (non-unanimous) majority of the bondholders. Exit consents can be (and have been) used in bond exchanges by a majority of bondholders that reduce the value of the remaining bonds held by a minority of bondholders who do not agree to the exchange. For this discussion, assume that the only terms of contracts relate to repayments, and revision of these requires unanimous bondholder

consent. In the model economy, this requirement can give rise to a renegotiation game between bondholders that displays socially costly delay to agreement in equilibrium.

The general model with N states of nature can be used. Suppose there are many potential lenders, all with limited resources so that each bond issue is held by a number of creditors. The bonds are issued in small units, in the sense that one bond readily satisfies the "very small" requirement for holding out in renegotiation. Suppose that at date t, a low income state occurs and that the total non-contingent repayment exceeds the total equilibrium surplus of lenders, $\Pi(y_t, c_{t-1})$. As a benchmark, let this be the surplus for an efficient self-enforcing equilibrium. The argument will apply when the total lender surplus is generated by an equilibrium that is inefficient among the set of all perfect equilibria.

If lenders do not agree to renegotiate the debt overhang (defined as the excess of the debt claim over the equilibrium lenders' surplus), then the borrower will not be able to borrow the amount (ℓ_t) that implements continuation of the equilibrium providing surplus $\Pi(y_t, c_{t-1})$ to the lenders. This is because the seniority allows current bondholders at time t to claim part or all of any future repayments. In this situation, the arguments for the two-lender case imply that some, sufficiently large, majority of bondholders will be better off renegotiating unilaterally and letting the minority receive the face value of their bondholdings. Delaying renegotiation would be costly for a fixed majority. The implementation of such renegotiations might be attempted using a bond swap in which the majority exchange the old bonds for new bonds that pay a proportionate share of $\Pi(y_t, c_{t-1})$ minus the equilibrium value of any bonds kept by bondholders not accepting the swap. It might also be implemented through a bond restructuring in which the minority are paid off to assure unanimity.

The problem is that any bondholder can be the last to agree. An individual bondholder can hold out for the rent of being last. For example, with a secondary market for bonds, an investor can purchase a minority share of bonds and seek the maximal rent attainable in an equilibrium renegotiation between a single majority bondholder (equivalently, a representative of the majority of bondholders) and the borrower. Without a single majority bondholder, any creditor could be a holdout or sell shares to such a "vulture fund" for a price equal to the expected return to holding out. If everyone else agrees to the restructuring, then the last bondholder should not agree, seeking instead to maximise his or her rent subject to a constraint that other bondholders are at least as well off accepting the negotiated settlement.

With any bondholder eligible to be the holdout, this gives rise to a "war of attrition" between bondholders.[11] Consider J lenders, numbered $j = 1, \ldots, J$, each holding a small enough share of the bonds to be a successful holdout if all the others co-operate in the bond restructuring. If all lenders, 1 through to J, except lender j', agree to the renegotiation for the total surplus $\Pi(y_t, c_{t-1}) - R_t^{j'}$, where $R_t^{j'}$ is the gross interest owed to lender j' under the original contract, the best action for lender j' is to holdout and

take his rent. Lender j' realises a higher payoff than every other lender. This is one equilibrium for this simple version of the war of attrition with complete information, but there are many others, particularly mixed strategy equilibria. Lenders j' and j'' can both choose strategies in which they agree to the restructuring with positive probability and holdout for one more period with the complementary probability. These probabilities are determined by the condition that the expected gain from waiting is zero for each of the two bondholders. Equilibria of this type generate stochastic delays to agreement which must reduce the total social surplus in the consumption smoothing model.[12]

The unanimity rule, together with the seniority rights that make it effective, create the opportunity for a minority of bondholders to gain by holding out in a renegotiation of repayment obligations in a low income state. The exogenous enforcement of these covenants interferes with the renegotiations of perfect equilibria for the repeated relationship between all bondholders and the borrower. A reason that the war of attrition naturally arises in bond restructurings under the unanimity rule is that no particular lender is identified as the "small lender" of the previous section *ex ante*. When a particular lender can seek conditional rents, the expected value of the rent can be priced into the loans and renegotiation-proof constrained efficient equilibria are possible. In the bond restructuring case, the winner of the war of attrition between potential holdouts gets the rent, but these property rights are not assigned a priori. The possibility of inefficient equilibria in the rent-seeking game implies that initial lending and social surplus under the unanimity rule can be lower than in the efficient self-enforcing equilibria used as a benchmark.

Renegotiation with collective action clauses

Bonds issued in the UK include provisions that allow the formation of a bondholder assembly to propose modifications to the original terms of the bonds, subject to the consent of a qualified majority of the bondholders. These collective action clauses often include collective representation, majority consent to revisions of any clauses and equal sharing provisions so that all bondholders share equally in ultimate repayments. Such collective action clauses can eliminate the possibility of the rent-seeking wars of attrition in restructurings that are possible under the unanimous consent rule in the complete information model of sovereign debt. The argument is that competition between bondholders to be the pivotal voter can be used to eliminate the rent.

Suppose that the covenants to a particular bond issue specify that a qualified majority hold three-quarters of the outstanding bonds. When the debt burden exceeds the total surplus in an efficient equilibrium by less than one-quarter of the debt, only a small vulture fund holding fewer than one-quarter of the bonds could hold out for full repayment. Such a lender cannot realise a higher surplus from holding out than from agreeing to a

proportionate share of restructured bonds, simply because the lender's voting shares are not necessary to conclude a renegotiation. The rent can only be gained by being the last to join the qualified majority. If there are many small bondholders, then competition among bondholders to be the decision member of the qualified majority should dissipate any such potential rents.

Now, consider another potential vulture fund strategy. Investors purchase one-quarter plus one of the bonds and seek to negotiate a favourable outcome with the other bondholders. If the other bondholders act collectively, then there are two equally senior creditors. If the solution to the condition for a "sufficiently small" creditor given by x in the equation,

$$\Pi_t - xR_t = e^{-\delta\Delta t}(1-x)\Pi_t,$$

is less than one-quarter, then the new fund can gain for its members by renegotiating together with the majority. There is no gain from forming a minority coalition. Another outcome is that the remaining bondholders do not act collectively. In this case the best that the prospective vulture fund can do is build a qualified majority itself.

Under the collective action clause, bondholders have an incentive to restructure the debt as soon as it exceeds the surplus that lenders can assure themselves in the highest income state in an efficient self-enforcing equilibrium. The conclusion is that renegotiation to the efficient frontier is mutually beneficial under collective action clauses as long as the size of a potentially profitable holdout coalition is less than the complement of a qualified majority. Whether such renegotiations occur will depend upon whether there are costs of renegotiation, bargaining and co-ordination between bondholders that inhibit the formation of a qualified majority.

Bondholder committees versus aggregation

Proposals for a sovereign debt restructuring mechanism (SDRM) respond to the holdout problem and potential co-ordination problems between creditors. It is implicit in such proposals is that all bond claims against a sovereign debtor need to be aggregated to allow renegotiation. Unless an international bankruptcy tribunal interferes with the sovereign immunity of debtor countries or the ability of creditors to make net resource transfers voluntarily, it might not increase efficiency over collective action clauses under complete information. Suppose that there are many bond issues in default and all have collective action clauses. If a bondholders' committee consisting of representatives of the qualified majorities of each bond issue can be formed or exists as a standing body (Eichengreen and Porter (1995)), aggregation under a formal tribunal may be unnecessary. If none of the bond issues is such a small fraction of the total debt that its holders can unilaterally hold out, then mutually beneficial renegotiation to an efficient self-enforcing equilibrium should be possible. Frequently,

government debt is held in a large number of outstanding bond issues, so that this condition is not met. The analysis, however, shows that there are welfare gains from including a majority action clause in a single bond issue *ex ante*. The logic applies equally well to the adoption of a clause that allows the restructuring of bonds by a qualified majority of the holders of a sufficiently large majority of the outstanding debt. This clause would specify, for example, that a three-quarters majority of the holders of all bonds is needed to restructure the lot, rather than a three-quarters majority of the holders of each issue. Such a super-collective action clause would eliminate the coordination problem among the representatives of the qualified majorities of each bond issued under UK governing law (by eliminating the representatives).

13.5 Extensions

The model of sovereign debt renegotiation used in this chapter assumes that debtor income is observed by the lenders. This leads to efficient self-enforcing equilibria that are implementable using state-contingent contracts. An alternative approach is to assume that lenders never observe borrower income but that the distribution of borrower income is common knowledge. Thomas and Worrall (1990) analyse a model of consumption smoothing with one-sided self-enforcement (binding on the risk-neutral lender) and show that perfect equilibria exist when self-enforcement constraints bind on both sides of the market (they do not derive properties of self-enforcing equilibria).

The assumption that the borrower's income is private information can be added to the model of Kletzer and Wright (2000) with a continuum of income states between y^1 and y^N. In this case, the efficient perfect equilibria can be implemented using standard bond contracts with non-contingent repayments when the sovereign immunity and participation constraints do not bind for the borrower and lenders, respectively. The change in the borrower's debt level falls as previous period income rises. The debt level rises in low income states. As the debt level rises, the borrower's sovereign immunity constraint will eventually bind with positive probability in the next period. There will be an upper bound for the expected present value of the debt (an endogenous credit limit). This is reached whenever the sovereign immunity constraint binds. When the upper bound on debt is reached, the borrower's sovereign immunity constraint binds for incomes below a threshold level, $\hat{y} > y^1$. In these states, the debt will be renegotiated in equilibrium. Under this type of asymmetric information, the borrower pays a portion of the accumulated debt and realises positive future expected surplus just to compensate for the opportunity cost of a positive repayment. In contrast with the perfect information model, the borrower does not receive a net transfer (equivalently, a new loan) in renegotiation. The lenders capture all of the surplus from the continuation of the relationship in low debtor income states. This

implies that all of the arguments regarding renegotiation under the stylised interpretation of the two governing laws are robust to this type of informational asymmetry.[13]

13.6 Conclusion

A benchmark model of sovereign debt renegotiation is used to discuss the effects of exogenously enforced rights of creditors vis-à-vis other creditors on debt renegotiation. These seniority rights represent the ability of bondholders to assert their contractual rights against infringement by other bondholders, either holders of the same issues or subsequent lenders. The inclusion of seniority privileges also introduces a role for provisions within non-contingent debt contracts that enable or inhibit debt renegotiation. The model allows a comparison of the potential welfare effects of US and UK governing law for sovereign bond issues on debt restructuring with these simple explicit restrictions on loan contracts. The model does not incorporate any additional or implicit institutional assumptions that influence resource allocation. The welfare comparisons, however, are idealised benchmark ones. They do not incorporate any costs of renegotiation or barriers to co-ordination among creditors.

The comparisons do reveal that, absent any costs of renegotiation, unanimity rules representing the application of US governing law inhibit efficient renegotiation in the model economy, while collective action clauses do not. Collective action clauses can eliminate the possibility of socially costly delays in renegotiation that arise from the rent-seeking behaviour of individual bondholders under unanimity clauses. Inefficient renegotiation reduces capital flows and debtor welfare. The approach taken makes a welfare argument for collective action clauses over unanimity clauses.

In the absence of any barriers to negotiation between the representatives of holders of different bond issues, the mutual gains to creditors from debt renegotiation imply that collective action clauses are all that are needed to achieve a constrained efficient equilibrium. This suggests that a prospective international bankruptcy tribunal under which all of a borrower's debts are restructured together may be overkill. Collective action clauses and the incentives for bondholders to send representatives to a bondholders' council should suffice.

However, this conclusion is sensitive to the costs of collective action across bond issues and across creditor jurisdictions. It does not address any difficulties for co-ordination of creditor rights across creditor country borders. It is hard to envision that bargaining costs would favour unanimity clauses over qualified majority clauses, but such costs could render collective action clauses insufficient for achieving efficient debt restructuring that would support a more efficient allocation of resources. A resolution of this problem might be found in the adoption of majority action clauses allowing a qualified majority of the holders of all bonds to agree to a restructuring.

Notes

1 I thank Prasanna Gai, Andrew Haldane, Simon Hayes and Adrian Penalver for their comments on the chapter; I also thank my discussants, Willem Buiter and Matthew Fisher, for their extensive, thoughtful and useful comments.
2 A very useful overview of collective action clauses is given in Bank of England (2000), pp. 142–151.
3 This property is shared by other models of sovereign debt with renegotiation. For example, the model of repeated bargaining over trade sanctions by Bulow and Rogoff (1989a). See also models by Atkeson (1991), Cole and Kehoe (1998) and Fernandez and Rosenthal (1990).
4 Eaton and Kletzer (2000) study the dynamics of debt and renegotiation when the discount rates of a lender and borrower differ. Wright (2001) extends the demonstration of self-enforcement of debt relationships in Kletzer and Wright (2000) to allow for debtor savings.
5 This statement is true for any number of states and for random income that is Markovian but not identically and independently distributed.
6 It is important to note that the repayment in any state is non-negative as a consequence of the lenders' participation constraints. No lender can be obligated to accept a net repayment that yields negative surplus looking forward. Under the simple loan contracts, lender surplus equals R_t so that renegotiated repayments are restricted to be non-negative. This restriction, and the participation constraint that leads to it, contrasts sharply with the assumptions made by Bulow and Rogoff (1989b). For an elaboration, see Kletzer and Wright (2000).
7 Wright (2001) considers exogenously enforced lender commitment in this framework. He shows that lender consortia can be sustained (in coalition-proof equilibria) that allow an efficient perfect equilibrium to exist.
8 Free entry by lenders in the initial contract yields all the gains from trade to the borrower but is not necessary for efficiency.
9 This does not mean that cross default clauses are superfluous even in this stripped-down model economy. Cross default clauses allow creditors to demand repayment of an outstanding debt even if it is not yet due under the original repayment terms. This allows debts of different maturities to have comparable seniority contingent on debtor behaviour.
10 This is an upper bound. The maximum payment that the debtor will make to lender A will leave him or her with just zero surplus.
11 Simple models of the war of attrition are explained in Fudenberg and Tirole (1991) in sections 4.5.2, 6.5 and 6.7.1.
12 Kletzer (1989) and Wells (1993) show how incomplete information regarding debtor preferences can lead to strategic delay in debt renegotiations and suggest that such delays may provide a role for policy intervention.
13 This paragraph describes the author's work in progress. The technical details of the asymmetric information version leave the more stripped-down benchmark more accessible to readers. The advantage of an incomplete information model is that it generates a contract form that may be more convincing to readers. However, adding or removing the information restriction has no effect on the qualitative arguments made in this chapter.

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14 Comments on "Sovereign bond restructuring: collective action clauses and official crisis intervention"

Willem H. Buiter[1]

Chapter 13, by Kletzer, is excellent. It brings rigorous economic theory to bear on an important practical policy issue and reaches conclusions that make sense. But I will concentrate my remarks on the issues where Kletzer and I appear to be in less than complete agreement.

The formal model has a number of familiar features as well as a few non-standard ones. A single, infinite-lived, risk-averse borrower with time-additive preferences and a random, perishable endowment faces a large number (probably a continuum) of infinite-lived risk-neutral lenders. The borrower's objective is to maximise expected utility of lifetime consumption. There is no third-party enforcement of contracts (contingent or simple). There is uncertainty, but no asymmetric information. The fallback position of the borrower and the lenders is financial autarky. It is not clear to me whether it might ever be individually rational for the borrower to become a lender. Is it ever rational for him or her to build up a stock of financial assets which can then be run up or down to buffer endowment shocks?

The strict concavity of his or her period utility function implies that the borrower is interested in two kinds of consumption smoothing: (1) consumption smoothing over time (intertemporal consumption smoothing); and (2) consumption smoothing across states of nature (diversifying consumption risk). And the borrower fails to achieve the command optimum because he or she labours under two handicaps: (1) an inability to commit his or her future actions; and (2) he or she is restricted to simple (non-contingent) debt contracts.

Third-party enforcement or some other ad hoc commitment mechanism is required to solve the commitment problem. Simple, multi-period debt contracts with third-party enforcement permit full consumption smoothing over time, but not across states of nature. Renegotiation can be used to mitigate the restriction on risk sharing caused by the assumption that only simple debt contracts can be used, but without third-party enforcement it will not resolve inefficiencies due to lack of commitment.

My main disagreement with Chapter 13 (or rather the main reason why the conclusions of the chapter cannot be applied directly to real-world renegotiation of sovereign debt contracts) is that the set-up of the model, and therefore its conclusions, are too "Coasian".

Kletzer takes as his welfare benchmark the efficient, perfect (roughly time-consistent) equilibria of the (implied) infinitely repeated game in which any agent (borrower or lender) can make a non-negative transfer of resources less than or equal to the amount of his or her current endowment.[2] He shows that the efficient self-enforcing equilibrium can be implemented using one-period state-contingent contracts, with free entry and exit by lenders. He then restricts his welfare comparisons to the class of self-enforcing contingent contracts. That is, in his benchmark world, there is still no third-party enforcement, but contracts can be made contingent on realisations of mutually observable random variables. Note that this welfare benchmark is a restricted, second-best welfare benchmark, as only the efficient equilibria among the class of perfect equilibria are considered. It is easily established that restricting contracts to be non-contingent does not in general permit (constrained) efficient perfect equilibria to be supported. For simple (non-contingent) debt contracts to support any equilibrium, we must structure the support of the endowment distribution and the permissible contracts to rule out "bankruptcy" or "default" (when the amount due on the debt exceeds the full realisation of the borrower's random endowment).

This restriction eliminates the scope for welfare improvements through third-party enforcement. Third-party enforcement is key to the viability of welfare enhancing contracts when the continuation value of the contract becomes negative for at least one of the parties. Third-party enforcement is welfare enhancing primarily because it resolves intertemporal commitment problems, not because it is essential for dealing with risk and uncertainty.

Kletzer then considers a different kind of repeated game using the same basic building blocks. Instead of single-period state-contingent contracts he considers simple (non-contingent) one-period debt contacts plus the possibility each period, after the uncertain random endowment of that period has been revealed to all parties, of renegotiation. Since the possibility of renegotiation effectively introduces state contingency into the contract, it is not too surprising that the combination of one-period non-contingent debt contracts plus unrestricted and costless renegotiation each period supports the same (constrained) efficient perfect equilibrium as the single-period contingent contracts.

Kletzer then looks at how different kinds of restrictions on the ability to renegotiate incomplete contracts affects welfare. These restrictions can be interpreted as stylised versions of the bond covenants that bind creditors together and that are enforced by creditor country governments. They are (a) enforcement of seniority rights among creditors and (b) collective action clauses.

The first proposition established is that renegotiation with seniority rights of simple loan contracts supports a (constrained) efficient perfect equilibrium. It is not necessarily true that any (constrained) efficient perfect equilibrium can be attainable through renegotiation of simple loan

contracts when seniority rights are enforced. This makes sense, since seniority rights are a restriction on the capacity to renegotiate. If I understand it correctly, this means that seniority rights do not necessarily hurt, but they do not help either. Like the earlier result that renegotiation of simple contracts supports constrained efficient equilibria, this proposition requires some strong "Coasian" assumptions, in particular common knowledge in the repeated game. Every lender observes the obligations of the borrower to every other lender and the actions of each lender, and also knows the preferences and endowments of all participants. Negotiation does not require time or other scarce resources.

The second proposition established in Chapter 13 is that renegotiation under unanimous consent can be costly: holdouts or vulture funds (such as Elliott associates) can cause inefficient perfect equilibria to be supported.

The third result concerns the efficiency of renegotiation with collective action clauses (CACs); that is, renegotiation under qualified majority or supermajority consent. It is shown that CACs can eliminate the costly wars of attrition in restructuring that can occur under unanimous consent. The intuition offered for this result is that competition between creditors (bondholders) to be the pivotal voter can be used to eliminate the rent to holdouts. I do not understand this. What determines the size of the smallest qualified majority to support an efficient perfect equilibrium? Does any qualified majority rule always support an efficient perfect equilibrium? Does any qualified majority rule support *only* efficient perfect equilibria? Are all efficient perfect equilibria always supported by any qualified majority rule? It would be helpful to be given insight into these questions.

The final proposition is that aggregation (the requirement that all bond claims be renegotiated together, and presumably on the same terms) may (or will) not increase efficiency over and beyond what can be achieved with just collective action clauses. Again, the assumption of common knowledge is central to this result. This proposition is intriguing, because it suggests that the key reform of the international financial architecture that should be pursued is CACs rather than the setting up of a sovereign debt workout tribunal such as the Sovereign Debt Restructuring Mechanism recently proposed by Anne Krueger.[3]

There is, however, some distance between the model and a reasonable simulacrum of contemporary interactions between sovereign borrowers and private creditors. The Coasian core of the model is recognised very clearly by Kletzer:

> In the bare-bones institutional structure of the consumption smoothing model of sovereign debt, any mutual beneficial renegotiation is possible after any history of the relationship between the borrower and lenders. Nothing impedes a mutually beneficial renegotiation.
>
> (Chapter 13, p. 240)

The model explicitly ignores all constraints on negotiation, let alone on period-by-period renegotiation. Forcing all reluctant creditors into a single corral with the debtor may be easier than having a large number of simultaneous negotiations going on all of the time. Thus the model overstates what renegotiation is likely to be able to achieve in the real world. Third-party enforcement probably has more going for it than the model can handle.

The model also ignores the gains from third-party enforcement to the extent that third-party enforcement resolves or mitigates the commitment problem. The efficient perfect equilibria are only constrained efficient, that is, they are inefficient relative to a model of contingent contracts (or renegotiation) with commitment. The command-optimum can only be supported by a credible commitment to contingent response rules, rather like the optimal "innovation contingent" but not time-consistent decision rules I analysed in a totally different context a long time ago (Buiter 1981). Third-party enforcement (or the incurable honesty of all players) is necessary to support fully efficient equilibria.

Chapter 13 represents a useful and interesting benchmark. Absorbing its message was for me rather like studying the First and Second Welfare Theorems: the real understanding I gained came from pondering what had been left out of the model, and what difference these simplifying features were likely to make.

I am not yet willing to give up on the importance of third-party (exogenous) enforcement of contracts as a precondition for efficient economic arrangements. The state or its supranational counterpart has no effective substitutes, be it the invisible hand or the inaudible negotiator.

Notes

1 The views and opinions expressed are those of the author. They do not necessarily reflect the views and opinions of the European Bank for Reconstruction and Development.
2 This will not in general be a command optimum, because a command optimum allocation will in general require commitment, that is, it will not be time-consistent or perfect.
3 The SDRM would be an IMF-on-steriods that can order debt service standstills, adjudicate disputes between a sovereign borrower and all its lenders and impose far-reaching conditionality on the borrower.

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Part V

Statutory resolution of financial crises

15 Standstills and an international bankruptcy court

Jonathan Eaton[1]

15.1 Introduction

Recent proposals have called for a sovereign debt restructuring mechanism (SDRM) to adjudicate disputes between sovereign debtors and their creditors. The goal is to develop an explicit framework for dealing with troubled loans to sovereign debtors, which up to this point the financial community has dealt with on a largely ad hoc basis. The goal is to mitigate the inefficiencies associated with default, in much the same way as domestic bankruptcy procedures are intended to mitigate the consequences of default by private entities within a given jurisdiction.[2] As things stand, to the extent that creditors have any legal recourse when faced with sovereign default, they have had to work within the judicial systems of their own localities. An international bankruptcy mechanism could, in principle, mitigate four deficiencies of the status quo.

First, even in the most sophisticated financial centres, legal precedent and codified law provide only very limited guidance about how to deal with sovereign debt. US law, for example, contains detailed provisions and provides rich precedent about how to deal with corporations, individuals, and state and local governments in default, but has little to say about how to deal with foreign governments.

Second, by virtue of the sovereignty of the debtor, these legal systems have little leverage over sovereign debtors anyway. They are also likely to lack jurisdiction over other creditors as well. Hence national legal systems have little ability to reorganise debts, seize assets or impose new management, the standard remedies in the case of domestic bankruptcy.

Third, to the extent that these legal systems impose decisions on sovereigns in default, debtors may see them as biased in favour of creditors who, since they are often a constituent force in the creditor nation, may be expected to have more political clout.

Fourth, the legal systems of some potential creditor countries (e.g. the United States and United Kingdom) have much more experience in dealing with sovereign debt than others. The status quo may favour potential private lenders from these countries relative to others, reducing global competition in the provision of loans.

Specific proposals for an SDRM have varied in terms of the extent to which they entail departures from the status quo. Less extreme versions seem largely to be means of enabling more co-ordination among lenders, or enabling the majority of lenders to impose their will on a resistant minority. More extreme ones seem to envision the establishment of an international bankruptcy court with the statutory ability to impose debt restructuring on majority lenders (if possibly to their ultimate benefit). This chapter addresses the costs and benefits of a stronger SDRM that acts like a bankruptcy court, in particular with the power to impose a "stand-still" that prevents creditors from trying to extract payment while debts are in the process of being restructured. Such an institution has the potential to address all four of the deficiencies with the status quo listed above.

First, establishing an international bankruptcy court would require some explicit initial statement of its objectives and procedures, so reducing the murkiness surrounding the legal status of sovereign debt. The clarification of the legal environment would grow over time as the court's decisions established precedent. Second, while an international bankruptcy court would never have the same power over a sovereign debtor as a local court has over an entity within its own jurisdiction, it would have a much better ability to enforce a unified response from the lender community as a whole, which usually spans many national borders. Third, the administration of the court would presumably involve representation from both the creditor and debtor nations. Hence the court would have a much greater claim to legitimacy among debtors. Fourth, creditors from all lending countries would presumably have the same footing at such a court. Creditors from non-financial centres would then not have to bear the disproportionate expense of litigating from abroad.

For these reasons, the establishment of such an entity would seem to make a lot of sense. But there is a huge gap between acknowledging that such an institution is a good idea in principle and coming up with a design for how it would function in practice. The structures surrounding domestic bankruptcy provide only very limited guidance, largely because a court dealing with sovereign debt has such limited powers of enforcement compared with one dealing with local bankruptcy.[3]

The profession has a long way to go before it can come up with a reliable blueprint for the design of an international bankruptcy court. A particular concern is that a court might reduce what a creditor could hope to recover from his or her initial loan. Given the terms under which the sovereign had borrowed, reducing the cost of default is of course to the debtor's benefit. Once the new mechanism had become part of the financial landscape, however, credit terms would adjust to take into account the higher anticipated loss, possibly to the overall detriment of borrowing sovereigns.

To understand these issues requires asking what functions a bankruptcy court serves domestically, the topic of the next section. Section 15.3 presents a bare-bones model of how a bankruptcy system, by invoking a

standstill, can prevent costly liquidation. Section 15.4 discusses the incentives that exist for a sovereign to repay in the first place, which differ from those in a domestic context. Section 15.5 introduces repayment incentive considerations into the model of bankruptcy developed in section 15.3, with section 15.6 showing how an international bankruptcy court could make things worse. In section 15.7 I turn to a couple of additional issues: official debt and private creditor market power. Section 15.8 concludes with a couple of very speculative thoughts about mechanisms that a court or other international financial institutions might employ to reduce the potential for financial crisis.

15.2 What do bankruptcy courts do domestically?

How can economic theory explain the existence of a bankruptcy court in the first place, setting international considerations aside? Why, in a domestic context, do governments get involved in disputes among private parties?

One answer is that the court, as an arm of government, having a monopoly on the legitimate use of force, can enforce a decision more effectively than any private entity. By entering into a contract in the first place, a party subjects itself to the possibility of a court-imposed settlement down the road. The court's enforcement power thus allows parties to contracts to make more credible commitments.

A second answer is that parties to a contract may have different information, giving rise to disagreement. A court, as a presumably disinterested party with subpoena power, can access and examine the relevant information to make a judgment that is both well-informed and unbiased.

A third answer is that private parties may have entered into incomplete contracts which, for unforeseen reasons, turn out to require actions that may not be in society's interest, or even in the interests of any of the parties to the contract. A party may appeal to the court to correct the situation.

A particular aspect of this third explanation appears to be driving the initiative to establish an official SDRM: co-ordination problems among lenders, or rogue minority lenders, prevent a restructuring of debts that would be beneficial to both the debtor and the majority of creditors. Section 15.3 presents a stripped down version of a workhorse model that illustrates this potential co-ordination problem.

15.3 Contract structure and market failure

An important feature of financial relationships is the potential for creditors to impose damage on debtors by withdrawing credit. A withdrawal of credit, for example, may keep the debtor from completing a profitable undertaking. This feature was the basis of the classic Diamond and Dybvig

(1983) paper on bank runs. In their model, a bank run leads to the abandonment of investments whose proceeds would have backed deposits. If a bank run occurs, all deposits cannot be paid off. Owing to the sequential servicing property of bank deposits, every depositor would want to withdraw his or her deposits as soon as possible knowing that the bank would not be able to honour the deposits of those at the end of the queue. An equilibrium outcome is for depositors to run to the bank even though there was nothing fundamentally wrong with the loans they financed. The run causes profitable investment opportunities to be abandoned. A run in their model is bad for both borrowers and most lenders.[4]

Sovereign debt, of course, is not formally subject to the same sequential servicing as bank deposits. But several papers in the 1980s, for example Cohen and Sachs (1982), Eaton (1987) and Krugman (1988), argued that sovereign debt nevertheless generated a very similar contract design which resulted in a "country run" that could make everyone worse off.

A very simplified version of the argument can be put in a three-period model. In the first period, called period 0, a country borrows some amount, L, that, if invested through period 2, will generate an output, βL^{α}, in that period. If loans are withdrawn in period 1, however, output in period 2 will be at some lower level, which for simplicity is set to 0. In the meantime, in period 1 the country has resources in amount y to repay creditors. To make the problem interesting we need to assume that y could fall below $(1+r)L$, where r is the safe market interest rate for one period. While y could also depend on the loan amount L, it is simpler to assume that it does not. An efficient outcome would involve a loan of $L^* = (\alpha\beta/R^2)^{1/(1-\alpha)}$, where $R = 1 + r$, with the loan in place for two periods.

A contract that would sustain this outcome would be a loan in an amount L^* at interest rate r to be repaid at the end of period 2. If potential lenders compete to provide such a loan, the country could then enter into an exclusive arrangement with this lender, ensuring the efficient outcome. The loan could either be a two-period loan or a one-period loan that the lender would commit (and want) to rollover into the second period.

However, for various reasons (one of which I will get into in section 15.4) no single lender typically provides all of a sovereign's funds. A debtor usually has debts outstanding to multiple lenders. With multiple lenders an equilibrium outcome has only one-period loans with the potential for lenders to demand repayment after the first period.[5] Say that N lenders had each extended one-period loans in period 0 in some (say identical) amount l at some rate r'. In period 1, one of the lenders decides not to renew the loan. Unless other lenders were willing to take over the loan, lending would be insufficient to sustain any positive output in the second period. The country would have to default for sure. The best response for other lenders is not to renew their loans either. If $y < (1+r')Nl$ then, with sequential repayment of debt, only the first creditors demanding payment get anything. The consequence is a country run analogous to a

Diamond–Dybvig bank run: an inefficient loss of output for the country and default on at least a fraction of the country's debt.

In the Diamond–Dybvig story there is a potential liquidity crisis that leads to insolvency. In period 1, the sovereign does not have enough current cash y to pay its current debts even though, if creditors are patient, by period 2 it will have enough cash to pay its debts. But an unhappy resolution of the liquidity crisis in period 1, by destroying period 2 output, generates self-fulfilling insolvency.

Moreover, the potential for a run has implications for the terms on which loans are available in the first place. As in Diamond and Dybvig, we can assign a "sunspot" probability to the run outcome. Say that investors anticipate the probability that a run *will not* occur is ω. For lending an amount L at rate r' to have an expected present value of L, then, requires:

$$L = \frac{(1-\omega)y}{R} + \frac{\omega(R')^2 L}{R^2}$$

which means that the country faces an upward sloping inverse loan supply curve:

$$R' = \sqrt{\frac{R^2 - (1-\omega)Ry/L}{\omega}} > R. \tag{15.1}$$

Facing this loan supply curve, the country will optimally want to borrow only an amount $L = (\omega\alpha\beta/R^2)^{1/(1-\alpha)} < L^*$. Hence the possibility of a run incurs two different costs. First, if the run occurs, output is destroyed. But even if a run does not occur, less is invested, so output is lower.

While the Diamond–Dybvig framework assumes that the borrower was fundamentally sound in that it could ultimately repay its loans if credit was not withdrawn, the argument would also apply if the borrower were insolvent, but continued credit would allow at least some return to eventually be realised. Even if the country were insolvent in the best of circumstances, it could well be that there would be more for everyone if credit were extended through period 2. Nevertheless, fearing that others would not extend credit, or fearing that they would fare worse in the sharing process if they did, individual creditors might withdraw. In fact, news of potential insolvency can quite plausibly generate a run as creditors hope to get more by withdrawing early than they expect to recover in any sharing of the final proceeds.

The simple story points to a role for an international bankruptcy court. In the event of a run the court could call for a "standstill", prohibiting even short-term lenders from liquidating their loans in period 1. It can use its police power to prevent collection (or, alternatively, prevent other judicial bodies from using their police power to enforce repayment) in period 1. The court can thus prevent a run from destroying period 2 output. Moreover, the existence of the court would improve the terms on which

sovereigns could borrow, since creditors would no longer have to worry about a loss on their loans because of a run.

The story would seem to make the case for an international bankruptcy court that could impose standstills to prevent such "country runs", just as domestic bankruptcy courts are supposed to prevent costly liquidations of firms by creditors rushing to exit. But another feature of sovereign debt suggests that such a bankruptcy court might run into problems.

15.4 Powers of enforcement: why do sovereign debtors pay?

In one important respect, an international bankruptcy court would act in a very different environment from a domestic counterpart. As an arm of the government, a domestic court can impose a settlement on creditors and debtors, with the threat of punishment. But what influence would a court have over a sovereign in default? It would not be totally powerless for the same reason that creditors themselves have enough influence over sovereign debtors to get them to repay at least some debt at least some of the time.

The nature of this influence has been the subject of much discussion. During the sovereign debt crises of the 1980s, academic researchers devoted a considerable amount of attention to understanding the incentives that sovereign debtors have to repay their debt.[6] In a domestic context the incentives are quite obvious: an individual debtor in default can have his or her assets seized. A corporation is subject to receivership or liquidation. But in an international context an external judicial authority can legitimately seize only those assets that the sovereign has abroad, which typically fall very short of the amount of debt itself. Hence there is little collateral for these debts.

What creditors can do is to disrupt the external intra and intertemporal trade of the sovereign debtor, forcing it towards autarky. To some extent the legal system in creditor countries makes this reduction in trade happen automatically in the case of default. The presence of unpaid debts in the creditor community makes the debtor an unattractive client for any potential new lender. The senior creditor could typically attach payments to any subsequent lender, rendering making new loans to a sovereign in default a bad idea. Moreover, funds of its own that a sovereign in default might attempt to invest abroad could in many circumstances be attached by creditors. Not only would these interferences in the credit market hinder a country's ability to trade intertemporally. Given the pervasive use of credit in international trade, they would tend to reduce intratemporal trade too.

The threat of a diminished ability to trade can provide a strong motivation to service debt, but only up to a point. Hence how much a sovereign debtor is willing to repay may be quite limited. This limited incentive to repay in turn reduces the sovereign's ability to borrow in the first place.

As it stands, the sanctions suffered by countries in default are the ad hoc outcome of a complex set of legal impediments and a general loss of the country's reputation in credit markets.[7] In some cases default might be for reasons that are beyond the control of the sovereign, in which case sanctions may not be justified. One role that an international bankruptcy court could play is in clarifying the extent of the sovereign's malfeasance in a default, and applying penalties appropriately. Where the sovereign is clearly at fault, the court may be able to co-ordinate sanctions more effectively than under the current system. Tougher sanctions in response to malfeasance that leads to default is ultimately in the interests of sovereign countries, as it enhances their access to credit. At the same time, the court could reduce the suffering experienced by sovereigns whose default it deems to be the consequence of circumstances beyond the sovereign's control.

An important difference between the sanctions imposed on private debtors in default domestically and those imposed on sovereigns is that, in a domestic context, sanctions often benefit creditors (as when they get to seize the debtor's assets) while having relatively little effect on third parties. In the case of sovereign debt, however, since the gains from trade are two-way, the loss of trade incumbent on default does little to benefit creditors themselves and may substantially harm third parties, including entities in creditor countries. This point has implications for the involvement of official lenders discussed in section 15.6 below.

15.5 Imperfect information and monitoring

How can we introduce potential enforcement problems into the runs model developed above? Even if profitable investment opportunities are exploited, the sovereign may not have the incentive to repay loans large enough to exploit them at the optimal level derived above. Specifically, following Kletzer (1984), say with probability π, the sanctions facing the debtor if it defaults are strong enough to elicit a payment P^H, while with remaining probability they can elicit a payment of at most $P^L < P^H$. To make the problem interesting, assume that $P^L < R^2 L^*$, so that the debtor may not have an incentive to repay the amount it would be optimal to borrow in the absence of any run or repayment problem.

With π sufficiently low, the best outcome now would be for the sovereign to borrow only an amount P^L/R^2, which it would repay under any circumstances. (Assume for now that y is high enough so that period 1 liquidity is never a problem.) Hence competitive lenders would be willing to lend this amount at the safe interest rate if they knew for sure that the sovereign was not going to borrow any more. If the sovereign does borrow more, however, its obligations will exceed what it would be willing to repay if sanctions are small, so a partial default occurs with probability π.

In fact, the sovereign will want to borrow more. If lenders cannot monitor and limit the borrower's total debt to P^L/R^2 then the lender has an

incentive to go out and borrow more, which it can do if it offers a risk premium to compensate for the probability of default. In the absence of seniority provisions that ensure those who lend the initial P^L/R^2 get paid off first, the equilibrium is one in which lenders, knowing that the sovereign will borrow more than P^L/R^2, will charge a risk premium. (Partly because of the information problem discussed below, seniority does not have as much meaning in sovereign lending as it does for domestic debt.)

How large will this risk premium be? Say that $P^H > R^2L^*$, so that the country would be willing to repay the efficient level of investment if sanctions are high enough. Absent the possibility of any premature liquidation of loans (to be reintroduced in section 15.6), loans will be available at a rate r' solving:

$$R' = \sqrt{\frac{R^2}{\pi}} > R \tag{15.2}$$

where again $R = 1 + r$ and $R' = 1 + r'$. Here we are assuming that, if sanctions are low, the borrower defaults and the lenders get nothing. They cannot organise to get repaid at least P^L.

There is an interest rate premium, as when there is the possibility of a run. A difference, however, is that the sovereign now has an incentive to borrow the efficient loan amount L^* derived above. While the interest rate is higher to adjust for the probability of default, the borrower does not pay if it defaults, so the expected interest cost is r. Unlike the case of a run, however, which destroys capital, with default capital remains in place. Nevertheless, as Kletzer demonstrates, the borrower can be worse off when it has unlimited access to capital at the risky interest rate than when it is rationed at the safe one, as can be shown by verifying that the inequality:

$$\beta(L^*)^\alpha - R^2L^* - (1-\pi)P^L < \beta(P^L/R^2)^\alpha - P^L$$

is easy to satisfy. Hence a regime with rationing can dominate one with unrestricted lending, even though less is lent and invested.

But rationing requires that creditors can monitor a sovereign's debt. A key lesson of Kletzer's paper is the importance of timely data on sovereign debt for the functioning of the markets. With default risk, prices alone are not sufficient signals of market conditions to ensure efficient participation. In this example a superior equilibrium can emerge if market participants can also observe the total amount that a sovereign has borrowed.[8]

15.6 Liquidity or insolvency: how can a standstill go wrong?

Combining the potential for default with the possibility of a run shows how a standstill need not necessarily provide a Pareto improvement, or

even an improvement in efficiency, if creditors know more about the debtor's situation than the court. Say that in period 1 creditors learn that default in period 2 is more likely than they thought when they initially extended loans in period 0. Their best response might be to liquidate loans in period 1, retrieving at least the liquidation value y. If the court, perceiving this liquidation as a run, calls a standstill, creditors are forced to bear the ultimate pain of default in period 2.

From the standpoint of period 1, the standstill is in the debtor country's interest. Credit is already outstanding and the standstill preserves output in period 2. But from the perspective of period 0, creditors, anticipating that a bankruptcy court will prevent them from withdrawing if things go bad, might extend less credit in the first place, ultimately to the detriment of the sovereign.

To work through one specific example, say that in period 1 creditors learn for sure whether or not the cost of default for the debtor will be P^H or P^L, and can liquidate the loan if they anticipate default in period 2, thereby obtaining the liquidation value y. Reintroduce the possibility of a groundless run from section 15.3, occurring with probability ω.

As in the previous section, say for now that P^H is so high that we can ignore the incentive constraint on repayment if this penalty is the realised one. Unhampered by the possibility of a standstill, competitive creditors will extend an amount L at an interest rate R' that satisfies the zero expected profit condition:

$$L = \frac{(1-\omega\pi)y}{R} + \omega\pi\frac{(R')^2 L}{R^2}.$$

The borrower faces this loan supply curve knowing both that there is the possibility of a run in period 1 and that if it turns out that it has an incentive to default in period 2, creditors will liquidate loans in period 1. It therefore borrows an amount L to maximise:

$$\omega\pi[\beta L^{\alpha} - (R')^2 L].$$

The amount that it borrows satisfies the condition:

$$\alpha\beta L^{\alpha-1} = R^2/(\omega\pi).$$

Less is invested than would be the case with an unanticipated default or a pure run situation.

Note that period 2 default never actually occurs since creditors liquidate in anticipation. With creditor anticipation, the potential for default has very similar effects to a run. An outside observer may not be able to distinguish between a groundless run and an intentional exit to avoid default.

Now let a bankruptcy court enter the scene which cannot distinguish

between runs and well-motivated exit, and calls a standstill in either case. By imposing standstills the court can prevent runs, but it also prevents creditors from realising the scrap value of the loan when they anticipate default. The competitive loan supply curve now satisfies:

$$L = \pi \frac{(R')^2 L}{R^2}.$$

and creditors charge an interest rate:

$$R' = R\sqrt{\pi}.$$

Since the borrower only pays with probability π, but earns income from investment regardless of whether it defaults or not, it borrows the amount which equates the marginal product of capital to the safe interest rate r. As in the case without potential default, the bankruptcy court increases the amount that the sovereign borrows.

With a standstill preventing creditors from liquidating their loans in period 1, however, with probability $(1 - \pi)$ the sovereign defaults in period 2. While the sovereign benefits from borrowing and investing more, in some states of nature it experiences the cost of default P^L. The net effect on the borrower's welfare from the perspective of period 0 is ambiguous. If P^L and y are both near zero, it is better off with a standstill. In this case the nominal interest rates are similar with and without a potential standstill, but more is invested with a standstill while the consequent risk of default is not costly.

If both P^L and y are large, however, the borrower can be worse off with a standstill arrangement. Since creditors cannot liquidate their investments in the face of default, interest costs are higher. Furthermore, in some situations the borrower goes through the pain of actually defaulting.

Hence, it is ambiguous whether a standstill arrangement benefits the borrower once the effect on initial credit terms are accounted for. However, once loans are outstanding, a standstill always benefits the borrower since the standstill allows it to realise the return to its investment. The model can thus explain why sovereign borrowers may be divided on whether they endorse or oppose the introduction of a formal bankruptcy procedure entailing potential standstills. Countries facing the prospect of servicing a large amount of debt with little prospect for much further lending in the immediate future are going to favour such an arrangement to avoid liquidation of investments in place. Whatever effect the prospect of a standstill had on credit terms is for them a bygone. Countries going to the credit markets to obtain loans for new investments, however, may oppose the idea because of its effect on the terms on which they can borrow, even if they anticipate that a standstill could prevent a costly liquidation down the road.

In this example, whether or not the borrower is better off, the prospect

of a standstill does increase the amount that a country initially borrows. The result is not general, however. Say that the cost of default is never high enough to support repayment of the amount that a country would like to borrow in a world with no potential for runs or default. In our specific example, say that creditors can monitor how much the country borrows and ensure that its total debt service obligations in period 2 are bounded by P^H. Hence they lend an amount L and charge an interest rate R' such that $R'L \leq P^H$. As before, there is the potential for a run, in which case there is nothing available for repayment in period 2, but investors recoup y in period 1. As before, assume that in period 1 creditors learn for sure whether the cost of default in period 2 will be P^H or some lower amount P^L, which here is set to zero. In the second case, they liquidate their loans to receive the scrap value $y < P^H/R$.

Under laissez-faire, competition among lenders enforces a zero expected profit condition and loan amount:

$$L^{LF} = \frac{(1-\omega\pi)y}{R} + \frac{\omega\pi P^H}{R^2}$$

so that lending has a zero expected present value. Note that in this case the amount lent L is constrained by the borrower's willingness to repay P^H and the scrap value y of loans in the event of a run or impending default.

Say that a bankruptcy mechanism is put in place that stops liquidations from occurring. As above, a standstill prevents a run but also paves the way to a default if lenders try to liquidate to recoup what they can. Competition among lenders will enforce a zero profit condition:

$$L^S = \frac{\pi P^H}{R^2}.$$

The potential for a standstill will raise the amount that a competitive credit market will extend to a country if the probability of a run is high, and creditors cannot recoup much through early liquidation. It will also improve credit availability to countries with stronger incentives to repay in the sense of having higher values of π and P^H.[9] This last implication is consistent with Eichengreen and Mody's (2001) finding that collective action clauses, which facilitate loan restructuring, improve access to credit for countries with good credit ratings but hurt them for countries with poor ratings.

15.7 Additional issues

The model as outlined so far ignores some additional issues that make the potential role of standstills and an international bankruptcy court even more difficult to assess. More research is called for on at least two issues.

Official creditors

Little has been done to examine the role of official creditors in a standstill or their standing in an international bankruptcy court. Questions abound. For example, should a debtor continue servicing its official debt during a standstill? What level of seniority would official debts have in their treatment by a bankruptcy court?

Answers to these questions require positing the objective functions of official lenders. They have budget constraints to satisfy but also have broader social and political objectives. Bulow and Rogoff (1988) show how official creditors' concerns about the broader costs of default can lead them to pick up loans to private creditors at concessionary rates. An objective of any new financial architecture should be to avoid the use of public funds from lender countries to pay off loans to private creditors. An advantage of the standstill arrangement is that it might displace official lending as a solution to debt crises, better ensuring that private creditors will not be able to dump bad loans onto the public.

Another issue is the information available to official creditors: are they better or worse informed than their private counterparts? Gai *et al.* (2002) provide a model in which the official sector provides information to the markets about the liquidity available to a sovereign, allowing private creditors to assess the extent to which a default is wilful. Punishment can thus be set accordingly. Spiegel (2002), however, argues that official institutions are inherently less well-informed than their private counterparts, citing the vastly larger research staffs in private sector institutions. He nevertheless shows how official creditors can set up lending schemes that can help avoid crises.

Creditor market power

A second issue that deserves further research is the role of creditor market power. Most of the literature assumes that lenders are perfectly competitive. But the number of financial institutions involved in bank lending and in issuing bonds to sovereign debtors is relatively small, and there appears to be substantial geographic concentration among private creditors to individual sovereign debtors. These circumstances are suggestive of at least some market power.

Even if initial lenders are initially competitive, once loans have been extended, loan covenants may make it difficult for new creditors to enter the picture. Existing creditors may use the opportunity of a rescheduling to tighten the terms of their loans. Ozler (1989), for instance, finds that reschedulings during the 1980s were often good news for the stock market values of the banks involved. She interprets this finding as reflecting the creditor's ability to use the rescheduling to exercise monopoly power in rolling over loans, since at that point the existing creditors could keep new ones out.

What concerns does creditor market power raise for standstills and an international bankruptcy court? A primary concern is that procedures maximise competitive pressure on creditors while, at the same time, ensuring that loan amounts are carefully monitored. Rescheduling should not be an opportunity for creditors to increase the net present value of their debts above their original face value.

15.8 Two speculative thoughts

I conclude with two very speculative suggestions on how a remodelled system might operate. One concerns the declaration of a standstill and the second the financing of official lending.

Borrower declared standstills and an escrow account

A bankruptcy court is an agency to decide when and where to stand still, weighing evidence presented by all parties. As suggested in the extended model above, a standstill might be more beneficial to the sovereign than to its creditors, at least in the short run, although there are circumstances where both could, on average at least, benefit.

An alternative possibility to having a court decide is to give the sovereign the right to declare a standstill unilaterally. A benefit is that a standstill could be called more quickly without potentially costly negotiation. A cost is that the sovereign might use the standstill to reduce the value of the creditors' assets.

One means of mitigating this downside is to require that a portion of a loan be held in escrow at the time that it is extended. The escrow account would be turned over to the sovereign as it repaid its loan according to schedule. Upon declaration of a standstill, however, funds would be paid instead to creditors. Such an account would ensure that the sovereign participated in the cost of a standstill while creditors would receive some release. The amount of the escrow account would need to be large enough to prevent the sovereign from declaring standstills frivolously, while not so large as to create an incentive for lenders to manufacture debt crises in order to get their hands on the escrow accounts.

Financing official finance: an experienced-rated lending tax

As discussed above, lending to sovereigns is typically characterised by the intermingling of official and private finance. An ongoing concern (perhaps unwarranted) is that private lenders and sovereigns might together be benefiting at the expense of official creditors. Since official lending is initially financed with tax revenues from creditor countries, the public in the lender community is financing any (net present value) bail-outs, to the extent that they have actually occurred. Since the private creditors themselves are only a minuscule fraction of the tax base, they have little economic interest

in minimising the cost of any official bail-out. The design of domestic unemployment insurance in many countries suggests another means of financing official intervention that brings private incentives closer into line with the public interest. Official finance could be financed by a tax on sovereign lending by private creditors that is "experienced rated" according to the past performance of both the financial institution and sovereign. Countries or financial institutions that were more frequently involved in bail-outs would find themselves paying more.

15.9 Conclusion

In summary, an international bankruptcy court could do a lot for the operation of international financial markets. There is a lot left to think about in terms of how it should be designed, however. But we should also acknowledge that we will not come up with a perfect design before trying it out. It might be time to move ahead and set one up, acknowledging that experience will create many wrinkles to be ironed out down the road. While the current system may not be completely broke, it is not working so well that we should not try to fix it.

Notes

1 I thank participants at the Bank of England Conference on "The Role of the Official and Private Sectors in Resolving International Financial Crises" and at the meetings of the Latin America and Caribbean Economic Association in Madrid for very helpful comments.

2 The proposal currently on the table is, of course, from Krueger (2001, 2002). Rogoff and Zettelmeyer (2002) comprehensively review the history of the idea, documenting that it has been around for some time.

3 Bolton (2003) provides an excellent overview of bankruptcy law.

4 Much more sophisticated models of financial failure involving creditor coordination problems have been applied to financial crises in emerging markets by Chang and Velasco (2000) and Gale and Vives (2002), among others.

5 In a recent paper, Tirole (2002) shows how short-term lending may elicit better policy from government, thereby enabling it to borrow more.

6 Eaton and Fernandez (1995) provide a survey.

7 Eaton and Gersovitz (1981) showed the extent to which the threat of banishment from international financial markets itself would generate an incentive to repay. Bulow and Rogoff (1988) show that, for an exclusion from capital markets to have any bite, banishment must hinder the sovereign's access to capital markets both as a future lender as well as a future borrower: that is, to suffer any harm from exclusion from capital markets the sovereign must be precluded from turning around and making loans that it can itself enforce. The ability of a harmed creditor to attach any funds that the sovereign attempted to invest abroad would serve the purpose of denying the sovereign access to international investment opportunities. Kletzer and Wright (1999) show how debt can be sustained as the renegotiation-proof equilibrium outcome in the absence of any legal sanctions incumbent upon default.

8 Despite the fact that Kletzer delivered this lesson so long ago, the data situation since then has, if anything, deteriorated. A deficiency more glaring and imme-

diate than the absence of an international bankruptcy court is the absence of a data authority providing timely and accurate information on sovereign debt. While the World Bank and the Bank for International Settlements provide some data on country debt, it is far from comprehensive. The World Bank, in its participation in the HIPC (Highly Indebted Poor Country) initiative to provide very poor countries with relief from official debt, conducts a comprehensive debt inventory. This methodology should be extended to all sovereign debtors and should apply to debts from both official and private sources. Recent financial scandals in the United States resulted in part because accountants were "cooking the books". In the case of sovereign debt, there are hardly any books to cook.

9 This last result follows from the fact that the difference $L^{LF} - L^{S}$ declines in π and P^{H}.

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16 Comments on "Standstills and an international bankruptcy court"

Jeromin Zettelmeyer[1]

Chapter 15 provides a nutshell exposition of both the type of rationale that could justify a bankruptcy court-type institution at the international level, and a potential risk of creating such an institution. It elegantly simplifies, concentrating on the basic logic of the cases for and against. Weighing benefits and risks, Eaton concludes that a bankruptcy mechanism, if executed well, would be a useful addition to the international financial architecture. I agree with this view. He ends with two practical suggestions: first, the idea that the debtor moral hazard problem associated with a bankruptcy court might be reduced by requiring the debtor to make escrow payments that could be seized by creditors in the event of a standstill; and second, a lending tax on private creditors to reduce the moral hazard problem of official bail-outs. I will briefly return to these below.

Perhaps inevitably, simplicity comes at a price. Eaton's approach is to justify an international bankruptcy court as an extension of the idea of payments standstills to prevent "country runs". The link between the two is that, because of debtor moral hazard, it cannot be efficient to allow a debtor to unilaterally declare a standstill – hence the need for a neutral court. This is quite removed from the current policy debate, in which an international insolvency regime is proposed primarily as a way of restructuring unsustainable debt, not preventing self-fulfilling runs. That said, Eaton's country runs could be viewed as symbolic of a larger class of collective action problems that arise in the context of debt restructuring as well as liquidity crises, such as the creditor holdout problem and the underprovision of new financing.

Similarly, the institutional solution suggested by Eaton should probably be viewed as one example among several possible solutions. To the extent that the underlying inefficiency is some kind of co-ordination failure across creditors, as suggested by Eaton, resolving it does not really require an international court. A mechanism which forces the creditors to take decisions collectively will do. For example, the Sovereign Debt Restructuring Mechanism (SDRM) recently proposed by IMF management and staff (IMF 2002b) does not assign much of a role to an international court, but instead gives the power to impose a stay on litigation, adopt a debt restructuring plan, and exempt new financing from the restructuring to the creditors *collectively*.

As far as the main risk of the international bankruptcy idea is concerned, Eaton's chapter again does not reflect the arguments that propel the current debate, but it certainly captures their bottom line. Like many of the critics of a sovereign bankruptcy mechanism, Eaton worries about its potential impact on the cost of capital. In his model, this is a consequence of the difficulty of separating "true liquidity crises", when a standstill is in everyone's interest, from solvency crises, when imposing a standstill can make creditors worse off. In contrast, recent proposals envisage an international bankruptcy mechanism precisely in the context of solvency crises, as a way of facilitating orderly debt restructuring. Moreover, in the IMF's SDRM proposal, the decision-making authority rests with creditors collectively, not with a third party that could decide against their collective interests. Nevertheless, capital costs might rise if the bankruptcy mechanism lowers default costs to the point where debtor incentives are undermined. Again, the argument is different from that developed in Chapter 15, but the consequences are much the same.

This brings me to my main point. Much of the recent debate, including Eaton's contribution, views an international bankruptcy mechanism as entailing both large potential benefits and large risks. Benefits and risks are attributed to the same cause, namely the mechanism's potential to substantially lower default costs. While desirable *ex post*, this could be inefficient *ex ante*, since high default costs may be necessary to maintain good debtor incentives, keep the cost of capital down, and preserve a functioning debt market. I would disagree. In reality, the main problem of an international bankruptcy mechanism as currently debated is not that it would go too far and thus throw the baby (the sovereign debt market) out with the bathwater (high crisis costs). Rather, its main limitation is that it may not go far enough in mitigating default costs *ex post*.

Consider the channels through which an international bankruptcy mechanism might lower crisis costs. The mechanism is designed to forestall a number of creditor collective action problems, including a "rush to the courthouse" that would impede orderly negotiations, free riding during and after the negotiation of debt restructuring agreements, and the underprovision of new financing to the sovereign. These problems – particularly the latter – surely contribute to the costliness of defaults. But they are not the whole story. Recent empirical work suggests that substantial costs are associated with (a) the reduction in trade and trade credit after a debt crisis and (b) the domestic consequences of sovereign defaults – including a banking crisis, a possible breakdown in the payments system, the undermining of property rights and trust in the government, and capital flight (Rose 2002; IMF 2002a). It is not clear how the presence of international bankruptcy procedures would affect the latter. As to the former, a bankruptcy mechanism might lower default costs if the collapse in trade credit has legal triggers, which could be conditioned on whether a default occurred via a recognised international bankruptcy mechanism or not. However, if the reduction in trade credit has to do with a general loss of creditworthiness

(suppliers begin questioning whether the debtor country will pay), it is not obvious that a bankruptcy-like mechanism will lower default costs. This will depend on whether creditworthiness is affected by *how* the default is conducted, rather than the mere act of default.

It follows that, while an international bankruptcy mechanism would remove or reduce some of the inefficiencies in resolving debt crises, it is hardly a miracle cure. At the same time, the chances that an international bankruptcy mechanism will undermine incentives, harm the debt markets and ultimately reduce welfare are very low. First, if default or debt restructuring costs are high, lowering them moderately need not adversely affect debtor incentives. Even from a narrow incentives perspective, there can be such a thing as overpunishment. Critics of capital punishment, for example, argue that capital punishment does not deter violent crimes any more than, say, life in prison without the possibility of parole. Moreover, extreme punishment may encourage gambles for redemption – policies that delay or slightly reduce the probability of the triggering event, but make it socially worse when it happens. Second, even if lowering default costs does indeed lead to more defaults or restructurings, this might be efficient *ex ante* provided that the recovery rate in the default state improves. To the extent that expected creditor losses decline, borrowing costs may in fact go down. Third, even if borrowing costs go up slightly, this could be welfare improving, if it is offset by a higher stability of capital flows, less financial fragility and smaller crises.

It is also worth pointing out that Kletzer's (1984) model of imperfect enforcement, which Eaton uses, contains a channel through which an international bankruptcy court could in fact have a very large *downward* impact on the cost of capital. This argument is not developed in Chapter 15, nor does it play much of a role in the current policy debate. Suppose that Eaton's/Kletzer's overborrowing problem were resolved through "seniority provisions that ensure that those who lend the initial P/R^2 are paid off first" (p. 268). As Eaton points out, interest rates would then fall – in his model, to the international risk-free rate – and debtor welfare would rise. As argued by Bolton (2003), seniority provisions of this kind are something that an international bankruptcy court could develop and/or enforce as part of the rules of debt restructuring, although this is not envisaged in any of the current proposals.

Finally, some comments on Eaton's "two speculative thoughts". First, he suggests that as an alternative to court-ordered standstills, creditors might be given the right to decide on a standstill unilaterally, provided that a portion of any loan is held in an escrow account, where it can be seized by creditors in the event of a standstill (if no standstill occurs, it would go towards repaying the loan at maturity). I agree that this is one way of discouraging frivolous unilateral standstills. An alternative approach, embodied in the IMF's SDRM proposal, would be to give the debtor the right to decide on a standstill, but at the same time give the creditors *collectively* the power to revoke that right (by terminating the SDRM).

Eaton's second idea is to finance official bail-outs by taxing private creditors that engage in sovereign lending (as opposed to taxing the general public). On this idea, I am more sceptical. Who ultimately finances crisis loans? Suppose it is the taxpayers in the creditor countries, as Eaton implicitly assumes. Then, the effect he seeks could be achieved equivalently – assuming that international capital markets are competitive – and perhaps more easily, by raising the interest rate of crisis loans. Suppose however that crisis lending does not involve an international transfer, i.e. charges levied on international crisis loans on average reflect the true risk faced by official lenders and the taxpayers that back them. This is argued by Michael Mussa in Chapter 3 in this volume, and by Olivier Jeanne and myself in a recent paper (Jeanne and Zettelmeyer 2001). In that case, an across-the-board lending tax misses the point: it would merely raise the cost of crisis loans for the borrower, and excessively so. This said, if the lending tax could vary according to the risk associated with official crisis lending to a specific country, it might serve a useful role, since the IMF's Articles of Agreement forbid it from differentiating its lending rate according to the risk it faces in individual circumstances.

Note

1 The views expressed in this chapter are the author's only and need not reflect the views or policies of the IMF.

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17 Co-ordination failure, moral hazard and sovereign bankruptcy procedures

Sayantan Ghosal and Marcus Miller[1]

17.1 Introduction

Following Mexico's moratorium on its external debt payments in 1982, virtually all voluntary lending to emerging markets by commercial banks ceased (Buchheit 1999); and the 1980s came to be known as the "lost decade" in Latin America. When lending to these markets restarted in the 1990s as a result of the Brady Plan, lenders sought to avoid any repeat of the write-downs imposed on commercial banks by swapping loans for sovereign bonds. Unlike bank lending, however, Brady bonds issued under New York law cannot be restructured without unanimous consent. While this may be a useful check on debtor's "moral hazard", it means that emerging markets are exposed to financial crisis due to creditor panic or extraneous shocks to their debt service capacity. Nevertheless, for some years, capital kept flowing to emerging markets at modest rates of interest – underwritten in part by an IMF policy of (ever-increasing) bail-outs. Following Russia's partial foreign debt repudiation in August 1998, however, generous inflows to Latin America once again came to a standstill; and sovereign interest rate spreads rose to over 1,600 basis points on the EMBI+ index, remaining above 700 basis points for the next two years.

These developments – together with the collapsing currencies and soaring sovereign spreads facing many Latin American countries in 2001/2 – have put in question traditional explanations for financial crises, based on current account and fiscal deficits. They suggest the need to focus on the intrinsic behaviour of capital markets (Calvo *et al.* 2002). Why do sudden stops to the flows of finance occur? What are the economic consequences and the implications for institutional design?

In this chapter, we focus on how problems of creditor co-ordination interact with debtor's incentives to generate excessive crises. In the literature, these issues are typically treated separately. In explaining bank runs, for example, Diamond and Dybvig (1983) demonstrated the possibility of multiple equilibria in financial markets, taking as given the structure of demand deposit contracts (i.e. the right of depositors to withdraw on demand) and the choice of investments by the bank. To help select the

"good" equilibrium, three institutional mechanisms were discussed – provision of liquidity, suspension of convertibility and deposit insurance. Analogous co-ordination problems arise in connection with emerging-market bonds[2] and similar proposals have recently been made. Stanley Fischer (1999), Radelet and Sachs (1998) and Truman (2001), for example, have emphasised official provision of liquidity; while Krugman (1998) called for capital outflow controls to protect East Asian currencies (i.e. a suspension of convertibility). There has not been much talk of explicit insurance, Soros (1998) and Jeanne (2001) being exceptions. But an additional possibility has been widely discussed, that of revising the nature of sovereign debt contracts themselves. Eichengreen and Portes (1995), Buchheit and Gulati (2000) and Taylor (2002) have advocated the insertion of collective action clauses to assist creditor co-ordination.

Such proposals to solve creditor co-ordination problems have been criticised for failing to take into account their effect on sovereign debtors' incentives. Barro (1998, p. 18), for example, suggested that bail-outs can increase the probability of sovereign default, stating that "bailouts increase 'moral hazard' by rewarding and encouraging bad policies by governments and excessive risk-taking by banks". With reference to the $42 billion package for Brazil in 1998, for example, Barro asked: "How did the Brazilians qualify for this support? They did so mostly by not exercising sound fiscal policies. If their policies had been better, they would not be in their current difficulties and would not qualify for IMF money" (1998, p. 18). After further discussion of the bail-outs for Mexico and Russia, he concluded "the IMF might consider changing its name to the IMH – the Institute for Moral Hazard". Typically, however, debtor's moral hazard has been considered in a separate strand of the literature which focuses on the use of punishment strategies in models of repeated interaction. In Bulow and Rogoff (1989a), for example, trade sanctions are the punishment mechanism to prevent strategic default. But since their bargaining model assumes a single creditor lending to a single debtor, creditor co-ordination problems are not discussed. Nor are they addressed in Kletzer and Wright (2000), who use a repeated game model to study how restricting access to capital markets can check moral hazard.[3]

A convincing treatment of sovereign debt crises and their resolution needs to combine creditor co-ordination and debtor incentives in a consistent framework. In this chapter, we develop such a framework. It implies that bail-outs do not solve the underlying causes of a sovereign debt crisis; and that the market equilibrium needed to provide the right incentives is excessively prone to financial crises (i.e. to sudden stops in capital flows). To improve on the equilibrium market outcome, we analyse an international bankruptcy procedure as an *ex ante* commitment device that involves (a) ensuring partial contractibility of sovereign debtor's payoffs, (b) temporary suspension of convertibility in a "discovery" phase and (c) *ex post* transfers. The mechanism we describe incorporates features of the bankruptcy procedures advocated by the IMF (Krueger 2002) – although,

unlike the IMF's proposal, it is not restricted to cases of "insolvency". On the other hand, it differs sharply from the "crisis insurance fund"[4] recommended by Jeanne (2001) who assumes that solving the creditor co-ordination problem has no impact on the debtor's incentives.

In related work, Tirole (2002) has recently emphasised the "common agency problems" affecting sovereign borrowing: the contracting externalities which may lead to over-borrowing and excessive short-term debt, and the collective action problems that prevent efficient rollover and restructuring. Although our focus is somewhat different – we take both the amount and maturity structure of sovereign debt as given – the analytical approach we use has many features in common, including the assumption that there are debtor payoffs which cannot be secured by creditors (i.e. are not "contractible") and the links that are established between *ex post* resolution procedures and *ex ante* debtor incentives. Our institutional recommendation for increasing the contractibility of the debtor payoffs is not unlike Tirole's proposal to increase the "pledgable income" of the sovereign debtor.

The chapter is structured as follows. To set the scene, we first describe the two principal proposals for improving the international financial architecture currently under active consideration, the Sovereign Debt Restructuring Mechanism (SDRM) advocated by the IMF and the Collective Action Clauses recommended by the US Treasury. The analysis begins in section 17.3 with a canonical two-player game of creditor co-ordination where neither creditor can make a credible commitment not to play a grab race, even when shocks are temporary. To select between the multiple equilibria of the creditor game, we use debtor's incentives – rather than sunspots or risk dominance. To this end, we present a generic model of debtor moral hazard, where the sovereign debtor cannot credibly (or verifiably) commit to putting in effort *ex ante*, due to either sovereign immunity or non-contractibility of debtor payoffs; nor can he or she commit to *ex post* bargaining in the event of default. Then we examine how the equilibrium selection in the creditor co-ordination problem interacts with the sovereign debtor's incentives and show that solving the sovereign debtor's incentive problems requires excessive "project termination" by creditors when sovereign default occurs. Although, in general, we treat interest rates as given, we discuss briefly how they may be determined endogenously, depending on the equilibrium selected. Lastly, we consider potential improvements involving either the SDRM or changes to contracts.

While in the main body of the chapter we have, for simplicity, assumed that shocks are temporary and creditors have symmetric (but incomplete) information about these shocks and the actions chosen by the debtor, the Appendix discusses the issues that arise when creditors are unsure and disagree whether the shock is temporary or permanent.[5] The model and results in Appendix 17.2 share with Calvo (1999) the focus on asymmetric information and heterogenous creditors as causes of excessive crises.

17.2 Sovereign debt restructuring: two mechanisms

Collective action clauses in bond contracts

After the Mexican crisis of 1994/5, the Deputies of the G10 made a number of recommendations to facilitate crisis management (Group of Ten Report 1996). As regards liquidity provision, for example, they suggested that the IMF should "lend into arrears" for countries whose domestic policies were deemed acceptable. For the private sector, they commended changes to contractual provisions covering sovereign debt (so as to allow for the collective representation of bondholders; for supermajority voting on changing the terms and conditions of the debt contract; and for sharing of proceeds among creditors). Such ideas had found academic support in the work of Eichengreen and Portes (1995) who also recommended the creation of a Bondholders Council to help negotiate debt reconstruction. But markets have proved very slow to respond, possibly because of adverse signalling reasons (Eichengreen 1999). However, in February 2003 Mexico took the initiative by selling $1 billion in 12-year global notes including collective action clauses, at a spread of only 3.125 per cent over comparable US Treasuries. And others have subsequently followed.

The desperate case of Argentina has re-opened the debate on sovereign debt restructuring.[6] Thus in April 2002, John Taylor (2002), on behalf of the US Treasury, argued forcefully for the inclusion of collective action clauses in emerging market debt. To help overcome the problem of transition, the US Treasury proposed adding substantial "carrots and sticks" as incentives to change. Positive incentives could include lower interest rate charges when borrowing from the IMF; and further financial inducements to carry out bond swaps on the existing stock. Additionally, the insertion of such clauses could be made a precondition of seeking an IMF programme. To tackle problems of asset diversity, it was proposed that such clauses be included in bank debt as well. For problems of aggregation across creditor classes, it was proposed that disputes between creditors could be handled in an arbitration process provided for in the contracts themselves. An alternative suggestion from JP Morgan Chase and Co. is that of a two-step bond swap where the first step is designed to achieve uniformity of the claim, and the second step is the actual restructuring (Bartholomew *et al.* 2002).

A sovereign debt restructuring mechanism

In response to the Mexican crisis of 1994/5, Jeffrey Sachs (1995) argued that sovereigns needed the basic protections available to corporate borrowers; and he proposed an international bankruptcy court to oversee sovereign debt restructuring. Rogoff and Zettelmeyer (2002) provide an account of this and other proposals for revising the international financial architecture to incorporate bankruptcy-style procedures.

The new Sovereign Debt Restructuring Mechanism first outlined by Krueger (2001) was clearly inspired by the analogy with US corporate bankruptcy procedures, Chapter 11 in particular. While collective action clauses also embody similar provisions for supermajority voting, the IMF claims that the SDRM is necessary to solve the problems of aggregation and of transition discussed above (Krueger 2002, p. 14).

The evolution of corporate debt restructuring and its implications

As a matter of history, Buchheit and Gulati (2004) contrast the different paths taken by Britain and United States in respect of corporate debt restructuring. As indicated in column 1 of Table 17.1, UK creditors inserted collective action clauses into their bonds in the nineteenth century; but – because these clauses were not acceptable under New York law – the US adopted court-ordered bankruptcy proceedings under Chapter 11 of the Bankruptcy Code. Buchheit and Gulati argue that the global economy should now follow the lead of the London bond market by adopting collective action clauses, implemented if necessary by "exit consent swaps", i.e. bond exchanges where creditors accepting the new contract agree to changes which render the old contracts less attractive. These links between corporate history and the current debate on sovereign debt are summarised in Table 17.1.

This historical precedent may suggest that collective action clauses and court-ordered procedures are substitutes. But the London capital market has subsequently gone on to develop court-ordered bankruptcy procedures analogous to those in the US, so they may well be complementary (Miller 2002). While it may be easier in the short run to solve the transition problem of modifying bond contracts than it is to revise the IMF's Articles of Agreement, there may nevertheless be advantages in having an explicit sovereign debt restructuring mechanism. The simple model of sovereign debt that follows abstracts from the aggregation and transition problems which play such an important role in the current debate: it does suggest, however, that sovereign bankruptcy procedures combined with IMF-style conditionality can better achieve the commitment needed than would collective action clauses inserted into bond contracts.

Table 17.1 Debt restructuring: two approaches

	Corporations	*Sovereign states*
Self-organising creditors	Nineteenth-century Britain: majority action clauses	London debt: collective action clauses *plus* exit consent/swaps
Court ordered restructuring	Twentieth-century USA: Chapter 11 bankruptcy	Sovereign Debt Restructuring Mechanism (SDRM)

17.3 Creditor co-ordination without moral hazard

Take the case of a sovereign embarking on a bond-financed investment project, costing K, which lasts only two periods. All the finance is supplied by two investors, investing b each, who are promised returns of r in the first period and $(1+r)$ in the second period. So long as resources available cover these payments (i.e. cash flow in period 1 is greater than $2rb$ and cash flow in period 2 is greater than $(1+r)2b$, all is well and the project will run to completion.

Consider what happens if an unanticipated, exogenous shock ("bad luck") lowers the capacity to pay in period 1 below the amount that is due to bondholders under their contract. If it is strictly a shock to liquidity, which is what we assume here, then project net worth will be unchanged. One example might be a country hit by contagion where the funds earmarked for debt service are suddenly withdrawn (as in South Korea in 1998); another would be a sovereign debtor in a "credit chain" forced into default by delays in payment by its creditors. Since failure to comply with the terms of the debt contract constitutes technical default, each creditor is entitled to accelerate its claim, demanding the capital sum as well as the current coupon owed in period 1, i.e. technical default makes the debt "callable" in period 1 and exposes the sovereign to the risk of a liquidity crisis. (Acceleration of the claim in this way normally requires a minimum percentage of creditors to act, usually 25 per cent: but in our two-creditor model, one is enough.)

The co-ordination game facing the two creditors is shown in Table 17.2 where the actions of Creditor 1 (Quit, Stay) are indicated by rows 1 and 2 respectively; likewise for Creditor 2 by the columns. In the cells showing the resulting payoffs, those for Creditor 1 are given first.

Symbols used and key assumptions made in determining the payoffs are as follows. First, if either creditor accelerates its claim, the project will end (i.e. there is a minimum level of resources $K_1 < K$ required for continuation, and $(1+r)b > K - K_1$ where $\overline{Q} < K$ is the recovery amount if the project is terminated in period 1. Second, the creditor who accelerates when the other does not reckons to recover either his or her initial investment b plus interest rb or the full quit value *minus* the privately borne

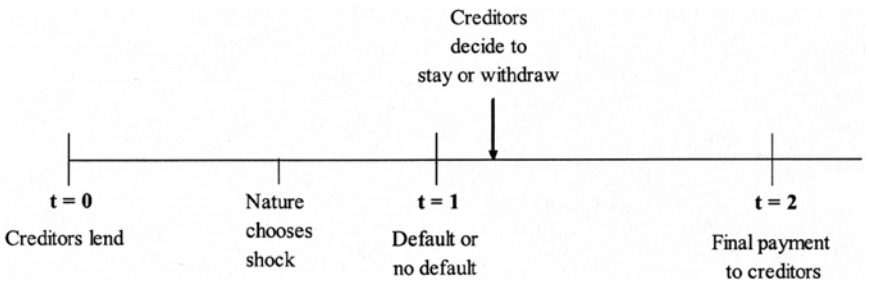

Figure 17.1 Timeline of events: liquidity shocks.

Table 17.2 How payoffs depend on creditor co-ordination

Actions	*2 Quits*	*2 Stays*
1 Quits	$Q/2 - L$ $Q/2 - L$	$\min\{(1+r)b, Q\} - L$ $\max\{Q-(1+r)b, 0\}$
1 Stays	$\max\{Q - (1+r)b, 0\}$ $\min\{(1+r)b, Q\} - L$	$(1+r)b$ $(1+r)b$

legal costs of quitting L – leaving the other creditor with the residual, if any. This is similar to a grab race for a firm's assets where liquidation allows the first mover to exit without much loss of value but liquidation is costly for other creditors. Third, if both quit, they each pay legal fees, L, and split the expected recovery amount equally between themselves. Last of all, we assume that unpaid interest is rolled-up and added to the coupon in period 2, so there is no loss of value to the bondholders if the project continues. Thus, if both creditors decide to stay, the payoffs are as shown in the bottom right cell.

As is evident after normalising the payoffs[7] (see Table 17.3, where $1 > \epsilon > 0 > \delta$), this co-ordination game has three Nash equilibria, two in pure strategies – (Stay, Stay) with unit payoffs and (Quit, Quit) with zero payoff – and a third in mixed strategies where each creditor quits with probability

$$q = \frac{1-\epsilon}{1-\epsilon-\delta}.$$

The payoffs from the normalised game are shown in Figure 17.2 together with the three equilibria indicated at A, B and C. Pure strategy equilibrium A represents a total co-ordination failure among creditors; and the mixed strategy equilibrium B represents a partial co-ordination failure.

What quit rates might one expect in the mixed strategy equilibrium? In their discussion of sovereign spreads, Cline and Barnes (1997) use a recovery rate of 0.5. If, correspondingly, one was to assume that the recovery value if the project is liquidated in the first period is sufficient to repay only one of the two creditors i.e. $\overline{Q} = (1+r)b$, and that the legal fee faced by any creditor accelerating his or her claim is equal to 10 per cent, i.e. $L = 0.1(1+r)b$, we find that, in the mixed strategy equilibrium, the

Table 17.3 Normalised expected, discounted payoffs for the co-ordination game

Actions	*2 Quits*	*2 Stays*
1 Quits	0 0	ε δ (<0)
2 Stays	δ (<0) ε	1 1

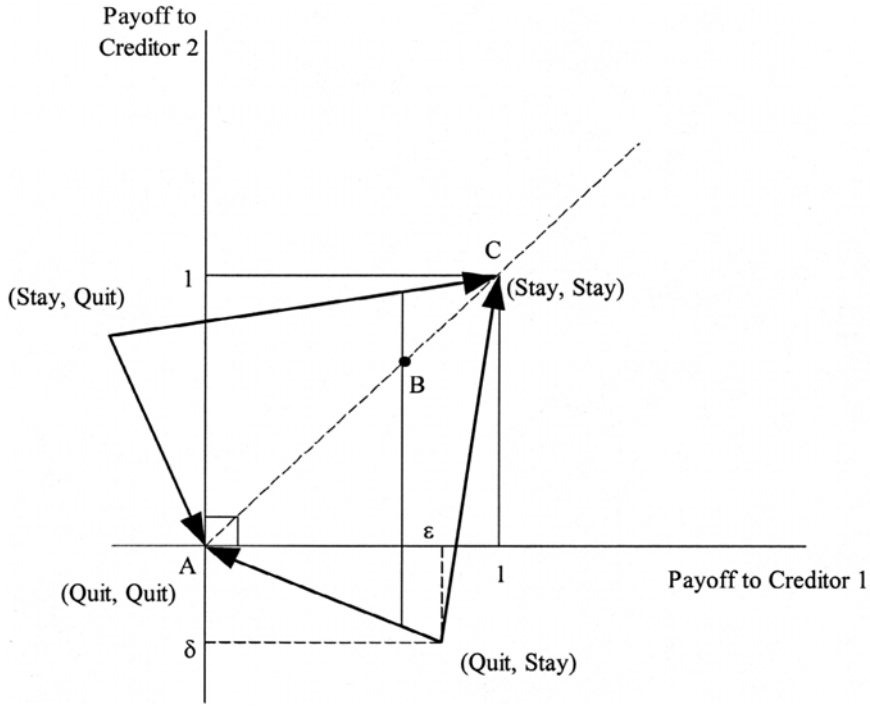

Figure 17.2 Discounted expected payoff in period 1: the creditor co-ordination game (with normalised payoffs).

individual quit rate is 0.2 and the continuation probability is 0.64. In this case, the payoffs and equilibria will appear as illustrated in Figure 17.2.

How is one to select between these equilibria? One possible answer is that the equilibrium is selected by sunspots. Sunspots are random, payoff-irrelevant states of nature which are publicly observed and are used by creditors to co-ordinate their expectations and actions (see, for instance, Jeanne 2001; Peck and Shell 2003). This approach implies that sovereign debt crises occur with positive probability: but the probability is entirely independent of the underlying economic fundamentals – an aspect which Morris and Shin (1998) criticise.

A second approach might be to focus on equilibria in pure strategies and use risk dominance as the selection criterion used by creditors. Note that, in this context, quitting is risk-dominant when the gain to being the first-mover in the creditor grab race is relatively large.[8] (Let α and $1-\alpha$ be the probabilities that player 1 attaches to the other player quitting and staying, respectively. Then expected payoffs to quitting and staying for player 1 are $\epsilon(1-\alpha)$ and $1-(1-\delta)\alpha$. The condition for quitting to be strictly risk dominant (i.e. $\epsilon(1-\alpha) > 1-(1-\delta)\alpha$) is that $|\delta| > 1-\epsilon$).

A more satisfactory theory of which equilibrium will be chosen lies, we

believe, in the need to provide appropriate incentives for the debtor, which is what we examine in the next section. While the main body of the chapter deals only with the case of two creditors, Appendix 17.1 examines the general case and shows that the key features – the existence of two pure strategy Nash equilibria and another mixed strategy equilibrium – continue to hold with n identical creditors. The second issue discussed in Appendix 17.2 is the extension of the creditor co-ordination game to the case where the shock to the country's fundamentals is not temporary. Where, conditional on default, there is incomplete information and disagreement among creditors about whether the shock is temporary or permanent, it is possible to show that, in equilibrium, there is inefficient termination of the project as well.[9]

17.4 Sovereign borrowing with moral hazard

Selecting an equilibrium without taking account of debtor's behaviour is inappropriate if different solutions to the creditor co-ordination problem alter incentives of the sovereign debtor. If the probability of project termination were reduced to zero, for instance, this could have the perverse consequence of actually increasing the possibility of sovereign debt crises, as the sovereign debtor uses the money borrowed from creditors unwisely (Barro 1998). It is possible, therefore, that a positive probability of termination may be needed to solve the debtor moral hazard problem.

The model of debtor's moral hazard developed here assumes a small open economy where, as in Bulow and Rogoff (1989b), the interest rate at which the sovereign can borrow in world markets is fixed. (For simplicity, dynamic interactions between creditors and sovereign debtors such as those involved in models of reputation are ignored.[10]) Assume as before that the sovereign issues debt in period 0 which promises an interest coupon in period 1 and repayment of the capital sum together with a second interest coupon in period 2. But before the first coupon becomes due, there are two events that may lead to default. First, the debtor has to choose a level of effort, either good and bad; and second, an independently determined negative shock arrives with probability p. Since we are still looking at *liquidity crises*, bad effort in this context involves condoning (or causing) cash flows to be temporarily reduced so that debt interest due cannot be paid on time. (It might involve those in power shipping cash overseas in a flight of capital which leads to default, for example.) We assume that either bad effort or a negative exogenous shock is sufficient to cause default – but which of these is not immediately evident. If the cause of the technical default is revealed fairly soon ("early") i.e. before creditors decide to stay or withdraw, the delay is not significant. But the problem of debtor's moral hazard arises when creditors have to decide whether to stay or withdraw before revelation takes place, see Figure 17.3.

There are four possible out-turns in period 1, as shown in Figure 17.4, where it is assumed that, with good effort plus good luck, the coupon can

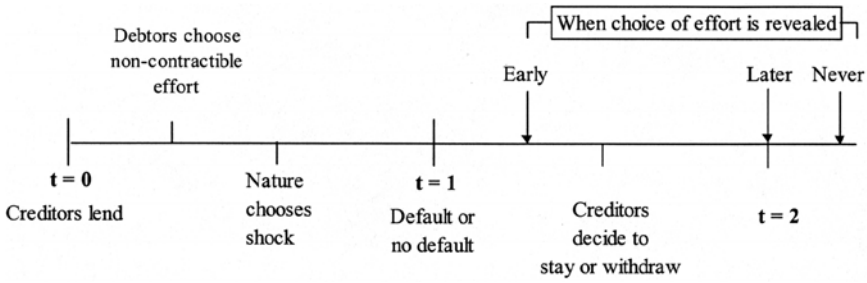

Figure 17.3 Timeline of events.

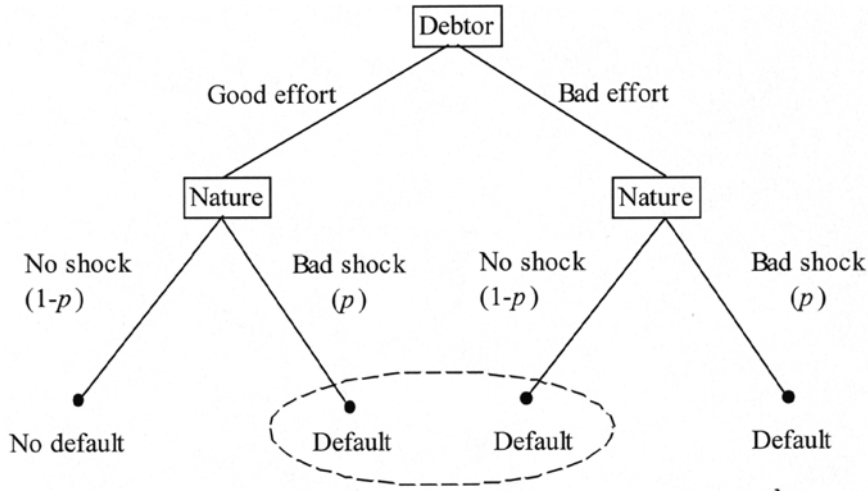

Figure 17.4 Events prior to default or no default in period 1.

be paid, but not otherwise. If the coupon is paid on time, of course, creditors have no option to terminate the loan and the project continues to completion. But when the coupon is not paid, creditors can accelerate.

It is assumed that creditors are able to distinguish between a default caused by bad luck plus bad effort and defaults due to only *one* of these factors; but that they are unable to distinguish between cases of the latter. So, as the circle in Figure 17.4 indicates, they are unable to distinguish between default due to a bad shock (for example, a delay in receipt of payments due to the sovereign in period 1) combined with good effort and one due to just bad effort – with no shock. In the sub-game following default, the co-ordination game facing the two creditors is shown in Table 17.4 below. The only new elements are the continuation values if both creditors choose to stay. As before, we assume that unpaid interest is rolled-up and added to the coupon in period 2, so there is no loss of value

Table 17.4 How payoffs depend on creditor co-ordination

Actions	*2 Quits*	*2 Stays*
1 Quits	$\bar{Q}/2 - L$ $\bar{Q}/2 - L$	$\min\{(1+r)b,\bar{Q}\} - L$ $\max\{\bar{Q} - (1+r)b, 0\}$
1 Stays	$\max\{\bar{Q} - (1+r)b, 0\}$ $\min\{(1+r)b, \bar{Q}\} - L$	$(1+r)b - (1-p)h$ $(1+r)$ $b - (1+r)$ $b - (1-p)$

to the bondholders from a temporary exogenous shock if the project continues. But creditors will not be paid in full if the sovereign does not put in good effort. Let p be the probability of an exogenous shock drawn by nature and h denote the "haircut" taken by creditors (due to bad effort by the debtor).[11] With probability p, each debtor obtains $(1+r)b$ at $t=2$, while with probability $1-p$ each creditor suffers a haircut, h, at $t=2$; therefore, conditional on default at $t=1$, the expected payoff to each creditor at $t=2$ is $(1+r)bp + [(1+r)b - h](1-p) = (1+r)b - h(1-p)$.

After normalisation, the payoff matrix will have the same structure as before; and therefore the set of equilibria remains unchanged. In this section, we will focus on the mixed strategy equilibrium where either creditor quits with probability q. Since either creditor leaving triggers disorderly default, the continuation probability is $1 - \pi_c = (1-q)^2$ where π_c is the probability of disorderly default. What if the need to provide incentives for the debtor to put in good effort is used as a principle for selecting equilibrium? Assume that the continuation outcome, where neither quits, cannot be the part of a sub-game perfect equilibrium where the debtor chooses to put in effort (i.e. assume that a debtor, whose funding is guaranteed, will inevitably be tempted to put in bad effort). By contrast, the outcome where creditors quit for sure will certainly give the debtor an incentive to put in effort. But it is also socially inefficient as any temporary exogenous shock will trigger a liquidity crisis. The mixed strategy equilibrium should provide some incentives for the debtor, but will this be socially efficient?

Debtor moral hazard and incentive compatible randomisation

The source of moral hazard in our model is that the sovereign debtor has incentives that are not aligned with those of the creditors. Funded by resources borrowed in the international bond markets, we assume that the sovereign debtor receives "private payoffs" when the project terminates at $t=1$ or at $t=2$. To begin with, we assume that these payoffs are essentially "non-contractible", i.e. cannot be attached by the creditors in settlement of their claims. Nor can the sovereign debtor make a credible commitment to transfer these payoffs to the creditors. If funds are used to subsidise a public corporation, for example, the assets of the corporation are not attachable even though the sovereign has waived immunity: so these assets

would count as private payoffs. Funds transferred to private citizens fall into the same category: the added popularity of the government is not something that creditors can attach either.

We further assume that the value of these debtor payoffs depends on whether "effort" is good or bad, where good effort implies that default only occurs with the bad exogenous shock, but bad effort implies that default is inevitable. Good effort could correspond to a situation where, for instance, money is borrowed and used to promote R&D in the export sector to help the country remain internationally competitive. Bad effort might correspond to transferring borrowed money to rich people who are free to put it in tax havens overseas, exposing the country to currency risk and the budget to a loss of tax revenue. (An alternative interpretation, suggested by James Tobin, would be that good effort corresponds to properly regulated liberalisation of domestic financial markets and bad effort corresponds to unregulated financial liberalisation.[12])

Let u_t^G and u_t^B denote the expected, discounted payoffs (measured at $t=1$) for the sovereign debtor when the project is terminated at period t, $t=1, 2$. We assume, for simplicity, that there is no residual value of the project after paying for debt service and repayment, so u_t^G and u_t^B consist of the non-contractible benefits to the sovereign. Suppose $u_t^G < u_t^B$ for all t. In that event, there is no solution to the debtor moral hazard problem without a bankruptcy procedure because, *ex ante*, the sovereign debtor will always choose bad effort even if the project is terminated in period 1. The intermediary case, which we study below, is when $u_1^G > u_1^B$ but $u_2^G < u_2^B$.

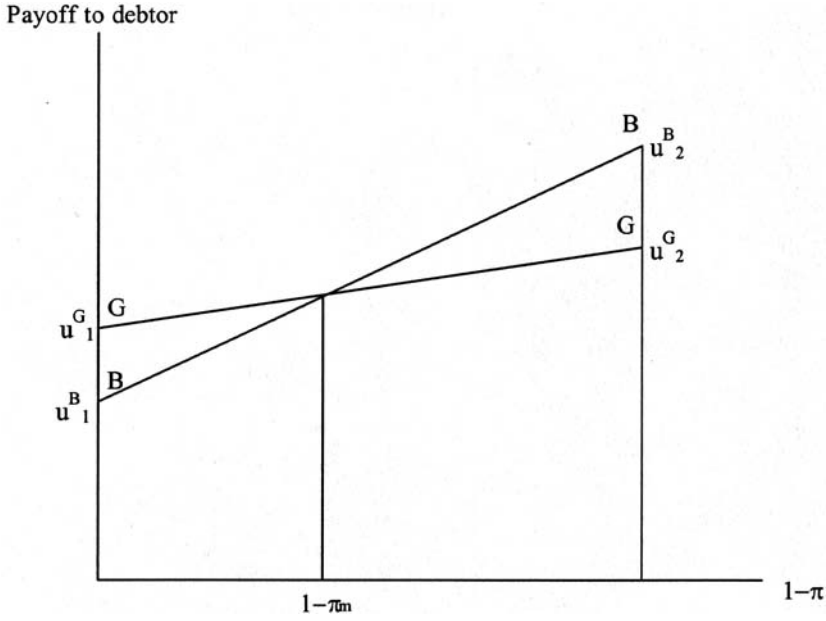

Figure 17.5 Debtor moral hazard: the no-shirking constraint.

This is shown in Figure 17.5 where *BB*, the schedule showing expected payoffs to bad effort, is steeper than *GG* which gives the expected payoff to good effort. If the probability of continuation $1 - \pi$, was equal to 0, second-period payoffs would of course be irrelevant. As $1 - \pi$ increases to one, however, the prospect of continuation with high private benefits makes bad effort ("shirking") more attractive.

To ensure that the sovereign chooses good effort, the probability of continuation must not exceed $1 - \pi_m$ where the two schedules intersect in Figure 17.5. It follows that the equilibrium selected in the creditor co-ordination game must satisfy a "no-shirking" constraint associated with debtor's moral hazard. Conditional on default, if creditors always choose to stay, the debtor's *ex ante* incentives to choose good effort will never be satisfied. The other extreme situation is when creditors always quit after default. This will solve the debtor's incentive problem but is obviously socially inefficient as a debtor applying his or her best efforts would nevertheless face certain default in the presence of an unfavourable temporary shock. An intermediate solution is that creditors co-ordinate on the mixed strategy equilibrium. As the continuation probability at the mixed strategy equilibrium, $1 - \pi_c$, is derived independently of debtor incentives, there is no reason why it should coincide with the continuation probability $1 - \pi_m$ associated with the no-shirking constraint. (Of course, the creditors could panic and choose the pure strategy of quitting: by assuming that, where it is incentive-compatible, creditors co-ordinate on the mixed strategy equilibrium in the event of default, our analysis is biased in favour of the market solution.)

These results are summarised in Figure 17.6. On the vertical axis is

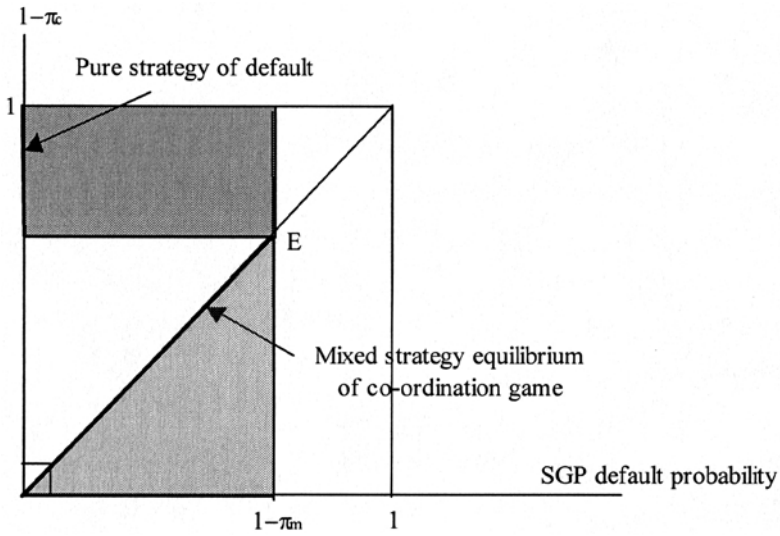

Figure 17.6 Excessive probability of disorderly default.

plotted $1-\pi_c$, the probability of continuation given the mixed strategy equilibrium of the creditor co-ordination game, while on the horizontal is plotted $1-\pi_m$, the continuation probability required for time-consistency or "sub-game perfection" on the part of the debtor. The shaded part of the figure shows the excess default probabilities relative to second best.[13]

Let NEC denote the Nash equilibrium continuation probability, where $\text{NEC} \equiv 1-\pi_c = (1-q)^2$ when $(1-q)^2 < 1-\pi_m$ and $\text{NEC} = 0$ otherwise; and let ICC denote the incentive compatibility continuation probability, $1-\pi_m$. The mechanism by which providing the right incentives for the debtor almost always leads to excessive crises is shown graphically in Figure 17.7. Creditor payoffs and the three Nash equilibria of the co-ordination game are shown in the top-left panel. The non-contractible payoffs to the debtor are shown in the top-right panel and ICC, the maximum probability of continuation compatible with good effort, is shown as $1-\pi_m$ on the horizontal axis (below the intersection of *GG* and *BB* at *I*). How does this incentive compatibility constraint affect the selection of equilibrium for creditors? Clearly it rules out equilibrium at *C* (Stay, Stay). It is, however, consistent with the mixed strategy equilibrium at *B*. This can be seen (in the bottom-right panel) by comparing the incentive compatibility constraint, $1-\pi_m$, with the continuation probability

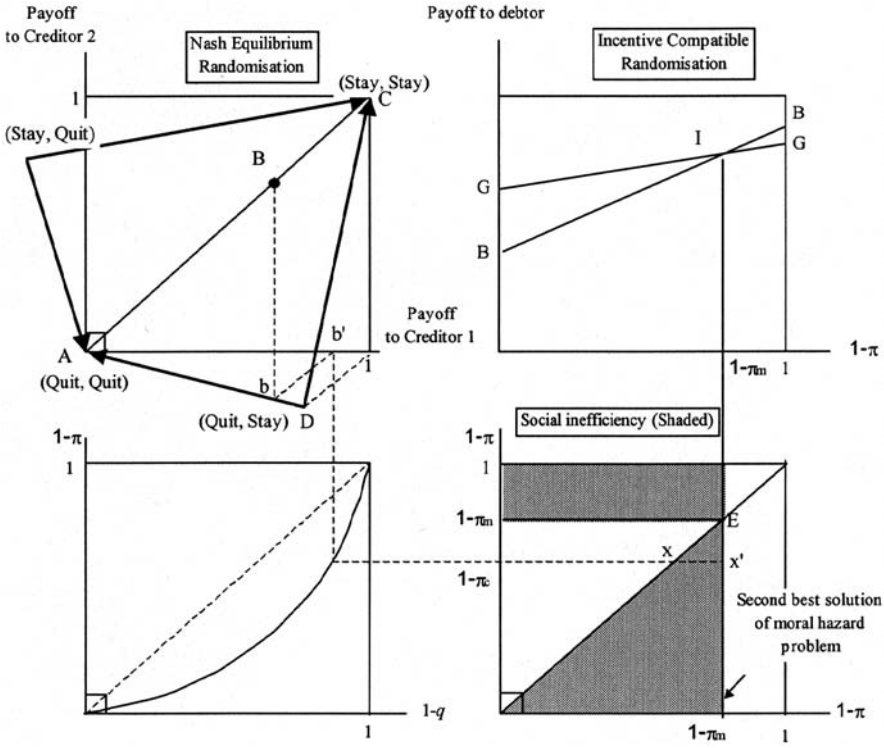

Figure 17.7 Creditor co-ordination and debtor moral hazard.

associated with the mixed strategy equilibrium, $1-\pi_c$. The latter is the square of the individual continuation probability $1-q$ (see lower-left panel) where this, in turn, is derived[14] from the mixed strategy equilibrium B (as shown in the top-right panel).

Although the level of randomisation in the mixed strategy equilibrium is consistent with the debtor putting in effort (as $1-\pi_m \geq 1-\pi_c$), there is "too much" randomisation (measured by distance xx' in the figure) as a higher continuation probability among creditors would also be incentive compatible. It is in this sense that the mixed strategy equilibrium is inefficient and the excess randomisation is indicated by the shaded triangle in the diagram.

This inefficiency would greatly increase, however, if the continuation probability from the co-ordination game were to rise above $1-\pi_m$ (i.e. if point B were to approach sufficiently close to C). In that case, the only credible equilibrium consistent with debtor incentives is where both creditors quit as soon as default occurs. The excess randomisation in this case, $1-\pi_m$, is shown by the shaded box in the lower-right panel. Only at the point E is the Nash equilibrium randomisation equal to the incentive-compatible randomisation. This is what leads to the conclusion that, in the absence of bankruptcy style procedures, there will almost always be excessive disorderly default in sovereign bond markets. The above discussion can be summarised as:

Proposition 1 *Almost always, NEC > ICC.*

Implications for sovereign spreads

To simplify the analysis, we have treated the interest rate as predetermined. In reality, however, sovereign spreads would be endogenous, varying with the equilibrium selected. Ideally,[15] we would extend the theory to explain how interest rates are determined and test the predictions of the extended model on relevant data. For present purposes, we restrict ourselves to briefly indicating how our model might be calibrated to fit recent data. As discussed in the introduction, emerging market sovereign spreads over US Treasuries responded sharply to the Russian default. From a level of between 400 and 500 basis points earlier in 1998, they peaked at over 1,600 after the Russian default in August and then fell to somewhere between 700 and 800 in 2000. In 2001, Argentine debt suffered spreads of 2,000 basis points and above, as did Brazilian debt in the summer of 2002. (After leaving the currency peg, Argentina has recorded even higher spreads of around 7,000 basis points.) In Table 17.5 illustrative parameters are chosen so as to generate sovereign spreads that vary over a range running from 300 to 7,000 bps. In case 1 with a low quit probability and a high risk of a bad shock, quitting is risk-dominant and the mixed strategy is consistent with a spread of 800 basis points. In case 2 with a high quit probability and a low risk of a bad shock, neither quitting nor

staying are risk-dominant and sovereign spreads can rise to 7,000 basis points. The sovereign spread, S, is calculated using the formula:

$$S = \pi p(1 - R) \text{ and } 1 - \pi = (1 - q)^2, \text{ so } S = [1 - (1 - q)^2]p(1 - R)$$

where p is the probability of a bad shock, π is a conditional probability of termination given default, q is the individual quit probability in the mixed strategy equilibrium and R is the recovery rate on debt. In Eichengreen and Bordo (2001), it is reported that, from 1973–1997, a randomly selected country (from a sample of 56 countries including OECD members) had a probability of experiencing crisis of 12 per cent per annum. Given the higher incidence of crises in emerging market countries, we choose a figure of 0.16 to characterise the probability of crisis in the mixed strategy equilibrium for emerging markets. Setting πp at 0.16 and combining this with a value of 0.5 for $(1 - R)$ (Cline and Barnes 1997), this implies a sovereign spread of 800 basis points, or eight percentage points at the mixed strategy equilibrium (see line 2 of Table 17.5, Case 1). Note that, in this case, the continuation probability conditional on default is set at 0.6. This implies a value of 0.4 for π and a quit probability, q, of 0.23 as shown in line 2. In Case 2, where the recovery rate is cut to 30 per cent, and q is set at 0.5, the continuation probability falls by more than half to 0.25, as shown in the lower half of the table.

The sovereign spreads associated with the mixed strategy equilibrium fall on the application of a "second-best" strategy of constructive ambiguity (labelled "CA" in the table). Assume, for example, that the lowest rate of termination consistent with good effort is $\pi_m = 0.2$. This policy would reduce sovereign spreads to between 400 bps and 300 bps, depending on the value of p. If, on the other hand, moral hazard problems were sufficiently severe as to shift the market equilibrium to the pure strategy of quitting whenever technical default occurred, sovereign spreads could rise sharply. In Case 1 where the increase in termination probability more than

Table 17.5 Sovereign risk: illustrative scenarios

	q	$1 - q$	$1 - \pi$	π	p	$1 - R$	*Spread (bps)*	*Spread (%)*
Case 1: Low quit probability/high risk of bad shock								
"Second Best" CA	na	na	0.8	0.2	0.4	0.5	400	4
Mixed strategy	**0.23**	**0.77**	**0.6**	**0.4**	**0.4**	**0.5**	**800**	**8**
Quit/Quit	1	0	0	1	0.4	0.5	2,000	20
Stay/Stay	0	1	1	0	na	0.5	5,000	50
Case 2: High quit probability/low risk of bad shock								
"Second Best" CA	na	na	0.8	0.2	0.213	0.7	298	3
Mixed strategy	**0.5**	**0.5**	**0.25**	**0.75**	**0.213**	**0.7**	**1,280**	**13**
Quit/Quit	1	0	0	1	0.213	0.7	1,491	15
Stay/Stay	0	1	1	0	na	0.7	7,000	70

doubles, spreads widen to 2,000 basis points. In Case 2 where termination is quite likely in any case, sovereign spreads rise to around 1,500 basis points.

Given the moral hazard constraint, selecting the pure equilibrium of Stay/Stay would remove the incentive to put in effort and increase the probability of a haircut to one. In this event, assuming for simplicity that $h = 1 - R$, sovereign spreads rise to 5,000–7,000 bps, as shown in the bottom line of each case.

The framework developed here could be used to look at contagion in capital markets.[16] Masson (1999, p. 267), for instance, argues that "pure contagion involves changes in expectations that is not related to country's macroeconomic fundamentals" and suggests that "by analogy to the literature on bank runs (Diamond and Dybvig 1983), attacks on countries which involve a simultaneous move from a non-run to a run equilibrium seem to be relevant for recent experience in emerging market countries". To include contagion on this definition, we need only relax the assumption that the market selects the most efficient incentive-compatible equilibrium between creditors. A move from a mixed strategy equilibrium to the pure strategy of quitting, unconnected with any change in fundamentals, would count as contagion on Masson's definition; and, as Table 17.5 indicates, could double sovereign spreads.

Note that changes in interest rates as between the mixed strategy and the pure strategy of quitting are, in fact, likely to change the default probability. Taking account of this could lead to models of self-fulfilling crises such as those of Aghion *et al.* (2000) and Sachs *et al.* (1996).

Financial liberalisation in the absence of appropriate regulation can also increase the risk of financial crisis (Goldstein 1997; Kaminsky and Reinhart 1999). In the framework developed here, this can come about through a fall in $1 - \pi_m$, together with an increase in $1 - \pi_c$. The former, the tightening of the "no-shirking constraint", could occur if liberalisation makes it more attractive to pursue the bad effort strategy – if it makes it easier to ship money out of the country to evade taxes, for example.[17] This increases the payoffs to low effort and, as shown by the upward shift from BB to $B'B'$ in Figure 17.8, shifts the intersection with GG to the left, which reduces the incentive compatible continuation probability (to $1 - \pi'_m$). If the mixed strategy equilibrium of the co-ordination game remains at $1 - \pi_c$, however, it may still satisfy the incentive-compatibility condition and there will be no effect on equilibrium. But what if liberalisation also cuts the cost of exit in the co-ordination game? (A fall in legal costs makes quitting more attractive: so, in the mixed strategy equilibrium, the probability of staying must be increased to balance the expected payoffs of quitting and staying – and this increases the continuation probability of the game.) The new mixed strategy equilibrium could then fall foul of the no-shirking constraints, as shown by $1 - \pi'_c$ in Figure 17.8. Hence, in the face of default for any reason, only the threat of certain withdrawal will be sufficient to check a debtor's moral hazard. The results

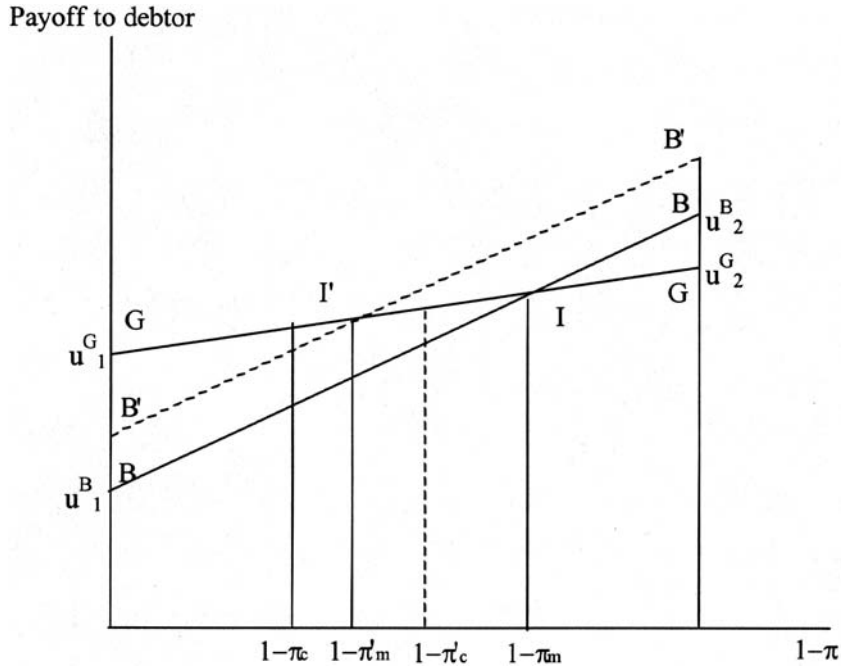

Figure 17.8 Possible effects of badly-designed liberalisation.

could be dramatic: as shown in lines 2 and 3 of Table 17.5, a shift from the mixed strategy equilibrium to the pure strategy equilibrium could raise the sovereign spread from 800 to 2,000 bps.

17.5 Sovereign bankruptcy procedures as a commitment device

We have seen that, in the absence of institutional innovation, there will be excessive disorderly default in equilibrium. Could this be reduced by institutional change?

Where creditors can, in the event of default, exercise some legal claim over the assets of the sovereign state or its citizens, there is a good case for a bankruptcy procedure. This might involve the following elements. *Ex ante*, the sovereign agrees to bargaining in good faith after default, and to this end establishes some "contractibility" on assets in favour of the creditors. This might involve waiving sovereign immunity and agreeing that some foreign interest payments and loans[18] could be diverted in favour of creditors as part of the bargaining process. Note that this enhanced "contractibility" must also have the effect of reducing private payoffs to the sovereign; otherwise it will not have the desired incentive effects.

When a default occurs, however, the sovereign debtor is afforded protection by a temporary stay on creditor litigation. This legitimises the suspension of payments and also prevents litigation (by "vultures") from

inhibiting negotiations (Miller and Zhang 2000). Furthermore, it provides a breathing space for a "discovery" process where efforts are made to establish the underlying causes of default (and to determine whether it was due to a bad shock or poor effort). If this reveals the debtor to have made appropriate effort and to be suffering from an exogenous shock, bargaining would involve debt restructuring – the lengthening of debt maturities for a temporary shock, and some write-down for a permanent shock known to be outside the control of the debtor. But if the debtor is revealed to have made little or no effort to arrange its financial and fiscal affairs, then it will be penalised with payoffs changed *ex post* in ways that have been agreed *ex ante*. This is why the debtor must have agreed to make some private payoffs contractible.

Along similar lines, Eaton (2004, p. 267) observes: "One role that an international bankruptcy court could play is in clarifying the extent of the sovereign's malfeasance in a default, and applying penalties appropriately." He goes on to note that: "Tougher sanctions in response to malfeasance that leads to default is ultimately in the interests of sovereign countries, as it enhances their access to credit." This can be shown in Figure 17.9 where an *ex ante* agreement to transfer funds to the creditors in period 2, in the event that default is discovered to be attributable to low effort, reduces the private benefits, swivels the *BB* schedule clockwise and so increases the maximum continuation probability. If *ex ante* contracting ensures that u_2^B is less than or equal to u_2^G, as shown by the lower dotted line in the figure, then the maximum incentive-compatible continuation

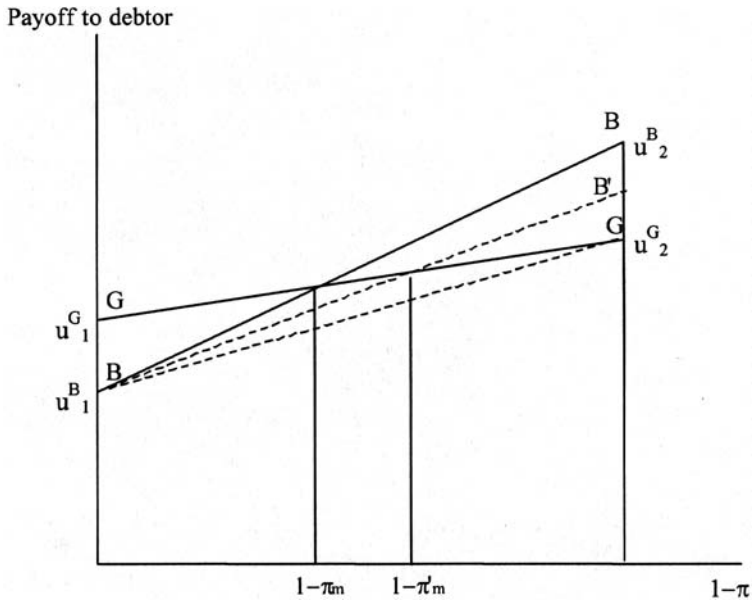

Figure 17.9 Shifting the no-shirking constraint by an *ex ante* contract.

probability shifts to one and the creditors can safely rollover their lending without fear of moral hazard. Even if the moral hazard constraint does not rise to one, but only to $1 - \pi'_m$ as shown in the figure, bankruptcy procedures can reduce the termination probability without completely eliminating it.

Before turning to the institutional implications, consider two special cases. First is the case where the reasons for default are known as soon as it occurs, i.e. without a discovery phase. Here, there is no need for an extended bankruptcy procedure. If the default is due to an exogenous shock, liquidity can be provided right away. If the default is due to lack of effort, then the debtor's payoffs are changed *ex post* in ways that have been agreed *ex ante*. This is the perspective taken by Olivier Jeanne (2001) who argues that "the institution that brings the economy the closest to the first-best is a 'crisis insurance fund' that bails out all governments with a rollover crisis *conditional on the fiscal adjustment*" (p. 19, italics in the original). Under his proposed scheme, moral hazard is neutralised by denying bail-outs to countries that have not implemented the fiscal adjustment. Jeanne notes, however, that the crisis fund would probably have to be a rule-based public agency, first because of "time to verify",[19] and second because private insurance contracts for sovereigns cannot be made contingent on fiscal effort which is under their control. At the other end of the spectrum is the special case where the discovery phase is completely unrevealing, so the indeterminacy as to the causes of default can never be resolved. In these circumstances, the contractibility over private benefits cannot be exploited, and "constructive ambiguity" appears to be the only solution – where all defaulting debtors are bailed out with probability $1 - \pi_m$, and the expected costs to creditors are reflected in sovereign spreads, as discussed earlier.

17.6 Institutional implications

If financing development by issuing bonds exposes emerging markets to excessive crisis, one response is to limit the use of such debt instruments (Rodrik 1998). Some economists (e.g. Stiglitz 1998; Williamson 1995, 1999) have discussed the use of explicit inflow controls such as those used in Chile, which are intended to change the composition of flows in favour of longer term investment rather than hot money.[20] As Cordella (1998) points out, inflow controls which succeed in shifting the structure of external financing may increase rather than decrease the total volume of finance available for development: "taxes on short-term capital flows by avoiding rational panics, can improve the expected returns of investments in emerging markets, and thus increase the total volume of funds entering the country" (p. 6). In times of crisis, however, the use of outflow controls may well be considered, both as a way of conserving scarce foreign currency and of lowering domestic interest rates (Krugman 1998).

Rogoff (1999, p. 37–38) has concluded that "the main problem with the

present system is that it contains strong biases towards debt finance". To mitigate this bias, he argues for a reversal of legal trends which have enabled creditors to enforce emerging markets debt contracts in industrialised country courts – an argument for the restoration of sovereign immunity.[21] (It is acknowledged that this recommendation would lead to a contraction in the issuance of sovereign bonds; and he observes that "instituting an international bankruptcy court might be an alternative means to the same end".)

The debate between John Taylor of the US Treasury and Anne Krueger of the IMF is, of course, premised on the widespread continuation of bond finance for emerging markets countries *without* sovereign immunity. So too is our own discussion of the bankruptcy procedure, where we see an important role for a rule-governed public agency to supply a commitment mechanism which makes private payoffs accessible to the creditors *ex post*. It may be that the required control over the *ex post* behaviour of the debtor could be achieved by official "IMF conditionality" which governs the actions of the sovereign whose debt is being restructured. Applicants for a debt restructuring in the Paris Club are required as a matter of course to agree a programme with the IMF before negotiations with creditors begin. Thus IMF programmes could play an important role in the international bankruptcy procedure described above.[22] To check moral hazard, of course, it would have to be known in advance that "conditionality" would be used to achieve the contractibility of private payoffs, i.e. the "rules" need to be clear.

As an alternative to an SDRM, CACs have the attraction that they are voluntary and market driven. As discussed earlier, however, there are two problems of implementation: first the need to replace outstanding contracts, by swaps for example; and second the need to aggregate across different instruments, possibly by two-stage debt swaps (see Table 17.6). Even supposing both can be solved, we believe that private bond contracts, which are typically incomplete and involve creditors deciding what to do *ex post*, are unable to deliver the required degree of protection and pre-commitment. Contracts incorporating CACs do not prevent creditors from suing provided there is a blocking minority in favour (Thomas 2002). Moreover, contracts with majority action clauses may fail to be renegotiation-proof after a discovery phase in which the debtor's effort level is confirmed to be "bad", as the debtor may renege on commitments to make *ex post* transfers. In other words, a hold-up problem may ensue as now the sovereign debtor has all the bargaining power.[23] Anticipating this, even with majority action clauses, creditors may choose to terminate the project.

An SDRM backed by an international organisation, acting on behalf of the international community, can solve such a hold-up problem by making the sovereign's payoffs attachable *ex post*. In other words, our analysis of the reasons for excessive crisis leads us to choose an SDRM mechanism rather than private contracts. The implementation of the SDRM will,

Table 17.6 CACs and SDRM: some key issues

	Problems of implementation	*Problems of operation*
Collective Action Clauses (voluntary, market driven)	(a) "Transition" (b) "Aggregation"	Not litigation proof Not renegotiation proof
SDRM (involuntary, statutory)	Change of IMF Articles needed	Subject to geo-political and ideological pressures

however, require a super-majority vote to change the Articles of Agreement of the IMF, something that the United States alone can block. Even assuming that the Articles can be changed, two delicate issues need to be considered: whose private payoffs should be attached *ex post*? And to whom should responsibility for overseeing such attachment be delegated? The former is a matter of political economy. What if, in a crisis, those responsible can exit, leaving debt for others to pay? In extreme cases, sovereign debtors may appeal to the principle of "odious debt" where a state may justifiably repudiate obligations incurred by tyrants no longer in power (Birdsall and Williamson 2002; Kremer and Jayachandran 2001). But assuming that this does not apply, is it efficient or fair to punish those who could not exit? It appears that in Argentina, for example, rich and well-informed citizens were able to take their capital out of the country, thus avoiding the precipitate depreciation of the peso.[24] If rich private residents have made enormous capital gains in local currency by exporting dollars from the country – now in default for lack of dollars to service its debt – should they not participate in the cost of clearing up the ensuing chaos? Could the state not demand payment of capital gains tax on the assets "marked to market", for example; or *in extremis* enforce repatriation in order to ensure the realisation of capital gains (and a massive inflow of dollars)?

Even if one could think of such devices for making private payoffs contractible, what public agency should implement them? Stiglitz (2002b) argues that, being dominated by creditor's interests and having adopted the "free market mantra of 1980s", the IMF is not well suited to devise and implement strategies for remedying capital market failures. In response to financial crises in East Asia and Latin America, the organisation has nevertheless shown itself willing to contemplate inflow controls and standstills as part of an SDRM – though recommending outflow controls (and enforced repatriation) would not be consistent with its normal practices and procedures.

17.7 Conclusion

Calvo's critique of the conventional wisdom – the Washington Consensus – is that market failures in emerging market finance are far too important

to be ignored.[25] Tirole (2002) evidently shares the same perspective: his recent book on financial crises begins by referring to the wide consensus that has emerged among economists that "capital account liberalisation . . . was unambiguously good. Good for the debtor countries, good for the world economy", but goes on to note "that consensus has been shattered lately. A number of capital account liberalisations have been followed by spectacular foreign exchange and banking crises." Like Tirole, we have focused on the problems that can arise from contracts which pose problems of creditor co-ordination. For simplicity we have assumed that creditors all share the same information: but the information asymmetries stressed by Calvo would (as the Appendix suggests) greatly enrich the analysis.

Solving creditor co-ordination problems in sovereign bond markets is, however, subject to a moral hazard constraint: that debtors must retain the incentive to service their debts. In a model of sovereign illiquidity with three Nash equilibria facing creditors, it is quite likely that this incentive constraint rules out the no-crisis equilibrium, and either the mixed strategy equilibrium or the pure strategy where all creditors quit will be selected, depending on how severe the incentive problem is. In general, however, the termination probability is higher than necessary for incentive purposes, i.e. there are too many crises.

How can bond markets be made more efficient? We consider a bankruptcy procedure involving a temporary stay on creditor litigation and a discovery process for determining the underlying causes of default. A key element of the procedure is that when the sovereign debtor in default is found to have made little or no effort, its private payoffs will be reduced *ex post*. To provide the right incentives, it is crucial that the mechanism for doing this should have been agreed *ex ante*, as would be true if a ruled-governed public agency is involved. Moreover, as we have argued, privately issued bond contracts are unlikely to achieve the same result. We believe that the institutional approach to sovereign debt restructuring proposed by the IMF is, in principle, capable of increasing bond market efficiency. What the rules should be – and whether the IMF as currently constituted is the appropriate public agency to implement them – are policy issues that remain to be discussed.

In future research, we intend to include the determination of sovereign spreads within the analysis; and to combine creditor heterogeneity and insolvency shocks with debtor moral hazard. Another useful extension would be to take account of the politics of decision-making within a debtor country and how it interacts with the debt crises.

Appendix 17.1 Robustness: the case of *n* creditors

In this section, we show that with n identical creditors, the equilibrium analysis of the creditor co-ordination game is robust, i.e. there continue to exist only two pure strategy equilibria where all creditors either choose to

quit or stay; and, in addition, there is at least one other mixed strategy equilibrium where each creditor quits with some probability q, $0 < q < 1$.

The timeline of events is as in Section 17.4. A sovereign is embarking on a bond-financed investment project, costing K', which lasts only two periods. All finance is now supplied by n identical creditors each of whom has invested b, and is promised a return of r in the first period and $(1 + r)$ in the second period. So long as available resources cover these payments (i.e. cash flow in period 1 is greater than nrb and cash flow in period 2 is greater than $(1 + r)nb$, all is well and the project will run to completion.

As before, there is an unanticipated, exogenous temporary shock ("bad luck") that lowers the sovereign's capacity to pay in period 1 the amount that is due to bondholders under their contract. This is a liquidity shock so that the project's net worth is unchanged, but, as the failure to comply with the terms of the debt contract constitutes technical default, the sovereign is exposed to the risk of a liquidity crisis if sufficient creditors seek to accelerate their claims. Here, we assume that acceleration requires a minimum of 25 per cent of the creditors to act.

The co-ordination game facing the n creditors can then be specified as follows. Label an individual creditor by i, $i = 1, \ldots, n$. Each creditor chooses an action $a^i \in \{Quit, Stay\}$. For an action profile $a = (a^1, \ldots, a^n)$, let $N_{a,Q} = \{i : a^i = Q\}$ and $N_{a,S} = \{i : a^i = S\}$. Let N be the set of integers between $n/4$ and n. Consider the function $\tilde{g} : N \to \Re$ such that $\tilde{g}(x) = \min\{(1 + r)b, \overline{Q}/x\} - L$, $x < n$ and $\tilde{g}(n) = \overline{Q}/n - L$. Consider also the function $\tilde{l} : N \to \Re$ such that

$$\tilde{l}(n - x) = \max\left\{\frac{\overline{Q} - (1 + r)bx}{n - x}, 0\right\}, x < n.$$

Note that $\tilde{l}(n - x)$ is well-defined for all $x \in N$ as we must have $(1 + r)bn > \overline{Q}$, otherwise, the sovereign debtor would have had enough resources to service the debt, i.e. would not have defaulted in the first place. The payoffs to creditors can be specified as follows. Suppose a is such that $x = \#N_{a,Q} \geq n/4$. Then, if $a^i = Q$, the payoff to creditor i is $\tilde{g}(x)$, while if $a^i = S$, the payoff to creditor i is $\tilde{l}(x)$. Now suppose a is such that $\#N_{a,Q} < n/4$. Then, if $a^i = Q$, the payoff to creditor i is $(1 + r)b - L'$, while if $a^i = S$, the payoff to creditor i is $(1 + r)b$, where $L' > 0$ and $L > L'$. The legal costs, L', reflect the fact that an individual creditor, who unsuccessfully tries to accelerate the project, pays a small legal fee for doing so, but as the project is not terminated obtains the continuation payoff $(1 + r)b$.

As before, we find it convenient to work with normalised payoffs. Define the function $g : N \to \Re$ such that $g(x)$ is decreasing in x, $g(x) > 0$ for $x < n$ and $g(n) = 0$. Consider also the function $l : N \to \Re$ such that $l(n - x)$ is decreasing in x and $l(n - x) < 0$ for all $x \in N$. Suppose a is such that $x = \#N_{a,Q} \geq n/4$. Then, if $a^i = Q$, the payoff to creditor i is $g(x)$, while if $a^i = S$, the payoff to creditor i is $l(n - x)$. Now suppose a is such that $\#N_{a,Q} < n/4$. Then, if $a^i = Q$, the payoff to creditor i is $1 - \gamma$ while $a^i = S$, the payoff to creditor i is 1 where $\gamma > 0$. As explained above, γ captures the

fact that an individual creditor who unsuccessfully tries to accelerate the project, pays a small but strictly positive cost and therefore receives a continuation payoff of one net of this cost.

As before, there are two pure strategy Nash equilibria, one where all creditors choose to quit and another where all creditors choose to stay. There are no other pure strategy Nash equilibria.

Next, we show that there is at least one other mixed strategy Nash equilibrium where all n creditors randomly choose to quit with probability q, $0<q<1$. Fix an individual creditor i. Then, from the perspective of this creditor, there are $n-1$ creditors choosing to quit with probability q and stay with probability $1-q$.

It follows that the payoff from quitting will be given by the expression:

$$\sum_{x+1\geq \frac{n}{4}} \binom{n-1}{x} q^x (1-q)^{n-1-x} g(x+1) + \left(\sum_{x+1<\frac{n}{4}} \binom{n-1}{x} q^x (1-q)^{n-1-x} \right) (1-\gamma)$$

while the payoff from staying would be given by the expression:

$$\sum_{x+1\geq \frac{n}{4}} \binom{n-1}{x} q^x (1-q)^{n-1-x} l(n-x) + \sum_{x+1<\frac{n}{4}} \binom{n-1}{x} q^x (1-q)^{n-1-x}.$$

At a mixed strategy equilibrium, the payoff from quitting must be equal to the payoff from staying. It follows that this condition is equivalent to requiring that the following polynomial $f(q)$ has a zero in the open interval $(0, 1)$ where $f(q)$ is given by the expression:

$$\left(\sum_{x+1<\frac{n}{4}} \binom{n-1}{x} q^x (1-q)^{n-1-x} \right) \gamma + r(q)$$

$$+ \sum_{x+1\geq \frac{n}{4}} \binom{n-1}{x} q^x (1-q)^{n-1-x} (l(n-x) - g(x+1))$$

where $r(q)=0$ if n is not exactly divisible by 4 and is given by the expression

$$\binom{n-1}{\frac{n}{4}-1} q^{\frac{n}{4}} (1-q)^{\frac{3}{4}n-1}$$

when n is exactly divisible by 4. Again, by computation, it follows that $f(0)=\gamma>0$ while $f(1)=l(1)-g(n)<0$. As $f(q)$ is a polynomial in q and therefore continuous in q, it follows that there is a solution to $f(q)=0$ at some $q\in(0, 1)$. Therefore, there is at least one mixed strategy equilibrium where all creditors randomly choose to quit with some probability q, $0<q<1$.

Appendix 17.2 Asymmetric information between creditors

Assume that after a sovereign default, there is incomplete information about whether the adverse shock is temporary or permanent, i.e. whether the underlying problem is one of liquidity or insolvency. There are two states of the world $\omega \in \{P, T\}$ where P denotes a permanent shock which has an irreversible effect on the debtor's net worth and on the continuation payoff of the creditors and T denotes a temporary shock which has no effect on debtor's net worth nor on the continuation payoff of the creditors. Nature selects one of these two states of the world according to the prior probability distribution $\{\pi, 1-\pi\}$. Once the state of nature is chosen, each player receives a signal $\sigma^i \in \{P, T\}$ which is privately observed by each individual creditor and independently distributed across creditors with $p = Pr(\sigma^i = \omega \mid \omega) > 1/2$, for $i = 1, 2$ and $\omega = P, T$. Payoffs depend upon state of nature and on creditors' action.

A strategy for a creditor is a map from his signals to actions. We focus on Bayesian equilibrium strategy profiles.

We remark that the strategy profile where both creditors quit, whatever their signal, is always a pure strategy Bayesian equilibrium: given that the other creditor always quits, quitting is a dominant action for each individual creditor.

However, under certain restrictions on parameters, another pure strategy Bayesian equilibrium exists, namely one where each creditor chooses to quit if $\sigma^i = P$ and stays if $\sigma^i = T$. Although at first sight this Bayesian equilibrium is appealing, as we show later in this subsection, it is also *ex ante* inefficient. Conditional on an individual creditor observing some signal, let s denote the probability that the other creditor observes the same signal. Note that $s = p^2 + (1-p)^2$.[26] For any individual creditor, conditional on $\sigma^i = P$, the expected payoff from quitting is $0 + (1-s)\epsilon > 0$ which is always greater than the expected payoff from staying, $s\delta - (1-s)K(1-2p) < 0$ as $p > 1/2$. For any individual creditor, conditional on $\sigma^i = T$, the expected payoff from quitting is $s\epsilon$ while the expected payoff from staying is $(1-s)\delta + sK(2p-1)$. For staying to be a best response, we need the condition that $s\epsilon \leq (1-s)\delta + sK(2p-1)$, or equivalently $|\delta|/(\epsilon + |\delta| + K(2p-1)) \leq s$. Remark that s is a measure of the correlation of the signals privately observed by individual creditors and $|\delta|$ is a measure of the disadvantage of being the second mover in the creditor grab race. The inequality $|\delta|\backslash(\epsilon + |\delta| + K(2p-1)) \leq s$ can now be interpreted as saying that the more costly it is to be the second mover in the creditor grab race, the more correlated the privately observed signals have to be across creditors for the above strategy profile to be a Bayesian equilibrium.

In a first-best situation, where the state of the world is common knowledge, termination should occur only when the shock is permanent, hence the project is terminated with probability π. In the Bayesian equilibrium where both creditors withdraw irrespective of their signal, however, the probability of project termination is one. In the Bayesian equilibrium,

where each creditor chooses to quit if $\sigma^i = P$ and to stay if $\sigma^i = T$, the probability of termination is $(1-\pi)+p^2+2p(1-p)-2p(1-\pi)$. Note that if $p=1$, this expression is equal to π. By computation, it can be confirmed that the derivative of this expression is $2(\pi-p)$. When, $\pi>p$, there is excessive project termination relative to the first-best, while if $\pi<p$ there is too little project termination relative to first-best. It follows that the Bayesian equilibrium randomisation is almost always inefficient relative to the first-best.

Now, consider a direct revelation mechanism where the creditors announce their signals to the mechanism designer and the mechanism designer terminates the project with probability one if both creditors announce a bad signal; terminates the project with some exogenous probability x if one creditor announces a good signal and another creditor announces a bad signal; and continues the project with probability one if both creditors announce the good signal. The associated probability of termination is $(1-\pi)+p^2+2xp(1-p)-2p(1-\pi)$. It follows that by choosing x appropriately, a direct revelation mechanism can always do at least as well as a Bayesian equilibrium and in some cases, i.e. $\pi>p$, it can do strictly better. Observe that this mechanism is incentive-compatible as truth-telling is a weakly dominant strategy for each creditor. We summarise this discussion by the following proposition.

Proposition 2 The Bayesian equilibrium project termination is almost always inefficient relative to the first-best. Moreover, a direct revelation mechanism does better.

a) When $\omega = P$ the payoff matrix is:

Actions	2 QUITS	2 STAYS
1 QUITS	0 0	ε δ
1 STAYS	ε δ	$-K$ $-K$

b) When $\omega = T$ the payoff matrix is:

Actions	2 QUITS	2 STAYS
1 QUITS	0 0	ε δ
1 STAYS	δ ε	K K

Notes

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2 Eaton (2004) uses a variant of Diamond and Dybvig (1983) in a sovereign debt context.

3 Bulow and Rogoff (1989b) point out that the threat of exclusion from capital markets may fail to satisfy renegotiation proofness and may be of limited use in the case of a small open economy with access to insurance markets.

4 Which bails out all governments facing a rollover crisis, conditional on fiscal adjustment.

5 Although the link between asymmetric information (among creditors) and *ex ante* debtor's incentives is ignored in the Appendix, we plan to analyse this in future work.

6 The sovereigns involved in the 1997/8 financial crisis in East Asia were not substantial debtors (at least *ex ante*): the debt was largely private and so in principle involved issues of corporate debt restructuring.

7 By subtracting payoffs in the top left cell and scaling by payoffs in the bottom right cell.

8 With fixed legal fees and no sharing clauses, the strategy of quitting is risk dominant if recovery rates are higher than 20 per cent of the total amount borrowed, i.e. $\underline{Q} > 0.4(1+r)b$. When $\underline{Q} = 0.4(1+r)b$, however, the two pure strategies have the same expected payoffs, so Harsanyi and Selten's criterion (1984) coincides with the mixed strategy equilibrium.

9 Some commentators, Stiglitz (2002a) and Calvo *et al.* (2002) for example, believe that *asymmetric information* between creditors is the main reason for excessive default, rather than the problem of debtor's moral hazard. In a complete analysis, it should be possible to combine asymmetric information problems with those of debtor's moral hazard.

10 There is no loss of generality in doing so, as Bulow and Rogoff (1990) have shown that reputation may not be renegotiation-proof in models of sovereign debt in small open economies.

11 While we refer to good and bad effort, the model may be interpreted such that the debtor chooses low and high risk growth strategies, for example where the latter poses the risk of a positive haircut in period 2.

12 > The central bank, committed to honor the peg and to maintain the country's terms of trade, has to protect its reserves. It cannot be indifferent to the claims on those reserves negotiated by private parties, domestic and foreign, who ignore the social risks. An obvious precaution is to limit even to zero the net indebtedness (particularly the short-term debt) in hard currency permitted any private bank.
>
> Tobin (1999, p. 73)

13 The second-best outcome, in this context, corresponds to the case where an international lender of last resort bails out both creditors for sure but only rescues the debtor with probability $1 - \pi_m$, i.e. it practices a policy of "constructive ambiguity" where the probabilities are defined by the need to solve the incentive problem.

14 The expected payoff for Creditor 1 playing a pure strategy of quitting is shown by the horizontal co-ordinate of B; so the ratio Ab to AD indicates the continuation probability of Creditor 2. By symmetry, this is also characteristic of Creditor 1; and so, by construction, Ab' gives the numerical value of the common continuation probability.

15 As suggested by Renato Flores and Federico Sturzenegger.

16 There are those who argue that the doubling of sovereign spreads seen in Brazil in 2002 was largely due to contagion from the Argentine crisis.

17 The very large measurement error in world current-account positions (a deficit larger than $100 billion for 1996), with recorded payments of capital income being much greater than recorded receipts, gives credence to the suggestion that a substantial portion of international capital movements is tax-avoiding in motive.

(Cooper 1998, p. 14)

18 Eaton (2004, p. 273) discusses the idea that "a portion of any loan be held in escrow at the time that it is extended. The escrow account would be turned over to the sovereign as it repaid its loan according to schedule. Upon declaration of a standstill, however, funds would be paid instead to creditors."

19 A private insurer would have strong incentives to renege the contract *ex post* (by not lending in the event of bad news). Even if one assumes that the private insurer can be forced by a court to lend later, it would be too late.

(Jeanne 2001, p. 21)

20 China attracts massive FDI inflows but strictly limits other forms of external finance.

21 He repeats a recommendation made earlier, in Bulow and Rogoff (1990), of "restricting countries' ability to waive sovereign immunity as a means of discouraging the mediation of debt contracts in industrialized country courts" (p. 38).

22 How does this differ from what happens with IMF "bail-outs" where private creditors who wish to exit can do so using emergency official funding and the IMF can impose conditionally so as to secure repayment? (Jeanne and Zettelmeyer 2001 provide evidence that official funding is almost always repaid.) If this is known *ex ante*, is it not as if creditors can secure commitment from the debtor? Yes but, given the possibility of exit, they do not have the appropriate incentives: there is a problem of investor's moral hazard where private creditors fail to monitor. The bankruptcy procedures advocated by Anne Krueger explicitly prevent creditor exit so as to avoid this problem.

23 This situation arises in Kiyotaki and Moore's (1997) model of credit cycles where the hold-up problem can only be solved by the provision of collateral.

24 Smalhout (2001) noted that "the net external interest burden is actually quite modest, external debt payments were $12.5 billion in 2000 or about 4% of GDP . . . But Argentines earned an estimated $6.4 billion or just over 2% of GDP." In addition, there may have been private capital flight of $20 billion dollars in 2001 before the collapse of the peso.

25 In presenting Calvo *et al.* (2002) at the UTDT summer workshop in Buenos Aires in August 2002, he suggested that whether or not a theory of sovereign debt crisis includes "sudden stops" should be a crucial test for its empirical relevance for emerging market finance.

26 We can derive this as follows:

$$\begin{aligned} s &= \Pr(\sigma^j = \omega \mid \sigma^j = \omega) \\ &= \Pr(\sigma^j = \omega, \omega)\Pr(\omega \mid \sigma^j = \omega) \\ &= p^2 + (1-p)^2. \end{aligned}$$

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18 Comments on "Co-ordination failure, moral hazard and sovereign bankruptcy procedures"

David Vines

Chapter 17, by Ghosal and Miller, suggests that an attempt to solve liquidity crises by rollovers will promote moral hazard and, conversely, that the better one can deal with such moral hazard problems the more one ought to solve all liquidity crises by rollovers. The basic argument is set out in Sections 18.1 to 18.3 of these comments.

This volume discusses both liquidity crises and solvency crises. Chapter 17 focuses almost entirely on liquidity crises. It does not consider the effect of solvency difficulties. I will discuss solvency crises in Section 18.4. Section 18.5 considers implications of this analysis.

18.1 The setup of the game

The setup is one which produces crises during the life of an investment project. These can be caused *either* by a negative external shock *or* by a failure of the borrower to make sufficient policy effort. When the negative effects of either of these strike, a liquidity problem arises, but the creditors cannot tell which. The question is whether (a) the lenders will continue to lend in such circumstances, and (b) whether the borrower has incentives to make policy effort in these circumstances. There are two periods (the first between $t = 0$ and $t = 1$, and the second between $t = 1$ and $t = 2$) and there are only two creditors. The project is long-run solvent in that the shocks only cause temporary liquidity crises.

There are two things which can go wrong at the beginning of the second period. First, there can have been "low effort" by the borrower at the beginning of period 1. Effort can be thought of as "financial regulation" or "capital controls". Without effort there will be an outflow of money abroad. The sovereign has the possibility of making effort which would prevent this. Second, the productivity of the project can temporarily fall, due to a negative shock at the end of period 1.

If either of these things happens, the project has a liquidity problem at the beginning of period 2, in that the required payment of interest at this time is more than the project has yielded by then.[1] The creditors face a co-ordination problem. They may or may not run. If they do not run, then the project can be completed. If they do run, then there is a "crisis" and the

project cannot be completed. Recall that the shocks are temporary and the project is solvent so that there will be enough money to fully service debts at the end of period 2, if the project is continued. So what we are discussing is not a solvency crisis, but a liquidity crisis.

18.2 Strategy of the players

Creditor co-ordination and creditor strategy

A liquidity problem – due to failure of effort, or a negative shock – may or may not produce a crisis, depending on the solution of the co-ordination game between the creditors and the effect of this on the creditors' strategy. Ghosal and Miller show that there are three possible strategies for the lender in these circumstances: (i) continue lending; (ii) quit, thus provoking a crisis; or (iii) a mixed strategy, in which they randomise on whether to lend or not. The authors opt for the mixed strategy, where the creditors randomise as to whether they continue to lend. So if there is a liquidity problem at the end of period 1, caused either by a shock or by low effort, there is a probabilistic outcome as between crisis and the project continuing.

Borrower effort and borrower strategy

The borrowers have a choice between effort or no effort. This choice is made at the beginning of period 1. It is assumed that if there *is* a liquidity crisis then the outcome with effort is better for the borrower than the one without effort. *Ex ante* regulation is supposed to lessen the costs of crises. Capital outflow controls are supposed to have the same effect. Neither of these effects are modelled explicitly. Conversely, however, it is also assumed that if there is no liquidity crisis then the no-effort outcome is better. This is because the borrower does not then bear the costs of financial regulation and/or capital outflow controls. The borrower will thus only choose to expend effort if there is a high enough chance of the crisis outcome.

18.3 Equilibria, moral hazard and efficiency

Three potential equilibria can be analysed.[2] In doing so, we note the implications for efficiency and for the moral hazard issue.

Full rollover by creditors

Suppose that the creditors were always willing to lend when there is a liquidity problem at the end of period 1. That means there would be no cost to the borrower of provoking a liquidity problem by putting in no effort, since this would never lead to a crisis. Indeed, there would be a benefit to

undertaking no effort because effort is costly. This is the moral hazard problem which lies at the centre of the analysis. The authors argue that it would not be in the creditors' interests to select an equilibrium which gave rise to no effort. So the full rollover strategy by the creditors is ruled out as an equilibrium.

No rollover by creditors

Suppose instead that creditors were always to quit when there is a liquidity problem. This means that there would be a cost to the borrower of undertaking no effort – it would provoke certain termination and crisis at the end of period 1.[3] And this outcome – certain crisis – would be costly for the borrower. Providing that effort is not too costly, they would put in effort to avoid this outcome. This can be an equilibrium of the game – effort on the part of the borrower and crisis whenever there is a negative shock.

But this equilibrium is inefficient. It has the cost that there will always be a crisis when there is a negative shock; it is the risk of this which induces effort. An efficient outcome would be one in which there was effort, but in which the lenders did not provoke a crisis following a negative shock. This equilibrium thus has "too many" crises compared with an efficient outcome.

Mixed strategy on the part of creditors

Suppose finally that there is a mixed strategy equilibrium of the creditor co-ordination game.[4] In this situation, creditors impose just a high enough probability of crisis when there is a liquidity problem that they can induce the borrower to undertake effort, though they do not cause a crisis after every negative shock. Let θ denote this probability of crisis when there is a liquidity problem. From the borrower's point of view, if he or she were to put in no effort this would provoke a liquidity problem with uncertainty, which would in turn provoke crisis with probability θ. By contrast, if the borrower were to put in effort, this would mean that the probability of a liquidity problem was equal to the probability of a negative shock, assumed by Ghosal and Miller to be p. In that case, the probability of crisis would be only $p\theta$ and undertaking effort would reduce the probability of crisis by $(1-p)\theta$. Let the benefit to the borrower of not having a crisis be α and let the cost of effort be x. Then for this mixed strategy outcome to be an equilibrium, it must be the case that $x \leq \alpha(1-p)\theta$. This means that the cost to the borrower of effort is less than or equal to the benefit of effort. Let $\theta = \theta^*$ be the value of θ at which this inequality holds exactly.

This equilibrium is inefficient, just like the equilibrium described above, even though the probability of a crisis following a liquidity problem is less than unity. It has the cost that, with probability θ, there will be a crisis when there is a negative shock; it is this probability which induces effort.

An efficient outcome would be one in which there was effort but in which lenders never provoked a crisis following a negative shock. The equilibrium thus still has "too many" crises compared with an efficient outcome. But if the *only* way to induce effort is to impose a positive probability of crisis when there is no effort, then this setup can be "constrained efficient", if θ is just large enough to pass the test described in the previous paragraph.

The reader of Chapter 17 might wonder whether creditors have an incentive to choose $\theta = \theta^*$ as an outcome of their co-ordination game. The authors do not examine whether they do. Instead they argue that the creditors will only by chance choose θ^* and that they will almost always choose too high a value of θ and thus cause an outcome in which there are too many crises.

Implications

Thus, overall, the equilibrium is one in which effort is undertaken, but in which there are too many crises. This may be a mixed strategy equilibrium, in which for all values of θ other than $\theta = \theta^*$ there will be too many crises. Or it may be an outcome in which there is always a crisis whenever there is a negative external shock. In either case there are too many crises, which is inefficient. Fundamentally, this comes from the moral hazard problem that the only way to induce effort is to impose at least some risk of a crisis. This point has been stressed by Dooley (2001) and Gai *et al.* (2001).

18.4 Liquidity crises and solvency crises

The discussion until now has been on liquidity crises, not solvency crises. The efficient resolution of such crises involves rollovers by creditors *and* the taking of due care by borrowers. Solvency crises are different from liquidity crises. They occur because there is a shortfall in the value of the project below the borrowing costs, and thus a debt overhang. The efficient solution to them *cannot* involve rollovers, since if there is a rollover the project still remains insolvent. It can also be argued that it should not involve subsidised lending from, say, the IMF, which would keep the project solvent by means of a low-interest subsidy (see Haldane *et al.* 2004; Irwin and Vines 2002). This is because of a different form of moral hazard: too much borrowing and too little reliance on risk-bearing equity.[5] Instead, efficient resolution typically requires a writing-down of debt to make the continuation of the project possible. This would remove the debt overhang, prevent it from swamping revenue in the second period, and thus enable the project to remain profitable.

Ghosal and Miller's chapter does attempt to address the solvency issue, when discussing what would happen if a "haircut" was attached to creditors' assets. But this does not get to the heart of the insolvency issue. Within this setup, if somehow borrowers can be persuaded to take care,

then there will be no liquidity problems and, as a result, there will be no insolvency problems. The solvency crisis issue arises when negative external events cause insolvency independent of borrower effort.

This suggests that one is looking for three types of outcome in crisis management:

1 removal of the advantages to sovereign lenders of not taking sufficient care; and
2 rollover/continuation of lending in the face of temporary liquidity shocks; but also
3 write-downs of debts owed to lenders in case of solvency difficulties.

Chapter 17 discusses how solving the second problem will make the first problem harder to solve. But the last problem also suggests that there will be some crises that one cannot solve by rollovers. Indeed, trying to solve such problems using rollovers will create lender moral hazard – inducing too much financing by debt and too little financing by equity.

18.5 Implications

IMF

Ghosal and Miller's analysis, and the extension of it discussed in the previous section, has implications for the IMF. Many papers have argued that the IMF should facilitate a complete rollover for liquidity problems (see again Haldane *et al.* 2004; Irwin and Vines 2002). But the argument in Chapter 17 suggests that such a full rollover could lead to a moral hazard problem, causing low effort and the more frequent emergence of liquidity problems.

There appears to be two kinds of solution to this problem. The first is to suggest that, if the IMF is to deal with such temporary liquidity problems, it may need to be able to distinguish between a negative external shock and a lack of effort. In the latter case, the IMF should impose harsh conditionality as the price for financial support (see Gai *et al.* 2002). Notice that the conditionality imposed for such liquidity support must be greater than the *ex ante* costs of undertaking effort, if the attractiveness of not undertaking effort is to be removed.

Alternatively, the discussion of solvency issues suggests another way forward. First, one should not be seeking to prevent solvency crises, but rather encourage their resolution through write-downs, so as to avoid lender moral hazard. Second, it may be that the risk of a solvency crisis is so great, and the costs of such a crisis are so large, that not undertaking effort becomes unattractive to the borrower. This suggests that dealing with solvency crises by means of debt write-down, rather than through subsidised lending, may achieve two things. It may not only solve lender moral hazard problems; it may also help resolve borrower moral hazard.

International bankruptcy procedures

The argument that there should be a different treatment of liquidity crises and solvency crises has implications for international bankruptcy procedures. This requires a careful "discovery process" when a crisis emerges. Is the crisis a liquidity crisis which requires rollover? Or is it a solvency crisis which requires debt write-down? It would seem that there needs to be institutional management of this discovery process. Some versions of international bankruptcy procedures rely on collective action clauses amongst lenders. But creditors, acting on their own, could not perform the required discovery process. This suggests that, at the beginning of any crisis, there is a need for some institution, such as the IMF, to determine whether the problem is a liquidity one or a solvency one. This issue is discussed in Haldane *et al.* (2004).

Timing of the "discovery process"

The timing of the decision determining the type of crisis is crucial. Signals will also be imperfect. And making the wrong decision may be costly. If the problem is a solvency one, but it is treated as a liquidity problem so that rollovers are provided, this may result in the solvency problem becoming larger over time. Many believe that this is what happened in the case of Argentina.[6] Alternatively, if the problem is a liquidity one, but it is treated as a solvency one and debt write-downs are instituted, this will cause projects which are in fact profitable to be abandoned. Many believe that the IMF lent to Brazil precisely to avoid this kind of difficulty emerging. But what if the IMF is not sure whether it is dealing with Argentina-type circumstances or Brazil-type circumstances? How should the decision be made so as to minimise the two-way risks involved in these decisions? This is a big open issue.

Notes

1 Ghosal and Miller call this liquidity problem a "technical default" but we do not need this term.
2 This discussion presents a simple version of the argument in Sections 17.3 and 17.4 of the chapter.
3 Ghosal and Miller assume that without effort there is *always* a liquidity problem. It would be possible to assume more generally that effort simply lowers the probability of crisis. That would make the analysis more general.
4 The reader of Chapter 17 may wonder whether creditors really can, or do, randomise in this way. The authors do not offer a persuasive argument about this.
5 In the Ghosal and Miller chapter, projects are entirely financed by borrowing. But in a more general setup in which projects can be financed by either borrowing or by equity, the prospect of this kind of intervention in the face of a solvency crisis can lead to an incentive to finance projects with too much borrowing and too little reliance on risk-bearing equity. This is because, in the face of bad shocks, the returns to lending are guaranteed by the IMF's subsidy, transferring the risks of these bad shocks to the IMF. The risks of the bad shocks should be borne by equity holders.

6 I am here referring to the period before the final end-game, in which Argentina was lent money, in the belief that adjustment strategies could and would be pursued which would ensure solvency.

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Part VI

The road ahead

19 Missing links in the international financial architecture

Mervyn A. King

19.1 Background

The official sector has been working actively on crisis resolution issues since at least the Rey Report in 1996. Since then, crisis resolution has remained near the top of the agenda of a number of official sector bodies, including the IMF, the G22, the G20, the G10 and the G7. Recent crises in Turkey, Argentina, Uruguay and – most recently – Brazil have, if anything, given that work added impetus.

Partly in response to these crisis events, some new ideas for dealing with crises have been put forward by, among others, the IMF and the US Treasury – and indeed by the Bank of England, working in collaboration with colleagues at the Bank of Canada. There are tentative signs that some of these words have begun to be put into action. The G7 Action Plan, announced at the time of the IMF Spring Meetings in 2002, was recognition of that.

But where is this implementation effort best directed? What are the "missing links" in the international financial architecture? And can we be confident these measures will lower the incidence and costs of crisis in the future?

19.2 Getting incentives right

First, the theory. Any crisis resolution framework needs to balance two objectives: minimising the costs of crisis when they happen, on the one hand; and minimising the chances of inducing further crises in the future, on the other. So the official initiatives currently on the table should be assessed not only on their capacity to clean up a problem, but also on their likely effect on incentives. Otherwise, resolving today's crisis will merely sow the seeds for tomorrow's.

Meeting the second objective means designing an international architecture which gets incentives right: the incentives of *debtors*, ensuring they meet contractual payments when they are able to do so, but that they promptly address payments problems when these arise; the incentives of private *creditors*, ensuring they assess and price the risks they take

appropriately; and the incentives of the *official sector*, ensuring they provide short-term liquidity support when warranted, but without distorting the incentives of debtors and creditors in the process.

19.3 Restructuring sovereign debt

Next, the practice. Sovereign default will always be a painful process. But recent crises – most prominently in Argentina – have illustrated that these costs may be unnecessarily high under the current system, for both debtors and creditors. Two of the highest profile initiatives currently on the table are intended to lessen the costs of restructuring sovereign debt following an event of default.

One bold proposal for reform was put forward by Anne Krueger of the IMF at the end of 2001. It involves the creation of a Sovereign Debt Restructuring Mechanism, or SDRM. This would facilitate restructuring by providing a legal framework within which a debt workout would operate, including majority voting provisions for the writing-down of debt. It would also provide some breathing space for the debtor to organise its affairs. A detailed blueprint for the SDRM was presented at the spring meetings of the IMF in 2003 and put on hold for now.

The second proposal for facilitating the restructuring of sovereign debt involves the more widespread adoption of collective action clauses in international bonds and possibly other instruments. Collective action clauses have been routinely included in English law bonds since the nineteenth century. The US Treasury and others in the official sector have recently lent strong support to the inclusion of contractual clauses in bonds issued under New York law. Indeed, the official sector (through the G10) and the private sector (through seven trade associations) have drawn up model clauses which might serve as a template for future issuance. More recently still, Mexico has introduced CACs into its own sovereign bonds, and was quickly followed by Brazil, Uruguay and South Africa. Plainly, progress has been tangible.

Although there are differences in these two approaches, they are fundamentally similar in spirit. Both aim to tackle the collective action problems associated with sovereign debt write-downs. For that reason, they should be seen more as complements than as substitutes.

Equally, it is clear that both proposals would face serious practical hurdles before they could be made operational. The SDRM would require a change in the IMF's Articles of Agreement and, potentially, statutory change in a number of countries. Collective action clauses face different hurdles, including the problem of introducing them into debt that has already been issued. Both of these problems are surmountable. But both would take time to fix.

19.4 The missing links

There are deeper-seated reasons, however, why these proposals, desirable as they may be, would by themselves not take us all of the way. Even if they were necessary for the efficient functioning of the international financial system, they would not be sufficient. They would help cut the costs of crisis. But they fall short of providing the right incentives to guard against future crises – the second key element of a crisis resolution framework.

To see this, imagine a country that finds itself unable to make payments on its debt. It is on the road to default, but has not yet reached that stage. If there are no constraints on IMF financing, the incentives for the debtor will almost always be to seek further official finance. Official financing provides a short-term balm.

But it also carries a potential longer-term cost. It may result in countries taking on *new* official debt when the solution to their problems is likely to be a reprofiling, or possibly a writing-down, of *existing* debts. In other words, official financing may induce incentives to "gamble for resurrection" on the part of the debtor and its creditors – or at least may blunt the incentives of both parties to face up to their financing problems. In short, the prospect of unlimited official sector finance would increase the potential for crises in the future, *irrespective* of whether the SDRM or collective action clauses were in place.

In practice, of course, official sector financing is not unlimited. But in a large number of recent cases – Mexico in 1994/1995, South-East Asia in 1997, Russia in 1998, Brazil in 1999, Turkey and Argentina during 2000 and 2001, and Uruguay and Brazil in 2002 – exceptional access to IMF financing has been provided. In some cases, IMF programmes have had to be augmented after a first programme has failed. Official lending has become the first (and sometimes the second and the third) resort, not the last.

It is not just the size of these packages that may be a cause for concern. It is also their lack of predictability. Crises are, by their nature, unpredictable events. But the degree of variability in the size of financing packages in recent years has introduced an added uncertainty into financial markets, which is costly to debtors and creditors. Both need a firmer basis on which to plan.

So what are the missing links in the international architecture, which might remedy these problems? In a paper published by the Bank of England in 2001, in collaboration with the Bank of Canada, we suggested that two of the key missing links were presumptive limits on official financing, on the one hand, and the judicious use of payment suspensions or standstills on the other.

We do not support strict rules on official finance, but rather stronger presumptions than at present: stronger presumptions about the quantity of official finance available in normal times; and much stronger presumptions about the circumstances and procedures that would accompany a breach

of those normal lending limits. For example, granting exceptional access might require greater *ex ante* justification and be subject to greater *ex post* accountability.

Again, it is possible to point towards tangible progress over the last year or so. The official sector agreed to strengthen the framework for IMF access policy in 2003, by introducing stricter criteria and extra procedural safeguards for access above normal lending limits. So a new access policy framework is in place – and the next step is to ensure it is adhered to rigorously in future cases.

The logical consequence of limited official finance is that sometimes countries will need to seek a reprofiling or restructuring of their debts. When a comprehensive writing-down of debts is required, the SDRM and collective action clauses are instruments for doing that. But there are a range of other, more informal means of tackling less serious payments problems: for example, a voluntary rescheduling or rolling-over of a subset of debts, as in the South Korean and Brazilian crises; or market-based bond exchanges, as in the cases of Ukraine, Pakistan and Ecuador.

The official sector has an important role to play in these situations. It should ensure that the full menu of options is made known and available to the debtor, from which the debtor – *not* the official sector – then chooses. Each of these options is backstopped by limits on IMF lending.

Lending limits are about strengthening presumptions regarding the behaviour of the official sector. There may also be a case, however, for strengthening presumptions about the behaviour of other players during crisis – specifically, the debtor and its creditors. In this regard, encouraging progress has been made over recent months, by both the official and the private sectors, in developing a "code of good conduct". This would aim to set out principles and guidelines which debtors and creditors might be expected to abide by when payment problems arise. It would help condition the actions and expectations of the different parties and, in this way, hopefully make the workout process more orderly. The precise design of such a code, and the incentives to comply with it, are issues that need to be addressed in future work.

Redesigning the international financial architecture is not about setting strict rules. But nor is it about unfettered discretion. It is about strengthening presumptions about the behaviour of different parties: the official sector, through lending limits; and debtors and creditors, through a code of good conduct. Both of these would be backed up by (contractual or statutory) apparatus to facilitate workouts. These are objectives which ought to be both practical and desirable, to the official sector, creditors and debtors.

20 The work ahead

Matthew Fisher

The aftermath of the Asian crises prompted a wide-ranging work programme designed to strengthen the IMF's role in the areas of crisis prevention and resolution. In a number of areas, substantial progress has been made, while in others it remains work in progress.

20.1 Prevention

In the area of prevention, much has been accomplished in reducing vulnerabilities. There has been a move away from pegged exchange rates that tended to be associated with the build-up of large unhedged exposures; reserve levels have been increased; financial systems have been strengthened; and there has been a substantial increase in transparency. Beyond the normal areas of policy advice, the IMF has increased the attention given to the assessment and management of risks. To this end, Article IV missions now attach considerable importance to the analysis of debt sustainability and vulnerability indicators. At the same time, complementary efforts are underway to strengthen financial system surveillance under the umbrella of the Financial Sector Assessment Programmes (FSAPs). Another strand of this work consists of promoting the adoption of, and adherence to, standards and codes, and the associated assessments of progress in these areas in the context of Reports on the Observance of Standards and Codes (ROSCs).

20.2 Contingent Credit Line (CCL)

The CCL was intended to provide contingent financing for countries that have sound fundamentals, but which are hit by an adverse shock. Substantial efforts have been made to consider ways to modify the facility and its eligibility requirements to balance the desire to provide contingent financing, while providing adequate safeguards. To date the facility has not been utilised and in a Board discussion in early 2003 it was not considered likely that it would be used in its current form. Against this background, the IMF Board has considered options for modifying the facility. However, many IMF Directors consider that reform has been tried once before, and that it

would probably not be possible to develop a structure for the facility that would both encourage the use of the CCL and provide the necessary safeguards for the IMF. These Directors also consider that there is potential for adapting existing IMF facilities and the Article IV consultation process to serve the purposes of the CCL. As things stand, there is not sufficient support to extend the facility beyond its sunset in November 2003. The IMF Board will reach a final decision on the future of the CCL in the light of forthcoming work on the effectiveness of surveillance and precautionary arrangements.

20.3 Crisis resolution

Notwithstanding best efforts at prevention, crises will occur, and so efforts have been taken and are currently underway to strengthen the tools for the resolution of crises.

Assessments of debt sustainability

Considerable effort has been devoted to trying to strengthen the capacity to assess a country's debt sustainability. This is not an exact science. Judgements need to be based, *inter alia*, on assessments of authorities' ability to mobilise and sustain support for adjustment efforts and the likely response of the economy to policies – including likely developments in real interest rates and the real exchange rate, as well as prospects for the external environment. The analysis must also reflect a sober assessment of the likely fiscal implications of resolving difficulties in the domestic financial sector. Beyond that, account also needs to be taken of vulnerability to future shocks. Here there is a need for careful analysis of the interlinkages between balance sheets in the economy and the ways in which developments in one sector may spillover to others, including the fiscal accounts.

Of course, judgements regarding an IMF member country's debt sustainability are not taken lightly. But continued IMF lending in the face of unsustainable debt burdens would be no panacea. Perhaps it could buy a little time. But increasing the burden of debt that benefits from the IMF's preferred creditor status must only increase the magnitude of the debt adjustment that must eventually be borne by private creditors in situations where there is no underlying improvement in the country's capacity to service its debt.

Access policy

One issue that has received particular attention is access policy. The concern that once access limits are breached there has been no effective ceiling, has led to efforts to find ways to constrain access to within a predictable framework, while still allowing the flexibility to provide access on a substantial scale in hopefully rare cases. In 2003, the IMF's executive

Board adopted a new framework for access in capital account crises. This sets out stronger procedures for decision making on exceptional access proposals. These include increasing the burden of proof in programme documentation, early and more formal IMF Board consultations on programme negotiations in exceptional access cases, and, as a rule, *ex post* evaluation of programmes with exceptional access within a year of the end of the arrangement.

We are now following a policy under which exceptionally large access to IMF resources – something associated with a number of recent crisis cases – will require the fulfilment of four conditions: first, an exceptionally large balance-of-payments financing need; second, a sustainable debt burden when evaluated under reasonably conservative assumptions; third, a judgement that the country will be able to return to private capital markets within a reasonable period of time; and, fourth, indications that the government has the will and capacity to deliver on its agreed programme. These principles should provide member countries and financial markets with greater clarity and predictability about the decisions the IMF will be taking in dealing with financial crises.

Lending into arrears policy

Clearly, in most cases it is hoped that the IMF's financing will be catalytic and will provide a breathing space as policies take hold and confidence builds. In some extreme cases, however, it may not be possible to avoid default on sovereign obligations. In this context, the IMF has modified its lending into arrears policy to provide procedural clarity, and in particular to provide better definition of the good faith criterion. This policy establishes expectations regarding the behaviour of debtors that are receiving financial support from the IMF in such circumstances. The debtor should engage in an early dialogue, which should continue until the restructuring is completed.

- The IMF member should share relevant, non-confidential information with all creditors on a timely basis. This would include an explanation of the adjustment programme and the financial circumstances that justify a restructuring, as well as a comprehensive picture of all domestic and external claims on the sovereign.
- The debtor should provide creditors with an early opportunity to give input on the design of the restructuring strategy. This could help address the specific needs of different types of investors, thereby increasing the likelihood of a high participation rate.

In addition, in cases in which creditors have organised a reasonably representative committee on a timely basis, and where warranted by the complexity of the case, there is an expectation that the IMF member would negotiate with such a committee in accordance with a number of

principles laid out in the policy. In formulating these principles, we have drawn on the expertise of workout specialists reflected, for example, in the report by the Council on Foreign Relations (CFR) and efforts by the International Federation of Insolvency Professionals (INSOL) to distil best practice for non-sovereign workouts.

20.4 Sovereign debt restructuring

One shortcoming of the existing architecture concerns the difficulties facing sovereigns with unsustainable debt burdens in reaching an early agreement with their creditors on the restructuring of their foreign debt. The existing system creates delays that lead to large costs for creditors and debtors alike.

In recent months, the IMF has pursued a twin track approach of developing a concrete proposal for a statutory mechanism, in response to a request from the International Monetary and Financial Committee (IMFC), and promoting the inclusion of collective action clauses (CACs) in sovereign debt contracts.

SDRM

The key objective of the proposed SDRM mechanism is to facilitate rapid agreement on the restructuring of sovereign debt in cases in which there is no feasible set of policies that offer the prospect of the country regaining viability. It is not the intention to make restructurings more frequent, or default easier, but rather to create incentives for debtors and their creditors to move quickly to reach agreement on a reduction in the debt burden that – taken with the sustained implementation of appropriate policies – should pave the way for a return to sustainable growth.

There is typically at least a brief period after it has become evident that debt is unsustainable and before the onset of a full-blown crisis. Time is the friend of neither a debtor nor its creditors in such circumstances. The challenge we face is to produce a system that maximises the prospect for reaching a rapid and orderly agreement, in a fashion that minimises the scale of economic damage and the costs that must be borne by debtors and their creditors.

Of course, there are a number of impediments to early agreement on a restructuring, and the relative importance of the various factors is likely to vary among cases. Clearly there is no substitute for the sustained implementation of appropriate policies. But one key issue is a market failure related to collective action. There is a broad measure of agreement about this. The recognition of, and measures to address, collective action difficulties lie at the heart of proposals for strengthening the arrangements for restructuring sovereign debt, including the inclusion of CACs in bond contracts, the JP Morgan variation of CACs, the use of class actions within the existing statutory frameworks of the United States and a number of

other jurisdictions, as well as the new statutory approach suggested under the SDRM.

In taking the many difficult decisions needed to formulate a SDRM proposal, we have been guided by a number of principles which are intended – in part – to reflect the legitimate concerns expressed by the private sector. In brief:

- the mechanism should only be used to restructure debts that are clearly unsustainable;
- the mechanism should be designed to catalyse rapid agreement;
- any interference in contractual rights should be limited to those needed to resolve the most important collective action problems;
- the mechanism should mandate transparency in the restructuring process, and should promote the active participation of creditors;
- finally, the role of the IMF should be limited.

Let me now summarise the design of the mechanism, before turning to recent deliberations of the IMF's Executive Board and the next steps.

- The mechanism would be activated by the debtor. We have considered – but rejected – suggestions for a second finger on the trigger, largely because of a desire to minimise the role of the IMF.
- The potential coverage of the mechanism would be broad. It would encompass claims governed by foreign law (i.e. it would exclude domestic law instruments, for which governments already have adequate tools for resolving collective action problems). There would be specific carve-outs for the claims of the IMF and some other IFIs, and privileged claims (i.e. secured financing). There is an open question of whether the claims of official bilateral creditors (i.e. the Paris Club) would be brought under the mechanism, or would be restructured in parallel.
- In individual cases, however, debtors – in consultation with their creditors – would be free to choose on the coverage of the proposed restructurings. We would certainly expect that following the practice established over the last 20 years, trade credit, while potentially included within the mechanism, would in fact not be restructured other than in the most dire circumstances.
- The balance we have struck with regard to coverage reflects extensive input from the private sector. It seeks to balance the need for flexibility in handling cases that we cannot now foresee, with the need to minimise the impact on capital markets – which is why we excluded secured financing – with the need to limit the scope for circumvention.
- Activation of the mechanism would trigger the transparency requirements. Beyond a description of its economic policies and prospects, a debtor would need to publish lists of claims: (i) that are to be restructured under the mechanism; (ii) that will be restructured in parallel with the mechanism; and (iii) that will not be restructured. This

reflects our view, shared by the private sector, that the efficiency of the restructuring process would be facilitated by a predictable and transparent framework.

- Activation of the mechanism would also trigger a registration requirement. This would be overseen by an independent Sovereign Debt Dispute Resolution Forum (SDDRF), which would also be responsible for resolving disputes, as well as overseeing the voting process.
- We are not proposing an automatic stay on the enforcement of creditor rights. This has been perhaps the most controversial feature of the discussions. After extensive discussions with the private sector and workout professionals, we have concluded that a general stay – even one activated by an affirmative vote of creditors – would be a disproportionate response to the risk of pre-deal litigation. Accordingly, we are proposing two more limited measures: first, the so called "hotchpot rule", and second, specific injunctive relief.
- Finally, the restructuring would be enforced by a majority vote of the creditors covered by the mechanism. We have proposed a threshold of 75 per cent. A deal that is acceptable to a qualified majority would be binding on all investors holding claims covered by the restructuring, so there would be no remaining threat of post-deal litigation.

Where do we stand? The debate inside the IMF's Executive Board has been as vigorous as it has been in other fora. We do not at this time have the support of members with 85 per cent of the voting power that would be needed to amend the IMF's Articles of Agreement. Among those who do support the proposal, views are divided on two major issues. First, while a majority supports the IMF staff proposals, several countries would prefer that the mechanism provide for a general cessation of payments and general stay on litigation. Second, concerns have been raised regarding the substantive decision-taking authority of the SDDRF. There is general agreement that it should judge neither the appropriateness of policies nor the terms of a restructuring. But the extent of its statutory authority to resolve disputes remains contentious.

Collective Action Clauses (CACs)

The IMF continues to actively support efforts to develop, and promote the adoption of, collective action clauses in sovereign debt contracts. There is no doubt in my mind that the widespread adoption of CACs would be a major step foward, and could be helpful in facilitating agreement on restructurings. Two recent developments provide grounds for cautious optimism that we are starting to witness a shift in market practice that has – for all too long – been elusive. While one swallow does not make a summer, these developments reinforce my view that we must redouble our efforts to ensure that the recent momentum is maintained.

We should congratulate Mexico for the successful placement of inter-

national bonds governed by New York law that include collective action clauses. In particular, (i) investors holding 75 per cent of outstanding principal can vote to modify the payment terms; and (ii) acceleration of the bonds following an event of default requires the consent of investors holding 25 per cent of outstanding principal. In contrast, previous Mexican bond issues in the New York market have included no provisions for majority action with regard to the modification of payment terms or of acceleration. The spreads at issue have been in line with the Mexican yield curve, suggesting that any premium paid for CACs has been negligible. Having solved the first mover problem, Mexico has since been followed by Brazil, Uruguay and South Africa.

A second development with respect to collective action clauses has been the proposals presented by a number of financial industry trade associations, the so-called "Gang of 7". We welcome this initiative, which proposes model clauses for bond contracts in all jurisdictions, including those, such as the New York market, that currently contain no such clauses. However, on balance, IMF staff consider the proposals problematic, and there are questions as to whether we could recommend the adoption of the proposed clauses to our emerging market members.

Although we see many benefits to the widespread adoption of CACs, the limitations of this approach are well known. While they provide for collective action among holders of individual bond issues, they do not provide for the aggregation of voting *across* instruments. Moreover, CACs can be introduced in *new* instruments, but do not address the problem of the outstanding stock of bonds and other debt instruments that do not include these clauses.

JP Morgan proposal

A contractual approach has been suggested by JP Morgan, which is based on a variation of the use of collective action clauses. This proposal recognises – and seeks to address – the problems of aggregation across debt instruments. The approach involves a two-stage process. In the first stage, investors holding international bonds and a wide range of credit instruments would exchange their existing instruments for new instruments. These would preserve repayment terms, but would be linked by collective action clauses which would provide for an aggregation across instruments on reaching the second stage – agreement on the terms of the final restructuring.

As the collective action problem reflects a divergence between what may be optimal for investors acting individually as opposed to in a group, how could the collective action problem associated with agreement on the first stage be overcome? JP Morgan has suggested a system of carrots and sticks. The carrot would take the form of an up-front cash payment for participation, while the stick would take the form of the aggressive use of exit consents, which – by eroding the contractual rights of investors who elect not to participate in the first stage – would reduce the attractiveness of a holdout strategy.

The proposal is undoubtedly ingenious. While it warrants further consideration, I confess to some doubts regarding its feasibility. In a pre-default case where collective action problems may be most acute, the tight timetable for restructuring before resources available for debt service are exhausted suggests that the two steps would need to be conducted back-to-back. This would negate any advantage of getting creditors into a collective framework. Decisions regarding participation in the first and second stage would be taken at the same time, so the operation would be equivalent to a straightforward exchange which, by its nature, does not resolve collective action problems.

Moreover, in a post-default case, in circumstances where there may be substantial doubts about the future course of economic policies and the terms of an eventual restructuring proposal, would investors be willing to surrender their individual contractual rights and enter into a collective process? Indeed, would such a move be consistent with portfolio managers' fiduciary responsibilities to their end-investors? Is there a danger that they would decide to preserve their rights under their existing instruments while they wait and see what will happen?

More generally than the JP Morgan proposal, I believe that the potential benefits of, and modalities for, aggregation across investors warrants further consideration. Aggregation is generally considered to be an essential feature of statutory frameworks for corporate rehabilitation. As the potential benefits appear to carry over to sovereign workouts, I think that there is a need for further exploration of approaches to contractual arrangements for aggregation in the context of new sovereign bond issues.

Code of Good Conduct

Various proposals have emerged from the public and private sectors for developing a voluntary Code of Good Conduct for sovereigns and their creditors. These proposals are constructive and could help provide greater predictability to the restructuring process under any legal framework. A Code could be made applicable to a broad set of circumstances, ranging from periods of relative tranquility to periods of acute stress, and could constitute an established set of best practices. In contrast, proposals for strengthening arrangements for debt restructuring have a more limited scope and purpose – to facilitate the resolution of financial crises. But by its very nature, a voluntary Code, while potentially helpful, could not resolve collective action problems. Finally, a Code could only be effective to the extent it was able to attract broad support among debtors and their creditors. Accordingly, the most promising approach to developing a code that could form the basis of a consensus would be for it to be developed jointly by debtors, their creditors and other interested parties (including the IMF). Conversely, it appears unlikely that a Code designed by the IMF or other bodies would attract broad support.

21 Next steps in the international financial architecture

Lorenzo Bini Smaghi[1]

21.1 Introduction

In addressing the issue of the next steps in the reform of the international financial architecture, I would like to start by looking at what has been achieved in the last few years. The reference point is the report of the G7 Finance Ministers to the Cologne Economic Summit, dated June 1999. The 1999 report is a useful reminder of the agenda for reform.

The report identified six priority areas:

1 strengthening and reforming the international financial institutions;
2 enhancing transparency and promoting best practice;
3 strengthening financial regulation in industrial countries;
4 strengthening macroeconomic policies and financial systems in emerging markets;
5 improving crisis prevention and management and involving the private sector;
6 promoting social policies to protect the poor and most vulnerable.

I will try to assess the progress achieved in these areas, starting with those where most has been achieved.

21.2 Enhancing transparency and promoting best practices

The greatest achievements in the last few years have undoubtedly been in the field of transparency and best practices. The international community has agreed on a series of standards and codes, in particular in the financial sector, that are now widely recognised as the benchmark for good practice. Implementation is still on a voluntary basis, but progress has been substantial – indeed, greater than financial markets realise. Market participants do not seem to pay as much attention to these codes and standards as the official sector would like. We may thus have to reflect on how to make better use of the various assessments, such as Reports on the Observance of Standards and Codes (ROSCs) and Financial Sector Assessment Programmes (FSAPs). Good results have also been achieved

in strengthening the international financial institutions (IFIs). Looking at the recommendations made in Cologne, most have been implemented with possibly one exception: the decision making for crisis prevention and resolution.

21.3 Strengthening macroeconomic policies and financial systems in emerging markets

An area where substantial progress has been made is in the field of macroeconomic policies and financial systems in emerging markets. The international community has been more attentive to these issues in recent years. There is now a consensus among advanced and emerging market economies on the appropriate macroeconomic policies to support growth and stability. This consensus has extended to the developing and lower-income countries. No policy authority in a major emerging market economy would today seriously suggest that an expansionary budgetary policy is the best way out of a financial crisis.

On exchange rate regimes, there is now widespread awareness of the risks involved in excessively rigid pegs. The theory of corner solutions for exchange rate regimes has, however, proven to be wrong. In Argentina, the failure of the currency peg fortunately did not push the authorities to move towards further rigidity, such as dollarisation, as some had suggested.

The Argentine experience with the collapse of their currency board validate the Sargent and Wallace intuition of more than two decades ago, that a monetary system cannot be considered in isolation from the rest of the economy. It is of little use to have a monetary and financial regime aimed at ensuring price stability, and a well functioning banking system, if the rest of the economy – in particular, fiscal policy and external trade – is on an unstable path. That is the reason why the Argentine economy cannot be rebuilt through a piecemeal approach. Reform of the monetary and banking systems alone cannot help restore a credible monetary framework and prevent hyperinflation. Even the most independent central bank cannot avoid hyperinflation if citizens have no confidence in their political system, if there are no prospects for recovery and if the external debt issue is not resolved. The Argentine economy is in such a state of disarray that an economic programme can be viable only if the main problems are addressed jointly, so that confidence in the currency can be restored.

It would be unfortunate if the collapse of the "two corners" theory of exchange rate regimes pushed countries to adopt only floating exchange rate systems in the belief that this would solve all their problems. As with any other regime, it has its own requirements to ensure consistency. One requirement is a credible monetary policy framework; another is that monetary policy is an effective tool for macroeconomic management.

This latter requirement cannot be taken for granted. In moving to more flexible exchange rate regimes, many countries have continued to issue

debt in foreign currency. This strategy, which aims at reducing the "credibility" cost of the debt, undermines the effectiveness of a floating rate system. It introduces into the economy elements of financial rigidity which produce perverse real and financial effects in the face of exchange rate fluctuation. The IMF, in its surveillance, should devote much more attention to monitoring such developments. Indeed, the reason why debt restructuring is relevant for emerging market economies is not so much because of sovereign debt, but rather dollar-denominated (or foreign currency) debt. We should thus not be talking so much about an SDRM but rather a DDRM – a Dollar Debt Restructuring Mechanism.

If debt was denominated in domestic currency, excessive accumulation could be addressed through traditional policy instruments, such as taxation, including the inflation tax. A devaluation under these conditions would have positive effects for the real economy. The problem is that IMF conditionality requires that countries renounce instruments such as the inflation tax. In addition, emerging market countries have found it practically impossible to borrow in international financial markets in their own currencies. As a result, foreign currency borrowing has increased, adding to the vulnerability of borrowing countries when exchange rates fluctuate.

It is legitimate to ask whether something can or should be done to stop the increasing tendency for countries to borrow in foreign currency. Is it efficient that countries try to "import" credibility by tying their hands to foreign currency debt? What actions can be taken, in particular by the IFIs, to encourage better access by emerging market economies to international capital markets? Work still needs to be done in this area.

21.4 Capital account liberalisation

A key aspect of the reform plan launched in Cologne, which has not yet been addressed, is liberalisation, in particular of the capital account. The IFIs have been burned in the past by financial crises that often followed speedy capital account liberalisation that the IFIs themselves promoted.

We all recognise that liberalisation entails substantial gains if conducted in an appropriate and well-sequenced manner, but we do not know how to implement such a design. There is no magic recipe. We all recognise now that a "big bang" approach is likely to fail. And we all recognise the mistakes of the past. But is there no other solution than ignoring the issue? Helping countries to liberalise is a task of the IFIs.

The result of recent experience is that most developing countries now fear liberalisation, in particular of the capital account, and thus tend to delay it. This is not a neutral choice. Delaying liberalisation by a few years can make the whole process much more difficult. The reason is that financial markets are not static. They evolve continuously and become more sophisticated. Opening capital markets now is much more difficult than it was at the end of the 1980s, when most European countries completed their process.

The degree of sophistication in today's markets is a multiple of that only a decade ago. This trend will inevitably continue, making it more difficult for a country to equip itself, for instance in terms of supervisory know-how, to enter the international financial system in a safe way.

The danger is that a vicious cycle develops: the increased integration and sophistication of international markets increases the entry costs, not only for participants but also for the authorities. Those unable to meet the entry costs delay their participation. But the entry costs increase further with time and the "outs" find it, in practice, impossible to enter.

In the financial sphere, the benefits of globalisation are not as easily available to all, because the adjustment costs to protect a country against the potentially negative effects of liberalisation are much higher than in other fields. So many countries have decided not to liberalise and thus not to benefit from financial globalisation. The result is that these countries' financial industries remain underdeveloped, fragile, non-competitive and thus ill-prepared for future liberalisation. There are clear "ins" and "outs" in the international financial system, clear leaders and followers, and the divergence seems to be increasing.

In 1999, the G7 invited the IMF "to explore further issues related to the Fund's role in facilitating an orderly approach to such liberalisation". Very little has been done in the last three years. As a result, I would hypothesise that there are fewer participants in the international financial system today than three years ago and that the degree of financial integration of emerging market and developing countries has decreased.

21.5 Strengthening financial regulation in industrial countries

The problem I have just underlined is even more acute in light of the fact that not much progress has been achieved in strengthening financial regulation in industrial countries. It would be too easy to point to the recent accounting scandals to show that the G7 have spent more time lecturing abroad than doing their homework.

On banking regulation, the new Basel Accord was not even completed before regulators were inundated with proposals for revisions. On highly leveraged institutions, the number of hedge funds has increased in the last few years, although individually with lesser leverage. We have largely accepted the impossibility of regulating them. On off-shore financial centres, some work has been done, in particular by the IMF, to assess the adequacy of their regulatory framework. Much of the work conducted so far is based on self-assessment exercises, which are certainly welcome but are only a first step. Progress has been achieved in fighting money laundering and the financing of terrorism. Much of the effort came in the aftermath of the events of September 11, 2001. This confirms the theory that regulation and supervision of our financial system is strengthened only after a major crisis occurs.

21.6 Promoting social policies to protect the poor and the most vulnerable

One area where no progress has been made is promoting social policies to protect the poor and most vulnerable. To be clear, I am not – and the G7 in 1999 was not – talking about the very poorest countries in the world such as the HIPCs, but about the poorest people living in countries, mainly the emerging markets, that experience financial crises.

The Asian financial crises showed that most emerging markets lack safety nets to protect the poorest segments of their population from major financial and economic downturns. The experience of Argentina shows that the international community has not equipped itself for dealing with such problems. In fact, some of the mechanisms that we have put in place produce just the opposite effect.

For instance, while the IMF can decide to roll over its credits to Argentina, the World Bank and the IADB cannot, because such a rollover is conditional on the existence of a programme with the IMF. Argentina is thus obliged to reimburse the loans received from the World Bank and from the IADB, loans which presumably were financing projects that helped the poorest. The reason is that the World Bank would lose its market rating if it were to rollover this type of debt. This is not credible. As long as shareholders stand by the World Bank, the rollover in favour of a few countries is unlikely to affect the World Bank's position in the markets. More generally, the inability to design and implement policies that alleviate the burden of financial crises on the poorest parts of the population seriously undermines the credibility of the IFIs.

21.7 Crisis prevention and management

The last recommendation made by the G7 in Cologne was: "Improving crisis prevention and management, and involving the private sector". Many ideas have been put forward recently on this front. In the short term, the best way to improve the framework for crisis management is to manage the current crisis well. One of the greatest contributions to improving the system has been, in my opinion, the 1998 Russian crisis. This has done more to convince market participants that the IMF would not systematically bail-out countries than any law or statute. The same applies to the most recent Argentine crisis.

Could such a crisis have been managed better had we had an international treaty regulating bankruptcies? How much easier would it have been? It seems to me that an international treaty on bankruptcy would not have prevented the Argentine authorities from sticking until the very end to the currency peg. It would not even have prevented Cavallo from promising the IMF, and his fellow citizens, that he could achieve a zero fiscal deficit in order to preserve the currency peg. It would have not prevented Argentina trying to restructure its debt through voluntary

mechanisms as it did in early 2001, thus worsening, instead of improving, its debt sustainability.

Would an international treaty have facilitated the restructuring of Argentina's debt after it declared default at the end of 2001? Maybe. But as things stand Argentina has not even started thinking about, much less negotiating, the restructuring of its debt. It has faced mainly domestic political problems that have prevented it from coming up with a credible economic programme. Without such a programme, there can be no restructuring, with or without an SDRM. The same could be said about collective action clauses.

Precedents are probably the best way to create predictability in crisis resolution, even if you had an SDRM. An SDRM is not a rule, an automatic mechanism which solves problems. It is a law, a procedure, which has to be implemented by human beings and institutions. Having the law is certainly helpful, but is in no way sufficient to facilitate debt restructuring and to make it more predictable. You need cases of countries declaring bankruptcies before you achieve the desired result.

What is really needed is not only a law that regulates bankruptcy cases (which hopefully will be rare), but a procedure by which market participants, policy authorities in creditor and debtor countries, and institutions understand how and why certain decisions are taken, in particular concerning the financial assistance provided by the IMF. It makes no sense, for instance, that market participants, policy authorities and IMF members find out from a newspaper that financial assistance has or has not been provided to a country.

Much progress has been made in the last few years in making institutions more accountable, not only to shareholders but also to stakeholders. I would like to suggest that the IFIs consider a system somewhat similar to the one the Bank of England uses in the area of monetary policy: neither rules nor discretion, but what I would call "transparent procedures". The way in which the Bank of England takes monetary policy decisions is clear and transparent. There is a model, which produces forecasts, which are the basis for discussions by the Monetary Policy Committee (MPC). Decisions are not rule-based, because monetary policy would then be run by a computer and the world is a bit too complicated to rely only on computers. But there is no pure discretion either, as the forecasts provided by the model create presumptions, or at least the need for the MPC to explain why a certain decision has been taken or not taken. In short there is a procedure that facilitates the task of those that have to make the decisions and ensures accountability.

Can we try to implement this model in the IMF? What would this imply for crisis management? First, when IMF management brings a proposal to the Board, a series of documents would have to be produced, describing not only the economic situation, but also the debt sustainability analysis for the country. It would also specify the expected contribution made by the private sector to filling the financing gap. This is not easy. It may be

more difficult than making inflation forecasts. But unless discussions are based on a sustainability analysis, the suspicion that the decision has been made on pure discretionary (political) grounds cannot be avoided. It is this kind of suspicion which is most detrimental to the reputation of the IMF.

Second, there would be a presumption that normal access limits to IMF financing are respected. If the request for financial assistance goes beyond normal access limits, a series of questions would have had to be answered *ex ante*. Third, communication and disclosure policy needs to be clarified. External communication would take place only after the decision is taken, with appropriate explanation, largely based on the same documentation on which the Board decision was based.

In our modern world, transparency and accountability govern decisions. The Bank of England publishes the minutes of the discussion that lead to its decisions. The ECB makes a statement and holds a press conference. There is no one-size-fits-all model. In the last few years, the IMF has done an enormous job in improving the transparency of its analytical documents and opening itself to dialogue and criticism. But the IMF must have a better model for explaining its decisions to the outside world; not before they are taken, but immediately after.

21.8 Surveillance

To conclude, a word on surveillance. The way in which the IMF carries out surveillance can be substantially improved. One just needs to look at the recent Article IV reports on Argentina or Turkey to see that there is a conflict between surveillance and programme design and monitoring.

Proposals have been put forward to separate programme monitoring from regular surveillance. These proposals make sense. There are analogies for such separation in the private sector. For example, recent experience underlines the need to separate the functions of consulting from those of certifying accounts. The IMF staff and the IMF Board have not examined these proposals thoroughly nor made counter proposals. The argument that this would increase costs or add bureaucratic layers is not convincing. Recent changes at the IMF show that changes can be made and accommodated when needed.

To sum up, more needs to be done and can be done to prevent and better manage financial crises. It would be an illusion to think that this can be achieved only by adopting new rules or laws rather than by improving further the efficiency and accountability of the key institution in charge of international financial stability.

Note

1 The views expressed in this chapter are those of the author.

22 Remarks on next steps in the international financial architecture

Richard H. Clarida

I would like to begin by offering some comments on the progress that has been made over the last year or so on the sovereign debt restructuring issue. In the view of the US Treasury, the agreement reached on April 20, 2002, on the G7 Action Plan represents a useful step forward. To review, the G7 agreed to work with emerging market countries and creditors to incorporate standardised contingency clauses into debt contracts. It was envisioned that these would include a majority action clause, an engagement clause, and would specify a process by which a rescheduling or restructuring would be initiated. The G7 pledged to work with the IMF to provide incentives for the adoption of these clauses. The Action plan also pledged to limit official sector lending to normal levels, except when circumstances justify. Limiting official lending was seen as an essential part of the plan. The Action Plan also pledged the G7 to work with the IMF to clarify its lending into arrears policy.

Importantly, the US Treasury and the rest of the G7 support further work by the IMF along the lines outlined by Anne Krueger – the "statutory approach". However, it is recognised that since the requirements of the statutory approach would take time to implement, this work should proceed in parallel with the contract based approach and that the two approaches are complements not substitutes.

Since the announcement of the Action Plan, large institutional investors, who in the past were at most lukewarm to proposed changes in the status quo, have in recent months been directing their efforts at achieving a consensus on the principles and framework to develop the contractual clause approach. A number of these investors now endorse the inclusion into bond contracts of majority action clauses, under certain conditions. These investor groups would not favour any aggregation of claims across bond issues, and they would hope to exclude from the voting on amendments to bond contracts any entities controlled by the sovereign. With regards to engagement, investor groups tend to support engagement as an ongoing process and tend to resist specific *ex ante* delegation of powers, other than the power to negotiate, to the chosen representative of the bond holders.

Investor groups are for the most part not in favour of legally binding

standstills that can be initiated at the debtor's choice. They do acknowledge that based on some past episodes – such as in South Korea and Brazil – an understanding reached between debtors and bondholders for a temporary standstill may prove useful for moving towards a resolution. However, they argue that contract based standstills bear a substantial risk of delaying renewed access, and that the same end result can be achieved with appropriately crafted majority action and engagement clauses. Barry Eichengreen, among others, has also made the point that collective action clauses include a de facto standstill since they give a debtor some shelter from legal action by requiring a critical mass of investors to agree before litigation can be initiated.

With regards to next steps, a G10 working group has drafted some model clauses. As for incentives, the US Treasury has in the past indicated that it is worthwhile to consider putting some official money on the table to encourage countries to engage in debt swaps with the contract provisions as part of the new debt. Over time, it is hoped that the G7 can work together to make adoption of these clauses an important factor to be considered when exceptional access to IMF resources is requested.

I would like to conclude with some personal reflections. Nouriel Roubini has made the case that, for a liquidity crisis in the real world, the ideal package would consist of policy adjustment, official finance at normal access limits and some private sector involvement. While this reasoning has much to recommend it, I do conjecture that, in practice, the likelihood of assembling anything approaching this ideal package might well be enhanced in a regime with a more predictable and well understood process for re-profiling sovereign debts. It also seems to me that in some circumstances, a temporary payment standstill at penalty interest which is allowed for in the contract language and hence in the *ex ante* pricing of the bond, could well contribute to assembling this ideal package, and especially in limiting access to normal levels and including PSI. Indeed, Professor Roubini acknowledges that, in some cases, standstills might be *ex post* efficient, although he comes out against them in *ex ante* agreements.

It has been said that, because of the substantial difficulty in liquidating the assets of a sovereign debtor, it is important for incentive purposes that sovereign default be costly for the debtor. I myself have no illusion that if any of the prominent sovereign debt restructuring proposals were now in force, that a major sovereign default on many different issues of bonds would be resolved especially quickly or without substantial cost to the debtor. However, I do observe that in the absence of a sovereign debt restructuring framework, there has in the past been a great desire on the part of the official community to avoid the "abyss" which is thought to be the only alternative to a large bail-out. It seems to me that the status quo is an example of Frank Knight's concept of "uncertainty" and that the sovereign debt restructuring proposals seek to replace "uncertainty" with "risk" – a draw from a more or less known distribution of outcomes.

Index