LESSONS IN MACROECONOMIC POLICY FOR DEVELOPMENT, IN LIGHT OF EXPERIENCES OVER THE LAST DECADE*

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ABSTRACT

During the 2000s, economic policies proved to be important lessons for developing countries. Its role was crucial to promote growth, financial stability and strong performance in face of external, real and financial shocks. This importance was confirmed by developing countries in the 2000s, which have adapted to innovations in macroeconomic policies, leading to acceleration of its growth and hanged its international situation. These countries have been less hit by the effects of financial crises and enjoyed greater degree of freedom to have acyclic policies, however countries that retained their prevailing policies of the 1990s in Latin America, have suffered severe consequences of crises, from which did not recover.

RESUMO

Durante os anos 2000 as políticas econômicas se mostraram lições importantes para os países em desenvolvimento. Seu papel crucial foi o de impulsionar o crescimento, a estabilidade financeira e um desempenho vigoroso frente aos choques externos, internos e financeiros. Essa importância foi confirmada pelos países em desenvolvimento que nos anos 2000 se adaptaram às inovações nas políticas macroeconômicas, levando à aceleração de seu crescimento e modificou a sua situação internacional. Estes países foram menos golpeados pelos efeitos financeiros das crises e desfrutaram de maior grau de liberdade para dispor de políticas acíclicas, em contrapartida os países que mantiveram suas políticas predominantes dos anos 1990 na América Latina, sofreram graves consequências das crises, das quais não se recuperaram.

1 INTRODUCTION

One can get important lessons on economic policy contrasting the experience of developing countries during the years 2000, including their performance during the recent financial crisis, with the three previous decades of financial globalization.

The most important lesson that can be derived from this contrast is the crucial role of the macroeconomic policies for stimulating growth, financial stability, and a robust performance against real and financial external shocks. Furthermore, the contrast can be distilled into a set of orientations of macroeconomic policy that contribute to reach the simultaneous fulfillment of the three aforementioned objectives.

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This work is dedicated to the development of this lesson and the identifying of the mentioned policy orientations. In the second part we synthetically expose the said orientations and discuss some aspects of their instrumentation, particularly of the monetary and exchange rate policies.

A synthesis of the first part says that a significant number of the developing countries adopted innovative macroeconomic policies in the years 2000. This induced an acceleration of their growth and modified their international situation. These changes not only favored the economies that adopted the new policies but also all the developing countries, through two channels. On the real side, through the drag effect that the acceleration of the economies which adopted the new policies on the rest of the developing countries, including in this channel the improvement in the terms of trade experienced by many of these economies. On the financial side, through the beneficial effect that the changes in the policies and their results had on the relations between the international financial system and the group of developing countries.

The beneficial global effects on the set of developing economies operated in the years 2000 on the period previous to the financial crisis, and also during its first phase, between mid-2007 and the collapse that followed the collapse of the Lehman Brothers.

In the following phase, when the crisis struck full on the developing economies, the effects were mixed. Those economies that had adopted the new macroeconomic configurations were less hit by the financial effects and enjoyed greater degrees of freedom to implement anticyclical policies. On the other hand, the developing economies that had maintained their international financial insertion marked by macroeconomic policies similar to those that predominated in Latin America during the 1990s (for example, the economies in center and eastern Europe) suffered the worst consequences of the crisis, of which they have not yet recovered.

The first part of the work is presented in two sections. In section 1 we expose three notable favorable changes in the behavior of the developing economies in the 2000 decade, in comparison with the behavior shown during the three previous decades. The first change is that after 2001 no external and financial crises occurred, while these had been growingly frequent and intense in the previous period. The second change that we point out is the dissipation of the segmentation in which the emerging market economies were found in the international financial system built by globalization. The third change refers to the acceleration of growth in the years 2000 with respect to the three previous decades and the greater resilience shown by the developing economies against the external shocks originated by the recent crisis.

In section 2 we sought a joint explanation of the aforementioned changes. We indicate that these are associated with the adoption of novel macroeconomic policies by a significant number of developing economies: the adoption of floating exchange rate regimes and the practice of exchange rate policies tending to preserve competitive real exchange rates or to avoid great appreciations; the accumulation of voluminous international reserves and the change in sign of the results of current accounts of an important set of these economies, that passed from deficit to surplus, whose aggregated effect is the inversion of the direction of the flows of capital that had ruled in the three previous decades.

The second part of the work is presented in section 3. Heading this section is a synthetic exposition of the new orientations of macroeconomic policy and forthwith we discuss some aspects of the implementation of the exchange rate, monetary and fiscal policies.

Closing the work, section 4 brings the final considerations.

2 THE FAVORABLE CHANGES IN THE 2000 DECADE

2.1 Crisis in the developing countries[1]

In the first thirty years of the financial globalization period, since the early seventies until the beginning of the XXI century, the financial and exchange rate crises in the emerging market economies became more frequent and intense. In contrast, after 2001 there were no new crises in the emerging market economies despite occurring in the period several episodes of economic turbulence with contagion effects. Strikingly, the crisis in the United States did not spark a financial crisis in any emerging market economy. In this section, we will characterize the crises of the emerging market economies in the first three decades of financial globalization.

Since the outbreak of the subprime mortgages crisis in the United States, there have been some reactions criticizing the dominant paradigm and a budging revalorization of the contributions of those scholars that address the issue of financial crisis as a general subject. The contribution of Minsky seems to have caught special attention.

The fact that analysts and observers of the financial markets have rescued Minsky's ideas from the intellectual exile that they were condemned is not surprising. The conditions that provoked and contributed to the development of the current

1. This point is based on Frenkel and Rapetti (2009).

financial crisis clearly reproduced Minsky's model for economic crises.[2] In it the crises are always preceded by a period of economic and financial boom. During the boom phase, the optimistic expectations about the future are generalized, trust is incremented, and the perception of risk is diminished. In this context, the agents assume risk positions and the system becomes increasingly fragile. Reaching a certain point, some event draws the attention of the agents to the high degree of risk exposure existent in the system. Thus, a period of difficulty starts. In response to the perception of a higher risk, most of agents modify their portfolios in favor of safer and more liquid assets. The excess of demand for liquidity and low risk assets end up popping the bubble, which results in a massive loss of wealth. In this recessive phase, pessimistic expectations prevail. As in the previous phase, where the effects of positive feedback predominated, in this stage the negative effects stand out. The deflationary developments in the financial markets make most of the agents notice that their liquidity being restricted or their assets being directly located in a state of insolvency; in either of these cases, their relative decisions to spend are adversely affected. Private consumption decreases and investments collapse. What started as a contraction of the financial sector reaches the whole economy. In short, the financial crisis leads to a systemic crisis.

The factors that triggered the cycle in the recent financial crisis of the USA (and other developed countries) are essentially endogenous. This is a key point in the theory of the financial systems of Minsky: the bubbles and the innovations that develop in the boom stages are a natural and spontaneous consequence of the evolution of the financial system.

The real estate bubble and the financial innovations that originated with the securitization of mortgages (and other debts) constituted in the basic ingredients of the boom phase of the Minskyan cycle in the recent crisis. Both the bubble in real estate prices and the financial innovations are processes that developed in the housing and financial markets, and were feeding off each other during a long period. There is no doubt that there were also external elements that influenced both processes: there are discussions, which probably will last for a long time, on the role of financial deregulation, the lax monetary policy and foreign capital inflow to the US, as factors that stimulated these processes. However, although some of these factors may have been relevant, the comparison with the crises in the emerging market economies reveals a crucial difference between the endogenous dynamics of the cycle in the Unites States and the exogenous character of

2. Minsky's works on the financial crises and their relation with macroeconomics are numerous. Minsky (1975) presents a critical analysis on the neoclassic assimilation of Keynes' contribution and the relevance of the finances by Keynes' standards. A synthesis of his model for financial crises is found in Minsky (1977). The most brilliant and mature exposition of his thoughts is found in Minsky (1986). Kindleberger (1977) offers an extensive historic panorama of the crises analyzed by Minsky's standards.

the elements that sparked the boom phase of the crises in the emerging countries, as will be discussed shortly.

Most of the crises in the emerging countries took place in Latin America. In effect, since the beginning of the 1970s the region started to participate in the financial globalization wave and, since then, suffered numerous crises. Other developing countries were later incorporated into the financial globalization process, during the first years of the 1990 decade and, together with Latin-American countries, became known as "emerging market economies". The crises in some of these economies, as those of the five counties in Eastern Asia, Russia, and Turkey, are added to the long list of crises in developing countries.

Minsky's model has inspired numerous studies on the financial crises of the developing countries[3]. In the second half of the 1970s, Argentina and Chile were immersed in the Minskyan boom and recession cycles that generated systemic financial crises that erupted close to one year before their respective balance of payments and exchange rate crises (1980 in Argentina and 1981 in Chile). Similar Misnkyan cycles were also observed in the Mexico and Argentina crisis of 1995, Eastern Asia in 1997-1998, Russia in 1998, Brazil in 1999, and Argentina and Turkey in 2001. In all of these episodes, the crises were preceded by long boom periods which created price bubbles in asset prices and financial intermediation in a context of increasingly risky behavior. The analysis of all the episodes shows that the crises were not a result of unsustainable financial policies, external shocks, or behaviors that involved high moral hazard due to implicit or explicit government guarantees. On the contrary, they were result of a growing financial fragility, due to the confluence of a greater appetite for risk by the private sector and a lax regulation of the financial market during the boom phase (Taylor, 1998).

The financial crisis of the US and the ones that hit the emerging economies are similar in their dynamics of Minskyan characteristics. There is, however, a crucial difference that lies in the factors that initiated the boom phase of the Minskyan cycle. In the case of the emerging market economies, the financial innovations and the bubbles that developed in the boom phase are consequence of the implementation of new rules of macroeconomic policy, including the opening of the capital account, which generate a profitable environment for the financial arbitrage between foreign and local assets.

This conclusion emerges from the comparative analysis of the crises in the emerging economies (Frenkel, 2003). The analysis, in effect, shows a series of common characteristics. In first place, the conditions that sparked the boom phase are originated by relatively drastic changes in the macroeconomic policies. In

3. A seminal model of financial crises in developing countries, as a Minskyan legacy, is found in Frenkel (1983).

general, the liberalization of the local financial market and the capital account are combined with some rule for the predetermination of the nominal exchange rate (as the fixed parities or the exchange rate "tablitas"). The implementation of new macroeconomic rules may be seen as an exogenous shock on the financial system, which generates incentives for the arbitration between external and domestic assets and induces inflows of capital that triggers the booms. In second place, in all the cases, the international capital movements played a fundamental role both in the boom and in the recession. Lastly, the laxness of the local financial market regulations is observed. This can occur due to the recent liberalization or to a too great expansion of the financial activity during the boom phase, which exceeds the existing regulatory capacity. In synthesis, the onset of the Minskyan cycle in the economies of the developing countries has an important exogenous component. The capital inflows and outflows play a significant role in multiplying the financial forces that push the cycle. The conditions that gave place to the crisis in the emerging market economies in the first decades of financial globalization changed in the 2000s, as will be explained in section 2.

2.2 Financial traps and segmented international financial integration

The emerging market countries were integrated into the international financial system in a segmented manner and several of them tended to fall into financial traps (Frenkel, 2008a). The international contagion and the herd behavior of investors are characteristic aspects of this segmentation. The segmentation tended to fade in the years 2000.

In the first three decades of the financial globalization of the emerging market countries that followed paths leading to the accumulation of large foreign debts tended to fall into financial traps that result in crisis in almost all cases. Argentina during the period of 1998-2001 is a clear example of this situation. But a country that falls into a financial trap of high debt and high risk premium can find itself stuck in this situation even if it has already experiencedand overcome an external and exchange rate crisis. Brazil, for example, after suffering an external and exchange rate crisis in 1998, corrected the main characteristics of its previous macroeconomic policy. But these changes did not alter the financial heritage from its previous trajectory, in a way that the Brazilian economy remained caught in a financial trap until the beginning of the 2000s. Later, Brazil found a noncritical way out of this situation mainly through the generation of surpluses in its current account, as mentioned in section 2.

The financial traps are the result of two main connections between the economy and the international financial market. The first is determined by the great volume of financing needs. The refinancing of debt maturities and the financing of high structural deficit in the current account constitute in the main link in the relation

between the country and the international financial market. This situation is highly vulnerable to contagion effects or any other source of volatility. It is also more prone to self-fulfilling prophecies. The market evaluates this situation imposing high risk premiums and the country loses a large degree of its economic policy freedom, because of the urgency imposed by the need for international financing to issue favorable signs to the eyes of the market.

The second connection results from the effect on the interest rates. A high country risk premium makes foreign financing more costly, contributing to worsen the foreigndebt ratios. On the other hand, the sum of the international rate plus the country risk premiumdetermines the floor of the local real interest rate. The integration of the emerging market with the international financial market results in a segmented integration, in which the international interest rate that the country is facing and the local interest rate are significantly higher than the rates in the developed countries. The high interest rates have negative effects on growth and on the internal and external financial fragility.

In the late-nineties, the phenomenon of segmented integration was evident for the highly indebted countries, like Argentina and Brazil. However, other developing countries, whose policies managed to avoid accumulating high foreign debts, also experienced a segmented integration. After having participated in the process of financial globalization during a long period (almost three decades in the case of Latin America), the financial assets of these economies constituted in a "class" whose returns included a considerable country risk premium. These risk premiums had reached their minimum in 1997, just before the Thai devaluation. But after the Asian and Russian crises, the risk premiums rose and remained elevated until the beginning of the years 2000s.

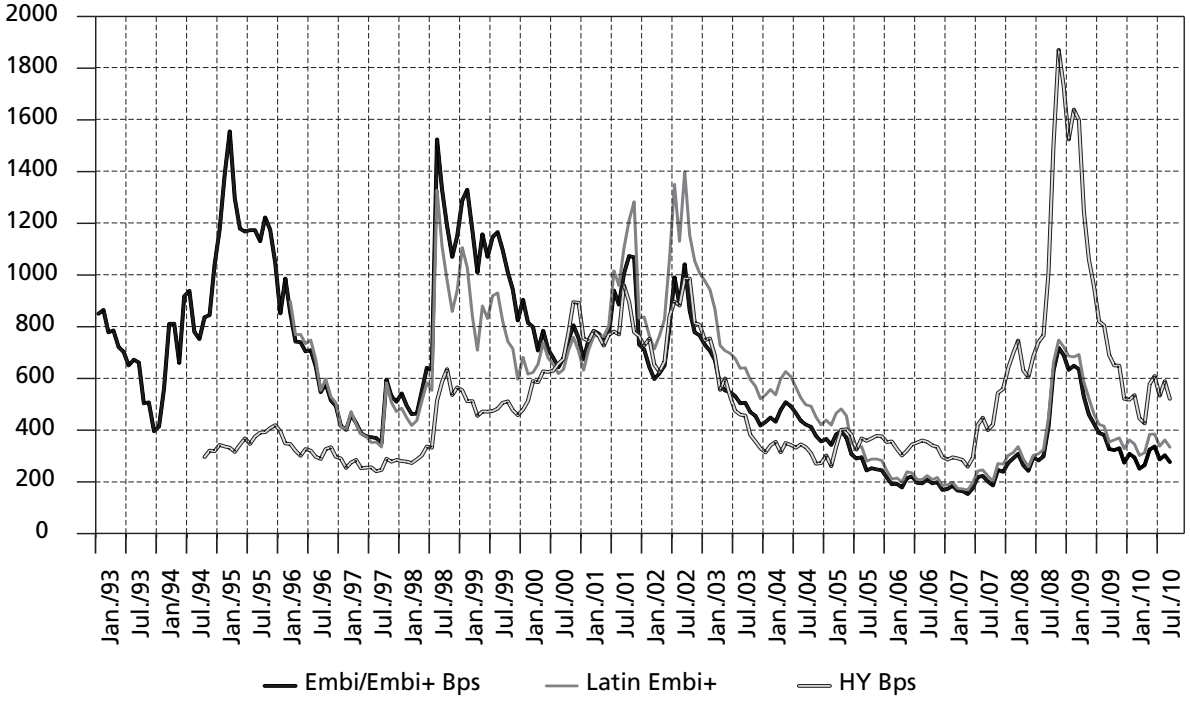
Persistently high country risk premiums were an unexpected result of financial globalization. Since its first steps, the advocates of financial globalization presented complete integration of the local financial system and the international system as the ideal state to which the process would converge. The complete integration implies in a global intermediation system in which the return of the savers' assets, on the one hand, and the capital cost for the debtors, on the other, become the same for the economically equivalent transactions, independent from the geographical location of savers and investors. The convergence of the globalization process towards complete integration would have meant in the persistent reduction of the country risk premiums. It did not happen like this until the early 2000s.

In the beginning of the XXI century it seemed difficult to find exits for the countries that found themselves in financial traps or, more generally, established an international context capable of avoiding the segmentation of developing economies, without an important effort of international cooperation. However,

the segmentation of the emerging market economies tended to fade later in the years 2000s, but this did not originate in an (nonexistent) improvement in international cooperation, but in the changes in policies and balance of payment results of a significant number of emerging market economies, as argued in section 2.

GRAPH 1

Risk premium of emerging market economies, of the emergent of Latin America and of high yield bonds of the United States



Source: US high yield bonds, data from the Merrill Lynch US High-Yield Master II (H0A0) index; sovereign bonds of emerging market economies and the emergent of Latin America, EMBI+ index of JP Morgan (EMBI until November 1997 and EMBI+ since December 1997).

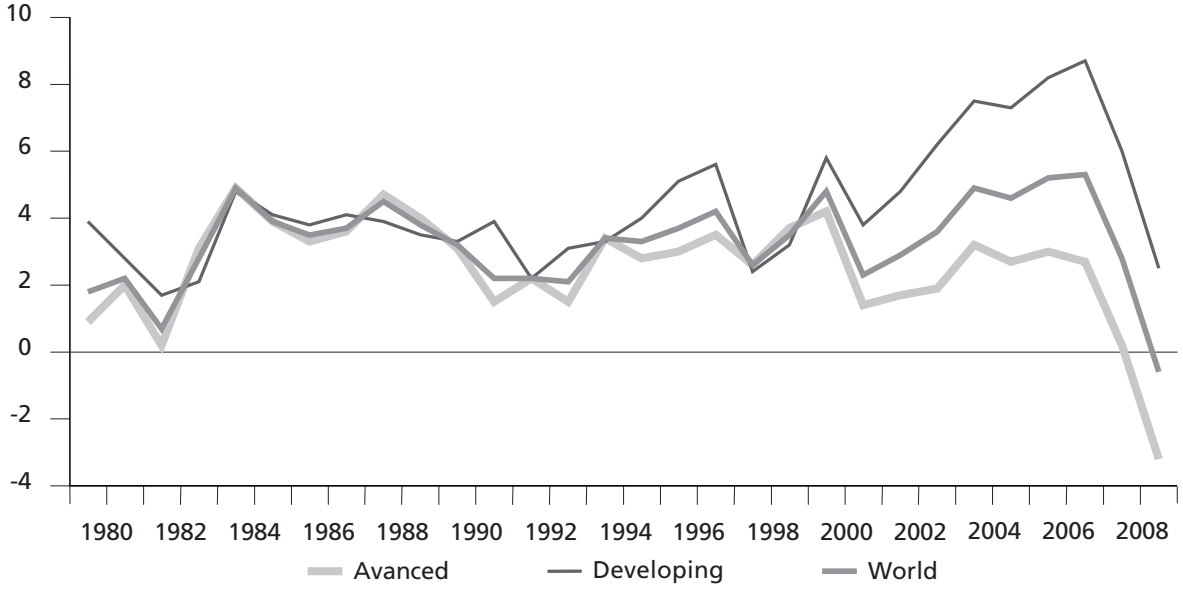
Effectively, the country risk premiums of the developing economies followed a downward trajectory since early 2003 and by mid-2005 they fell under the registered minimum during the period previous to the Asian crisis. In early 2007, the average risk premium reached its historic low in a level that was significantly inferior to the one observed before the Asian crisis and also significantly inferior to the spread of the high yield bonds of the United States. The country risk premiums tended to elevate since mid-2007, but still, before the collapse of Lehman Brothers, the risk premium of the emerging market economies were similar to the levels that predominated during the best moments of the period previous to the Asian crisis. On the other hand, the financial contagion of the collapse that followed the bankruptcy of Lehman Brothers was brief and in 2009 many of the developing countries recovered their access to international credit at relatively low interest rates.

2.3 Acceleration of growth and resistance against external shocks in the 2000s

In the years 2000s took place a notable acceleration of the growth of developing countries. Furthermore, these countries showed a new resilience to real and financial external shocks caused by the recent global crisis.

In the eighties and in the nineties the cycles of the advanced countries and those of the developing countries were highly correlated and the average rates of growth of both groups were roughly speaking similar. For example, during the period of 1992-2001, the advanced countries grew at an annual rate of 2.8% while the developing countries grew at an average annual rate of 3.8%. As it may be noticed in the following graph, the difference in favor of the average growth rate of the developing countries during this period is explained by a relatively faster growth of these economies between the Mexican crisis and the Asian and Russian crises, but the crises of 1997-98 had a relatively greater contractive effect on the developing economies, so that the rates of both groups of countries tended to balance out again in the late 1990s.

GRAPH 2
Annual growth rates of the world, the developing economies and the advanced economies



Source: elaborated with data from the IMF World Economic Outlook, October 2010.

During the years 2000s the cyclical correlation between the two groups of countries persists, but during this period, for the first time since the beginning of the financial globalization, the developing countries (and also the subset of the economies of Latin America) grew at systematically more elevated rates than the advanced economies. Between 2002 and 2008 the average annual growth rate of the developing countries was 6.7%, while the advanced economies grew an average

of 2.1% per year. During the period there was a substantial acceleration of the growth of the developing economies in comparison to the previous decades, and also a significant departure of their rates in relation to the rhythm of growth of the advanced economies.

On the other hand, it is also notable the novel resistance shown by the developing economies in facing the impacts of the global crisis. This was synthetically illustrated observing the behaviors of the levels of activity in 2009, the calendar year in which the recessive effects of the crisis were concentrated. During this year the advanced countries fell 3.2% while the developing countries grew an average of 2.5%.

Nevertheless, the performance of the developing economies in 2009 by regions shows great heterogeneity. On the one hand we find the catastrophic behavior of the economies of center and eastern Europe, where almost all of the countries suffered recessions and an average contraction of 3.6%. On the opposite side, solely a small number of developing Asian economies experienced recessions and the region grew an average of 6.9%. In Africa and Latin America and in the Caribbean the national performancee were more heterogeneous.

No country was free of the external recessive impacts of the contraction in international trade (Griffith Jones and Ocampo, 2009). Effectively, no country can isolate itself form the recessive effects of the contraction of its exports. These effects are specific to each country and depend on their particular commercial insertion. The decline of international trade was the main mechanism of transmission of the recessive effects to developing countries. An important channel for some countries was the drop in remittances of workers that emigrated to developed countries, notably in Central America and Mexico, for example. These effects also are specific to each country and independent of their national policies.

Another channel for transmission of the recessive effects is the financial. This played a role of secondary importance in many developing economies. Beyond the relatively brief impact of the collapse that followed the bankruptcy of Lehman Brothers, in an important number of countries there has been a decoupling of the financial contagion effects of the recent crisis. The phenomenon contrasts vividly with the important effects that had the financial contagion of the Asian and Russian crises on the emerging market economies.

Our hypothesis is that, besides the specific recessive impacts through the real transmission channels in each developing economy, the resistance to the crisis is directly linked to the macroeconomic policies applied in the previous years and their reflections in the greater or lesser fragility to face external shocks.

These policies and results were, on the one hand, the determinant factor for the decoupling of financial contagion and also, on the other hand, of the possibilities of implementing anticyclical policies.

To test this hypothesis we carried out a econometric study with a sample composed of 48 developing countries[4] and 30 advanced countries, focusing on the performance of the GDP in 2009. The regression shown below is one of the results of this study. It is a regression on the sample of 48 developing economies whose dependent variable is the growth rate of the GDP in 2009 (REALGDP2009).

The independent variables are the rate of growth exports in 2009, (CAIDA-EXPO09), the short term external debt/output ratio at the end of 2007 (DEUD-ACORTOGDP2007), the average of the ratio current account/output in the 2005-2007 period (CTACTE20052007), the international reserves/output ratio at the end of 2007 (RESERVASGDP2007), and the average growth rate in the period previous to the crisis 2005-2007 (REALGDP20052007).

In the sample of developing countries (48 countries) the GDP in 2009 contracted an average of 1.9% and the decline in exports was of 21.3%. The sample includes 12 countries[5] that had Stand-by agreements with the IMF between July 2008 and November 2009. In this group, the average contraction of GDP in 2009 was of 5.6% while the exports contracted an average of 24.1%. In the remaining group of 36 countries that did not have an agreement with the IMF, the GDP had an average contraction of 0.7% and the exports contracted an average of 20.4%. In the estimation that is shown as follows, the reserves/output ratio is equalized to zero in the case of the 12 countries with agreement with the IMF.

The following table shows the results. In the estimation, the variation of the GDP in 2009 as well as the independent variables are expressed in percentages, so that the regression coefficients have a direct interpretation.

4. The countries included are: Argentina, Armenia, Azerbaijan, Bangladesh, Belarus, Brazil, Bulgaria, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Georgia, Guatemala, Honduras, Hungary, Indonesia, Jordan , Kyrgyz Republic, Latvia, Lithuania, Macedonia, Malaysia, Malta, Mexico, Moldova, Mongolia, Morocco, Nicaragua, Panama, Paraguay, Peru, Romania, Russia, South Africa, Tanzania, Thailand, Tunisia, Turkey, Ukraine, Uruguay, Vietnam.

5. The countries of the sample with a Stand-by agreement are: Armenia, Belarus, Costa Rica, Dominican Republic, El Salvador, Georgia, Guatemala, Hungary, Latvia, Mongolia, Romania, Ukraine.

TABLE 1
Dependent variable: REALGDP2009
Method: M.C.O.

Variable	Coef.	Standard error	t-Statistic	Prob.
CAIDAEXPOS09	0.230666	0.070028	3.293899	0.0020
DEUDACORTOGDP2007	-0.180065	0.075302	-2.391245	0.0213
CTACTE20052007	0.227194	0.104493	2.174249	0.0354
RESERVASGDP2007*(1-DUMIMF)	0.101975	0.045814	2.225826	0.0314
REALGDP20052007	0.527259	0.211063	2.498112	0.0165
C	-0.276486	1.997482	-0.138417	0.8906
R-squared	0.479726	Average Dependen. var.		-1.910417
R-squared adjusted	0.417788	E. S. dependen. var.		6.159519
E. S. of regression	4.699886	F-statistic		7.745329
Resid. sum squared	927.7349	Prob (F-statistic)		0.000031

Obs.: number of observations: 48.

As may be seen, all of the coefficients are highly significant (under 4%) and the constant is undistinguishable from zero. The independent variables explain 48% of the variation of the GDP rates in 2009.

As was expected, the coefficient of the export rates in 2009 is positive. The coefficient indicates a contractive effect of 0.23% for each percentage point of decline in exports. With an average contraction of 21.3% in the sample, the fall in exports implies an average decline of 4.9% of the product.

The coefficient of the external short term debt/output ratio is negative (- 0.18) and of an important magnitude. The coefficient of the average r of the current account/output ratio in the 2005-2007 trienium is positive (0.23) and its magnitude is similar to the coefficient that measures the impact of the decline in exports in 2009. We will discuss such results further on.

The coefficient for the growth trend in the period previous to the beginning of the crisis (0.53) is positive and of an important magnitude.

Lastly, the coefficient of the international reserves/output ratioat the end of 2007 ratio is positive (0.10). As indicated before, in the estimation presented we equalize to zero the ratio of the international reserves/output ratio of the countries that signed Stand-by agreements with the IMF, under the hypothesis that they should have requested these programs for insufficiency of international liquidity. We have already mentioned that all the countries that signed Stand-by agreements experienced in 2009 an average contraction of the GDP greater than the rest of the countries in the sample. Thus, the significance of the coefficient of the reserves ratio in the shown estimation may be a result of a greater contraction of the GDP, caused by factors diverse to the availability of reserves, of the economies that

signed agreements with the IMF. Effectively, the coefficient of the reserves ratio loses significance if the IMF agreements are not taken into account and neither is significant if the estimation is made on the subsample of countries that did not sign thpse agreements. On the other hand, if we exclude the reserves variable and include a dummy variable for the countries that signed agreements with the IMF in the estimation of the equation , the coefficient of the dummy has significant results at 8%, and a value of – 3. That is, controlling for the rest of the variables, excluded the reserves, the countries with IMF agreements contracted an average of three percentage points more than the rest of the sample. We will comment this point further on.

When we run the regression on the set of advanced and developing countries in the study, the decline in exports in 2009 is the only variable with a significant coefficient. In contrast, in the sample of developing economies, all the variables included in the regression show significant influence, together with the decline in exports, on the differential impact of the external shock on the level of activity in 2009. The results of the regression indicate that, controlling for the respective declines in exports, in 2009 the coutries that grew the most (or that decreased less) were those developing countries that were experiencing greater growth rates before the crisis, the ones that had smaller short term debts before the crisis, the ones that showed greater results of current account in the period previous to the crisis, and those that had greater availability of reserves (or that did not have to require IMF support).

At first it is presumable that the differential effect of the external financial shocks generated by the crisis[6] are correlated with the degree of dependence of the previous performance of the economy to the capital inflows. Aggregate indicators of this dependency are the situation of the current account, the magnitude of the financing needs of the public and private sectors, the proportion of foreign capital in the financing of the banks, firms and government, and the magnitude of available international reserves. But these data not only indicate the sensibility of the workings of the economy to a sudden stop, but also the degrees of freedom of the economic policies to pursue compensatory actions.[7]

In light of the criterion of dependency from the capital inflows, the coefficient of the short term external debt /output ratio has a direct interpretation. A smaller short term external debt implies a smaller capacity of the sudden stop of generating illiquidity situations with recessive impacts. It is worth mentioning

6. The magnitude of the external finance shock on the developing economies, measured through various indicators, was similar to the shock caused by the Asian crises. But its duration was briefer in this opportunity.

7. For example, this criterion separates well the Asian and the Latin American emerging market economies, on the one hand, the central and Eastern Europe economies, plus Turkey and others of recent international financial insertion, whose dependency on capital income is similar to what Latin America had in the nineties (Ocampo, 2009).

that the total external debt/output ratio has less significant results than that of the short term debt.

Beyond the neat greater recession of the countries that signed agreements with the IMF, it is worth saying that are not well identified the differential effects of a greater or lesser availability of reserves on the level of activity, in the presence of other independent variables. A possible cause is that many of the countries in the sample have voluminous reserves, so that their different magnitudes have not differentially affected the levels of activity through the various functions served by the availability of reserves. Indeed, the role of the reserves in facing a sudden stop is to avoid default, which has not occurred in any of the cases (it can be conjectured that there would have been default events in some of the economies that signed agreements with the IMF if they had not received this support). The availability of reserves allows to provide liquidity in international currency to private or public debtors that find themselves forced to cancel their international debts in a sudden stop, but does not avoid the recessive effects of these cancellations if theses foreign debts are not totally refinanced in local currency by the local finance system or by the government. This explains the significance of the coefficient of external short term debt, despite the existence ofabundant external reserves. On the other hand, part of the countries in the sample have floating exchange rate regimes and gave way to the devaluation of their currencies when facing the external shock. A function of the reserves in these cases is to allow official intervention in the exchange rate market to control the magnitude of the devaluation. Neither does this function depend on the differential magnitude of available reserves, when exist in general sufficient reserves to intervene.

To interpret the coefficient of the average of the current account/output ratio during the period of 2005-2007 it is useful to express the result of the current account with the following identity:

$$(SP - IP) + (SG - IG) = CC$$

Where SP and IP indicate private savings and investments and SG and IG indicate government savings and investment. The first two terms of the first part of the identity are, respectively, the financial surplus of the private sector and the financial surplus of the government. A positive result of the current account means that the aggregate economy is increasing its stock of net foreign assets (or reducing its net foreign debt) and consequently indicates a relatively smaller dependency on external financing to provide the resources in international currency needed for the normal movement of the economy. On the other hand, expressed as shown above, a positive current account result is an indirect indicator of surplus situations of the private sector, of the government, or of both sectors, and consequently, as indicator of a smaller chance of a sudden stop to induce illiquidity situations

with recessive effects. Therefore, the result of the current account of the balance of payment is also an indirect indicator for the local financial ability to financing expansive policies in face of negative external shocks.

The role payed by the current account results for the period of 2005-2007 in the resistance facing the impacts of the recent crisis is consistent with various studies, with data from previous periods, on the relation between the results of current account and growth, as indicated in section 3.

3 THE NEW MACROECONOMIC POLICIES AND THEIR RESULTS

3.1 Factors of the not occurrence of crisis in developing economies and of the fading of the financial segmentation

After the Asian crises two important innovations were registered in a great number of developing economies. The first innovation was the change of the exchange rate regimes[8]. In the new context, the flexibility is the characteristic shared by the exchange rate regimes of most of these economies.

Traditionally it is understood by flexibility that the exchange rate is determined by the international currency market without intervention from the monetary authority. But in the present context of the developing countries, flexibility also denotes that the monetary authority retains the right to intervene in this market. It is generally understood that in a pure floating exchange rate regime the monetary authority has a commitment with regard the determination of exchange rate. But the pure floating regime is not the one of minimum commitment, since in it the authority assumes the commitment of non-intervention. In contrast, in the current system of many developing countries there is no commitment of non-intervention and the monetary authority intervenes at its discretion.

An advantage of this regime is its preventive role, since it cannot be victim of speculative attacks. The regime combines the advantages of the floating exchange rate regime with the degree of liberty of the monetary authority to react before the changes in the local and international contexts, and adjust the behavior of the exchange rate and the monetary policy to the necessities of the economic policy. In practice, if not *de jure*, in the recent experience of most of the emerging market economies it is found this type of exchange rate regime, that is generally denominated as "managed float" (Williamson, 2000 y Bofinger and Wollmerhäuser, 2003).

Along with the movement of the exchange rate regimes towards a greater flexibility, another innovation of great importance in the financial globalization

8. In Frenkel and Rapetti (2010b) present an analysis on the evolution of Exchange rate regimes in Latin America.

process has been the reversion of the direction of net capital flows, which started to move from the developing countries to the advanced economies.[9]

Many of the emerging market economies that had been integrated into the international system as receivers of capital inflows to finance deficits in current accounts, started in the beginning of the years 2000 to generate surplus in current accounts – or to reduce significantly their previous deficits – and to persistently accumulate international reserves.

Effectively, in a set of 29 emerging market economies[10] only four had surpluses in current accounts in 1997. In the same set, the number of countries with surplus in current accounts was 14 in 2001, 18 in 2004, and 14 in 2006, In this set of countries, the ratio between the aggregated amount of the surpluses and the absolute value of the aggregated amount of the deficits was 0.35 in 1997; 1.40 in 2001; 3.93 in 2004 and 4.64 in 2006. Excluding China, the aforementioned ratio was 0.04 in 1997; 1.13 in 2001; 2.73 in 2004 and 2.15 in 2006.

There was a complete turnaround of the conditions in which these countries integrated the international financial system. From receptors of foreign savings they became exporters of savings and intermediaries of international capital flows. This modified their position in the international finance system.

Surpluses in current accounts and the availability of voluminous international reserves are indicators of external strength, since they indicate a low probability that the country will find difficulties in honoring its foreign commitments. Furthermore, as indicated above, the surpluses in current accounts are also indicators of financial strength of the domestic agents. These indicators are used by the international investors in their portfolio decisions. On the other hand, empirical research also shows that they are good forecasters of the probability of the balance of payments crises (for example, Kaminsky, Lizondo and Reinhart, 1998). Consequently, it is not hard to explain why the perceived risk and the country risk premiums declined in the national cases with current accounts surpluses.

But the emergence of a significant number of surplus countries had benefic effects on the countries where the current account deficits persisted and on the relation between the set of developing countries and the international financial

9. In the eighties there was also a period in which the capital net movements were from the low risk countries to the high risk ones. But this was a transitory consequence of the external adjustment of the Latin American countries after the debt crisis. In the course of the renegotiations of the default debt, which extended from 1982 and 1990, there was practically no external voluntary private financing and many of the countries generated surplus in current accounts to serve some proportion of the interests.

10. The set includes 24 of the 25 countries included in the Emerging Markets index developed by MSCI Barra (Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Israel, Jordan, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Thailand and Turkey), to which were added Bulgaria, Ecuador, Panama, Ukraine and Venezuela.

system. A lesser number of countries with deficits, in a context where many of the emerging market economies show surpluses, reduced the wirk of contagion and herd behavior and, consequently, reduced also the perceived risk of the countries with deficits. The "class" of emerging market assets is more heterogeneous and many of these assets correspond to robust economies. This configuration benefited the perception of risk of the countries with deficits and that of all the class of emerging market assets.

To finish this topic, a brief discussion of the national Latin-American cases can illustrate different manners in which the aforementioned changes in the international conditions contributed to find solutions to the harsh restrictions in place in the early 2000s. At this time, as mentioned in section 1, Argentina and Brazil were caught in financial high debt and high country risk premiums traps

In the case of Brazil, the strong improvement in the current account was the key factor that enabled the country to leave the financial trap in which it was stuck in since the last third of the 1990s. The improvement reduced the external financial fragility and contributed to the reduction of the country risk premium, operating in conjunction with the reduction of the average premium of the emerging market countries that was happening simultaneously. The following decline of the international interest rates faced by the country allowed the deceleration of the growth of foreign and public debts and the improvement of their sustainability prospects. In short, the transition from deficits in current account to surplus lead the financial behavior of the economy to a virtuous cycle replacing the vicious cycle set by the financial trap.

The restructuring of the Argentinian debt represents the case of a country that benefited from the appearance of a set of emerging market economies with surplus in current accounts. The default of the foreign debt took place in December 2001, before the changes in the conditions of the international financial market. At the start of 2003 the government launched an initiative of a debt swap that implies the haircut of 75% on the nominal value of the original debt. The swap was completed in 2005 with an adhesion of 76%. The success of the restructuring was surprising, considering the volume of the debt in default and the magnitude of the haircut; they were the historic maximum in both cases. It is clear that the new financial conditions contributed to the end result. The swap took place when the risk premiums of the emerging market countries were falling, making the financial offer attractive, whereas a few months earlier, with the risk premiums higher for the emerging market countries, it would have been considered unacceptable.

3.2 The acceleration of growth

Until now we discussed that the innovations in the exchange rate regimes, the emergence of surplus in current accounts (or the reduction of previous deficits), and the accumulation of reserves positively affected the behavior of the developing economies, generating a context where new crises did not emerge and the perceived risks and the risk premiums of the countries were reduced. In what follows the focus of the argument is on the acceleration of growth experienced in the 2000s.

The role played by the positive results in current accounts and the accumulation of reserves is not limited to the financial level. A series of comparative international studies suggests that these variables are key factors in the explanation for the accelerated growth in the developing economies. These empirical works show that current accounts and international reserves are positively correlated with growth. For example, the influential work by Prasad, Rajan and Subramanian (2007) has demonstrated the positive correlation between the results of current accounts and growth in the non-industrialized countries during the period of 1970-2004. Similar results were obtained by Bosworth and Collins (1999) and UNCTAD (2008). On the other hand, the positive correlation between accumulated reserves and growth was documented by Polterovich and Popov (2002) and Levi Yeyati and Sturzenegger (2007), among others.

Even when the positive correlation between these variables seems a well-documented empirical fact, the mechanism through which the surpluses in current accounts and the accumulation of reserves favor growth is not obvious. A possible mechanism is related to the financial channels discussed in the previous point and is explained below. The international financing of the developing economies was volatile and subject to sudden stops. These features tend to negatively affect the growth in at least two ways. The massive exits of capital can generate an external crisis with persistent effects on the economic structure and consequently reduce the long term growth rate (Stiglitz, 2000). On the other hand, even if crises are avoided, the volatility of capital flow can negatively affect investment decisions and growth. Consequently, the surpluses of current accounts (or smaller deficits) and the accumulation of reserves may have contributed to growth by reducing the volatility and the probability for crisis. These are plausible arguments. In fact, the aforementioned work by Prasad, Rajan and Subramanian (2007) demonstrates that one of the reasons for which the countries who grew more were the countries who used less external savings resides is the fact that they did not experience a crisis. However, this study also indicates that the association between current accounts and growth does not derive exclusively from the inexistence of a crisis in surplus economies, because the correlation is also verified on the sub-periods of the past in which there was no crisis in any developing economy. This last result suggests that the current account and the accumulation of reserves effects on growth did

not operate exclusively through the reduction of volatility and the probability of crisis. A hypothesis that has gained a growing number of followers in recent times is that the surplus of current accounts and the accumulation of reserves influence growth because they are associated with competitive real exchange rates (RER). We discuss this question further on, but previously we can extract a conclusion of what was already exposed.

In light of the aforementioned empirical evidence, the period between 2002-2008 – with numerous developing countries exhibiting current account surpluses, financial strength and accelerated growth – can be seen as the amplification of a historic pattern. In the years 2000, a greater number of countries than in the past have followed trajectories with surplus current accounts and higher growth rates. In some cases, these results were induced by policies explicitly oriented to stimulate growth through the preservation of competitive RER, which generated at the same time higher growth rates, surplus in current accounts and accumulation of reserves. In other cases the results were mainly consequence of international factors that were exogenous to the economic policies of these countries (for example, the drag through trade of the other developing economies with accelerated growth, low international interest rates, quick expansion of the United States, high prices of the commodities). However, even in the cases in which the results cannot be attributed mainly to national policies, the authorities aimed to enhance external strength and moderate the appreciations of the currency through the accumulation of reserves. In consequence, the trajectories followed by numerous developing countries in the years 2000 can be seen as a confirmation *a posteriori* of the policy lessons implied in the aforementioned empirical studies.

We turn our attention now to the role of the competitive RER. There exists an ample consensus on that the primary motivation of the surpluses in current accounts and the accumulation of reserves is the willingness of the countries to maintain competitive RER, or at least, to avoid appreciations. Results of the aforementioned empirical studies corroborate that the surplus in current accounts and the accumulation of reserves are highly correlated with competitive RER (depreciated) (see, for example Prasad, Rajan and Subramanian, 2007). Is also a consensus on the hypothesis that the surpluses in current accounts and the accumulation of reserves affect growth because they are associated with competitive RERs. Several empiric studies provide substantial support to this hypothesis.

Razin and Collins (1999) earlier showed that competitive RER (depreciated) was associated with higher growth rates with a sample of 93 countries during the period of 1975-1992. The work of Aguirre and Calderon (2005) finds that moderately depreciated RER positively affect growth. A recent work byRodrik (2008) uses data panel for 184 countries during the period of 1950-2004 and also

finds that the two variables are positively correlated. Rodrik also finds that the competitive RER is associated with the growth of industrial activity, and that the expansion of this sector is significantly correlated with aggregated economic activity. This result suggests that the effects of the RER operate (at least partially) through the expansion of the industrial activities. The result is also important because it is free from the inverse causation problem, because at the level of the firm, the RER can be considered exogenous, which cannot be assumed in the aggregated cross-sectional studies. With a similar objective, a study by Eichengreen (2007) with a sample of 28 industries, in 40 emerging market economies, during the period of 1985-2003, finds that depreciated RER are positively correlated with the growth of industrial employment. Other empirical studies which obtained similar results on the relation between competitive RER (depreciated) and growth are Bhalla (2008), Gala (2007), Hausman, Pritchett and Rodrik (2005), and Prasad, Rajan and Subramanian (2007).

The works mentioned up to this point suggest that the new international insertion of numerous developing economies, with surplus in current accounts and accumulation of reserves, accelerates growth not only by reducing volatility and the risk of crisis, but mainly because of how it affects the real exchange rate. This seems to be a widely shared idea. On the other hand, the channels through which the RER affects growth is the reason for greater dispute. On a macroeconomic level, the academic debate is articulated around two visions: the one which conceives that the restrictions to growth are found in the supply and the other that places the restrictions on the demand.[11]

Those who conceive that the growth of developing economies is mainly restricted by demand are inspired by a Keynesian point of view. Under such perspective, the effective demand is the main motor behind growth in the economies with unemployed or sub-employed workers. With this perspective, a stylized explanation of the operation channels of the RER-growth relation is the following.

In an open economy, a competitive RER induces the rise in demand and the production of exports and substitutes for imports. The resulting increase in production generates an additional increase indemand, output, employment, and income. Higher levels of output, through the accelerator, induces higher investments and growth. Additionally, the acceleration of growth in the aggregated demand and output has a positive feedback effect on the growth of labor productivity (denominated on occasion as the "Kaldor-Verdoorn Law") (Frenkel and Taylor, 2007). Lastly, in a Keynesian framework it is not difficult to demonstrate that a

11. We have no space here for a more detailed presentation of this debate. A revision of the debate on the transmission channels of the RER to growth is found in Frenkel and Rapetti (2010a).

more depreciated RER leads to higher investment and savings rates, along with an improvement of the current account.[12]

The Keynesian interpretation of the RER-growth relation can be completed with an element of the structuralist view. In a closed economy the source for the increase in aggregated demand is not as important as in an open economy. The distinction is well known in the developing economies, where growth has been repeatedly restricted by the insufficient offer of foreign resources. This is a crucial aspect of the competitive RER policy: the increase in aggregated demand is obtained simultaneously with the relaxation of external restrictions. The promoters of export-led growth, with John Williamson (Williamson 2003 and 2008) as a notable example, have pointed out for some time the importance of a competitive RER as a crucial ingredient of a development strategy that seeks to avoid external restrictions (as used to be called) on growth.

The Keynesian-structuralist framework provides an explanation that fits well with the stylized facts showed by the economies that practice competitive RER policies, but among those who recognize the positive association between RER and growth there are different views, so that the debate on the transmission channels is open.

We conclude by pointing that there is robust evidence that suggests that the preservation of a competitive RER is the key mechanism through which surplus in current accounts and the accumulation of reserves push growth. But the operation channels of the RER-growth relation are not clearly identified and it is probable that they vary in different countries. This question demands more research, and so does the implementation of competitive RER policies, as will be discussed in section 3.

4 THE NEW DIRECTIONS OF MACROECONOMIC POLICY AND ITS IMPLEMENTATION

As an introduction to this section, we present a list of the components of the new macroeconomic configurations.[13] We define them by observing the implementation of the new policies in a number of important developing economies. They are stylized formulations that intent to collect the best practices (in our opinion) of each one of the exposed orientations. In the set of countries where the new configurations are found there is much diversity, not only because there are differences in practices, but also because the developing economies are heterogeneous in multiple dimensions. The orientations are the following ones:

12. In a neoclassical framework, surplus of current accounts is a consequence of the savings rate which overlaps the investment rate. In a Keynesian framework, a competitive RER that influences in greater investment by the mentioned mechanisms causes an increase of the savings rate that finances investment and the surplus in current accounts.

13. Amar Bhattacharya suggested denominating this set of orientations as "the new fundamentals for macroeconomic policy in developing countries".

1) A managed floating exchange rate regime that combines the flexibility of the nominal exchange rate with discretionary interventions of the monetary authority in the international currency market.
2) The preservation of a competitive trend in the real exchange rate level and to avoid strong appreciations in the short run.
3) Surplus as a tendency and transitory moderate deficits in the current account of the balance of payments.
4) Accumulation of considerable international reserves.
5) An active monetary policy facilitated by the sterilization of the official interventions in the exchange market and the inexistence of fiscal dominance and exercised in coordination with fiscal policy. Eventually, the implementation of capital controls is necessary to simultaneously achieve i) and v).
6) Balanced tendency in the fiscal accounts results and moderate fiscal deficits.

The subset of orientations *i)* through *iv)* focuses on promoting growth and employment, the strength of external accounts, and the prevention in the facing of real and financial external shocks. The two following orientations are more traditional, although there are new aspects in formulating the monetary and fiscal policies. The focus of the component *v)* is the control of aggregated demand and inflation and, as indicated, the monetary policy should be coordinated with the short term fiscal policies. The component *vi)* is the long term orientation of fiscal policy. This orientation focusses on facilitating in the short term anti-cyclical fiscal policies (the control of aggregated demand and inflation in the boom phases and the fiscal stimuli in the contraction phases) and preventing the accumulation of important public debts.

In the following we discuss different aspects and problems of the implementation of the policy orientations listed above.

4.1 Exercising exchange rate policy

In a context of a free exchange rate market, the Central Bank (CB) intervenes with discretion with the purpose of preserving a competitive and stable trend of the RER. The attribute of the goal's stability does not refer to the short term, but aims at longer terms. Its objective is to influence private expectations of stability of the competitive RER and reduce uncertainty in the periods relevant to the employment decisions and investment in existing or new tradable activities. In particular, persistent tendencies in the exchange market inducing appreciation expectations in the long term should be avoided. This is important for two rea-

sons. Firstly, to avoid that self-confirmed bubbles make more costly – in terms of monetary expansion – the buying interventions of the CB. Secondly, because the effects of the appreciation and depreciation of the RER are not symmetrical. Investment in tradable activities is largely irreversible, in such a way that in this sector there are motivations to bestow a great weight to the appreciation risk. For this reason, beyond the signals provided by the interventions in the market, the CB and the government should endeavor, without compromising quantitative goals or rules, in signaling the stability of the tendency of RER as a strategic objective of economic policy.

On the other hand, the nominal exchange rate should float in the short term. The uncertainty of the future nominal exchange rate discourages the speculative capital movements . This is one of the advantages of floating, together with protecting reserves from a speculative attack.

In consequence, the CB interventions are marked by the aforementioned conflictive demands. The monetary authority should avoid that positive or negative tendencies expectations are formed in the RER and, on the other hand, the exchange rate should float. The fluctuation range should be sufficiently wide to discourage short term capital movements and straight enough to induce stability expectations of the real RER.

The exchange rate market is an asset market. The buying and selling decisions are largely determined by expectations of future prices. If BC interventions and signals stabilize these expectations around the RER policy goal – given fiscal and monetary policies consistent with stability – the very market forces tend to stabilize the price trajectory, fewer interventions are required and they are less costly. For this reason, the CB interventions should be strong, in the sense of providing a clear sign of the monetary authority's will.

4.2 The coordination of the macroeconomic policies

The adoption of a RER goal should be part of a wider scheme that includes the fiscal and monetary policies consistent with this guideline. The monetary, fiscal and exchange rate policies are interconnected and should be coherently designed and implemented. For this reason, the adoption of the exchange rate objective should be conceived as a component of the regime for macroeconomic policy, capacitated to pursue multiple and conflictive objectives in a coherent way. This regimen simultaneously pursues objectives of growth, employment, activity level and inflation. The competitive and stable RER is an intermediate target of the regime, as can a certain interest rate be for monetary policy or a determined result for fiscal policy.

The aforementioned regime characteristics make essential to coordinate macroeconomic policies in a governmental instance with high power of analysis and

decision. It could be sustained that the coordination in conducting the policies would be advantageous under any regime[14]. But in this regime, coordination is imperative, because the three macroeconomic policies – exchange rate, monetary and fiscal – are active and complementarily concur in achieving the objectives. Since there is conflict among the objectives, the complementarity of the policies should be guaranteed by the established coordination of a single driving source.

4.3 Competitive RER and the inflationary pressure

A unique feature of a stable and competitive RER macroeconomic regime maintains lit a powerful motor for expanding aggregated demand and employment. It is precisely through these effects on the demand for tradable goods from local production, on the demand for investment and on the demand for employment that the regime induces the growth stimuli for production and employment. For the same reason, this establishes a permanent element of inflationary pressure that does not exists in other policy regimes.

The expansionary impulse on aggregated demand established by a competitive exchange rate is difficult to specify and to quantify. As indicated in section 2, the transmission channels are not clearly identified and may differ between countries. Furthermore, the effects of a competitive RER in the same country can change through time as per its cyclical situation. Consequently, the competitive RER is relatively rustic instrument, not apt to being managed with fine-tuning. Furthermore, signaling stability of the RER trend is a crucial objective of exchange rate policy, in such a way that even though the necessary knowledge for using the RER as an instrument for control of aggregated demand would be available, the variability of the RER would conflict with the main objective of the policy.

The regime of a competitive and stable RER differs from other policy context in this crucial aspect: in this regime the RER establishes a permanent expansionary impulse on demand. This unique characteristic of the regime imposes also particular features on the policies that accompany the exchange rate policy: the presence of a permanent expansive impulse emphasizes the brake role that monetary and fiscal policies should play in specific moments. In general, the fiscal and monetary macroeconomic policies focus on the control of aggregated demand and can play expansionary or contractive roles. The same is true in a competitive RER context. But in this regime the RER permanently pressures on the throttle of the vehicle. Since there is a permanent pressure on the accelerator, the anti-inflationary pressure rests exclusively on the braking role of the fiscal and monetary policies.

14. Although there are those who argue that it is best to segment the objectives and attribute exclusive responsibility for one of them for a specific institution. For example, an independent Central Bank that is exclusively responsible for inflation. Obviously, we do not agree with this idea.

These considerations lead macroeconomist to an unexplored territory. Certainly there is little discussion and experience with respect to the role of fiscal policy as a breaking mechanism for the expansion of aggregated demand. The regime of competitive RER is relatively new and macroeconomic policy found itself obligated to make its path on the way. Its instrumentation requires creativity and constant monitoring of data of the economy and of the consistency of exchange rate, monetary and fiscal policies.

4.4 Exercising an active monetary policy

At this point, we will analyze the question of monetary autonomy, that is, we ask ourselves if in a competitive RER regime (or more broadly, in a context where the CB aims to avoid appreciation and for this makes buying interventions in the exchange rate market) the economy counts with sufficient autonomy to exercise monetary policy. Our conclusion is that the sterilization generally allows sufficient monetary autonomy for exercising an active monetary policy.

The main theoretic objection that has been made to the policy of intervening in the exchange market supports that this leads to the loss of monetary autonomy. The criticism is based on the widespread trilemma of an economy open to the capital movements. The trilemma postulates that the CB cannot control simultaneously the exchange rate and the interest rates in a context of free mobility. The trilemma is false in specific circumstances and consequently is false as a general characterization of open economies.

The condition that allows for the control of the exchange rate and the simultaneous preservations of the monetary autonomy is the existence of excess supply of international currency at the exchange rate targeted by the CB. In this context, the monetary authority can determine the exchange rate by buying the excess of supply in the exchange market, and can control the interest rate by sterilizing the monetary effect of this intervention by issuing Treasury bills or CB bill in the monetary market. The CB has two available instruments to achieve its two objectives: the intervention in the exchange rate market to fixate the exchange rate and the intervention in the monetary market to determine the interest rate.

A simple explanation of the exposed is the following. The excess supply of foreign currency, at the exchange rate by the CB and the prevailing interest rate, implies an excess demand for domestic assets. The completely sterilized intervention can be imagined as a policy implemented in two steps. In the first step, the CB's intervention in the exchange market generates an expansion of the monetary base. The resulting situation would show a greater stock of monetary base, an unaltered stock of domestic assets, and a smaller interest rate than the initial. In the second step, the complete sterilization would totally compensate the change in the private

portfolio that took place in the first step. The CB absorbs the increment in the monetary base and issuesan amount of domestic assets equivalent to the initial excess demand for domestic assets (the excess of foreign currency supply) returning the domestic interest rate to its previous level (Bofinger and Wollmerhäuser, 2003).

We underline that the condition that invalidates the trilemma and enables the CB to determine simultaneously the exchange rate and interest rate is a situation of excess supply of foreign currency when the exchange rate is in the level targeted by the CB. We believe that this idea is not very disseminated because the literature that discusses the monetary autonomy and the exchange rate regimes and policies rarely treat conditions of excess supply and in vast majority is focused on situations of balance of payments deficit. But the maintenance of a competitive RER (depreciated), for its effects on the current and capital accounts generally tends to produce the conditions that invalidate the trilemma and enable a certain degree of monetary autonomy.

In explaining the sterilization operation exposed above, we suppose a simplified financial structure. The portfolio of the agents includes only monetary base, domestic assets and foreign assets. There are only two interest rates: the local rate and the international rate. The explanation above presented has the following reasoning behind it. Given certain configurations of the portfolios and certain interest rates structure, there is an increase of the preference for domestic assets for any reason (for example, a reduction of the international interest rate or a decline of the local perceived risk by investors). This change in preferences, with the current interest rates, determines an excess demand for domestic assets and the corresponding excess supply of external assets. Since the CB emits the same local asset that is on demand (the only domestic financial asset of the model), a monetary policy of maintenance of the local interest rate implies the complete sterilization of the base emission resulting from the buying intervention in the exchange market. With this simplified model, the preservation of the interest rate is equivalent to the complete sterilization, which is the same as keeping the monetary base stock unaltered.

How does the existence of a broader menu of domestic assets affect the analysis? To explore this question we will discuss as follows a more complex model, with two local financial assets. Let us suppose then that the local assets menu is composed of the monetary base and two assets that yield interest, short term assets, and long term assets (bonds, for example). Let us also suppose that the CB operates solely in the short term assets market. Let us imagine now that the excess demand for domestic assets resulting from the change in preferences of the preceding reasoning and is distributed in some way among the local short and long term assets. The first step of the CB operations – buying excess foreign currency to maintain the

exchange rate – would result in short and long term local interest rates both lower than the initial ones. In this case, if the CB completely sterilized the emission of the base by putting out short term assets, the resulting short term interest rate will be greater than the initial. This is so because the long term interest rate would be smaller than the initial and, if the elasticity of substitution between the monetary base and the long term asset base is significant, the demand for base money would be greater than the initial. To keep the base stock equal to the initial one, it would be necessary that short term interest rate was higher than the initial, to compensate the effect of a lower long term interest rate.

The increase of short term interest rate of the previous exercise has this result because the CB, that operates exclusively in short term assets, performs a complete sterilization of its intervention in the exchange market to keep the base stock unaltered. Whereas if the CB pursues the maintaining of the short term interest rate at its initial level (for example, because this is its monetary policy instrument), it can do this and for this it should not perform a complete sterilization but a partial one, allowing the supply of monetary base to be accommodated to a greater demand due to the influence of a long term interest rate inferior to the initial one.

The example with three local assets illustrates the more general case in which there isa great quantity of local assets, including land and real estate, that are demanded as counterparts of the exceeding supply of foreign assets. It is clear that the CB cannot control the whole structure of the interest rates, neither in an open economy nor in a closed one. The monetary autonomy exercised through the sterilization policy should be understood as the capacity of the monetary authority to control the interest rate instrumental to its monetary policy. The goal of the sterilization policy should be the interest rate of the assets with which the CB operates and not a quantitative base goal (or any other monetary variable).

In practice, and it is frequently mentioned, it has occurred that the sterilization policies induce the increase of domestic interest rates. The preceding discussion suggests a possible explanation of these cases and comments. If the CB pursues quantitative monetary targets (base or other monetary variables) and to preserve them carries out a complete sterilization of its purchasing interventions in the exchange market, it is probable that the interest rate of the class of assets with which the CB operates becomes elevated. But in this case the problem is not the sterilization policy, but the goal that it pursues.

4.5 Sustainability of the sterilization policy

In the previous point it is concluded that the in conditions of excess supply of foreign currency in the exchange market, the sterilized purchasing intervention, is

possible at any time. In this point we will focus on the sustainability of this policy: is it possible to keep doing it indefinitely? The answer is: no, not at any circumstance.

The sustainability of this sterilization policy depends on the interest rate earned by the international reserves and the local interest rate, on the trajectory of the exchange rate, and on the evolution of the variables that determines the demand and the supply for monetary base. The conclusion which one arrives at (Frenkel, 2007 and 2008) is that there is a maximum local interest rate that is allowed by the sustainability of the sterilization policy. The CB has freedom for fixating a local interest rate that is equal or lower than this maximum interest rate. More formally:

In each moment of time the unit cost of sterilization is:

$$s = i - r - e$$

where s is the cost of sterilization, i is the local interest rate, r is the international interest rate, $e = dE/E$ is the rate of increase in the price of the international currency (E = \$ / U\$S, is the exchange rate).

The cost of sterilization s is null if $i = r + e$, that is, if the local interest rate is equal to the sum of the international interest rate plus the rate of increase of the exchange rate. Or, which is the same, if the uncovered interest parity condition (UIP) is strictly verified.

The sterilization policy is obviously sustainable if the cost of sterilization is null or negative. If it were the sustainability condition, the sterilization policy would only be sustainable if $i \leq r + e$. This is, $r + e$ would be the maximum value of the interest rate that would make the sterilization sustainable. Greater rates than this would make the policy unsustainable.

In Frenkel (2007) we demonstrate that the mentioned condition is not necessary for sustainability. We demonstrate that the policy can be sustainable with local interest rates that are greater than $r + e$ and we calculate the maximum rate allowed by sustainable sterilization. The conclusion result simply from taking into account the seigniorage received by the CB.

In the cited work we define the degree of monetary autonomy as the difference between the maximum local interest rate that allows the sustainability of the sterilization and $r + e$.

$$g = i_{max} - (r + e)$$

where i_{max} is the aforementioned maximum rate and g is the degree of monetary autonomy.

Given the international interest rate and the rate of increase (tendency) of the nominal exchange rate, the degree of autonomy is greater the higher the

local interest rate that can be determined without making the sterilization policy unsustainable.

The sustainability criterion that we use is that the CB's total liabilities – interest-bearing liabilities plus the monetary base – is not incremented more than the international reserves valued in domestic currency, in such a way that as time goes by, the relation between the total liabilities of the CB and its reserve assets remains constant or is reduced.

From this criterion is derived a simple condition on the maximum interest rate that can yield the sterilization bills of the CB. The sterilization policy is sustainable for interest rates that are equal to or inferior to this rate. Such maximum sustainable rate results from the quotient between two variables. The numerator is the sum of the interest rate perceived by the international reserves plus the rate of increase of the exchange rate. The denominator is the ratio between the amount of interest-bearing liabilities and the value of the international reserves in domestic currency. The intuition of the expression is clear. The numerator is the total return of the reserves in domestic currency (the international rate plus the rate of increase of the exchange rate). The denominator is a number lower than one, so that the maximum sustainable rate is greater than the numerator. The smaller the denominator, that is, the smaller the proportion between the stock of interest-bearing liabilities of the CB and value of the reserves in domestic currency, smaller the proportions of liabilities for which the CB pays interests and greater is then the maximum sustainable interest rate. More formally:

We define the sustainability condition of the sterilization policy as:

$$dP \leq d(R\,E)$$

where P is the liability of the CB. The condition means that the sterilization policy is sustainable if the relation between total liabilities of the CB and the value in local currency of the international reserves $P/(R\,E)$ is not increased. In Frenkel (2007) it is shown that the condition for sustainability results in:

$$i \leq (e + r) / l_R$$

where $l_R = L/R\,E$ is the coefficient between the interest-bearing liability stock of the CB and the value in domestic currency of the international reserves.

If $l_R < 1$ the domestic interest rates that sustain the sterilization policy can be greater than $e + r$ and higher the lower is the ratio l_R. As was explained above, the CB operations determinate each moment the domestic interest rate and the exchange rate. The sustainability of these operations depends on the domestic and foreign interest rates, of the temporal trajectory of the exchange rate, and also of l_R.

The maximum domestic interest rate that maintains the sustainability of the sterilization policy is:

$$i_{max} = (r + e) / l_R$$

Consequently, the degree of monetary autonomy is:

$$g = i_{max} - (r + e) = (r + e)\ (1 - l_R) / l_R$$

The degree of monetary autonomy, that is, the difference between the maximum sustainable domestic rate and $r + e$, is greater the smaller l_R is.

It is clear that the relation l_R varies through time, modifying the range of sustainable interest rates and the degree of monetary autonomy. If l_R increases with the passage of time, the degree of autonomy tends to reduce, and vice-versa. This consideration suggests analyzing the tendency of the condition for sustainability for establishing if the maximum interest rate that allows for the sustainability of the sterilization policy tends to increase or to reduce with the passage of time. Or, which is actually the same, if the evolution of the monetary variables and the exchange market determine that the degree of monetary autonomy tends to increase or to decrease.

The condition for permanency is obvious: that there is no increase in the relation between the interest-bearing liabilities of the CB and its reserves valued in domestic currency. That is, that the stock of interest-bearing liabilities of the CB grows at a rhythm that is equal to or less than the value of reserves in domestic currency. More formally: the condition for permanency of the degree of autonomy is defined as

$$d(L/R\ E) = dl_R \leq 0$$

If the monetary variables and the exchange market satisfy this condition, this implies that the maximum sustainable interest rate and the degree of autonomy tend to remain stable or to increase. If the condition is not verified, the degree of autonomy tends to reduce, although this does not mean that a sterilization policy that is sustainable in a moment becomes rapidly unsustainable. It means that the maximum sustainable interest rates tend to be reduced with the passage of time and that, if the situation is maintained, the possibility of exercising an active monetary policy will be lost.

It is demonstrated that the permanent condition of the degree of autonomy can be expressed as another restriction on the local interest rate:

$$i \leq (e + r) + (B/L)\ \beta\ (p + y) - (C/R)(1 - l_R)/ l_R$$

where B is the stock of monetary base; β the elasticity of demand of the nominal monetary base; p is the inflation rate; y is the output growth rate; and C is the flow of purchases of the CB in the exchange market.

Local rates that are equal or less than the second part of the expression preserve the permanence of the degree of autonomy. Higher rates, although sustainable, imply that the degree of autonomy tends to be reduced, because the relation between the stock of interest-bearing liabilities of the CB and the reserves tends to increase. The restriction depends on the ratio between the monetary base and the stock of interest-bearing liabilities of the CB *(B/L)* and the growth rate of the demand for base $\beta (p + y)$. Also, as can be seen in the last part of the equation, the restriction depends negatively of the ratio between the flow of purchases of the CB in the exchange market and the stock reserves *(C/R)* (equivalent to the growth rate of the international reserves net of the interests that these earn). The intuition is clear: the greater the purchases of the CB in the exchange rate market, the greater is the growth of the stock of sterilization liabilities and their cost and the quicker tend to be reduced the maximum sustainable interest rates.

The preceding analysis supposes a freedom of capital movements. However, beyond the purpose of showing the conditions that give place to the sustainability of sterilization in this context, it is opportune to be served by the last part of the presented inequality to highlight the roles that can play the control of capital inflows and the purchases of foreign currency by the government.

Effectively, the inequality indicates that the regulation of capital inflows, that moderate the magnitude of the CB purchases (reducing *C/R*), contributes to preserve the permanency of the degree of autonomy enjoyed by the economy at a determined moment. For the same reason, the fiscal policy can also contribute to the preservation of the degree of autonomy. In conditions of fiscal surplus the government can invest in part of this flow in foreign assets, reducing in this manner the purchases of the CB necessary to sustain the targeted exchange rate.

In Frenkel (2007), there are presented various numeric exercises, in different inflation and growth scenarios and with plausible data and parameters, which suggest that the sterilization policies become sustainable and that there are considerable degrees of permanent monetary autonomy in settings that are ordinary in many developing economies. It can be concluded that the exchange rate policy of a competitive RER regime does not generally inhibit the exercise of monetary policy. The orthodox criticism in this respect is not valid. Even with free mobility of capital (with the obvious hypothesis that the domestic and foreign assets are not perfect substitutes) the regime is not incompatible with a considerable degree of monetary autonomy that can be exploited to exercise an active monetary policy.

The conclusion does not imply, however, that in a competitive RER regime, or more generally, in a context of avoiding appreciation, the control of the aggregated demand dynamics and the inflationary pressure can be exclusively trusted

to the monetary policy. If the highest limit of the interest rate that allows the sustainability of the sterilization policy is conjugated with a low elasticity of aggregate demand to the interest rate, these circumstances can significantly inhibit the regulatory capacity of the monetary policy. The interest rates that are necessary to sensibly affect the aggregate demand could be higher than the sterilization sustainability limit (Frenkel, 2008). A low elasticity of the aggregate demand to the interest rate is observed even in developing economies with a relatively high degree of financial intermediation. It can be presumed that this characteristic is found in a great number of these economies.

Our conclusion to this respect is that in a competitive RER regime active monetary policy can and should be exercised, because it is imperative to use all the available instruments to control the aggregate demand dynamics and the inflationary pressures. But the responsibility for this control cannot be trusted exclusively or mainly to monetary policy. This conclusion highlights the crucial role that the fiscal policy should play as a regulatory instrument on aggregate demand and inflationary pressure.

5 FINAL THOUGHTS

It is striking that the evidence presented in this work has scarce recognition on the part of the multilateral financial institutions. Although without recognizing the role that the new macroeconomic configurations played in the acceleration of growth of the developing economies, the effects that have had the changes in the relationship between these countries and the international financial market can hardly be ignored. It should be accepted, at least, that the new context alleviated in great measures the negative traces that financial globalization showed until the beginning of the years 2000. But the official doctrine of the international financial institutions does not register it.

The IMF, for example, continues to officially promote macroeconomic policies based on pure floating and inflation targeting monetary policy. Among other negative traces (for example, the volatility of the exchange rate), the pure floating can lead to a great appreciation of the exchange rate, particularly in the current international financial conditions, and to consequently debilitate the robust foreign balances and growth.[15]

15. However, inside the IMF there have been discrepancies after the crisis. For example Olivier Blanchard and collaborators (Blanchard et al, 2010) published a Staff Position Paper that reflects the intention of reorienting the recommended macroeconomic policies. In the C section of the work, entitled "Inflation Targeting and Foreign Exchange Intervention", which focuses on the developing countries policies, the authors recommended interventions in the exchange rate markets to avoid strong appreciations, accumulation of reserves and sterilization policies. En another Staff Position Paper, published shortly after the one mentioned, Jonathan D. Ostry and collaborators (Ostry et al, 2010) accepted the control implementations on the entry of capital incomes in certain circumstances. The policies suggested in both documents collide with the official IMF orientation.

On the other hand, since the G-20 decided to triplicate the loan capacity of the IMF, in April 2009, the institution promoted the idea that it can replace the role played by the international reserves accumulated individually by the developing countries. The initiative overlaped with critical opinions about the preservation of high reserves, originated from the very IMF and also from scholarly sources (for example, Rodrik, 2006). If the lender of last resort role of the IMF is strengthened, it is good for the international financial system, but the initiative clearly points to central banks not intervening in the exchange market and leaving free the market forces in the determination of the exchange rate. It is clear, however, that after the experience in the recent decade, particularly the one in the global crisis, it seems difficult to convince the central banks of the developing countries that accumulating reserves is inefficient.

In principle, it is doubtful the effectiveness that the aforementioned initiative could play a similar role to that played by the availability of voluminous reserves. The eventual assistance of the IMF to cover deficiencies of international liquidity of the countries would be subject to a conditionality (even if it were an ex-ante conditionality).[16] Accordingly, the effective availability of this liquidity would be uncertain and consequently a default risk would survive for this reason. This consideration shows that international reserves and the supranational lender of last resort are not equivalent.

Regarding this issue, the treatment by the European Union (EU) and the IMF of the problems faced by the refinancing the European public debts in the first semester of the current year adds new elements for judging.

In the first place, the recent European experience provides evidence that allows conjecturing of the probable effects of the aforementioned initiative. Although the lender of last resort function of the IMF will be translated into a new financing line, with the minimal imaginable restrictions for its access by the developing countries, it seems difficult that its effects on the risk premiums of these countries result greater than the effects that, in the case of the Eurozone, showed the recent EU-IMF bailout added to the potential assistance of the Central European Bank. And these effects are evidently inferior to the ones provided by the availability of reserves in the case of the emerging countries. In other words, it seems improbable that an international agreement within the IMF, which constituted the institution as a lender of last resort for the developing economies, offer to investors better guarantees than the ones recently established in the Eurozone for the countries that integrate it, and that at their turn, result

16. In fact, two lines created by the IMF with this purpose in the past (the Contingent Credit Line, in the second half of the nineties, and the Short Term Liquidity Facility, in October of 2008) were not requested by any country and had to be deactivated. The recently created Flexible Credit Line was requested by three countries, but has not been used.

clearly inferior to the guarantees provided by the availability of reserves in the emerging market countries.

In second place, the recent European experience serves to illustrate the enormous difficulties of coordination that would face the initiative to establish an international lender of last resort. The EU is doubtless the most suitable area imaginable for an international agreement that dispels the sovereign default risks of the countries that integrate it. If an agreement is so difficult in this area, what would be the real possibilities of a global agreement? The difficulties would surely be greater than in the case of the EU.

A frequent objection to the competitive RER policies, surplus in current accounts and accumulation of reserves, is that they imply in a fallacy of composition. Certainly, not all the countries of the world can simultaneously implement these policies. However, in principle it is not inconsistent to recommend these orientations to the set of developing economies. Of course that the generalization of these policies in the set of developing economies implies necessarily in that the aggregate of current accounts of the advanced countries should be in deficit. As such, the debate on the new macroeconomic configurations of the developing countries overlaps with the debate on the "problem" of global imbalances.

It is a fact that developing countries have failed to implement policies that tend to generate current account surpluses simultaneously and it does not seem to happen in the near future, so that the above policy recommendations for each of the developing countries may not be accused of global inconsistency, even if the global imbalances are perceived as a problem. On the other hand, a small country in international terms has no reason to worry about the international repercussions of its policies. However, if the international debate and the possibilities of improvement of the international institutions to make them more favorable to development are valuable, the issue of global consistency of the development policies must be addressed.

The debate on global imbalances essentially involves the judgment about the sustainability of deficits in the United States and other advanced economies current accounts. Obviously, we have no place in this work to discuss the subject, but there is an aspect of the debate that must be underlined: the role attributed to the global imbalances in the recent crisis.

In the midst of the first decade of the 2000s, some analysts predicted that the global imbalances would be abruptly adjusted, causing an international crisis. Those who imagined a crisis originating in the current account deficit of the United States reasoned by analogy with the crises originated in the current account deficits in emerging market economies. Faced with the growing deficit trend in the current account they predicted a sudden confidence reduction in North-American assets,

which would involve the public debt papers, and the consequent rapid liquidation of dollars and dollar-denominated assets. This would cause an abrupt depreciation of the dollar, whose inflationary effects would induce the Federal Reserve to significantly elevating interest rates, which would push the United States and the rest of the world into a recession.

Effectively, a crisis did occur, but it was not the one expected by those who focused on global imbalances. In fact, the opposite of what was expected occurred: the crisis generated a "flight to quality" that produced for some time the appreciation of the dollar and of the Treasury bonds of the United States.

Anyhow, among those calling for urgent solutions for the "problem" there are many that support that the global imbalances played a central role in the gestation of the current crisis. Without detailing these arguments, we can say that they are not very convincing in the scholarly level. The consensus at this level locates as the main factor of the crisis the great financial fragility reached by the globalized system centered in the United States, facilitated by the weak regulation exercised by the government in the developed countries, together with the bursting of the real estate bubble in 2006. In fact, the financial crisis affected more the developed countries with high surpluses but greatly exposed to assets in the United States, like Germany, than other developed countries with deficits in current accounts, with a smaller exposure to North-American risk. With respect to the relation between the crisis and the global imbalances, the scholarly consensus recognizes that both can have a common root in the extremely low savings rate of the North-American economy before the crisis, but discards the high deficits in current accounts as the main cause.

Beyond the debate on the sustainability of global imbalances, there has recently been intensified the pressure of the advanced countries on the developing economies, especially China, for them to appreciate their exchange rates and debilitate their current accounts. The intensification of the pressure does not appear now primarily motivated by the tendencies of foreign balances, but as an urgency in increasing foreign sales. Effectively, the recuperation of domestic demand is poor in the United States and in other developed economies and the effects of the monetary policies are weak. The increase in net exports seems as the only viable way to stimulate the reactivation. On this path, the United States and other developed countries have placed the exchange rates and trade balances as priority subjects at the IMF and the G-20. Besides the international pressure, several of the developed countries have adopted measures for devaluating their currencies; including Japan, whose position in the global imbalances should guide its exchange rate policy in the opposite direction. An "exchange rate war" is being waged, as Brazil's Finance Minister has denominated, in which all are prone to lose, both the developing countries as the advanced ones.

The developing countries should participate in this debate taking the discussion beyond the short term and putting the development question at the forefront. With this perspective they should propose a profound reform of the international monetary system, which among the objectives it should include the consolidations of the best traces of the international configuration of the years 2000. For example, they should promote an international agreement on exchange rate regimes and real exchange rates that would allow for the developing economies to follow high growth-cum-exports rate trajectories.[17]

For the circumstances that prevail in the advanced countries, the conditions for the success of this kind of proposal seem at these times the worst. But some aspects of the situation are advantageous for, at least, starting this discussion. For example, the situation has the virtue of clearly showing the role of the exchange rate regimes and the real exchange rates, without the paraphernalia with which these subjects are surrounded in neoclassical economy. In second place, the subject has been placed at the forefront of international attention by the developed countries and is open to negotiation possibilities.

To gain support for the suggested reform would require reviving the Bretton Woods spirit in a context of great poverty of initiatives of international coordination.

It is difficult but not impossible. Two conditions seem necessary to advance on this path. The first is the widespread recognition of the lessons provided by the history of financial globalization. The second is to recognize the benefic effects that an international agreement on exchange rate regimes and policies would have bothon the developing and advanced countries. The exchange rate war is not good for anyone.

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