

# Towards a Better Understanding of International Capital Volatility

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## Key Points

- International capital movements exhibit considerable volatility.
- There is a pattern of capital surges, sudden stops and reversals, and these phenomena have important macro/prudential consequences.
- Getting a better understanding of international capital volatility involves drawing on both economic and behavioural approaches to international finance.
- These approaches help to explain past episodes of volatility but it still remains difficult to predict the pattern of international capital movements.

## Introduction

In an era of financial globalization it has become increasingly important to understand international capital flows. Many of the high-profile economic crises that have been experienced since the early 1980s have been associated with sudden stops in the inward movement of capital and subsequent reversals. The crises have often been preceded by capital surges. This pattern has been observed in the cases of the Third World debt crisis in the early 1980s, the Mexican ‘tequila’ crisis in the mid-1990s, the East Asian crisis in 1997–8, as well as the Eurozone crisis in 2009. It may also emerge in the case of China and other emerging economies in the mid-2010s.

The feast-and-famine pattern of international capital movements has important implications for macro-economic performance in the countries

involved. It creates serious problems for economic management. However, as a foundation for constructing policy the causes of international capital movements and their volatility need to be understood.

From their inception, open economy macro-economic models sought to provide an explanation of international capital mobility. Early ones in the tradition of the Mundell Fleming model, and against a backdrop of the Bretton Woods system and quasi-pegged exchange rates, focused on interest rate differentials. Capital was assumed to move towards economies in which interest rates were relatively high. As the world shifted over to generalised flexible exchange rates, expected changes in exchange rates were incorporated as an additional factor. Theory also acknowledged that risk came not only from variations in exchange rates but from other sources as well, such as the possibility of borrowers defaulting. Furthermore, it was recognised that capital mobility involves both capital-exporting and capital-importing countries, and that ‘push’ factors in capital exporters could be important alongside ‘pull’ factors in capital market<sup>1</sup>.

These relatively simple explanations have been found to be lacking in the cases cited above. They fail to provide a fully convincing account of capital surges, sudden stops and reversals. Explaining international capital movements, and in particular the volatility that is observed, is more complicated and nuanced.<sup>2</sup>

This article identifies a number of factors that may help to understand the volatility of capital flows. These factors embrace some that are consistent with assumptions of rationality (broadly interpreted), but they also include others that involve a behavioural approach to international finance. A satisfactory account of capital volatility needs to explain not only why capital

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<sup>1</sup> Interest rate differentials may open up as a consequence of changes occurring in capital exporting countries. Thus changes in the stance of monetary policy in the US or other advanced economies may exert an important influence on capital flows to emerging and developing economies. Volatility in US monetary policy involving changes in interest rates, quantitative easing or tapering may translate into volatility in capital flows to emerging economies. We do not examine this influence over capital volatility at any length in this paper.

<sup>2</sup> There are similarities here with our understanding of exchange rates where our ability to explain long-run movements is much superior to our ability to explain short-run movements and exchange rate instability. Indeed, to the extent that exchange rates are driven by the capital account there may be a potentially important analytical link between capital and exchange rate volatility.

inflows and outflows may pick up speed, but also why reversals and turning points occur.

The article is organised in the following way. The second section briefly presents evidence on the pattern of international capital movements. This illustrates the volatility of these movements. It also shows that volatility is more pronounced for bank lending and portfolio investment than it is for foreign direct investment (FDI). Such an observation suggests that there is no universally applicable theory of capital mobility. The third section analyses both the economic and the behavioural factors that may help to explain the pattern of international capital movements, and assesses their contribution to understanding volatility. The fourth section considers how different, contingent combinations of factors may explain why the relationship between capital surges and sudden stops and reversals might vary from case to case. In particular, it emphasises how the factors that influence turning points are likely to differ from those at work during other phases of a capital flow cycle. Although the article offers no formal empirical testing of the ideas discussed, the fifth section draws on them to help explain a few selected cases of capital surges and sudden stops. The final section proffers some concluding remarks that underline where we currently stand in seeking to explain the volatility of international capital.

### **The international movement of capital: the empirical evidence**

Figure 1 provides an overall picture of net inflows in the form of portfolio equity and foreign direct investment at the world level over 1990–2014. Two aspects of the chart are particularly noteworthy. First, volatility has been more pronounced since 2000 than it was in the 1990s. Second, whereas portfolio and direct investment moved broadly in step from about 1997 until about 2004–5, the relationship broke down afterwards. This implies that movements in these different types of international capital are being influenced either by different factors, or, if by similar factors, then to different degrees or with different lagged responses.

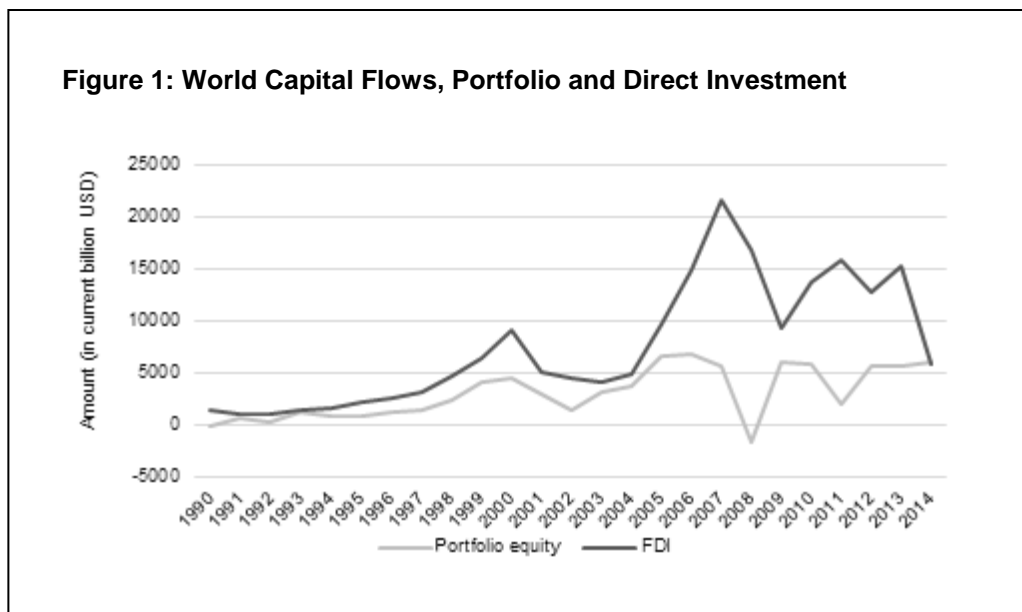
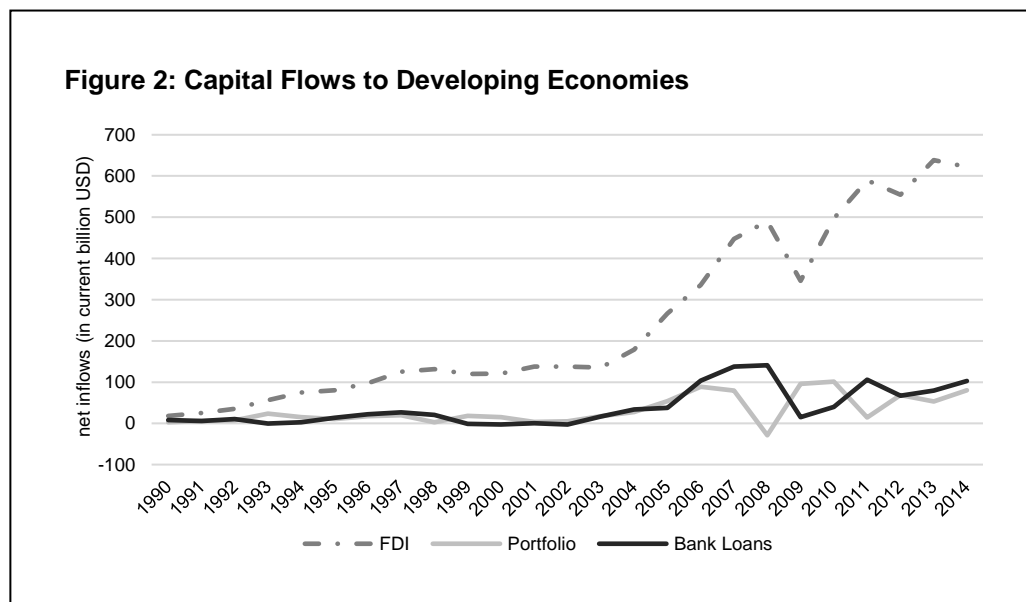


Figure 2 focuses on capital flows to developing economies, again over 1990–2014; but this chart includes bank lending. The chart shows the increasing relative importance of FDI to this group of countries. The growth of FDI was particularly marked in the period after 2002 and running up until the global economic crisis in 2008. It has only been in the period since 2008 that there has been significant instability in FDI. In part, this no doubt reflects the impact of the global crisis and the recovery from it; but not just this. The pattern of shorter-term bank lending and portfolio investment appears to have been more unstable, with this instability being a feature of the period since the mid-2000s. However, the increases and declines in these two types of short-term lending have not been in step with one another. Once again this suggests that different factors are influencing them.



## Analysing international capital mobility and volatility

### Background issues

At one level explaining capital mobility is comparatively straightforward; it involves perceptions of return and risk. Foreign investors are trying to assess the expected return from different assets worldwide. It may be anticipated that they will opt for assets that yield the highest expected return, and capital will move in this direction. Against this background it might also appear to be comparatively straightforward to explain capital volatility. There will be capital surges into a country when there is a sharp increase in expected returns relative to those available elsewhere. The surge will peter out as the excess expected return shrinks and will stop when it is eliminated. A reversal in relative expected returns will lead to a reversal in capital movements. The reversal will end when the expected return once again comes in line with that available elsewhere.

Of course, different investors are likely to have different perceptions of return and risk, and different degrees of risk aversion. When many diverse points of view and preferences are represented within the market they may

cancel one another out and the market will be relatively stable. When one point of view or preference dominates, then the impact on capital movements will be accentuated.

Surely things cannot be this simple. They are not. As is often the case, the devil is largely to be found in the detail. The key problem here is in determining how investors calculate expected returns. Do they rationally evaluate all the relevant information available to them at the time, or are they influenced by inbuilt psychological biases? The subsections that follow examine the issues involved in answering this question.

However, before moving on to discuss them, there are other aspects of international capital mobility and volatility that make the analysis more complicated than might initially appear.

First, international movements of capital are conventionally referred to as capital flows. Early open economy macro-economic models treated them in this way; an increase in domestic interest rates resulted in an ongoing increase in capital inflows. But are they actually flows? The very notion of a 'flow' suggests something that goes on for a protracted period of time. Flows may get stronger or weaker, they may even occasionally dry up and stop completely, but generally they are not reversed. Thus the observed volatility of international capital movements sits uneasily with the characterisation of them as flows. It may be more accurate to view them within a portfolio adjustment framework. In this context, changing perceptions of return and risk alter fund managers' optimal portfolios. They then embark on the buying and selling of assets internationally to adjust their actual portfolios to the new optimum. During this period there will be movements of capital. What might be represented as a flow is in reality a process of portfolio adjustment. Once the optimal portfolio has been achieved the flow will stop. Using the notion of portfolio adjustment, it is easier to see why capital inflows may diminish over time and eventually stop. In the reverse circumstances it is also easier to see why periods of capital outflow may come to an end.

Second, risk should be seen as something that can be calculated in a probabilistic way and as measuring the potential deviations from a particular expected outcome. Such an approach to analysing capital movements may be reasonable when markets are relatively stable. But in the extreme conditions

that may be expected to accompany capital surges, sudden stops and sharp reversals, uncertainty may be the more relevant concept. In these circumstances, it might be impossible to calculate risk in any meaningful way and an approach to capital mobility that focuses on risk and return becomes more difficult to sustain. Decisions are instead being made in conditions of extreme uncertainty. In these circumstances something akin to ‘gut feelings’ or intuition may assume greater importance.

Third, time is of the essence. Generally speaking, the future is more uncertain than the present, and the long-term future is more uncertain than the near-term future. On this basis, short-term movements of capital should be less exposed to uncertainty than movements of long-term capital. However, having said this, volatility is instability around a trend. Over the long term, and with a larger number of observations, it is easier to estimate the trend and therefore to identify short-term instability around it; this should make it easier to limit uncertainty and calculate risks for long-term investments that can look through the cycle. In the case of short-term capital surges, the problem is to distinguish contemporaneously between a deviation from an existing and well-established trend, and changes in the trend itself. Almost by definition, surges can only be identified with confidence once they have come to an end. If turning points are difficult to forecast with any precision then it follows that uncertainty will be a common characteristic of short-term capital volatility.

### **An economic approach to international capital volatility**

The standard economic approach to analysing international capital movements envisages well-informed and rational investors reaching a view about the fundamentals of a country’s overall economic performance and prospects. The design of economic policy has a bearing on the latter in as much as it influences future economic performance. Investors will assess the wisdom of current domestic economic policy; although how much weight they attach to it will in part depend on whether they believe policymakers are committed to the policies currently being advocated.

At a basic level this approach seems reasonable. Foreign investors will surely prefer to lend to countries that are perceived to be in good economic

shape, are being managed well by policymakers, and where the future appears to be relatively bright. They will tend to be repelled by the opposite combination of circumstances. However, it is when one looks beneath the surface that things become more complicated.

First, there is the question of what constitutes ‘economic fundamentals’. The conventional macro-economic list would include performance indicators such as economic growth, employment, inflation and the current account of the balance of payments. However these performance variables are unlikely to move in step, and investors therefore need to attach implicit weights to them. A problem is that the weights are difficult to determine in any scientific way. On top of this, there are likely to be other fundamentals that for various reasons (see below) are omitted.

Economic fundamentals may also include the key policy variables. Investors will, for example, want to assess the current stance of fiscal and monetary policy and in relation to this the rate at which debt is being accumulated. Once again, however, there is no clear guidebook that unambiguously helps investors judge what policies are appropriate. This is reflected by the deep divisions between ‘freshwater’ and ‘saltwater’ economists about the impact of fiscal deficits, the effects of monetary expansion and the sustainability of debt.

Second, but linked to the above, investors will not be assessing the performance of economies in a theoretical vacuum. Even though it may not always be spelt out in detail, they will have an implicit mental model on the basis of which they evaluate contemporary performance and economic policy. This will be used to help anticipate the future. At times when there is no one particular mental model that is shared by all investors the resulting diversity will tend to stabilise markets. At other times, when there is greater consensus around one model, the unanimity will accentuate market movements and may result in surges, sudden stops and reversals.

Third, if capital movements are to reflect economic fundamentals, not only is it necessary to be able to identify what they are and why they are important, but it is also necessary to be able to collect accurate data on them



relatively quickly.<sup>3</sup> Markets may be forced to overlook or de-emphasize some factors that might be deemed to be fundamental simply because there are insufficient reliable, high-frequency data upon which to base judgements. This would not matter so much if the downplayed fundamentals moved in step with the other ones, but there is no guarantee that this will be the case. As an example, the domestic financial sector might weaken in a way that is not immediately clear from available data and alongside other aspects of economic performance that seem to be satisfactory.

Taking the ideas introduced so far, how might surges in capital inflows and their eventual diminution or sudden stops and reversals be explained?

A capital inflow will tend to increase when available information is interpreted by investors as meaning that a country's economic fundamentals are becoming increasingly strong. Part of any individual investor's set of information will be what others are doing. As a result, increased inflows will tend to be self-perpetuating. There will be a form of lending leadership. Fund managers also face incentive structures that encourage them not to be left behind. Their remuneration and promotion may depend on it. Moreover, even in circumstances where they believe that lending is excessive, it may be rational for them to keep on lending if they believe that they have superior information or a superior ability to anticipate when the market is about to switch direction.

The probability of a sudden stop or reversal increases if new information becomes available suggesting that economic fundamentals are weakening, or if problems that were previously overlooked become more apparent. The more pronounced the change in information, the more pronounced is likely to be the change in capital flows. If there is a theoretical notion of optimal lending and borrowing, the probability of reduced capital inflows, sudden stops and reversals increases as the extent of the deviation from the optimum gets larger. But things may also change suddenly. The erosion of fiscal space or the accumulation of external debt beyond a level deemed to be sustainable

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<sup>3</sup> In addition there is the likelihood that there will be non-linear aspects to the relationship between changes in economic fundamentals and capital flows. Hypothetically, economic fundamentals could be divided into 'bad', 'satisfactory' and 'good'. Moving between categories might lead markets to reassess performance and adjust investment behaviour. Moving within the categories might not. Bird (1999) analyses this in more detail and provides some empirical support for the idea.

may spark a discrete change in the market's perception of the economic fundamentals.

Overlending and overborrowing may carry with them the seeds of a sudden stop or reversal since they may lead to an appreciation in the real exchange rate of the capital-importing country and a loss of competitiveness that weakens the current account balance of payments. They may also stimulate credit expansion and asset-market and housing-market bubbles. The bursting of such bubbles will then lead to an economic crisis that alters investors' assessment of expected returns. Even investors who do not consider the economic fundamentals to have been significantly changed might deem it rational to withdraw capital. The rational actions of one investor depend on the actions of others. In this sense a sudden stop or reversal is not necessarily a sign of irrational panic but a measured and balanced response to changing circumstances. If other investors are rushing for the exits it might be rational to join the rush rather than risk carrying the cost of being left behind. More specifically, investors may rationally take into account a country's reserve holdings. If a capital outflow diminishes them, it might be rational for investors to withdraw capital in circumstances where they would not have done so had there been no such significant decline in reserve holdings.

There are analogies here with the established theories of currency crises.<sup>4</sup> Deteriorating fundamentals, both observed and initially unobserved, will make a capital-importing country more vulnerable to a sudden stop, with the chances of it happening increasing as the deterioration becomes larger. At some stage there will be investors who determine that a crisis is imminent. Their actions to withdraw capital may then stimulate similar actions by other investors. Or there might be a discrete shock that triggers a sudden stop and capital reversal. This might simultaneously affect a number of capital-importing countries or it might occur in one of them with the impact spilling over to others. It might occur in capital-exporting countries and affect the push element of capital movements. The shocks could in principle relate to

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<sup>4</sup> See Bird (2007) for a succinct summary of these theories. Montiel (2013) analyses the connections between currency crises and sudden stops of capital flows, showing how currency mismatches, large current account deficits and large stocks of short-term debt interact with low reserve stocks to generate dual equilibria. The panic equilibrium is characterised by a currency crisis, a sudden stop and an output collapse.

economic events or to political ones. They could, for example, involve new information becoming available that suggests that economic fundamentals are weaker than previously assumed, such as lower growth forecasts, or larger fiscal and current account deficits, or lower reserve holdings.

There could also be an element of moral hazard at work. If investors had thought that a country's government would not permit default, or that the IMF would provide resources that would be used to service existing external debts, they might have been inclined to underestimate risks and therefore overlend. The overlending would increase the capital-importing country's vulnerability to a sudden stop. The removal of such safety nets could then spark a sharp increase in perceived risk and an equally sharp reduction in expected return. A capital surge could quickly cease.

Whatever their precise nature, the unifying theme of shocks is that, by definition, they are unanticipated. This implies that the exact timing of a switch from a capital surge to a sudden stop is difficult to predict.

### **A behavioural approach to international capital volatility**

Augmenting the economic factors that help to explain capital volatility, there are also a number of behavioural factors that may be at work. Market psychology may play a key role in influencing what happens in international capital markets.<sup>5</sup> The earlier discussion has already touched on a herding tendency; the notion that there is safety in numbers. Investors may find it reassuring to be a member of a group rather than an outlier. There may be a tendency to believe that it is safer and less risky to move with the herd, irrespective of the direction in which the herd is moving. There may also be a psychological inclination for any one investor to believe that if many other investors are lending they must know something that justifies it. A component of apparently irrational behaviour may be to believe that other people are acting rationally. Beyond this, investors might rationally believe that the chances of some form of international bail-out are higher where many investors are involved.

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<sup>5</sup> Willett (2000) offers an interesting discussion of how markets may tend to respond to changing circumstances in ways that are 'too much' and 'too late'. He therefore questions the extent to which they fulfil the role of disciplining policymakers.

In addition to this there may be elements of confirmation bias and cognitive dissonance: investors putting a heavy and disproportionate weight on information that reinforces their beliefs whilst ignoring or downplaying evidence that is inconsistent with them. During a capital surge they may selectively favour good news and information suggesting that the economic fundamentals are secure, while disfavouring bad news and information that points in the opposite direction. Once a reversal has occurred the same basic behavioural traits may work to increase the rate of capital outflow. Here it will be bad news and information suggesting that fundamentals are weakening that confirms the bias and contra-indications that will be overlooked. The result will be that capital markets are subject to waves of over-optimism and -pessimism.

A further psychological phenomenon is disaster myopia and, in relation to this, representativeness bias. There will be a tendency to put undue weight on recent events and recent evidence. This will encourage expectations to be formed in an extrapolative way. In circumstances where a capital surge has come to an end because of an economic crisis, markets might shortsightedly imagine that further crises are more likely to occur than would be suggested by a reasonably scientific evaluation of the fundamentals.

Even when it comes to fund managers assessing their own ability to extricate themselves ahead of a turn in the market, there may be a tendency for them to have an inaccurate and overly positive perception, in much the same way as the majority of students in a class have been shown to believe that they will receive a mark above the average. The perception of ability may not always be accurately informed by the facts of the case.

Two further observations about the behavioural approach are important. First, behavioural factors are hard to measure. It is therefore difficult to test the behavioural approach except in terms of offering a potential explanation as to why an economic approach fails to provide an entirely satisfactory account of capital surges and reversals. Where capital movements appear to be inconsistent with economic fundamentals, it may be that behavioural factors are at work and are exerting the dominant influence.

Second, behavioural factors are better equipped to explain why ongoing movements in international capital continue into the future and become

magnified than why they come to an end. During a time when international capital inflows to a country or group of countries are increasing, psychological factors may play an important part in reinforcing what is happening and in converting the capital inflow into a capital surge. Similarly, once a turning point has been reached and there is a capital reversal, the same psychological factors will reinforce the capital outflow.

Confirmation bias, cognitive dissonance and disaster myopia imply that the event that eventually changes the market mood has to be substantial. This would mean that turning points are more likely to be associated with a significant economic event or new information that is strongly at odds with what had been assumed up to that point. However, a gradual and persistent deterioration in fundamentals is likely to make markets more vulnerable to a change in psychology. In these circumstances even a relatively modest event may serve to alter the market mood and bring about a turning point.

It remains the case that behavioural factors are primarily a source of market momentum. Once a turning point has been reached, the behavioural factors support the movement in the opposite direction. The outcome of this is that international capital movements will exhibit short-run volatility and greater volatility than can be explained by economic factors alone.

### **Capital volatility: combining the economic and behavioural approaches**

As shown in the second section of this article, different types of international capital flow exhibit different characteristics. On top of this, even similar types of capital may behave in different ways at different times and in different circumstances. Understanding capital movements and their volatility therefore involves taking into account a range of economic and behavioural factors that are likely to display different degrees of impact from case to case and at different stages of a capital flow cycle.

Leading on from the discussion towards the end of the previous section, the relative stability of FDI suggests that this type of investment is more strongly influenced by slower-changing economic fundamentals than by the behavioural factors that serve to magnify short-term surges and by the shocks

that lead to sudden stops and reversals. FDI decisions are less likely to be affected by confirmation bias, cognitive dissonance and myopia. They may also be less affected by a herding instinct. In a similar way, long-term investment decisions will almost tautologically be less affected by short-term shocks. The impact that these have on economic performance will dissipate over time, and may even be reversed. For example, where a country has a relatively high degree of export concentration on primary commodities, short-term economic performance is likely to be closely connected to contemporary commodity prices. If commodity prices are unstable, rising sharply at some times and falling sharply at others, the implication is that the exporting country's short-term economic performance will also be unstable. When the long-term trend in commodity prices is deciphered, however, the impact of short-term variations on long-run economic performance will be less pronounced, and investment that is more heavily linked to long-term economic performance will also be more stable.

In addition to this, decisions affecting FDI are generally less easy to reverse. The assets acquired are likely to be relatively illiquid and the decision to acquire them involves a long-term perspective.

It may even be that the people making the decisions about FDI work as part of a team, investigate full and detailed economic information more thoroughly, are older and more experienced and exhibit less professional mobility. All these factors, if accurate, would tend to militate against volatility in FDI. In contrast, if fund managers organizing investment portfolios are younger, consult a narrower range of information and have less experience in interpreting it, move more frequently between jobs, and are more influenced by the actions of others, they will be more strongly affected by short-term factors. The behavioural elements of capital mobility might be more likely to apply to them. As a consequence short-term capital movements would be expected to be more volatile.

This is not to say that all short-term capital movements will take the form of surges, or that all surges will end in sudden stops and capital reversals. Some might but others might not.<sup>6</sup> The significance of economic and

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<sup>6</sup> Amri et al. (2015) review the empirical evidence on the connection between surges and sudden stops. In relation to this they also explore empirically the extent to which capital surges lead to credit booms. They find results vary

behavioural factors will vary from case to case as will the way in which they interact. An accelerating inflow of international capital is less likely to lead to a sudden stop in circumstances where any appreciation in the capital-importing country's exchange rate starts from a situation of significant undervaluation; where intervention to moderate exchange rate appreciation is set against a background of inadequate international reserves and economic stagnation; where sterilising the effects of intervention can be accommodated because of low debt and sufficient fiscal space; and where the capital inflows are not connected to asset-market or housing-market bubbles. Capital surges may not necessarily lead to the domestic credit booms and economic crises that cause sudden stops in capital inflows. Against a background of sound economic fundamentals, competent economic management and appropriate financial regulation, capital inflows, along with the temperate use of capital controls, may have positive consequences for economic growth in the capital-importing country. Even flows that are influenced by behavioural elements may turn out to be justified by economic developments. In these circumstances the accelerating inflow of capital does not increase the vulnerability of the capital-importing country to a crisis and, in relation to this, a sudden stop in capital inflows might not follow.

In contrast, a sharp increase in capital inflows that is perhaps associated in the first instance more with push than with pull factors, and therefore reflects economic weaknesses in the capital-exporting countries more than the economic strength of the importing ones, may have a less encouraging outcome. In this scenario the capital inflow may lead to currency overvaluation, a loss of competitiveness, and a deteriorating balance of payments on current account. If the economy has no output gap, the monetary implications of intervening in the foreign exchange market to offset the appreciation in the nominal exchange rate may result in inflation and an appreciation in the real exchange rate. Sterilisation to moderate this

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somewhat depending on how surges and credit booms are measured but that on most of their measures only 20 per cent of capital surges are followed by credit booms. It is in part for this reason that not all surges lead to sudden stops and reversals. Much depends on how surges are managed. Governments and central banks can influence the macro-economic effect of capital surges by means of exchange rate policy, sterilised intervention and macro-prudential policies. Bird (2012) reviews and evaluates the various alternatives that may be available to countries in managing capital surges.

might lead to its own problems, particularly where debt levels are already high and where there is little fiscal space to accommodate any related increase in government expenditure. Where the capital inflow is associated with a boom in domestic credit and with asset-market and housing-market bubbles, an economic crisis and a sudden stop to capital inflows becomes probable. In these circumstances the sharp inflow of capital increases the probability of there being a sudden stop, and behavioural factors might serve to accelerate the process. The arrival of the crisis will then be the turning point that causes the sudden stop and the capital reversal.

### **Applying the ideas: selected case studies**

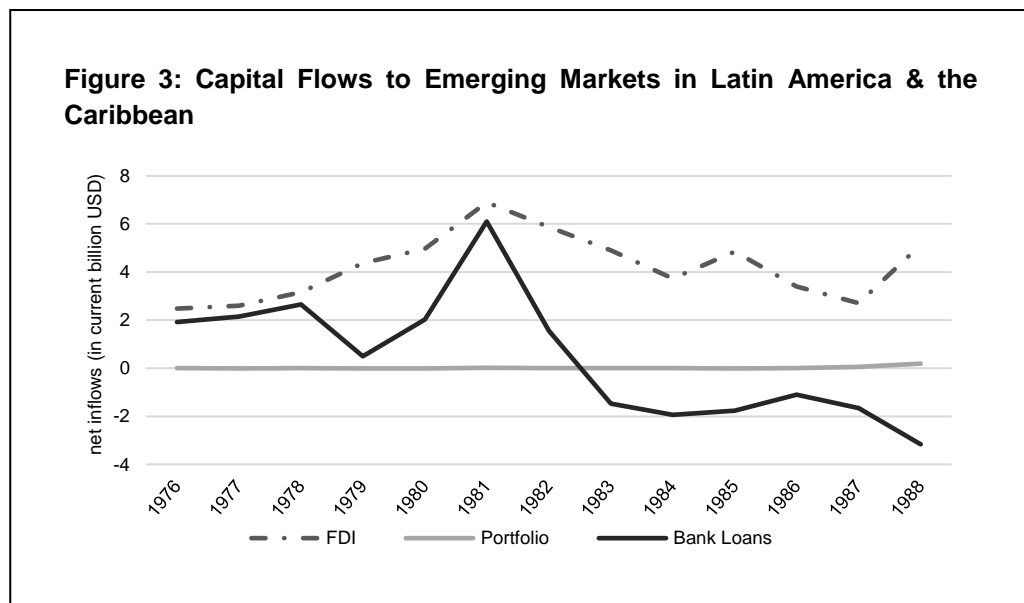
The world has experienced a number of periods in which sharp increases in capital inflows to emerging economies have been followed by sudden stops and reversals. Drawing on the ideas discussed above, it is possible to offer a retrospective interpretation of what may have been going on.

#### **The Third World debt crisis in the 1980s**

The first case relates to the increase in bank lending to emerging economies in the late 1970s and its subsequent reversal in the early 1980s. This is illustrated in Figure 3, which shows the flows to emerging market economies in Latin America and the Caribbean over this period. Following the quadrupling in the price of oil in 1974, oil-exporting countries with relatively low absorptive capacity made large deposits with the international commercial banks that, as a consequence, were anxious to ‘push’ loans. With real interest rates being low because of relatively high inflation, there were countries that were prepared to borrow. With the benefit of hindsight it is clear that inadequate attention was paid by the lenders to how vulnerable borrowing countries were to an increase in global interest rates and a decline in export revenues. Essentially, debt sustainability analysis was lacking and there was insufficient consideration given to different scenarios, particularly in circumstances where a common shock affected all indebted countries. There was a tendency to believe that interest rates would remain low and



that commodity prices would continue to rise to the benefit of commodity exporters.



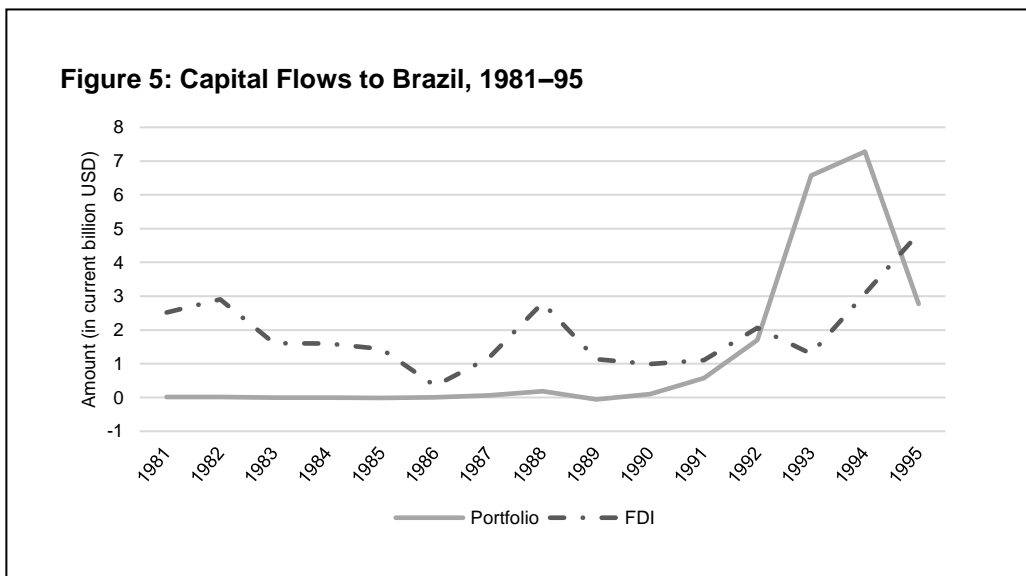
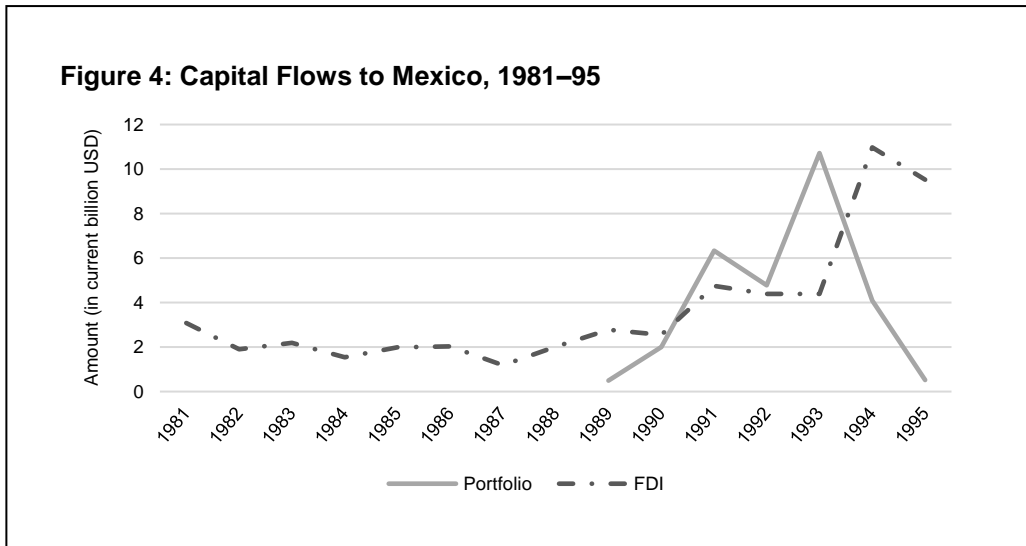
Anecdotal evidence also suggests that individual banks were also strongly influenced by what other banks were doing. There were institutional incentives that favoured making loans; loan managers did not maximise their chances of promotion and their remuneration by counselling caution. In any case there was the misguided mantra that countries did not go bust, as well as the loose assumption that, if they did, the IMF would step in and bail them out. How could things possibly go wrong?

But wrong is what they went. Initially, and even with the rising interest rates and falling export revenues that were associated with recession in advanced economies during the early 1980s, there was no obvious tapering-off in lending to Latin America until the Mexican crisis erupted in 1981–2. While some observers had been foretelling problems, it took the apparent shock of the crisis to change the market mood. However, once the mood changed banks seemed to believe that what had happened in Mexico would happen in all the other indebted Latin American economies. Disaster myopia

took hold. Risks were seen as being so high and the degree of risk aversion was so great that decisions not to lend were often made in the absence of any rigorous evaluation of the long-term economic prospects of indebted countries. On top of this, the involvement of the IMF was often taken as an indication of the poor economic health of the countries with IMF programmes and in these circumstances further voluntary lending would have been deemed to be unwise. The Fund had to coerce banks into lending in support of its programmes.

### **The surge in lending to Latin American (early 1990s) and the Mexican crisis in the mid-1990s**

Net capital inflows to Latin America did not reassert themselves until the early 1990s. But when the capital returned the rehabilitation was in many ways surprisingly rapid. Rather than bank lending, private capital inflows took the form of portfolio investment. Figures 4 and 5 illustrate what was happening in Mexico and Brazil. There was probably a combination of pull and push factors at work. The market perception seemed to be that the debt crisis had finally been overcome as a result of the Brady Plan, and that Latin American economies were emerging from what had been seen as the 'lost decade of development'. Markets possessed a shared mental model that was associated with the Washington Consensus. There was a belief that by jettisoning old heterodox policies and replacing them with ones incorporated in the Washington Consensus there would be sustained economic success. Confidence was also bred by the success of many Latin American economies in reducing inflation. The related waves of privatisation also created investment opportunities that foreign investors were anxious to grasp.

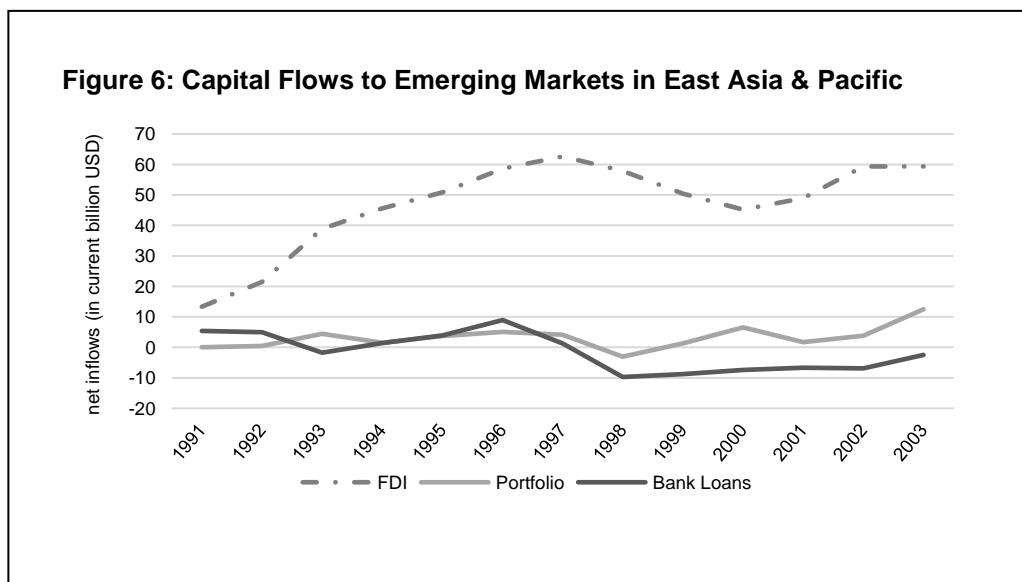


It might have been anticipated that as these opportunities were exploited, and as the portfolio adjustment associated with the rehabilitation of Latin American economies was achieved, the capital surge would come to an end. But it is also the case that investors paid too little attention to signs that the Mexican economy was heading for another crisis with a deteriorating current

account balance of payments and accumulating external debt. There was a tendency to overlook previous history and to believe that somehow ‘this time it’s different’. It was not.

### The East Asian crisis, 1997–8

As illustrated in Figure 6, East Asian economies were largely unaffected by the so-called ‘tequila effect’ of the Mexican crisis in 1994. Capital inflows into them gathered pace in association with a financial liberalisation that saw interest rates rise and an opening-up of capital accounts. With markets believing that there was little risk of debtor default and a high probability of an IMF bail-out if economic problems should arise, expected risk-adjusted returns appeared attractive, especially where the denomination of loans in US dollars eradicated any potential exchange rate risk for lenders. Borrowers were disinclined to hedge against the exchange rate risk that they carried since they believed that governments were strongly committed to maintaining the dollar value of their domestic currencies and avoiding substantial depreciation. Foreign investors seemed little concerned by weakening current accounts and by dwindling reserves but overimpressed by what appeared to be reasonable fiscal performance.



During the early to mid-1990s the Asian economies were frequently presented and perceived as ‘miracle economies’, and markets exhibited unfounded faith that the miracle would continue. The experience of Japan just a few years previously, where rapid economic growth had been brought to an end by asset-market and housing-market bubbles that burst, was overlooked or regarded as irrelevant. Once again markets apparently believed that this time it was different. It was only when they realised that forward foreign exchange commitments meant that Thailand’s international reserves were almost fully depleted, and in the circumstances surrounding the related devaluation of the Thai baht, that the market mood completely changed, and as Figure 6 shows, FDI, portfolio investment and bank lending to East Asia and the Pacific all fell. The crisis in Thailand changed the market psychology and the crisis spread to other regional neighbours.

The mental model that had previously underpinned lending decisions was abandoned. With the devaluation having significant adverse effects on balance sheets and with the IMF initially favouring economic adjustment that placed excessive emphasis on contractionary fiscal policy, economic prospects were now of prolonged recession rather than sustained and miraculously high rates of economic growth. Capital inflows suddenly stopped and were reversed.

### **The Eurozone and other crises in the 2000s and beyond**

Similar characteristics have subsequently been observed in the context of the Eurozone crisis and the capital surges and sudden stops in Latin American and other emerging economies in the period after 2009. The picture is reflected in Figure 2, which shows a pattern of volatile capital flows to developing countries in the period after 2008; surges, sudden stops and reversals are to be found for bank lending, portfolio investment and direct investment. At first a combination of monetary expansion and recession in advanced economies (push factors), alongside apparently relatively strong performance across a limited range of easily observable economic variables in many developing and emerging economies as well as peripheral Eurozone countries (pull factors), may have bred over-confidence and excessive optimism. Contra-indications were downplayed. The momentum of the

market's mood seemed often to take over from measured economic evaluation until unanticipated events revealed economic shortcomings and sparked a crisis that then sent the whole process into reverse: just as, on the way up, the change in market psychology had induced an over-reaction.

## **Concluding remarks**

In a world with a high degree of international financial integration it is important to understand why capital moves between countries. Capital mobility has potentially significant consequences for many aspects of macro-economic performance and policy. A feature of international capital movements has been their susceptibility to surges, sudden stops and reversals. Although volatility does not necessarily lead to problems, it is helpful to know why this pattern has been exhibited.

Two extreme interpretations are available. The first views capital flows as reflecting the rational analysis of reasonably complete sets of information that allow assessments of economic performance and policy to be made. From these, calculations of return and risk are possible, upon which lending decisions are based. In this context volatility implies that factors reflecting economic fundamentals are themselves unstable and can change radically at specific moments in time.

The second interpretation views capital flows as being determined by waves of extreme market optimism and pessimism that are, at best, only loosely related to underlying economic fundamentals. Once capital inflows to a country or region commence they tend to acquire a momentum of their own that continues until an event occurs that is sufficiently strong and significant to alter market psychology.

In this article we have discussed a range of economic and behavioural factors that may be combined to offer a more complete explanation of international capital volatility. There are, of course, difficulties with this ecumenical approach. When an approach tries to be all-embracing and more realistic it also tends to become much less precise and much more awkward to test. Methodologically, it is difficult to identify the relative importance of the different factors that may be at work. Some are easier to measure than

others. As a consequence, it is easier to say which explanations do not work than to say which ones do. Thus, where capital flows *ex post* appear to be inconsistent with an approach that emphasises economic fundamentals, it may be that markets found it difficult at the time to form an accurate view on them and their relative importance, rather than that they paid insufficient attention to them or ignored them altogether. Moreover, it is easier to identify certain general psychological traits and contemplate whether the revealed pattern of capital mobility has been consistent or inconsistent with them than it is to come up with an operational way of quantifying the effect of any particular trait, other than by calculating the deviation from what might have been expected on the basis of factors that are relatively easy to measure. It is tempting to use broadly defined behavioural factors as a way of explaining a residual that is left unexplained by economic factors.

Having said this, it seems improbable that there is just one specific combination of economic and behavioural factors that offers a universally applicable and tightly defined explanation of capital volatility. Different factors are likely to have varying degrees of significance in different cases. They are likely to vary across different types of capital such as bank lending, portfolio investment and direct investment. Moreover, their importance is also likely to vary at different stages of a capital flow cycle; behavioural factors are better equipped to explain why surges and reversals gather momentum once started than they are at explaining turning points. Whilst it is frustrating not to be able to put forward a neat and precise explanation of capital volatility, it may simply be the case that capital volatility is a phenomenon that does not lend itself to a narrow, neat and precise explanation. Recognising this represents an important step towards formulating a better understanding.

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