International reserves, effective demand and growth

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Abstract

During the last decade, developing (and some developed) economies have accumulated large amounts of international reserves, mainly for precautionary reasons. This phenomenon has been coupled with moderate economic growth. The resources being amassed largely overwhelm protective needs, there is an excess of resources that is being wasted, and which could be utilised for alternative productive projects, namely to promote growth. If insufficient aggregate demand can largely explain low growth, it is clear that this excess of international reserves can be used to stimulate aggregate demand. This paper argues that the excess of international reserves represents a potential source to boost growth.

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Key words: international reserves, aggregate demand, economic growth.

1. Introduction

For many economies rapid and stable long run growth has remained elusive. This includes many developing countries which, since the beginning of the 1980s, have recorded paltry growth, including Latin American and sub-Saharan African countries (see UNCTAD, 2003). There are, however, also developed economies that have recently grown at poor rates; the most remarkable being the Japanese economy.

Some of these economies have, since the mid 1990s, but particularly since the end of the South East Asian financial crisis of 1997-1998, amassed large amounts of international reserves. Latin America, for example, by 2005 had accumulated 63.4 per cent more international reserves than it had in 1996, when the Mexican peso crisis concluded. Sub-Saharan Africa accumulated an astonishing 290 per cent during the same period; which is almost the same amount that Japan accumulated, 284 per cent, over the same time.

The reasons for the large hoardings of foreign currency, particularly for developing economies, are mainly underpinned by the so-called precautionary,

mercantilist and policy autonomy motives (see Aizenman, 2007, 2006, Aizenman and Lee, 2007, and Bird and Mandarilas, 2005). There is, nevertheless, no guarantee that these aims can be achieved and accumulating reserves for their own sake generates direct and potential detrimental costs both for the domestic and for the global economy (see Cruz and Walters, 2008, García and Soto, 2004, Mohanthy and Turner, 2006, Schiller, 2007, Wheatley, 2007).

Moreover, there is no theoretical justification for the large quantities of foreign resources being amassed. Independently of whether rules of thumb (i.e. the ratio of imports to international reserves or the Guidotti-Greenspan rule), econometric or other type of models (i.e. general equilibrium models) are used to measure the optimal level of international reserves, the results show that there is always an excess of international reserves, in some cases a very large one (see Floerkemeier and Sumslinski, 2008, Jeanne, 2007 and Jeanne and Rancière, 2006). This excess of resources is being wasted, and could be utilised for alternative purposes, in particular for growth goals. In this sense, there has been little discussion of the fact that these resources can be used to pursue growth in those economies that share the dual characteristic of growing moderately coupled with excess foreign international reserves.

Importantly, poor growth in capitalist economies can be largely ascribed to ineffective aggregate demand[1] (Kalecki, 1933; Keynes, 1936). Thus, clearly, the excess of international reserves can be used to stimulate aggregate demand through any or some of its components. Developing economies lack sufficient productive capacity, so here demand can be boosted through further levels of investment. In fact, "... in the interplay of linkages that make up a virtuous growth regime, capital accumulation holds a central place" (UNCTAD, 2003, p. 61); moreover, in these

economies, the expansion of physical capacity provides the basis for long term growth. Developed economies, on the other hand, might just need to boost consumption as they do not have shortages of productive capacity and thus, in this case, increasing levels of capital accumulation might have little effects on short term aggregate demand and may tend to constrain long term growth.

In addition, the international implications of countries building up excess international reserves also need to be noted. Reserves accumulate as a result of intentional policy decisions. In particular, the build up of reserves is associated with lower rates of growth of output, but also of imports. This means that one country increasing its reserves will reduce effective demand elsewhere. As a result, a general build up of reserves of the kind noted will be associated with lower levels of global demand and, therefore, lower levels of world economic activity. So, the build up of reserves is associated with lower levels of both domestic and international demand.

The aim of this paper is to argue that excess international reserves represents a potential source to boost growth in those economies that, as we have stressed, have recorded moderate economic performance since they started to horde large amounts of foreign exchange.

The next section provides an overview of what drives international reserve accumulation, and the fact that there has been little attention to the use of the excess of these resources for growth purposes. In section 3, we provide evidence that economies have accumulated reserves beyond their needs. To this end we measure the excess of international reserves using the notion of the maximum sustainable external threshold proposed by Cruz and Walters (2007). Section 4 shows the way international reserves, aggregate demand and growth can be related and illustrates, by

calculating the upper bound rate of growth for a sample of economies, that excess international reserves can stimulate growth.

2. International reserves: accumulation motives and beyond

The tendency to accumulate large amounts of international reserves, particularly in the developing countries, started in the aftermath of the Mexican peso crisis of 1994-1995. In fact, after other financial crises in the developing world ocurred, notably in Russia in 1998, Brazil in 1998-1999, Turkey in 2001 and Argentina in 2001-2002, the increase in international reserves was confirmed. In this sense, *The 2001 Report of the High-Level Panel on Financing for Development to the United Nations*, the so-called Zedillo Report, pointed out that since the Asian crisis of 1997-1998 international reserves in emerging economies had increased by around 60 per cent. Moroover, Rodrik (2006, p. 255), points out that emerging countries' international reserves "have risen from 6-8 per cent of GDP during the 1970s and 1980s to almost 30 percent of GDP by 2004". Currently, around two thirds of international reserves are held by developing countries (Aizenman, 2007). The phenomenon of foreign reserves accumulation, as can be seen, is strongly associated with financial crises over the developing world.

In the light of the unprecedented levels of international reserves that economies are accumulating, two facts are worth noting. In the first place, it is worth considering the motives that are driving the accumulation of reserves, namely the precautionary, mercantilist and policy autonomy motives, as well as the arguments against them. In effect, as financial crises and its high associated output costs caused growing accumulation of international reserves, it is clear that the primary reason for the building up of international reserves has been, as Bird and Mandarilas (2005)

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point out, to reduce the risks of future financial crises, providing financial stability through the increase of liquidity, or, what has be known in the literature as the precautionary motive. However, a buffer stock of reserves, even a large one, might not deter the negative cycle of speculative-attacks-financial-crisis if the economy adopts or reinforces rapid financial liberalisation. In this sense, it is unsurprising that "the history of international capital flows in periods of minimum government intervention and control suggests that financial markets do have a tendency to produce boom-bust cycles in individual economies, with periodic defaults as the natural outcome" (UNCTAD, 2003, p. 36). In short, by deregulating the capital account, no matter how high its degree of liquidity, the economy remains highly exposed to the punishing vicissitudes of hot money (see Cruz and Walters, 2008).

In this vein, it is worthy noting that until very recently, and only after the huge output losses caused by financial crises, fervent advocators of the strategy of financial liberalisation have clearly signalled the perils associated with this strategy. Some have recognised, for instance, that "there is plenty of evidence that premature opening of the capital account… can hurt a country by making the structure of inflows unfavourable and by making the country vulnerable to sudden stops or reversal of flows" (Kose et al, 2006, pp. 34-5). Others, more optimistically but ironically, have argued that despite currency crises, financial liberalisation can be linked to boom-bust cycles (see Tornell et al, 2004). Finally, others have warned that abandoning financial repression may lead to an explosion of government debt and lower economic growth (Fry, 1997, p. 768).[2]

Another motive is that trying to emulate the export-led growth success of some economies (namely the first-tier of Asian tigers and China), increased reserves have been seen as a by-product of maintaining a competitive exchange rate designed to

expand tradable production. In this sense the accumulation of international reserves is considered an active industrial policy, or, what has to be known in the literature as the mercantilist motive (see Aizenman and Lee, 2007). In this case, the empirical evidence contests this approach and it has been argued that the management of international reserves should not be seen as a panacea, particularly for either an export-led growth strategy. (Aizenman, 2006) or as a replacement for an industry policy. In particular, rather than having a lower exchange rate associated with a build up of foreign reserves, the same exchange rate could also be associated with higher growth rates, which would not only improve output and employment but would also encourage further investment, often a major problem in developing economies.

Finally, countries have engaged on accumulating reserves as a way of attaining policy autonomy in the sense of "… minimising the need to turn to the IMF if crises occurred" (Bird and Mandarilas, 2005, p. 85). As the empirical evidence has shown, however, financial liberalisation has preceded financial crises and their associated huge costs and it has reduced significantly the space for and the autonomy to formulate policies in the pursuit of national development objectives. So, the sort of policy autonomy attained by accumulating international reserves is very narrow and is not conductive to growth and/or industrialisation goals.

It is also important to highlight costs associated with the accumulation of international reserves. As well as direct costs, holding reserves incurs an opportunity cost, which is the difference between what the reserves could have earned and what they actually earn; Rodrik (2000, 2006) and Bird & Rajan (2003), among others, have estimated that the excess of reserves holdings to be around 1 per cent of GDP. There are also potential costs because, "large reserves stocks may create moral hazard problems that could weaken the financial system of a country. This, in turn, could

make crises to be deeper…" (García and Soto, 2004, pp. 17-18; see also Schiller, 2007). Moreover, large and prolonged reserve accumulation aimed at resisting or delaying currency appreciation can create a range of domestic macroeconomic risks, which may include near term inflation, high intervention costs and monetary imbalances (see, Mohanty and Turner, 2006, Wheatley, 2007). In addition, the opportunity costs must include the other options available to the economy if, instead of accumulating reserves, the economy used the resources in stimulating growth. The higher levels of growth, both in output and employment would induce additional investment. This in turn, by expanding domestic capacity, would alleviate future currency problems and increase the economy's autonomy.

Under these circumstances, current large holdings of reserves seem unrelated to any clear notion of what might constitute an optimal level. This is unsurprising as there no uniform consensus (neither empirical nor theoretical) about what might constitute the optimal level of international reserves. Therefore, the accumulation of international reserves can best be characterised as following what has come to be called Mrs. Machlup´s wardrobe theory. According to Bird and Rajan (2003, p. 877), this theory suggests that the "acquisitive characteristics of monetary authorities in terms of adding to their reserves resembled those of Mr. Machlup's wife in terms of clothes. According to this idea no level of reserves was ever enough."

The second relevant fact accompanying the remarkable accumulation of international reserves, which is often ignored in the literature, is the moderate growth performance of both crisis-affected and non-affected economies. This is especially the case for Latin American nations, where a number of economies underwent financial collapses. Other crisis-affected regions, such as East Asia, witnessed a lower level of

economic growth in the aftermath of the 1997-1998 crisis, when compared to their growth performance achieved prior to this crisis.

Importantly, despite the fact that some affected economies have grown at high rates after their crisis (remarkably Argentina, Turkey and Russia) and others have recaptured quickly their growth path (for instance Korea) none of them have recovered yet (and they are unlikely to do so) from the large negative shocks suffered. This is because crisis-affected economies not only suffer a large and persistent negative output loss, but it has been shown that they never recover from such large negative shocks in the sense that output losses are not reversed. Evidence of this fact has been recently formalised and presented by Cerra and Sexena (2008). In their work, the authors estimate that the lost of output due to a currency crisis varies between 1 and 5 per cent, and output loss persists even at a ten-year horizon. In the case of a banking crisis, the output impact is, on average, 7.5 per cent and is as persistent as for a currency crisis. Finally, in the case of a twin crisis, the authors find that the output loss is deeper than either of the individual crises and that by the third year after the crisis, output loss reaches and remains at 10 per cent.

Other countries and regions, both developed and developing (like Japan and Sub-Saharan Africa), that did not undergo a financial crisis but that followed the fashion of accumulating extraordinary amounts of foreign exchange have also recorded moderate levels of economic growth (see table 1).

Here Table 1

Summarising, on the one hand, large amounts of international reserves do not guarantee the prevention of future speculative attacks, the ensuing financial crisis or the associated output costs[3] nor do they allow support for an active long term industrial policy to boost exports and provide space for growth/industrialisation policy

goals. On the other hand, and more importantly, these large amounts of unused resources have been associated with moderate economic growth, especially in cases when the country is most in the need of it (that is after a crisis). This leads to the question of whether these resources (specifically its excess) would not been more beneficially utilised to accelerate growth, for instance by financing infrastructure. In this sense, particularly for developing economies, "the key question is whether higher returns, after allowance for risk, could be made elsewhere (eg through investment in the country's domestic infrastructure)" (Bank of England, available online, p. 10).

This proposal, though debatable,[4] represents an important alternative to promote economic growth, as there is no theoretical or technical impediment that stops policymakers from implementing it. Moreover, the stimulation of economic growth (and employment generation) should be a priority after the economy has suffered a deep economic slowdown as a result of a crisis, so that the need for rapid and sustained growth is more urgent than ever. This is particularly relevant when the economy is in the earlier stages of industrialisation and requires large amounts of resources (particularly foreign exchange to acquire, for instance, capital equipment) to enhance, accelerate and sustain this process. For these economies in particular, these idle resources represent forgone development projects. These resources in fact, when wisely allocated (namely expanding productive capacity in strategic sectors, industries with high growth potential or financing R&D to raise productivity) could also represent the basis for long term growth.

Furthermore, even though there is no evidence that international reserves have been used to promote growth through financing infrastructure projects, especially when the aims of reserves accumulation are liquidity and protection, there is certainly evidence that countries with good growth records and large amounts of foreign

exchange (mainly the result of large current account surpluses) have not left these resources unproductively. China, within the group of emerging economies, is maximizing returns through investing the resources in investment funds, particularly through sovereignty wealth funds (see Singh, 2006, and Truman, 2007). This is also a common practice for recently industrialized economies (like Korea and Singapore) and rich-oil Middle-East economies such as the United Arab Emirates, Kuwait and Qatar. Within the group of developed economies, Norway is a good example of how to use international reserves productively.

By proposing the use of international reserves to boost growth, we are not suggesting the running down of all reserves, leaving the economy illiquid and therefore highly exposed to domestic and/or external shocks. Clearly there are precautionary reasons for holding reserves. Our proposal consists of using excess international reserves, that is, the amount that is not necessary to protect the economy from the total or overall vulnerability of the balance-of-payments, that is that arising from both the capital and the current accounts. Obviously, the key point is the establishing of the criterion used to define an adequate (rather than optimal) level of international reserves, and how to gauge if it is excess. That is "quantifying optimum [adequate] reserves is… not straightforward since it is difficult to estimate the adjustment costs and output losses that reserves may enable a country to avoid" (Bird and Mandilaras, 2005, p. 86). In the next section we address this issue by using a simple and ad hoc criterion to gauge reserves adequacy and thus its excess.

3. Calculating the excess of international reserves

Historically, two rule of thumbs (from the 1960s, the ratio of international reserves to imports, and more recently the Guiotti-Greespan rule) have been generally used as guides to establish the adequate level of international reserves and define its excess.

Before the recent escalation of financial crises, the vulnerability of the balance-of-payments stemmed almost exclusively from the current account. For this reason, the logic determining the adequate level of international reserves was based on the value of imports. For operational reasons, the ratio of international reserves to imports (R/M) became the standard measure defining reserve adequacy, with the ratio indicating the number of months of imports that could be financed from the reserves. This criterion increased in importance as the economy became more open and its vulnerability to domestic or external shocks increased accordingly. An adequate level of reserves was conventionally established as that level of reserves which was able to cover at least three or four months of imports. It is important to notice that this criterion lacked any theoretical underpinning; it was a rule of thumb, based on a conventional, discretionary view of what was considered adequate (see Bird and Rajan, 2003).

A crucial difference in the new era is that the vulnerability of the balance-of-payments now emanates primarily from the capital rather than the current account. Thus "developing country's reserves is related to changes not in *real* quantities (such as imports or output) but in *financial* magnitudes" (Rodrik, 2006, p. 257, emphasis in the original). To determine, therefore, reserve adequacy requires consideration of the need to protect the total vulnerability of the balance-of-payments. This is the essence of the Guidotti-Greenspan rule,[5] which suggests "the maintenance of reserves

equivalent to 12 months of a country's total foreign obligation, which includes but is not limited to imports" (Mendoza, 2004, p. 76). This, like the R/M ratio, is a conventional criterion, a rule of thumb, about what is considered adequate.

More recently, Cruz and Walters (2007) proposed a more *ad hoc* criterion, dubbed the maximum sustainable external threshold, to measure the adequate level of international reserves. This measure also takes into consideration the overall vulnerability of the balance-of-payments, maintaining the operationality of the R/M and Greenspan-Guidotti ratios, but it gauges international reserve adequacy in terms of GDP.

The central idea of this threshold comes from the fact that during recent financial crises, both the current account deficit and the short term external debt, both expressed as a fraction of GDP, reached levels beyond which the historical record indicates financial markets start to get nervous and, on that basis, decide to withdraw their capital out of the country (recall that recent financial crises have been strongly associated to speculative attacks). Thus, the ratio is grounded in evidence which reflects market perceptions of emerging economies' financial stability. For instance, the current account deficit to GDP ratio beyond which international financial markets start to get nervous for understandable reasons, historically, seems to be of the order of 2-3 per cent (depending on circumstances) (see Thirlwall, 2003). This sets, therefore, a minimum level of reserves to avoid instability arising from the current account.

Unfortunately, the same cannot be deduced in the case of the capital account, as during the recent series of crises, there was no real concern by domestic authorities about what level of short-term external debt to GDP ratios would be adequate to reassure investors. As a result, there is no strong historical record which would

identify, at least roughly, the range below which the short-term external debt to GDP ratio must remain in order to keep international financial markets calm.

Looking at the evolution of the short-term external debt to GDP ratio for a sample of crises-affected economies, Cruz and Walters (2007) infer that, in general, there is a declining trend, reaching the single digit level in 2002 for all countries in the sample, except Indonesia, and, in fact, at low levels (less than 5 per cent) for some economies like Mexico and Brazil. Based on this evidence, that is that emerging countries are engaging less and less in short-term external debt given the risks that it involves, the authors suggest that the short-term external debt to GDP ratio that is consistent with calm in the international markets is likely to be within a range similar to the one of current account deficit to GDP, that is of 2-3 per cent.

The authors, therefore, suggest that a level of reserves that could maintain financial investors' confidence could be of the order of around 5-6 per cent of GDP. Any level of international reserves above that threshold can be considered to be excessive. The threshold of course might well vary, depending on the particular circumstances of individual economies, like its degree of trade openness and its vulnerability to external shocks, which in turn depend on its current levels of currency, flight and fragility risk, and external conditions.

It is important to stress that "while it is easy to say that the adequacy of reserves depends on investors' confidence, it is difficult to say with precision what determines this…, it will almost certainly be influenced by the package of economic policies that a government is pursuing and the commitment with which they are being pursued, as well as by economic performance, but it is likely to be affected by the perceived degree of financial stability and indeed by the level of reserves as well" (Bird and Rajan, 2003, pp. 879-80). In this sense, due to the impossibility of defining

what determines investors' confidence and their behaviour, it is important to bear in mind that the threshold proposed is, like the R/M ratio and the Guidotti-Greenspan rule, an *ad hoc* and atheoretical criterion and ultimately a rule of thumb. Nonetheless, we prefer to adopt this *ad hoc* criterion to measure the excess of international reserves as it explicitly takes into account the factors that triggered the recent financial crises, namely investors' confidence.

Using this criterion we can now attempt to measure the excess of international reserves. Table 2 shows the evolution of international reserves and excess reserves for our sample of selected economies, assuming a maximum sustainable external threshold of 6 per cent. In the case of crises-affected economies, we estimated the excess from the year immediately following the year in which their respective crisis began, until 2005. This is because, as we noted earlier, they started to accumulate massive reserves in the aftermath of their crises (for example, for Mexico, the excess is calculated for the period 1996-2005, in the case of Brazil for 2000-05, and so on), whereas for non-affected countries or regions, like Japan and Sub-Saharan Africa, we calculate excess reserves for the whole period 1996-2005.

The first important point to emerge from table 2 is, as expected, that all economies show a growing tendency to accumulate international reserves. In particular, East Asian economies register large amounts of international reserves during the whole period 1996-2005. From this group, Malaysia and Thailand demonstrate very high levels of reserves. This is, to a certain extent, unsurprising as these economies record constant and large trade surpluses.

Secondly, table 2 reveals that each economy in the sample has an excess of international reserves. This excess varies from a low level of 1.7 per cent for Brazil and Mexico to a high of 36.6 per cent of GDP for Malaysia. These results are

consistent with those reported by Jeanne (2007) and Jeanne and Rancière (2006) in the sense that Asian economies have the largest excesses of international reserves. These numbers, importantly, are not by any mean insignificant. They represent much higher levels than the budget allocated for crucial matters such as education, R&D or anti-poverty programmes in most countries in the sample. In sum, the evidence clearly indicates that the levels of international reserves have been beyond those needed to protect the economy from the overall instability of the balance-of-payments. This suggests that there has been a large level of unutilised resources which could have been used to improve the growth record of each of these countries.

In addition, given the importance of high levels of effective demand for investment and for the maintenance of animal spirits, it is clear that policymakers should use all the tools at their disposal to achieve increasing and sustaining growth. Ironically, the room to manoeuvre for traditional tools, such as monetary and fiscal policy, to stimulate aggregate demand, has been drastically reduced, in tandem with the imposition (or adoption) of the neoliberal agenda, which compels, among others, fiscal budget balance (if not surplus) and inflation targets of no more than three per cent per annum as a pre-requisite for growth (see Chang, 2007). This has led to severe restrictions on aggregate demand through lower public spending and tight monetary conditions, which discourage investment through low levels of economic activity and high rates of interest.

An alternative, which promotes escape from this policy straightjacket, as we have emphasised, is the utilization of the excess foreign exchange resources being amassed. This excess can be used to expand aggregate demand. In the next section we aim to address a theoretical explanation of how the excess foreign exchange can be used to accelerate growth (and generate employment).

Here Table 2

4. Aggregate demand and growth

> "The problem of unemployment in underdeveloped countries differs fundamentally from that in developed economies. In the latter, unemployment arises on account of inadequacy of effective demand. During periods of depression unemployed labour coexists with underutilised equipment. The situation may, therefore, be tackled by measures designed to stimulate effective demand, such as loan financed government expenditure.
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> "Unemployment and underemployment in underdeveloped countries are of an entirely different nature. They result from the shortage of capital equipment rather than from deficiency of effective demand". (Kalecki, 1960 p. 3)
>
> "The crucial problem of the underdeveloped economies is different from that of the developed countries. This is not to deny that in an underdeveloped economy there may be a deficiency of effective demand. There are many instances of countries whose capital equipment, meager though it is, will nevertheless be underutilised. However, as contrasted with developed economies, even if this equipment is fully utilised, it is still not capable of absorbing all available labour, as a result of which the standard of living is very low.... the main problem here being the deficiency of productive capacity rather than the anomaly of its underutilization..... The crucial problem facing the underdeveloped countries is thus to increase investment considerably, not for the sake of generating effective demand, as was the case in an underemployed developed economy, but for the sake of accelerating the expansion of productive capacity indispensable for the rapid growth of the national income". (Kalecki, 1966 pp. 15-16)

As these passages from Kalecki indicate, the fundamental factor constraining growth in developed economies is the level of effective demand, while for developing economies, though effective demand may be important, the main constraint comes from the lack of productive capacity. For both of these types of economy, the build up of excess foreign reserves represents lost opportunities in terms of reduced growth and employment.

Low levels of aggregate demand will lead to a build up of inventories, causing a slow down in production and investment, which will further reduce employment and

consumption. It will also translate into declining profits, leading to an increased inability of firms to service and discharge outstanding debts and, importantly, in the generation of negative expectations that this cycle, ceteris paribus, will perpetuate itself, inhibiting future investments and thus reducing income expansion.

In this context, the recommended policy is clear: the path of sustained growth (and growing employment) can be regained by stimulating one or more components of aggregate demand. More precisely, "in the Keynes/Kalecki approach… policies to maintain appropriate levels of aggregate demand are essential to bring about high profits and keep firms financially healthy" (López and Carvalho, 2008, p. 394).[6] Needless to say, more vigorous policies are needed when the economy has suffered an economic collapse or is in recession.[7]

Knowing that insufficient aggregate demand is the main cause of low growth does not imply that all countries should stimulate the same components of aggregate demand or that demand should be increased for its own sake. In this sense, the decision regarding which component of aggregate demand should be stimulated will depend, among other factors, on whether the economy is developed or semi-developed. In other words, the decision of where aggregate demand needs to be boosted has to be taken on the basis of the particular structural characteristics of the economy under consideration and what will contribute most to growth in the short term without restricting it in the long one.[8]

The fundamental problem in developed economies is rooted in inadequate levels of aggregate domestic demand. The existence of idle productive capacity implies that there is no need for additional capital accumulation which may, in fact, constrain long term growth. For capitalism investment is a double edged sword. In the short run it increases effective demand, which is important in reducing today's

unemployment, but, at the same time it increases capacity and productivity, which increase tomorrow's unemployment. Thus, for developed economies the policy recommendation to boost growth and increase the degree of capacity utilization (reducing unemployment) will emphasis consumption. Investment becomes important mainly when considering international competitiveness.[9]

On the other hand, as the quote from Kalecki indicates, the problem of low growth (and unemployment) in developing economies is of a different nature as for these economies it results mainly from a shortage of capital equipment.[10] In this case, therefore, stimulating effective demand through the expansion of capacity productivity through higher investment will be essential for both short and long term growth. In developing economies, the effect of investment is unambiguously positive in its ability to increase capacity, and by increasing the size of the capital stock, enable increased employment and growth. It important to notice that since, in these economies, most capital goods are imported, with limited domestic capital goods producing industries, the balance of trade provides an important constraint on the economy's ability to grow. The build up of international reserves reduces the growth potential of developing economies. If, instead the economies were able to expand at a higher growth rate, they would be able to use the resources which were generating reserves to finance the import of investment goods to aid industrialisation. In this case, the economy would be less reliant on imports in future growth episodes, as its ability to provide for domestic activity would be higher.[11]

Investment plays a vital role in the growth process as it "… simultaneously generates income and expands productive capacity, and it also carries strong complementarities with other elements in the growth process, such as technological progress, skills acquisitions and institutional deepening" (UNCTAD, 2003, p. 61). In

fact, as that study stresses, "among the many variables fed into growth equations, investment still emerges as one of the few with a robust and independent impact on growth, particularly for rapidly growing middle-income economies" (Ibid; see also Kenny and Williams, 2001, p. 8). The evidence of the most recent industrialized economies (the first and second tier of Asian Tigers and China) confirms that for rapid and sustained growth, capital accumulation was a *sine qua non* condition (see Young, 1994, 1995, Krugman, 1994, Bosworth and Collins 2003, 2007[12]). In other words, capital accumulation is fundamental for the *take-off* of any developing economy.[13] So, if a developing economy really aims at accelerating and maintaining growth, sustaining and growing levels of capital accumulation are necessary conditions. This is reinforced by the empirical evidence demonstrating a strong link between growth and investment, especially when is in the form of machinery and equipment (see Madsen, 2002). According to UNCTAD (2003, p. vi), "the minimum level needed for a satisfactory growth performance will be influenced by country-specific factors, but a 20 per cent share of fixed investment in GDP has been suggested as a target threshold in poor countries, rising towards 25 per cent as countries climb the income ladder".

For capitalist economies, it is worth noting that a recovery of aggregate demand must originate in those of its components which are autonomous with respect to current income. In the case of private domestic expenditure, for instance, it is unlikely that capitalists, let alone workers, will increase consumption when their current incomes are contracting. This might not be the case, however, where income is stagnating or growing slowly rather than falling.[14] Private investment, on the other hand, will also be unlikely to increase if firms have unused capacity, and are facing problems paying off or servicing their debts. In these circumstances, any stimulus to

aggregate demand must originate from outside the private sector, for example by increased public spending, either consumption and investment, or through tax cuts (López and Carvalho, 2008, pp. 395). Monetary policy, in the form of reduced interest rates, is unlikely to provide any effective stimulus to demand, as neither consumption nor investment are likely to be interest elastic during a contractionary period (Kriesler and Nevile, 2003).

"Now, in the case of developing countries, public spending should consist mostly of public investment, since the infrastructure provided by the state is fundamental in the process of economic growth" (López and Carvalho, 2008, p. 396). There is, indeed, a large literature that shows that public investment is beneficial for short and long term growth and that it complements, rather than crowds-out, private investment (see, for example, Aschauer, 1989; Munnell, 1992; Otto and Voss, 1994; Nazmi and Ramírez, 1997; Rodrik and Subramanian, 2004; Erden and Halcombe, 2006; Bose et al, 2007; Herrera, 2007; Noriega and Fontanela, 2007). The *take-off*, in other words, must be made through public investment.

Of course, investment should be made according to a coherent and a well designed strategy of industrialisation, meaning aiming "… at *particular industries* (and firms as their components) to achieve the outcomes that are *perceived by the state* to be *efficient* for *the economy as a whole*" (Chang, 2003, p. 112, emphasis in the original). This means that there is a case for the state to "selectively monitoring entry, establishing mechanisms to make possible more *ex ante* coordination than is possible through market mechanisms alone, and for governmental regulation or overview to constrain or supplement profit incentives" (Nelson, 1981, quoted by Chang 2003, p. 113). Otherwise, as Robinson, clearly put it (1971, p. 234): "To

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embark upon large schemes of investment without coherent plan will mean a great of wasted effort".

It is also important to emphasise that promoting investment is likely to reduce inflationary pressure when there are shortages of capital equipment. In fact, sources of inflation (like increases in the prices of food-stuff due to higher demand) can be controlled by the application of the appropriate policies. Moreover, growing economic activity implies higher tax revenues and lower transfers and so is likely to reduce any existing fiscal deficits, while the increased tax revenues can be used to continue financing economic expansion. In other words, rapid growth promoted by expansionary policies does not need to be coupled with fiscal deficits nor generate high inflation.

A final remark. Surpluses in the current account are a method of exporting one country's unemployment and insufficient aggregate demand problems (Halevi and Kriesler, 1998). If countries maintain such surpluses, the increased domestic employment from the trade surplus, will be offset in another country whose balance of trade is in deficit, and which will need to lower domestic growth rates to improve their trade balance. Deficit countries experience leakages to domestic demand, as one country's imports are another's exports. Excess international reserves represents a loss to all countries. By lowering the growth rates of countries, it also lowers their imports. This, in turn, lowers demand levels in these countries, with the concomitant lower rates of growth. As was discussed above, the main determinant of a country's level of exports is the level of world activity. Higher reserves reduce that level of activity, and hence reduce exports. In other words, the tendency for developing economies to build up excess foreign reserves will lead to a reduction in total international trade, and, therefore lower levels of world economic activity. The effects spread beyond the

countries building up these excess reserves, due to their lower levels of economic activity and the resulting lower level of imports. In other words, the excess build up of international reserves reinforces stagnationist tendencies that result from the current international monetary system (Halevi and Kriesler, 2007).

In sum, to accelerate growth, aggregate demand needs to be stimulated through any its components. Excess international reserves can act as resources to help promote this end. In the case of developed economies the option is to promote public and/or private consumption, whereas for the developing economies the most viable and convenient choice, specially for long term purposes, is by way of public investment, though private investment and public or private consumption represent alternatives (especially when there is large idle productive capacity). In both cases, importantly, it is the government that needs to take the main role in ensuring the necessary measures.

4.1 Stimulating growth through the excess of international reserves: a simple exercise

In tables 3 to 5, we present the evolution of the components of aggregate demand for the same group of selected economies presented in table 1. As can be seen, since these economies started to accumulate international reserves, the evolution of the components of aggregate demand shows, in general, a stagnated or declining trend. In fact, as expected, in most of the crisis-affected economies, levels of aggregate demand have not recovered to the levels they were at prior to their crises. In particular, the figures in table 3 clearly indicate that the investment to income thresholds recommended by UNCTAD (2003) have not been achieved. Indeed, some regions (like Sub-Saharan Africa) and some economies (like Argentina, Mexico, Brazil and Russia) are still far from these levels, whereas other countries (like

Indonesia, Malaysia, Philippines and Turkey) despite having achieved or overcome such thresholds in the past, experienced drastically decreased investment after their respective crisis. This evidence shows that the economic performance of the economies in the sample have experienced a vicious and reinforcing cycle of stagnated aggregate demand and moderate economic growth.

Tables 3 to 5

Tables 3 to 5 also confirm that there is plenty of room to stimulate aggregate demand in all these economies. The excess of international reserves can be used to achieve this goal. To illustrate this, we elaborate a simple exercise to calculate the upper bound rate of growth of some developing economies in our sample, assuming that excess foreign exchange would have been used to stimulate aggregate demand through investment.[15]

To do this we apply two basic steps. First, we follow the policy prescriptions derived from the Keynes/Kalecki approach discussed earlier. Accordingly, we assume that some the developing economies shown in table 2 (specifically, Argentina, Brazil, Mexico, Indonesia, the Philippines, Thailand, Turkey and Russia) used their respective excess resources to increase their productive capacity. Furthermore, they increased investment levels, particularly through public investment, following a coherent strategy of industrialisation.

The second step consists of estimating the capital-output ratio to know by how much these previously unused resources would have contributed to the observed rate of growth. Table 6 shows the estimated capital-output ratio for some economies. We obtained this value by dividing the average rate of growth of gross capital formation five years before each country's respective crisis occurred by the average GDP's rate growth during the same period. With this information and the excess of international

reserves shown in table 2 we calculate the upper bound rate of growth. The last column in table 6 presents the results.

As can be seen, had all developing countries in the sample used their excess international reserves to boost investment they would have achieved a considerably higher rate of growth than the one observed after their respective crises. In fact, except for the Latin American economies, the rest would have practically doubled their observed growth rates.

Table 6 here

On the other hand, high income economies, like Japan and Korea, could also use their excess international reserves to stimulate aggregate demand and growth. In this case, the Keynes/Kalecki prescription consists of increasing public and/or private consumption. In this case, however, to calculate the upper bound of the growth rate is not so straightforward, as the capital-output ratio cannot be used. To illustrate, nonetheless, our point we refer to a recent article by Chandler (2008). In this work, the author suggests that the Japanese economy can be stimulated through boosting consumption. To achieve this goal, he proposes that if a quarter (roughly US$242 billion) of the total amount of Japan's current international reserves were given back to its citizens (knowing that the propensity to consume after taxes of Japanese people is around 73 per cent) the result will be that they will end up consuming at least US$1300 each, which is the equivalent of around 2.5 per cent of Japan's GDP. This, undoubtedly, will set in motion the virtuous cycle of income expansion-aggregate demand-investment-economic growth.

In addition, if the economies discussed above were to expand by using their excess international reserves, then this would have flow effects on the level of world

economic activity. The major expansions envisaged, would stimulate the trading partners of these economies, which would, in turn, further stimulates world economic activity. In other words, by running down excess reserves, not only would growth rates increase due to the resultant increase in domestic activity, but they would be further boosted by the resulting increase in global economic activity.

These results give strong evidence to support the argument that if policymakers want to accelerate growth, then excess international reserves are a potential tool at their disposal. Low economic performance, in other words, (borrowing Chandler's, 2008, title), means the rainy days that excess international reserves are theoretically meant for.

5. Conclusions

The accumulation of international reserves, particularly in the developing world, has sharply increased since the East Asian financial crisis of 1997-1998. These resources have been effectively taken out of circulation, and have not been used to influence domestic economic activity. As a result, they represent a potential source of economic growth, which could stimulate domestic economic activity in these economies. The effects of these would be to stimulate aggregate demand, particularly through investment in the case of developing economies and therefore increase domestic capacity levels. At the same time, the increased levels of domestic activity would spill over into increased global activity and trade, which would further benefit these economies. This demonstrates that these reserves have a large opportunity cost associated with them, that is too often ignored.

Endnotes

[1] Globalisation has increased this tendency – see Kriesler and Nevile (2003).

[2] For a pertinent explanation of why financial liberalisation did not boost investment and growth in emerging economies but rather led to increased volatility and crises see Rodrik and Subramanian (2008).

[3] This is true even for developed countries, where the economy is performing well according to the factors that financial markets supposedly give weight to (see Kriesler and Nevile 2003).

[4] Rodrik (2006, p. 8) for example argues that "the process of accumulating international reserves… makes clear that the relevant counterfactual in most instances is not one dollar of additional public investment, but one less dollar of short-term foreign debt." Truman (2007), on the other hand, highlights that using international reserves for development purposes might be problematic as this might require both the recalibrating and reversal of economic and financial policies.

[5] Proposed initially by Pablo Guidotti (then deputy finance minister of Argentina) and then refined by former U.S Federal Reserve Chairman Alan Greenspan in 1999.

[6] The constat expansion of aggregate demand, as is well-known, leads to increments on supply side factors, such as productivity and labour force as these variables are endogenous or elastic to the dynamic of aggregate demand (see Setterfield, 2002).

[7] The Economist's (2007) analysis of Chinese growth further illustrates the relevance of aggregate demand to economic growth considering that "... the popular notion that China is dependent on export-led growth is a myth; domestic demand is much more important. This year the increase in China's net exports (ie, less imports) is likely to account for about one quarter of its growth—a record amount. But even without this external boost, GDP growth would still have been a respectable 9%".

[8] In the analysis that follows we omit exports as this variable of aggregate demand does not depend, to a large extend on domestic policymakers, particularly in the long run. In the short run, the unique policy to promote exports is to devalue the exchange rate, but this alternative, depending on the size of the devaluation, might produce negative effects for the economy (ie, inflationary costs).

[9] There are, nevertheless, evidence that supports the fact that unemployment in developed economies (mainly Europe) during the 1970s to the 1990s has been the result of capital shortages (see Alexiou and Pitelis, 1994). In this sense, policies to expand capital accumulation should not be dismissed.

[10] However, there might be cases in which capital equipment will be idle, so stimulating private and public consumption may also be important in these economies.

[11] In the same vein, one of the most important reasons for developed economies not expanding demand, in cases where there is excess capacity and/or unemployed labour, is the constraint imposed by the balance of trade. Here, the problem is that increased levels of economic activity are associated with increased imports. Unless this is matched by increased exports, the long run prognosis is for deficits in the current account and depreciating currency. Since the main determinant of exports is usually the level of world economic activity, which is exogenous to the country, this implies an important constraint to economic growth. Excess reserves can be used to finance any increased imports resulting from higher growth levels.

[12] These studies, however, are silent regarding what factors generated investment. They assume, in fact, that higher investment was the result of higher levels of savings. For a contrasting view which emphasises the role of aggregate demand in

the process of growth in some Asian economies see Halevi and Kriesler (1998, 2007) and Kriesler and Halevi (1996).

[13] In words of Rostow (1956, p. 25): "The take-off is defined as the interval during which the rate of investment increases in such a way that real output per capita rises and this initial increase carries with it radical changes in production techniques and the disposition of income flows which perpetuate the new scale of investment and perpetuate thereby the rising trend in per capita output".

[14] This is because in a context of low expansion or stagnated income consumers are not so risk avert to increase their consumption by incurring in debts, particularly through credit cards.

[15] Recall that the logic of using the excess of international reserves for growth purposes might apply even for those economies that have rapidly recovered their growth rates after having undergone a crisis (namely Argentina, Turkey, Russia and some East Asian economies). This is because, as we stressed, crisis-affected economies do not recover output losses after they undergo a crisis.

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Table 1. Economic growth and international reserves in selected regions and countries.

Region/Country	GDP growth 1996-2005 (average %)	International reserves growth 1996-2005 (average %)	International reserves (% of GDP)	
			1996	2005
Latin America				
Argentina	2.5	10.9	6.6	14.7
Brazil	2.2	1.8	7.5	6.8
Mexico	3.6	16.4	5.7	9.6
East Asia				
Indonesia	2.8	9.8	7.9	11.5
Korea	4.5	28.1	6.1	26.6
Malaysia	4.8	13.0	26.7	53
Philippines	4.2	13.3	12	16.2
Thailand	2.8	4.7	20.9	28.8
Japan	1.2	17.2	4.7	18.3
Turkey	4.3	17.07	8.8	14
Russia	4.0	40.6	2.8	23
Sub-Saharan Africa	3.9	17.8	6.2	13.1

Source: WDI, CD-Rom, 2007.

Table 2. International reserves and its excess as a % of GDP in selected regions and countries, 1996-2005

Region/Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Averange
Latin America											
Argentina											
International reserves	6.6	7.5	8.4	9.2	8.8	5.6	9.8	10.8	12.4	14.8	9.4
Excess after crisis								4.8	6.4	8.8	6.7
Brazil											
International reserves	7.5	6.3	5.5	6.5	5.3	7.1	8.2	9.7	8.8	6.8	7.2
Excess after crisis				-0.7	1.1	2.2	3.7	2.8	0.8	1.7	
Mexico											
International reserves	5.7	7.2	7.6	6.7	6.2	7.2	7.9	9.2	9.4	9.6	7.7
Excess after crisis	-0.3	1.2	1.6	0.7	0.2	1.2	1.9	3.2	3.4	3.6	1.7
East Asia											
Indonesia											
International reserves	7.9	7.9	24.2	18.6	17.6	16.5	15.5	14.8	13.8	11.5	14.8
Excess after crisis				12.6	11.6	10.5	9.5	8.8	7.8	5.5	9.5
Korea											
International reserves	6.1	3.9	15.1	16.6	18.8	21.4	22.1	25.5	29.3	26.6	18.5
Excess after crisis				10.6	12.8	15.4	16.1	19.5	23.3	20.6	16.4
Malaysia											
International reserves	26.7	21	36.1	39.2	31.1	34.1	34.7	42.3	55.9	53.8	36.5
Excess after crisis				33.2	25.1	28.1	28.7	36.3	49.9	47.8	35.6
Philippines											
International reserves	12	8.5	13.8	17.1	17.3	17.1	17.1	17.3	14.3	16.2	15.1
Excess after crisis				11.1	11.3	11.1	11.1	11.3	8.3	10.2	10.6
Thailand											
International reserves	20.9	17.2	25.9	27.9	26	27.6	29.9	28.7	30.2	28.8	26.3
Excess after crisis				21.9	20	21.6	23.9	22.7	24.2	22.8	22.4
Japan											
International reserves	4.7	5.2	5.6	6.6	7.6	9.7	11.8	15.7	18.2	18.4	10.4
Excess after crisis				0.6	1.6	3.7	5.8	9.7	12.2	12.4	6.6
Turkey											
International reserves	8.8	10.1	9.5	12.5	11.1	13.1	14.7	14.2	11.9	14.0	12.0
Excess after crisis								8.7	8.2	5.9	8.0	7.7
Russia											
International reserves	2.8	3.2	3	4.1	9.2	10.7	12.8	16.9	20.5	23	10.6
Excess after crisis				-1.9	3.2	4.7	6.8	10.9	14.5	17	7.9
Sub-Saharan Africa											
International reserves	6.2	8.2	8.2	8.8	10.2	10.4	10.3	9	11.5	13.2	9.6
Excess after crisis	0.2	2.2	2.2	2.8	4.2	4.4	4.3	3	5.5	7.2	3.6

Source: WDI, CD-Rom, 2007.

Note: the excess of international reserves is calculated assuming a maximum sustainable external threshold of 6 per cent.

Table 3. Gross fixed capital formation in selected regions and countries, 1996-2005 (% of GDP)

Region/Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Latin America										
Argentina	18.1	19.4	19.9	18.0	16.2	14.2	12.0	15.1	19.2	21.5
Brazil	19.1	19.5	19.6	19.1	21.8	20.6	19.0	16.4	18.2	18.3
Mexico	17.8	19.5	20.9	21.2	21.4	20.0	19.2	18.9	19.6	19.3
East Asia										
Indonesia	29.6	28.3	25.4	20.1	19.9	19.2	19.0	19.3	21.7	22.0
Korea	37.5	35.6	30.3	29.7	31.1	29.5	29.1	29.9	29.5	29.3
Malaysia	42.5	43.1	26.8	21.9	25.6	24.9	23.2	22.0	20.4	20.0
Philippines	23.4	24.4	21.1	19.1	21.2	17.9	17.6	16.8	16.1	14.9
Thailand	41.1	33.8	22.4	20.8	22.0	23.0	22.8	24.0	25.9	29.0
Japan	28.4	27.6	25.9	25.5	25.2	24.7	23.3	22.9	22.9	23.1
Turkey	25.1	26.4	24.6	21.9	22.4	18.2	16.6	15.5	17.8	19.6
Russia	20.0	18.3	16.2	14.4	16.9	18.9	17.9	18.4	18.3	18.2
Sub-Saharan Africa	16.9	17.1	18.5	17.7	16.9	17.5	17.7	17.9	18.2	18.7

Source: WDI, CD-Rom, 2007

Table 4. Household consumption expenditure in selected regions and countries, 1996-2005, (% of GDP)

Region/Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Latin America										
Argentina	70.1	70.8	70.1	70.0	70.7	70.3	60.9	62.7	62.6	61.1
Brazil	62.5	62.7	62.4	62.3	60.9	60.5	58.0	56.7	55.2	55.5
Mexico	65.1	64.2	67.4	67.0	67.0	69.6	69.0	68.7	68.1	68.3
East Asia										
Indonesia	62.4	61.7	67.8	73.9	60.7	63.2	65.8	59.2	63.7	65.2
Korea	53.0	53.1	49.3	51.9	53.7	55.5	56.6	54.4	51.8	53.3
Malaysia	46.0	45.3	41.6	41.6	42.4	45.0	44.1	43.6	42.8	43.6
Philippines	72.8	72.4	73.0	68.0	63.8	71.9	71.3	78.0	77.0	79.8
Thailand	54.3	54.8	52.6	55.4	57.2	58.1	58.4	57.6	57.1	58.1
Japan	55.3	55.3	56.0	57.1	56.4	57.0	57.7	57.4	57.4	57.7
Turkey	69.8	68.4	66.7	65.1	68.9	66.6	66.2	66.9	66.9	68.7
Russia	52.6	54.7	59.6	53.5	46.2	48.9	51.4	50.3	50.4	49.1
Sub-Saharan Africa	67.6	69.0	69.8	69.2	65.6	65.5	66.1	63.9	64.8	65.0

Source: WDI, CD-Rom, 2007

Table 5. Government consumption expenditure in selected regions and countries, 1996-2005, (% of GDP)

Region/Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Latin America										
Argentina	12.5	12.1	12.5	13.7	13.8	14.2	12.2	11.4	11.1	11.9
Brazil	18.5	18.2	19.1	19.1	19.1	19.2	20.1	19.9	18.8	19.5
Mexico	9.6	9.9	10.4	11.0	11.1	11.8	12.1	12.4	11.8	11.5
East Asia										
Indonesia	7.6	6.8	5.7	6.6	6.5	6.7	7.1	8.0	8.4	8.2
Korea	11.6	11.6	12.8	12.3	12.1	12.9	12.9	13.3	13.5	14.1
Malaysia	11.1	10.8	9.8	11.0	10.4	12.6	13.8	13.9	13.2	12.9
Philippines	11.9	13.2	13.3	13.1	13.1	12.2	11.5	11.1	10.1	9.7
Thailand	10.2	10.1	11.1	11.5	11.3	11.3	11.1	10.7	11.1	11.8
Japan	15.4	15.4	16.0	16.6	16.9	17.5	17.7	17.9	17.8	17.6
Turkey	11.6	12.3	12.7	15.2	14.1	14.2	14.0	13.6	13.2	13.1
Russia	19.5	21.1	18.7	14.6	15.1	16.4	17.7	17.6	16.5	16.5
Sub-Saharan Africa	14.7	14.9	14.9	15.3	15.7	16.5	16.4	17.3	17.4	17.6

Source: WDI, CD-Rom, 2007

Table 6. Capital-output ratio, observed GDP growth and the upper bound rate of growth for some selected developing countries

Country	Capital-output ratio	GDP growth after crisis-2005 (average %) [a]	Upper bound rate of growth
Argentina	2.8	9.0	11.4
Brazil	1.4	2.6	3.8
Mexico	1.7	3.6	4.5
Indonesia	1.6	4.2	10.1
Philippines	2.2	4.5	9.3
Thailand	4	4.9	10.5
Turkey	2.1	7.5	11.2
Russia	1.4	6.7	12.3

Notes: [a] for Argentina the average is for the period 2003-05, for Brazil 2000-05, for Mexico 1996-2005, for East Asian countries 1999-2005, for Turkey 2002-05 and for Russia 1999-2005

Source: WDI, CD-Rom, 2007