

Firewalls: Controlling Short-Term Capital Flows

Ronan Clarke, Chris Dailey, Marc Feustel and Vinay Nair
Senior Sophisters

Before the recent crises in capital markets around the world, few mainstream economists would have told developing countries to refuse foreign direct investment. Now, the question of whether short-term speculative capital flows should be discouraged is being taken more seriously in light of the social and economic consequences of contagion. Ronan Clarke, Chris Dailey, Marc Feustel and Vinay Nair take this opportunity to examine arguments in favour of the use of capital controls.

“Just as the right to free speech does not necessarily include the right to shout ‘Fire!’ in a crowded theatre, the principle of free markets does not necessarily mean that investors should be allowed to trample each other in a stampede.”

Paul Krugman (1997)

It is established wisdom in economics that countries can only prosper by opening up their economies to international trade and capital flows. However, in recent times this wisdom has been challenged by dramatic events in world capital markets and some leading economists now argue that, in certain circumstances, it may be appropriate for developing countries to discourage flows of short-term capital.

In this essay we examine the established arguments in favour of openness to capital flows in the light of recently expressed dissenting opinions.¹ Before doing so, however, we briefly examine recent trends in the nature and composition of capital flows. We also identify the potential problems that may arise from short-term flows, and we discuss measures that have been taken by governments of developing countries to manage these flows. We conclude that whilst short-term capital flows need not be discouraged *per se*, measures to control these flows may at times be justified.

¹ For example, Bhagwati is quoted in *The Economist* (23/5/98) as saying that “*the claims of enormous benefits from free capital mobility are not persuasive*”

FIREWALLS: CONTROLLING SHORT TERM CAPITAL FLOWS

The rapid integration of capital markets was a remarkable feature of the international economy in the closing decades of the 20th century. While large-scale capital mobility is not a new phenomenon, according to the IMF, the 1990s witnessed “*a movement of capital to emerging markets on a scale not seen since the gold standard era*”². The most striking feature of modern capital flows is the replacement of official capital with private capital as the most important component of aggregate flows. This is indicated in Table 1, which shows that, between 1990 and 1996, the share of private flows in aggregate net flows to developing countries grew from 44.1% to 85.7%. Overall, despite intermittent crises, net private flows to emerging markets amounted to \$1.32 trillion between 1973 and 1997.³

Table 1: Aggregate Net Resource Flows to Developing Countries, 1990-96 (billions of US dollars)

	1990	1991	1992	1993	1994	1995	1996
Aggregate Net Flows	100.6	122.5	146.0	212.0	207.0	237.2	284.6
Official Development Finance	56.3	65.6	55.4	55.0	45.7	53.0	40.8
Total Private Flows	44.4	56.9	90.6	157.1	161.3	184.2	243.8
- Portfolio Flows	5.5	17.3	20.9	80.9	62.0	60.6	91.8
Bonds	2.3	10.1	9.9	35.9	29.3	28.5	46.1
Equity	3.2	7.2	11.0	45.0	32.7	32.1	45.7
- FDI	24.5	33.5	43.6	67.2	83.7	95.5	109.5
- Commercial Banks	3.0	2.8	12.5	-0.3	11.0	26.5	34.2
- Others	11.3	3.3	13.5	9.2	4.6	1.7	8.3
Private Flows' Share (%)	44.1	46.4	62.1	74.1	77.9	77.7	85.7

Source: World Bank, Global Development Finance 1996

A further, related feature of modern capital flows is the increased significance of short-term flows. Montiel and Reinhart⁴ have examined the pattern of private flows to emerging markets in the 1990s. They calculate that, for capital-importing Asian countries, short-term flows accounted for 39 per cent of total capital inflows over the period 1990-96, while for Latin America the figure was 32 per cent. This increase in

² IMF (1997), p234.

³ IMF (1997)

⁴ Montiel. & Reinhart (1999)

RONAN CLARKE, CHRIS DAILEY, MARC FEUSTEL AND VINAY NAIR

short-term flows is identified with greater volatility in capital flows. Montiel and Reinhart⁵ found that short-term capital was more volatile than all other types of capital flows in both Asia and Latin America over the period 1990-1996 and, in the case of Latin America, overall volatility in capital inflows was entirely accounted for by the volatility of short-term flows.

The Causes and Consequences of Capital Flows

Having illustrated the capricious nature of capital flows to emerging market economies, it is important to discuss the causes of such flows and analyse their impact on the macroeconomic health of the affected countries. In particular, we must ask ourselves why short-term capital flows are a potential source of instability. There are significant positive effects of international capital surges into developing economies, but negative consequences can quickly overshadow these benefits if short-term inflows are allowed to reach unsustainable levels. The potential costs, and possible solutions to such problems, must be weighed against the benefits in order to determine whether short-term capital should be allowed to flow, without restriction, over international boundaries.

Causes of Capital Inflows

The increase in emerging market inflows in the 1990s is attributed to both internal and external factors. The major internal or '*pull*' factors relate to: (1) the improved creditworthiness of developing countries due to debt restructuring and (2) productivity gains arising from structural reforms and increased confidence in macroeconomic management. In recent empirical research, the World Bank⁶ claims that such internal elements are the driving force behind recent capital flows. The following findings support its conclusion: countries with the strongest perceived fundamentals have received the largest inflows. FDI is the largest component of these flows, yet is not responsive to global interest rates; and while portfolio flows are more sensitive to interest rates, they continued to increase despite increases in global interest rates in 1992-1993.⁷

Despite these findings, the role of foreign factors cannot be completely ignored. This is particularly the case with respect to the causes of short-term flows. Although FDI

⁵ *ibid*

⁶ World Bank (1996)

⁷ Lopez-Mejia (1999)

FIREWALLS: CONTROLLING SHORT TERM CAPITAL FLOWS

is generally the largest component of capital inflows, commercial bank-lending and portfolio flows represent a significant proportion of these inflows, and should therefore not be ignored, (see Table I). Calvo, Leiderman and Reinhart⁸ suggest that cyclical conditions in the industrial countries have been the driving force behind such portfolio flows. The decline in world real interest rates in the early 1990s '*pushed*' investors to the emerging markets by making returns more attractive relative to those at home, and by lessening the default risk of these countries. Furthermore, the growing presence of institutional investors aiming for greater risk diversification in world financial markets has significantly increased the levels of portfolio flows into Asia and Latin America. The danger of these flows, however, is that cyclical changes can lead to large capital flow reversals and destabilisation of the local economy. Short-term capital flows are therefore a major worry for many developing economies as '*hot money*' used purely for speculative purposes can have severely destabilising effects.

Consequences of Capital Inflows

Inflows of capital to developing countries have many desirable effects. Foreign capital can finance investment, stimulate economic growth, and increase consumer welfare by enabling households to better smooth consumption over time. These effects aid developing countries in increasing their standard of living relative to the rest of the world.⁹ For these reasons, many economists have heralded freely flowing capital as a catalyst for convergence between the developing and the developed world. Are these benefits specifically due to FDI, or do short-term flows also contribute to such growth? If short-term flows are only destabilising, should they be allowed at all, or do they serve a necessary purpose in the financial markets? These are some of the central questions that must be answered before concluding as to whether short-term flows should be discouraged.

Between 1990 and 1994, a substantial portion of inflows into Latin America and Asia appeared in the form of an accumulation of foreign exchange reserves. This was especially the case under fixed exchange rate regimes, as central banks bought foreign reserves to avoid an appreciation of the nominal exchange rate. Second, in most countries the inflows were associated with widening current account deficits. This resulted from both an increase in national investment and a decrease in national saving, which in turn led to faster GDP growth. Many countries also experienced

⁸ Calvo, Leiderman & Reinhart (1996)

⁹ Calvo, Leiderman & Reinhart (1995)

RONAN CLARKE, CHRIS DAILEY, MARC FEUSTEL AND VINAY NAIR

rapid money supply growth, due to increased economic activity, and a reduction in the opportunity cost of holding money, due to the recent inflation stabilisation. Several countries avoided this, however, by either allowing the exchange rate to appreciate, or by using sterilised intervention in the currency market. Most countries also saw dramatic increases in stock and asset prices as well as real exchange rate appreciations.¹⁰

Under these circumstances, although output growth may be expanding, capital surges into developing markets can lead to a weakening of macroeconomic fundamentals to unsustainable levels. Many emerging markets have consequently been hurt by deep and protracted crises that have been characterised by sharp capital flow reversals and output collapses, exacerbated by serious banking crises.¹¹ Such capital flow reversals are much more likely when a large portion of flows are short-term in nature and can be easily withdrawn, as seen in Appendix A, Figure A.1. Herein lies the debate on short-term capital controls as a means of either restricting outflows or inhibiting inflows in the first place. This issue will be discussed at length below.

Large capital inflows, deemed to be unsustainable in the long run, have proven significant in exacerbating, or even in inciting, currency and banking sector crises in emerging economies throughout the 1990s. As Sebastian Edwards points out, with reference to the 1994 Mexican crisis, “*the role played by large capital inflows - which at their peak surpassed 9 per cent of Mexico’s GDP - has been at the centre of almost every post mortem of the Mexican crisis*”¹² Some analysts argue that these massive flows allowed Mexico to increase private consumption, despite weak fundamentals, while others claim that short-term capital controls were lifted too early, allowing speculative flows to destroy the economy.

The former point brings up the issue of capital account sustainability. Edwards calculates that Mexico’s long run sustainable current account deficit was in the range of 2 to 3 per cent of GDP, far below the 7 to 8 per cent levels attained during the early 1990s inflow period.¹³ Chile, on the other hand, had a higher average growth rate during the period, and could therefore sustain much higher levels of capital inflows. This, combined with the maintenance of short-term capital

¹⁰ Calvo, Leiderman & Reinhart (1996)

¹¹ Calvo & Reinhart (1999b)

¹² Edwards (1998)

¹³ *ibid*

FIREWALLS: CONTROLLING SHORT TERM CAPITAL FLOWS

restrictions, may be why Chile largely avoided the subsequent Tequila Crisis that plunged most of Latin America into recession.

The Tequila Crisis, as well as the more recent Asian crisis, exemplifies the problem of contagion. When one country experiences a capital crisis, investors may panic and withdraw capital from all economies deemed similar, particularly when it is observed that all of these have large volumes of short-term capital inflows, as Argentina did during the Mexican meltdown. The emerging economies lose access to the capital markets at such times and a crisis becomes unavoidable. With high capital mobility, rumours and changes in expectations in one country can quickly spread to other nations with healthy fundamentals.¹⁴

Looking at the data presented in the tables below, we can see that Argentina was hit much harder than many other Latin American countries following the Mexican crisis in 1994. Almost all countries did see a substantial fall in capital inflows during this period, due to the contagion problem. Argentina may have been attacked disproportionately, since portfolio and short-term flows to that country were very large relative to total flows, allowing investors a quicker exit. Informational asymmetries between investors contribute to these adverse circumstances.

Table 2: Total Capital Inflows as a per cent of GDP

	1990	1991	1992	1993	1994	1995	1996
Argentina	-0.8	1.3	4.6	4.7	3.8	1.4	3.4
Brazil	1.0	0.0	2.6	1.9	1.3	4.3	4.4
Chile	10.0	2.4	0.7	8.0	8.8	1.7	6.7
Colombia	-0.1	2.1	0.0	4.8	4.4	6.2	7.1
Costa Rica	3.8	4.1	6.3	8.0	4.3	3.6	4.5
Mexico	4.5	7.1	7.1	7.3	2.4	4.0	1.2
Latin America	3.1	2.1	4.6	5.4	4.2	3.5	4.5

Source: Montiel and Reinhart (from IMF, World Economic Outlook)

¹⁴Edwards (1998)

Table 3: Portfolio Flows as a per cent of GDP

	1990	1991	1992	1993	1994	1995	1996
Argentina	-0.9	0.3	-0.2	9.5	1.3	1.5	3.7
Brazil	0.1	1.0	3.8	2.8	9.1	0.3	0.8
Chile	1.2	0.1	0.8	1.6	1.7	0.3	1.5
Colombia	0.0	0.2	0.3	1.0	0.5	-0.1	1.7
Costa Rica	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mexico	0.5	3.1	4.3	5.8	0.8	-5.0	1.2
Latin America	0.2	0.8	1.5	3.5	2.1	-0.5	1.5

Source: Montiel and Reinhart (from IMF, World Economic Outlook)

As illustrated above, capital flows have recently shown a distinct stop and go phenomenon, with very large volumes flowing in or out of emerging markets throughout the past several decades. These occurrences have caused great economic and social pain to many emerging economies during the last decade. Thus, it is no surprise that there is considerable disagreement among economists about the merits of complete capital market liberalisation in emerging economies. Some argue that openness to capital flows pressurises governments to follow more sound and stable policies, and will bring domestic interest rates in line with world rates, just as free trade promises to do with prices. Advocates of this view propose a complete opening of the capital account.

Economists such as Rodrik and Bhagwati, on the other hand, insist that opening an emerging market to foreign financial inflows does not significantly raise output or growth and can harm the economy if its fundamentals are in poor shape. An economy should fulfil a set of conditions before capital liberalisation is completed. They also argue that international capital markets are not a reliable source of market discipline, as creditors have been known to panic, forcing the emerging economies into self-fulfilling financial crises.¹⁵ This has happened all too often in recent years, as observed in Latin America in 1994-1995 and Asia in 1997-1998.

Roberto Zahler, former governor of the Central Bank of Chile, argues that emerging economies must be wary of massive short-term inflows. He claims that the only way

¹⁵ Eichengreen (1999)

FIREWALLS: CONTROLLING SHORT TERM CAPITAL FLOWS

real interest rate differentials can fall quickly enough in the short-term is through massive increases in asset prices. Thus, short-term flows create stock market and property bubbles, (e.g. Argentina), which lead to consumption booms followed by worsening current account deficits. A major reason for Chile's use of short-term capital controls is to allow these interest rate differentials to narrow without asset bubbles forming.¹⁶

Above, we have illustrated the problems arising with large volumes of short-term capital flows. The benefits of capital market liberalisation are nearly certain in the long run, but in the short run it may make more sense for emerging economies to follow more prudent liberalisations until their economies have reached a higher state of development. We now turn to an analysis of the possible solutions to the short-term capital flow problem and assess their effectiveness.

Analysis of the Methods Used to Discourage Capital Flows

Governments dispose of a multitude of different methods, some far more efficient than others, for dealing with large volumes of capital inflows or outflows. In this section we are interested in outlining these methods and attempting to identify an '*ideal*' policy mix for coping with capital flows.

There are two broad types of intervention in the face of capital flows: indirect and direct. The former consists of a policy response to capital flows which is designed to influence their effect on the macroeconomy (often foreign exchange intervention), whereas the latter targets the flows themselves in attempting to affect their volume or composition. An overview of the deployment of these methods in a cross-section of countries is provided in Figure A.2.

Indirect Policy Measures

Sterilised intervention is the main form of indirect response to capital flows. This involves an intervention in the foreign exchange market so as to prevent nominal exchange rate appreciation due to excessive inflows of capital. Meanwhile, an accompanying set of open market operations drains domestic reserves so as to offset

¹⁶ The Economist (14/03/98)

the total effect on the money supply.¹⁷ Despite being the most universal policy response to capital inflows¹⁸, it has also proved to be one of the least efficient.

Empirical evidence shows that sterilised intervention, by further widening the interest rate differential, increases the volume of total capital flows through short-term capital. In Malaysia in 1993, for instance, during a period of aggressive sterilisation, interest rates on short-term bank deposits were driven up substantially - thus attracting a significant number of non-resident short-term bank deposits¹⁹. Furthermore, studies have shown that this policy has only had short-run effects in the developing countries in which it has been implemented.²⁰ This form of policy thus appears to be a counter-productive method of intervention in discouraging volatile capital flows.

Direct Policy Measures

Direct restrictions on capital flows can target either outflows or inflows. Such controls have proven to be significantly more efficient than monetary sterilisation. Empirical studies suggest that such direct controls significantly reduce short-term and portfolio flows and promote a higher level of FDI. However there have been considerable differences in the impact of controls on *inflows* and controls on *outflows*.

Controls on Capital Outflows

One approach to excessive capital inflows has been to liberalise capital outflows so as to encourage a move away from domestic assets to foreign assets, thereby decreasing net inflows. This policy is based on two tenuous assumptions. Firstly, it assumes that the announcement of liberalised outflows has a *negative* impact on inflows. Both theoretical and empirical evidence, such as the cases of Yugoslavia and Chile in the early 1990s, suggest that outflow liberalisation has a tendency to encourage further inflows of capital. Furthermore, such a policy move assumes that domestic investors will in fact increase their purchase of foreign assets. However, the effectiveness of this approach in inducing outflows may be undermined by

¹⁷Reinhart & Reinhart (1998)

¹⁸*ibid*

¹⁹Montiel & Reinhart (1999)

²⁰Reinhart & Reinhart (1998)

FIREWALLS: CONTROLLING SHORT TERM CAPITAL FLOWS

higher domestic interest rates (say, due to sterilisation policies) which will create a disincentive for overseas investment.²¹

Another approach involves the placing of restrictions on capital outflows. This allows time for reform of the financial system²², and the pursuance of sensible policies that otherwise would be ruled out in the event of the threat of speculative attack. This may come in the form of “*voluntary*” actions by creditors, or through the imposition of controls over the outflow of capital in general, either directly via capital controls (e.g. Malaysia), or indirectly via a dual-exchange system as suggested by Krugman.²³ Unfortunately, this method has often failed to achieve its desired aims. The reason for this is that such controls did not encourage domestic restructuring, but instead served as a facade for the implementation of populist policies, often leading to a deepening of the financial crisis. This was the case in Latin America following the 1980s debt crises.²⁴ Finally, investors may interpret these controls as indicating a lack of confidence in the domestic economy, which in turn could exacerbate the problem of potential capital flight.

Controls on Capital Inflows

Capital inflow restrictions have proven to be a far more efficient, and more commonly used, tool in influencing capital movements than measures which are designed to influence capital outflows. Such restrictions typically take one of two forms.²⁵

- Quantitative restrictions that prohibit inflows or outflows of funds (e.g. Malaysia in 1994).
- ‘*Tax-based*’ restrictions which make capital transfers more costly (e.g. Chile in 1991).

²¹Reinhart & Reinhart (1998)

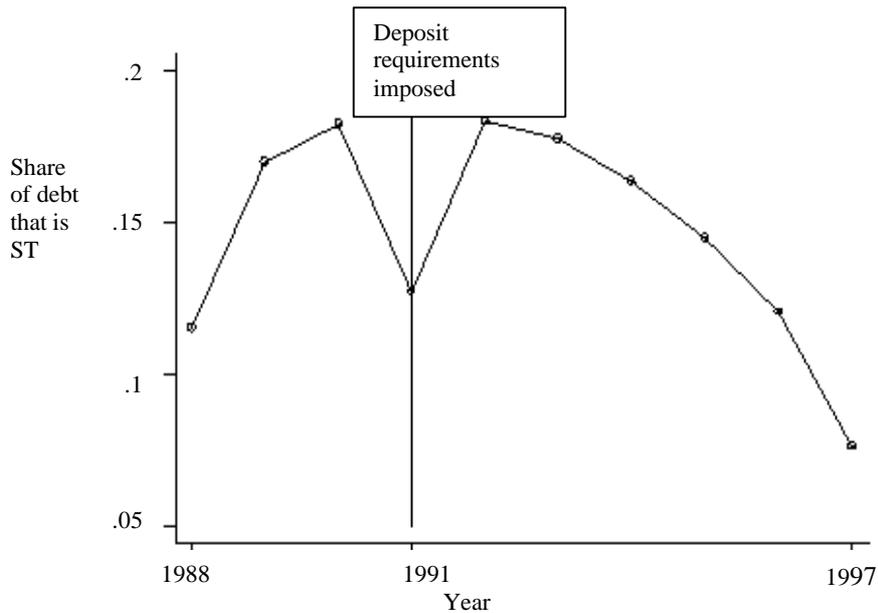
²²Krugman (1998a)

²³ibid

²⁴Edwards (1999b)

²⁵Blöndal & Christiansen (1999)

Figure 1: Share of short-term debt, Chile 1988-97



Source: Rodrik & Velasco (1999)

Inflow controls appear to be more effective in shifting the *composition* of capital flows away from short-term to longer maturities, instead of actually changing the total *volume* of flows²⁶. In the case of Chile, for instance, the authorities imposed a 20 per cent reserve requirement, to be deposited at the Central Bank for a period of one year, on foreign currency liabilities associated with direct borrowing by firms. This was structured in such a way as to penalise investments of less than 12 months. This 'tax' was raised to 30 per cent in 1992 on the basis that a higher rate would be more effective in deterring capital inflows. While in place, this method had the desired effect of creating a severe disincentive for short-term capital inflows²⁷, as can be seen in *Figure 1*.

²⁶ Montiel & Reinhart (1999)

²⁷ Rodrik & Velasco (1999)

FIREWALLS: CONTROLLING SHORT TERM CAPITAL FLOWS

Despite the apparent success of capital controls in Malaysia and Chile, there is still a significant amount of criticism of these methods, particularly regarding their costs and effectiveness, not least from those market participants the controls are designed to influence. The effectiveness of capital controls is questioned because they may be circumvented in today's sophisticated financial markets by re-routing inflows through other channels.²⁸ This is one of the more compelling reasons why capital controls cannot be sustained in the long-term.

Direct controls are also criticised for being quite costly in terms of growth. However, there is little evidence of specific episodes of controls having real costs - e.g. in Malaysia's case, capital controls engendered a massive turnaround in flows without adversely affecting the country's growth.²⁹ In addition, restrictions on inflows have been criticised for significantly increasing the cost of capital, especially for small/medium-sized firms, as their cost of financing is twice as high as for large companies, according to Edwards.³⁰

The most important caveat that must be placed on the efficiency of capital controls concerns the length of their implementation. Many of the countries implementing such controls leave them in place for longer than necessary, due to concern that a surge in capital flows may occur if the controls are removed. This creates an '*addictive*' situation which will offset the benefits of the controls.³¹ It must also be noted that when implementing capital controls, governments may be faced with the sizeable task of covering all participants in the credit market, including both financial and non-financial corporations. Countries that succeed in this task may find themselves immersed in central planning.³² What these two arguments strongly illustrate is that capital controls can at best be a short-term policy response.

To conclude this analysis of the effectiveness of capital controls, it is important to restate the desired objectives of such measures. Capital controls may be useful in reducing pressure on countercyclical monetary and fiscal policy during an emerging market's economic development. They may also serve as a temporary means of ameliorating some of the problems outlined in the previous section. However, such

²⁸ For example, by the use of derivative techniques or the over- or under-invoicing imports and exports, since trade credits are exempt from tax

²⁹ Rodrik & Velasco (1999)

³⁰ Edwards (1999b)

³¹ Reinhart & Smith (1997)

³² Calvo & Reinhart (1999a)

RONAN CLARKE, CHRIS DAILEY, MARC FEUSTEL AND VINAY NAIR

controls are not the first best solution. What is far more important is to eliminate the problems leading to monetary and fiscal policy excesses in the first place.

As stated by Eichengreen, capital controls

“are only justifiable where financial markets are thin, the private sector’s risk-management practices are underdeveloped, and the regulators’ capacity to supervise the financial sector is limited - in other words, where the conventional defences against systemic risk are not enough”³³.

By resolving any problems with economic fundamentals, the economy should be able to reach a state where capital controls are no longer needed. To achieve this, several measures in various aspects of the economy are necessary: reform of both monetary and fiscal policy, reform of economic and political arrangements by which policies are made (as in the case of Indonesia), increased market transparency³⁴, avoidance of overly rigid exchange rates, and enhanced transparency of budgeting. Such measures will enhance investor confidence for the long-term.

In spite of stringent capital controls, spanning from 1978 to 1982, Chile suffered a severe crisis resulting in a 90% devaluation and a large number of bank bailouts. Widespread banking reform aided Chile in withstanding the financial difficulties of the Tequila Crisis. This episode illustrates the need for banking regulation in reducing a country’s vulnerability to volatile capital flows.³⁵ There is room for more effective enforcement and regulation in the intermediation of banks in cross-border capital flows to help reduce the reliance on short-term lending. Another option is to regulate and supervise the local lending practices of domestic banks, so as to ensure prudent and effective credit-risk management.

Developing countries have different market fundamentals to more sophisticated economies. What our analysis shows is that without the resolution of these fundamentals in the economy, *“there are arguments for special measures, including capital controls, to limit risks to the financial system and to free up the use of monetary and fiscal policies in a slum”³⁶*. However, as these economies improve

³³ Eichengreen (1998)

³⁴ Chan (1998)

³⁵ Edwards (1999b)

³⁶ Eichengreen (1998)

FIREWALLS: CONTROLLING SHORT TERM CAPITAL FLOWS

their market fundamentals, the role of capital controls becomes less important and liberalisation should be implemented.

Conclusion

The issue of short-term capital flows is relevant to many developing countries at the moment. Recent years have seen explosive growth in international flows of private capital, much of which has been intended purely for short-term investments. The 1990s have seen a number of high profile financial crises in emerging economies, indicating that these countries are perhaps more vulnerable than ever to financial volatility and capital flow reversals.

This paper has discussed the problems associated with short-term capital flows and has analysed the policy options available to governments to discourage such consequences. The arguments outlined have shown that there is no explicit and intuitive solution to these problems, and governments have relied on varying policy mixes in dealing with them. In the industrialised world, free capital mobility is espoused as the new means of globalisation and international economic convergence. It must be remembered, however, that some of these rich countries only fully liberalised capital flows as late as 1992. To expect developing economies to fully liberalise their capital account before achieving greater economic development has proven dangerous, if not an invitation for financial crises.

Thus, there are certain circumstances under which controls on short-term capital flows may in fact be appropriate. They should by no means, however, be relied upon as a long-term solution to a country's economic woes. The long run benefits of freely flowing capital are clear, which is why these economies must continue to address fundamental macroeconomic reforms. At the same time, temporary capital controls should only be used when necessary to buttress these reforms. Ideally, once emerging economies prove to the market their reliability and responsibility, they should reach a point where they can reap the benefits of freely flowing capital, without reliance on capital controls and without fear of financial collapse.

Bibliography

Bacchetta, P. & E. van Wincoop (1998) *Capital Flows to Emerging Markets: Liberalisation, Overshooting and Volatility*. NBER Working Paper, No. 6530, April.

Blöndal, S. & H. Christiansen (1999) *The recent experience with capital flows to emerging market economies*. OECD Economics Department Working Paper, No. 211.

Calvo, G., Leiderman, L. & C. Reinhart (1995) "Capital inflows to Latin America with reference to the Asian experience" in Edwards, S. (ed.) *Capital Controls, Exchange Rates and Monetary Policy in the World Economy*. Cambridge University Press: Cambridge.

Calvo, G., Leiderman, L. & C. Reinhart (1996) "Inflows of Capital to Developing Countries in the 1990s" in *Journal of Economic Perspectives*, Vol. 10(2).

Calvo, G. & C. Reinhart (1999a) *When capital inflows come to a sudden stop: consequences and policy options*.
Available from <http://www.puaf.umd.edu/papers>

Calvo, G. & C. Reinhart (1999b) "Capital Flow Reversals, the Exchange Rate Debate, and Dollarization" in *Finance and Development*, September.

Chan, R. C. (1998) "Whither global capital flow" in *Far Eastern Economic Review*, November.

The Economist (14/03/98) "Of take-offs and tempests: can capital controls stop poor countries crashing?"

The Economist (23/05/98) "Capital controversies"

Edwards, S. (1998) *Capital Inflows into Latin America: A Stop-Go Story?* NBER Working Paper, No. 6441, March.

Edwards, S. (1999a) *How effective are Controls on Capital Inflows? An evaluation of Chile's experience*.
Available from
http://www.anderson.ucla.edu/faculty/sebastian.edwards/capflows_chile.pdf

FIREWALLS: CONTROLLING SHORT TERM CAPITAL FLOWS

Edwards, S. (1999b) *The Mirage of Capital Controls*.

Available from http://www.anderson.ucla.edu/faculty/sebastian.edwards/for_aff.pdf

Eichengreen, B. (1998) *Capital controls: capital idea or capital folly?*. November.

Available from <http://elsa.berkeley.edu/users/eichengr/policy.htm>

Eichengreen, B. (1999) "Taming Capital Flows" in a special issue of *World Development*.

Available from <http://elsa.berkeley.edu/users/eichengr/policy.htm>

International Monetary Fund (1997) "Capital Flows to Emerging Markets - A Historical Perspective" in *International Capital Markets*.

Krugman, P. (1998a) *Curfews on capital flight – what are the options?*

Available from <http://web.mit.edu/krugman/www/curfews.html>

Krugman, P. (1998b) *An open letter to Prime Minister Mahathir*.

Available from <http://web.mit.edu/krugman/www/mahathir.html>

Krugman, P. (1999) *The Return to Depression Economics*. Norton & Co.: New York

Lopez-Mejia, A. (1999) *Large Capital Flows: A Survey of the Causes, Consequences and Policy Responses*. IMF Working Paper, February.

Montiel, P. & C. Reinhart (1999) *Do capital controls and macroeconomic policies influence the volume and composition of capital flows? Evidence from the 1990s*. Paper prepared for UNU/WIDER project on short-term capital movements and balance of payments crises, March.

Reinhart, C. & V. R. Reinhart (1998) "Some lessons for policy makers dealing with the mixed blessing of capital inflows" in Kahler, M. (ed.) *Capital flows and financial crises*. Cornell University Press: New York

Reinhart, C. & R. T. Smith (1997) *Temporary capital controls*.

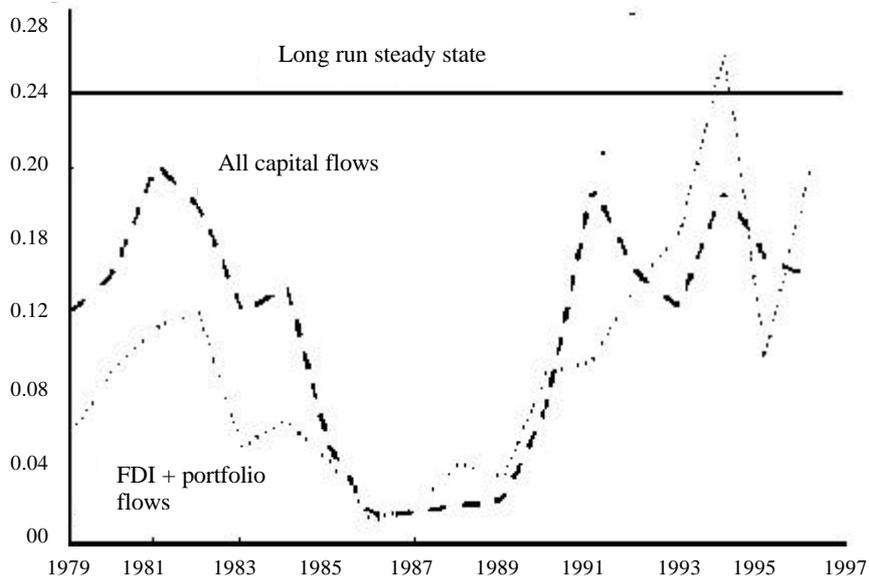
Available from <http://www.puaf.umd.edu/papers>

Rodrik, D. & A. Velasco (1999) *Short-term capital flows*. NBER Working Paper, No. 7364, September.

World Bank (1996) *Global Development Finance 1996*.

Appendix A

Figure 2: *Inflows Emerging Markets / Outflows Industrialised Countries**



Source: Bacchetta & van Wincoop (1998)

* This figure shows the share of capital outflows from 21 industrialised countries going to the sum of 17 emerging markets

FIREWALLS: CONTROLLING SHORT TERM CAPITAL FLOWS

Table 4: Policy Mix in Response to Capital Inflows

<i>Trade Country Liberalisation Accelerated</i>	<i>Fiscal Restraint</i>	<i>Revaluation</i>	<i>Increased Exchange rate variability</i>	<i>Sterilised Intervention</i>	<i>Controls on Capital Inflows</i>	<i>Liberalisation of Capital Outflows</i>
Argentina	No ^a	No	No	No	No	No
Chile	Yes	Yes	Yes	Yes	Yes	No
Columbia	No	Yes	Yes	Yes	Yes	Yes
Indonesia	No	No ^b	No	Yes	No	No
Malaysia	Yes	No	Yes	Yes	Yes	Yes
Mexico	No ^a	No ^b	No	No	Yes ^d	Yes
Phillipines	No	No ^c	Yes	No	Yes	No
Sri Lanka	No ^a	No ^c	No	No	No	Yes
Thailand	Yes	No	No	Yes	Yes	Yes

Source: Reinhart & Reinhart (1998)

^a Fiscal consolidation (including privatisation efforts) were part of the inflation stabilisation programs and not a response to the rise in capital inflow per se. The convention plan in Argentina begins in April 1991 while the Moroccan plan predates the surge in inflows and begins in December 1987.

^b Despite announcements of broader intervention bands, exchange rate variability does not change appreciably.

^c The Philippines and Sri Lanka already had a relatively flexible exchange rate system at the start of the inflow episode.

^d Caps on foreign currency liabilities of banks are not binding on 1994.