

UNCERTAINTY IN THE GLOBAL CAPITAL MARKET AND THE IMPLICATIONS FOR ECONOMIC ACTIVITY

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It has become increasingly evident that international capital flows have firmly occupied the driving seat in the international economy. As early as 1986, Peter Drukker in referring to the emerging “symbol” economy argued that capital movements (instead of trade in goods and services) are driving the world economy. He asserted (1986:12): “In the world economy of today, the real economy of goods and services and the symbol economy of money, credit and capital are no longer bound tightly to each other; they are indeed, moving further and further apart...”

Traditional economic theory views the global capital market as a **source of financing** of international trade and investment in goods and services (the real economy). In such a world, relative rates of return (including interest rates) and exchange rates, which influence the cost of capital, would play an important role in determining global capital movements. Real economic activity would influence relative rates of return and exchange rates across countries, which would then influence the flow of capital in terms of direction and magnitude.

However, in today’s world, the global capital market has far exceeded its role as a source of financing of activities in the real economy. It has become an important medium, through which international investors pursue short-term speculative gains. Given a system of floating exchange rates, and the importance of short-term and portfolio capital flows, the traditional link between real economic activity and global capital movements has, to a large extent, been reversed. Global capital flows seem to influence exchange rate and interest rate movements, which then impact on real economic activity. Moreover, the very nature of short-term capital has led to increased volatility in the global capital market, which then means greater instability and uncertainty in the foreign exchange market. The unpredictable effects on exchange rate movements then act as an important constraint on economic activity.

Given the dominance of short-term and portfolio capital flows and their consequent real economic effects, the question that follows is: Why is there an increasing preference for shorter-term portfolio investments over longer-term capital investment? It is argued that the decision to engage in shorter-term investments, despite the greater profit potential of longer-term investments, rests on the degree of uncertainty that international investors experience/confront in the global capital market. **Therefore the volatility in the global capital market is in large part, due to investors’ behaviour aimed at reducing their exposure to uncertain returns, as well as attempting to exploit uncertainty-related movements in prices for speculative gain.**

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This paper focuses on the nature of such uncertainty and its implications for economic activity. In order to set the scene for the main areas of discussion, it will be useful to start by looking at the changed role (alluded to above) of international capital flows in the domestic economy. This is followed by a discussion and an analysis of the volatility of international capital flows. Thereafter the nature of uncertainty in the global capital market is addressed, followed by an analysis of the implications for economic activity. Much of the discussion focuses on developing/emerging/transitional economies.

THE CHANGED ROLE OF INTERNATIONAL CAPITAL FLOWS IN THE DOMESTIC ECONOMY

In the domestic economy there is an important link between the current account, capital flows and the financing of gross capital formation. Stephen Grenville (1998: 2) states that an *a priori* case can be made that international capital flows are good, in that it supplements domestic savings in the financing of gross capital formation. The relationship between capital flows and the financing of gross capital formation may be expressed as follows:

$$\text{NCF} = (\text{GCF} - \text{GDS}) + \Delta\text{GFR} \quad (1)$$

Expression 1 indicates that net capital flows (NCF) could either supplement gross domestic savings (GDS) in the financing of gross capital formation (GCF) or it could move into the reserves of gold and foreign currency (GFR) or some combination of the two. Another expression may also be used to show the relationship between capital flows and the current account balance:

$$\text{NCF} = -\text{CA} + \Delta\text{GFR} \quad (2)$$

Expression 2 simply indicates that net capital inflow (outflow) could reflect itself as a current account (CA) deficit (surplus) or an increase (decrease) in reserves or some combination of the two.

Expression 1 indicates that foreign capital flows can act as an important supplement to domestic savings in financing gross capital formation. At the same time expression 2 indicates that foreign exchange generated from a net capital inflow may be used to finance a current account deficit. Both expressions 1 and 2 reduce the role of capital flows to that of financing real economic activity. This is the traditional view of capital flows, as alluded to by Grenville (1998: 1): “Traditionally, the focus has been on the real sector counterparts of these: the savings/investment balance and the current account surpluses and deficits. Both theory and practical policymaking often assume that these are the “movers” of the action, with capital flows largely a passive, accommodating residual.”

However experience shows capital flows as being far from a passive and accommodating response to real economic activity in capital importing countries. With reference to the 1997 Asian crisis, Grenville (1998: 1) states that capital flows, preceding the crisis, significantly exceeded current account deficits. Therefore they were excessive in relation to what could be absorbed by the real economy. Excessive capital inflows (relative to current account deficits) could potentially end up financing less productive capital projects or excessive household or government consumption expenditure.

Table 1 highlights the important role played by capital flows. The table is based roughly on expressions 1 and 2 which show the relationship between gross domestic savings (GDS), gross capital formation (GCF), the current account balance (CA), and net capital flows (NCF). The information on capital flows is in respect of private (instead of aggregate) flows. In order to provide some focus on developing/emerging economies, the table covers three regions, viz. Latin America and Caribbean, East Asia and Pacific, and Sub-Saharan Africa. Five periods are covered, the first three of which, are based on the analysis by P J Montiel (1998). The four-year period 1978-1981 is described as the pre-debt crisis period. The eight-year period 1982 – 1989 is presented as the debt crisis period (referring to the Third World debt crisis). The seven-year period 1990 – 1996 is referred as the post-debt crisis period. The two-year period 1997-1998 is presented as the East Asian crisis period. Finally the three-year period 1999-2001 is described as the post-East Asian crisis period.

Table 1: The Changed Role of Capital Flows
(Annual averages, percentage of GDP)

	1978-1981 Pre-debt crisis period	1982-1989 Debt crisis period	1990-1996 Post-debt crisis period	1997-1998 East Asian crisis period	1999-2001 Post-East Asian crisis period
Latin America and Caribbean					
Gross domestic savings	22.57	23.00	20.11	19.26	19.03
Gross capital formation	23.97	19.94	20.35	21.90	20.11
Current account balance	-1.41	3.06	-0.24	-2.63	-1.08
Net private capital flows	4.17	1.46	3.26	6.00	4.53
East Asia and Pacific					
Gross domestic savings	32.09	31.62	36.27	37.53	35.23
Gross capital formation	32.02	32.13	36.28	32.94	29.67
Current account balance	0.07	-0.52	-0.01	4.58	5.57
Net private capital flows	1.57	1.84	5.42	4.69	2.71
Sub-Saharan Africa					
Gross domestic savings	21.01	17.39	15.79	15.59	16.28
Gross capital formation	21.52	17.02	16.41	17.99	17.41
Current account balance	-0.51	0.36	-0.62	-2.40	-1.13
Net private capital flows	1.98	1.13	1.24	4.06	4.05

Source of basic data: World Bank, Global Development Indicators

It is clear from the table that capital flows far exceed their role as a mere source of finance for capital formation or current account deficits. In the case of Latin America and the Caribbean, net private capital flows have, in the periods subsequent to the debt

crisis period, exceeded the current account deficits by more than 3 percentage points of GDP.

Net private capital flows in East Asia and the Pacific, increased phenomenally as a percentage of GDP from 1.57 percent in the 1978-81 period to 5.42 percent in the 1990-96 period. In the latter period, net private capital flows exceeded the current deficit by well over 5 percentage points. However, this situation turned around since the East-Asian crisis of 1997-98. Although the increase in net private capital flows, as a percentage of GDP, in Sub-Saharan Africa was slower than in the other two regions, the flows were always significantly in excess of the current account deficits.

VOLATILITY OF INTERNATIONAL CAPITAL FLOWS

As suggested in the opening remarks of this paper, portfolio transactions or short-term capital movements, in pursuit of speculative gains, dominate international capital flows. Hence, they play an important role in exchange rate movements, which would then impact on the real economy. This important possibility seems to be overlooked by traditional economists. John T Harvey (1997: 3) made the observation: "...though all economists are well aware of the fact that portfolio transactions dominate daily volume, exchange rate models typically assume the primary causal role is played by trade flows. The reason for this is that neoclassicism expects the financial or monetary side of the economy to serve as a passive engine of growth for the real side. Financial flows arise only in accommodation of the demands of the real side of the economy, and are not of themselves important."

Given the importance of short-term capital flows in the global capital market one needs to understand the essential difference between such flows and long-term capital flows, as well as the consequent impact on the real economy. Charles WL Hill (2000: 353) refers to the distinction made by Harvard economist, Martin Feldstein, between "hot money" and "patient money". Hot money refers to short-term capital flows, while patient money refers to long-term capital flows. According to Feldstein, most capital flows are hot money, in pursuit of temporary gains and moves in and out of countries as soon as conditions change. Patient money, on the other hand, is relatively scarce and that may be due to the lack of reliable information concerning foreign investments. Feldstein attributes the 1994 Mexican crisis to too much hot money moving in and out of the country, relative to patient money (Hill, 2000: 353). He places the blame on the lack of information on long-term investment opportunities. Whatever the reason for the preference for short-term investments, there will inevitably be less funds available for the financing of capital projects however profitable the latter may be. Over and above the real effects of related exchange rate volatility, the lack of funds for profitable capital projects will hamper real economic activity.

Although hot money (short-term capital movements) may not be driven solely by the need for temporary gains, by their very nature, they possess the potential to contribute to instability in a country because they can move out as fast as they came in, as conditions

in that country or elsewhere, change. The decision to engage in short-term investments despite the greater profitability of longer-term investments rests on the degree of uncertainty confronted by investors and their attitude towards it. Table 2 compares the different components of private capital flows in terms of their magnitude and variability over four time periods. The time periods are the same as in table 1, except that periods 4 and 5 have been collapsed into one.

Table 2: The Magnitude and Variability of Capital Flows and their Components
(Current US\$, millions)

	1978-1981		1982-1989		1990-1996		1997-2001	
	AVE	STD DEV	AVE	STD DEV	AVE	STD DEV	AVE	STD DEV
Latin America and Caribbean								
Net private capital flows	28985	8783	11252	9625	51110	30459	101872	22416
Bank and trade-related lending	21509	7087	5987	7931	5456	6049	14295	18355
Foreign direct investment	6084	1947	5747	1553	21913	12990	74457	8328
Portfolio investment	*1183	*516	-482	1851	23742	16994	13120	8035
Portfolio investment – bonds	1358	858	-581	1887	12627	11185	11223	6951
Portfolio investment – equities	*67	*96	100	191	11115	7763	1897	6752
Short-term debt flows	14095	7460	-3105	13348	8746	8259	-4963	6600
East Asia and Pacific								
Net private capital flows	5658	2076	9526	2544	57023	30803	52936	18829
Bank and trade-related lending	4060	1798	3882	1560	9198	3964	-6779	10001
Foreign direct investment	1372	620	4138	2181	34170	19261	52327	7377
Portfolio investment	226	153	1506	1031	13655	11113	7389	8009
Portfolio investment – bonds	228	153	1093	1111	5083	5408	2569	6087
Portfolio investment – equities	-2	2	413	877	8573	7044	4820	8549
Short-term debt flows	2885	560	1484	2647	14304	6902	-7423	27339
Sub-Saharan Africa								
Net private capital flows	4463	315	2768	1689	3797	2622	13168	2354
Bank and trade-related lending	3663	371	1511	1444	-262	907	-1673	311
Foreign direct investment	726	480	1284	614	2716	1314	8524	3098
Portfolio investment	75	112	-28	22	1344	1617	6317	3578
Portfolio investment – bonds	73	110	-28	22	472	545	1080	601
Portfolio investment – equities	0.8	4	0.8	2	872	1269	5236	4035
Short-term debt flows	1433	809	456	2309	3780	1865	-2108	3525

*Calculations include 1980 and 1981 only

Source of basic data: World Bank, Global Development Indicators

The phenomenal expansion in private capital flows is clearly evident in table 2. In Latin America and the Caribbean, the average annual capital flow in the 1997-01 period was more than 3.5 times the average flow in the 1978-81 period. For East Asia and the Pacific, despite the 1997 East Asian crisis, the average capital flow in the 1997-01 period was more than 9 times the average flow in the 1978-81 period. Although the average capital flow in Sub-Saharan Africa was the lowest relative to the other two regions, the average flow in the 1997-01 period was just under 3 times that of the 1978-81 period.

Bank and trade-related lending and short-term debt flows played the most important role in all three regions in the pre-debt crisis period of 1978-81. These flows were not only more important in Latin American and the Caribbean in terms of size (relative to the other two regions), they also exhibited a greater degree of variability. After the debt

crisis period of 1982-1989, the relative importance of these flows diminished. This pattern was already evident in Latin America and the Caribbean and East Asia and the Pacific in the 1990-96 period. Short-term debt flows continued to play a relatively more important role in Sub-Saharan Africa in the 1990-96 period. In the 1997-01 period (inclusive of the East Asian crisis), all three regions experienced a sharp reversal in short-term debt flows. There was also a sharp reversal in respect of bank and trade-related lending in the same period in East Asia and the Pacific and Sub-Saharan Africa.

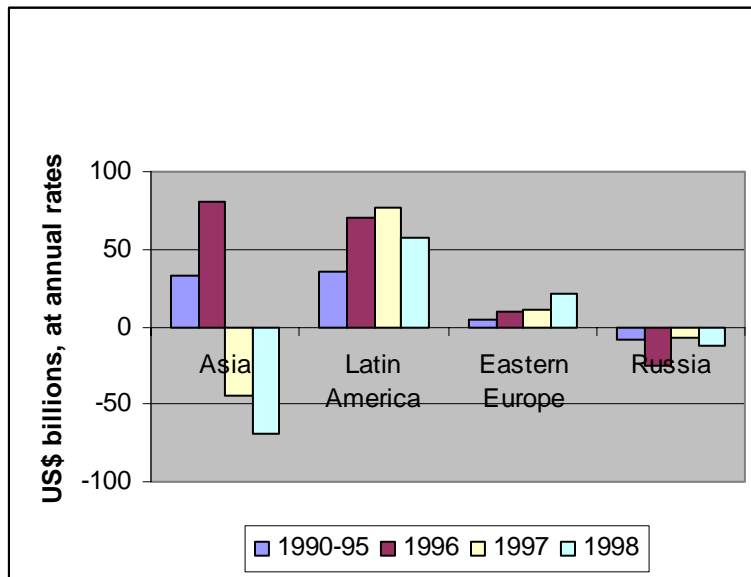
Despite the general surge in private capital flows in the 1990-96 period, there were marked differences in terms of size, composition and variability in the three regions. In Latin America and the Caribbean, portfolio investment dominated foreign direct investment in terms of size and variability. In East Asia and the Pacific, foreign direct investment dominated portfolio investment in terms of size and variability. Although foreign direct investment in Sub-Saharan Africa increased significantly in 1990-96 from the previous two periods, it was significantly lower than the other two regions. Furthermore, although foreign direct investment dominated portfolio investment in Sub-Saharan Africa in 1990-96, a greater degree of variability was experienced in respect of portfolio investment. Variability in respect of portfolio investment dominated the scene in the 1997-01 period in both East Asia and the Pacific and Sub-Saharan Africa. A closer look at portfolio flows reveals that the variability stems from trade in equities relative to bonds. It is apparent that portfolio equity investments, together with short-term debt flows, exhibit a high degree of volatility and hence, possess a large potential for reversibility.

An important concern regarding the volatility of capital flows is that short-term and portfolio capital tend to be predisposed to **excessive inflows and abrupt reversals** as and when there are changes in sentiment and risk perceptions. This concern has become particularly important with the spate of crises in the 1990s (Agenor, 2001: 4): the 1994 Mexican crisis; the 1997 Asian crisis; the 1998 Russian crisis; and the 1999 Brazilian crisis. Large-scale capital outflows can result in painful macroeconomic consequences for developing/ emerging/ transitional economies in terms of their potential to generate instability. The macroeconomic effects of large reversals in capital inflows will be addressed later in this paper.

In analyzing the volatility of capital flows in the context of the 1997 Asian crisis, Grenville (1998: 10) observes: “One of the characteristics of capital flows in the crisis was their *reversal* – it was not simply a matter of the capital-receiving countries being forced to pay somewhat more for the capital, because of a changing perception of risk. New flows dried up and existing capital fled, and could not be lured back at any price. Considerations of risk seem to be a binary (on/off) process, rather than a monotonic function.” Grenville (1998: 11) also, in referring to the traditional distinction between uncertainty and risk, argues that the relevant concept describing the Asian crisis is uncertainty rather than risk. The distinction between uncertainty and risk is addressed below.

Figures 1a to 1c, based on information from the 69th annual report (1999) of the Bank for International Settlements (BIS), provides a clear picture of the extent of capital reversals as a result of the 1997 Asian crisis. Unlike the previous tables, the figures provide a narrower focus in terms of periods and countries per region². Figure 1a clearly shows the abrupt decline in private capital inflows in emerging economies in 1997, as compared to the surge in such flows in 1996. By 1998, private capital inflows to emerging economies virtually dried up. Figure 1b also shows the extent to which the deficit in private capital inflows was compensated for by an increase in official capital inflows. The volatility of the capital inflows is also evident in the net changes in reserves (figure 1c). According to the BIS Report, Asia experienced a sharp reversal in bank lending and flows in securities in the second half of 1997. The actual crisis Asian economies themselves (Indonesia, Korea, Malaysia, Thailand and the Philippines) experienced a decline in those flows from almost +5.5 percent of GDP in 1996 to -10 percent in late 1997.

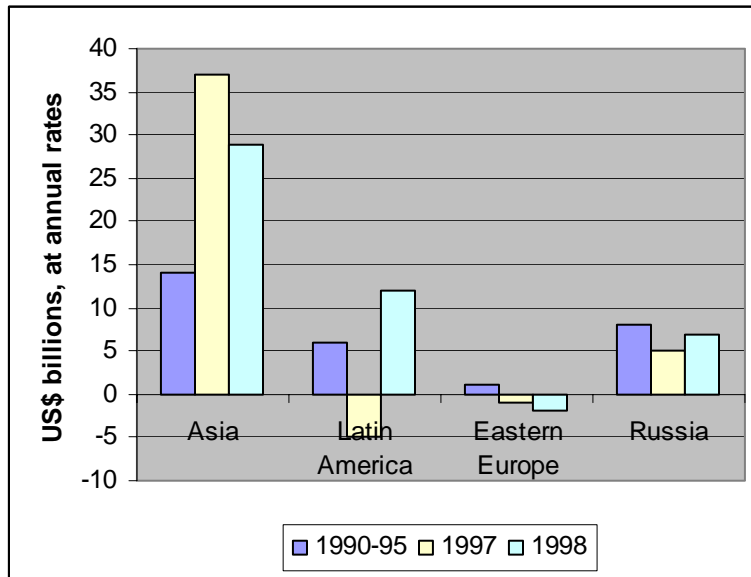
Figure 1a: Net Private Capital Inflows in Emerging Market Economies



Source: BIS, 69th Annual Report, 1999 (Ch.3)

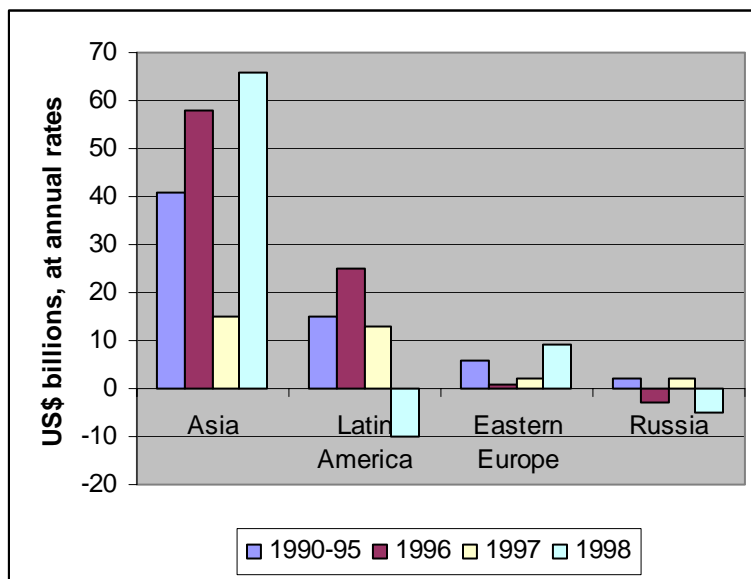
² Asia: China, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand
Latin America: Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela
Eastern Europe: The Czech Republic, Hungary and Poland

Figure 1b: Net Official Capital Inflows in Emerging Market Economies



Source: BIS, 69th Annual Report, 1999 (Ch. 3)

Figure 1c: Net Increases in Reserves in Emerging Market Economies

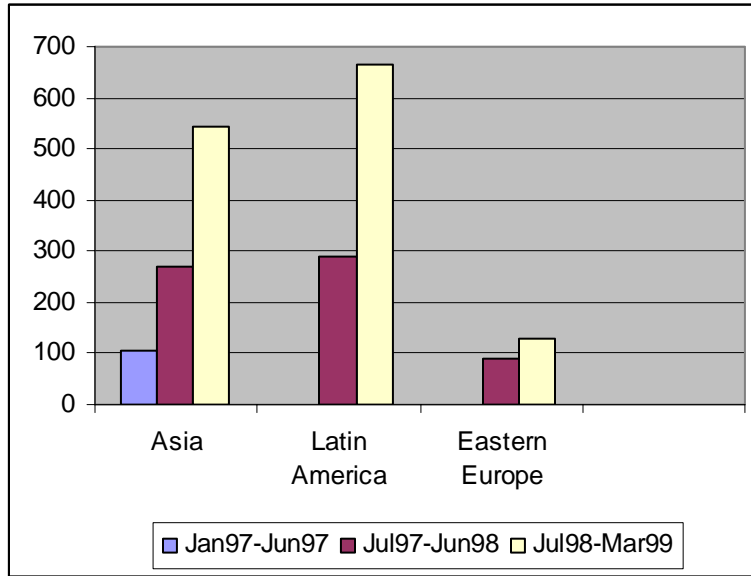


Source: BIS, 69th Annual Report, 1999 (Ch. 3)

The uncertainty that prevailed during the crises in emerging markets is also reflected in bond spreads and their volatility. Bond spreads in emerging markets over benchmark US Treasury bonds measure risk perceptions in emerging markets. Figures 2a and 2b, based on information from the 69th annual report of the BIS, gives an indication of the trend and volatility in emerging market bond spreads from 1997 to early 1999. There was clearly a

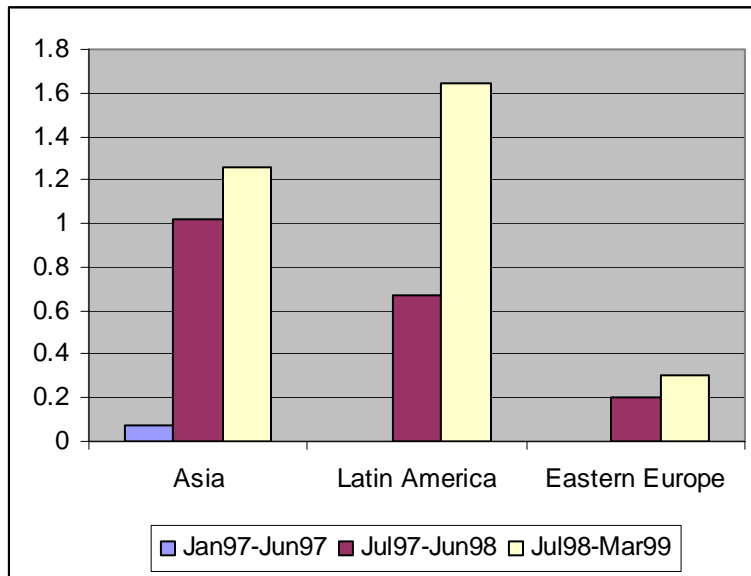
widening of bond spreads in emerging markets and an increase in their volatility over that period.

Figure 2a: Daily Mean of Emerging Market Bond Spreads
(Over benchmark US Treasury Bonds - basis points)



Source: BIS, 69th Annual Report, 1999 (Ch. 3)

Figure 2b: Daily Volatility of Emerging Market Bond Spreads
(Over benchmark US Treasury Bonds - basis points)



Source: BIS, 69th Annual Report, 1999 (Ch. 3)

According to the BIS (69th Annual Report: 35): “Although spreads did not stay at the high levels of late 1997 and early 1998, neither did they return to pre-crisis levels in the ensuing months. Moreover, volatility remained high in the face of unexpectedly deep recessions in much of Asia, political and social unrest in Indonesia and growing evidence that countries as dissimilar and distant as Chile and South Africa were also being affected.”

THE NATURE OF INVESTOR UNCERTAINTY IN THE GLOBAL CAPITAL MARKET

This section examines the meaning of true uncertainty in the context of investment decisions as opposed to the concept of mathematical risk. Thereafter various aspects relating to investor uncertainty in the global capital market will be discussed. Although the various aspects are interrelated in some way or the other, an attempt will be made to discuss them separately.

Uncertainty versus Mathematical Risk

In order to have a clear understanding of the concept of uncertainty, one needs to distinguish it from the concept of mathematical risk. Porterfield (1965: 107-109) clearly distinguishes between these two concepts. Mathematical risk refers to circumstances in which plural (more than one) outcomes are possible candidates to a particular decision, and their values and probabilities can be established in advance. Uncertainty, on the other hand, characterizes situations where there are also more than one possible outcome to a decision, but their values and probabilities cannot be objectively determined in advance. Perhaps, Lawson (1995: 914) captures the meaning of uncertainty a little more clearly and succinctly. He states that “uncertainty is not merely a situation in which the probability relation is known and the primary proposition ... relative to the evidence, gives rise to a numerical probability that is less than unity.” Instead, “uncertainty ... arises when the probability relation is numerically indeterminate and non-comparable ... to other relations.”

The global economy is characterized by the aggregate behaviour of a large number of individuals (and institutions) with varying motives. This mass interaction of individuals and institutions is bound to lead to circumstances which go beyond the control of any single institution, individual or even government. Decision-making in such an environment will not only be characterized by the plurality of outcomes, but also by the fact that their dimensions and probabilities cannot be objectively (mathematically) specified in advance. As Lawson (1985: 909) aptly put it: “Uncertainty, as opposed to mathematical risk, is a pervasive fact of life.” An economy (global or domestic) is governed by human behaviour and change is the only constant. Hence, forces generated within such a system would make it difficult, if not impossible, to objectively allocate a particular value and/or probability to the outcome of a particular variable.

The global financial market comprises the mass interaction of a large number of individuals and institutions competing for available funds and investment opportunities. Such an environment lends itself to the type of uncertainty characterized by unknowable future values and probabilities. Indeed, the decisions and actions of investors themselves may influence the direction and extent of future outcomes. However, even that relationship cannot be objectively specified in advance. Uncertainty of this nature has much to do with the element of time prevalent in investment (or virtually all economic) decisions. The element of time is discussed below. Real time (as opposed to logical time) is asymmetric and carries with it, the potential for variables relevant to a decision, to change. This would then, inevitably, have an impact on the portfolio decisions of an investor.

The Role of Fundamentals

Given the above description of the type of uncertainty prevalent in investment decisions, an investor will make use of available information (of so-called fundamentals) to form, at best, an idea about the future outcome of a proposed investment. This would involve a great degree of **subjectivity** and also reliance on the behaviour of other investors pursuing similar investments. However the **information** at his disposal will still not “provide a sufficient basis for a calculated mathematical expectation” (Keynes, 1973: 152). In fact Keynes (1973: 149) in his discussion on capital assets, questions the way in which existing knowledge of fundamentals/factors may be used to estimate the prospective yield of a capital asset: “The outstanding fact is the extreme precariousness of the basis of knowledge on which our estimates of prospective yield have to be made. Our knowledge of the factors which will govern the yield of an investment some years hence is usually very slight and often negligible.” Herein also lies a possible reason as to why investors may shy away from longer-term capital investments and opt for shorter-term portfolio investments. As mentioned above and discussed below, time is a crucial element in investment decisions. Time carries with it, the potential for relevant variables to change. The longer the period, the greater is the potential for change.

Paul Davidson (1998: 5), in reiterating Keynes’s analysis of uncertainty, states that even if existing fundamentals or information did allow one to estimate an objective probability distribution of possible future outcomes, such calculations would still not be reliable for forecasting the future. Davidson rejects, unequivocally, the ergodic axiom, which serves as a necessary foundation for efficient market theory. In his 1991 article, Davidson states (italics included): “By definition, an ergodic stochastic process simply means that averages calculated from past observations cannot be persistently different from the time average of future outcomes. *In the ergodic circumstances of objective probability distributions, probability is knowledge, not uncertainty!*”

According to the ergodic axiom, future outcomes are predetermined by today’s fundamentals, and such outcomes cannot be changed by human activity (Davidson, 1998:2). In the context of financial investments, their future returns would be inevitable outcomes of fundamentals, which exist today, and they cannot be altered by investor behaviour or actions. It therefore follows that, within an ergodic world, an observed data

set (existing information) allows for the estimation objective probabilities that provide statistically reliable information about the conditional probability function that will decide future outcomes (Davidson, 1998:2). According to Keynes, financial markets cannot be presumed to be efficient and ergodic, and therefore the prevailing information set cannot serve as a reliable guide to predicting future outcomes (Davidson, 1998: 5). The economy is not a stationary process through time and future outcomes are themselves, are influenced by the very decisions of economic agents. Hence, economic agents live in a non-ergodic world characterized by uncertainty, in which their own psychology, observations, levels of confidence and experiences govern their decisions and actions.

Before moving on to the next section, it would be useful to take a slightly different look at the role of fundamentals, in the sense that they constitute the prevailing circumstances within which investment decisions are made. It was mentioned above that in an ergodic world future outcomes are determined by today's fundamentals. This means that today's fundamentals would constitute the circumstances that will dictate that investors behave in a particular way so that predetermined outcomes will be achieved. Therefore investor behaviour would be determined by circumstances in a fixed manner without any room for the role of subjectivity in the interpretation of circumstances. Alternatively, a change in investor behaviour will only result if there is a change in circumstances. However, is it not possible that investor behaviour could change as a result of a change in belief or attitude without any corresponding change in circumstances? Such a possibility would then highlight the importance of subjectivity in investment decisions.

Although Coddington (1982) attaches little significance to this view of uncertainty for analytical purposes, his distinction between two causes of erratic investment behaviour is useful. The first cause relates to erratic changes in beliefs about the future, resulting from erratic changes in prevailing circumstances. The second relates to the possibility alluded to in the previous paragraph, i.e. beliefs about the future change even though there is no corresponding change in circumstances (or the fundamentals which constitute such circumstances). Coddington (1982: 482) argues that such a view of subjectivism effectively creates a 'wedge' between behaviour and circumstances and is hence, misleading for analytical purposes. However such subjectivity in investment decisions that detaches from prevailing circumstances (or fundamentals) may actually be quite important in understanding investment behaviour in capital markets and the dominance and volatility of short-term portfolio investments.

The Elements of Time and Distance

It is perhaps superfluous to say that the key-differentiating factor between short and long-term investments is the element of time. Time however, carries with it, the potential for changes in variables that would determine the extent to which the actual outcome of a decision deviates from its expected counterpart. The greater the time period of an investment the greater the potential is, for changes in variables relevant to that investment. Hence, when confronted with the decision to invest, as well as the time period over which to make an investment, the investor's uncertainty relates to the extent

or probability of the actual outcome of his proposed investment deviating from that which he expects, given his information set about prevailing and expected conditions relevant to the investment. The greater the degree of uncertainty about his information set and hence the future outcome of an investment proposition, the more likely will he opt for a short term investment in search of temporary gains. A short-term investment then offers him the advantage of quickly disposing of his investments in a country, should there be a change in conditions and sentiment.

The element of time features prominently in Post Keynesian economics, which proposes that the economy is a process in historical time, as opposed to logical time (Davidson, 1981: 158-159). Post Keynesians point out that real time is an asymmetric variable in that the past is known, but not the future. Hence time carries with it the element of uncertainty and market forces simply cannot account for such uncertainty. Phillip Arestis (1992: 91) states: “Market forces cannot account for the unknowability and unpredictability of the future and so can only disseminate incomplete, even misleading, information.”

Arestis (1992: 92) also alludes to the irreversible nature of time in the sense that an economic decision taken in the present involves commitments, which have to be undertaken with a view to realizing the expected outcome from that decision in a future period. Long-term investment decisions, especially in respect of capital projects, would involve large commitments in terms of money. Very often such commitments are considered to be irreversible (see for example, Robert Pindyck, 1988: Irreversible Investment, Capacity Choice and the Value of the Firm). Given the long-term nature of such investments, and the likelihood of actual outcomes deviating from expected outcomes, the irreversibility of financial commitments will merely increase the uncertainty of the investor. This will therefore provide an incentive for the investor to opt for the shorter-term, portfolio type of investment.

The degree of investor uncertainty is not only associated with the element of time, but also with the element of distance inherent in the global capital market. Hill (2000:353) states: “Despite advances in information technology, it is still difficult for an investor to get access to the same quantity and quality of information about foreign investment opportunities that he can get about domestic investment opportunities.” He goes on to say that different accounting conventions in different countries will further exacerbate the information gap and increase the difficulty in making a direct comparison between cross-border investment opportunities. It therefore follows that the inadequacy of quality information regarding foreign investment opportunities will encourage investors to engage in short-term speculative investments. This would then create the potential for instability due to increased likelihood of reversals in capital flows in the face of changing conditions and sentiment. However this source of uncertainty would diminish as the global capital market continues to grow in terms of magnitude and sophistication and more reliable information is made available.

The Need for Liquidity

Given the nature of uncertainty inherent in the process of time, investors would prefer to operate in a market which is able to meet their unexpected liquidity needs. Davidson (1998: 5) notes that in a nonergodic system, where existing data does not provide a reliable basis for predicting future outcomes, the primary function of financial markets is to provide liquidity. Such a function is important for investors to be protected against the risk of not being able to meet unpredictable future obligations. The degree to which investors wish to maintain liquidity is directly related to the level of their uncertainty. Increased uncertainty will induce investors to maintain greater liquidity in the form of money or liquid assets. Liquid assets include financial instruments, which can be easily sold without incurring significant costs.

At any moment a desire to maintain greater liquidity will induce investors to purchase financial assets that can easily be disposed of, should there be an increase in uncertainty or simply to cater for the need to meet unanticipated obligations. The need for increased liquidity would then hamper the financing of new capital projects and hence, real economic activity. This could very well happen in a bear market (Davidson 1998: 6), when an excessive need for liquidity hinders the production of new investment capital even though real resources are idle and readily available to produce such goods.

The link between changing liquidity needs and real economic activity can also be analyzed by bringing into consideration the characteristics of liquid assets (including money). Davidson (1981: 167-170) provides two essential characteristics of liquid assets. Firstly, liquid assets have a zero elasticity of production. Over and above the actions of a central bank and/or the bank system, an increase in the demand for money will not lead to a derived increase in the demand for factors of production to produce money or for that matter, other liquid assets. Secondly, liquid assets have a zero elasticity of substitution. An increase in the demand for liquid assets will lead to an increase in their price. The increased price of liquid assets will not cause the increased demand for such assets to be diverted towards other goods.

Suppose that there is an increase in uncertainty, precipitated by some or other event. Economic agents will postpone their expenditure on durable goods and investors may be discouraged from placing their money in long-term investments. The reduced demand for durable consumer goods and capital goods will lead to an increase in unemployment. In attempting to maintain a higher degree of liquidity they will opt for either holding money balances or purchasing liquid assets. Despite the increased demand for liquid assets and their resultant higher price, both the above characteristics of liquid assets will prevent the reallocation and reemployment of workers.

The need to maintain liquidity then provides a reason why investors would opt for short-term portfolio investment over long-term investments. In the event of increased uncertainty, there will be an increase in capital outflows as short-term investments become liquidated.

Expectations under Uncertainty in the Global Capital Market

The nature of uncertainty discussed in the preceding sections, presents a few complications regarding the role of expectations in investor behaviour. The debate around the formation and role of expectations under uncertainty features regularly in economic literature. Initially a brief discussion of the concept of expectations and the formation thereof will be undertaken and then it will be discussed in the context of financial investment behaviour. Much of the ensuing discussion brings into consideration the arguments presented in the previous discussions.

An expectation is essentially a mental process, which involves forming an idea of the future outcome of a variable/s. It is therefore forward-looking in nature and the process of expectations formation is influenced by an individual's intellect, memory, emotion and attitude (Chetty and Greying, 2001: 220). Ozga (1965: 23-48) distinguishes between four components, which constitute an expectation, viz. the agent, subject, the evidence and the prospect.

In the context of the present discussion, an agent could take the form of a financial investor whose subject of concern is an investment proposal. The evidence refers to his information set, which includes past, current and anticipated future values of relevant variables (such as exchange rates and interest rates). The information set may also include the expected actions of other investors in the market. The prospect is simply the agent's view of the most probable outcome of his decision. In financial markets, the prospect is simply the investor's view of the future market valuation of his portfolio. Over time various approaches have been adopted in the treatment of expectations in economic theory. They include static expectations, adaptive expectations, exogenous expectations and rational expectations. Given the scope of this paper, these approaches will not be discussed. The reader is referred to the comparisons made by G.K. Shaw (1984: 19-35). However, during the course of the ensuing discussion, an attempt will be made to bring into consideration the various dimensions of expectations formation in the global capital market. The various dimensions follow either directly or indirectly from the preceding discussions.

The first dimension focuses on the question of efficiency in financial markets, the role of fundamentals and the need for liquidity. It was argued that financial markets cannot be presumed to be efficient and ergodic. Therefore prevailing information on so-called fundamentals (evidence) cannot serve as a reliable guide to predicting future outcomes. Neoclassical theory premised on the rational expectations hypothesis, on the other hand, emphasizes the importance of fundamentals in predicting future outcomes. According to the rational expectations hypothesis, economic agents make the most efficient use of available information consisting of past and current values of relevant variables, in the formation of expectations or forecasts. A stronger version of the hypothesis states that economic agents' expectations of economic variables are the same as mathematical expectations of those variables as predicted by the relevant economic theory (Muth, 1961: 316). This means that on average, forecasts will be correct and that agents do not make systematic errors over time. This assumption will be relevant in an efficient and

ergodic financial system, in which expectations based on fundamentals translate passively into actual outcomes.

However in a non-ergodic financial world, in which market forces are inefficient in providing correct and adequate information of future outcomes of investment decisions, existing fundamentals do not provide a reliable basis for predicting future outcomes. Both past and current observations do not provide reliable knowledge of future outcomes (Arestis, 1992: 91). Furthermore the formation of rational expectations is hampered by the asymmetrical nature of real time, and the non-stationarity of the economy. According to Davidson (1998: 7): "... a change in the fundamentals, must already be encapsulated in the information existing at the initial instant for rational expectations to be formed. If one does not presume that every possible future regime change is already nested in existing probabilistic information about every contingency in every state of the world, then financial markets cannot be claimed to be efficient as today's real capital allocations can result in future possible egregious costly errors."

The difficulty experienced in relying on existing information to predict future outcomes, implies that expectations will always be uncertain. Such uncertainty creates a need to maintain a liquid position in order to meet unanticipated future obligations. This encourages speculative behaviour in short-term investments with the secondary consequence of limiting funds for long-term capital investments. Such behaviour may be described as follows (Davidson, 1998: 6): "Under circumstances where bullish sentiment dominates, liquid financial markets can encourage savers to readily provide the funding that encourages entrepreneurial-investors to spend sums on new investment projects that far exceed their current incomes. Under other circumstances where the bear position is overriding, an excessive desire to maintain one's liquidity can develop that may impede the production of new investment capital even when real resources are idle and therefore readily available to produce new real capital goods." This means that, given uncertain expectations and changing circumstances in the financial market, real economic activity can be significantly impeded.

The second dimension focuses on the role of subjectivity in expectations formation. Post Keynesian economics emphasizes the heterogeneous nature of expectations (Davidson: 1981). The expectations of economic agents are shaped by their experiences, perceptions and the extent to which they were incorrect in previous expectations. In a world of uncertainty, expectational errors are the order of the day. Furthermore, economic agents are aware that they are subject to expectation errors.

This element of subjectivity in the formation of expectations of future outcomes, which in the case of financial markets refer to the future market value of one's portfolio, creates the potential for volatility in investment behaviour. The implication here is that changes in investors' behaviour, following a change in sentiment, will inevitably influence the future market value of their portfolios. This argument relates to an important proposition of Post Keynesian theory (Davidson, 1981: 159), i.e. expectations, in a world of uncertainty, is bound to significantly affect economic outcomes. Ultimately, the very

actions of investors (agents) themselves, as they commit to an investment decision (subject), are bound to influence the future outcome (prospects) of investments.

From another perspective, the element of subjectivity in expectations formation, which detaches behaviour from circumstances, may in fact be more important than realized. As discussed earlier, this type of subjectivity places a wedge between behaviour and circumstances, in that investor behaviour could change as a result of a change in belief and attitude, without any corresponding change in circumstances. This type of behaviour relates to the capricious or whimsical nature of investors, referred to by Keynes (1973). Such subjectivity in the formation of expectations regarding the future value of investments could then be an important explanation for the dominance and volatility of short-term investments.

The final dimension follows from the second, but it goes beyond the possibility that subjective expectations have an unavoidable impact on economic outcomes. It raises the possibility that expectations could lead to behaviour in such a manner that expected outcomes are actually realized. Before discussing this possibility further, it is important to note that movements in two variables influence the future value of an asset in the global capital market. Harvey (1997: 7) emphasizes this point: "...market participants must take into account the fact that the value of their portfolio is affected not only by own-price changes of assets, but by movements in the value of the currency in which they are denominated. Harvey (1997: 3) also emphasizes that, of all the determinants of foreign currency prices, portfolio capital flows are the most important. The implication follows that since expectations of future market valuations of assets influence investment behaviour, they will also have a decided influence on exchange rate movements.

This intimate link between future asset valuations and currency movements creates fertile ground for speculation, which could then translate expectations to reality. For example, assume that portfolio investors expect an appreciation of the rand. The resultant purchase of rand-denominated assets will increase the demand for rand, which will cause the expectations of the investors to be fulfilled, as the rand does indeed appreciate. This is normally referred to as a self-fulfilling prophecy. This example illustrates the possibility that expectations do not only influence outcomes, but could also direct behaviour in such a manner that expectations are actually fulfilled.

The tendency to focus on generic assets in the financial market increases the link between asset prices and exchange rate movements (Harvey, 1997: 7). Apart from forming expectations of currency movements, investors may also observe the behaviour of other investors very closely. Investors then speculate about the behaviour of other investors. Therefore a sudden change in sentiment (due to a change in circumstances or not) could then result in a herd-like behaviour, regardless of whether or not the change in expectations was justifiable. Davidson (1998: 6) refers to this possibility: "Speculation about the psychology of other market players can result in a lemming-like behaviour which can become self-reinforcing and self-justifying."

In the final analysis, uncertain and subjective expectations in a non-ergodic financial world may actually be the driving force behind the future market valuation of investors' portfolios. Speculation is not limited to movements in asset price (due to own-price movements or currency movements) but also extends to the behaviour of other investors in the market place. The reinforcing and self-justifying effects of behaviour, following such speculation, raise the potential for increased volatility in capital markets.

MACROECONOMIC IMPLICATIONS

Much of the preceding discussion has argued that, given the nature of uncertainty in the global economy, there is a preference for the shorter-term and portfolio type investments relative to longer-term investments such as FDI. There are three implications that follow from this argument. Firstly, the preference for short-term investments limits the availability of funds for long-term capital projects thereby inhibiting the potential for economic growth. Secondly, the volatile nature of short-term and portfolio flows, leads to unpredictable effects on exchange rate movements, and as such, they themselves, contribute to economic uncertainty and act as an important constraint on real economic activity. Thirdly, the volatility of short-term and portfolio flows render them prone to excessive inflows and abrupt reversals, and as a result, create the potential for macroeconomic instability. This does not mean that capital flows, in themselves, are not beneficial. They do offer a number of advantages.

Foreign direct investment, for example presents a number of benefits to capital receiving countries. Some of the well-known benefits include the transfer of capital, skills and technology, as well as the positive effects on employment, competition and economic growth. The access to foreign portfolio capital also provides a number of benefits to both borrowers and investors. Borrowers benefit from the lower cost of capital while investors gain from the increased number of investment opportunities for portfolio diversification.

Therefore the problem does not lie with the actual access to capital, but rather with their excessiveness in term of inflows and sudden reversals. As Grenville (1998: 11) aptly argues, the risk considerations underlying capital flows tend to be binary (on/off) process instead of a monotonic function. Capital inflow surges and their abrupt reversals would inevitably contribute to a general level of uncertainty in the macroeconomic environment of capital-receiving countries. An excessive inflow of capital would either flow into reserves or, as indicated earlier in this paper, be redirected towards less productive capital projects or be used for the funding of excessive household or government expenditure. In the build-up to the East Asian crisis, for example, excessive capital inflows eventually found their way into unproductive investments. The accumulation of large excess capacity, especially in the property market, resulted in a rapid decline in prices. The consequent decline in profits made debt repayments difficult.

Talley, Giugale and Polastri (1998) identified various macroeconomic and financial effects of large-scale capital outflows. The relevant macroeconomic or financial variables generally affected by capital reversals include: the exchange rate, interest rates,

domestic equity prices, economic growth rate and the inflation rate. Table 3 provides information on these variables for five countries that have experienced financial crises. The table presents the information on an annual basis and may therefore mask the extent of the impact that the capital flow reversals had during the months in which the crises took place. The shaded parts of the table represent the years in which the crises took place in each country. Information on the affected variables is provided for before, during and after the crises.

Table 3: The Economic Impact of Capital Inflow Reversals

	GDP Growth Annual %	Inflation, Consumer Prices Annual %	Market Capitalisation of Listed Companies Current US\$ billion	Stocks Traded, Total Value % of GDP	Lending Interest Rate %	Real Interest Rate %	Official Exchange Rate LCU per US\$, period average
MEXICO							
1992	3.63	15.51	139.06	12.26	*	*	3.09
1993	1.95	9.75	200.67	15.49	22.04	11.46	3.12
1994	4.42	6.97	130.25	19.72	20.38	11.18	3.38
1995	-6.17	35.00	90.69	12.01	58.59	15.04	6.42
THAILAND							
1995	9.24	5.80	141.51	33.95	13.25	7.25	24.92
1996	5.90	5.81	99.83	24.42	13.40	9.02	25.34
1997	-1.37	5.61	23.54	17.24	13.65	9.21	31.36
1998	-10.51	8.07	34.90	18.66	14.42	4.74	41.36
RUSSIA							
1996	-3.40	47.73	37.23	0.71	146.81	71.17	5.12
1997	0.90	14.74	128.21	3.79	32.04	15.33	5.78
1998	-4.90	27.67	20.60	3.72	41.79	21.93	9.71
1999	5.40	85.68	72.21	1.47	39.72	15.32	24.62
BRAZIL							
1996	2.70	15.76	216.99	14.47	*	*	1.01
1997	3.30	6.93	255.48	25.06	78.19	64.66	1.08
1998	0.10	3.20	160.89	18.62	86.36	77.68	1.16
1999	0.80	4.86	227.96	16.43	80.44	72.51	1.81
SOUTH AFRICA							
1996	4.31	7.35	241.57	18.93	19.52	10.58	4.30
1997	2.65	9.01	232.07	30.05	20.00	11.00	4.61
1998	0.76	6.72	170.25	43.62	21.79	13.80	5.53
1999	2.12	5.07	262.48	55.49	18.00	10.99	6.11

Source of Basic Data: World Bank, Global Development Indicators

In the run-up to the Mexican crisis in 1994, the Mexican government experienced difficulty in maintaining the peso's dollar peg in the face of a large trade deficit (\$17 billion or approximately 6 percent of GDP), together with a rapid expansion of its public and private sector debt (Hill, 2000: 326). The Mexican government nevertheless promised to support the peg at around \$1 to 3.5 pesos and between 1990 and 1994 foreign investment to the amount of \$64 billion flowed into the country as investors were attracted by the expansion of the economy (Hill, 2000: 326). The difficulty in maintaining the peg and the expectation of a peso devaluation resulted in a reversal in the flow of short-term capital by December 1994.

The peso against the dollar (recalculated from table 3 as dollars per peso) depreciated by almost 47 percent from 1994 to 1995. As investors fled the local currency by disposing of domestic debt instruments, domestic interest rates were pushed up. The lending interest rate increased by 38 percentage points from 1994 to 1995. The higher interest rate contracted spending and the positive growth rate of 4.42 percent in 1994 shifted sharply to a negative growth rate of 6.17 percent in 1995. At the same time the depreciating currency caused the inflation rate to increase from 6.97 percent in 1994 to 35 percent in 1995. The general loss of investor confidence and the rise in interest rates resulted in a decline in equity prices as reflected in the market capitalization of listed companies, which decreased from \$130.25 billion in 1994 to \$90.69 billion in 1995.

Thailand was one of a set of East Asian countries that had common weaknesses that made them vulnerable to a financial crisis in 1997. These weaknesses included (BIS, 69th Annual Report: 31): vulnerable corporate and financial sectors, weak public finances, growing current account deficits and inconsistent policy frameworks. These weaknesses together with increased global financial integration caused Thailand and the others to be exposed to reversals in capital flows (see figure 1a). By 1998, the Thai baht depreciated by 33 percent, the inflation rate increased to 8.07 percent (from 5.61 percent in 1997), the lending interest rate was raised to 14.42 percent (from 13.65 percent in 1997) and the growth rate turned to a negative 10.51 percent from a positive growth rate of 5.90 percent in 1996. The negative impact on equity prices took place in 1997 before recovering marginally in 1998. The market capitalization of listed companies declined from \$99.83 billion in 1996 to \$23.54 billion in 1997.

Private capital outflows began in Russia well before 1998 (see figure 1a). There were a number of fundamental weaknesses that were still evident and not adequately addressed since the start of the transition process (BIS, 69th Annual Report: 52). These weaknesses included inadequate progress in establishing a market economy, unsound public finances and limited financial intermediation. By late 1997 and the first half of 1998, Russia experienced difficulty in servicing its debt which resulted in repeated attacks on its currency (BIS, 69th Annual report: 50). By 1999, the Russian rouble suffered a depreciation of almost 60 percent against the dollar. The inflation rate soared from 27.67 percent in 1998 to 85.68 percent in 1999. The lending interest rate increased in 1998 to 41.79 percent (from 32.04 percent in 1997), before declining to 39.72 percent in 1999. Economic growth recorded a decline in 1998 of 4.90 percent before recovering to 5.40 percent in 1999. The adverse effect on equity prices was already felt in 1998, as the market capitalization of listed companies declined from \$128.21 billion in 1997 to \$20.60 billion in 1998.

Apart from fiscal weaknesses and external vulnerabilities, the impact of both the Asian and Russian crises, subjected Brazil to a reversal of capital flows (BIS, 69th Annual Report). According to the BIS report (P.34), Brazil “recorded a period of particularly buoyant inflows of bank credit, equivalent to over 2% of GDP. Only around mid-year, following the Russian crisis, did bank flows change direction, with outstanding bank claims dropping precipitously in the second half.” The effect of the crisis on the Brazilian Real is not clearly evident as a floating exchange rate system was only adopted

in early 1999. The persistently high interest rates kept inflation low. Economic growth declined from 3.30 percent in 1997 to 0.10 percent in 1998 and remained low at 0.80 percent in 1999. The negative impact on equity prices is evident in the decline in the market capitalization of listed companies from \$255.48 billion in 1997 to \$160.89 billion in 1998.

Both the Russian and Asian crises also impacted negatively on the South African economy as international investors, in a move to quality, transferred their funds out of emerging markets to the US and Europe (Schaling and Schoeman, 2000). Although the rapid depreciation of the rand was more evident during the months of the crisis, there was an 11 percent depreciation from 1998 to 1999. The persistently high interest rates helped to contain the inflation rate, but at the same time pushed down economic growth. The inflation rate dropped from 9.01 percent in 1997 to 6.72 percent in 1998 and economic growth declined from 2.65 percent in 1997 to 0.76 percent in 1998. Schaling and Schoeman are of the view that the increase in the interest rate came too late, as it did not help to stem the outflow of capital at the time, and prevent the rapid decline in the value of the rand. Instead the higher interest rate pushed the South African economy into a deeper recession. The crisis of confidence in emerging markets at the time is also reflected in the decline in South African equity prices. The market capitalization of listed companies declined from \$232.07 billion in 1997 to \$170.25 in 1998.

In the final analysis, the volatility of capital flows, in terms of their rapid inflows and sudden reversals can significantly harm emerging market economies. Domestic lending booms and asset price bubbles that follow excessive inflows of capital merely set up the recipient country for financial mayhem. Abrupt reversals in capital flows set in motion a chain of events in the affected economy that include a rapid depreciation of the domestic currency, increased interest rates, higher inflation, economic recession and a crisis of confidence as reflected in a decline in equity prices.

In the face of such uncertainty arising from capital flows, what policy recourse do developing/emerging/transitional economies have? The traditional measures at the disposal of a country experiencing a capital account shock include expenditure switching policies, expenditure reducing policies and capital controls. Expenditure switching policies in the form of a currency devaluation have potential inflationary consequences. Expenditure reducing policies in the form of higher interest rates can push an economy into a recession. The use of capital controls can create confidence and credibility problems in the relevant economy.

Kenneth Rogoff (1999) in exploring various institutional possibilities to improve the global financial system, also evaluates three alternative measures that developing countries can adopt to reduce their vulnerability to speculative capital flows, viz. controls on capital outflows, controls on capital inflows and increased transparency and improved financial regulation. Rogoff (1999: 35) argues that whilst a temporary payments standstill may at times, be the best policy response, the pervasive use of restrictions on capital outflows may scare off investors who regard them as arbitrary and unpredictable. Furthermore, according to the BIS (69th Annual Report: 47): "...the potential loss of

confidence and policy credibility which controls on outflows could entail is likely to raise the cost of international borrowing for much longer than just the duration of the crisis.”

Controls on capital inflows, such as the Chilean tax (from 1992 to 1998) can help to discourage short-term borrowing relative to long-term borrowing. In terms of the Chilean tax, all non-equity capital inflows had to be accompanied by a non-interest bearing one year deposit equal to 30 percent of the original value of the investment (Rogoff, 1999: 35). According to Rogoff, due to the transparency of the tax, it is not characterized by the arbitrariness associated with controls on capital outflows. However, whilst a capital inflows tax may help to reduce speculative pressures, it can result in a sharp decline in international lending to the relevant country. The BIS in its 69th annual report (P.47) acknowledges the usefulness of containing capital inflows with the use of market-based instruments such as reserve requirements that tax shorter-term inflows more heavily. According to the BIS: “If carefully designed, they may help avoid a domestic lending boom and the asset price bubble which is often associated with it, while allowing a liberal attitude to be maintained towards longer-term inflows such as foreign direct investment.”

Finally, Rogoff (1999: 36) argues that whilst increased transparency and improved financial regulation in developing countries would contribute to a more efficient global capital market, bank runs and country runs could still occur as long as banks have maturity or currency mismatches. Furthermore, increased transparency could also worsen the problem of multiple equilibria as speculators may then be able to coordinate on the timing of a run. Despite these possibilities increased transparency and improved financial regulation would certainly help in the prevention or early detection and management of financial difficulties.

CONCLUSION

The paper has argued that capital flows have far exceeded their role in serving as a passive accommodation of the demands of the real economy. They are, in fact, driving the world economy. Capital flows in the form of hot money, in pursuit of temporary gains; move in and out of countries as soon as conditions or sentiment change. The evident volatility of short-term and portfolio capital flows then impacts on the real economy via exchange rate volatility and in the inadequate funding of capital projects.

The paper argues that the decision to engage in short-term investments, despite the greater profit potential of longer-term investments, rests on the degree of uncertainty that international investors experience/confront in the global capital market. Hence volatility in the global capital market is largely due to investors’ behaviour aimed at reducing their exposure to uncertain returns, as well as attempting to exploit uncertainty related movements in prices for speculative gain. An important concern regarding the volatility of capital flows is that short-term and portfolio capital are predisposed to excessive inflows and abrupt reversals as and when there are changes in sentiment and risk

perceptions. Such volatility would then have serious macroeconomic consequences for a developing/emerging/ transitional economy.

True uncertainty is quite different from mathematical risk in that the probability distribution of the future outcomes of a decision cannot be mathematically/objectively specified in advance. Investors operate in a non-ergodic financial world characterized by inefficient markets. Future outcomes are themselves influenced by the actions of economic agents. Existing knowledge of fundamentals do not provide a reliable guide to predicting future outcomes. The asymmetric nature of real time merely emphasizes the unknowability and unpredictability of the future. The element of distance in the global capital market still presents a source of uncertainty in respect of the quantity and quality of information about foreign investment opportunities.

An increase in uncertainty or the need to meet unanticipated obligations could create a need to maintain greater liquidity. A desire to maintain greater liquidity will induce investors to purchase financial assets that can be easily sold. This possibility could then explain why investors may prefer short-term investments to long-term investments.

The nature of uncertainty in financial markets, the limited role of fundamentals, the need for liquidity and the asymmetric nature of real time have an important influence on the formation of expectations and their impact on outcomes. The uncertain and subjective expectations of investors do not only have an unavoidable impact on the future outcomes of their decisions, but they could also lead to behaviour in such a manner that expected outcomes are actually realized.

Given the nature of uncertainty in the global capital market, there is a preference for the shorter-term and portfolio type investments relative to the longer-term capital investments. The three macroeconomic implications that follow, include: the reduction in funds available for long-term capital projects, thereby inhibiting economic growth; the unpredictable effects of exchange rate movements due to the volatile nature of short-term and portfolio flows; and the effects of excessive inflows and abrupt reversals of capital.

Excessive inflows of capital could either flow into reserves or be redirected towards less productive investments or be used for the financing of excessive household or government expenditure. Domestic lending booms and asset price bubbles that follow excessive capital inflows merely set up the recipient country for financial mayhem. An abrupt reversal of capital flows adversely affects a developing/emerging/transitional economy in terms of: a rapid depreciation of its currency, increased interest rates, higher inflation, an economic recession and a crisis of confidence reflected in falling equity prices.

Policy measures that developing economies could adopt to reduce their vulnerability to speculative capital flows include capital outflow controls, capital inflow controls and increased transparency and improved financial regulation. Although capital flows may be useful as an interim measure, its arbitrariness and unpredictability could lead to a loss of investor confidence and policy credibility. Capital inflow controls such as the Chilean

tax could help to reduce speculative pressures, but may result in a sharp decline in international lending. Increase transparency and improved financial regulation would help in the detection and management of financial difficulties, but it could also worsen the problem of multiple equilibria as speculators may then be able to coordinate on the timing of a run.

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