

**DESA Working Paper No. 59**

ST/ESA/2007/DWP/59

November 2007

## **The Instability and Inequities of the Global Reserve System**

*José Antonio Ocampo*

---

### **Abstract**

This paper argues that the current global reserve system is inherently unstable due to the use of a national currency as the major international reserve currency, and the high demand for “self-insurance” by developing countries. The latter is due to the mix of highly pro-cyclical capital flows and the limited room to maneuver that developing countries have to manage counter-cyclical macroeconomic policies. Both features imply that the system is also inequitable. An important insight of the paper is that such inequities feed into the instability of current arrangements. Any meaningful reform of the system must therefore address these two interlinked features.

JEL Classification: F02-International Economic Order, F33-International Monetary Arrangements and Institutions, F55-International Institutional Arrangements

Keywords: Global reserve currency, seigniorage powers, financial volatility, pro-cyclical macroeconomic policies, self-insurance, inequities of international economic order

---

**José Antonio Ocampo** is Professor of Professional Practice and Fellow of the Committee on Global Thought at Columbia University and was Under-Secretary-General for Economic and Social Affairs in the United Nations from September 2003 until June 2007. E-mail: [ocampo.joseantonio@yahoo.com](mailto:ocampo.joseantonio@yahoo.com)

Comments should be addressed by email to the author.

## Contents

|  |    |
|--|----|
| The Instability of the Global Reserve System .....                         | 1  |
| The Links with the Instability of the Financial System.....                | 6  |
| The Effects of the Inherent Asymmetries of the Global Reserve System ..... | 8  |
| Conclusions and Policy Implications .....                                  | 12 |
| References .....   | 15 |

UN/DESA Working Papers are preliminary documents circulated in a limited number of copies and posted on the DESA website at <http://www.un.org/esa/desa/papers> to stimulate discussion and critical comment. The views and opinions expressed herein are those of the author and do not necessarily reflect those of the United Nations Secretariat. The designations and terminology employed may not conform to United Nations practice and do not imply the expression of any opinion whatsoever on the part of the Organization.

Typesetter: *Valerian Monteiro*

United Nations  
Department of Economic and Social Affairs  
2 United Nations Plaza, Room DC2-1428  
New York, N.Y. 10017, USA  
Tel: (1-212) 963-4761 • Fax: (1-212) 963-4444  
e-mail: [esa@un.org](mailto:esa@un.org)  
<http://www.un.org/esa/desa/papers>

# The Instability and Inequities of the Global Reserve System

*José Antonio Ocampo*<sup>1</sup>

The international financial system exhibits two features that have left a significant dent in international financial markets in recent years. The first is the inherent instability of a global reserve system which continues to be based on a national currency, the US dollar –and, more generally, on any global reserve system based on national (or regional) currencies. The second is the pro-cyclicality that the system exhibits, which is inherent to the functioning of financial markets but has been enhanced by financial deregulation. The latter feature is reflected in varying ways in different segments of financial markets. Agents that are perceived to be risky borrowers are subject to the strongest swings in terms of both the availability and costs of financing. These riskier agents include both some domestic agents in industrial countries (a fact that was made again clear by the crisis of the sub-prime mortgage market in the US in mid-2007) and emerging market (and, more generally, developing country) borrowers.

Due to the latter feature, developing countries face both stronger pro-cyclical swings in financing and more limited room to manoeuvre to adopt counter-cyclical macroeconomic policies.<sup>2</sup> Their response in the recent years has been massive “self-insurance” in the form of a large accumulation of foreign exchange reserves. This is a rational response by individual countries to a system that lacks any well functioning collective insurance against balance of payments crises and which lacks, furthermore, any mechanism for macroeconomic policy coordination. However, this response to a major deficiency—and, indeed, inequity—of the global reserve system has generated “fallacy of composition” effects that have worsened global imbalances. The again rational decision by major commodity exporting developing countries to accumulate foreign exchange reserves to absorb part of the cyclical improvements in their terms of trade may have generated similar “fallacy of composition” effects.

This paper analyzes how the mix of instability and inequities in the global reserve and financial system has played out in recent years. It is divided into four sections. The first looks at the instability of the global reserve system. The second analyzes the links between such instability and that of the world financial system as such. The third considers the asymmetries that characterize the global reserve system and their implications for global imbalances. The last section considers possible international responses to these major deficiencies of the system.

## The Instability of the Global Reserve System

As is widely known, the global economy has accumulated large and widening imbalances in recent years. The most striking feature has been the large current-account deficits of the United States, which is matched by an

---

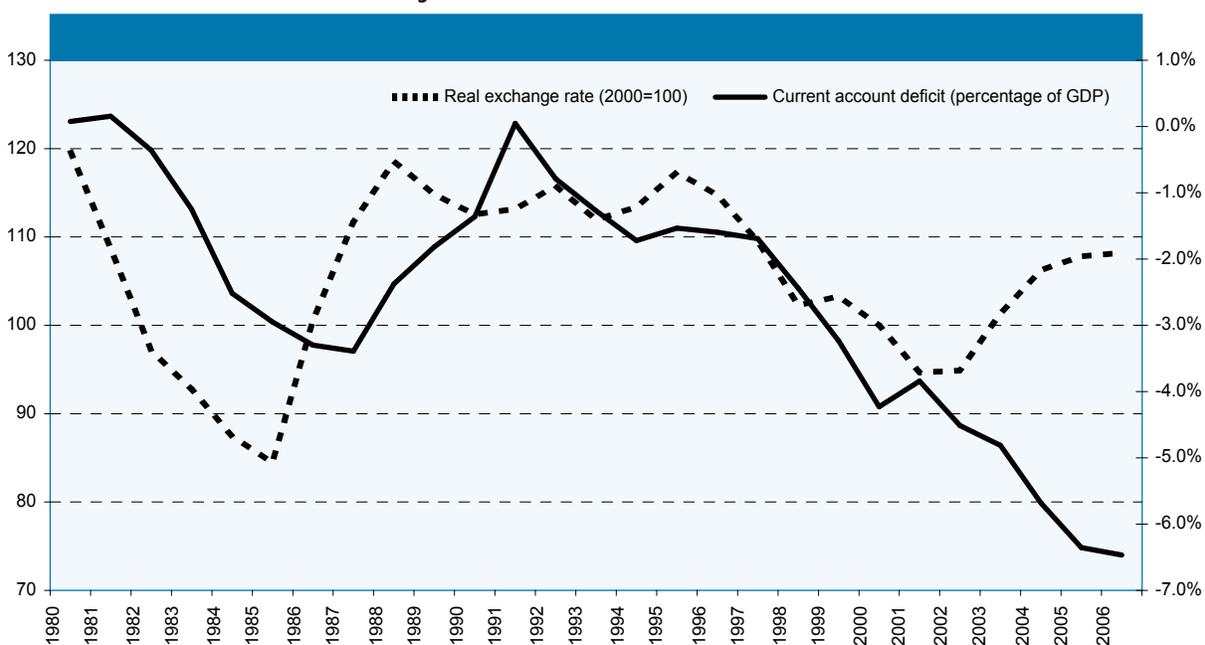
1 This paper benefits from previous work at the United Nations and Columbia University’s Initiative for Policy Dialogue, which is extensively used and quoted throughout the paper. I am grateful to Esteban Pérez, Mario Seccareccia, Lance Taylor and Matías Vernengo for comments on a prior version of this paper. The paper will be published in the *International Journal of Political Economy*, Winter 2007 ([www.mesharpe.com](http://www.mesharpe.com))

2 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”.

aggregate of surpluses in a number of other countries, mainly Japan, developing countries in East Asia and commodity-exporting countries in the rest of the world, mainly net fuel exporters. The cumulative depreciation of the dollar has been strong but orderly in recent years. Together with the slowdown in the US economy, the US deficit has tended to stabilize and even moderately fall since 2006, but the persistence of a large net US debtor position remains as a major source of concern. Furthermore, even if the adjustment is smooth and the imbalances are sustainable, the equitable distribution of global resources across countries that such imbalances imply raises major questions. Indeed, what these imbalances imply is that the surplus of savings over investment in a large part of the developing world is mostly financing investment and, particularly, consumption in the United States.

The current situation has several precedents. Indeed, since 1980, the current-account deficits of the United States have been the rule rather than the exception (see Figure 1). In turn, US balance of payments adjustments have had major repercussions on the world economy in recent decades. In the early 1970s, adjustment to the loss of US gold reserves and the then moderate deterioration of the current account led to the collapse of the Bretton Woods system of fixed parities and the transition to a floating exchange-rate system among major currencies. It was also one of the factors that contributed to the end of the “golden age” of post-war economic growth in the industrial world.

Figure 1:  
Current account deficit and real exchange rate of the United States



Source: IMF, International Financial Statistics. The real exchange rate is depicted here to show an increase when there is a real depreciation (the opposite convention to that used by the IMF). It is estimated as the inverse of the real exchange rate estimated by the Fund.

In turn, during the first half of the 1980s, the “twin” fiscal and external deficits of the United States led to a substantial appreciation of the US dollar. The adjustment was initiated by the 1985 Plaza Accord. However, the market response produced a sharp real depreciation of the dollar (see again Figure 1). According to some analysts, and against its initial objective of achieving an orderly devaluation, the Plaza Accord might have actually exacerbated the downturn of the dollar, and thus led to the Louvre Accord of 1987, which sought to stabilize the dollar.<sup>3</sup> Following two sharp falls in equity markets, in 1987 and 1989, the cor-

3 See Frankel (1994) for a detailed account of policy coordination during the late 1980s.

rection of the current account deficit was induced by the US recession of the early 1990s. The US slowdown led, in turn, to a global economic slowdown in 1989-1991.

The adjustment of the deficit in the United States during the late 1980s was matched by a rebalancing of surpluses in Germany and a few other developed countries, a number of developing countries in Asia and, as a result of falling petroleum prices, in oil-exporting developing countries. In contrast, Japan's large external surplus remained stubbornly high, even though the yen appreciated significantly against the dollar since the mid-1980s. This experience shows that currency appreciation in a surplus country may not necessarily result in the correction of external imbalances. Through its effects on the domestic price level, it helped to generate the deflation that plagued Japan during most of the 1990s. This contributed, in turn, to the financial crisis and stagnation of the Japanese economy that swamped the effects of real exchange rate on the current account. Some analysts have indicated that a similar result may take place in other surplus countries if they are forced to undertake a strong exchange rate appreciation (Genberg, *et al.*, 2005).

Although the renewed appreciation of the US dollar in the second half of the 1990s and rising domestic deficits (particularly of households) is behind the deterioration of the US current account since then, the large magnitude of the current imbalances also reflects conditions that have taken place outside the US economy. The sharp increase in the US current account deficits in the late 1990s was generated by the sharp divergence between US and world economic growth during a conjuncture characterized by the strong slowdown of many parts of the developing world, the transition economies and Japan, induced by the Asian and Russian crises. In turn, the additional sharp increase that took place in the early 2000s reflects the imbalances generated by the demand for "self-insurance" by developing countries, an issue that I will analyze in the third section of this paper. The latter may be important to understand, in particular, why the tendency of the dollar to depreciate since 2003 has not been accompanied, as in the second half of the 1980s, by an improvement in US current account imbalances.

The cyclical recurrence of US imbalances is closely related to the nature of the current global reserve system. A central feature of this system is the use of the national currency of the United States as the major reserve currency and instrument for international payments. In the early 1960s, Robert Triffin (1961) emphasized the fact that an *international* reserve system based on the *national* currency of the dominant economy is inherently unstable. There are two reasons for this. First, although there are many ways to generate dollar-denominated assets in today's global economy, the only way for the rest of the world to accumulate *net* dollar assets is for the US to run a *current* account deficit. Second, the reserve currency country has a greater autonomy to run a truly independent monetary policy –indeed, of imposing it on the rest of the world. One of the basic reasons for that is the perception (and consequent use) of US Treasury bills as the "safest assets" in the world economy, which implies that the determinants of US interest rates are relatively independent of the exchange rate of the US dollar against other currencies, contrary to what is usually assumed in open macro models. The only strong constraint that the US had in this regard was the possibility of other countries transforming their dollar reserves into gold, a constraint that was lifted in the early 1970s.

However, such deficits (in both the current and the capital accounts under an expansionary monetary policy) tend to erode the confidence in the dollar as a reserve currency. The loss in the confidence in the dollar as the world's reserve currency then forces an adjustment to restore its credibility. Since the abandonment of the gold-dollar parities in the early 1970s, adjustment has involved a cyclical depreciation of the dollar, followed by appreciation once confidence in the US dollar is restored. The system is then plagued by a cycle of expansion and contraction in the external deficit of the United States, strong cyclical swings of the

real exchange rate of the major reserve currency, and fluctuations in the growth of the world economy (Ocampo, Kregel and Griffith-Jones 2007: ch. IV).

Under the original Bretton Woods system, stability of exchange rates relative to the dollar depended on the accumulation of dollar reserves by central banks. Obviously, the US had no such a need, and was able to finance partly its deficits through the accumulation of reserves by other central banks, but had in principle to keep enough gold reserves to maintain confidence in the gold-dollar parity—an effort that, at the end, was bound to fail. Since the breakdown of the fixed exchange rate parities of the Bretton Woods system, the US has still no need to keep reserves denominated in the currencies of other countries and is able to finance external deficits with its own currency.

This privilege has both positive and negative features. On the one hand, it allows the United States to adopt autonomous macroeconomic policies, while other countries—and particularly, as we will see, developing countries—face external constraints to doing so. As we have seen, this privilege tends to be used excessively during cyclical upswings, forcing a later adjustment. On the other hand, as Stiglitz (2006: ch. 9) has argued, a current account deficit has contractionary effects on US economic activity, which means that some of the stimulus generated by the expansionary policies during upswings benefits the rest of the world. As cyclical upswings are also characterized by the appreciation of the US dollar, other countries also gain during these phases through the increased real value (in terms of their domestic currencies) of assets held in the US.

The United States also profits more concretely from its role as the world's banker, a role that in this case is closely tied to that of managing the major reserve currency. Part of her external liabilities is the dollar reserves accumulated by other countries, usually held in deposits and liquid instruments paying relatively low interest rates. This raises global distributive issues. First, it implies that there is a very imbalanced distribution of seigniorage powers in the world economy. But, additionally, since developing countries are forced to accumulate foreign exchange reserves (a fact that has been enhanced, as we will see below, by the strong demand for “self-insurance”), it implies a redistribution of income from developing economies to the major industrialized countries—that is, a case of so-called reverse aid (see the Zedillo report published as United Nations, 2001).

It is important to emphasize that some of these problems would not be solved if there are competing national (or, in the case of Europe, regional) currencies which are used as international reserve currencies and means of payments—as is already true. The seigniorage powers would still be concentrated in the rich countries, so that reverse aid continues to be a feature of the system. Furthermore, although such a multicurrency world provides developing countries the benefit of diversification of their foreign exchange reserve assets, it is potentially even more unstable, as substitution among reserve currencies generates additional volatility of the real exchange rates of major international monies.

Under the current system, the United States faces an additional advantage during periods of adjustment to current account imbalances. Whereas economies that have external liabilities denominated in other countries' currencies experience a net wealth loss (negative real balance effect) when their own currencies depreciate,<sup>4</sup> this effect is absent in the US. In contrast, the US experiences a positive wealth (real balance) effect when the dollar depreciates, as such change increases the value of foreign assets owned by US residents,

---

4 This assumes that these countries (particularly, developing countries) have net liabilities denominated in foreign currencies. Of course, there are agents that win with depreciation (those with net assets in foreign currencies) as well as losers (agents with net liabilities in foreign currencies). If the country has positive net assets, the real balance effect would be positive, but there will still be distributive effects.

while their liabilities remain invariable. This implies, in turn, that the depreciation of the US dollar will have weaker effects in terms of rebalancing global current account imbalances, as the wealth effects of such depreciation run counter to the relative price effects (United Nations, 2005: ch. I).

As we have seen, among the three phases of balance of payments imbalances that the US has experienced in the post-WWII period, the most recent one has been larger in magnitude and has lasted longer. Some analysts claim that this should not be overstated, as traditional balance of payments accounting may not make sense in a globalized economy (Kregel, 2006). Other analysts—including the former chairman of the Federal Reserve System, Alan Greenspan—argue that deepening global financial integration have made current imbalances different from those of the 1970s and 1980s in terms of their sustainability and implications for the world economy. Actually, orthodox analysis has always claimed that in a world of perfect capital markets, current account imbalances would merely reflect private decisions to allocate savings to the places where it is optimal to invest them. This would imply that such imbalances are, as such, irrelevant.

Still other analysts have argued that current imbalances could be sustained for a long time, as the system has evolved into a “second Bretton Woods” (see Dooley, Folkerts-Landau and Garber, 2003). This school of thought contends that the “mercantilist” decision of the Asian countries to avoid exchange rate appreciation to sustain their export-led growth models imply that they are willing to continue financing the US current-account deficits. According to this point of view, the economic benefits of stable and weak exchange rates exceed, for those countries, the costs of reserve accumulation. In turn, the persistent accumulation of dollar reserves by central banks allows the United States to rely on domestic demand to drive its economic growth.

However, an increasing number of observers fear that the risks associated with the accumulation of a net US debtor position imply that even official agents (particularly central banks) may be unwilling to continue to accumulate dollar assets, due to the possible losses associated with further dollar depreciation (see, for instance, Williamson, 2004). Indeed, the risk of a reversal of capital flows may be enhanced by certain features of the current US current-account deficits that make it unsustainable. They include the fact that the deficit is financing domestic consumption rather than investment; that US investment is shifting towards non-tradable sectors; and that the deficit is increasingly being funded by short-term flows rather than direct investment (Summers, 2004). Curiously, these are the same issues that have been raised in the past in relation to external imbalances of developing countries, most notably in Latin America.

In relation to US imbalances, it must be finally pointed out that, so long as US Treasury bills continue to be perceived as one of the “safest assets” in the world economy, the factors determining US interest rates will continue to be relatively independent of those that determine the exchange rate of the US dollar vis-à-vis other currencies. But the relative independence of these two variables may break at some point. Indeed, the most negative scenarios for the correction of global imbalances involve a link between foreign exchange and financial (bond and equity) markets, as is typical of most balance of payments crises: a run on dollar assets (including now Treasury bills) will force *both* a dollar depreciation and an increase in US interest rates, which will then generate a US recession that will spread to the rest of the world. The links between foreign exchange and financial markets also brings to the fore the interaction between the macroeconomic risks associated with the current global imbalances and the potential vulnerabilities generated by the financial innovations and market consolidation that is taking place. To this issue I turn next.

## The Links with the Instability of the Financial System

Contrary to the claim of orthodox economic analysis that rational speculation helps stabilize financial markets, since the late 1990s many economists have tended to emphasize the opposite phenomenon, which has come to be called “irrational exuberance”<sup>5</sup> and, its counterpart, “unwarranted pessimism”. The “contagion” and “herd behaviour” that underlies such boom-bust cycles has been reflected through history in successive phases of “appetite for risk” (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 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 behaviour. 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 events. Since these players are seen as better “informed”, other market agents are likely to follow their lead, reinforcing herd behaviour. Herd behaviour 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. Furthermore, the use of similar market-sensitive risk models, together with benchmarking and evaluation of managers against competitors, may increase herd behaviour and the short-term bias of market agents (Persaud, 2000). The practice and the regulatory obligation to “mark-to-market” the value of assets and liabilities, although good from the point of view of transparency, may have also increased the sensitivity of all market agents to short-term variations in asset prices. More generally, as the macroprudential literature has emphasized, traditional prudential regulation may have pro-cyclical biases (see, for instance, Borio, Furfine and Love, 2001; Ocampo, 2003), a feature that the new Basle Capital Accord (Basle II) shares (see, for instance, Griffith-Jones and Persaud, 2008). Also, the risk assessments of rating agencies, of both sovereign and corporate risk, are highly pro-cyclical (Reisen, 2003) and tend to react to the materialization of risks rather than to their build-up.

Contagion is also enhanced by financial linkages. During periods of euphoria, access to finance in one part of the world economy can facilitate investments in others, and profits made from investing in one country can lead to investments elsewhere, often involving greater risk. In turn, financial agents that incur losses in some markets are often forced to sell their assets in other markets to recover liquidity (or pay their short term obligations, including margin calls).

Another manifestation of “contagion” is the tendency of markets to cluster countries and firms in certain risk categories. Independently of their objective basis, this clustering becomes a “self-fulfilling prophecy”: events that take place in one country or firm tend to be seen as “representative” of an asset class, and therefore tend to generate reactions that affect other members of the cluster. Thus, as the experience of emerging markets indicates, even countries with weak “fundamentals” may be drawn into a financial boom (see, for example, Calvo, Leiderman and Reinhart, 1993), while all countries, with some independence from their “fundamentals”, will be later drawn into “sudden stops” of external financing (Calvo and Talvi, 2008).

---

5 The phrase was made famous by Alan Greenspan (1996). See also the classic book by Kindleberger (1978) and Schiller (2000).

Herd behaviour takes place even in normal times but is particularly devastating in periods of high uncertainty when “information” becomes unreliable and expectations become highly volatile. 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 emerging markets—the Latin American debt crisis of the 1980s and the 1997 Asian crisis—but also the bust of the technology equity market in the early 2000s and the crisis of sub-prime mortgages in the US in mid-2007. A central feature of these panics is the simultaneous liquidation of assets, particularly assets that are perceived as riskier, which may make the markets for such assets entirely illiquid.

Exchange rate flexibility and interest-rate fluctuations have generated, in turn, a rapid expansion of new financial instruments aimed at managing the risks that investors face. The development of these financial instruments, particularly derivatives, has permitted the independent pricing of risk factors and the widespread use of hedging techniques have allowed individual agents to better cover their individual risks. 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 strengthens the links between different types of risk and makes the assessment of the underlying risks more difficult (Knight, 2004). Besides, the increased opportunities for risk transfer mean that more risk may end up in parts of the financial system where supervision and disclosure are weaker, or in the hands of 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. In the words of Dodd (2008), if short term capital flows are “hot” money, under critical conditions derivatives can turn into “microwave” money, speeding up and magnifying market responses to sudden changes in expectations.

Derivatives as well as securitization have also moved many financial assets off the balance sheets of financial institutions. This has facilitated the growth of non-bank agents and made the activities of banks and non-bank institutional investors increasingly similar. The fact that there is less risk concentrated in banks implies that the probability of systemic financial crises may be lower than in traditional bank-based financial systems. At the same time, however, it means that there has been a sharp increase in the share of assets that are not in the balance sheets of institutions subject to consolidated risk-based capital frameworks (Geithner, 2004). Weak regulation of off-balance-sheet transactions and the strong opposition to regulating hedge funds have contributed to the development of potential instabilities. The growing size of large financial institutions generated by the simultaneous consolidation that has taken place and the diversity of the activities in which they are involved has probably made them less vulnerable to shocks, but has also increased the impact of the potential failure a systemically important intermediary.

All these structural trends have manifested themselves in 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 in different parts of the world implies, in fact, that correlation of market swings has increased, limiting, at the global level, the room for effective risk diversification. This has significant implications for the potential links between macroeconomic and financial developments. In terms of the macroprudential literature, the *macro*-economic risks, associated with variations in exchange and interest rates and

economic activity, may prevail over the *micro*-economic advantages of risk diversification. This implies that there can be potentially strong financial implications of the macroeconomic adjustments associated with the unwinding of global imbalances. In turn, the fact that a much larger, more complex and interlinked financial sphere has emerged, means that problems in the financial system can have larger consequences for the real economy than in the past.

### The Effects of the Inherent Asymmetries of the Global Reserve System

The dynamics of boom-bust cycles that characterize world financial markets have specific features in the developing world, which are deeply rooted in basic asymmetries that characterize the world economy (Ocampo and Martin, 2003). In the financial area, such asymmetries are reflected in: (i) the incapacity of most developing countries to issue liabilities in international markets in their own currencies, a phenomenon referred to as “original sin” (Eichengreen and Hausman, 2005); (ii) differences in the degree of domestic financial and capital market development, which lead to an under-supply of long-term financial instruments; and (iii) the small size of developing countries’ domestic financial markets vis-à-vis the magnitude of speculative pressures they potentially face. The first two asymmetries imply that financial markets are more “incomplete” in developing countries and, as a result, portfolios of market agents are characterized by variable mixes of currency and maturity mismatches. It also implies that some financial intermediation must be conducted through international markets—to the extent, of course, that market agents have access to such markets.<sup>6</sup>

It is important to note that, although the boom of local currency debt markets that has taken place in the developing world since the Asian crisis partly compensates for the first of these problems, it may just substitute maturity mismatches for currency mismatches (see, for example, Jeanneau and Tovar, 2006, in relation to Latin America). Furthermore, to the extent that there is no long-term net *external* demand for assets denominated in the currencies of the developing countries, foreign investors act as pure speculative agents: the demand for local currency instruments depends essentially on expectations of exchange rate appreciation, and therefore tend to disappear when there are expectations of depreciation. This implies that a broader definition of “original sin” should refer to the long-term net external demand for securities issued in the currencies of developing countries. Obviously, domestic agents, that do have a permanent demand for assets denominated in developing countries’ currencies, also respond in a speculative way to exchange rate expectations.

The pro-cyclical effects of fluctuations in the availability of external financing and the behaviour of country risk premia are magnified by the currency and maturity mismatches that characterize financial portfolios in developing countries. A major implication of currency mismatches and, particularly, of net liabilities in foreign currencies is that the exchange rate fluctuations generated by capital flows (real appreciation during capital account booms, depreciation during crises) generate pro-cyclical wealth effects. In turn, maturity mismatches imply that domestic private and public sectors agents finance long-term investment with short term finance. This means that debts face stronger interest rate risks and that refinancing requirements associated with debt rotation are high. If the availability of domestic financing is also pro-cyclical, refinancing needs will only be partly supplied during crises, leading to a credit crunch and possible bankruptcy of solvent agents.

6 This generates an additional set of asymmetries that I will not analyze here. I refer to the fact that poorer countries as well as small firms in all countries have very limited or no access to international financial markets. Those countries with a poor track record will also have more limited access. In recent years, however, the return to markets after major financial crises has been surprisingly fast.

All of these factors imply, 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. There is, indeed, overwhelming empirical evidence that capital flows to developing countries are pro-cyclical and thus exacerbate rather than dampen both economic booms and recessions (Prasad, *et al.*, 2003). Their effects on major macroeconomic variables are also pro-cyclical: they directly affect exchange rates, interest rates, domestic credit, and asset prices, which, in turn, impact investment and savings decisions. 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).

It is important to emphasize that the volatility that developing countries face goes beyond the erratic behaviour 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.<sup>7</sup> 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 1997-1998. Since 2002-2003, the upswing of a new such cycle has been in place, which already underwent a phase of turbulence in May/June 2006 and may have come to the end in mid-2007.

Financial asymmetries generate also important macroeconomic asymmetries. In particular, whereas major industrial countries maintain a large room to manoeuvre in adopting counter-cyclical macroeconomic policies—a freedom that the US, in particular, has amply used in the recent past—developing countries face significant constraints to their capacity to undertake counter-cyclical macroeconomic policies (Ocampo, 2008; Ocampo, Spiegel and Stiglitz, 2008; Stiglitz, *et al.*, 2006). There is indeed ample evidence that macroeconomic policies in developing countries are pro-cyclical (Kaminsky, Reinhart and Végh, 2004) and that this pro-cyclical behaviour has adverse effects on growth (United Nations, 2006: ch. IV).

Domestic policy actions in developing countries 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 as “self-insurance” against the reduced availability of finance during the succeeding crisis; (ii) the associated intervention in foreign exchange markets that would tend to smooth exchange rate variations; (iii) price-based or administrative capital account regulations; and (iv) external liability management (reduction of the public sector external debt or improvement in its term structure during booms; modifying the mix of government borrowing in the domestic versus international market in a counter-cyclical fashion). The second include counter-cyclical fiscal policies, strengthened prudential regulation and supervision—particularly to reduce currency and maturity mismatches—and using the room to manoeuvre for counter-cyclical monetary policy that capital account interventions provide (Ocampo, 2003, 2008; Stiglitz, *et al.*, 2006).

However, none of these actions is costless. The accumulation of international reserves as “self-insurance” generates quasi-fiscal losses that are particularly high in countries with high country risk premia and, more generally, high domestic interest rates. Capital account regulations can be effective in providing some

7 Indicating that this is a feature of financial markets in general, interruptions of financing also affected the US market during the crisis of mid-2007.

room to manoeuvre for counter-cyclical monetary policies (an issue usually ignored in the orthodox economic literature), but these benefits may be temporary and it may be impossible to insulate totally an economy from strong swings in international capital market (see for, example, Ocampo and Palma, 2008). 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 that has already been mentioned 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.

Indeed, in economies that have opened their capital account, the best counter-cyclical instrument is fiscal policy. From the point of view of the balance of payments, counter-cyclical fiscal policy should be accompanied during booms by the accumulation of foreign exchange reserves, liquid investments abroad by the government or reduction in the public sector external debt. However, counter-cyclical fiscal policies may involve long lags in policy decisions and additional lags in making their macroeconomic effects felt, which run counter to the need to face the strong and sudden shocks which originate in the capital account. Additionally, it faces political economy constraints. Such 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). 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 is facing after it accumulated large fiscal savings during the recent boom) or to dilapidate them in the form of unsustainable tax cuts (the US experience over the past decade).

There is, therefore, a deep sense in which we can argue that financial and macroeconomic asymmetries that affect developing countries are inescapable. However, within the limited room to manoeuvre that these countries have, there is a strong rationale for the adoption of the counter-cyclical macroeconomic policies that are available. This rationale originates, first of all, in capital account volatility, the issue that has been the focus of this paper. There is a similar rationale for counter-cyclical macroeconomic policies in the case of primary commodity exporting countries, particularly to manage terms of trade shocks. More generally, it can be argued that the cyclical performance of export revenues should be also managed in developing countries in a counter-cyclical fashion.

The very costly capital account and terms of trade shocks that developing countries have faced in the past has indeed led them in that direction. The Asian crisis seems to have been the turning point, particularly in the strong move by Asian countries in that direction. Capital account regulations have probably continued to weaken (though Argentina, Colombia and Thailand introduced price-based capital account regulations during the recent boom), but other counter-cyclical policies are being increasingly practiced. They include stronger prudential regulation (with some pro-cyclical features, but also the development of specific instruments to mitigate currency mismatches); promotion of domestic currency bond markets; active external liability management; a move by some countries to adopt counter-cyclical fiscal policies; and, particularly, the accumulation of large foreign exchange reserves during the recent boom.

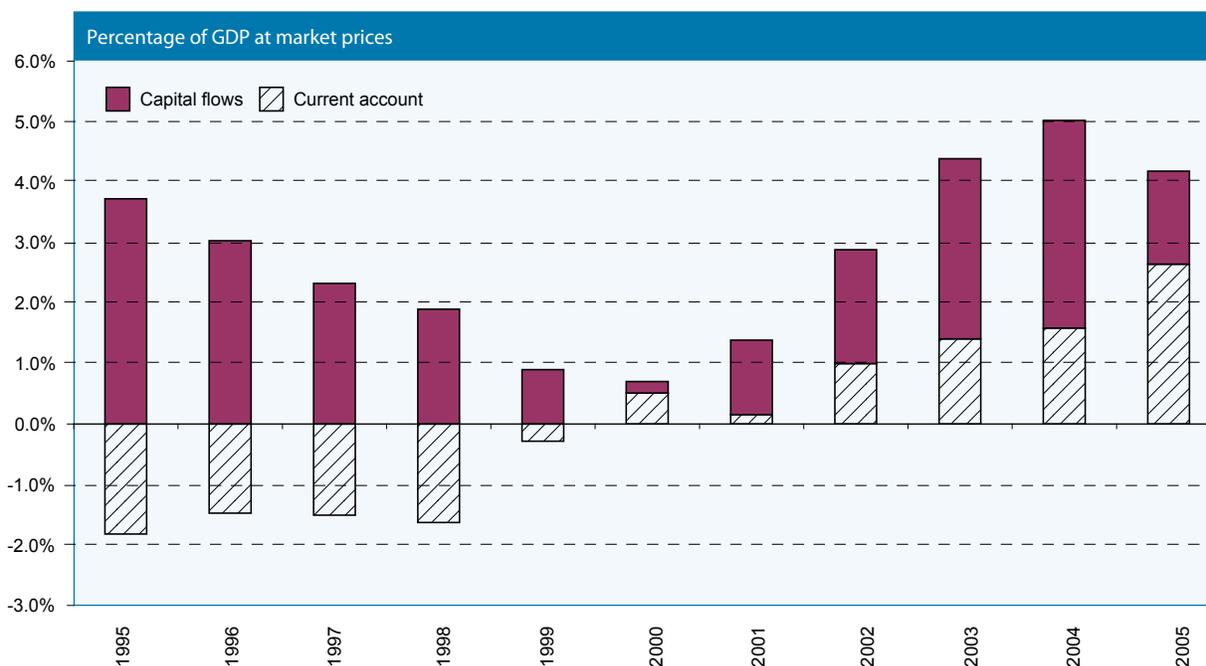
The “mercantilist” motives of such accumulation, which have been emphasized by the “second Bretton Woods” literature, may be part of the explanation, as well as the absence of appropriate coordination mechanisms for exchange rate policies in export-led economies, which generate incentives for each one of them to maintain exchange rate competitiveness. However, the recent literature comes definitely in favour

of “self-insurance” 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 rule (also called Greenspan-Guidotti-Fisher 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: managing the medium-term capital account cycle that developing countries face is an equally or more challenging issue. This argues in favour 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.

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. Since the developing world has experienced exceptional export performance in recent years, these counter-cyclical policies are indeed an appropriate response. The evidence provided by Figure 2 indicate that a major feature of average developing country performance in recent years has been the accumulation of international reserves to absorb *both* part of the additional export revenues and *all* the additional pro-cyclical net capital inflows. Furthermore, as Table 1 indicates, although stronger in East Asia, this practice has been fairly widespread in the developing world. In most regions, the capital account has been the major source of reserve accumulation.

This behaviour raises, of course, some interesting policy questions. From the point of view of the individual countries, the most important is that capital account liberalization forces developing countries to absorb net capital inflows in the form of additional foreign exchange reserves—that is, to deepen both sides of the national balance sheet. This is costly and, in a sense, destroys the rationale for capital inflows in the

Figure 2:  
Reserve accumulation by developing countries



Source: Database of the United Nations Department of Economic and Social Affairs.

Table 1.

**Factors that Contribute to Foreign Exchange Reserve Accumulation in the Developing World, 2001-2005**  
(Percentage)

|                                 | Current account | Net capital flows | Change of reserves |
|---------------------------------|-----------------|-------------------|--------------------|
| East Asia                       | 17.7            | 12.2              | 29.8               |
| Central and Eastern Europe      | 5.2             | 13.5              | 18.6               |
| Latin America and the Caribbean | -1.0            | 6.2               | 5.3                |
| Middle East and North Africa    | 2.9             | 15.4              | 18.3               |
| South Asia                      | 2.9             | 11.8              | 14.7               |
| Sub-Saharan Africa              | 2.1             | 7.2               | 9.3                |
| <b>Total</b>                    | <b>6.8</b>      | <b>11.1</b>       | <b>17.9</b>        |

*Source:* Database of the United Nations Department of Economic and Social Affairs.

*Note:* Net capital flows have been estimated on the basis of the two other accounts.

first place, which is to transfer resources from rich to poorer countries. It also implies that the additional rationale for capital account liberalization, to diversify risks, is clearly insufficient as a protection, as countries feel in any case that they need the additional “self-insurance” in the form of foreign exchange reserves.

For the issue at hand in this paper, what matters, however, is the fact that this strong counter-cyclical rationale generates “fallacy of composition” effects that feed into global imbalances. Indeed, if a large group of developing countries follows this route, they generate a current account surplus and an additional demand for liquid assets that has contractionary effects on the world economy unless it is matched by current account deficits and the supply of those liquid assets by industrial countries. The US has been playing those roles in recent years. So, the instability of the global reserve system is associated not only with the peculiar dynamics that it creates in the country that provides the major reserve currency. It is also associated with the strongly pro-cyclical behaviour of capital flows to developing countries and the high demands for “self-insurance” that it generates.

Therefore, self-insurance is not only a costly form of insurance for individual countries but also a source of instability to the global economy. However, the problem cannot be solved simply by asking developing countries to appreciate their currencies to correct the balance of payments surplus. It must solve first the source of the demand for “self-insurance”, which is the lack of adequate supply of collective insurance against balance of payments crises. In this sense, this problem has many similarities with the instability that a national banking system faced in the past in the absence of a lender of last resort (Ocampo, 2002).

## Conclusions and Policy Implications

The major conclusion of this paper is that the current global reserve system is inherently unstable due to two distinct features: the use of a national currency as the major international currency and reserve asset, and the high demand for “self-insurance” by developing countries that it generates. The latter is related, in turn, to the mix of highly pro-cyclical capital flows and the absence of adequate supply of collective insurance to manage balance of payments crises. Due to the fact that developing countries are seen by markets as subject to higher risk, they are subject to stronger pro-cyclical swings in the availability and costs of financing. This implies, in turn, that the system is inequitable, and that such inequity feeds into the instability of current arrangements. Any meaningful reform of the system must therefore address three major issues.

The *first* is to create a true global currency and to reinforce the role of the IMF in the management of the international economy. The creation of a true global currency would solve both the Triffin dilemma and the distributive effects generated by the use of the currency of the major industrial country as the dominant global currency. The most readily available alternative is the revitalization of the SDRs, of which no allocations have been made since 1981. The IMF Board of Governors did agree in 1997 on a special one-time allocation of SDRs, but it was not approved by the US. The cessation of SDR allocations had negative effects for developing countries and the world economy, as it coincided with a growing demand for international reserves.

Several proposals to renew SDR allocations have been made in recent years, following two different models. The first is issuing SDRs during episodes of financial stress that would be destroyed once financial conditions normalize (United Nations, 1999; Camdessus, 2000; Ocampo, 2002). This would develop a counter-cyclical element in world liquidity management, and would resolve the problem of supplying adequate finance for the extraordinary demand for official liquidity during crises. However, it would not solve the problem of unequal distribution of seigniorage powers. The solution to this problem requires permanent allocations of SDRs, which could go (directly or indirectly) to developing countries only or to the entire Fund membership. In the first case, the allocations could be used to finance additional aid for the poorest countries (Stiglitz 2007: ch. 9).

Reinforcing the role of the IMF in the management of the world economy would require strengthening the surveillance of major economies as well as its role as an honest broker in policy coordination among major economies. Indeed, such an approach would allow the Fund to go beyond its function as an “emergency financier” of developing countries during crises, the essential role that it has played since the 1970s, and the demand for which has declined due to the massive amount of “self-insurance” by these countries.

It must also be emphasized that, despite the problems of representation that the IMF has, it is the only institution where developing countries have a voice on the macroeconomic imbalances of major economies and could eventually have a voice in guaranteeing global macroeconomic policy coherence. This was not true of the “Accords” of the 1980s and is not true of the most recent ad-hoc industrial country groupings (particularly the G-7/G-8). A step in this direction was taken by the International Monetary and Financial Committee (IMFC) in April 2006 when it created the mechanism of multilateral surveillance of groups of countries, which involved in the first stage consultations on current account imbalances that include China, the Euro area, Japan, Saudi Arabia and the US, but its results have been so far frustrating. This reflects the fact that coordination of macroeconomic policies is, of course, no easy task, as the experience of the past indicates (see United Nations 2007: ch. I).

The *second* major area of reform is the need to recognize the links between macroeconomic adjustments and financial stability, and thus between the potentially very damaging links between the unwinding of global imbalances and world financial stability. This implies a shift of prudential regulation away from the notion that the stability of a financial system is simply the result of the soundness of individual financial institutions. It requires that the traditional microeconomic focus of prudential regulation and supervision be complemented by a macroprudential perspective, particularly by introducing explicit counter-cyclical features in prudential regulation and supervision (such as forward-looking provisions), that would compensate for the tendency of financial markets to behave in a pro-cyclical fashion. 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.

Two complementary issues in this regard are the regulatory deficits and the high pro-cyclicality that characterizes those segments of the market where (perceived) high-risk borrowers are clustered. The first indicates that it is important to regulate derivative markets along the lines suggested by Dodd (2008): introducing reporting and registration requirements; capital requirements for institutions operating in derivative markets and collateral requirements for derivative transactions; and orderly market provisions that would punish fraud and manipulation, establish position limits in derivatives markets, and require market dealers to act as market makers. More broadly, there is a serious need to strengthen international governance in the area of financial regulation, as has been suggested by Eatwell and Taylor (2000). The second requires special instruments to mitigate the strong pro-cyclical swings of the “high-risk” segments of the market. In relation to developing countries, this may mean giving an explicit role to capital account regulations as an instrument to mitigate capital market volatility, or design domestic regulations that have similar effects (Stiglitz, *et al.*, 2006: part III).

The *third* area is the need to address the pro-cyclical swings which developing countries face, which has resulted in a large demand for “self-insurance”. This means that, beyond the emphasis on the sustainability of macroeconomic policies (the major focus of reflection of the BWIs in recent years), an equally or even more important emphasis should be given to the *counter-cyclical* dimensions of macroeconomic and financial policies. The absence of this concept in the new IMF Medium-Term Framework (IMF, 2005) is thus a major deficiency. More broadly, this means that one of the roles of international financial cooperation vis-à-vis developing countries, and the major role of the IMF from the point of view of these countries, is to mitigate the pro-cyclical effects of financial markets and open “policy space” for counter-cyclical macroeconomic policies.

Managing counter-cyclical policies in developing countries under the current globalized financial world is, of course, no easy task, as financial markets generate strong incentives to adopt pro-cyclical policies and reduce the room to manoeuvre to undertake counter-cyclical macroeconomic policies. It is thus essential that international cooperation be designed to overcome such incentives and constraints. This can be achieved by: (i) smoothing out boom-bust cycles at the source through regulation, or at the destination through capital account regulations (or domestic regulations that have a similar effect) and counter-cyclical prudential regulation and supervision; (ii) helping to develop markets that better distribute the risk faced by developing countries throughout the business cycle (GDP-indexed and local currency bonds) or that encourage more stable private flows (such as counter-cyclical guarantees); (iii) increase cooperation among developing countries in the monetary and financial area, involving such issues as common reserve funds, regional and sub-regional development banks, and cooperation to create regional bond markets; and (iv) increasing more generally the incentives and degrees of freedom that developing countries have to adopt counter-cyclical macroeconomic and financial policies (Ocampo and Griffith-Jones, 2007).

This also requires addressing the need for much better collective insurance against balance of payments crises. At the country level, central banks have acted for many decades as lenders of last resort, to prevent systemic financial crises and to manage them when they do occur. The role of the IMF as an “emergency financier” is, of course, different to that of the central banks at the national level, since there is no automatic provision of liquidity during crises. It should be emphasized that these mechanisms should be seen as instruments of crisis *prevention*, particularly to prevent self-fulfilling liquidity runs, and should be matched by

mechanisms to better manage solvency crises associated with over-indebtedness. The latter are also essential to manage the moral hazard that emergency financing mechanisms can generate.

A step forward was the establishment in 1997 of the Supplemental Reserve Facility (SRF) to provide larger amounts of financing to countries hit by capital-account crises. Much less has been done to revitalize the mechanism to manage terms of trade shocks—particularly the Compensatory Finance Facility—and to design a new precautionary financial arrangement, closer to the lender-of-last-resort functions of central banks. According to the analysis presented in this paper, this mechanism is essential to reduce that excessive demand for “self-insurance” that the current system has generated. The IMF had introduced in 1999 the Contingent Credit Line (CCL) but it was never used and was discontinued in November 2003. The IMF Medium-Term Framework has proposed a new liquidity instrument for countries that are active in international capital markets. The discussion has not been completed and the initial proposal for a single up-front loan equivalent to 300 per cent of quota seems small relative to the magnitude of a typical “sudden stop”.

## References

- Aizenman, Joshua, and Jaewoo Lee (2007). International reserves: Mercantilist vs. Precautionary View, theory and evidence. *Open Economies Review* 18 (2) (April): 191-214.
- Borio, Claudio, Craig Furfine and Philip Lowe (2001). Procyclicality of the financial system and financial stability: Issues and policy options. BIS Papers No. 1 (March).
- Calvo, Guillermo, and Ernesto Talvi (2008). Sudden stop, financial factors and economic collapse: A view from the Latin American frontlines. In Narcis Serra and Joseph Stiglitz (eds). *The Washington Consensus Reconsidered: Towards A New Global Governance*. Oxford University Press for the Initiative for Policy Dialogue, Columbia University, New York.
- Calvo, Guillermo, Leonardo Leiderman, and Carmen Reinhart (1993). Capital inflows and real exchange rate appreciation in Latin America: The role of external factors.” *IMF Staff Papers* 40 (March): 108-151.
- Camdessus, Michel (2000). An agenda for the IMF at the start of the 21<sup>st</sup> Century. Remarks at the Council on Foreign Relations, New York (February).
- Dodd, Randall (2008). The consequences of liberalizing derivative markets. In José Antonio Ocampo and Joseph E. Stiglitz (eds). *Capital Market Liberalization and Development*. Oxford University Press for the Initiative for Policy Dialogue, Columbia University, New York.
- Dooley, Michael P., David Folkerts-Landau and Peter Garber (2003). An Essay on the Revived Bretton Woods System. NBER Working Paper 9971 (September), National Bureau of Economic Research, Cambridge, Massachusetts.
- Eatwell, John, and Lance Taylor (2000). *Global Finance at Risk: The Case for International Regulation*. The New Press, New York.
- Eichengreen, Barry, and Ricardo Hausmann (eds) (2005). *Other People’s Money: Debt Denomination and Financial Instability in Emerging Market Economies*. University of Chicago Press, Chicago.
- Frankel, Jeffrey (1994). Exchange Rate Policy. In Martin Feldstein (ed.). *American Economic Policy in the 1980s*. University of Chicago Press, Chicago.
- Frenkel, Roberto (2008). From the boom in capital inflows to financial traps. In José Antonio Ocampo and Joseph E. Stiglitz (eds). *Capital Market Liberalization and Development*. Oxford University Press for the Initiative for Policy Dialogue, Columbia University, New York.
- Geithner, Timothy (2004). Changes in the structure of the U.S. financial system and implications for systemic risk. Remarks before the Conference on Systemic Financial Crises at the Federal Reserve Bank of Chicago, Illinois (1 October).
- Genberg, Hans, Robert McCauley, Yung Chul Park, and Avinash Persaud (2005). *Official Reserves and Currency Management in Asia: Myths, Reality and the Future*. International Centre for Monetary and Banking Studies and Centre for Economic Policy Research, Geneva and London.
- Greenspan, Alan (1996). The challenge of the central banking system in a democratic society. Remarks at the Annual Dinner and Francis Boyer Lecture of The American Enterprise Institute for Public Policy Research, Washington, DC. <http://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm>.

- Griffith-Jones, Stephany, and Avinash Persaud (2008). The Pro-Cyclical Impact of Basle II on Emerging Markets and its Political Economy. In José Antonio Ocampo and Joseph E. Stiglitz (eds). *Capital Market Account Liberalization and Development*, Oxford University Press for the Initiative for Policy Dialogue, Columbia University, New York.
- International Monetary Fund (IMF) (2005). The Managing Director's Report on the Fund's Medium-Term Strategy. Document presented to the International Monetary and Financial Committee, Washington, DC (15 September).
- Jeanneau, Serge, and Camilo E. Tovar (2006). Domestic bond markets in Latin America: Achievements and challenges. *BIS Quarterly Review* (June): 51-64.
- Kaminsky, Graciela L., Carmen M. Reinhart, and Carlos A. Végh (2004). When it rains, it pours: Procyclical capital flows and macroeconomic policies. NBER Working Paper 10780 (September), National Bureau of Economic Research, Cambridge, MA.
- Kindleberger, Charles P. (1978). *Maniacs, Panics, and Crashes: A History of Financial Crises*. John Wiley and Sons, Inc., New York.
- Knight, Malcolm (2004). Markets and institutions: Managing the evolving financial risk. Speech delivered at the 25<sup>th</sup> European Money and Finance Forum (SUERF) Colloquium in Madrid (14 October).
- Kregel, Jan A. (2006). Understanding imbalances in a globalised international economic system. In Jan Joost Teunissen and Age Akkerman (eds). *Global Imbalances and the US Debt Problem: Should Developing Countries Support the US Dollar?* FONDAD, The Hague.
- Marfán, Manuel (2005). Fiscal policy, efficacy and private deficits: A macroeconomic approach. In José Antonio Ocampo (ed.). *Beyond Reforms: Structural Dynamics and Macroeconomic Vulnerability*. Stanford University Press and Economic Commission for Latin America and the Caribbean, Stanford and Santiago.
- Minsky, Hyman P. (1982). The financial instability hypothesis: a restatement. In Hyman Minsky. *Can "It" Happen Again? Essays on Instability and Finance*. M.E. Sharpe, Armonk, New York: ch. 5.
- Ocampo, José Antonio (2002). Recasting the international financial agenda. In John Eatwell and Lance Taylor (eds). *International Capital Markets: Systems in Transition*. Oxford University Press, New York.
- Ocampo, José Antonio (2003). Capital account and counter-cyclical prudential regulations in developing countries. In Ricardo Ffrench-Davis and Stephany Griffith-Jones (eds). *From Capital Surges to Drought: Seeking Stability for Emerging Economies*. Palgrave Macmillan for UNU-WIDER, Basingstoke, UK.
- Ocampo, José Antonio, and Juan Martin (2003). *Globalization and Development: A Latin American and Caribbean Perspective*. Economic Commission for Latin America and the Caribbean and World Bank, Stanford University Press, Stanford.
- Ocampo, José Antonio, and Stephany Griffith-Jones (2007). A counter-cyclical framework for a development-friendly international financial architecture. DESA Working Paper 39 (June), United Nations, New York.
- Ocampo, José Antonio, Jan Kregel and Stephany Griffith-Jones (2007). *International Finance and Development*. Zed Books, in association with the United Nations, London.
- Ocampo, José Antonio, Shari Spiegel and Joseph E. Stiglitz (2008). Capital Account Liberalization and Development. In José Antonio Ocampo and Joseph E. Stiglitz (eds). *Capital Market Account Liberalization and Development*. Oxford University Press for the Initiative for Policy Dialogue, Columbia University, New York.
- Ocampo, José Antonio, and José Gabriel Palma (2008). Dealing with volatile external finances at source: the role of preventive capital account regulations. In José Antonio Ocampo and Joseph E. Stiglitz (eds). *Capital Market Account Liberalization and Development*. Oxford University Press for the Initiative for Policy Dialogue, Columbia University, New York.
- Persaud, Avinash (2000). *Sending the Herd off the Cliff Edge: The Disturbing Interaction between Herding and Market-sensitive Risk Management Practices*. State Street Bank, London.
- Prasad, Eswar S., Kenneth Rogoff, Shang-Jin Wei and M. Ayhan Kose (2003). Effects of financial globalization on developing countries: some empirical evidence. Occasional Paper 220, International Monetary Fund, Washington, DC.
- Reisen, Helmut (2003). Ratings since the Asian Crisis. In Ricardo Ffrench-Davis and Stephany Griffith-Jones (eds). *From Capital Surges to Drought: Seeking Stability from Emerging Economies*. Palgrave for UNU-WIDER, Hampshire, United Kingdom.
- Schiller, Robert J. (2000). *Irrational Exuberance*. Princeton University Press, Princeton, NJ.
- Stiglitz, Joseph E. (2006). *Making Globalization Work*. W.W. Norton, New York.
- Stiglitz, Joseph E., José Antonio Ocampo, Shari Spiegel, Ricardo Ffrench-Davis and Deepak Nayyar (2006). *Stability with Growth: Macroeconomics, Liberalization, and Development*. Oxford University Press for the Initiative for Policy Dialogue, Columbia University, New York.
- Summers, Lawrence H. (2004). The U.S. current account deficit and the global economy. Per Jacobson Lecture, International Monetary Fund, Washington, DC.

- 
- Triffin, Robert (1961). *Gold and the Dollar Crisis* (Revised edition). Yale University Press, New Haven.
- United Nations (2001). Towards a new international financial architecture. Report of the Task Force of the Executive Committee on Economic and Social Affairs of the United Nations. United Nations, New York (26 June).
- United Nations (2001). *Report of the High-level Panel on Financing for Development* (Zedillo Report), available at: [www.un.org/reports/financing](http://www.un.org/reports/financing)
- United Nations (2005). *World Economic Situation and Prospects 2005*. United Nations, New York.
- United Nations (2006). *World Economic and Social Survey 2006: Diverging Growth and Development*. New York: United Nations.
- United Nations (2007). *World Economic Situation and Prospects 2007*. United Nations, New York.
- White, William R. (2005). Procyclicality in the financial system: Do we need a new macrofinancial stabilization framework? *Kiel Economic Policy Papers* (September), Kiel Institute for Economic Policy, Kiel.
- Williamson, John (2004). The future of the global financial system. *Journal of Post Keynesian Economics* 26 (4), Summer.
- Wyplosz, Charles (2007). The foreign exchange reserves: Business as usual? Paper prepared for the Workshop on Debt, Finance and Emerging Issues in Financial Integration, United Nations Department of Economic and Social Affairs and Commonwealth Secretariat, London, 6-7March.

