

# MACROECONOMIC VULNERABILITY AND REFORM: MANAGING PRO-CYCLICAL CAPITAL FLOWS

José Antonio Ocampo\*

## I. Introduction

The current decade has seen one of the most impressive economic booms in the developing world, fueled by a mix of three conditions prevailing in global markets: exceptional financing, high commodity prices and, for an important group of countries, large flows of remittances. The first two had coincided for the last time in the 1970s, while the mix of the three had probably not been experienced before. The rise of an alternative Asian engine, with China at the center, may be a fourth element.

These conditions have been replaced in recent months by the effects of financial turmoil that erupted in mid-2007 in the US and has now become the worst global financial crisis since the Great Depression. The turmoil precipitated, in turn, a recession in the industrial world that became generalized by mid-2008. For a year since the crisis erupted, commodity prices continued to boom, but they have now joined the downturn, and there are increasing signs that the third source of the boom, remittances, are also falling. We will see in the immediate future whether the Asian and, particularly, the Chinese engine, can serve as the basis for world –and not only Chinese—economic growth. Recent events indicate that the view exposed by the IMF in 2007 that the developing world can “de-couple” from weak economic conditions in industrial countries is essentially flawed.

The management of the recent boom by developing countries had several novelties. Many, though certainly not all, developing countries learned from previous crises that letting foreign exchange abundance generate a large exchange rate appreciation is a recipe for a crisis later on. So, they have chosen to accumulate the excess capital flows and part of their booming export revenues as international reserves and some with large current account surpluses have created or accumulated a fraction of

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\* Professor of the School of International and Public Affairs and Fellow of the Committee on Global Thought at Columbia University. Paper presented in the international symposium on “Financial Globalization and Emerging Market Economies” organized by the Bank of Thailand, November 7-8, 2008.

the export revenues in sovereign wealth funds. This “self-insurance” is a source of strength for many countries though, as I have argued elsewhere (Ocampo, 2007-8), it contributed to worsening global imbalances.

Although this “self-insurance” will certainly give greater room of maneuver for many countries than the very poor collective insurance provided in the past by the IMF, we will only know over the next months and years whether it has really increased the “policy space” that developing countries have to overcome the basic problems that the global economic system has shown in recent decades: the limited room of maneuver that developing have to adopt counter-cyclical macroeconomic policies in the face of pro-cyclical capital flows.

The paper is divided in four sections, the first of which is this introduction. The second considers the nature of mechanisms of pro-cyclicality. The third, and main part of the paper, analyzes the room of maneuver for counter-cyclical macroeconomic policies. The fourth draws some conclusions. The empirical evidence refers in some occasions to the developing world but in others focuses on Latin America, the major area of expertise of the author of the paper.

## **I. The nature and mechanisms of pro-cyclicality**

### *1. The basic rationale for boom-bust cycles*

Contrary to the claim of orthodox economic analysis that financial markets are stabilizing and tend to smooth out consumption (and more broadly, spending), many economists have tended to emphasize since the late 1990s the opposite phenomena, which have come to be called “irrational exuberance”<sup>1</sup> and, its counterpart, “unwarranted pessimism”. The “contagion” and “herd behavior” that underlies such boom-bust cycles has been reflected through history in successive phases of “appetite for risk” (or, rather, underestimation of risks) followed by periods of “flight to quality” (risk aversion), to use the terminology of financial markets. These boom-bust cycles follow the endogenous unstable dynamics analyzed by Minsky (1982), who argued that financial booms generate excessive risk taking by market agents, which eventually leads to crises. A similar

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<sup>1</sup> The phrase was made famous by Alan Greenspan (1996). See also the classic book by Kindleberger (1978) and Schiller (2000).

explanation has been suggested more recently by White (2005), who underscores how the “search for yield” characteristic of low interest rate environments generates incentives for credit creation, carry trade, and leverage that easily build up asset bubbles.

Many factors explain such behavior. Major market players—investment banks, rating agencies, international financial institutions—use the same sources of information and tend to reinforce each other’s interpretations of data and events. Since these players are seen as better “informed”, other market agents are likely to follow their lead. Herd behavior enhances, in turn, the volatility that results from the short term focus of many market decisions and operational practices. Most risk models rely heavily on market-determined variables like equity prices and credit spreads that may be biased towards excessive optimism during periods when asset bubbles build up, and to excessive pessimism after they bust. The use of similar market-sensitive risk models, together with benchmarking and evaluation of managers against competitors, may increase herd behavior and the short-term bias of market agents (Persaud, 2000).

Furthermore, as the macro-prudential literature has emphasized, traditional prudential regulation have pro-cyclical biases (see, for instance, Borio, Furfine and Lowe, 2001; Ocampo, 2003b) that have been reinforced by Basle II and its major novelty, self-regulation. One particularly critical issue is loan-loss provisions, which tend to be tied to current delinquencies or short-term expectations about them. In the upswing, delinquencies are low; this fact and the consequent need to make limited provisions encourage risk-taking. But this means that a jump in delinquencies rapidly exhausts existing provisions during crises. Financial institutions will have to use their capital to cover losses, but then, given regulatory capital requirements, their capacity to lend is limited and may therefore trigger a credit squeeze. They could also sell some of their assets but this is hardly a solution, as the simultaneous liquidation of assets by financial institutions, particularly assets that are perceived as riskier, tends to reduce the liquidity of those assets and forces great losses to agents who sell them in the panic.

Herd behavior takes place even in normal times but is particularly devastating in periods of high uncertainty, when confidence in other market agents deteriorates, expectations become highly volatile and “information” becomes unreliable. Indeed, the

“information” that underlies panics may be factually imprecise or incorrect, but it may still prevail, generating “self-fulfilling prophecies”. The sharp correction of expectations that then takes place have triggered numerous crises in industrial countries –the bust of the technology equity market in the early 2000s, the crisis of sub-prime mortgages in the US in mid-2007 and the recent meltdown of financial markets in the US in September 2008—as well as in emerging markets—the Latin American debt crisis of the 1980s and the 1997-1999 succession of Asian, Russian and Latin American crises.

The development of derivate and associated markets has permitted the independent pricing of risk factors and the spread of hedging techniques. However, the unbundling process does not necessarily eliminate or reduce risk. It may simply transform and redistribute it among different holder. This again improves efficiency if it transfers risks to those agents in the financial system most capable of managing them. At the same time, however, it makes the assessment of the underlying risks more difficult (Knight, 2004) and may transfer risk to those parts of the financial system where supervision and disclosure are weaker, or to agents with excessive “risk appetite” and high degrees of leverage who bet on windfall gains during the upswing. Therefore, although the accelerated growth of derivative markets has helped to reduce risks at the *micro*-economic level, it might have increased potential *macro*-instability.

Recent market trends have generated growing linkages among different segments of the global financial system: between financial institutions and markets, among different types of financial institutions, and among different countries. Financial linkages have also been enhanced by the liberalization of cross-border capital flows as well as deregulation of domestic financial markets. The growing correlation among markets implies, in fact, that correlation of market swings has increased, limiting the room for effective risk diversification. This has significant implications for the potential links between macroeconomic and financial developments. Again, in terms of the macro-prudential literature, the *macro*-economic risks, associated with variations in economic activity as well as interest and exchange rates, may prevail over the *micro*-economic advantages of risk diversification.

The regulatory deficit has made all these problems more severe. This deficit can be seen either by looking at either agents or assets. In the first case, there is clearly inadequate regulation of certain practices of agents that are otherwise well regulated (off-balance transactions of commercial banks, for example) but also agents that can concentrate high levels of risks (investment banks in the US, for example, and hedge funds) and agents that play a role in risk evaluation (credit rating agencies). In the second case, a myriad of assets now escape regulation, from securitized assets to derivatives.

Serious thinking must therefore be given to how to strengthen regulation. According to the analysis above, the basic implication for prudential regulation, which has been largely ignored in the past, is simple: since the basic problem of financial markets is strong cyclical swings, the basic objective of prudential regulation and supervision should be to introduce strong counter-cyclical rules.

## 2. *Pro-cyclical capital flows and the developing world*

Financial instability has diverse effects on different categories of agents. Agents that are perceived to be risky borrowers are subject to the strongest swings in terms of both the availability and costs of financing: they benefit from “appetite for risk” but also experience disproportionate shocks as a result of “flight to quality”. These riskier agents include both some domestic agents in industrial countries (smaller firms and poor households, but also large firms with poor credit ratings) and emerging market (and, more generally developing country) borrowers. In the latter case, it implies, in the terminology of Frenkel (2008), that integration of developing countries into global financial markets is always a *segmented* integration—that is, integration into a market that is segmented by the risk category according to which borrowers are bundled, and one in which high-risk borrowers are subject to strong pro-cyclical swings.

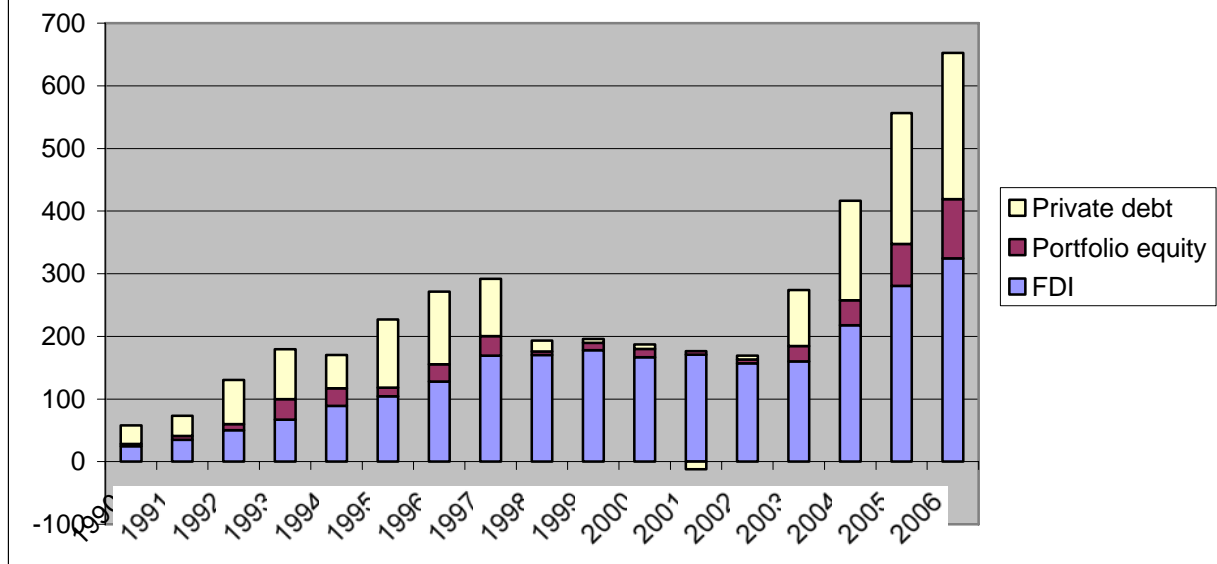
Segmented integration is closely linked to three essential asymmetries that characterize the integration of developing countries into world finance. The first is the incapacity of most countries to issue liabilities in their own currencies, a phenomenon that has become known as “original sin” (Eichengreen, *et al.*, 2003; Hausmann and Panizza, 2003). Although this has been partly solved over the past decade by the development of domestic currency bond markets, they are not a substitute for the capacity

to issue liabilities denominated in domestic currencies in global markets, the “hard core” of the original sin. The second asymmetries are differences in the degree of domestic financial and capital market development, which lead to an under-supply of long-term financial instruments. The third is the small size of developing countries’ domestic financial markets relative to the magnitude of the speculative pressures they may face. Taking the first two of these phenomena together, this implies that domestic financial markets in the developing world are significantly more “incomplete” than those in the industrial world, and thus that some financial intermediation must necessarily be conducted through international markets. As a result, developing countries are plagued by variable mixes of currency and maturity mismatches in the balance sheets of their economic agents.

It is important to emphasize that the volatility that developing countries face goes beyond the erratic behavior of short-term capital flows, or the very intense upward movement of spreads and the short periods of interruption (rationing) of financing observed during the Mexican, Asian and the Russian crises. Even more importantly, these countries face *medium-term* cycles in the availability and costs (spreads) of financing. Since the mid-1970s, two full medium-term cycles were experienced: a boom of external financing in the 1970s, followed by a major debt crisis in the 1980s; a new boom in the 1990s, followed by a sharp reduction in net flows after the Asian and Russian crises of 1997-98. Since 2003 the upswing of a new such cycle has been in place, which probably came to the end in mid-2008

Figure 1 shows the central features of the last two cycles. As it is shown, both debt and portfolio flows are strongly cyclical. They boomed between 1990 and 1997 and were followed by a five year collapse between 1998 and 2002. They again boomed since 2003. FDI has also been pro-cyclical, as reflected in both the 1990-97 and 2003-07 booms, but it stagnated rather than collapsed during the developing country crises of the late twentieth and early twenty-first centuries.

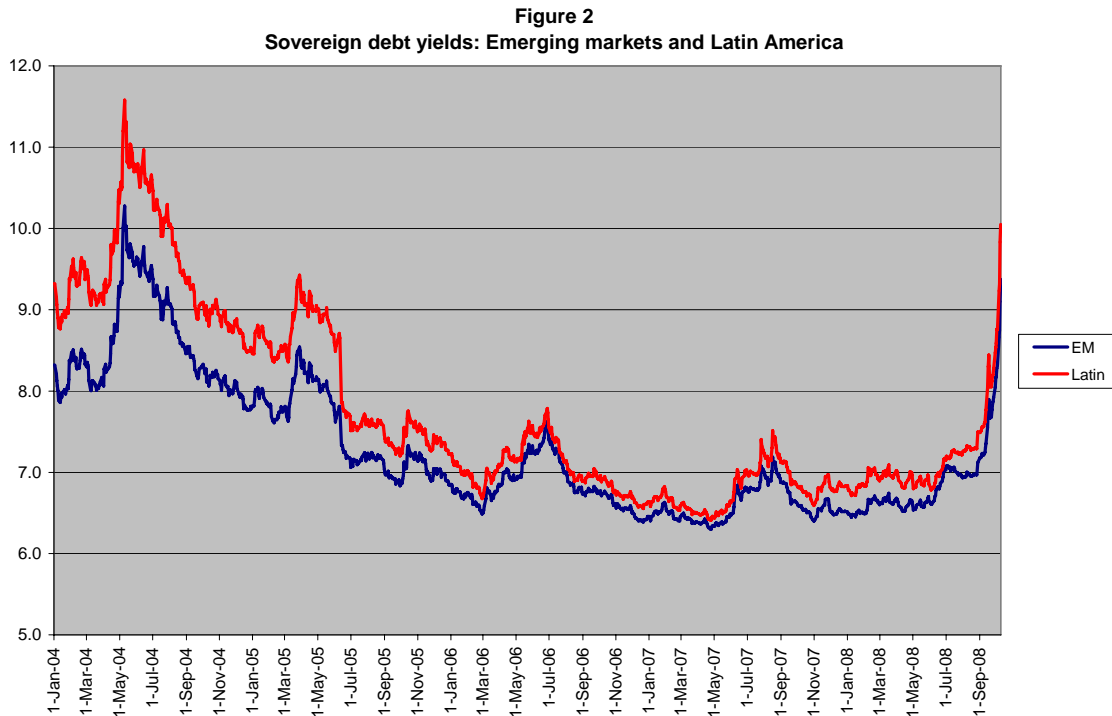
**Figure 1**  
**Private capital flows to developing countries**



Medium-term cycles also include shorter sub-cycles. The experience during the recent boom serves to illustrate this point. Figure 2 shows the daily evolution of yields of emerging and Latin American sovereign bonds since 2004, whereas Figure 3 estimates capital flows into the six large and medium-sized Latin American countries (the seven largest excluding Venezuela) based on balance of payments statistics. Following a previous paper (Ocampo, 2007), three episodes of euphoria (“exuberance”) in capital flows can be differentiated, which were interrupted in all cases by disturbances in global financial markets.

Mid-2004 may be taken as the starting point of a first phase of euphoria, as it was the moment when spreads started to fall consistently before the pre-Asian crisis levels and stock markets started to boom. Yields bottomed out in February 2006 and then increased, particularly during the disturbance in emerging markets of April 2006, which centered in China. The second phase of euphoria covers from mid-2006 to April 2007. Yields increased sharply in the following period of disturbance, particularly between June and August, coinciding with the beginning of the sub-prime crisis in the US. Spreads peaked however, in late August and started to fall in September and October, coinciding

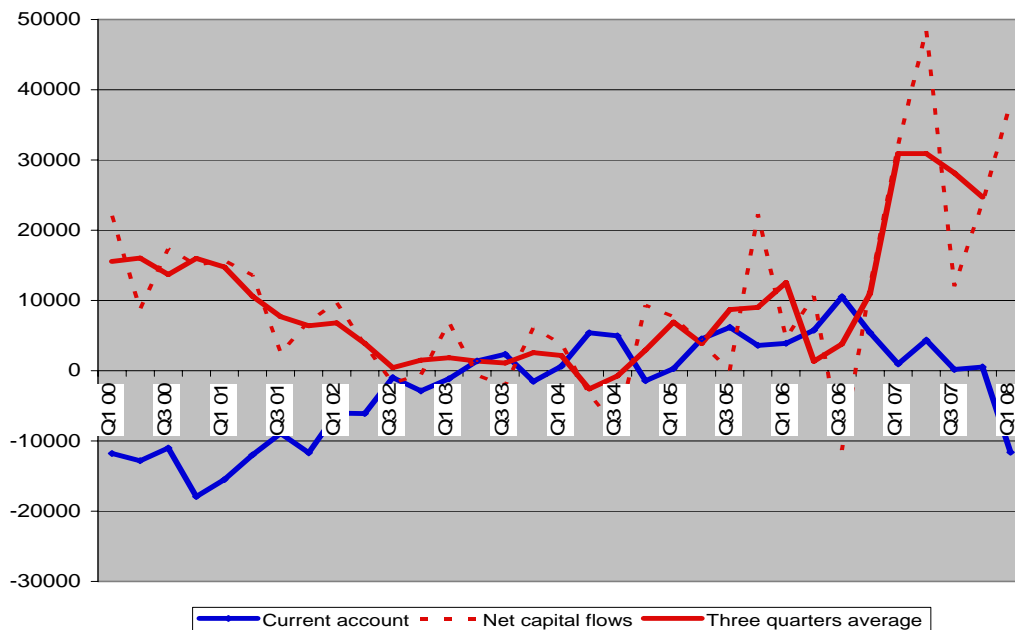
with a peculiar boom which centered on emerging markets. Finally, conditions changed radically since June 2008, when yields started to go up sharply, particularly in September.



Seen in terms of the magnitude of net flows, the first period saw a reversal of the downward trend that had characterized external financing to Latin America since the late 1990s. Net capital flows became more important than the (quite atypical) current account surplus as the basis of overall balance of payments surpluses and, therefore, of reserve accumulation. After a reduction in mid-2006, a veritable flood of capital came in during the last quarter of 2006 and first semester of 2007, when net capital flows came to entirely dominate reserve accumulation. After an interruption during the third quarter of 2007, net capital flows returned in last quarter of 2007, though in somewhat weaker magnitudes. Since mid-2007, the current account surplus disappeared (excluding Venezuela) and turned negative in the first quarter of 2008. Net capital flows then became the only source of reserve accumulation. As we will see below, reserve accumulation was massive during the last two episodes, mixed with the reintroduction of some regulations of capital flows, which in any case, did not reverse the capital account liberalization of the previous period.

The background for the third phase of euphoria was the growing interest rate differentials generated by neutral or moderately contractionary policies in the face of rising food price inflation in Latin America vs. the sharp reduction in interest rates adopted by the US to face its own financial crisis and risks of recession. This generated strong incentives for interest rate arbitrage. However, net flows came to the end by mid-2008 and were followed by capital outflows during the third quarter, particularly since September. Two higher frequency indicators of the downward trend are the sharp reduction in stock market prices that started in June and the rapid depreciation of Latin American currencies in September and early October 2008.

Figure 3  
 Net capital flows vs. current account  
 (Argentina, Brasil, Chile, Colombia, México y Peru; million dollars)



Viewed in retrospect, it is quite clear that the period of exuberance that started in late 2007, when the US had been already hit by the financial crisis was quite atypical. The mix of exceptionally high foreign exchange reserves and commodity prices made emerging markets appear for the first time as a sort of relatively safe destination relative to investments in risky assets in the US. Since mid-2008, when the trend of commodity prices started to move sharply downward, we came back to the normal pattern experienced in the past. Emerging market fell sharply, indeed at a faster pace than the

equally sharp fall in industrial countries' markets. Spreads also increase rapidly and currencies experienced strong depreciation pressures.

The strong pro-cyclical swings of capital flows to developing countries raise several policy questions. The most important problem is that they generate pro-cyclical *effects* on major macroeconomic variables: exchange rates, interest rates, domestic credit, and asset prices, which, in turn, impact investment and savings decisions.<sup>2</sup> For developing countries, capital account volatility has therefore become one of the major—and for many of them, the major—source of *real* macroeconomic instability (Stiglitz *et al.*, 2006). There is indeed overwhelming empirical evidence that capital flows to developing countries are pro-cyclical and that they exacerbate rather than dampen both booms and recessions (Prasad *et al.*, 2003).

Pro-cyclical capital flows also increase the intensity of major policy trade-offs. First, it creates a tension between macroeconomic policy autonomy and investment and growth in economies that are open to trade. Countries may choose to float to regain capacity to manage domestic interest rates but, as we will see, this can be relative ineffective and may simply displace the effects of pro-cyclical capital flows to the exchange rate. More exchange rate volatility is, in turn, a great disincentive to invest in both export and import-competing sectors and, for that reason, may have a negative effect on growth in open economies.

Authorities may then try to stabilize the exchange rate. In the presence of capital account liberalization, this forces them to absorb net capital inflows in the form of additional foreign exchange reserves—that is, to deepen both sides of national balance sheets. Strong accumulation of foreign exchange reserves during booms is also a form of “self-insurance” against the potential reversibility of capital flows that is inherent in pro-cyclicality. But reserve accumulation is costly and, in a sense, destroys the rationale for capital inflows in the first place, which is to transfer resources from rich to poorer countries. Furthermore, this response also implies that the additional rationale for capital

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<sup>2</sup> I will use in this concept “pro-cyclical” to refer to a variable that has pro-cyclical *effects* on economic activity. This differs, therefore, from the tradition of using the term to refer to a variable that rises during a boom and falls during a crisis. Thus, for example, developing country risk premia behave, according to the traditional criteria, in a counter-cyclical fashion (fall during booms, rise during crises) but have a pro-cyclical effect on economic activity. I thus characterize that variable as “pro-cyclical”.

account liberalization, to diversify risks, is clearly insufficient as a protection for the reversibility of capital flows. For those reasons, Rodrik (2006) and Ocampo (2007-8) have argued that it may be more logical to limit capital account liberalization.

### **III. The space for counter-cyclical macroeconomic policies**

Domestic policy actions in developing countries to managing pro-cyclical capital flows could aim at correcting the direct source of the disturbance—capital account volatility—or its indirect macroeconomic effects. In the first case, policies can involve variable mixes of: (i) accumulating foreign exchange reserves during booms; (ii) price-based or administrative capital account regulations; and (iii) external liability management (improvements in the term structure of liabilities during booms, and modifying the mix of government borrowing in the domestic versus international market in a counter-cyclical fashion). The second includes counter-cyclical fiscal policies, using the room to maneuver for counter-cyclical monetary policy that capital account interventions provide, and strengthened prudential regulation and supervision—particularly to reduce currency and maturity mismatches (Ocampo, 2003 and 2008; Stiglitz *et al*, 2006).

None of these actions is, of course, costless and they raise several policy trade-offs. The accumulation of international reserves as “self-insurance” generates quasi-fiscal losses that are particularly severe in countries with high country risk premia and, more generally, high domestic interest rates. They also generate capital gains and losses associated with swings in exchange rates among major reserve currencies. Capital account regulations can be effective in providing some room of maneuver for counter-cyclical monetary policies, but these benefits may be temporary and it may be impossible to insulate totally an economy from strong swings in international capital market. Stricter prudential regulations tend to raise the cost of financial intermediation and may restrict the development of new financial services. Furthermore, many regulatory actions that emerging economies can adopt to manage risks merely shift rather than correct the underlying risks; one case in point is the development of domestic bond markets, which eliminates the currency mismatches of agents that have no revenues in foreign currency, but may increase maturity mismatches.

There is, therefore, a deep sense in which we can argue that the risks and costs generated by pro-cyclical capital flows financial are inescapable. However, within the limited room to maneuver that these countries have, there is a strong rationale for the adoption of the counter-cyclical macroeconomic policies that are available.

*1. Counter-cyclical fiscal policies*

In economies that have opened their capital account, the best counter-cyclical instrument is fiscal policy. For those countries experiencing surging export prices, the simplest alternative is setting up fiscal stabilization funds to store temporary public sector revenues originating in the booming sector, as oil countries have been doing during the recent boom as well as Chile with its copper revenues (Colombia used to do this in the past with its coffee revenues). The accumulation of such resources in a sovereign wealth fund is one possible alternative. Both can provide “self-insurance” against sudden stops in external financing and export price collapses. More aggressive counter-cyclical policies could take the form of taxes on booming exports and capital inflows (including unremunerated reserve requirements on capital inflows discussed below).

More generally, the public sector should establish rules that aim at a “structural” sustainable deficit – i.e., a deficit adjusted by pro-cyclical swings in tax and other government revenues (those from natural resources) and, to the extent that they are strictly cyclical, the costs of safety nets used as automatic stabilizers. If such a rule is followed, spending, excluding that associated with safety nets, would follow a long-term steady pace, and current deficits would fall during booms and increase during crisis. A final alternative is adjusting government outlays counter-cyclically, but long debates over “fine tuning” suggest that discretionary changes in public spending may be difficult to use effectively, as they involve significant lags in the approval and implementation process. A well-designed safety net to protect vulnerable groups during crises (preferably as part of a permanent social protection system) is an automatic stabilizer that can play beneficial macroeconomic and social roles. This is a major mechanism in industrial countries, in the form of unemployment insurance.

However, counter-cyclical fiscal policies face both economic and political economy constraints, which tend to have their strongest effect during different phases of

the business cycle. In economic terms, the major issue is how to finance the deficit during the cyclical downturn, when external financing dries and markets ( and possibly the IMF) pressure for orthodox pro-cyclical fiscal adjustment to generate “credibility” –i.e., signals to financial markets that default is unlikely. The political economy constraints refer, first of all, to the fact that, during booms, it is difficult to argue in political terms for counter-cyclical fiscal policies to compensate for private sector “exuberance”—particularly exuberance that benefits in developing countries the richest segments of society (Marfán, 2005). This is particularly difficult when fiscal expenses were cut during the preceding crisis as part of an orthodox stabilization package. There are also classical time inconsistency issues: large public sector savings during booms may generate strong political incentives to spend them (the pressure that Chile faced in recent years after it accumulated large fiscal savings out of its copper revenues) or to dilapidate them in the form of unsustainable tax cuts (the US experience over the past decade).

For that reason, the evidence seems to indicate that pro-cyclical fiscal policies are the rule in the developing world, and have negative effects on long-term economic growth. Table 1 shows this, based on the data provided by Kaminsky *et al.* (2004) on the cyclicalities of fiscal policies in a sample of 104 developed and developing countries for the period 1960–2003.<sup>3</sup> It indicates that, in general, macroeconomic policies tend to be pro-cyclical in developing countries and counter-cyclical in developed economies. In particular, fiscal policy in Africa and Latin America has been highly pro-cyclical while in the fast-growing economies in East Asia, fiscal policies have been mixed, though rarely counter-cyclical. Evidence for Latin America indicates that with the notable exception of Chile and, partly, of Peru (thanks to its fiscal rules and, in the first case, its stabilization funds), fiscal policy has been pro-cyclical during the recent boom (Ocampo, 2007; IADB, 2008). Ocampo and Vos (2008, ch. IV) have shown, in turn, that there is a strong negative correlation between pro-cyclical fiscal behavior and for developing countries’ long-term growth.

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<sup>3</sup> Policy cyclicalities are defined more specifically here as the correlation between the cyclical measure of a specific policy stance and the cyclical measure of GDP growth. The Hedrick-Prescott filter is the commonly used approach to isolate the cyclical from the “structural” component of the trends in output growth, fiscal spending, taxation and monetary variables.

**Table 1**  
**Cyclicality of fiscal policy and economic growth 1960-2003**

Region/ Country	Cyclicality of fiscal policy (index) <sup>a</sup>	Average GDP Per Capita Growth Rate (in percentage)
Africa	0.30 (highly procyclical)	1.1
Cameroon	0.51 (highly procyclical)	1.0
Cote d' Ivoire	0.38 (highly procyclical)	0.4
Kenya	0.26 (highly procyclical)	1.2
Rwanda	0.63 (most procyclical)	0.5
Latin America	0.25 (highly procyclical)	1.2
Argentina	0.28 (highly procyclical)	1.0
Brazil	0.22 (highly procyclical)	2.4
Colombia	-0.02 (acyclical)	1.8
Mexico	0.19 (moderately procyclical)	2.0
Peru	0.40 (highly procyclical)	0.8
Venezuela, B.R. of	0.36 (highly procyclical)	-0.3
Asia	0.16 (moderately procyclical)	3.3
Fast growing Asia	0.06 (acyclical)	4.4
China	-0.03 (acyclical)	6.1
Indonesia	0.09 (procyclical)	3.6
Korea, Republic of	-0.11 (countercyclical)	5.8
Malaysia	0.11 (procyclical)	4.0
OECD	-0.11 (countercyclical)	2.6
Finland	-0.51 (most countercyclical)	2.9
France	-0.24 (highly countercyclical)	2.5
Germany	-0.02 (acyclical)	1.9
Japan	0.05 (acyclical)	4.0
United Kingdom	-0.37 (strongly countercyclical)	2.2
United States	-0.19 (moderately countercyclical)	2.2
High-to-Middle Income Developing Countries	0.28 (highly procyclical)	2.8
Middle-to-Low Income Developing Countries	0.17 (moderately procyclical)	2.0
Low-Income Countries	0.28 (highly procyclical)	1.0

Source: Ocampo and Vos (2008), table IV.2.

<sup>a</sup> The index is constructed as a weighted average of indicators of fiscal policy cyclicality, which include public expenditure, a proxy for changes in tax rates and changes in expenditures over the business cycle in 104 countries. The index ranges from -0.51 to 0.63 where positive figures denote higher procyclicality and negative numbers, the level of countercyclicality. More details in Kaminsky et al (2004).

## 2. *The limits of counter-cyclical monetary policy*

Low and stable real interest rates are essential to support investment and growth. The major problem in financially open developing country economies is, however, that

arbitrage in effect puts a floor under local rates that tends to generate pro-cyclical macroeconomic behavior (Ocampo, Rada and Taylor, 2008, ch. V). The floor determined by such arbitrage is the “parity” interest rate, determined by the reference costs of external financing, risk premium and expected exchange rate depreciation (or minus expected appreciation).<sup>4</sup>

The major problem is that, as indicated above, risk premia tends to increase for developing countries during crisis, at the same time that the scarcity of foreign exchange generates strong pressures for exchange rates to depreciate. Both tend to increase parity interest rates. When external financing is abundant, risk premia fall and foreign exchange abundance tends to generate exchange rate appreciation. Both factors reduce parity interest rates. These pro-cyclical swings in parity interest rates and in the availability of external financing explain, in turn, why domestic demand and asset prices are subject to pro-cyclical swings.

This behavior of interest rates is just the opposite of the standard prescription for monetary management, which are now broadly based on the inflation targeting paradigm. Under the now widely accepted “Taylor rule”, the central bank is supposed to increase interest rates when domestic demand is buoyant and inflation exceeds a pre-announced target, and the opposite when demand cools and inflation falls below the target. If inflation is determined exclusively by aggregate demand, this turns out to be a counter-cyclical rule.

The counter-cyclical effect is absent if the source of rising inflation is not domestic demand but a supply shock, such as the sharp hike of oil and food prices of 2007 and 2008. A simple rule could be that the central bank should simply ignore these shocks as temporary. But if it fears that “second round” effects may turn the supply shocks into a permanent acceleration of inflation, it would try to counteract the price hikes by increasing the interest rate. If so, the central bank would transform the supply shock into a downswing of economic activity. Similarly, if authorities respond to a

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<sup>4</sup> In algebraic form, let  $i$  be the local lending rate,  $i^*$  the foreign borrowing rate,  $\rho$  the risk premium, and  $\hat{e}^E$  the expected rate of depreciation (the "hat" notation denotes a growth rate,  $\hat{e} = (de / dt) / e$ ). Then interest rate arbitrage as described in the text will give rise to the equation  $i = i^* + \rho + \hat{e}^E$ .

positive supply shock by easing monetary policy, they will transform the positive supply shock into a boom.

This issue is important because nominal exchange rate are a major determinant of domestic prices in developing countries, directly through imported and exported consumer goods, and indirectly through the cost structure of firms that import inputs for their production. Thus, nominal exchange rate fluctuations generate supply shocks on the price level, which are favorable during booms and adverse during crises. During booms, appreciation pressures lead to slower inflation and may help the bank to meet its target without having to adopt contractionary monetary policies. In contrast, during crises, depreciation pressures may lead central banks to adopt contractionary rather than expansionary monetary policies. Due to these effects of the exchange rate on the domestic price level, the monetary authorities may in practice tolerate appreciation during booms and fight depreciation during crisis.

Furthermore, by trying to increase domestic interest rates during booms, when parity rates tend to fall, the central bank may induce additional capital inflows, which would reinforce the tendency of the exchange rate to appreciate. Joint appreciation and capital inflows can lead to a boom with low inflation, but only at the cost of growing external deficits that create vulnerability to a sudden stop in external financing. The other way round, during downswings attempts to reduce the interest rate would induce additional capital outflows that would reinforce depreciation pressures. The effects of exchange rate depreciation on domestic prices now operate as an adverse supply shock, and may lead monetary authorities following inflation targeting to increase rather than reduce interest rates, thus reinforcing the recession.

In sum, pro-cyclical capital flows tend to generate booms with low inflation followed by recessions with inflationary pressures. This sequence of boom-cum-price stability (“boombility”) and “stagflation” pressures is, therefore, the domestic counterpart of the global cycle of “appetite for risk” followed by “flight to quality”.

In this context, the major complication of monetary policy in developing countries is that the *counter*-cyclical policy rule implicit in inflation targeting goes against the logic of *pro*-cyclical swings in parity interest rates. This is made more complicated by the fact

that the nominal exchange rate swings induced by pro-cyclical capital flows generate supply shocks on the domestic price level that run counter to those assumed by the inflation targeting paradigm. If authorities try to counteract these supply shocks, this would effectively lead to pro-cyclical monetary policies.

The other side of the same coin is that authorities following inflation targeting *cum* exchange rate flexibility simply shift the problem to the exchange rate, which then becomes more volatile and gives unstable price signals to exporters and domestic producers competing with imports. The attempt to do counter-cyclical monetary policy with open capital accounts will then have negative effects on the basic objective of *trade* openness: to generate stable incentives for international specialization. This is further complicated by the fact that trade liberalization reduces the number of policy instruments available to encourage a dynamic export performance, leaving the exchange rate as generally the only instrument available for that purpose.

Therefore, in a very significant sense, capital account and trade liberalization have contradictory objectives. This is particularly clear when there is an “inflation stabilization dominance” in macroeconomic policy, which may lead authorities to tolerate appreciation during booms and fight depreciation during crisis, generating a net appreciation bias. Such bias has adverse effects on long-term growth, given the positive effects of competitive exchange rates on growth (Rodrik, 2007; Frenkel and Taylor, 2007). Another way of posing the same issue is that maximizing the benefits from trade openness require that macroeconomic policy should introduce some elements of exchange rate targeting.

Furthermore, a striking paradox is that the attempt to do counter-cyclical monetary policy may actually increase the risks of a balance of payment crises. Appreciation during booms tends to generate large current account deficits that make the economy extremely vulnerable to sharp reversals in the availability and/or cost of external financing.

In sum, pro-cyclical swings in parity interest rates and in the availability of external financing reduce the room of maneuver of monetary authorities to undertake truly counter-cyclical policies. So long as the logic of parity interest rates is pro-cyclical,

the capacity of central banks to manage rates in a counter-cyclical fashion is limited and may actually reinforce the pro-cyclicality of capital flows –and, therefore, of private sector net borrowing and spending and asset prices— and generate exchange rate volatility. Under “inflation stabilization dominance”, macroeconomic policy may achieve better stability of domestic inflation and even of domestic interest rates –though real interest rates may be high— but at the cost of greater instability in other dimensions, particularly of economic activity and exchange rates. The net effect will be adverse for investment and growth.

The major morale of this analysis is that the only way to break the deadlock is to delink, at least partially, the association between domestic and parity interest rates. This requires a mix of capital account regulations and strong interventions in foreign exchange markets.

### 3. *Capital Account Regulations*

Capital account regulations can play a dual role. They can be used as an additional tool of macroeconomic policy. But they can also help to improve debt profiles, and in this way reduce the risks associated with liability structures that are biased towards short-term capital flows.

As a macroeconomic policy tool, capital account regulations provide some room for counter-cyclical monetary policies that help partially avoid the tough dilemmas generated by pro-cyclical capital flows. During booms, they can help authorities “lean against the wind”, by permitting contractionary monetary policy while reducing exchange rate appreciation pressures. In turn, during crises, capital controls can create room for expansionary monetary policy. In either direction, capital account regulations can help the authorities combine –obviously within some margins— counter-cyclical monetary policy with active exchange rate targeting.

Viewed as a liability policy, capital-account regulations recognize the fact that the market rewards sound external debt profiles (Rodrik and Velasco, 2000). This reflects the fact that, during times of uncertainty, the market responds to *gross* rather than merely net financing requirements, which means that the rollover of short-term liabilities is not financially neutral. Under these circumstances, a maturity profile that leans towards

longer-term obligations will reduce domestic liquidity risks. The emphasis on *liability structures*, rather than on national balance sheets, recognizes the fact that, together with liquid assets (particularly international reserves), the liability structures play the crucial role when countries face liquidity constraints; other assets play a secondary role in this regard.

In practice, capital market regulations *segment* domestic and international markets. Traditional “quantity” controls of the type used in China and India (but being gradually dismantled in these countries, as in others before) openly differentiate between residents and non-residents, and between corporate and non-corporate agents among the former. Prohibitions or ceilings may be imposed on foreign borrowing by domestic residents, and/or on foreign investors taking positions in domestic securities. There may also be limitations on various forms of lending and borrowing in foreign currency by banks.

Another option is to introduce price-based regulations that effectively tax inflows or outflows. Taxing inflows was the choice pioneered by Chile in 1991 and Colombia in 1993 (where it was then applied more aggressively), using the mechanism of unremunerated reserve requirements (URRs) on capital inflows; in both cases, URRs were reduced and eventually dismantled during the Asian crisis. Taxing outflows was introduced by Malaysia in February 1999 as a substitute for the quantitative regulations it had introduced in 1998; the exit tax was then gradually reduced until it was dismantled in May 2001. The basic advantage of price-based over traditional regulations is their non-discretionary character.

Following Ocampo (2008), a large literature on these experiences leads to five main conclusions. First, controls on both inflows and outflows can work, but the authorities must be able to administer regulation while closing loopholes and (especially) avoiding corruption. *Permanent* regulatory regimes that can be tightened or loosened in response to external market conditions are probably the best option in this regard. Second, exchange controls and quantitative restrictions may be the best means to reduce the domestic sensitivity to global financial cycles, as reflected in China’s and India’s

avoidance of the Asian crisis in the late 1990s.<sup>5</sup> URRs and similar measures may only have temporary effects on capital inflows (especially if they are not ratcheted up during a surge) but do seem to influence interest rate spreads. Third, URRs and other reserve requirements help hold down short-term debt, which is highly volatile and thus a significant source of vulnerability. Fourth, controls are a complement for sound macro policies, not a substitute for them. Finally, to guarantee that capital market regulations can be effective, some intervention in current account transactions may be required as well, such as export surrender obligations or requirements to channel trade transactions through approved intermediaries.

Capital controls obviously have costs. During surges, they increase the cost of financing, but that should not be seen as a drawback, because this is precisely what they are supposed to do. Longer term costs are more important. In this regard, they can inhibit the development of derivatives markets and discourage operations by foreign institutional investors who may act as market makers for domestic bond and stock markets. Ways of avoiding this trade-offs between the short-term effectiveness of capital controls and their possibly unfavorable long-term repercussions on financial development are not simple.

Despite their advantages, capital account regulations have not been widely used during the recent boom. The trend has continued to be towards capital account liberalization, as reflected in particular in the gradual liberalization that has taken place in China and India. The moves to introduce URRs by Argentina, Colombia and Thailand were rejected by financial markets and have been partly reversed and their lead was not followed by others. Some countries did introduce other regulations, particularly on the purchase of domestic currency government bonds by international institutional investors. Other liability policies have, however, played an important role in recent years, particularly prudential instruments aimed at mitigating currency mismatches and active liability management by public sectors. But the most important developments have been the accumulation of large foreign exchange reserves to absorb excess capital flows, and the promotion of domestic currency bond markets to reduce the vulnerability associated with currency mismatches in balance sheets.

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<sup>5</sup> India's prior crisis in 1991 was caused by an unsustainable current account position under strict capital controls.

#### 4. *Foreign exchange reserve accumulation*

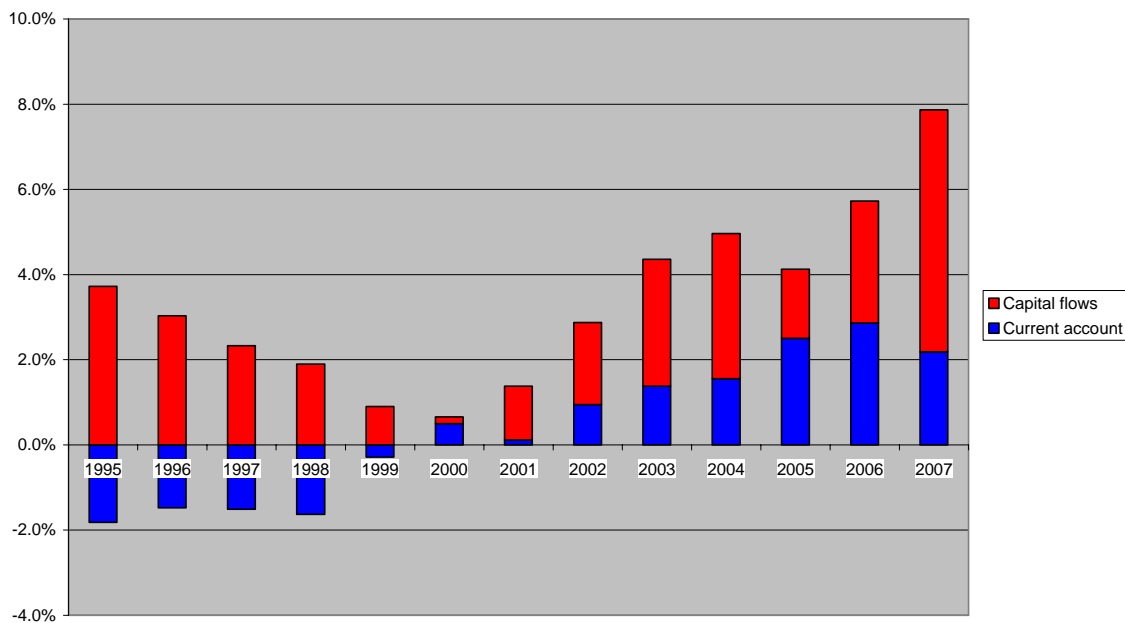
According to the previous analysis, the basic rationale for foreign reserve accumulation originates in the attempt to smooth out the effects of pro-cyclical capital flows on exchange rates. If adequately sterilized, it is possible to target both the exchange rate and the interest rate, thus avoiding the trilemma of open economies (Frenkel, 2007). A similar logic applies to primary commodity exporting countries facing terms of trade shocks. Indeed, saving some of the exceptional export revenues and associated fiscal revenues has long been accepted as a good practice. More generally, it can be argued that cyclical swings in export revenues should be managed through cyclical swings in foreign exchange reserves that would accumulate the excess supply of foreign exchange during booms to be used during the succeeding crises. It is interesting to emphasize, however, that this has not been the practice in the past, when the tendency to overspend export and fiscal revenues has been the rule.

The very costly capital account and terms of trade shocks that developing countries faced in the late 1990s finally led them to use this policy instrument in an active, in some cases aggressive way. The Asian crisis seems indeed to have been the turning point, as reflected in particular in the strong move by Asian countries in that direction. This was undoubtedly a response to the fact that the crisis revealed the lack of adequate institutions to manage crises that originated in the capital account, as well as the excessive conditionalities associated to those that are available –emergency IMF financing. As a result, highly intervened flexible exchange rate regimes have become the dominant regime in developing countries.

The “mercantilist” motives of such accumulation have been emphasized by the “second Bretton Woods” literature (Dooley *et al.*, 2003). An additional reason may be the lack of appropriate mechanisms for exchange rate coordination in export-led economies, which generate incentives for competitive exchange rate policies (Sakakibara, 2003). However, the recent literature comes definitely in favor of “self-insurance” against capital account volatility as the main motive for foreign exchange reserve accumulation (see, for example, Aizenman and Lee, 2007; Ocampo, Kregel and Griffith-Jones, 2007: ch. IV; Wyplosz, 2007). This literature finds, furthermore, that the motive for self-

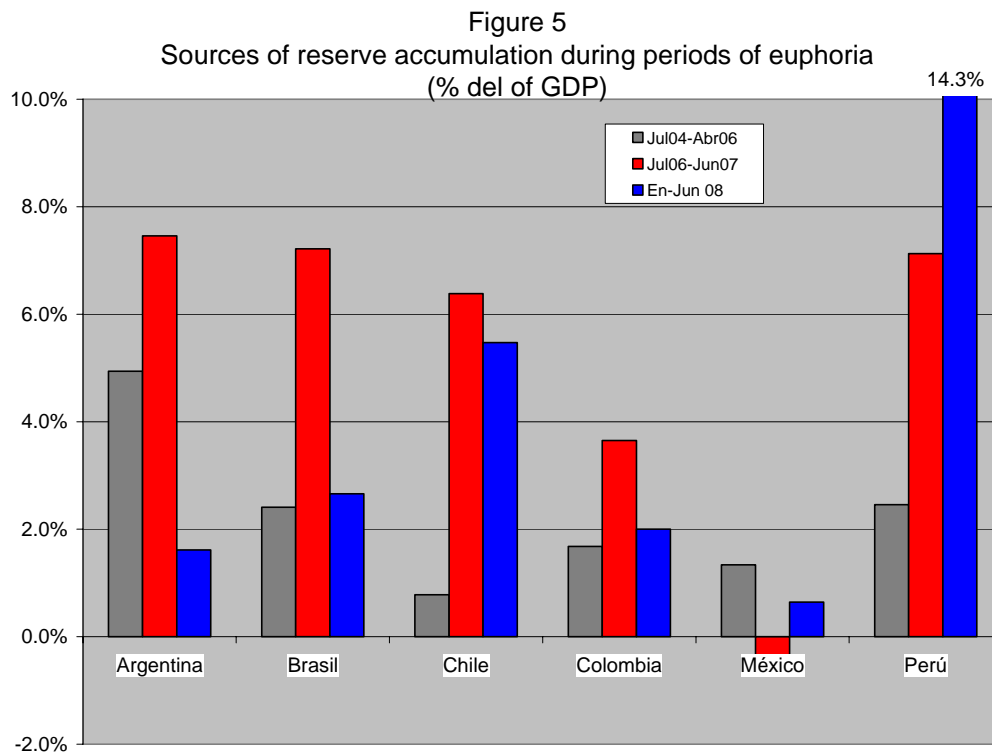
insurance against financial crises goes beyond the Guidotti-Greenspan rule that argues that countries should keep foreign exchange reserves at least equivalent to short-term external liabilities. Indeed, the evidence indicates that the risks associated with capital account liberalization are broader than those associated with short-term liabilities: according to the analysis above, managing the *medium-term* capital account cycle that developing countries face is an equally or more challenging issue. This argues in favor of a precautionary demand for international reserves that is proportional to *total* external liabilities, a proportion which furthermore should be larger the more open the capital account is. Existing evidence is consistent with this view.

Figure 4  
Sources of reserve accumulation by developing countries  
(% of GDP at market prices)



On top of that, the recent boom in commodity markets and, more generally, export revenues, has led to the desire by developing countries to save a proportion of the additional export revenues. The evidence indicates, indeed that the average pattern of developing countries has been to accumulate in foreign exchange reserves part of the additional export revenues and *all* net capital inflows (Figure 4). The pattern differs across regions and regions. Three types of developing countries can be differentiated in this regard. A first group includes countries with current account deficits for which the

only source of reserve accumulation is net capital flows. This is the largest group, and includes whole regions (Central and Eastern Europe, South Asia and sub-Saharan Africa), including major developing countries such as India, Turkey and Brazil (which ceased to run a current account surplus since the last quarter of 2007), but also a large number of smaller countries. The second group includes countries that mix current account and capital account surpluses. The major case is China. As Figure 3 above indicates, Latin America was in this group during the early part of the boom but moved to the first since the second semester of 2007. The third are basically energy exporters with strong current account surplus that are net exporters of capital.



The amounts of reserve accumulation involved are very large: 8% of GDP in 2007 for developing countries as a whole, out of which close to 6% of GDP originated in the capital account. Strong intervention in foreign exchange markets in Asia is a well known phenomenon, but the Latin American story is similar, with a few exceptions. Figure 5 shows the magnitude of the interventions in foreign exchange markets by the largest Latin American economies during the three episodes of “exuberance” identified in the first part of this paper. As it can be seen, only Mexico runs a relatively clean float.

Chile also did prior to 2008, but heavily intervened through the accumulation of foreign exchange assets in its fiscal stabilization funds. All other countries have intervened heavily in the foreign exchange markets, particularly between mid 2006 and mid 2007 but also some during the first semester of 2008. In two cases, Brazil and Colombia, heavy interventions were nonetheless accompanied by strong exchange rate appreciation (Ocampo, 2007).

A third explanation for heavy interventions in foreign exchange markets may be called the “financial stability” motive (Obtsfeld et al., 2008). The major argument is that in financially open economies countries in financially open economies must hold reserves against capital flight, particularly the desire to convert money balances (defined in a broad sense) into foreign exchange. However, it is difficult to separate this from the “self-insurance” motive. To the extent that changes of money balances are determined by exogenous factors determining capital flows, as argued above, the latter must be taken as the determining factor. The fact that reserves tend to be accumulated when there are excess net flows of capital is the best demonstration that the “self-insurance” motive is the dominant one.

It is important to emphasize that, independently of whether either motive dominates, capital account liberalization forces developing countries to accumulate large amounts of foreign exchange reserves. So, the basic point made at the end of the second part of this paper remains: to reduce the costs of reserve accumulation, it may make more sense to limit capital account liberalization.

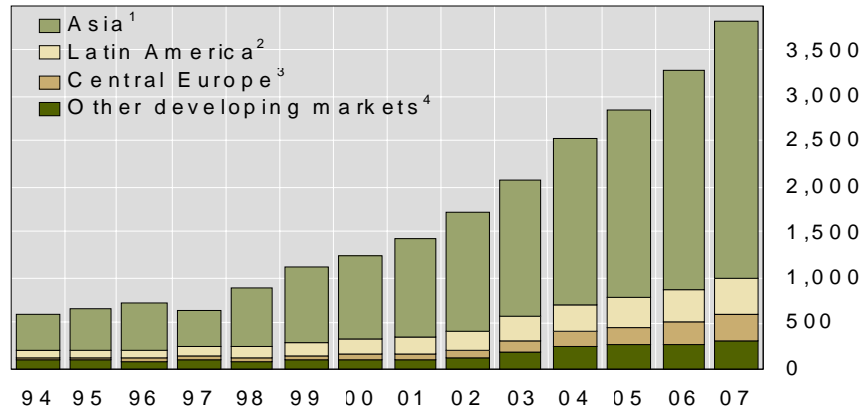
##### 5. *The development of domestic bond markets*

The second major innovation accelerated by the Asian crisis was the development of domestic bond markets. This was seen as a response to the dramatic effects that currency mismatches can have on balance sheets as a result of the sharp depreciation of local currencies that takes place during crises. It can also be seen as an attempt to avoid the “original sin” that affects developing countries –that is, the incapacity of these countries to borrow in their own currencies.

Figure 6 shows the impressive boom of domestic debt securities that took place in the developing world over the past decade. Although this development pre-dates 1997,

the rapid growth of this market follows the Asian crisis. Asian countries concentrate a large part of the associated debt issues, but this development has taken place throughout the developing world. As a result of this growth, local bond markets have become a major source of funding for the public and, to a lesser extent, the private sectors.

Figure 6  
Domestic debt securities outstanding  
(Billion US dollars)



- |   |  |
|---|--|
| 1 | China, India, Indonesia, Korea, Malaysia, the Philippines, Taiwan (China), and Thailand. |
| 2 | Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.                          |
| 3 | The Czech Republic, Hungary, Poland and Russia.  |
| 4 | South Africa and Turkey.   |

One major issue hindering the development of these markets in the past was the absence of a broad and diversified investor base. Until the late 1990s, institutional investment played a limited role in most emerging market countries, with the notable exception of Chile, as illustrated by the much smaller stock of assets managed by institutional investors than in the industrial world, relative to GDP. The development of this market has therefore been accompanied throughout the developing world by the growth of institutional investors.

Recent evaluations of the development of these markets in Latin America (Jeanneau and Tovar, 2008; Ocampo and Tovar, 2008) indicate that they have six main features. First, they are very heterogeneous in size, both in absolute terms and relative to GDP. Second, they are still largely dominated by public sector issuers, with the partial exception of Chile and Peru; the development of securitization may, in this regard, may

be more broadly based, though still incipient in most countries. Third, although local-currency fixed-rate instruments are slowly expanding, these markets are still dominated by short-term, floating and inflation-indexed securities; in contrast, public sector currency-linked debt has lost prominence, except in Argentina and Venezuela. Fourth, despite the recent expansion of longer term segments of public sector debt markets, the maturity structure is still biased towards the short-term. Fifth, markets remain somewhat illiquid, as reflected in the ratio of yearly trading to the outstanding stock of government securities relative to more mature industrial country markets; also, bid-ask spreads are significantly higher in Latin America than in the United States and Asia. Finally, although again expanding, derivative markets are still incipient. They are, of course, important to allow foreign investors and issuers to issue bonds in those markets by being able to hedge their currency and interest rate exposures.<sup>6</sup>

Despite progress made, it is an open question whether the development of domestic currency bond markets and the reduced reliance on external financing is permanent or not. It can be argued that the 2003-07 boom was facilitated by the appreciation trends that characterized the favourable phase of the medium-term cycle of external financing. It attracted, in particular, investments from foreign institutional investors, who saw opportunities to benefit not only from high local rates but also from the appreciation of developing country currencies. Moreover, their still dominant short term bias implies that the gains in terms reducing currency mismatches were mixed with increasing maturity mismatches.

As the pillars of these favourable external environment are now gone, the new markets will have to prove their resilience. It remains to be seen whether the progress made was enough as to allow developing countries to manage a prolonged turmoil in global financial markets and to provide truly new room of manoeuvre for counter-cyclical macroeconomic policies. The recent strong market downswing is not a promising sign in this regard.

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<sup>6</sup> Mexico may be an exception, followed by Chile. Taking advantage of the demand for highly rated peso paper, foreign financial institutions have issued a number of international peso-denominated bonds in the Mexican market. Since such issuers tend to swap the proceeds of their issues into other currencies, they have provided a natural counterpart to foreign investors wishing to hedge peso paper.

On a more structural basis, the development of large and deep markets for corporate debt remains still an unfulfilled promise in most countries. This is, therefore, an area where structural policies will have to be implemented in the future. It may also pose problems for the management of cyclical swings, which in liberalized developing economies of today are more associated with swings in “twin” private/external deficits (or surpluses) rather than the “twin” external/public deficits that were characteristic of the past (Ocampo, Rada and Taylor, 2008, ch. III).

#### 6. *Counter-cyclical prudential regulation*

As argued in the second part of this paper, the most problematic feature of finance is that it is inherently pro-cyclical. Risks are accumulated during booms that are only evident at the end of the boom, when it is generally found that financial systems are seriously under-capitalized relative to the risks they have assumed. This is behind the most basic recommendation to improve regulation: *prudential regulations must have a strong counter-cyclical component*. Whether we focus on agents or assets, one element that must be central to any reform effort in this area is therefore leverage or, its counterpart, the capital backing of financial institutions in a broad sense, which includes provisions (reserves).

This issue has been disregarded in the past, except by the macro-prudential literature (Borio, Furfine and Lowe, 2001; Ocampo, 2003). On the contrary, as pointed out in the first part of this paper, one of the major problems of current regulation, including Basle II, is that it is actually pro-cyclical, including pro-cyclical pattern of credit ratings; the broad use of mark-to-market pricing, that tends to link assets booms with excessive leverage and open speculative positions; and risk evaluation models that, due to their similar design, make actually turn markets more volatile. The recent *Annual Report* of the Bank of International Settlements (BIS, 2008) has fortunately put it at the center of any reform efforts.<sup>7</sup>

This requires that the traditional microeconomic focus of prudential regulation and supervision be complemented by a macro-prudential perspective, particularly by

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<sup>7</sup> See also d’Arista and Griffith-Jones (2008), who propose that issue, together with comprehensiveness, should be the two major criteria for regulatory reform.

introducing explicit counter-cyclical features in prudential regulation and supervision that would compensate for the pro-cyclicality of financial markets. The simplest recommendations are to increase capital and/or provisions for loan losses during booms, and to avoid mark-to-market asset pricing from feeding into leverage, such as limits on loan-to-value ratios and/or rules to adjust the values of collateral for cyclical price variations. This principle should also apply to bond issues, a fact that implies that securitization should be accompanied by the obligation for to make compulsory provisions for bond defaults, which would increase with asset prices. The introduction of a specific counter-cyclical perspective in prudential regulation would go a long way to overcome some of the major criticisms of Basle II. It also implies that financial institutions should be urged to adopt risk management practices that take better account of the evolution of risk over the full business cycle and that are not excessively sensitive to short-term variations in asset prices.

A proposal suggested in a previous paper (Ocampo, 2003), following the system introduced by Spain in 2000, is to shift the principles for making provision for loan losses to those of the insurance industry. Banks tend to make provisions close in time to when loans are supposed to come due and are not expected to be paid. In contrast, the insurance industry makes provisions when an insurance policy is issued. The analog for banks would be to build up provisions (reserves) when loans are *disbursed* rather than when repayments (or, rather the lack of repayments) are *expected*.

Under this system, provisions build up during an upswing and can be accumulated in a fund (along with special back-up for non-performing assets or borrowers under stress). The fund can be drawn down in a slump to cover loan losses. This sort of action counters the financial cycle, because it amounts to a pro-cyclical increase in the banks' own capital-cum-provisions during booms, which will give them more room to maneuver to manage losses during crises. This system is strictly speaking only cycle-neutral rather than counter-cyclical, as it essentially follows the pro-cyclical behavior of lending, but that is a still a considerable advance over current practices.

More directly counter-cyclical rules regarding changes in the credit exposure of financial institutions would also be desirable. Particularly, financial institutions could be

asked to increase general or sector-specific provisions when there is an excessive growth of credit relative to a benchmark, a bias in lending toward sectors subject to strong cyclical swings and, in developing countries subject to significant currency mismatches in portfolios, to the growth in foreign currency loans to sectors producing non-traded goods. Indeed, all maturity and currency mismatches on balance sheets as well as in expected income and payment flows should be subject to provisions.

An alternative, suggested recently by Goodhart and Persaud, is to increase capital requirements during booms.<sup>8</sup> This is partly a response to objections of accountants using “fair value” principles to provisioning based on expected losses of asset classes rather than individual loans. This solution is fine, though it tends to confuse the functions of capital, which are supposed to cover for unexpected losses, with those of provisions, which are to cover *expected* losses (in this case, throughout a whole business cycle).

These provisions should be supplemented in developing countries by more specific regulations aimed at controlling currency and maturity mismatches (including those associated with derivative operations). The strict prohibition of currency mismatches in the portfolios of financial intermediaries is the best rule. Authorities should also closely monitor the currency risk of non-financial firms operating in non-tradable sectors, which may eventually become credit risks for banks. Regulations can be used to establish more stringent provisions and/or risk weighting for these operations, or a strict prohibition on lending in foreign currencies to non-financial firms without revenues in those currencies.

In addition, prudential regulation needs to ensure adequate levels of liquidity for financial intermediaries so that they can handle the mismatch between the average maturities of assets and liabilities, which is inherent in the financial system’s essential function of transforming maturities, and which generates risks associated with volatility in deposits and/or interest rates. This underscores the fact that liquidity and solvency problems are far more closely interrelated than traditionally assumed, particularly in the face of macroeconomic shocks. Reserve requirements, which are strictly an instrument of monetary policy, provide liquidity in many countries, but their declining importance

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<sup>8</sup> See the op ed piece by Charles Goodhart and Aninash Persaud in the *Financial Times* on June 4, 2008.

makes it necessary to find new tools. Moreover, their traditional structure is not geared to the specific objective of ensuring financial intermediaries' liquidity in the face of the inherent maturity mismatches in their portfolios. The best system could be one in which liquidity or reserve requirements are estimated on the basis of the residual maturity of financial institutions' liabilities, thus generating a direct incentive for the financial system to maintain an appropriate liability structure.

#### **IV. Conclusions**

This paper has argued that the major macroeconomic problems that developing countries face in the current global order is the limited room to maneuver to adopt counter-cyclical macroeconomic policies in the face of strong pro-cyclical capital flows. In this context, massive “self-insurance” in the form of a large accumulation of foreign exchange reserves has been a rational response to a system that has not placed the policy space that developing countries have to undertake counter-cyclical macroeconomic policies in the agenda, and lacks any well functioning collective insurance against balance of payments crises –and, for that matter, lacks any mechanism to coordinate macroeconomic policies among major actors. The other common response has been the development of local currency bond markets, which still must prove their resilience to an environment characterized by reduced external financing and associated depreciation pressures. Their initial response to current turmoil does not look very promising.

The traditional frameworks used to analyze the challenges of macroeconomic policy are not very useful to analyze these problems. This is particularly true of the famous “trilemma” of open economies and their implicit recommendation that only polar exchange rate regimes are sustainable (or closing the capital account, but this is not seen by orthodox economists as desirable). The now standard recommendation to adopt inflation targeting cum exchange rate flexibility to regain macroeconomic policy autonomy falls into this vacuum.

The trilemma just does not capture the major challenges that developing countries have in the face of pro-cyclical capital flows: how to manage the sequence of boom-cum-price stability (“boombility”) followed by “stagflation” pressures that are the domestic counterpart of the global cycle of “appetite for risk” followed by “flight to quality”. The

major complication of macroeconomic and, particularly, monetary policy under these conditions is how to counter *pro*-cyclical swings in parity interest rates. This is made more complicated by the fact that the nominal exchange rate swings induced by pro-cyclical capital flows generate supply shocks on the domestic price level that run counter to those assumed by the inflation targeting paradigm.

The inadequacy of the current paradigm is reflected in the effective choices made by developing country authorities. In fact, the option for a mix of heavy intervention in foreign exchange markets and some limited regulation of capital flows indicates that the “revealed preference” of domestic policy authorities is for some interior position inside the famous triangle. But the choice for interior positions is simply the reflection of the fact that the major challenges are simply wrongly stated by traditional analyses.

An alternative, more useful way, can be built on two pillars. The first is full understanding that macroeconomic stability involves multiple dimensions: not only price stability and sound fiscal policies, but also smoother business cycles (i.e., *real* macroeconomic stability), sustainable debt ratios, and healthy domestic financial and non-financial private sector balance sheets. Investment incentives require, in turn, real stability, moderate long-term interest rates and, in an open economy environment, competitive exchange rates. Such a broad view of macroeconomic stability should recognize, in turn, that there is no simple correlation between its various dimensions and, thus, that multiple objectives and more rather than less instruments are required to manage the complex trade-offs involved (Ocampo, 2008).

The second is that the exchange rate regime faces an inherent tension between the demand for stability and the demand for flexibility that open developing economies face. So, polar regimes are inherently inferior, as they simply give up major macroeconomic policy objectives. The demand for stability comes from trade, but also from domestic price stability and the need to avoid the wealth effects of exchange rate fluctuations in the face of currency mismatches in portfolios. The demand for flexibility comes from the need to have some degrees of freedom to manage trade and capital account shocks. Authorities will thus tend to choose the exchange rate regime based on their preferences, but also on the relative benefits (“price”) of flexibility vs. stability, which are determined

by both the external environment (more turbulent times increase the benefits from flexibility) and objective factors (such as the size of the economy and its patterns of specialization) (Ocampo, 2003a).

The mix generally favored today –inflation targeting, flexible exchange rates and capital account liberalization—has, in this sense, a major problem: it ignores that gains in the capacity to manage domestic monetary policy go against a basic objective of *trade* openness, which is no other than to generate stable incentives for international specialization. More broadly, capital account and trade liberalization may be contradictory policy objectives. The only way to mainstream trade policy objectives in macroeconomic policy is to recognize that maximizing the benefits from trade openness require some elements of exchange rate targeting.

I have argued that the difficult challenges posed by pro-cyclical capital flows involve a mix of counter-cyclical fiscal and monetary policies, and heavy counter-cyclical interventions in foreign exchange markets supported by some (and possibly a high) degree of capital account regulations, counter-cyclical prudential regulations and domestic financial development, including deep domestic currency bond markets.

One element of this mix that has been ignored by macroeconomists is the role of counter-cyclical prudential regulations. The need for such regulations is derived from the recognition that there are deep links between macroeconomic and financial stability. This requires that the traditional microeconomic focus of prudential regulation and supervision be complemented by a macro-prudential perspective, particularly by introducing explicit counter-cyclical features in prudential regulation and supervision, which would encourage financial institutions to adopt risk management practices that take better account of the evolution of risk over the full business cycle.

There is, in any case, a deep sense in which we can argue that the risks and costs generated by pro-cyclical capital flows are inescapable. This calls for broader global financial reform that incorporates the major interests of developing countries into account, particularly the need for policy space for counter-cyclical macroeconomic policies and for better collective insurance against balance of payments crises. In the debates on financial reform that will follow the current meltdown of the global financial

system, the macroeconomic policy space for developing countries must be at the center of the agenda.

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