

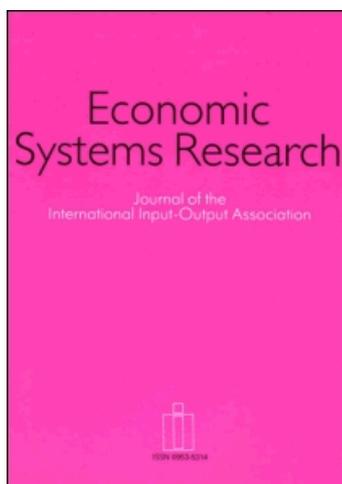
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Asymmetries between Rich and Poor Countries in Financial Crisis Responses: the Need for a Flow-of-Funds Approach

ALAN R. ROE

ABSTRACT *This paper focuses on the manner in which interest rates have been raised to, and sustained at, extremely high levels in developing and emerging market economies as a consequence of recent financial crises. By contrast rich market economies have typically lowered interest rates and injected liquidity in response to incipient financial crises. The paper first sketches the logic that lies behind extremely high interest rates (nominal and real) as an element of crisis resolution. It suggests that this reflects a money-phobic view of financial markets and also conflicts with some well-established economics. It then reviews the conventional wisdom about why richer economies have enjoyed sustained price stability in recent years and why this in turn has allowed their monetary authorities to be relaxed about injecting additional liquidity in response to LTCM (1998) and September 11 (2001)-type crises. It is pointed out that this conventional wisdom is also money-phobic in that it neglects the build up of corporate and government debt in bond and financial derivative form that has been associated with recent financial developments. This analysis helps to contest the common view that emerging market economies pay a higher price merely because their policies are 'bad'. Finally, the paper reviews the manner in which the financial systems of developing and emerging market economies respond to the destabilization created by corrosively high real rates of interest. Even when bankruptcy arrangements are well established, certain new forms of financial flows and instruments are implicit in this response, but are invariably ignored in formal modelling.*

KEYWORDS: *Interest rates; flow-of-funds; financial crisis; monetary policy*

1. Introduction

When a developed industrial economy has a financial crisis, policy makers normally find a policy response to mitigate the negative impacts on the public. When low income or emerging market economies have financial crises, their policy makers often seem forced into a policy response that will intensify the damage to living standards. Why?

Frederic Mishkin provides one standard answer based on the different 'institutional financial structures' in the two classes of country. He argues that '... the net result of an expansionary monetary policy in a developing country *with the*

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institutional structure described above is the opposite of an industrial country after a financial crisis: it causes a deterioration in balance sheets and therefore amplifies rather than ameliorates the adverse selection and moral hazard problems in financial markets caused by a financial crisis' (Mishkin, 1996; my italics). This line of argument is consistent with the view that there is some minimum level of 'good financial structure and management' that developing countries need to attain before they escape the fate that confronted some of them in the 1990s. After all it took the US many years to bolt together the institutional arrangements and practices that responded to the banking failures of the 1930s. Maybe the same learning process is needed in the developing and emerging economies.

A second strand in the literature relates to the idea of weak economic fundamentals and relies particularly on the past inflationary records of many developing and emerging economies.¹ Hence, an appropriate 'hangover' period of recession and tight money is needed to clean the consequences of any earlier 'binge' of loose monetary and fiscal policies. This is a frequently repeated but not very robust explanation. Several developing countries that have gone into crisis in the past decade have not been prime offenders in terms of their monetary policy competence or their pre-crisis inflation records.

This paper brings flow-of-funds approaches to bear on these puzzles, including explicit attention to the full range of financial instruments used in the respective economies and the associated adding-up conditions (Brainard & Tobin, 1968; Roe, 1971, 1985). Specifically, for the lower income countries it seeks to explore how the fund flows and balance sheets of different sectors (corporations, government, etc) are impacted by high nominal and real rates of interest and how the responses to these initial impacts might feed back to abort otherwise desirable policy responses to crises. For the richer countries it seeks to get behind the apparent macro stability of the past decade and assess how key changes in institutional sector balance sheets and fund flows during this period may have helped to sustain low interest rates at the same time as they contributed to some inherent instabilities. These approaches provide new insights into the asymmetries of policy response noted above.

The paper proceeds in Section 2 by documenting examples of the extreme shifts in key macro policies and variables that have been 'required' post-crisis in certain poorer/emerging economies. Sections 3 and 4 explore and question the underlying economic logic that has been used to justify such policies. Section 5 documents several dimensions of structural financial imbalances in the rich countries and assesses the parallels and differences between these structures (and patterns of flows of funds) relative those of the poorer/emerging market economies. It asks whether the differences in these structures account for the radically different interest rate behaviours that we observe? Section 6 summarizes the main conclusions.

2. Tendencies in Recent Crisis

Figure 1 confirms the tendencies referred to above. It shows the quarterly movements over time of interest rates in six emerging and transition countries that have experienced a major crisis during the past decade. The interest rate series cover periods from just before these crises began to a date sometime after their worse manifestations. The inflation tendencies of these six countries are also indicated. Specifically, they show the prevailing levels of inflation in the period prior to crisis and the prevailing levels at the end of the periods shown. These two inflation

indicators for each country are intended to convey some information about the inflation tendencies in each case rather than the actual quarter-to-quarter movement of rates during the period in question.²

In order to provide a comparative basis for these patterns of interest rate movement, Figure 2 presents similar information for two rich industrial economies, namely the USA and the UK for a nine-year period up to 2001.

The contrasts between the countries depicted in Figure 1 and between all of these and the two industrial countries shown in Figure 2 can largely speak for themselves. But we should emphasize the following set of tendencies and puzzles.

- All the developing and transition economies experienced large upward shifts of *nominal* interest rates at the time of their respective crises. For example, money market rates tripled from 20% to 60% in the case of Mexico (1994-Q4 to 1995-Q2). They increased by similarly large percentage amounts in Indonesia (1997-Q2 to 1998-Q2) and Russia (1998-Q1 and 1998-Q3).
- These nominal rate hikes were associated with large and sustained rises in real interest rates in all six cases. The interest rate movements were doing far more than merely compensating for high rates of inflation expectations. In the three East Asian cases, the pre- and post-crisis inflation levels were quite modest (well under 10%). In the cases of Ukraine and Mexico, the prevailing levels of inflation were in the 10–20% range, but this is still much lower than the levels to which interest rates were forced during the crisis adjustment. The persistence of high real rates is emphasized.
- Two countries in particular, namely Ukraine and Russia, had bank lending interest rates at both the beginning and the end of the crisis period that were also very much higher than the prevailing rates of actual and expected inflation. This is a puzzle that is explained elsewhere (see Peachey & Roe, 2001).

The benchmark countries, namely the UK and the USA, had nominal interest rates that were both modest in absolute size (rates never exceeded 10%) but which also moved sympathetically with the crisis tendencies in both countries. So, for example, when the Russian crisis shook the financial markets in September 1998, and these were then further rattled by the problems of Long-Term Capital Management (LTCM) in the subsequent month, the US Federal Reserve cut interest rates rapidly and injected plentiful additional reserves into money markets. The decision to save LTCM was motivated, it is argued, by an anxiety to prevent the liquidation of that organization's extremely large holdings of US stock options. This was a liquidation that would have caused devastating losses to the stock markets generally and to certain key investors in LTCM including certain overseas central banks (Warburton, 2000, p. 265).³ LTCM was evidently judged too big to fail.

Similarly, in the third quarter of 2001, there was a systematic move in the richer economies to lower the cost of funds and to inject additional liquidity. Although this was initially motivated by the increasing concerns about recession especially in the USA and parts of the Euro area, this pattern of easier monetary policy achieved an almost complete consensus of support after the September 11 terrorist shocks threatened a major investor panic. Fortuitously, the possible systemic effects of the Enron and World-Com problems were also accommodated by this approach. No one dissented during this period on the grounds that major economies such as the USA have a major borrowing exposure, through Treasury

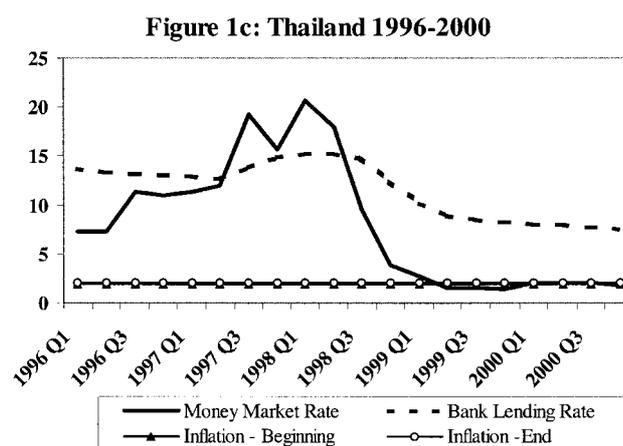
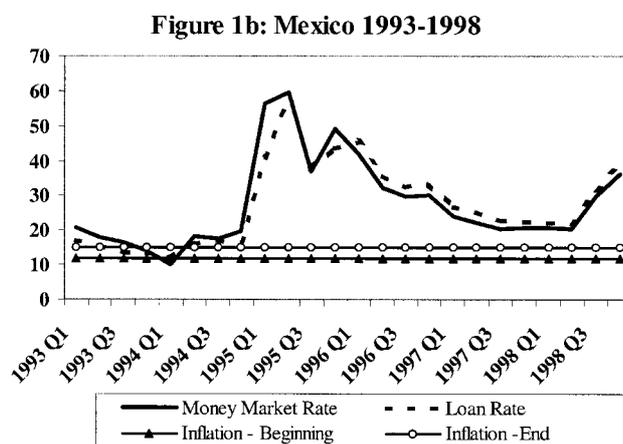
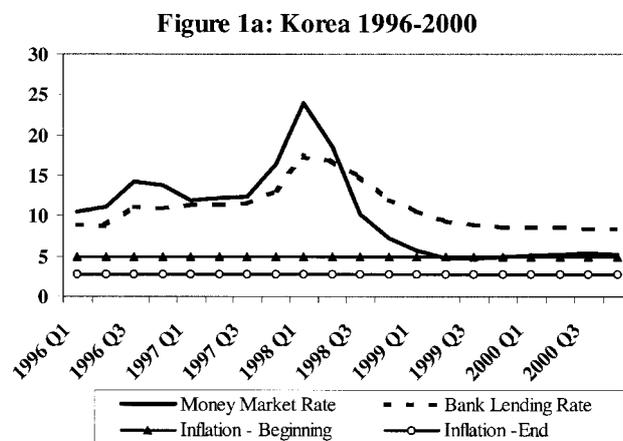


Figure 1. Interest rate and inflation in emerging-market crisis countries.
 Source: IMF, International Financial Statistics.

Figure 1d: Indonesia 1996 - 2000

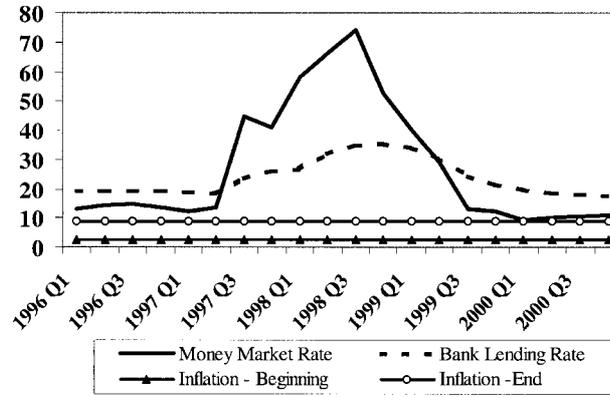


Figure 1e: Russia 1997-1999

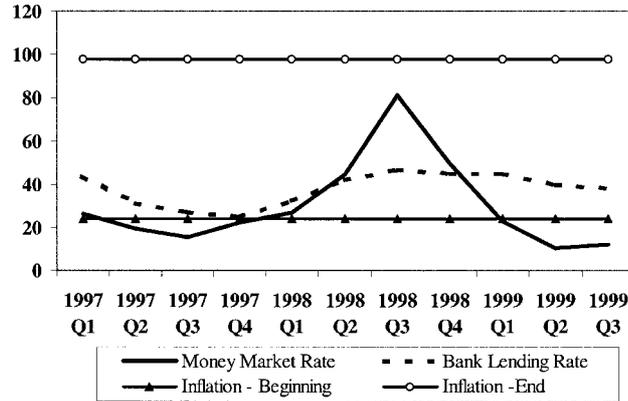


Figure 1f: Ukraine 1997-1999

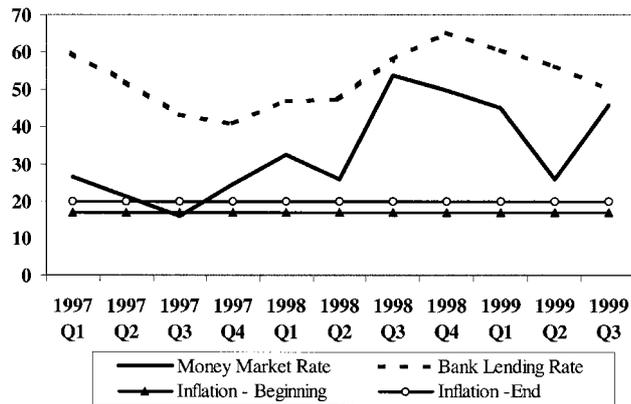


Figure 1. Continued

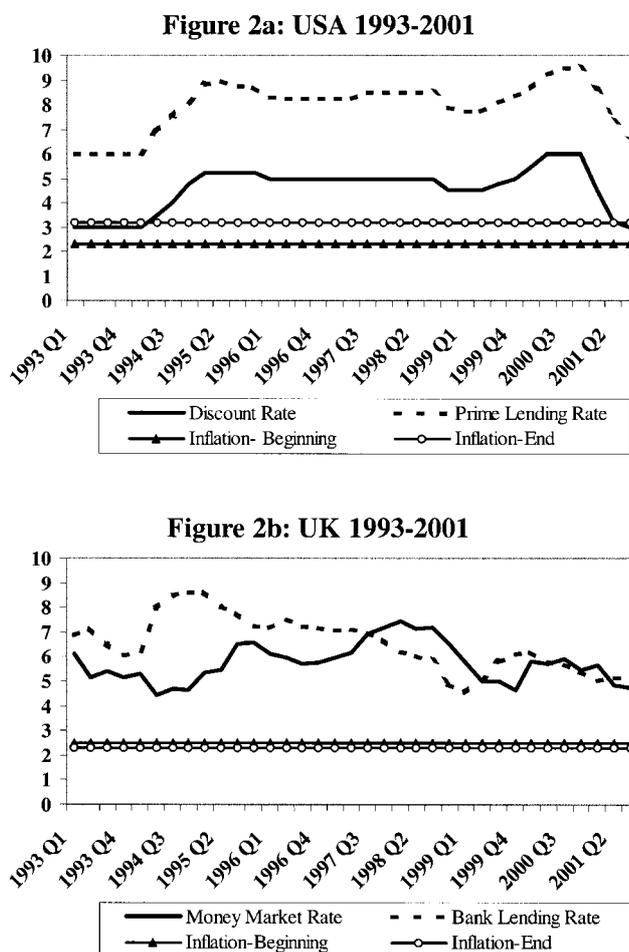


Figure 2. Interest rates and inflation in high-income countries.

Bonds and, in other ways, to the rest of the world. The contrast between this and the actions necessitated in 1994, 1997 and 1998 in the poorer/emerging economies is plain to see.

3. The Economic Logic

What was the justification for pushing interest rates to the levels shown in Figure 1? There is no single or simple answer. But there are some common threads. Most developing and emerging market crises have been characterized by a sudden flight from various domestic assets including the domestic currency and into dollars. This has typically been associated with the non-sustainability of a subset of the main macroeconomic variables caused by the perception that there has been excessive borrowing either by the government or by the private sectors. For example, excessive borrowing by the Mexican government using *Tesobonos* was an important element in the Mexican crisis of 1994. Similar excessive borrowing via hedged securities was a factor in both Russia and Ukraine in 1997–98. This

excessive loan exposure that has preceded most crises in turn has resulted in an upward pressure on some or all of: (a) asset prices; (b) commodity prices; (c) the cost of loanable funds—i.e. interest rates;⁴ and (d) nominal and real exchange rates. It is the non-sustainability (perceived or real⁵) of these upward movements of prices that prompts the eventual rush to sell domestic assets including the domestic currency.

3.1. A Solution Linked to Tighter Money

Since financial systems in most crisis countries were still based on commercial bank assets and liabilities (i.e. were money-based), the medicine required to correct the over-borrowing suggested itself quite readily. Too much borrowing having been associated with too much *money-based* credit, it seemed reasonable to concentrate the measures needed to correct for the over-borrowing on tighter *monetary* policy. Further, in those cases where the government itself had been borrowing too much, a tight fiscal policy was the only way available to achieve the monetary tightening. Not incorporated in this line of reasoning is the possibility that the over-borrowing had been based partly on *non-monetary* sources of credit.

3.2. The Choice of Targets and Instruments

What instruments and targets were typically adopted to effect the correction? As regards targets, it has been the normal approach of the IMF and others to target two of the four variables that we listed above. These have typically been (b) the *inflation rate* of commodity prices and (d) the *nominal exchange rate*. The justification for this is essentially that alluded to earlier. The developing and emerging-market economies, it is argued, are structurally prone to high inflation (unlike the industrial economies that might be argued to have expunged this evil). Hence, commodity price inflation should be the central focus of adjustment. Since the nominal exchange rate is a key element in the structure of prices, it is also necessary to avoid excessive nominal depreciation in order to further the anti-inflation objective. In any case, with high foreign exchange borrowing assumed to be a structural feature, a significant nominal depreciation would inflict considerable damage on the balance sheets and cash flows of local companies as well as the government.

In this logic, hikes in nominal interest rates are seen as the necessary price to pay for the attainment of the targeted objectives—lower inflation and more stable exchange rates. Commenting on the IMF response to the Asian crises, Fischer (2001) notes ‘... No aspect of IMF-supported programs in Asia was more controversial than the interest-rate policies. In all programmes, interest rates were raised at the start, to try to limit the extent of currency depreciation.’⁶ However, the same logic seems to say that it may be OK for the sectors remaining in deficit to borrow in non-monetary form (e.g. by issuing securities) and to pay the already high and now increasing interest rates on these borrowings. Indeed, the high interest rates could be seen as the ‘justifiable’ burdens that the borrowers now have to accept as the penalty for their own earlier imprudence. Certainly, none of the IMF crisis programmes imposed any limits on non-monetary domestic borrowing as far as we know.

As regards instruments, the logic presented so far neglects the potentially important flow-of-fund feedback mechanisms that arise from the use of the interest rate as an *instrument* rather than a *target* of policy. What if the problems that cause

the initial crisis originate not with the liquidity associated with money-based credit but from credit more generally? The standard central bank/IMF view is that other types of credit (e.g. the sale of securities by borrowers to willing purchasers) is not a serious problem because this form of borrowing extracts an identical amount of liquidity and spending power from the lender as it confers on the borrower. So it does not impact the inflation variable. This approach is fine except that it puts the emphasis totally on available liquidity. But what if conditions in the economy require this ‘voluntary’ sale and purchase of securities to take place at high nominal interest rates? We know from the standard economics of information that this will increase the likelihood of adverse selection and that it will therefore impact the quality of the loans being made. We also know that the macroeconomic effects can be very damaging if real interest rates rise above the real rate of return of assets held by the borrowing agents. In these cases, the balance sheets of those agents will be undermined and their capital positions will be eroded. Hence, we move to a more impaired financial situation in both the financial institutions that are providing the loans and in the non-financial institutions that are doing the borrowing.

Let us summarize the argument so far. If the pre-crisis errors of policy are associated with over-borrowing, this is likely to exert upward pressure on a variety of prices in the domestic economy. We identify four of these prices. If the post-crisis policy response targets just *two* of these prices, commodity prices and the exchange rate, the implicit model of adjustment is under-specified because the movement of the other two might conceivably compromise the adjustment. If one of these prices, namely the nominal interest, rate happens to be used explicitly as an *instrument* of the adjustment—with no alarm bells being rung when it rises to the high levels shown in Figure 1, then a compromised adjustment outcome is a clear possibility.

The adjustment can certainly be compromised by adverse selection-type effects but these will occur only with significant lags—when the reality of poor credit decisions start to become visible in bank balance-sheets. So, more important in terms of the viability of a crisis policy package (i.e. the gains achieved in the first three to five quarters) may be certain flow-of-fund effects. These can more quickly reveal some obvious negative feedback effects on the balance sheets of households, corporate enterprises and the government.

4. Adverse Feedback Loops

Let us now consider a few of these potentially adverse flow-of-funds feedback effects related to the structure of financing of fiscal deficits, over-leveraged firms and financial fragility, and persistent exchange-rate risk.

4.1. Fiscal Financing

It is hardly a new proposition in macroeconomics that if real rates of interest on public debt exceed the growth rate of an economy ($r_g > n$) and if the authorities maintain a strict monetary growth rule, then there can be an explosive path for the levels of real government debt (McCallum, 1981). Sargent & Wallace (1986) elaborated this point in relation to the then high pre-tax rates of return on US government securities. They demonstrated the theoretical possibility that easier monetary policy could be associated, given reasonable values for the main para-

Table 1. The Korean fiscal targets

	Date	Fiscal targets for 1998 (% of GDP)
Original Program	December 1997	0.2% surplus
1st Quarterly Programme	February	1.5% deficit
3rd Quarterly Programme	July 1998	4% deficit
4th Quarterly Programme	November 1998	5% deficit
Actual outcome		5% deficit

meters, with a lower rate of inflation even in the short term; that is, tight money could make inflation worse. The explanation is to be found in the higher seignorage required to help finance fiscal deficits swollen by rising debt service burdens.

The relevance of these theoretical results to the recent crisis cases is necessarily qualified. The theory relates to situations of pure monetary adjustment, whereas the actual crisis cases of the 1990s were all addressed using a mix of monetary and fiscal adjustment. Clearly, the perverse effects found by Sargent and Wallace can be mitigated if the fiscal adjustment is sufficiently large. However, as we have seen in Figure 1, nominal interest rates in most crisis countries hit levels well above the prevailing growth rates of income and government revenues and so they did create the necessary conditions for unstable debt dynamics. Larger fiscal deficits or larger fiscal adjustments were therefore called for to compensate for these adverse feedback effects.

To show this possibility it is noted first that some IMF-supported crisis programmes have been characterized by significant errors regarding the fiscal adjustment that can be achieved.⁷ For example, in the Korean adjustment programme as agreed in December 1997, the initial fiscal programme targeted a fiscal surplus of 0.2% of GDP for the year 1998. The sequence of target adjustment thereafter was as shown in Table 1. Less than a year after the initial programme, in November 1998, the fiscal target had been reset to a deficit of 5% of GDP and this also turned out to be the observed outcome (Hyun-Hoon, 2001).

A more general indication of whether interest-rate feedback effects can explain such miscalculations can be obtained by examining the pre-crisis debt service levels against the rise in interest rates associated with the crisis as shown in Figure 1. This is done for those countries for which relevant data are available in Table 2.⁸

Table 2 shows a considerable variation between crisis countries. Several countries had relatively low levels of public domestic debt. External debt was indeed a bigger source of vulnerability. In some cases, total interest payments on pre-crisis debt represented only a small percentage of budgetary revenues (e.g. Thailand and Korea) suggesting that neither external nor domestic public debt were serious sources of vulnerability. In these cases, the possible flow-of-fund feedback from high nominal interest rates could reasonably be ignored. In other cases (e.g. Indonesia) the domestic debt was completely overshadowed by the external debt. Again this suggests that the interest cost feedback was not a main concern but currency depreciation probably was. However, several contrary cases are also quite evident from Table 2. In Mexico for example, interest payments on debt were already around 16% of government revenues before the 1994 crisis and domestic debt was more than 40% of total public debt. A similar pattern is evident in the cases of Russia and the Ukraine. In the former, the pre-crisis interest payments accounted for almost one third of current government revenue.

Table 2. Interest burdens and debt structures—selected countries

Country	Year 1	Year 2	Year 3	Year 4	Year 5
Mexico (Year 1 = 1993)					
Interest Payments/Revenue	16.24%	13.42%	18.86%	18.81%	15.12%
Domestic Debt/Total Debt	42.40%	35.68%	20.71%	24.45%	33.44%
Indonesia (Year 1 = 1996, April 1st)					
Interest Payments/Revenue	—	9.50%	19.69%	10.09%	—
Domestic Debt/Total Debt	0.06%	0.90%	2.56%	1.31%	—
Thailand (Year 1 = 1997)					
Interest Payments/Revenue	1.16%	1.77%	1.15%	6.04%	—
Domestic Debt/Total Debt	29.51%	16.24%	45.29%	62.48%	—
Korea (Year 1 = 1996)					
Interest Payments/Revenue	2.37%	2.49%	—	—	—
Domestic Debt/Total Debt	85.01%	67.43%	—	—	—
Russia (Year 1 = 1998)					
Interest Payments/Revenue	29.65%	16.26%	—	—	—
Domestic Debt/Total Debt	23.08%	18.82%	—	—	—

Source: IMF, Government Finance Statistics.

One conclusion is already clear. In the pre-crisis years, it was not reasonable to categorize all six countries as externally debt dependent to the point that a depreciation of the currency was their *only* major vulnerability. Several of the selected countries had large domestic debt burdens and large recurrent interest charges associated with those burdens. Policy-makers should have worried about the fiscal consequences of prospectively large percentage changes in interest rates. Fiscal considerations should have also led to significantly different adjustment approaches in different crisis countries: those with large domestic debt burdens being candidates for programmes with a greater emphasis on targeted limits on interest-rate hikes. This would have required looser monetary programmes in these cases and a greater willingness to see large exchange rate changes.

Furthermore, the analysis implied by Table 2 refers only to the interest element of debt servicing and not to the repayment of principal on the debt. But as the earlier Mishkin (1996) quote suggests, at least some of the crisis countries confronted not only large burdens of debt but also very short maturities on this debt. Hence, finding the means to make the repayments of principal was an important immediate part of the fiscal problem needing resolution. In at least two country cases, Ukraine and Russia, the evidence shows that it was quite impossible to cover the repayments of principal on debt while also dealing with other unavoidable fiscal outlays. Both countries needed to write down the nominal value of government debt obligations before they could achieve viable IMF programmes by the end of 1998.

In the particular case of Ukraine, the debt dynamics were already adverse long before the Russian crisis in August 1998. When interest rates generally were forced up further by the Russian situation in the early part of 1998, this completely destroyed any real hope of sustainable debt dynamics in Ukraine given the unhealthy structure of debt. In effect, the high interest rates got locked into the stock of debt—Ponzi style as the authorities borrowed new money to cover the costs of servicing the old. In this situation, sustained high interest rates at the levels shown in Figure 1 were clearly capable of causing an explosive domestic debt problem

that, if unchecked, could rapidly have pre-empted *all* government revenues. The only way to avoid this was by having an explicit policy of debt restructuring or debt default as in the Fund programme of September 1998.

4.2. Leveraged Corporations and Financial Fragility

The theoretical literature also provides us with significant examples of adverse feedback coming through the corporate financing route. One strand, due to Calvo (1991), is that the persistence of high nominal interest rates signals a failure to achieve a rapid impact on either inflationary expectations (π_{exp}) and/or expectations of currency devaluation (S_{exp}). In the event that adjustment policies succeed in reducing *actual* inflation, the persistence of these expectations can be manifest in significant gaps between *ex-ante* real interest rates and their *ex-post* level. Specifically:

$$(R_d - \pi) > (R_d - \pi_{\text{exp}}) \quad (1)$$

That is, the *ex post* real interest rate exceeds the *ex ante* real interest rate. The inequality in equation (1) implies a redistribution of wealth from borrowers to lenders. If this is short lived (i.e. expectations adjust quickly), the borrowers may be able to absorb the costs with few ongoing negative or systemic effects for others. This is the ‘good’ adjustment. However, if the inequality in equation (1) persists, and we have ‘bad adjustment’ then the costs to the borrowers will cumulate. ‘Bad adjustment’ can also trigger ongoing corrosive effects on the financial system. In particular, corporate borrowers will face real interest charges higher than expected at the time when they contracted the debt. By implication, these charges may also exceed the anticipated real rates of return on their investments. At least some of these borrowing companies will face bankruptcy, will resort to additional borrowing or, where they fail, will resort to non-payment of their obligations (involuntary borrowing). Most borrowers are likely to face declining profitability. Banks and other financial institutions will also be caught out. They will be confronted with far more failed projects and businesses than seemed likely at the time when they granted credits. If this is a *systemic* economy-wide problem, then banks may continue to provide facilities to those borrowers who remain solvent even though their profitability may be less than originally expected. This will further weaken overall credit quality in the system. At some more advanced stage of this process the banks may even extend new facilities to non-current borrowers (ever-greening) in the vague hope that some of these will be able to save themselves and repay earlier loans.

Calvo (1991) makes the point that this process is insidious, and that it can coexist with some positive news such as falling inflation. But it is a process nonetheless that dooms the adjustment effort to eventual failure. At some point the deteriorating financial situation in companies and banks has to spill over to cause new fiscal pressures. At that point the authorities will be forced to relax their monetary tightness and accede to a resurgence of inflationary pressures.

In most of the countries considered in this paper, conditions existed for a negative feedback via corporate finances. Certainly, real interest rates stayed at levels far higher than was indicated by prevailing inflation tendencies (Figure 1). The persistence of *unreasonably* high real rates was measured in years in some cases (notably Mexico and Ukraine) and not in the 6–9 months characteristic of Calvo’s ‘good’ adjustment. This gave plenty of time for the induced flow-of-funds feedback discussed theoretically by Calvo to emerge; that is, the ever-greening of bank loans

to defaulting clients, the substantial non-payment of obligations by financially distressed companies and individuals, and the extension of the barter economy, as happened in Russia and the Ukraine. The likelihood of abnormal flow-of-funds adjustments, such as these, was enhanced by the prevailing characteristics of some of the countries: highly leveraged corporations, poor banking supervision, poorly developed credit and risk analysis in lending institutions magnified by so-called 'crony capitalism'. Their persistence into the adjustment period would have increased the likelihood of the negative dynamic feedback analysed by Calvo. In the Asian countries in particular, events since 1997 give credence to this possibility. A recent study by Sun-Bae Kim of Goldman Sachs (as quoted in *The Economist*, 2001) reports an increase for East Asia as a whole in the ratio of non-performing loans to GDP since the 'end' of the crisis. He reports that this now stands at the alarmingly high level of 15% of GDP.

Numerical evidence to sustain the point can be obtained from the balance sheets of relevant enterprises. Pomerleano (1998a) has compiled relevant data for the Asian crisis economies and a few of the major statistical findings from his work are summarized in Table 3. His data show clearly that, in the three Asian crisis countries analysed in this paper, corporate balance sheets were already very fragile even before the hike in interest rates that followed the 1997 crises. Debt financing was already a dominant part of financing both in terms of accumulated assets and in terms of the flow of new investment activities. Fragility, as measured by the five Altman indicators, was at or below critical values. Above all, even before the interest rate hike, companies in his sample were failing to achieve a return on capital employed sufficient to match their costs of borrowing (see the last column of Table 3).

Table 3. Corporate financing characteristics in Asia

Countries	Debt raised		Altman's Fragility Index 1995/96	ROCE-lending rate 1995/96 (%)
	Leverage 1992-96 average (%)	(% of investment) 1992-96 average		
Crisis Countries				
Indonesia	92	67	2.6	-9
Korea	132	69	1.55	-2
Thailand	155	78	1.5	-8
Malaysia	62	45	3.9	3
Philippines	69	25	3.4	-9
Comparator Countries				
Hong Kong	39	45	6.9	12
Latin America	31	19	1.9	—
Germany	58	6	—	-8
USA	90	8	—	4

Source: Pomerleano (1998a).

Notes: (i) Leverage is the company's total debt divided by shareholder equity—it shows the relative importance of debt in overall balance-sheet financing.

(ii) Debt raised shows the percentage dependence on the debt financing of fixed investments.

(iii) The Altman 'Z' ratio is a weighted average of five ratios from standard corporate financial statements. It has a possible range of from minus 4 to plus 8. Scores above '3' indicate reasonable financial soundness; scores < 2.99 indicate vulnerability; scores < 1.81 indicate financial distress.

(iv) ROCE-Lending Rate shows the gap between the return on capital and the prevailing cost of borrowed funds. A negative indicates that the average value being delivered to shareholders as a result of borrowed funds is negative.

Table 4. Interest rate impacts on a typical company

Combined operating and P&L account									
Costs	Year 1	Year 2 (A)	Year 2 (B)	Year 2 (C)	Revenues	Year 1	Year 2 (A)	Year 2 (B)	Year 2 (C)
Wages	150	165	165	165	Sales	490	539	539	539
Materials	50	55	55	55					
Interest Charges	80	88	176	220					
Depreciation	130	143	143	143					
Balance-profit	80	88	0	-44					
Totals	490	539	539	539		490	539	539	539
Balance sheet									
	Year 1	Year 2 (A)	Year 2 (B)	Year 2 (C)		Year 1	Year 2 (A)	Year 2 (B)	Year 2 (C)
Fixed Assets	1300	1287	1287	1287	Loans	800	880	880	880
Cash	80	231	143	99	Shareholder Funds	500	500	500	500
					Revaluations	0	50	50	50
					Retained Profits	80	88	0	-44
Totals	1380	1518	1430	1386	Totals	1380	1518	1430	1386
ROC						5.8%	6.38%	0.00%	-3.19%
Revaluation Profit									
Fixed Assets	130								
Loans	-80								

Interest-rate hikes that would eventually double or more than double the interest rates prevailing in 1996, were certain—in this context—to exert large deflationary impacts through the weakening of corporate balance sheets. In countries with workable bankruptcy arrangements, these interest rate hikes would have been manifest in the form of increased rates of corporate failure.⁹ But in the absence of active bankruptcy arrangements these ‘failures’ would likely have resulted in the rapid growth of the informal flows of funds indicated above, such as arrears, ever-greening of loans, etc. Flow-of-funds adding-up conditions require that the emergence of negative corporate cash flow combined with the failure of the bankruptcy mechanism must imply new sources of credit—probably involuntary—associated with the survival of failing firms (see also Section 5 below).

A simple numerical example for a representative company (Table 4) based on balance-sheet and ROCE structures that seem broadly typical of the pre-crisis situation in countries such as Korea and Thailand can help to confirm the likelihood of these recession and involuntary flow-of-funds effects.

Year 1 is constructed to be a pre-crisis year in which the company achieves positive profits, has a return on capital (ROCE) of 5.8%, and a leverage ratio of 1.38 (800/580). In other words the company is profitable albeit financially fragile. Year 2, Case A is the same except that we explore the effects of 10% inflation with zero real change in the sales and cost characteristics of the company. An interest rate on loans of 10% is also assumed. Year 2, Cases B and C are the same again except that we now factor in hikes in nominal interest rates of 20 and 25 percentage points respectively—broadly the size of the increases actually experienced. It can be noted that the first of these simulations reduces the return on capital (allowing for inflation) from 6.38% to zero. The second simulation results in a negative

return on capital of 3.2% and so causes a significant decline in shareholder capital. Our examples do not allow the companies to pass on any of their higher interest charges in their pricing—the effective inflation rate for them remains at 10%. This seems realistic in an environment where GDP growth is declining by well over 10% (Indonesia and Thailand in 1997) and certainly by more than 6% (Korea in the same year). However, some modest pass-through of part of the higher costs, would still be consistent with a large deterioration in the profitability and possibly the solvency of the companies concerned.

Could a currency collapse on the scale actually experienced or threatened in the crisis countries have had a similar effect? Yes it could. If about one third of the corporate debt (880 units in our example) was denominated in foreign currencies, then a nominal devaluation of around 30% would have been sufficient to reduce profitability by 100 units—an intermediate outcome between the Year 2, Cases B and C outcomes shown in Table 4. But other vulnerabilities are evident from this example. In particular, the simulated magnitudes of the interest-rate effects are too large for them to have been sidelined as ‘trivial’ in any serious analysis. The worst of all worlds is clearly to have a combination of negative interest-rate and negative exchange-rate effects—a combination that seems to have been close to the reality in some crisis countries.

4.3. *Risk Persistence*

A third type of negative feedback can come from the risk weights that actual or prospective investors attach to the economy undergoing adjustment. This can be seen in a number of ways but one is through the familiar uncovered interest-parity condition for the case where domestic and foreign financial instruments are imperfect substitutes. This condition can be written as:

$$R_d = R_f + \left(\frac{S_{\text{exp}} - S}{S} \right) + \theta \quad (2)$$

where R_d and R_f are, respectively, the interest rates on domestic currency and foreign currency instruments; S and S_{exp} are, respectively, the actual and expected spot rates for the currency against, say, the dollar; and θ is the risk premium attached to domestic financial instruments.

A ‘good’ adjustment in the Calvo sense would have S_{exp} and S rapidly converging so that R_d can also converge downwards on R_f . But a failure¹⁰ in this regard creates the potential instabilities for the fiscal accounts described as our first flow-of-funds feedback above. This, in turn, can result in considerable uncertainty about the future path of seignorage demands, through inflation, tax increases, etc. It also creates the damaging flow-of-fund feedbacks in relation to corporate and bank finances analysed by Calvo: deteriorating corporate profitability, high rates of corporate bankruptcy and deteriorating bank finances. The persistence during two to three years of the gaps between domestic and foreign interest rates implied by Figure 1 indicates that agents were attaching non-zero probabilities to further exchange-rate adjustment and/or were attaching very high risk premiums to the six countries for a long time after the crises were notionally resolved. It is not unreasonable to suggest that the induced instability in fiscal and corporate accounts caused by the high interest rates played a part in this persistence. In short, the use of high domestic interest rates as instruments of adjustment may have extended,

rather than shortened, the period, during which the actual and expected levels of the exchange rate diverged.

4.4. Conclusions

What can we learn from the analysis presented in this section? It shows above all that the flow of funds-based caveats to traditional approaches to crisis adjustment cannot be rejected. Our admittedly limited numerical evidence shows that the flow-of-fund feedback effects, in some recent episodes, have been large enough to work strongly against the credibility and the success of the narrow monetary approaches. Adjustment policies focused narrowly on monetary, liquidity and exchange-rate considerations have been seriously incomplete in some cases. Some forms of financial imbalances seem to have been addressed with great vigour (e.g. the growth of liquidity) while others have warranted scarcely a mention (e.g. the growth of credit in the form of arrears of payment). Since the feedback effects that we analyse are relatively easy to conceptualize and to calibrate, it seems strange that they have not received greater attention.

The relative lack of concern about a prospective deterioration of public sector and corporate balance sheets has accompanied the apparent lack of anxiety about extreme levels of interest rates. Although structural measures (better capitalization of banks, improved bank supervision etc) have figured prominently in some crisis programmes, there has been little apparent recognition that weaker balance sheets of companies and the banks that lend to them constitute an unpropitious starting point for launching such reforms. Above all, structural measures to enhance the soundness of domestic financial systems cannot achieve much in the face of increasing corporate and banking distress. It is a puzzle therefore that the advocacy of corporate and banking viability and profitability has been so under-emphasized. This is a very significant contrast between rich and poor country adjustment as the next sections attempt to clarify.

5. Rich and Poor Countries: Parallels and Differences

5.1. Parallels: a Money-phobic View of Financial Stability

The financial-sector situation in the lower income countries as just described manifests several interesting contrasts and some parallels with the corresponding situation in the richer countries. By distilling some of the more important of these, we can throw further light on the radically different interest-rate behaviours seen during recent crises. This is done in this section by introducing a discussion of some of the more significant changes, especially since 1990, in balance-sheet structures and flows-of-funds in the more advanced economies.

A crucial similarity between the two groups of countries relates to the manner in which macro/monetary policies are conditioned in both cases by narrow monetary models. This is despite the radically different financial structures in the two cases. To illustrate this, consider the way in which ideas about inflation tendencies and financial stability tend to be articulated in the two groups of countries. In the poorer countries it is almost a knee jerk reaction that the over-borrowing associated with crisis must have something to do with the growth of monetary assets and so will need cures based on very tight monetary policies. In the richer countries, there is presently great satisfaction with the idea that financial stability is set in concrete

because the past decade has seen only modest rates of growth of monetary assets. Almost by definition this implies ‘financial stability’.¹¹

However, these ‘money-phobic’ approaches are very misleading in both cases. The money-phobic approach is one that understates very seriously the possibilities of financial crisis in the richer countries that have deeper financial systems and capital markets. In these richer countries, a huge legacy of potential problems is being built up in the extraordinarily rapid growth of non-money assets in the portfolios of both lenders and borrowers (see below). Central bankers would not sit quietly by and allow the growth of bank credit at double-digit rates for many years. But they have allowed this in the case of derivative instruments—sustained growth of 40% implying a doubling in little more than 2 years¹² and bond securities. Central bankers are well aware of the empirical literature that associates excessively rapid growth of banking credit with an enhanced probability of crisis (see, for example, Caprio *et al.*, 1998). But central bank warnings about the dangers of similarly rapid growth of non-monetary credit are relatively rare.

5.2. *Differences: Depth of Capital Markets*

As documented by Warburton (2000), financial activity (lending and borrowing) in many richer countries is becoming increasingly concentrated on a range of sophisticated capital-market and associated instruments. ‘Disintermediation’ has substantially downgraded the relative importance of traditional commercial banking. Just a few examples are sufficient to confirm these extremely important tendencies.

- *Money stocks versus outstanding stocks of bonds.* The ratio of these two stocks globally, back in 1970, was 2.5:1 (US\$2 trillion of broad money versus US\$800 billion of bonds). In 1990 it was 1.1:1.0. By the end of the 1990s the global bond stock at over US\$25 trillion had overhauled the money stock and the ratio was 0.8:1.0 in 1997. This has moved the centre of gravity of the global financial universe from banks and the money markets to the bond markets and their derivative cousins.
- *Non-monetary borrowing by governments.* Rich country government and government agencies are implicated as major contributors to the outstanding bond obligations. Warburton (2000) estimates that between 1989 and 1995 OECD governments together accumulated a further US\$3.7 trillion of public deficits and issued US\$3.9 trillion of central and local government debt. The USA, Germany, Japan, Italy and France were the largest issuers. Since 1995, that splurge of government borrowing has continued. In the five and a half years since the end of 1995, the USA government and various Federal agencies alone have issued (net) another US\$800 billion of bond debt (Warburton, 2000).
- *Non-monetary borrowing by companies.* The past 30 years has seen the outstanding stock of corporate bonds rise from US\$150 billion to US\$2400 billion. This represents a compound annual growth rate of almost 10%. Through most of the period and certainly in the 1990s, the growth of borrowing from commercial banks has been far slower. The result is that outstanding USA corporate bond liabilities are now 2.7 times the level of corporate bank credit (see also Figure 3).

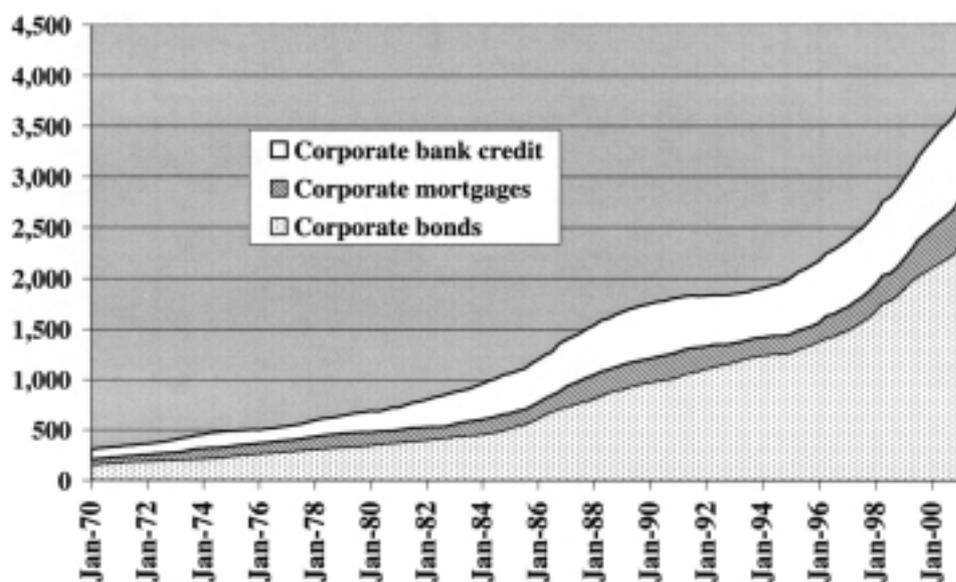


Figure 3. US corporate liabilities, 1970–2001.

- *Capital market instruments held by savers.* Wealth holders in the rich countries have shown themselves increasingly willing to allocate their funds to capital market instruments rather than to the more traditional and liquid monetary instruments. In the UK for example, between 1987 and 2000, money-based assets held by households rose by 156% while capital market instruments held directly or via mutual funds rose by 424% and pension funds rose by 327%.
- *Generally low liquidity.* The liquid asset holdings of wealth holders in many richer countries are now significantly less than the holdings of less liquid capital market instruments. See data for 13 countries in Figure 4 (Miles, 1997).

By contrast, the situation in most low-income and emerging-market economies still shows commercial banking as the centre of gravity of both borrowers and lenders. Globalization notwithstanding, the tendencies described in the bullet points above have been very much a rich country phenomenon, as poorer/emerging economies, for example, account for only 2–3% of the global total of bonds outstanding. This is routinely noted as a crucial weakness of the financial sectors in such countries. Pomerleano (1998b) sets down the standard argument. He notes that in a situation (Asia) where the household sector saves an amount equal to almost one third of GDP, and where most intermediation is dealt with through the banks, the result is certain to be a highly leveraged corporate structure. This is especially true, he argues, where very high rates of growth have not given companies much opportunity to generate large internal funds to buffer debt accumulation.¹³ He goes on to say that ‘... Asia’s high corporate leverage contrasts with that in countries with slower-growth and more balanced financial systems, *including well-developed equity and bond markets*. The ensuing financial structure was inherently risky and vulnerable to internal and external shocks’ (Pomerleano, 1998b; italics are mine).

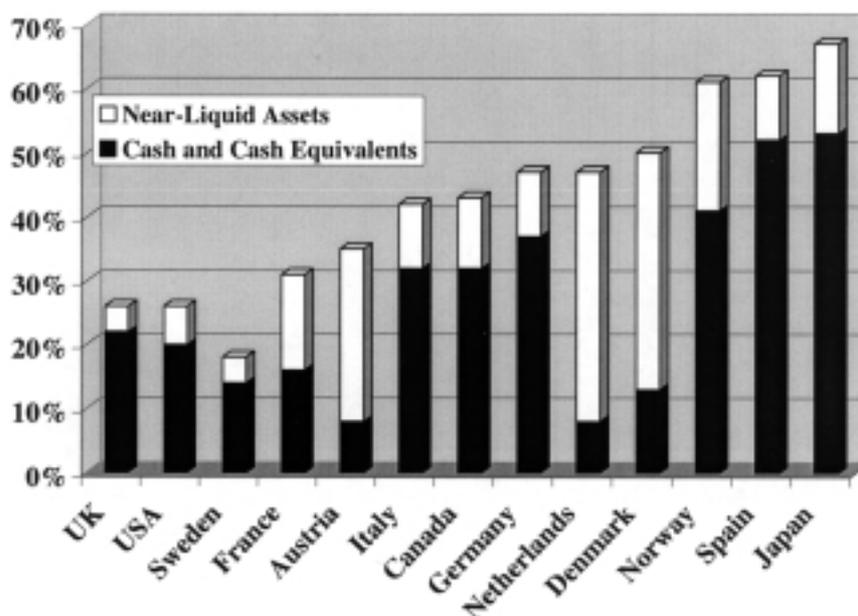


Figure 4. Household liquidity in rich countries.

Source: Miles (1997).

While it is hard to disagree with the thrust of Pomerleano's standard argument, the alternative view of inflation based on the changing asset structure of financial markets in OECD countries provides a basis for giving his argument a new twist. As argued by Warburton (2000), the low-inflation phenomenon currently experienced by OECD countries is closely associated with the ability of governments to borrow easily using non-monetary forms of credit without forcing up bond yields excessively. Lower returns on bank deposits have shifted household portfolio preferences away from highly liquid bank deposits into longer term capital-market investments carrying higher yields. The intermediaries in this market (pension funds, mutual funds, insurance companies) have magnified this tendency by aggressive marketing of their own retail products. Large corporations (until recently), like governments, also obtained easy access to non-monetary forms of credit and thereby reduced the relative importance of their bank borrowing. Warburton argues forcefully that this 'disintermediation' process in the rich countries can be interpreted as part of a mechanism that has suppressed the inflationary pressures that would otherwise have accrued from large scale borrowing (i.e. if it had been structured in the same way as in the 1980s). Clearly, the poorer countries have not had access to this same mechanism. Two implications follow—one good and one bad. First, these countries have avoided the staggeringly high risks that confront participants in the rich country financial markets, such as the ever larger non-liquid asset positions of savers and the obfuscation of true risks because of the increasing derivative and globalized dimension of the financial instruments. Second, their anti-inflation struggles have been more difficult: higher incipient inflation is associated with any given amount of corporate and government borrowing.

Notice that this last proposition requires us to interpret the greater inflationary tendencies of the developing/emerging economies in a much more specific manner

than is normal. In particular, we cannot necessarily associate relatively high inflation with excesses of borrowing—we have seen that borrowing levels in the US and the UK are scarcely modest and yet inflation remains low. We cannot necessarily associate deep financial structures with stability. The deep structures in the USA and the UK are inherently high risk and have become riskier during the low inflation era. The stark reality is that some richer countries have so far got away with ‘excessive’ borrowing via capital market instruments—although events through the latter part of 2002 begin to question even this. The key so far has been that rich countries’ borrowers have been able to find the willing lenders to provide the funds that they need (increasingly non-monetary credit) and at relatively low apparent cost, while the other countries have not. Upward sloping yield curves and large prospective capital gains have been an important part of the reason. But the ‘true’ costs of this ‘success’ need to factor in the enhanced risks of capital losses that are inherent in the process: these are only now becoming apparent in collapsing stock-market valuations.

5.3. The Motivations of Monetary Authorities

A second key difference suggested by this line of analysis concerns the freedom enjoyed by the authorities in each group of countries to use the interest rate instrument. Because capital-market instruments and financial derivatives have become such an important part of mass-market savings portfolios and public and corporate financing structures, it is easy to see that there are now significant limits on the freedom of manoeuvre for the monetary authorities in the richer economies. The mechanisms described by Warburton (2000), and that underpin the sustained low inflation, depend on bond and other asset values avoiding precipitate falls. In the highly leveraged Western capital markets, this means that the authorities need to shy away from themselves causing interest rate increases that could prompt those falls in value and a possible large sell off of the capital-market assets. Possibly, they can move rates upward by 0.5 or 0.25% without causing huge market jitters—but they cannot contemplate the swingeing rate hikes that have been seen in all the poorer crisis countries. Equally, when external shocks threaten the possibility of significant falls in asset values, the rich country authorities have little choice but to counteract the tendency by pushing interest rates lower—failure to do so could quickly unwind a huge pyramid of credit. So, the LTCM example referred to earlier is not a one-off exception—an aberration on a behaviour pattern normally characterized by great prudence. Instead, it is an example of the more general reality that one major role of Western central banks has become that of protecting the inflated, and fragile level of asset values that gradually built-up through the triumphal 1990s.

Inhibitions of this type are likely to be far less significant in most poorer and emerging market economies. The proportions of wealth-holders in these countries that have a significant stake in capital-market assets will typically be very low—so the political flak caused by large write-downs of asset values will be quite modest. Equally, the complex leveraging and layering of financial instruments of the type that caused anxiety during the LTCM crisis in the US will typically be absent. Hence, the authorities have less need to be responsive to a financial problem involving even major borrowers in their own financial systems: even a large failure need not spread the systemic ripples of distress that would occur in the US. In brief, the logic of simpler bank-based financial systems is that both the political and the economic constraints on large upward movements of interest rates are far less.

However, if achieved in the poorer emerging-market economies, deep capital markets would impose significant constraints on the authorities' use of the interest rate instrument: clearly such constraints were absent during the crises of the 1990s.

5.4. The Intersection of Capital-Market Activities

A third difference is derivative on the first two. It relates to the question of what happens when globalization creates a limited intersection of these two regimes through portfolio capital flows—the bank-based regime of the developing economy borrowing from the capital markets-based regime of the rich economy?

The investment by rich-country savers in the bonds of emerging-market economies is typically of minor importance in the lending portfolios of the source country—developing country bond issues account for only 2–3 % of the global total. However, these investments may well be highly significant amounts in the *borrowing* of the destination emerging economy. The rich-country investor knows that his/her emerging-market investment will lie beyond the protective environment that is implicitly available in the rich-country markets—the result of the limits on central bank interest rate discretion indicated earlier. Hence, the risk premium for that overseas investment is immediately higher than for a comparable domestic investment. Note that this has nothing at all to do with the quality of the general economic situation or the specific investment projects in the destination country. The higher risk premium will nonetheless create strong incentives to take returns up-front (e.g. arrangement commissions by brokers) and to invest short term. For these reasons, the risk premium will likely reduce the prospects of a successful investment and increase the chances that the capital flow will soon be reversed. Improved prudential arrangements for banks in the destination country can only be a palliative in this situation—the reform that is really needed is one that would make the investor fully aware of the risks being faced in his/her own country.

In short, until the poorer countries achieve the critical mass of capital-market activity that will cause their monetary authorities to respond to incipient problems in the manner of the Fed or the Bank of England, their participation in international capital-market activity exposes them to hazards not encountered in the richer countries. Specifically, the implicit protection from interest-rate risk available when funds are invested in the richer countries will be absent when the funds are moved to a poorer country with only embryonic capital markets. Again, this has nothing to do with the economic fundamentals in the destination market or with the quality of economic policies, bank supervision, etc.

5.5. The Alternatives to Money-based Credit

A final important difference relates to the nature of the financial instruments that present themselves as alternatives to money-based instruments. The key to the asymmetry of response referred to in the title of this paper seems to reside in the nature of the balance-sheet structures and the composition of credit in the different economies that we have considered. In economies where both lending and borrowing structures have become highly dependent on longer-term and leveraged capital-market instruments, it is less easy for the authorities to contemplate large movements in interest rates. Traditional monetary policies can still be expected to expand (or contract) the economy by making bank credit more (or less) available and affordable, but the indirect consequences of these interest-rate

movements cannot be neglected. This is because their impact on asset prices runs the risk of swamping the direct monetary policy effects. This is particularly true when interest rates need to increase: a small traditional dampening of levels of activity could be multiplied many times over by a major collapse in bond and equity prices.¹⁴ By contrast, in economies where monetary-based instruments still dominate the portfolios of both lenders and borrowers, such inhibitions will be far less compelling: the asset price effects might be ignored even by responsible central banks. Hence, the asymmetry—the over-borrowing in developing and emerging economies being far more likely to be addressed, by the IMF and others, by adopting very tight monetary policies.

However, the story does not end there. Although the pre-crisis situation in the poorer economies may be one where alternatives to monetary assets or bank credit seem hardly to exist, this will not necessarily be the situation through the period of any crisis or at its supposed ‘conclusion’. The key to this apparently odd statement is the readjustment of the flow of funds that mirror the company and individual responses to the large level of financial distress that can result from extreme monetary tightness.

Let us consider two separate cases. The first is where the financial distress (loss of profitability, negative cash flow, possibly insolvency) affects a significant *minority* of enterprises and individuals. In this case, and if the economy has working bankruptcy arrangements in place, then those arrangements will lead to the write-down of existing credits in balance sheets and some negative spill-over effects to the creditors. In this case, there is a good chance that the problem can be contained, that total credit will be reallocated—more credit going to ‘good’ credit risks—and also that there will be some limit on the flow of new credit to the distressed enterprises. However, if bankruptcy procedures are not in place, the opposite can happen. The distressed enterprises remain in business, their existing credits do not get written down (even though they are non-performing), and there is a strong possibility that their continued trading may result in the provision of further involuntary credit in the form of arrears of payment to suppliers, workers etc. The ever-greening of bank loans is also a strong possibility.

The second situation is where the financial distress becomes systemic—a majority of enterprises and many individuals being saddled with non-supportable levels of debt. In this second case, even the presence of a strong bankruptcy system is unlikely to prevent the accumulation of new amounts of involuntary credit in the form of arrears or payment and the accrual of interest on non-performing bank loans. After all, there are strict limits on how many companies and individuals can be pushed through even a robust system of bankruptcy.

These theoretical possibilities have been exhibited *in extremis* in two of the country cases considered in this paper, namely Russia and Ukraine. Neither country, prior to about 1995, had any significant securities market activity other than that associated with mass privatization. This provided little or no alternative sources of corporate finance to compete with bank credit. Even before the 1998 crisis only a handful of natural resource-based companies in Russia were able to issue bonds and other securities and almost none could do this in Ukraine. However, before and after their crises, both countries saw the emergence and survival of a huge alternative source of credit in the form of payments arrears and a variety of securitized manifestations such as veksel (IOUs), and offsets (the right to pay some debts such as a tax bill by using an IOU issued by other debtors). In Ukraine, the level of enterprise arrears has easily exceeded GDP for several years.

Presently, it is equivalent to ten times the level of bank credit outstanding. In both Russia and Ukraine, even the outstanding payment arrears to the electricity power companies at 7–8% of GDP have been almost as large as outstanding bank credits in some recent years.

The Russia/Ukraine situation is obviously a bit unusual because of the grossly distorted nature of the production structures that both countries inherited from the USSR in 1991. But extreme cases are useful in reminding us of possibilities that may go unnoticed in less extreme cases. Two points are worth emphasizing in this context.

First, any economy where a significant number of enterprises and individuals are subjected to serious financial distress is likely to develop a set of alternatives to bank credit: there is no obvious limit on the scale of this ‘financial innovation’. This development will alter the structure of balance sheets (as well as behaviour) in ways that are unlikely to be beneficial either to long term economic stability or to economic efficiency.¹⁵ The excesses of borrowing that preceded a crisis may need correction. But there is no particular reason to believe that balance sheets can generally be made healthier by broad-based distress and the incentives thereby created for alternative forms of credit to emerge and spread. The research undertaken for this paper has not included any scrutiny of post-crisis balance sheets in countries other than Ukraine and Russia. But it is likely that some of the same tendencies seen *in extremis* in Russia and Ukraine would be found also in Mexico, Korea and elsewhere. Sun-Bae Kim’s (see *The Economist*, 2001) findings about the deterioration in the bad debt ratios in banks in Asia are consistent with this possibility. Conversation with one senior official involved in the 1997–98 Korean crisis also confirms the informational problems inherent in systemic corporate distress. It was not possible, he points out, for banks or for government agencies to differentiate between those enterprises that were deservedly distressed and should be pushed towards liquidation and the others. Hence, there was no objective basis (private or public) to allocate any marginal unit of new credit.

6. Conclusions

This paper has examined some of the economic issues involved in the extremely large interest rate hikes in developing and emerging-economy crisis during the past 15 years. The economic and human distress associated with these events is obvious enough. But the aptness of the familiar cameo explanations normally used to account for the differences in policy responses in poorer as compared to richer countries turn out to be less than convincing.

Explanations based on the supposed greater fragility of financial structures in the poorer countries turn out to be particularly unsatisfactory. Indeed, the financial structures of the major rich economies are arguably far more fragile and potentially unstable than those of several of the developing/emerging economies discussed in this paper.¹⁶ The real structural difference in the richer economies is that their high levels of leveraged capital-market dependence imposes strict limits on the extent to which their monetary authorities can use the interest-rate instrument. There is a strange poetic irony in the suggestion that Alan Greenspan may have less room for manoeuvre than do his developing country counterparts. Both types of country seem to suffer from a ‘money-phobic’ approach in the analysis of their own problems.

Equally unhelpful is the proposition that the developing/emerging economies are substantially more prone to inflation and that it is this that forces them into a

particular mode of crisis response. Several of the crisis countries have not been strongly inflation prone either before or after their crises. But equally important are the points attributed to Warburton (2000) that indicate how portfolio structures in richer countries have, for the time being, served to suppress the inflationary pressures that could have arisen from the huge borrowing loads of the 1990s. The absence of this same mechanism in the developing countries is one important reason why they have faced a higher inflation penalty for any given borrowing.

The paper has also looked critically at the logic that seems to underpin the crisis packages in most developing/emerging economies. The central role given to tight monetary policy has allowed interest rates to rise to extremely high levels with few alarm bells being rung when this happens. Arguably, this is because too narrow an emphasis has been attached to restraining liquidity: a consequence of the priority accorded to commodity price inflation and to the exchange rate targets. In at least some of the crisis countries, the feedback effects from high interest rates on fiscal stability and on economic stability more generally were demonstrably going to be large: the data presented here offer support to this proposition. It is surprising in the light of this that there has not been a more differentiated approach as between different countries. The money-phobic nature of our traditional thinking is one explanation. A second is in the sheer scale and global significance of the capital market dependencies of the rich country populations (97% of the global totals) as opposed to those in the poorer and emerging market economies. This makes widespread corporate distress unthinkable in the richer countries but an issue of more marginal political concern elsewhere: the asymmetry probably resides at least partly in the political domain.

This is not to suggest that the crisis policies of the 1990s were wholly wrong or that there was a radically different approach—a painless third way—that could have been invoked. It does suggest that the ‘standard’ approach is oversimplified in that not all borrowing excesses can be resolved by tightening the flow of bank credit alone. The bad lending and borrowing decisions of the past are already set into balance-sheet structures at the point when a crisis begins. The mere act of making credit more expensive cannot alter that reality. Furthermore, policies that lead to widespread financial distress in enterprises and individuals are likely to promote ‘financial innovation’ and unregulated new forms of credit that can substitute for the bank credit that is being made more expensive. This is almost certain to be a harmful development and one that will make long term stability harder to achieve. Hence, like the alternatives to monetary credit that constitute the real source of financial vulnerability in the richer countries, this should command far more attention from the monetary authorities and the IMF than it currently receives. Good central banking needs to focus on a much wider range of financial assets and not just on those that have the label ‘money’ attached to them.

Notes

1. Another line captured in the literature is that the vulnerabilities of emerging economies have arisen because too ‘safe’ a deal has been offered to foreign investors. Dooley (1999), for example, argues that foreign investors have in effect been granted three guarantees—an exchange rate guarantee via the policies of pegging rates; a credit guarantee through public bail-out commitments; and a repatriation guarantee via the commitment to open capital accounts. The overall effect of these is an excess of ‘hot’ money flows.
2. The actual inflation series for some countries move up significantly in the crisis period and then return to something close to their pre-crisis levels. So it would be easy to assert that the movements

of interest rates are merely reflecting the higher inflation. But if, on the other hand, inflation moves up in part as a consequence of the higher interest rates, then we get a radically different conclusion about the stabilizing role of interest rates. The presentational device for inflation used in Figure 1 attempts to maintain some neutrality between these two competing positions. Specifically, the pre-crisis and post-crisis levels of inflation might be argued to provide a good fix on the range within which inflationary expectations lie during the period of crisis itself.

3. Miller (1998) quotes Alan Greenspan saying ‘... rather than let the firm go into disorderly fire-sale liquidation following a set of cascading cross defaults, the Federal Reserve Bank of New York helped to arrange an orderly resolution not to protect LTCM’s investors, creditors and managers from loss, but to avoid the distortions to market processes caused by a liquidation and the consequent spreading of those distortions through contagion.’
4. The pre-crisis movement of interest rates is harder to interpret in these terms than is the movement of commodity and asset prices. This is because the nature of the excessive-borrowing pre-crisis is that it has both supply and demand elements. Depending on the balance of these two forces, the interest rate may rise or stay quite low. But once the forces of the crisis are unleashed, the available supply of credit is likely to dry up as new loan availability shrinks and lenders seek repayment of existing loans. There is no corresponding collapse of the demand for credit and certainly no reason why most borrowers will be looking to repay old loans. Hence, some upward pressure on interest rates is a likely consequence of most crises.
5. One of the complexities of crisis analysis and management is that (initially) unfounded perceptions can easily become ‘reality’ if they result in actions such as the selling of the domestic currency.
6. Fischer (2001) goes on indicating that ‘... Underlying these monetary policy specifications was the belief that inflation could become a serious problem in the context of a currency crisis, and that tightening monetary policy in the face of depreciation would help stabilize the currency and prevent high inflation’.
7. Interest rate feedback is only one of the possible causes—problems originating in corporate and banking sectors may also be a factor (see below).
8. For this purpose we relied solely on IMF Government Finance Statistics that currently do not carry any data for Ukraine. Data in the Year 2000 Edition has data on Korea only through the year 1997 and data on Russia that is preliminary for all years before 1998. Hence the rather patchy nature of Table 2.
9. We do see this in some countries—for example, Hyun-Hoon (2001) reports a tripling of insolvency cases in Korea. In others, such as Russia and Ukraine, bankruptcy was extremely limited.
10. Failure implies that R_d stays high without killing-off expectations of currency devaluations.
11. The conventional wisdom about low inflation in most OECD countries would go something like this. After many years of erratic progress after the Second World War, most OECD countries have established fiscal discipline and have achieved sustainably lower levels of fiscal deficits (around 1% of GDP by 1998). So reliance on the inflation tax has been radically reduced and commodity price inflation has converged at very low levels (1–3%) in most countries. This has resulted in a reduced supply of government debt and so helps to sustain higher bond prices and lower yields. Globalization and increased international competition for most traded commodities and services reinforce this tendency from the cost side. In this context the small—0.25% and 0.5%—interest-rate cuts in the US, the Euro area and Britain in 2001–03 (see Figure 2) involve little danger of letting the inflation genie back out of the bottle. Equally, these cuts do not trigger substantial loss of confidence about economic stability in general.
12. In Mexico, commercial bank credit to the private sector doubled approximately every three years after 1998 and was widely linked to the subsequent crisis. See, for example, Mishkin (1996).
13. This point overlooks the reality that the high savings in Asia are used in significant measure to finance small business activity and also housing. Since this form of financing is not intermediated and also builds significant equity in the benefiting businesses, large numbers of small businesses avoid excessive leveraging.
14. The effects may be illustrated from Mexico’s reality in the mid-1990s. Interest rates jumped from 15 to 80% between December 1994 and February 1995, putting nearly everyone under the water and converting consumers, campesinos, landowners and major business conglomerates alike into bad debtors. According to some sources, about 40% of housing mortgages were no longer paid. Credit cards and car loans, both of which had expanded explosively during the financial boom of the early 1990s, were nearly hopeless. To illustrate the general situation, a bank manager at Bancomer, Juan Octavio Ballesteros explained ‘we don’t repossess the cars. We just keep renegotiating with the customers to keep the loans going. If Bancomer repossessed all the car loans that are

non-performing now, we would have a huge parking lot of cars' (adapted from Greider, 1997, Chapter 12).

15. In both Russia and Ukraine there is ample survey evidence that the new informal credit is just as likely to favour inefficient low productivity activities as efficient ones (Roe *et al.*, 2001).
16. In one of the most widely read books about the stock-market boom of the 1990s, Shiller (2001, p. 68) comments: '... speculative feedback loops that are in effect naturally occurring Ponzi schemes do arise from time to time without the contrivance of a fraudulent manager. Even if there is no manipulator fabricating false stories and deliberately deceiving investors in the aggregate stock market, tales about the market are everywhere. When prices go up a number of times, investors are rewarded sequentially by price movements in these markets, just as they are in Ponzi schemes. ... As prices continue to rise, the level of exuberance is enhanced by the price rise itself.'

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