

MANAGING CAPITAL FLOWS: A DISTORTIONS APPROACH

The East Asian financial crisis has highlighted the challenges that international capital movements pose for domestic economic management. Many of the conditions necessary to maximise the benefits and minimise the risks associated with international capital flows were violated in East Asian economies. In particular, a number of distortions encouraged capital to flow to the wrong investments and with insufficient attention to risk. For economies with open capital accounts, the policy priority must be to remove these kinds of distortions. Where this is not possible in the short term, other policies to influence the capital flows may be desirable.

Introduction

‘A week is a long time in politics’, British prime minister Harold Wilson once famously remarked. In economics too, both theory and underlying reality can sometimes change with startling speed. Barely two years ago, economic orthodoxy strongly upheld the benefits of free capital mobility for developing countries, and the International Monetary Fund (IMF) actively sought to enshrine the goal of capital account liberalisation in its Articles. Two years on, this orthodoxy has come under serious challenge. The financial crisis in East Asia and its transmission to the world economy have prompted economists to take a harder look at the risks as well as the benefits of an open capital account.

The massive reversal in capital flows to East Asia following the floating of the Thai baht on 2 July 1997 was unprecedented in its speed and scale. Although the crisis initially centred on the East Asian economies, the turbulence in emerging markets was widely felt. In June 1998 Russia was added to the critical list when its announcement of a debt moratorium prompted an unwinding of positions in Russian and other emerging markets. And in January 1999, the Brazilian government abandoned the peg on its exchange rate, a move which was prompted by rapid capital flight and which precipitated a large currency depreciation and further capital withdrawal. As a result of these developments, it is now common to find economists, central bankers and the international institutions themselves discussing the merits of capital account restrictions, a tightening of the Basle Capital Accords, the ‘Chilean model’ or other tinkering with the ‘international architecture’.

The debate over the management of capital flows has been an emotive one, with strong unconditional statements on both sides. That the debate has polarised seems surprising in light of both the evidence and theory of the benefits of capital account liberalisation. It is reasonably clear that capital controls can be desirable and effective in some cases (who would recommend a speedy capital account opening in China and India?) and that they are not a serious proposition in others (the United States, for example). It is easily demonstrated that the strength of the case for full capital account liberalisation is largely contingent on particular conditions in domestic markets.

What is needed instead is a framework that helps us to decide when and where various kinds of restrictions may be appropriate policy responses, and which are the best policies in different circumstances. The ranking of regimes and policy tools under different assumptions about underlying market conditions has long been a part of the trade literature. The work of Bhagwati (1971) and Corden (1957), among others, illustrated how the ordering of trade regimes might alter in the presence of various distortions and provided a framework to assess and rank various possible policy responses.

This paper adopts a similar approach to the problems arising from international capital flows. A simple diagrammatic approach is used to illustrate that a relaxation of capital account restrictions in the presence of distortions is likely to have two opposing effects. On the one hand, reduced borrowing costs will increase the efficiency of intermediation and tend to raise welfare. On the other, the ability to borrow abroad is likely to increase the deadweight costs from distortions in the domestic market. The tension between these two effects means that the case for capital account liberalisation is likely to be more finely balanced than has often been acknowledged. In the absence of offsetting action to address distortions, the optimal degree of capital account liberalisation will vary according to the degree to which domestic markets are distorted. In economies where distortions are particularly severe, financial autarky may be optimal.

Many of the prominent models of the East Asian crisis can be interpreted as variants on this general framework that emphasise one or other particular distortion or market failure. In fact, it is possible to identify a relatively wide range of distortions that drove a wedge between the social costs and benefits of decisions and helped generate the surge and subsequent reversal in capital flows in East Asia. In some instances, these distortions were the direct outcomes of government policy. In others, they stemmed from market failure that had not been adequately addressed. These distortions took a range of forms. Governments

gave subsidies, implicitly and explicitly, to certain kinds of borrowing. There were important externalities in foreign borrowing decisions. And problems of moral hazard in the financial sector encouraged an excessive accumulation of risk and compounded the divergence between private and social costs of borrowing.

Analysing the problems of managing capital flows in terms of underlying distortions is helpful because it leads to firm conclusions about the appropriate policy responses. The work on distortions and welfare in trade highlighted the fact that although restrictions on the current account might succeed in addressing a range of domestic distortions, there were less costly ways of achieving the same objectives. Similar arguments apply to the capital account. Moving directly to restrict capital flows would almost certainly reduce the incidence of capital account crises, but in many cases is an extremely costly way of ensuring financial stability. The general lesson from the trade literature is to tackle distortions as close as possible to their source. As a result, the first-best solution in efficiency terms is almost always to remove the distortion. In some cases, this will involve governments getting out of the market, but in others it may imply an increase in regulation. In some situations, it may not be possible or desirable to eliminate the distortion itself. This may happen if the distortion arises from a policy that serves another important purpose or if the removal of the distortion takes time. In such situations, there is a case for 'second best' policies that decrease the cost of the distorted activity. The burden in these situations should lie on those who want to introduce restrictions to identify precisely the market failure or policy distortion that they are seeking to redress.

Capital account liberalisation in the presence of distortions

A diagrammatic approach

The argument that full capital account liberalisation may not be desirable in the presence of distortions can be sketched in simple diagrammatic terms. Figure 1 depicts the marginal expected costs and benefits of units of borrowing for an economy that has not opened its capital account (financial autarky). The marginal cost and benefit schedules essentially represent supply and demand curves for credit.¹

In the absence of distortions, social and private costs and benefits are equal and the resulting equilibrium will be Pareto efficient. The presence of distortions drives a wedge

Figure 1 The economy before liberalisation

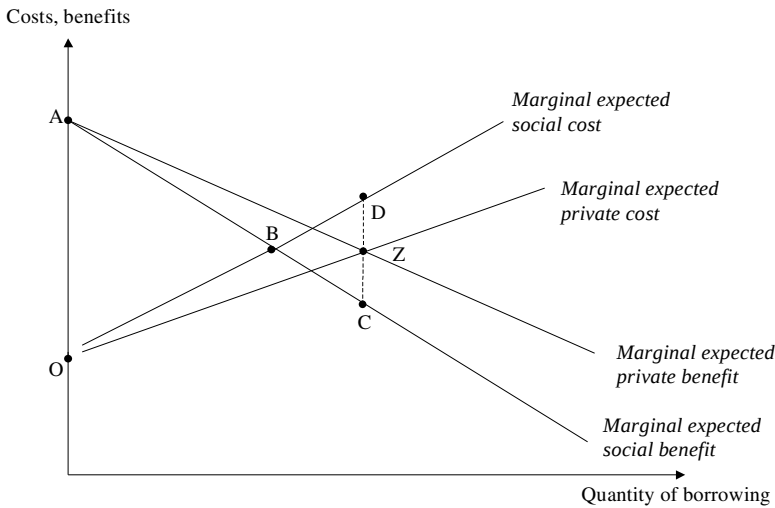
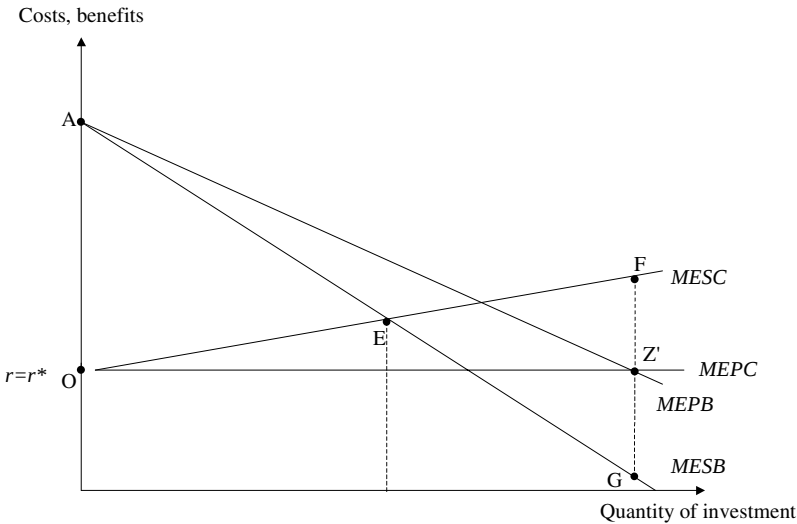


Figure 2 The economy after liberalisation



between the costs and benefits perceived by individual borrowers and lenders and the costs and benefits to the economy as a whole. These distortions can take a number of forms. Subsidies to investment activities might for instance pull the marginal social benefit of additional borrowing below its marginal private benefit. Subsidies to credit, tax breaks or external costs to individual borrowing decisions will push marginal private costs below marginal social costs. The various possibilities are considered in detail below. For the moment, it is sufficient to consider the implications of distortions in general, whatever they may be. Figure 1 indicates that the presence of distortions leads to an equilibrium at Z , where marginal private costs and benefits intersect. There is overborrowing relative to the social optimum, B , and an associated deadweight loss equal to $DBCD$. In the financially autarkic economy, the tendency for interest rates to rise helps to choke off the increased demand for borrowing. The more inelastic the supply of credit, the smaller the deadweight loss will be.

Now imagine that the economy fully liberalises its capital account. Capital account liberalisation, as in Figure 2, has two main effects. First, it makes the marginal private cost of credit more elastic (for a small open economy, the supply curve will become perfectly elastic at the world real interest rate, r^*). Second, it may also increase the range of activities that are subject to external costs and/or moral hazard problems. In particular, we shall see below that access to foreign borrowing may increase both the risk of financial crisis and the cost of a crisis should it occur. This may push the marginal expected social costs of borrowing further above the marginal private costs than in the autarkic economy. Once again, the equilibrium, Z' , is characterised by overborrowing relative to the optimum, E . The amount of borrowing (and overborrowing) is greater after capital account liberalisation, since the interest rate does not now rise to choke off increased credit demand.

What are the welfare consequences of a decision to liberalise the capital account in the presence of distortions? Welfare can be measured in terms of changes to the implied Marshallian surplus in the two different situations. Figure 3 replicates Figures 1 and 2 on a single diagram to allow comparison. It is obvious that in the absence of distortions, there are clear gains from international liberalisation, since $DOAE > DOAB$. These gains represent the efficiency benefits that arise from a lower cost of borrowing and a more elastic credit supply schedule and lie behind the conventional case for the move to capital account liberalisation.

In the presence of distortions, however, the case is less clear. There are now two offsetting effects from capital account liberalisation. The first – the ‘efficiency’ effect –

Figure 3 The costs and benefits of liberalisation

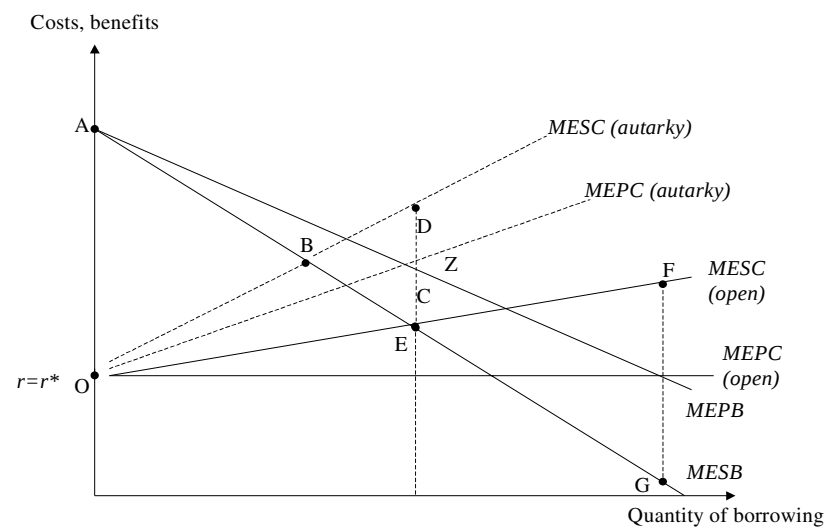
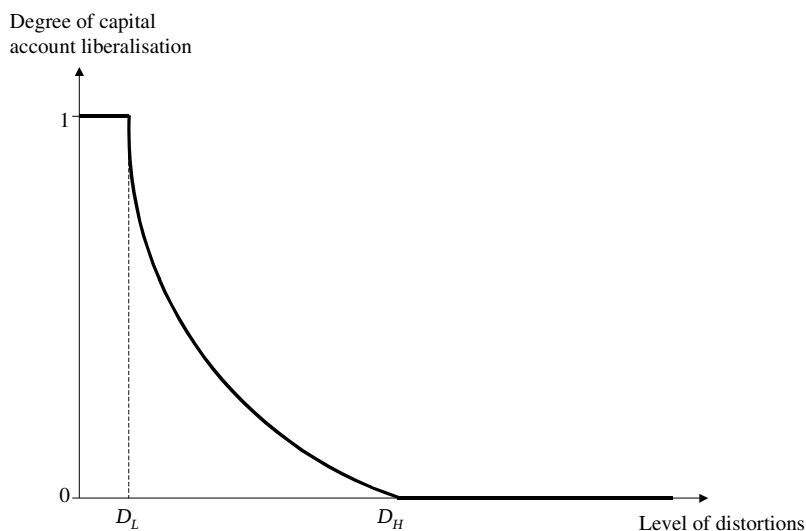


Figure 4 Optimal levels of capital account liberalisation



captures the same benefits that arise in the absence of distortions, which we have seen are clearly positive ($DOAE > DOAB$). But there is now an offsetting ‘distortion’ effect, which measures the increase in the deadweight loss from overborrowing. From Figure 3, this is clearly negative since $DEFG > DBCD$. Because the supply of credit is now highly elastic, there is greater potential for overborrowing than before capital account liberalisation.

Thus, there is a tension at the heart of the case for capital account opening when domestic markets are distorted. The ability to borrow abroad increases the scope for socially beneficial borrowing, but it also expands the opportunity to borrow for projects that are not worthwhile from a social perspective. If domestic distortions are relatively low, the efficiency effect will exceed the distortion effect. But if the level of distortions is high, the distortion effect may dominate, and a move to an unrestricted capital account could lower welfare. By comparing the efficiency and distortion effects of incremental moves toward full capital account liberalisation, it is possible (in principle at least) to map out the optimal level of capital account liberalisation contingent on the level of distortions in the domestic economy. Figure 4 illustrates this relationship using a scale that runs from 0 for autarky to 1 for a totally unrestricted capital account.

Consider the impact of incremental movements toward complete capital account liberalisation. Below a finite level of distortions, D_L , the marginal increase in efficiency will outweigh the marginal increase in distortions along the entire path to an unrestricted capital account. Likewise, above some finite level of distortions, D_H , even a small decrease in the degree of capital account restrictions will increase the distortion effect more than it increases the efficiency effect and the optimal capital account policy will be autarky. At intermediate levels of distortions, the optimal degree of capital account liberalisation is likely to lie between autarky and full liberalisation.² In other words, *unless action can be taken to remove or offset distortions*, the appropriate capital account regime is likely to vary across economies according to the state of domestic markets.

Empirical evidence

These ambiguities in the theoretical case for free capital movements are reflected in the empirical evidence. It has long been recognised that inflows of capital through foreign direct investment (FDI) can transfer technology, and there is substantial empirical evidence that

FDI raises total-factor productivity, capital accumulation and growth.³ There are, however, few clear findings relating broader capital account liberalisation to economic performance and growth.

Simple regression analyses, which do not rely on assumptions of this kind, give much more ambiguous results. Rodrik (1998) regresses an index of capital account restrictions on GDP growth and finds no clear link between unrestricted capital accounts and growth or inflation performance, after controlling for initial conditions. The World Bank (1998) reports further evidence along similar lines. What neither study notes, however, is the strong negative relationship between black market premia on exchange rates and growth, a relationship that is one of the most robust in the growth literature (Lee 1993; Sala-i-Martin 1997). Since these exchange rate distortions are associated with extensive controls on capital and foreign exchange, they indicate the dangers posed by restrictive regimes, at least if the exchange rate is not managed in a way that validates fundamentals. A more rigorous approach would be to use a fully specified model to compare the path of an economy with and without capital account restrictions. McKibbin (1998) has carried out preliminary work that illustrates the gains predicted by orthodox theory, although he acknowledges that the magnitudes are highly sensitive and that the model's structure eliminates by assumption many of the market failures that would weaken the case for capital account liberalisation.

In practice, the move toward freer capital movement has been based as much on pragmatism as on proof. As international trade has increased, so have the opportunities for disguised capital movements through misinvoicing and delayed payment. The difficulties of controlling capital flows in open economies were illustrated by a succession of balance of payments crises under the Bretton Woods system, which helped lead to its collapse (Obstfeld 1998). In industrialised countries with strong institutions and relatively undistorted markets, the orthodox theory of the benefits of unrestricted capital flows is likely to be reasonably close to the truth. Together with the practical difficulties of restraining capital flows, this creates a powerful case for liberalisation. But in developing economies, where domestic distortions are more severe, the presumption that full capital account liberalisation is appropriate is less wise.

Identifying distortions

Existing models as variants on a general theme

Although their focus is generally both narrower and more rigorous, many prominent attempts to model the East Asian crisis are variations on the theme of capital account liberalisation in the presence of distortions set out in the diagrammatic approach of Figures 1–4. These models, and the schools of thought behind them, have generally focused on one of three kinds of vulnerability:

1. *The misallocation of resources in the pre-crisis period.* A common theme has been that the roots of the problems in East Asia lay in the misallocation of capital to activities where expected returns were low. Much of this discussion has highlighted the role of moral hazard in a poorly regulated financial sector as a critical distortion that encouraged firms to invest in overly risky projects, gambling on the chance of high returns. Paul Krugman (1998) mounted this argument early on in the crisis, although the best-known formal exposition of the problems of overborrowing in the presence of moral hazard comes from McKinnon and Pill (1997). In the presence of deposit guarantees, banks effectively discount the lower tails of the distribution of returns and so face incentives to make higher-risk lending decisions. Since the expected private benefits from investing in risky projects are higher than the expected social benefits, the result is overborrowing relative to the optimum. As in the diagrammatic approach above, the impact of market failure on overborrowing in McKinnon and Pill's model is less severe in the financially autarkic economy since interest rate rises increase the cost of excess borrowing.

Aizenman (1998) develops a more sophisticated model in the same spirit, in which banks mitigate the problems of excessive risk by engaging in costly monitoring. He finds that the riskiness of projects is raised the higher are the costs of risk monitoring or financial intermediation and the lower are the costs of bank funds. In other words, economies with inefficient banking systems and poor prudential supervision will engage in excessive risk-taking. In this model, capital account liberalisation may magnify the impact of severe distortions not just by increasing the opportunity for poor

investments, but also because by reducing the cost of funds it reduces the level of monitoring and exacerbates the underlying distortion itself.

2. *Maturity mismatch and liquidity risk.* Chang and Velasco (1998) have drawn attention to the problems of financial sector illiquidity, using a version of the well-known Diamond-Dybvig (1983) model of bank runs. In Chang and Velasco's model, capital account liberalisation brings efficiency gains for intermediation, but increases the risk that the financial system will suffer a liquidity crisis. In particular, a build-up of short-term foreign debt may sharply increase both the risks of a liquidity crisis and the costs of such a crisis should it occur. If these risks are not fully internalised in the cost of borrowing, then the private cost of borrowing will not reflect its true social cost and the resulting situation may again be sub-optimal. Creditors may be particularly inclined to refuse to roll over debt if information about the quality of borrowers or their balance sheets is highly uncertain (Bacchetta and Wincoops 1998), or if bankruptcy procedures make the collection of assets after default costly.
3. *Foreign currency mismatch.* In a more recent model, Krugman drew attention to the problems of unhedged foreign-currency-denominated borrowing, a theme that featured in some of the earlier commentary on the crisis (IMF 1998; Garnaut and Wilson 1998). The majority of foreign borrowing in the crisis economies was in foreign currency, and foreign currency risk went largely unhedged. In the Krugman model, unhedged foreign borrowing leaves firms' balance sheets vulnerable to currency depreciation. Self-fulfilling crises are then possible, where a refusal by foreign creditors to roll over debt leads to a fall in the value of the currency, which wrecks the balance sheets of local firms, validating the creditors' initial decisions not to lend.

McKinnon and Pill (1998) also draw attention to the risks posed by unhedged foreign currency debt. While Krugman stresses an externality implicit in foreign currency borrowing,⁴ McKinnon and Pill pay more attention to moral hazard and expectations of a 'bail-out' in the event of a crisis, either by domestic or international authorities. Both explanations imply that the private cost of borrowing faced by local lenders will not reflect its true (risk-adjusted) social cost.

Each of these explanations for what went wrong in East Asia stresses a different kind of market failure that drove a wedge between the private and social costs and benefits of borrowing decisions. In reality, all three problems had a part in the East Asian financial crisis.

Table 1 Profitability of investment in the crisis economies

a) Incremental capital–output ratios (ICOR)			b) Profitability of Korean <i>chaebols</i> (ROI)		
	1987–92	1993–96		1992–96	1996
Korea	3.8	4.9	Hanbo	3.0	1.7
Indonesia	4.0	3.8	Sammi	2.9	3.2
Malaysia	3.7	4.8	Jinro	2.7	1.9
Philippines	6.0	5.5	Kia	18.9	8.7
Thailand	3.4	5.1	Dainong	6.8	5.5

Source: Roubini et al. (1998).

Table 2 Banking sector problems in the crisis economies

a) Non-performing loans (per cent of total outstanding end-1997)		b) Banking system exposure to property sector (end 1997, per cent)	
Korea	16	Korea	15–25
Indonesia	17	Indonesia	25–30
Malaysia	16	Malaysia	30–40
Philippines	14	Philippines	15–20
Thailand	19	Thailand	30–40

Source: Roubini et al. (1998).

There is substantial evidence that resources were being poorly allocated. First, there was evidence that investment was increasingly less productive, at least in some economies. The amount of additional capital required to produce an additional unit of output rose between 1987 and 1996 in Korea, Malaysia and Thailand (Table 1a). In Korea the profitability of a number of the *chaebols* (conglomerates) declined sharply. Thai and Korean stock prices began to fall after early 1996, providing further indication that expected future earnings were being revised down. There is evidence too that capital inflows were to a growing extent being channelled into more speculative ventures, particularly real estate and equity (Roubini et al.

Table 3 Foreign debt and reserves in the crisis economies

	Indonesia	Korea	Malaysia	Philippines	Thailand
a) Total external debt (US\$ million)					
Jun-94	30,902	48,132	13,874	5,990	36,545
Jun-95	40,411	71,430	14,722	7,357	53,604
Jun-96	49,306	88,027	20,100	10,795	69,409
Jun-97	58,726	103,432	28,820	14,115	69,382
b) Per cent of total debt denominated in local currency					
Jun-94	2.73	6.61	10.91	5.39	5.87
Jun-95	2.63	5.54	9.30	6.25	2.95
Jun-96	2.93	4.60	7.23	12.92	3.45
Jun-97	2.15	5.95	10.33	15.88	5.63
c) Short-term debt as per cent of total					
Jun-94	60.91	72.53	59.12	44.17	74.29
Jun-95	62.53	72.01	49.42	46.31	71.18
Jun-96	60.01	70.81	49.71	55.10	68.92
Jun-97	59.02	67.85	56.45	58.75	65.68
d) Short-term debt to reserves ratio					
Jun-94	1.72	1.61	0.25	0.41	0.99
Jun-95	1.97	1.81	0.28	0.55	1.13
Jun-96	1.90	1.71	0.39	0.70	1.23
Jun-97	1.70	2.06	0.61	0.85	1.45

Sources: BIS, IMF.

1998). Bank exposure to the property sector in Malaysia, Indonesia and Thailand was high (Table 2).

Problems of illiquidity and foreign currency exposure also played an important role. The high ratios of short-term debt to external reserves that characterised the worst-affected East Asian economies support Chang and Velasco's emphasis on illiquidity (Table 3). Table 3 also shows that the overwhelming majority of foreign debt was in foreign currency. The World Bank estimates that by 1996 the median value of foreign debt relative to equity stood at 70 per cent in Indonesia, 80 per cent in Thailand and 150 per cent in Korea. This implies, in

Korea's case, that a 40 per cent depreciation of the won would have been sufficient to wipe out the balance sheets of half of the corporate sector (a 55 per cent depreciation in the baht and a 60 per cent depreciation in the rupiah would have had the same effect in the other two countries).

Classifying distortions

Rather than focusing exclusively on a single distortion, as many of the formal models do, a broad policy response requires a more comprehensive view of the distortions that may have contributed to overborrowing and excessive risk-taking in the East Asian context. It is convenient to classify these distortions into those that drove a wedge between the private and social *benefits* of borrowing and those that led to a divergence between private and social *costs*.⁵

Two main types of distortion appear to have been important in raising the private benefit of lending funds above the true social benefit:

- *Subsidies and related party lending.* Governments in many of the East Asian countries have historically subsidised certain sectors and certain firms, either implicitly or explicitly. In Korea, for instance, certain industries, particularly producers of capital-intensive goods and tradable goods, received subsidies from the government either in the form of direct tax concessions or directed credit. In addition, politically motivated lending was widespread in several countries. Since these practices meant that the allocation of resources was not based on intrinsic profitability, investment finance was not always allocated to projects that were socially efficient.
- *Market failure in the financial sector.* As noted above, the problems of moral hazard in the financial sector have played a central role in explanations of the crisis. Weakly capitalised and poorly supervised financial institutions had little of their own money at stake and so faced stronger incentives to take risks. In East Asia prudential supervision was generally inadequate and prudential regulations were poorly enforced (Fane 1998). There was a widespread perception that governments would guarantee deposits and that financial institutions would not be permitted to fail. Of course, some kinds of guarantees to financial institutions can be desirable on the grounds of financial stability and the integral place of banks in the domestic financial and

payments system. The corollary is that prudential supervision is needed to tightly control the risks banks take. In the absence of proper prudential regulation, deposit insurance and other guarantees that limit liability can subsidise risk-taking. Where lenders can safely ignore the lower ends of the distribution of returns on the projects that they finance, the expected return from the project *faced by the lender* will exceed the project's *actual* expected return. These risks may be particularly severe after episodes of financial liberalisation. Increased competition is likely to erode the franchise value of existing banks and, if it occurs rapidly, may further encourage risk-taking and 'gambling for redemption' (World Bank 1998).

Moral hazard is not limited to host countries. There are concerns that international rescue packages that bail out foreign investors, particularly international banks, following crises, encourage foreign investors to pay too little attention to investment risk. These concerns may be exaggerated. It is too early to say what final portfolio losses will be, but investors in East Asian bond and equity markets suffered substantial losses, as did some banks. It seems unlikely that the prospect of Korea (even Thailand or Indonesia) turning to the IMF was high on investors' minds before the crisis broke.

Two main types of distortion served to lower the private cost of foreign borrowing below its social cost:

- *Explicit subsidies to particular forms of borrowing.* A number of the region's economies provided explicit subsidies to foreign borrowing through preferential tax treatment. The Bangkok International Banking Facility gave special tax breaks to foreign currency dealing (Radelet and Sachs 1998), as did the Malaysian Financial Centre on Labuan Island. In both cases policies were aimed at promoting a regional offshore banking centre. In the Philippines onshore income from foreign exchange loans was taxed at 10 per cent compared with a 35 per cent rate on other loan income. Philippine banks also faced no reserve requirements on foreign currency deposits. These subsidies reduced the costs to borrowers of borrowing abroad relative to the true social cost, and clearly encouraged the accumulation of foreign debt.

The prudential guidelines embodied by the Basle Capital Accord have also been criticised for subsidising short-term borrowing relative to longer-term debt. The Accord sets risk weights for various asset categories against which capital must be

held. Since holding capital is costly, higher-risk loans raise costs for the lending bank and so are likely to be subject to less favourable terms. Currently, the risk weights set by the Accord are 20 per cent of total asset value for short-term loans to non-OECD banks (and all loans to OECD banks), but 100 per cent for long-term bank loans and loans to the private sector. Some analysts have argued that this creates a distortion that significantly favours short-term bank borrowing (Reisen 1999). However, the fact the Bank for International Settlements (BIS) engaged in substantial short-term lending to the Thai and Indonesian non-bank sectors, although there was no regulatory advantage from such lending, suggests that risk weights may not play a large role in explaining the preference for short-term borrowing. This notion is also supported by the fact that there have been large increases in the proportion of foreign debt held in short maturities over the last decade in OECD economies (New Zealand, Greece, Portugal) as well as those outside the OECD (Table 4).

- *External costs of individual borrowing decisions.* The private and social costs of financial activities will diverge when there are external costs to individual borrowing decisions. For instance, borrowers may not take into account the effect of other individuals' risk-taking or failure to meet credit conditions, although these external effects may be significant, particularly in the presence of imperfect information. An individual's decision to borrow may also increase the vulnerability of the economy (or at least of other borrowers) to particular events or shocks, particularly in the presence of other distortions. The externalities posed by systemic risks are likely to exist regardless of whether economies are open to foreign capital. But foreign borrowing can increase the significance of these externalities by raising both the probability of a crisis and the costs incurred if it should occur. Where borrowing is in foreign currency, a withdrawal of funds is potentially more destructive since the central bank cannot act as a lender of last resort. Substantial injections of funds could stabilise the banking sector in the event of a domestic financial crisis and prevent further withdrawals. We have seen that these kinds of externalities are implicit to several existing models of the crisis. It might be argued that creditors should take account of these kinds of risks and impose higher costs on marginal lenders as the ratio of short-term debt to reserves increases, as compensation for additional risk. This is a less likely outcome if creditors face moral-hazard problems of their own (e.g., from the expectation of domestic or

Table 4 Changing preferences for short-term bank debt, 1987–97

Country	Short-term debt from BIS banks as per cent of total debt	
	End-June 1987	End-June 1997
Indonesia	39	59
Korea	47	68
Malaysia	19	56
Philippines	33	60
Thailand	33	66
Argentina	36	54
Brazil	41	62
Mexico	22	46
India	39	59
Greece	32	55
Portugal	30	67
New Zealand	31	53
All countries	41	56

Source: BIS.

international bail-outs) or if information on overall reserve and debt levels is not publicly available or costly to collect.

Contributing factors and ‘quasi-distortions’

A number of additional factors contributed to vulnerability, which while not themselves directly distorting, served to encourage activities that were. In the absence of other market failures, these ‘quasi-distortions’ would probably not have posed serious problems.

- *Exchange rate policy.* The combination of stable exchange rates and large nominal interest rate differentials provided a fertile environment for excessive foreign borrowing. All of the affected economies pegged or stabilised their currencies to varying degrees. In the face of large capital inflows in the early 1990s, monetary authorities conducted sterilised intervention. Between 1990 and 1997, nominal interest rates in Thailand, Malaysia, Indonesia and the Philippines were much higher than in industrialised countries, but exchange rates were fairly stable.⁶ As a result, effective real interest rates on foreign borrowing were between 4 per cent (Malaysia) and 12 per cent

(Philippines) lower than on domestic loans (Table 5). These incentives for offshore borrowing were matched by equally large incentives for portfolio inflows. The yields on US\$ and yen 'carry trades', where speculators issued money market securities in US or Japanese markets and then invested the proceeds in local-currency-denominated money market instruments, were large (Table 6).

These persistent differences in foreign and local currency returns suggest that market participants acknowledged a risk of abnormal depreciation, and are therefore hard to reconcile with the notion that exchange rates enjoyed 'excess credibility', as some authors have suggested (Eichengreen 1999). The important issue is why the failure to cover exchange risk was so widespread. It is possible that borrowers simply accepted higher risk in exchange for higher returns. In that case, the fact that investors took on risks should not in itself be cause for concern. But if risk-taking or foreign borrowing is subsidised in other ways (and we have seen that it was) or if there are external costs to this kind of gamble, acceptance of exchange risk may still be undesirable. Where large parts of the corporate and financial sectors are exposed to the same risk (i.e., are taking the same gamble), the systemic consequences of foreign currency borrowing may be severe, even if foreign borrowing is optimal at an individual

Table 5 Effective real interest rates on domestic and foreign borrowing (average 1991–96)

Country	Local lending rate	Inflation	LIBOR for East countries ^a	Average annual appreciation	Real rate on domestic borrowing ^b	Real rate on foreign borrowing ^c	Exchange rate volatility
Indonesia	21.0	8.5	6.0	−3.8	12.5	1.3	0.7
Korea	9.2	3.5	6.0	−3.2	5.7	5.4	3.4
Malaysia	8.4	3.8	6.0	1.2	4.6	1.0	2.6
Philippines	17.0	10.1	6.0	0.9	6.9	−5.0	3.8
Thailand	12.7	4.9	6.0	−0.3	7.8	1.4	1.2

Notes:

a LIBOR + 40 basis point risk premium.

b ex post.

c ex post: calculated as LIBOR – average appreciation – inflation.

Table 6 Yields on US\$ and yen carry trades in Thai baht (money market)

Quarter	Index returns in Yen	Japan yen LIBOR (3-month)	Profit from yen carry trade	Index returns in US dollars	US dollar LIBOR (3-month)	Profit from US dollar carry trade
1996Q3	15.66	0.52	15.09	8.88	5.63	3.13
1996Q4	23.42	0.49	22.85	6.03	5.56	0.45
1997Q1	36.24	0.58	35.52	3.97	5.77	-1.73
1997Q2	-1.33	0.66	-1.98	34.47	5.78	27.54

Note: Annualised returns; computed by converting Thai money market index returns into dollars or yen.

Source: IMF (1998)

level. Essentially, the fixed exchange rate regimes amplified the impact of existing distortions on risk-taking and on financial system vulnerability by providing a particularly easy and profitable form of gamble that had large external costs.

- *Restrictions that encouraged bank borrowing.* The differential pace at which restrictions on different kinds of foreign borrowing were removed also channelled borrowers toward bank borrowing, where distortions were particularly severe. Restrictions on foreign bank debt were commonly loosened earlier and more comprehensively than limits on foreign equity. Thailand and Malaysia, in particular, maintained extensive restrictions on portfolio investment while greatly relaxing restrictions on borrowing from foreign banks. In Korea too, restrictions on bank borrowing were lifted more comprehensively than restrictions on equity purchases by foreigners. Regulations limiting the issues of securities to entities with high ratings also meant that in practice most foreign borrowing was intermediated through banks (IMF 1998). Since debt in general, and short-term debt in particular, appears to carry special risks in terms of the external costs of individual borrowing decisions, it seems unfortunate that many East Asian countries favoured the liberalisation of bank borrowing ahead of the lifting of restrictions in equity markets.
- *Peso problems and perverse incentives.* The experience of risk management in East Asia also suggests that there may be persistent difficulties in discouraging risk-taking

related to so-called peso problems, where there are small risks of substantial negative outcomes. The pricing of these kinds of risks explains why short-term debt is generally cheaper than long-term debt and why foreign-currency debt is generally cheaper than domestic debt in contracted terms, even if its 'risk-adjusted cost' is the same. If the risk does not eventuate, problems arise because there may be a long period of time where firms who (unwisely) fail to cover their risk (say by borrowing unhedged in foreign currency or borrowing short instead of long) incur substantially lower costs. If the period is long enough, competitive pressures may mean that other firms are forced to join the risk-takers or go out of business.⁷ Long boom periods are particularly likely to generate these kinds of perverse incentives for risk-taking, since they represent substantial episodes where downside risks do not emerge.

Tackling the problem

The previous section illustrated that a number of distortions in lending and borrowing countries encouraged an excessive reliance on short-term foreign borrowing and risky lending practices that made the East Asian economies vulnerable to crisis. Even if panic also played some role in the unfolding of the crisis, any sensible package of measures to reduce vulnerability to sudden capital withdrawal must address these distortions. In doing this, the general principle should be to make individuals face the true costs of their decisions as far as possible. In that regard, the necessary measures should be seen as part of a broader sequence of financial reform that seeks to align the private and social costs and benefits of financial activities.⁸

The first-best solution: the industrialised-country paradigm

The ideal response to the problems identified above will generally involve removing the underlying distortions. Figures 1–3 illustrated that distortions impose deadweight losses regardless of the capital account policy and that a situation with no distortions and full capital account liberalisation is in general clearly superior to any other. In the East Asian economies, this would require a number of policy changes. First, favourable tax and regulatory treatment for foreign borrowing should be abolished. This would remove explicit subsidies to

accumulate foreign ahead of domestic liabilities. Ideally, restrictions on foreign access to domestic equity markets would not be raised ahead of bank borrowing.

Second, authorities should move to more flexible exchange rate regimes. By exposing borrowers directly to exchange risk and allowing the exchange rate to appreciate in the wake of capital account liberalisation, the incentives for excessive foreign borrowing are likely to be reduced. The IMF found that increased exchange rate flexibility in Chile after its financial crisis in 1982 was useful in discouraging short-term speculative flows (IMF 1998). Floating the exchange rate is no panacea. Overborrowing episodes have occurred under flexible regimes, and the sharp appreciations that can follow capital account liberalisation will continue to present difficult policy dilemmas.⁹ But a more flexible exchange rate is more likely to encourage borrowers to take account of exchange risk (Reisen 1999) and less likely to tempt borrowers into betting on currency stability through unhedged foreign borrowing.¹⁰

Third, domestic distortions to the allocation of resources (tariffs, subsidies to different industry groups) should, as far as possible, be removed. By far the most important distortions in East Asia centred on the financial sector. Moral hazard is an intrinsic feature of a financial system that provides a safety net to financial institutions. In general, the costs of a financial crisis are sufficiently great that in practice safety nets do operate, even when deposits have not been explicitly guaranteed. Without eliminating these guarantees, moral hazard can only be removed (or limited) by prudential regulation.

The traditional regulatory solution mimics an insurance contract (Fane 1998). Minimum capital adequacy standards operate like the 'deductible' component of the contract, since the bank loses its capital if it fails even when deposits are guaranteed. Reserve requirements then operate like an insurance premium, raising the private cost of providing loans to a level that includes the implicit costs of deposit insurance. Essentially, the reserve requirement operates as a tax on risk-taking activity that balances the subsidy to risk provided by the safety net.¹¹ This implies that reserve requirements are likely to be optimal for all risk-taking activities that are subject to moral hazard, not simply for domestic deposits. But the success of tight capital adequacy standards and reserve requirements to limit moral hazard will depend on the ability of prudential authorities to enforce regulations swiftly and actively.

Fourth, the externalities identified in foreign borrowing would need to be internalised. These externalities arose principally from the build-up of short-term foreign currency debts in excess of liquid assets and, given the absence of an international lender of last resort, the

substantial costs of a sudden withdrawal of capital posed large risks. As mentioned above, external effects were exacerbated by uncertainty over the true financial position of domestic borrowers or by moral hazard in creditor nations. Increasing the provision of financial information and raising the risk weighting on short-term interbank lending might give creditors greater incentives to monitor these dangers and price these risks into loans. Although improving disclosure requirements and tightening prudential regulations on cross-border lending in creditor nations could reduce the external costs of currency exposure, it will not eliminate them. There is therefore a strong case to raise the costs of accumulating short-term currency exposures relative to other forms of risk.

Applying these remedies to the various distortions would essentially bring the East Asian economies to the position of most industrialised economies. Industrialised countries typically do not provide preferential tax treatment to foreign borrowing or extensive domestic subsidies. They generally operate floating exchange rates.¹² They retain few restrictions on overseas bank borrowing or portfolio equity purchases by foreigners. They enforce strict capital adequacy ratios and reserve requirements, backed up by strong prudential supervision. And, to a growing extent, they require banks and securities firms to hold additional capital against short-term currency exposure (Abrams and Beato 1998).¹³ Within the East Asian region, Singapore and Hong Kong broadly conform to this position, although in Hong Kong the dollar is pegged through a currency board arrangement.

Undoubtedly, even with these first-best solutions to existing distortions, large (and possibly irrational) movements in asset prices and capital flows remain possible. But with the social and private costs of financial activities more effectively aligned, economies can in general be made robust to adverse developments, and the benefits of an open capital account are relatively clear cut.

Reducing vulnerability: policies for the short and medium term

Implicit in best-practice recommendations is that the removal of distortions is both feasible and does not conflict with other objectives that the economy is unwilling to abandon. The removal of explicit subsidies to foreign borrowing and moves toward greater exchange rate flexibility are easily instituted and have already occurred in most East Asian economies. But the removal of distortions in the financial sector and the establishment of an effective system of enforceable prudential regulations will not happen overnight (MacFarlane 1998). Resolv-

ing financial sector weakness requires a greater level of technical expertise in financial institutions, efficient legal procedures and experienced regulators.

Even if the correct procedures can be introduced, authorities must have the will and the capacity to enforce them. The problem in the Southeast Asian economies was less that the necessary regulations had not been enacted but that they had not been enforced. Because these are huge tasks, developing economies are likely to continue to have seriously distorted financial sectors at least until financial reform is completed. Where financial systems are weak, problems of excessive moral hazard will be more severe and the probability and cost of a banking crisis will be high. As a result, the social costs of various risky financial activities may continue to exceed the private incentives faced by banks even after attempts to institute best-practice measures have been made.

According to earlier analysis, if distortions continue to be significant, the optimal capital account policy will only involve full capital account liberalisation if offsetting action can be taken to align private and social costs. In other words, if in the short term these distortions cannot be tackled directly by adequate prudential supervision, there will be a strong second-best case for raising the cost of certain risky activities beyond the levels required in industrialised countries. The vulnerabilities associated with the East Asian crisis suggest that there may be a particularly strong case for raising the costs of foreign borrowing above domestic borrowing and for raising the costs of short-term bank debt and foreign-currency-denominated bank debt relative to other forms of foreign funding.

The issue then becomes one of how best to align social and private costs. Figures 1–3 show that direct prohibitions or controls on certain kinds of activity are likely to be an inefficient way of doing this, since controls will exclude some transactions where the social benefit exceeds the social cost as well as some where it does not. In general, it will be more efficient to raise the *price* of these activities so that they reflect their true social costs. In doing this, efforts must be made to ensure that all those who undertake particular kinds of risky activity are treated equally, otherwise attempts to discourage particular transactions in one part of the economy may simply divert it to another.

A simple way to counter excessive moral hazard in relation to all risky *bank-related* activities is simply to raise the required minimum capital adequacy ratio (CAR) above the 8 per cent stipulated by the Basle Accord. Fane (1998) points out that CARs average 16–20 per cent in the top US banks and 17.7 per cent in Hong Kong. With minimum CARs of between 15 and 20 per cent, the private costs of engaging in risky activities will be closer to reflecting

the much greater problems of moral hazard and the large costs of financial crisis in weaker financial systems. Naturally, capital adequacy requirements must be supported by strict arrangements on provisioning for non-performing loans if they are to be effective. Such new arrangements are currently being introduced in Thailand and Indonesia.

Higher CARs raise the price of risk-taking activities generally. But the higher risks and greater external costs imposed by unhedged foreign currency borrowing may justify additional prudential requirements to recognise the additional risks it carries. There are a number of ways to change the incentives of banks to borrow and lend in foreign currencies and to build up foreign exchange exposure. Best-practice arguments for imposing additional asset requirements on open foreign exchange positions have already been considered and are likely to be reinforced by second-best considerations. These would help to limit the build-up of exchange risk by financial institutions.

Regulations that focus on the foreign exchange positions of *banks* do not prevent financial institutions from borrowing abroad and lending on in foreign currency – in effect balancing their own books but transferring exchange risk to the corporate sector – as happened in Thailand. Measures to discourage on-lending of this kind would need to raise the costs of borrowing and lending in foreign currency directly. Increasing the risk weightings in calculating CARs for foreign currency lending to the private sector would raise the cost to domestic banks of this type of lending. At present, a 100 per cent weight is attached to lending to private non-bank borrowers regardless of the currency denomination of lending. It may be desirable to raise the weighting for foreign-currency-denominated lending. It may also be sensible to investigate ways of securing capital adequacy ratios to the *sources* of funding, a suggestion made by Alan Greenspan (1998). One of the weaknesses of the Basle framework is that it focuses on the asset side of bank balance sheets, paying less attention to the differential riskiness of liabilities. A similar result might be achieved by tightening the risk weightings for cross-border lending for banks in industrialised countries, both for short-term interbank and private sector lending to developing countries.

Measures along these lines would raise the cost of bank-intermediated foreign currency borrowing. With proper prudential design, non-bank financial intermediaries could also be regulated in a similar fashion. But even a broad range of capital adequacy restrictions will do nothing to prevent direct borrowing or the accumulation of exchange risk by the private sector, although this represented a large part of the problem in some countries. One approach is simply to leave the monitoring of the private sector to the banks that lend to them. If banks

both at home and abroad take full account of the risks of lending to corporate borrowers and if domestic authorities are prepared to allow bankruptcies to occur, this should deliver an efficient solution. Moves to tighten capital adequacy requirements for banks in industrialised countries that lend in foreign currency to the private sector in developing countries could help in this regard.

Yet the risks posed by widespread foreign borrowing suggest that such a *laissez-faire* attitude may be risky. At the other end of the spectrum, strict limits on non-bank borrowing abroad might be maintained to ensure that foreign borrowing is largely channelled through more heavily regulated financial firms. The Czech Republic operates this kind of policy, requiring strict case-by-case approval on non-bank foreign borrowing. The policy aims to ensure that foreign borrowing is largely intermediated by domestic banks that are subject to domestic prudential control. There will be some costs in terms of disintermediation, but these may be worth bearing.

A much-discussed alternative that would raise the cost of foreign borrowing for financial and corporate borrowers alike would be to introduce large compulsory reserve requirements for all foreign loans. The version of this system introduced in Chile, and widely discussed elsewhere, required that 30 per cent of any foreign loan had to be deposited for one year in a non-interest-paying account. Less extreme differential reserve requirements for foreign and domestic deposits could still raise the relative cost of foreign borrowing substantially. This kind of requirement is a cruder and more direct form of tax on foreign borrowing than most of the prudential measures described above. The evidence from Chile on the success of this kind of measure is mixed. The Chilean tax appears to have succeeded in discouraging short-term capital flows only after controls were strengthened in 1993, and there is considerable debate over whether their effectiveness has been eroded. Several commentators have argued that the greater stability in Chile's financial sector owes more to improvements in its banking system than to the disincentives to foreign borrowing (IMF 1998).

In fact, Chile's experience in this regard is illustrative of the advantages and disadvantages of all of these second-best measures. According to Goodhart's Law, financial regulations that seek to raise the costs of certain kinds of financial activity tend to be circumvented over time. They are best seen as short-term measures that can be justified only alongside vigorous measures to reach the first-best scenario of a prudent and well-regulated financial system.

An alternative method of raising the cost of foreign currency borrowing that might be easier to operate would be to limit the tax deductibility of interest on debt denominated in or linked to foreign currencies. Another proposed solution is for the central bank to accumulate reserves to 'back' the economy's short-term liabilities. This can be interpreted as an inferior version of the 'reserve requirement' policy, where the central bank now acquires the reserves (at considerable cost to its own balance sheet). Since, in this case, the private sector does not itself face the cost of reserve accumulation, overborrowing relative to the optimum is likely to continue, although the policy may be easier to implement than the Chilean inflow tax.

Sequencing and prohibitions: policies for the less developed

It was noted earlier in that in economies where distortions were very severe, even small moves toward capital account liberalisation might lead to increases in deadweight losses that outweigh the associated efficiency gains. Where the financial sector is so weak, domestic distortions so large and the possibility of effective supervision so remote that these distortions cannot be adequately addressed, it may be desirable to prohibit certain types of foreign capital inflows altogether. The conditions under which this proves optimal are likely to be restrictive. Not only must domestic distortions be severe but the prospects for removing them rapidly (which would be a superior solution) must be low. The argument is then essentially one of sequencing. In countries with severe financial weakness, the logical sequence of measures is to reform the financial sector before liberalising the capital account.

The case for direct controls is most likely to hold for countries with extremely weak domestic institutions that have not already opened to foreign capital and so does not apply in most of the East Asian economies. But for countries such as China and Vietnam, there may be good reasons to work rapidly to strengthen financial systems before liberalising foreign borrowing greatly. Even then, there are huge issues of practicality, particularly as these economies become more open to trade. The risk that continued exchange controls will prove increasingly ineffective and that considerable distortions will emerge as borrowers seek to circumvent them will rise over time. This makes the task of moving to second-best and best-practice regimes more urgent.

Another situation where direct prohibitions may be desirable arises when there is considerable uncertainty about the exact risks of capital inflow or foreign currency exposure

and when the costs of a bad outcome rise rapidly. In this case, it can be shown that direct limits on quantity are likely to be better than attempting to use prices to influence decisions, following an argument first elaborated by Martin Weitzman (1974). The basic idea is that a policy design based on an underestimate of the wedge between private and social costs could expose the economy to sharply rising risk. The area where this approach is most likely to be relevant is in containing currency exposure. Following episodes of financial liberalisation, financial institutions and regulators may face considerable uncertainty over the risks of foreign currency borrowing. As a result attempts to influence the cost of taking on foreign currency risk, along the lines already described, might still leave the economy open to considerable risk of overborrowing. This creates an argument for direct limits on foreign currency exposure. Although limits of this sort are being replaced by capital requirements in many industrialised economies, they still have a role to play in many developing countries.

Lateral thinking: short cuts to avoiding financial sector distortions

The solutions suggested so far have focused on addressing or counteracting distortions in the financial sector, through prudential regulation or other means. In practice, installing, operating and enforcing these kinds of systems effectively is a demanding task. Many developing countries lack the technical expertise and institutional capacity that would make it easy to operate even the kinds of second-best prudential and regulatory measures discussed above. Against this background, it may be sensible to consider ways in which distortions and deficiencies in the domestic financial system can effectively be bypassed – what I have termed ‘lateral thinking’ solutions (Wilson 1999).

Greater international participation in the banking sector provides one way of rapidly importing expertise and prudent management systems, although it is one that many of the region’s economies (and not just the developing ones) are reluctant to embrace. Through ties to their parents, domestic affiliates effectively have their own private lenders of last resort. Parent firms usually have a highly diversified asset base and are less likely to be destabilised by adverse domestic conditions or exposures to particular parts of the local economy. As a result, a highly internationalised financial sector is likely to be less exposed to risk-management problems, and more of the external costs associated with foreign borrowing may be internalised. The regional economies that have come under the IMF’s tutelage are moving in this direction already. Malaysia might benefit too from greater international involvement

in its banking sector. Tough limits on international bank participation have seen the share of deposits held by foreign banks fall from 70 per cent in the early 1980s to around 30 per cent now (Athakurola 1999).

More broadly, the continued liberalisation of foreign direct investment and equity investment and the deepening of bond and equity markets would allow East Asian economies to borrow from abroad in ways that avoid the market failures implicit in their banking systems. A greater tendency to use local equity markets to mobilise foreign savings would also limit the exposure to foreign currency risk that is an unavoidable part of bank borrowing.

Conclusions

Until recently there has been insufficient acknowledgment that the benefits from free capital mobility in terms of superior resource allocation are largely contingent on the absence of considerable distortions in domestic economies. Policymakers are now recognising that greater care must be taken in assessing the appropriate regimes for capital inflows in developing countries. In particular, the efficiency of the allocation of capital flows and the extent to which they lead to sustained improvements in economic performance will depend heavily on the development and efficiency of the financial system (IMF 1998).

The excesses that lay behind the East Asian crisis and the vulnerabilities that the crisis exposed did not emerge without encouragement. A large number of distortions existed that led to substantial divergence between the private and social costs of certain types of financial activity. These distortions were a significant contributor to East Asia's problems.

In considering how best to tackle these distortions, it is sensible to move away from a knee-jerk antipathy to the concept of 'capital controls' to acknowledge that capital is already controlled and flows distorted by government policies and market failure. Moves to manage capital flows span a broad spectrum from prudential regulations of the kind in place in industrialised countries to outright prohibitions on capital movements. Although it is sensible to consider a range of options, changes to prudential regulations in general, and the treatment of foreign currency lending in particular, would go a long way to align the social and private costs of borrowing. In combination with increased exchange rate flexibility and the removal of preferential tax treatment for foreign borrowing, these changes might well be sufficient to prevent excessive foreign borrowing. More explicit taxes, like the reserve requirements against foreign loans required in Chile, would then be unnecessary.

A major problem confronting developing economies is the practical difficulty of creating a robust financial system in a short space of time. Many of the East Asian economies have had extensive regulations on paper, but poor enforcement in practice. For this reason, the kinds of technical cooperation by regional governments established by the EMEAP group of central bankers and the proposals made at the Kuala Lumpur meeting of APEC in November 1998 are valuable ones. In many cases, the process of transferring expertise has already begun through the private sector. Foreign banks for instance are already beginning the task of developing hedging instruments in some of the affected economies. There are potentially large benefits from reducing the transaction costs of these kinds of transfers through the private sector.

Of course, even the elimination of a wide range of distortions will not prevent irrational behaviour in asset markets from time to time. Dramatic movements in asset prices and capital flows will continue to be a feature of domestic and international markets. As the experiences of industrialised countries have proven, where distortions are kept to a minimum it should in general be possible to keep the economy robust to disturbances. By tackling the symptom rather than the source of the problems, the danger is that as governments step into regulate or tax capital flows, they will fail to do so in the most efficient way and risk introducing new distortions to replace the old ones.

Notes

- 1 This is essentially a partial equilibrium approach. A more rigorous representation can be derived in a general equilibrium context from fundamental principles by considering the cost of current relative to future consumption. McKinnon and Pill (1997) use a two-period framework to analyse overborrowing in this way.
- 2 For an interior solution, the optimal level of liberalisation is defined by the point where the marginal increase in efficiency from a further incremental step toward capital account liberalisation is exactly matched by the marginal increase in deadweight losses from distortions.
- 3 Borenzstein et al. (1995), for instance, use cross-country growth regressions to demonstrate that FDI raises growth in the host economy, through complementarity with domestic investment and human capital. Similar evidence on the productivity of FDI and its role in promoting domestic investment and growth can be found in country studies (e.g., Warr 1998 for Thailand).
- 4 Krugman argues that 'there appears to be a sort of external diseconomy to borrowing in foreign currencies; because such borrowing magnifies the real-exchange rate

impact of adverse shocks, and because the real depreciation interacts with capital-market imperfections to cause economic distress, the decision by an individual firm to borrow in dollars imposes costs on the rest of the economy’.

- 5 For a more comprehensive discussion, see Wilson (1999).
- 6 In Korea these incentives were markedly smaller. Smaller interest rate differentials were accompanied by a significant depreciation in the won.
- 7 Those who had hedged their currency exposure in the Southeast Asia (at considerable cost) might have been engaging in sensible risk management, but would have found themselves at a competitive disadvantage to those that did not, particularly since the risk of substantial depreciation did not eventuate for many years.
- 8 The notion that crisis prevention involves the removal of distorted incentives that encourage risky lending practices is not a new development. This theory has been the basis for many financial reforms, including those that followed the Savings and Loans crisis in the United States and the tightening in Japan of regulations following the *junen* crises.
- 9 The textbook response to an appreciation that results from a massive capital inflow is to contract fiscal policy. In practice this may be politically difficult and in some circumstances may induce further inflows by signalling greater credibility of the government’s reform programs.
- 10 Some doubt has been cast on the idea that exchange rate flexibility will reduce unhedged foreign borrowing or provide greater flexibility, largely on the basis of Latin American experiences (e.g., Grenville and Gruen 1999). Because the Latin American economies are de facto dollarised and authorities are reluctant to allow exchange rate movements even under flexible regimes, there are special problems that do not generally apply in East Asia.
- 11 The use of prudential regulation to limit moral hazard may arguably be better viewed as a second-best policy. Since moral hazard can be viewed as fundamental to financial systems, this paper treats it as a distortion that cannot be directly removed.
- 12 The establishment of Economic and Monetary Union on 1 January 1999 does not invalidate this. While participants will share a common currency, the exchange rate is still floating relative to foreign currencies.
- 13 The European Union, for instance, introduced a directive in 1993 that required an 8 per cent capital charge against the overall foreign exchange position of banks and securities firms. France, Germany, the Netherlands and Spain now operate systems along these lines.

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