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**Working Paper**

## Macroeconomic policies, growth, employment, and inequality in Latin America

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Working Paper No. 2012/23

## **Macroeconomic Policies, Growth, Employment, and Inequality in Latin America**

Mario Damill and Roberto Frenkel \*

February 2012

### **Abstract**

This paper examines the macroeconomic policies and outcomes experienced by the Latin American economies during the period 1990-2010. Macroeconomic policies refer to exchange rates, monetary and aggregate fiscal policies, while macroeconomic outcomes, on the other hand, refer to the patterns of growth, inflation, employment, investment, balance of payments, and the evolution of external and public debts and international reserves. The analysis includes a discussion of the effects of macroeconomic outcomes on poverty rates. With regard to policy, the study examines the changes that took place in 1997-98, and then reviews the resulting new macroeconomic configuration that was established in 2002-03. This new configuration favoured the acceleration of output growth and employment creation, and contributed to reducing poverty rates.

**Keywords:** Latin American economies, macroeconomic policies, economic growth, employment, poverty rates, inequality

**JEL classification:** E65, I32, N16, O54

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## Acronyms

CA	Central America
EMCs	emerging market countries
IMF	International Monetary Fund
LA	Latin America
NER	nominal exchange rate
pp	percentage point
RER	real exchange rate
SA	South America
SCRER	stable and competitive real exchange rate
ToT	terms of trade

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## **1 Introduction**

This paper examines the macroeconomic policies and outcomes experienced by the Latin American economies during the period 1990-2010. Macroeconomic policies refer to exchange rates, monetary and aggregate fiscal policies, while macroeconomic outcomes, on the other hand, refer to the patterns of growth, inflation, employment, investment, balance of payments, and the evolution of external and public debts and international reserves. The analysis includes a discussion of the effects of macroeconomic outcomes on poverty rates.

With regard to policy, the study reviews the changes that took place from 1997-98 onward (when the contagion effects of the Asian and Russian crises were felt in South America in particular). As a result, a new macroeconomic configuration was established in 2002-03, a configuration that favoured the acceleration of output growth and employment creation, and contributed to reducing poverty rates. The paper examines data for ten South American and eight Central American countries, including Mexico.

The paper is presented in three sections in addition to this introduction. Section 2 discusses the main changes in macroeconomic policies and outcomes. We first examine exchange rates regimes and policies, and the evolution of real exchange rates. Next, we take steps to describe modifications in fiscal policies and public finances. The section focuses on the changes in the variables related to external fragility, such as current account balance and its composition, accumulation of foreign exchange reserves and external debts. This is followed by a discussion of their effect on the relationship between a country and the international financial system. Next we focus on growth and inflation performance and develop an econometric assessment of the diverging impacts of the global crisis on emerging market and Latin American (LA) economies.

Section 3 examines the evolution of unemployment and poverty rates, and develops econometric tests to assess the relationship between growth, real exchange rates, unemployment, inflation and poverty rates. Conclusions are given in Section 4, which also includes a stylized set of macroeconomic policy guidelines intended to foster growth and employment creation in a sustainable manner.

## **2 Macroeconomic evolution in Latin American countries: policy changes and outcomes**

### **2.1 Main changes in the orientation of macroeconomic policies**

Many developing countries in LA—and elsewhere—adopted novel macroeconomic policies in the 2000s. In contrast to the 1990s, these changes in the wake of the 1997-98 crises in Southeast Asia and Russia prompted an acceleration of growth and changed these nations' integration with the global economy. The policies also contributed to the promotion of employment creation, poverty reduction, financial stability and robust performance in the face of financial and real external shocks.

The core of these policy changes was the pervasive adoption of managed floating regimes and exchange rate policy practices that were aimed at either preserving competitive real exchange rates or avoiding massive appreciation.<sup>1</sup> The managed floating exchange rate regime allows monetary authorities to intervene and accumulate reserves to prevent or mitigate the necessity to resort to appreciation when current account conditions or capital flows lead to sales pressures in foreign currency markets, as happened in many LA economies and emerging market countries (EMCs) in 2002-08.

Under any exchange rate regime, the availability of significant amounts of foreign reserves reduces the risk of default on public and private debts caused by insufficient international liquidity when capital inflows, for example, come to a sudden stop. But the combination of abundant reserves and managed floating tends to reduce the risk of default through other channels as well. Exchange rate flexibility leads to exchange depreciation in the face of negative external shocks, and this contributes to an adjustment of the economy to new external conditions. The availability of reserves makes it possible to intervene in order to control devaluation, and to avoid overshooting and bubbles. This limits the negative balance sheet effects on banks and companies, a particularly relevant factor in economies with partially dollarized financial systems. Large reserves provide greater influence for central banks to guide foreign exchange markets so that large-scale interventions can be avoided. Under the new managed floating regimes, the voluminous accumulation of international reserves that resulted from foreign exchange market interventions was frequently accompanied by monetary sterilization to limit the evolution of monetary aggregates, aiming at price stability.

Another important modification in the macropolicy orientations of LA countries concerned fiscal management. Signs of structural change in Latin America's fiscal policies were apparent in the 2000s, and many countries implemented fiscal rules, fiscal responsibility laws or took discretionary decisions oriented at correcting the pro-deficit bias of the past.<sup>2</sup> In many countries these changes contributed to a generalized improvement in fiscal results as well as to a declining trajectory of the outstanding public debt.

### *Exchange rate policies and the evolution of real exchange rates<sup>3</sup>*

Figures 1a and 1b record the 1990–2010 evolution of real bilateral exchange rates in the economies of South America (SA) and Central America (CA)<sup>4</sup> against the US dollar.

The typical pattern on the part of several South American countries encompassed episodes of real appreciation in the early 1990s until 1995, mainly due to the fact that the exchange rate was used as a nominal anchor to fight inflation. Next, relative stability was evident until 1998, which was generally followed by periods of real depreciation during 1998-2003, and sustained real appreciation thereafter, except for a brief interval

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1 See, for instance, Williamson (2000) and Bofinger and Wollmerhäuser (2003) for details on managed floating regimes.

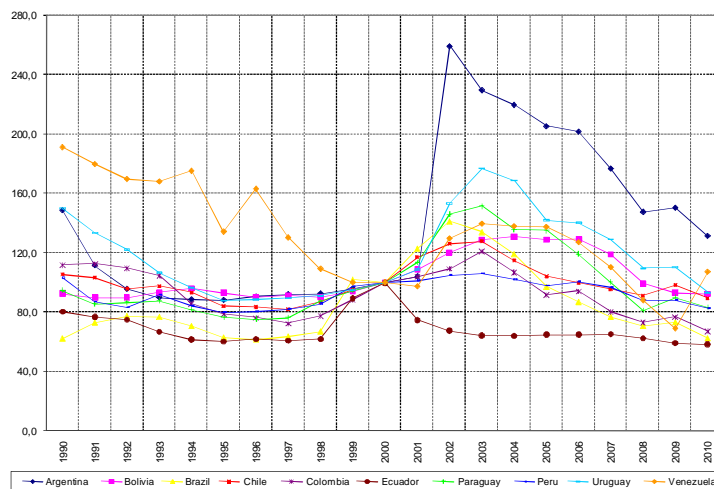
2 On this aspect, see for instance, Fanelli, Jiménez and Kacef (2011).

3 See Frenkel and Rapetti (2010b) for an analysis of the evolution of ER regimes in Latin America.

4 Including Mexico.

in 2009. Brazil, Colombia and Chile adopted floating regimes and inflation targeting schemes in 1999 to face the negative contagion effects from the Asian and Russian crises in 1997-98. Peru, already having adopted a managed floating ER regime in the early 1990s, also formally introduced inflation targeting policy in 2002. Argentina and Uruguay retained fixed exchange rates and continued to appreciate real exchange rates

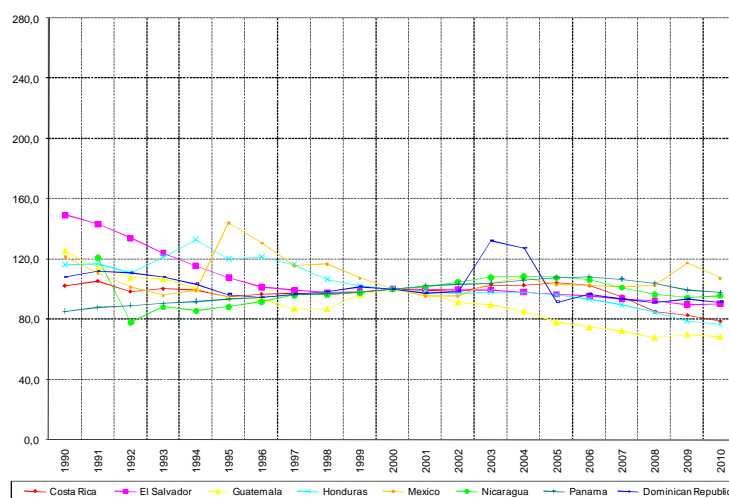
Figure 1a  
Real bilateral exchange rates against the US dollar,  
South America (2000=100)



Note: SA refers to South American economies (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela); CA refers to Central American economies and Mexico (Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama). The Argentine RER has been corrected for the period 2007-10 using the average CPI of 7 provinces (CPI-7) published by CENDA, instead of the CPI elaborated by INDEC. The Argentine CPI-7 has also been considered for the period 2007-10 in the analysis of inflation rate.

Source: Authors' computation based on CEPALSTAT data.

Figure 1b  
Real bilateral exchange rates against the US dollar,  
Central America (2000=100)



Source: Authors' computation based on CEPALSTAT data.

(RERs) until the 2001-02 crises, when both countries moved to floating regimes. Peru showed a dynamic evolution pattern for RER similar to that of the other SA countries but with lower volatility. Similar RER trends were also recorded in Paraguay, which retained its managed floating ER scheme, and in Bolivia where the exchange rate was based on a crawling peg. Only two countries in South America managed to avoid this common pattern: Ecuador, which had dollarized in 2000, and Venezuela with its erratic ER policy and strong RER fluctuations.

In most Central American countries, the crawling peg or managed floating exchange rate regimes were maintained with a high degree of intervention, thus preventing strong swings in the nominal and real exchange rates. Costa Rica, Nicaragua, Honduras and Guatemala belonged to this group, as did the Dominican Republic, but it experienced an episode of severe depreciation followed by a swift reversion in 2003-05, associated with a domestic financial crisis. Mexico represents a different story with its 1995 depreciation followed by a longer period of appreciation, and a reversal in 2003/4 and 2009 to real depreciation. Two other CA economies to be considered here are the dollarized economies of Panama and El Salvador. The latter country fixed its nominal exchange rate in 1994-95 with free convertibility of the currency, finally to dollarize at the beginning of 2001.

Bilateral exchange rates in Central America followed a much more stable evolution than in South America. In the early 1990s, with the exception of El Salvador and Mexico, there was no general tendency to appreciate, nor was there any indication of an impact from the Southeast Asian crisis. The countries went through soft real depreciation of their currencies in 2001-03, followed by mild appreciation thereafter. However, a few more relevant episodes of real appreciation stand out: El Salvador between 1991 and 1997, Guatemala between 2000 and 2010 and Honduras between 1994 and 2010.

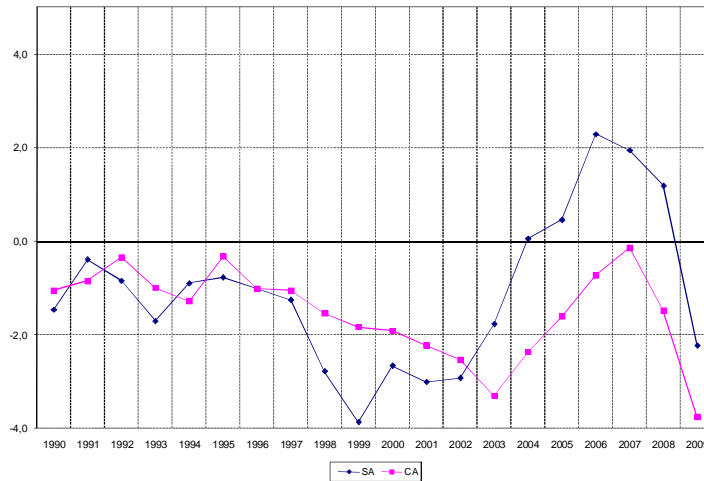
No important variations in the real exchange rates were observed in CA in 2008-09, with the exception of Mexico where a significant depreciation took place in 2009. In contrast, a general tendency to appreciate was evident in the SA economies in 2008. This faded in some countries in 2009, but most economies appreciated again the following year. Thus, in 2010 the RERs of the SA economies were, on average, 35 per cent below their 2003 level, and had appreciated against the US dollar in every country considered, with Brazil registering a record 53 per cent. By comparison, in Central America the average appreciation between 2003 and 2010 was 15 per cent.

Some points deserve to be emphasized. First, the RERs in 2002-03 dropped in every SA country to their lowest levels since around 1990 when the region regained access to voluntary flows of international financing. Second, real depreciation had a significant impact on the current account situation prior to the commodity price increases in the 2000s. Third, due to the high 2002-03 RERs, average RERs during the period 2002-08 were considerably more depreciated than a decade earlier despite the clear general trend to real appreciation. Fourth, depreciations in 2008-09 were only a transitory interruption of the appreciation trend, which continued the following year. But in view of analysis to be undertaken later on the link between RERs and employment, it is important to point out that in South America the average RERs during the economic upswing prior to the global crisis were in most cases considerably higher than the minimum levels observed in the 1990s.

*The fiscal front*

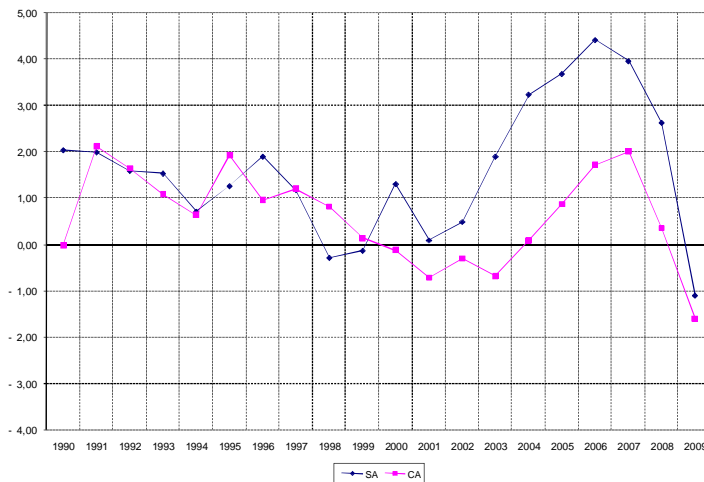
In Latin American countries, the long-run trend of better fiscal performance was, in part, the result of the adoption of fiscal measures oriented at correcting the pro-deficit bias of earlier periods.<sup>5</sup> Evolution of the aggregate fiscal accounts during the expansion of the 2000s is very different from its past development (Figures 2a and 2b). In fact, both regions in the 1990s recorded primary surpluses ranging between 1 and 2 per cent of GDP, a trend that lasted until 1997, as well as moderate global fiscal deficits. This was a significant improvement for several Latin American economies. But hit by the spillover effects of the crises in Southeast Asia and Russia, from 1997 onward the SA

Figure 2a  
Fiscal results as percentage of GDP by subregions  
(non-financial public sector, average)



Source: Authors' computation based on CEPALSTAT data.

Figure 2b  
Primary fiscal results as percentage of GDP by subregions  
(non-financial public sector, average)



Source: Authors' computation based on CEPALSTAT data.

<sup>5</sup> Fanelli, Jiménez and Kacef (2011).



economies experienced increasing global deficit that lasted on average until 2002, with a sharp deterioration in 1997-99. However, despite the recessionary stance, a positive trend in South America's economies in primary results can be observed in 1998-2002, thus revealing the procyclical bias of its fiscal policies.

The average primary public accounts of the Central American economies turned negative in 2001, when they were hit by the impact of the recession in the USA. Although both subregions showed significant improvements in the fiscal results between 2003 and 2007, this change was considerably more intense for the SA economies. In the post-2007 period, fiscal figures worsened as a consequence of the global crisis.

#### *Reduced financial vulnerability*

The benefits from above mentioned changes in macro policies—the adoption of managed floating regimes in particular—were apparent not only in the relevant economies but also in all developing countries. The advantages developed through two channels: on the real side, the accelerated growth of the reforming economies induced a drag effect that extended to other developing countries; this includes improved terms of trade. On the financial side, changes in policy and their attendant results had a beneficial effect on the relationship between the international financial system and the developing countries.

These positive effects were in evidence prior to the global financial crisis, and during its first phase around mid-2007 and the collapse following the bankruptcy of Lehman Brothers. In the subsequent phase, when developing economies were hit squarely by the crises, the effects differed. Financial shock was less severe for the economies that had adopted new macroeconomic configurations, as they had greater room to implement anti-cyclical policies. In contrast, the consequences were devastating for the economies that based their international financial integration within the framework of macroeconomic policies similar to those that had prevailed in LA during the 1990s (for example, economies in Central and Eastern Europe).

Therefore, given the region's history of frequent and intensive financial crises, reduced financial vulnerability was a primary benefit of the policy changes mentioned above. In fact, the first thirty years of financial globalization (from the early 1970s to the beginning of the century) have witnessed financial and currency crises in emerging market economies becoming more frequent and intense. In striking contrast, the recent global crisis initially developing in the US triggered no similar financial crises in the emerging market economies. The importance of this observation stands out if we take into consideration the fact that the real and financial negative shocks of the developing economies at this time were similar to those caused by the Asian and Russian crises in 1997-98. In both cases, the external shocks were more devastating and geographically more widely extended than any other adversity since financial globalization began.

The unique experience of the developing countries with respect to the global crisis can be associated with two factors. One is the renewed role of the IMF. IMF innovations bring the institution closer to the role of international lender of last resort, largely along the lines previously called for by the developing countries. It is plausible that IMF action helped a number of small economies avoid situations that wielded great financial and external fragility. But more important in our opinion is the fact that other

developing economies which did not need IMF support also avoided crisis situations. This stronger financial resilience is apparent in the improvements experienced by many developing economies in the 2000s.

Emerging market countries were integrated into the international financial system in a segmented manner and several fell victim to financial traps that usually turned into crises (Frenkel 2008a). International contagion and herd behaviour of investors are characteristic aspects of this segmentation. Segmentation tended to dissipate in the 2000s. Financial traps are the result of two key links between the economy and the international financial market. The first link is determined by the volume of financing needs that may be required to refinance debt maturities and fund high structural current account deficits. This situation is very prone to contagion or other sources of volatility, and it tends to have self-fulfilling prophecies. The market assesses this situation by imposing higher risk premiums, and a country loses to some extent its freedom with regard to economic policy, because the urgency imposed by the need for international funding gives priority to issuing signals that look favourable in the market.

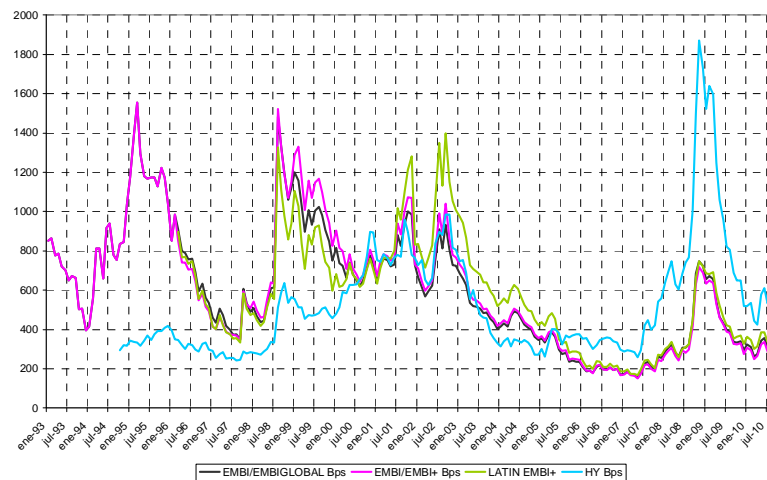
The second link is the effect on interest rates. A high country risk premium makes external financing more expensive, contributing further to the worsening debt ratios. On the other hand, the combined effect of the international rate plus the country risk premium determines the floor for local real interest rates. An emerging market's integration with the international financial market is thus segmented, and international interest rates faced by the country and its local interest rates are significantly higher than those in the developed countries. High interest rates have adverse effects on growth as well as on internal and external financial fragilities.

At the end of the 1990s, the phenomenon of segmented integration was evident for highly indebted countries, such as Argentina and Brazil. However, other developing countries, which had managed to avoid the accumulation of heavy foreign debts, also experienced segmented integration. After embracing financial globalization for almost three decades, financial assets of these Latin American economies were such that their returns included considerable country risk premium. In 1997, just prior the Thai devaluation, these risk premiums touched bottom but rose after the Asian and Russian crises, and remained high into the early 2000s.

The persistently high country risk premiums were an unexpected result of financial globalization. During its initial stages, defenders of financial globalization considered full integration between local financial systems and the international system to be the ideal towards which the process would converge. Full integration implies a global brokerage system in which the performance of financial assets on the one hand, and the cost of capital for borrowers, on the other, are equal in economically similar transactions, regardless of the geographical location of the parties involved. Globalization converging towards total integration was to have implied continuing reductions in country risk premiums, but this did not happen until the early 2000s.

However, a reduction of the perceived risk associated with these assets was experienced in this decade. In fact, the country risk premium in developing economies has followed a downward trend since late 2002, and by mid-2005 it had fallen below the minimum

Figure 3  
Emerging markets risk premium and spread of high-yield US private bonds



Source: Authors' computation based on data from the Merrill Lynch index of US High-Yield Master II (H0A0) for high-yield US private bonds; the EMBI+ JP Morgan index (EMBI to November 1997 and EMBI+ from December 1997 on) for sovereign bonds of emerging market economies and of LA emergent markets.

recorded prior to the 1997-98 Asian crises. In early 2007, the average risk premium dipped to a record low, a level that was significantly below that observed before 1997 and significantly below the spread of high yield bonds in the USA. Country risk premiums have tended to rise since mid-2007. In the emerging market economies before the bankruptcy of Lehman Brothers, premiums still resembled levels that had prevailed prior to the Asian crises. On the other hand, the contagion effect following the bankruptcy was short-lived and by 2009 many developing countries had regained access to international credit at relatively low interest rates. Risk premiums continued to decline during 2009 and 2010, settling again at levels lower than in the favourable 1990s.

Figure 3 shows that the average risk premium for LA countries followed a similar development pattern of the average emerging economies. However, the decrease in Latin America observed in the first half of the 2000s was more pronounced, mainly due to the high spreads seen in Argentina and Brazil at the beginning of the decade.

The reduction of perceived risks can be associated with the significant changes in the 2000s in the modalities of the EMCs with regard to international financial integration. These modifications, related to macro-policy changes, began to occur after the 1997-98 Asian and Russian crises (Frenkel and Rapetti 2010a). Major factors included: (i) adopting flexible exchange rate regimes (with different levels of administration); (ii) generating current account surpluses or reducing previous deficits, and (iii) accumulating substantial reserves. These features persisted after the global crisis, moderating the perception of risk. Current account surpluses and foreign reserves are bulky external indicators of robustness.<sup>6</sup> In the 2000s, the 'class' of assets of the emerging markets became more heterogeneous, and many of these assets were issued by robust economies. This helped to dispel the segmentation of emerging market assets and

<sup>6</sup> These indicators are good predictors of the probability of balance of payments crises. In this respect see for instance Kaminsky, Lizondo and Reinhart (1998).

significantly limited the risk of contagion and herd behaviour on this asset ‘class’ so that the perception of diminishing risk was also extended to the EMCs with deficits or less flexible exchange rate regimes.

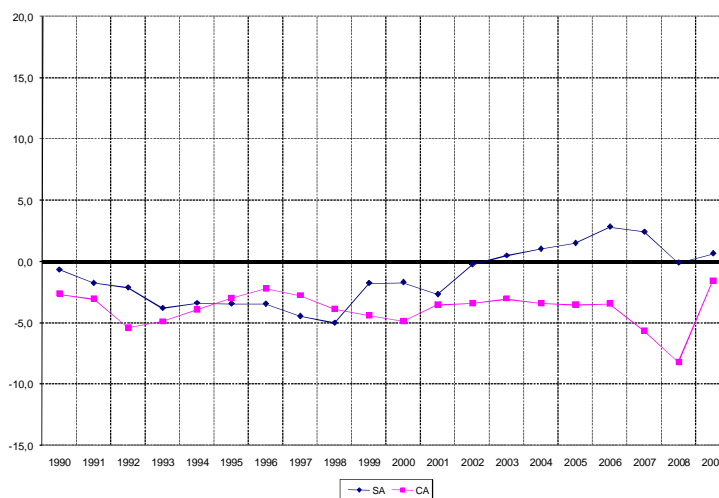
#### *Aggregate investment and current accounts in the LA economies*

An important indicator of the reduced financial vulnerability of SA economies in the 2000s is the switch from foreign to domestic savings as the source of financing of aggregate investment. In fact, in contrast to the 1990s, the important recovery of investment rates in the 2000s was completely independent of foreign savings. This factor, relevant with regard to the sustainability of growth, is evident in the subregion’s average current account results (Figure 4). More precisely, foreign savings (equivalent to the current account with an inverted sign) went from positive to negative in most SA countries. Towards the end of the 1990s expansion in 1997, among the ten SA economies considered here, only Venezuela had a current account surplus. By 2003, half of the economies indicated current account surpluses, and by 2005 Colombia was the only one to register a current account deficit. However, several of the surplus economies recorded deficits from 2008 onward.

The contrast between the current account performance during the two upswing periods (1990-97 and 2003-08) needs to be emphasized. Unlike in the former period, the economic expansion of the 2000s was not reliant on foreign savings. There was also a clear distinction between the development of current accounts in the two regions: South America and Central America. As was the case in the SA economies, the CA countries were dependent on foreign savings during 1990-97, but were not forced to adjust to the sudden 1997-78 halt in capital inflows, nor did they show any improvement in the 2000s. This can be seen in the average current account results for the subregion, but it was also true for each individual country in the group.

A remarkable aspect of the current account performance of CA economies is that they systematically recorded deficits despite the receipt (at times) of huge flows of unilateral transfers from abroad, as a consequence of labour emigration. These transfers were particularly high in El Salvador, Panama, Honduras, Nicaragua, the Dominican Republic and Mexico.

Figure 4  
Current account result, average by subregion (% of GDP)



Source: Authors' computation based on CEPALSTAT data.

Aggregate investment rates grew in both subregions during the 1990s expansion (Figure 5), albeit dropping in SA because of the SE Asian and Russian crises. The upturn lasted longer in the CA economies, which also enjoyed a less intense decline than the SA area in the intermediate period. Although investment in the SA recovered faster during the 2000s upswing, by 2008 both subregions had achieved similar peaks of about 23 per cent of GDP on average, only to fall thereafter with the global crisis. As we see later, this pattern of investment rates was clearly procyclical.

Figure 5  
Average investment rates in South American and Central American countries  
(% of GDP)



Source: Authors' computation based on CEPALSTAT data.

### *Terms of trade*

As already mentioned, part of the favourable development in current accounts and the reduced financial vulnerability of many EMCs resulted from a significant improvement in the terms of trade (ToT) in the 2000s. Truly, the most remarkable fact regarding its evolution in the period 1990-2010 has been the important increase in the ToT indicator for most SA economies, which was particularly steep for minerals exporting countries (Figure 6a). The rise was remarkably strong from 2003 on. In comparison, the negative development observed in several countries after the 1997 adverse international situation looks quite mild.

However, the observed performance of the indicator was completely different in Central American countries, mainly because the terms of trade did not improve in the 2000s. On the contrary, with the exception of Mexico, the ToT indicator kept falling, mainly because these economies were oil and food importers, and were thus affected by a predominantly negative impact from increased commodity prices.

The fluctuations of the ToTs during the global crisis were more intense in South America than in Central America. However, in both subregions the 2009 ToTs were, on average, close to the 2006 levels. In SA this was the consequence of a strong rise during the first phase of the global crisis (2007/8) followed by a fall in 2009. On the other hand, fluctuations in CA were modest and mostly negative between 2006 and 2008, and in most cases recovered slightly in the following year.

Figure 6a  
Terms of trade indexes for South American countries (2000=100)

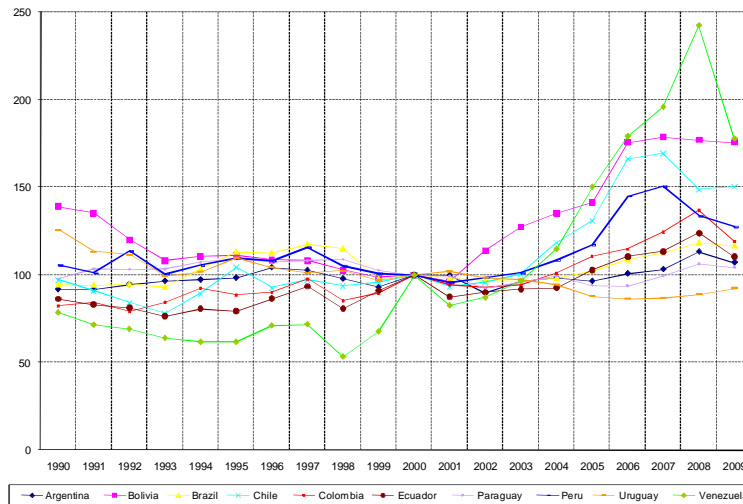
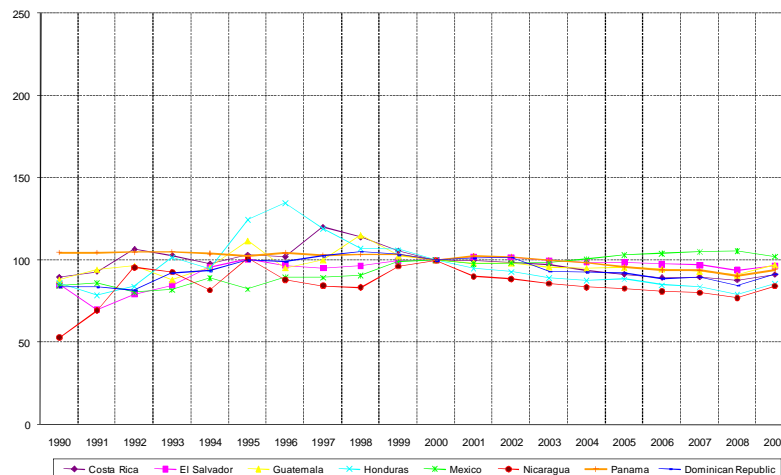


Figure 6b  
Terms of trade indexes for Central American countries (2000=100)



Source: Authors' computation based on CEPALSTAT data.

### *Foreign debt and reserves accumulation*

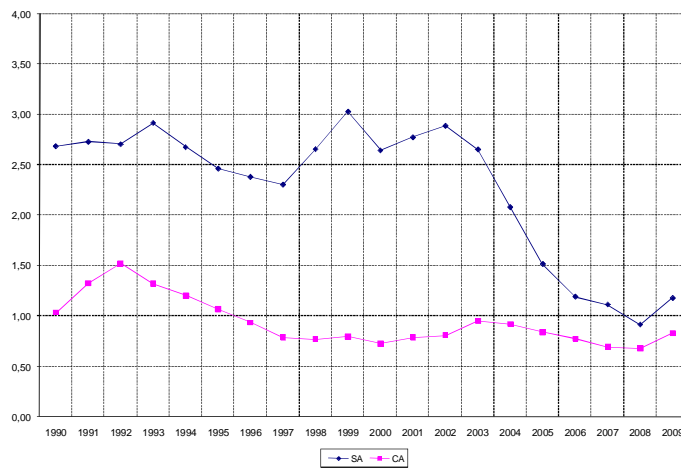
If the change in SA current account results in the 2000s contributed to reduced financial vulnerability, the evolution of foreign debt and the stocks of foreign reserves reinforced this position. In fact, the performance of the current accounts made a substantial reduction in the outstanding foreign debt possible from 2003 onward (Figure 7). The average ratio of foreign debt to annual exports fell from almost three in 2002 to less than one in 2008. This is another fact differentiating the expansion of the 2000s from the era of better performance in the 1990s.

The performance of the two subregions, however, deviates considerably. The average ratio of foreign debt to exports has always been considerably lower in Central America, mainly reflecting the fact that these economies, on average, are much more open than in

South America (85 per cent ratio, on average, for the whole period versus 47 per cent for the SA economies, calculated as the ratio of the sum of exports and imports to GDP, in constant US dollars). Despite permanent current account deficits, CA economies have registered a soft, sustained decline in their foreign debt ratios since the early 1990s, albeit with the period 2000-03 an exception. Moreover, unlike in most SA economies, the majority of these obligations were related to credit lines obtained from multilateral agencies like the IMF, the IDB and the WB, or from governments of advanced countries.

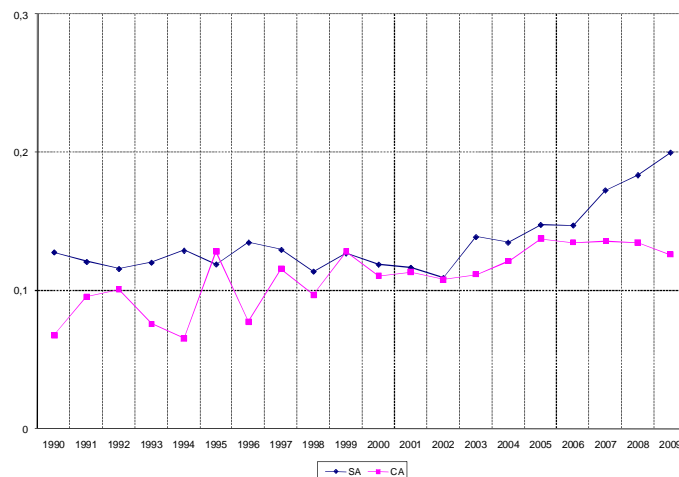
The lower financial vulnerability can also be observed in the fact that interest payments have had a much lower weight in the returns to foreign investment outflows, a situation different from the earlier 30-year period of financial globalization. On the other hand, returns to investment have also had a lower weight in the current account results, and are, in great part, explained by profits and dividends from foreign direct investments.

Figure 7  
Ratio of foreign debt to total exports,  
average by subregions



Source: Authors' computation based on CEPALSTAT data.

Figure 8  
Foreign reserves as % of GDP,  
average by subregions



Source: Authors' computation based on CEPALSTAT data.

Interest payments on foreign obligations denominated in international currency need to be served in this currency and are thus an inertial variable of the current account debit. In contrast, FDI profits accrue predominantly in local currency and the amount, measured in international currency, falls when the exchange rate (ER) depreciates. Moreover, authorities may establish temporary limits or restrictions on the transfer of profits abroad. On the other hand, in normal conditions, an important part of FDI profits is recycled to finance new investments (which are registered in the balance of payments as new FDI inflows). Thus, a significant portion of the current account debit with regard to FDI profits is a more or less automatically financed, and neither the reinvested FDI profits nor the new capital inflow is channelled through the foreign exchange market. Consequently, the external vulnerability associated with a certain current account deficit is currently considerably lower than in the past.

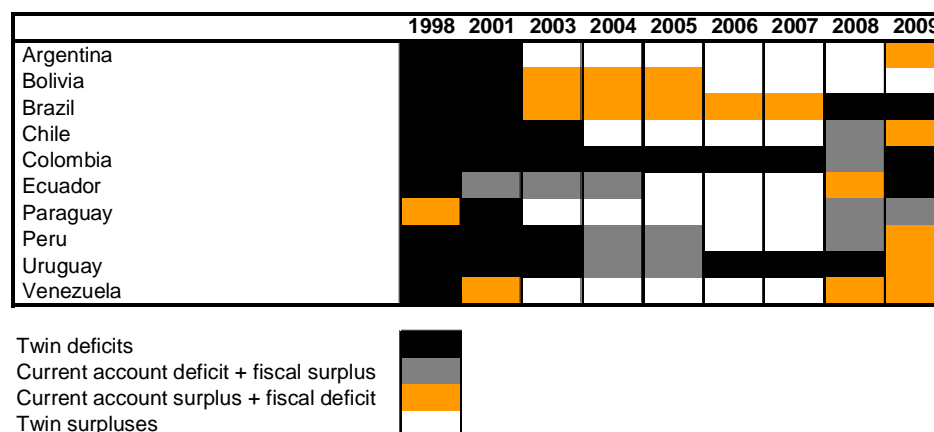
It is interesting to note that among the 12 LA countries with current account deficits in 2010 (or based on data availability, in 2009), nine—Brazil, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Paraguay and Peru—were able to finance their entire deficit with FDI inflows, with reinvested profits being an important component of these flows. The exceptions were Ecuador, Nicaragua and the Dominican Republic.

The decreasing financial vulnerability of the LA economies was also supported by the accumulation of foreign reserves, which was particularly intense in SA after 2002 (Figure 8). In addition five CA countries—Honduras, Costa Rica, Dominican Republic, El Salvador and Guatemala—reached stand-by agreements with the IMF between April 2008 and December 2009.

*From twin deficits to twin surpluses*

Significant reduction of South America’s financial vulnerability in the 2000s can be assessed more clearly by examining both the evolution of current accounts and fiscal results. As can be seen in Figure 9, most SA countries showed twin deficits around the turn of the century, but this changed noticeably from 2002. By 2006 and 2007, seven out of the ten countries recorded twin surpluses, although there was some deterioration with the onset of the global crisis.

Figure 9  
From twin deficits to twin surpluses



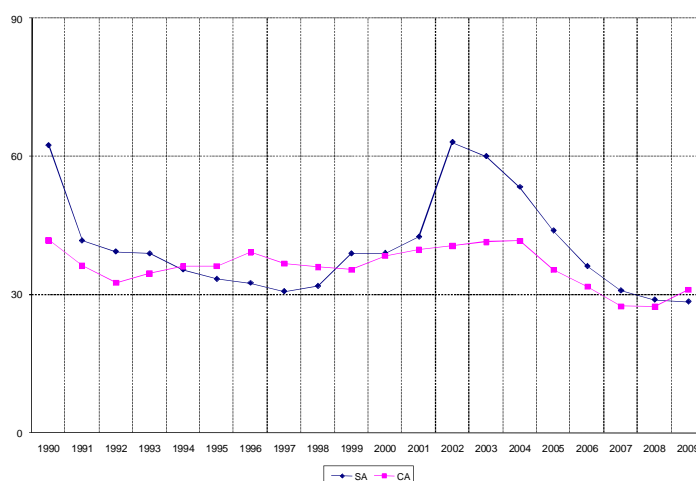
Source: Authors’ computation based on CEPALSTAT data.



### *Public debt*

As was the case with foreign debt, average public debt ratio to GDP of the SA economies declined significantly from 2002 onward, led by Argentina in particular as a result of its 2005 debt restructuring. Therefore, it can be said that the macroeconomic policy regimes of the 2000s allowed the South American countries to bring about significant changes in some stock-flow ratios that are crucial to defining financial vulnerability. In contrast to recent trends in the developed countries, the SA economies at present have a diminished public and foreign debt burden. A decline in this indicator was also evident in the CA economies albeit much smaller. As Figure 10 shows, both regions by 2008 had reached the lowest ratio of public debt to GDP of entire period.

Figure 10  
Ratio of the public debt to GDP (average by subregion, in %).



Source: Authors' computation based on CEPALSTAT data.

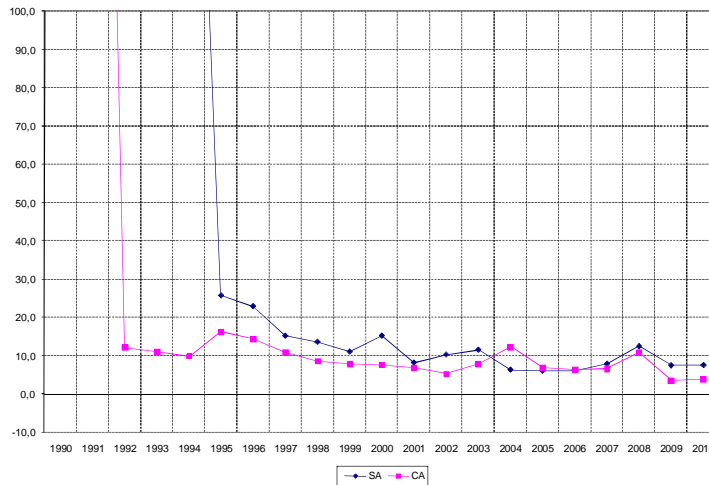
### *GDP growth and inflation rates*

Disinflation was a major achievement of the LA economies in the 1990s, witnessed mostly during the expansionary period, but stabilizing in most countries in the 2000s. This was possible under stabilization programmes that used exchange rate fixation as the main anti-inflationary tool. Thus, real exchange rate (RER) appreciation trends were secondary effects of these programmes.

Figure 11 shows the very high average inflation rates of the early 1990s (averages for the period drop off the charts): 4-digit annual price fluctuation rates were experienced by several economies—Argentina, Brazil and Peru in SA, and Nicaragua in CA. Most economies managed to cut inflation, bringing regional averages in Central America to less than 10 per cent a year by 1998 and in South America by 2004. At the end of the period under study, only Argentina and Venezuela were struggling with 2-digit annual inflation rates.

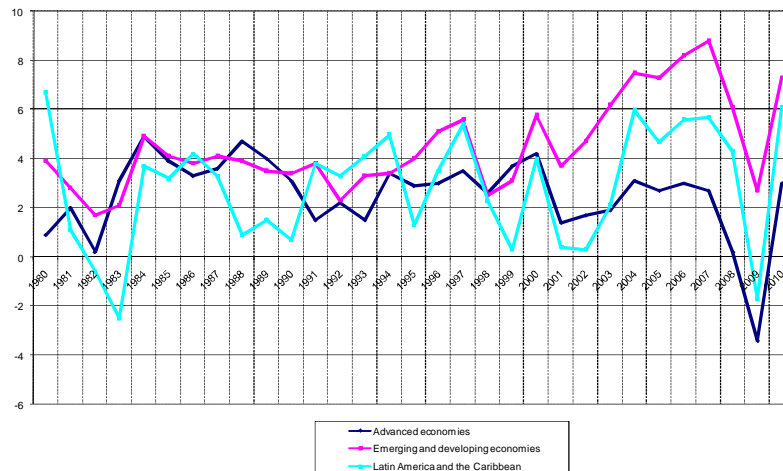
As already mentioned, another notable change in the global economy during the first decade of the millennium was the acceleration of economic growth in developing countries. In the 1980s and 1990s, economic cycles in the advanced and developing countries were highly correlated, with average growth rates in both country groups broadly similar.

Figure 11  
Average annual rates of inflation in SA and CA countries (CPI)



Source: Authors' computation based on CEPALSTAT data.

Figure 12  
GDP growth rates for emerging and developing economies, advanced economies and Latin American economies



Source: Authors' computation based on IMF World Economic Outlook database.

For example, during 1992-2001, advanced countries grew at an annual rate of 2.8 per cent compared to an average of 3.8 per cent for the developing countries. As Figure 12 shows, the difference in favour of the developing countries is explained by their relatively faster growth in the interval between the Mexican and the Asian and Russian crises. But as the latter had a relatively greater adverse impact on developing economies, growth rates for both country group tended to equate by the end of the decade. LA also registered on average slightly higher growth rates than those of the advanced countries (3 per cent per annum), but with wider fluctuations. Latin America also displayed a much greater fall than the set of developing countries by the end of the decade.

The cyclical correlation between these country groups has persisted in the new century, but for the first time since the start of financial globalization, developing countries (including those in Latin America and the Caribbean) have expanded at consistently higher rates than the advanced economies (annual growth rate of 7.4 per cent for developing countries versus 2.3 per cent for the advanced). Latin America's growth rates, although lower than the developing country average, reached on average 4.7 per cent, or double the rate of their advanced counterparts. In short, compared to previous decades, the developing countries achieved substantial acceleration of growth in the 2000s as well as a significant departure of their growth rates relative to those in the advanced economies. The remarkable resilience shown by the developing economies in the face of the global crises is discussed later.

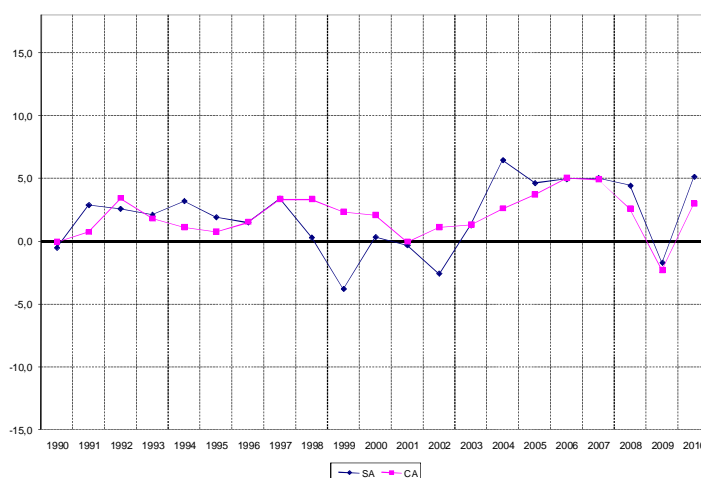
### *GDP growth in the South and Central American economies*

As was the case with several other variables, three major episodes in the international scenario became the main pivots for the LA economies with respect to economic growth: (i) the 1997 crisis in the SE Asian economies and the ensuing contagion effects; (ii) the changing global scenario around 2003 that resulted in hugely increased commodity prices; and (iii) the global crisis that started in 2007 in the USA.

Furthermore, the general patterns of GDP performance were quite similar within Latin American region as a whole, but with clear dissimilarities between the South American and Central American subregions. The evolution of per capita GDP in the SA economies (see Figure 13) shows two expansion periods: 1991-97 and 2003-08. In the first period, GDP per capita growth averaged 2.5 per cent. The negative impact of SE Asian crisis became evident in 1998-99, with the recessionary stance lasting until 2002. During the second upswing (2003-08), the SA rate of growth accelerated noticeably to almost double that of the early 1990s, but fell in 2009 as a result of the global crisis.

Although growth performance of Central America in the early 1990s was slightly below that of South America, CA's expansionary phase lasted longer, until 2001. There was no evidence of damage from the SE Asian crisis but, being closely linked to the USA

Figure 13  
Average rate of growth of per capita GDP (SA and CA)



Source: Authors' computation based on CEPALSTAT data.

through exports, this region was hit in the early 2000s by the negative economic developments of its northern neighbour. After recovery (2003-08), the average growth rate was 3.4 per cent, which was higher than the 1990-2000 average but lower than the SA achievements for the same period.

## **2.2 Econometric assessment of the impact of the global crisis**

A synthetic way of measuring the novel resilience of the emerging market economies is to focus on growth performance in 2009, the year of concentrated recessionary effects of the crisis. In that year, the GDP of advanced countries dropped 3.4 per cent while the GDP of developing countries grew 2.7 per cent. Performance of the developing countries was varied: on the one side, trends in Central and East Europe were catastrophic: almost all economies struggled with recession and the region's average GDP rate was -3.6 per cent. On the other hand, only a few Asian developing economies were affected, and the regional average GDP growth rate was 6.9 per cent. In Africa and Latin America, national performance was even more heterogeneous. The recessionary impact was greater in Latin America than in the developing country group as a whole. Effects of the US recession on Mexico and Central America decisively affected this outcome. While the GDP of South America contracted on average by only 0.3 per cent in 2009, Mexico's decline was much stronger: 6.1 per cent.<sup>7</sup>

We are interested in the factors that could explain the national differences in the 2009 GDP rates of growth. Obviously, in the first place are the recessionary effects of the drop in international trade, seen as the slowdown in advanced economies. It was impossible for a country to isolate itself from a decline in its exports, as the decreasing international trade was the main mechanism through which recessive effects spilled over to the developing world. These effects were country-specific because they depended on the specific trade insertion of each country. The fall in migrant workers' remittances, particularly important in Central America and Mexico, was another channel. Also these effects were country-specific.

The financial channel forms yet another force driving adverse effects, yet it had only a secondary role in many developing countries. In addition to the relatively short impact of the collapse following the Lehman Brothers bankruptcy, many developing economies were able to decouple themselves from the financial contagion effects. As was mentioned above, this vividly contrasts with the important financial contagion effects of the Asian and Russian crises on Latin America and other emergent market economies.

Based on the above, our hypothesis with respect to the resilience of emerging market economies in the global crisis is as following: given the country-specific recessive effects of each real driving channel, country resilience depended on prior policies and their influence on a country's fragility vis-à-vis external shocks. These policies and their results were the decisive factors that determined both the countries' decoupling from the financial effects and the possibility of implementing countercyclical policies.

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<sup>7</sup> On the impact of the global crisis on developing countries see, for instance, Griffith-Jones and Ocampo (2009) and Ocampo (2009).

To test our hypothesis, we worked with a sample of 48 developing<sup>8</sup> and 30 advanced countries. The sample included 16 Latin American countries (the 18 countries considered in this paper, except Bolivia and Venezuela). The dependent variable is the 2009 GDP (at constant prices) growth rate (y09).

The independent variables are the following. In the first instance we include the 2009 growth rate of the dollar-valued exports (expo09) as a proxy of the real effects of the decrease in international trade led by the recession in advanced economies. Another set of independent variables represents the external fragility indicators of the countries at the end of 2007 or in the three prior years (2005-07). These variables are: the short-term debt/GDP ratio at 2007 year-end: (stermdbtgdp07), the average current account/GDP ratio in the period 2005-07 (caccountgdp0507) and international reserves/GDP ratio at 2007 year-end (reservgdp07). Lastly, as explanatory variable, we also include the average GDP growth rate over the period 2005-07 (y0507). We comment on the explanatory variables later in our interpretation of the results.

The average 2009 decrease in GDP in the developing country sample (48 countries) was 1.9 per cent, while average value of exports decreased 21.3 per cent. The sample included 12 countries<sup>9</sup> which had signed IMF stand-by agreements between July 2008 and November 2009 (dumimf is a dummy variable that equals 1 for these countries and 0 for the rest). The 2009 average GDP contraction in this group was 5.6 per cent, while the value of exports fell 24.1 per cent, and corresponding figures for the remaining 36 countries were 0.7 per cent and 20.4 per cent, respectively. In the estimation given below, the international reserves/GDP ratio is zero in the 12 countries with stand-by agreements.

Table 1  
Econometric estimation: determinants of the impact of the crisis on growth performances

Dependent Variable: y09			
Variable	Coefficient	t-Statistic	Prob.
expo09	0.231	3.545	0.0010
stermdbtgdp07	-0.180	-2.337	0.0243
caccountgdp0507	0.227	1.804	0.0783
reservgdp07*(1- dumimf)	0.102	2.416	0.0201
y0507	0.527	2.240	0.0304
C	-0.276	-0.154	0.8776
R square= 0.48			
Method: OLS			
Included observations: 48			

Note: White heteroscedasticity-consistent standard errors and covariance.

Source: See text.

<sup>8</sup> The countries 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, Russian Federation, South Africa, Tanzania, Thailand, Tunisia, Turkey, Ukraine, Uruguay, Vietnam. The source of the data was the IMF World Economic Outlook database.

<sup>9</sup> Countries included in the sample with stand-by agreements: Armenia, Belarus, Costa Rica, Dominican Republic, El Salvador, Georgia, Guatemala, Hungary, Latvia, Mongolia, Romania and Ukraine.

Table 1 gives the results of the estimation. The 2009 GDP rate and the independent variables are measured in percentages, thus, the estimated coefficients have a direct interpretation.

As can be seen, the current account coefficient is significant at the 8 per cent level, the rest of coefficients are significant at the 4 per cent level at most and the constant is not significant. The exports coefficient is positive. It indicates a recessive effect of 0.23 per cent of GDP for each percentage point reduction in the dollar value of exports. With an average sample fall of 21.3 per cent, the decreased exports value would imply a 4.9 per cent average fall in GDP. The short-term external debt/GDP ratio coefficient is negative and its magnitude is significant (-0.18). The current account/GDP ratio coefficient is positive (0.23), with a magnitude similar to the coefficient of the fall in exports. The coefficient of the 2005-07 average growth rate is positive and its magnitude significant. We comment on these results below.

Lastly, the international reserves/GDP ratio coefficient is positive (0.10). As was indicated above, we made this ratio zero for countries with stand-by agreements. The underlying hypothesis was that these countries needed IMF support because of insufficient international liquidity. The developing countries that subscribed to IMF stand-by agreements experienced, on average, a much higher GDP contraction than the rest of the sample countries. So, the significance of the international reserves coefficient could result from its higher contraction rate, explained by factors other than the availability of international reserves. In fact, the significance of the reserves coefficient fades if IMF agreements are not taken into account. The coefficient also becomes insignificant if the equation is estimated on the subsample of countries without IMF agreements. On the other hand, if the reserves variable is excluded from the equation and the dummy variable for the countries with IMF agreements is included, the coefficient of the dummy variable is -3 (significant at the 8 per cent level). If the rest of the independent variables are controlled for, this implies that the contraction for countries with IMF agreements was three percentage points greater than in the rest of the sample. We comment on these results below.

When the above equation is estimated on the advanced country sample, only the value of the exports variable shows a significant coefficient. In contrast, in the developing country sample all the included variables affected the 2009 activity level, together with the fall in the value of exports. The results of the estimation show that, controlling by the fall in exports, in 2009 the countries, which before the crisis had experienced higher rates of growth; had lower short-term debt ratios; showed higher current account results in the previous years; had higher international reserves (or have not had to ask for the IMF support) grew more (or contracted less severely).

In order to interpret these results, it seemed reasonable to conjecture that the diverging effects of the external financial shocks from the global crisis are correlated with the level of dependence of earlier economic mechanisms affecting capital inflows. This degree of dependence is indicated by a country's current account situation, the magnitude of public and private sectors' financial needs, the proportion of foreign capital in the financing of banks, firms and the public sector, and the magnitude of international reserves. These elements indicate not only the degree of robustness of the

economy vis-à-vis a sudden standstill, but also the degree of freedom of domestic policy to implement countercyclical measures.<sup>10</sup>

The external short-term debt/GDP ratio coefficient has a direct interpretation that is founded on the above criteria. A lower ratio implies less force for a sudden stop to generate liquidity problems with the resultant recessive effects. It should be mentioned that the long-term debt/GDP ratio is less significant than the short-term debt ratio.

The results show clearly that countries with IMF stand-by support experienced deeper recessions. One might ask why we did not identify the effects of the magnitude of international reserves on the level of activity. One possible reason is that many countries held voluminous amounts of international reserves but these different magnitudes produced no deviations in activity levels within the multiple functions they performed. In fact, one function of international reserves is to avoid default of public and private debts: no defaults occurred within the emerging market economies during the global crisis (it could be conjectured that without IMF's intervention, default incidences could have been possible in the economies that requested assistance).

Availability of international reserves provides liquidity in international currency to private or public debtors forced to cancel external debts in a sudden stop, but cannot avoid recessive effects if the debts are not fully refinanced in domestic currency by the national financial system or government. This could explain the significance of the short-term debt coefficient, despite the availability of voluminous reserves.

On the other hand, a number of countries in the sample have flexible exchange rate regimes, providing them with room to devalue their currencies in the face of external shocks. One function of international reserves is to allow official exchange market intervention in order to control the magnitude of the devaluation and to guard against overshooting and the formation of bubbles. This does not depend on the different national magnitudes of international reserves, because sufficient amounts for undertaking corrective measures are available in many countries.

In order to interpret the average 2005-07 current account/GDP ratio coefficient, it is useful to express the current account result with the following identity:

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

where SP and IP indicate, respectively, private savings and investment and SG and IG indicate, respectively, government savings and investment. The two terms in the first identity member are the financial surpluses of the private and government sectors, respectively. A positive current account result implies an increase in the amount of external assets owned by the resident agents (or a decrease in net external debt). Consequently, it indicates a lower dependence on external financing for providing the international currency resources needed for the normal working of the economy. On the other hand, as expressed above, a positive current account result is an indicator of

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<sup>10</sup> For instance, the indicators clearly distinguish between the Asian and LA emerging market economies, on the one side, from the Central and East Europe economies, Turkey and other economies with recent incorporation to the international financial system, whose dependency on capital inflows before the global crisis resembled the situation of LA economies in the 1990s.

financial surplus status of the government, the private sector or both. Consequently, a current account surplus indicates a smaller possibility that a sudden-stop could generate illiquid situations with recessive effects. By the same logic, a positive current account result indicates greater domestic financial space for the government to finance implementation of expansionary policies.

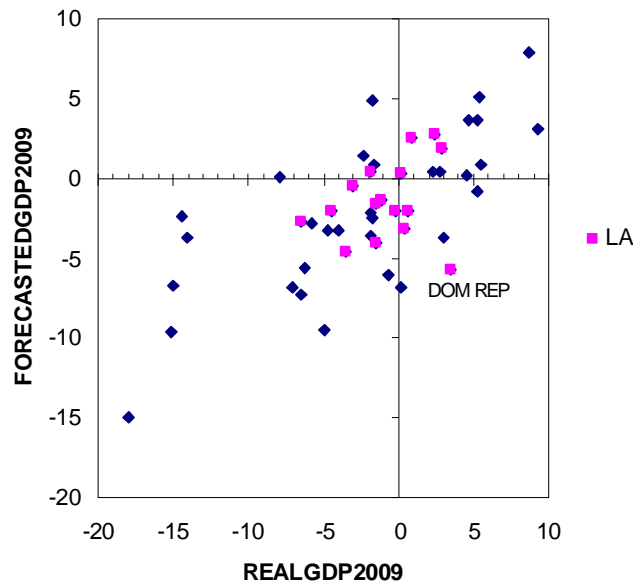
*The LA countries*

The developing country sample included 16 Latin American economies (the 18 considered here with the exception of Bolivia and Venezuela). We wanted to evaluate the quality of the estimation fit in the case of the LA countries. To do so we calculated the 2009 GDP rates forecasted by the estimated equation for the 48 countries (Figure 14, where LA countries are identified with a different colour).

For the whole sample, the standard deviation (SD) of the residuals is 4.4 per cent; the maximum is 9.3 per cent and the minimum -12 per cent. For the set of the LA countries, the mean of the residuals is 0.6 per cent; the standard deviation is 3.1 per cent, with a maximum of 9.3 per cent and a minimum of -3.7 per cent. So the forecast shows a small underestimation bias of 0.6 per cent in the case of LA countries, but the fit is similar or better than in the whole sample.

The correlation coefficient between actual and forecasted GDP growth rates is 0.69 in the whole sample and 0.28 in the LA countries subsample. The Dominican Republic mainly accounts for the difference, as the country is an outlier in both the whole sample and in the LA countries subsample. If the country is excluded from both samples, the correlation coefficient is 0.72 for the whole sample and 0.60 for the LA subsample, indicating that the model shows a quality fit in the subsample of 16 LA countries similar to that in the whole sample .

Figure 14  
Actual and forecasted 2009 GDP rates of growth (%)



Source: Authors' computation based on the panel data described above and the panel regression results.



### 3 Employment, unemployment and poverty incidence

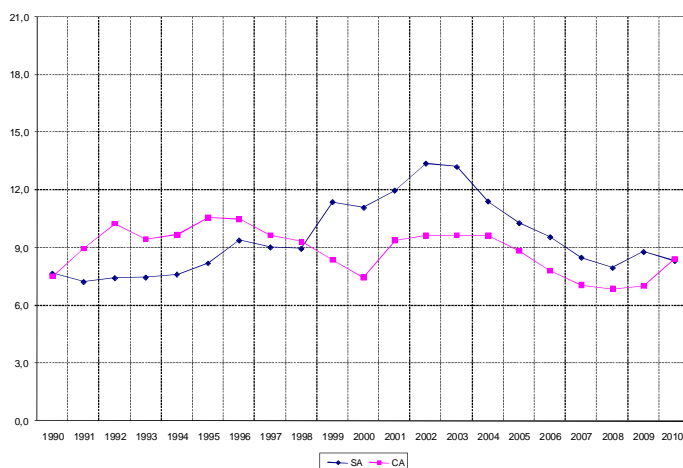
The average rates of unemployment in the SA and CA regions are presented in Figure 15. As employment normally has a positive correlation with the economic cycle, the expected relation between the unemployment rate and GDP growth is negative. Quite remarkably, this has not always been the case in the region, particularly in the SA subregion, where average unemployment rates showed an increasing trend during the 1990s upswing (a rising trajectory that became steeper in the 1998-2002 period). In contrast, the 2003-08 expansion showed a sharp decline in unemployment, but the deterioration in this variable in the 1990s, and particularly during 1997-2002, had been so severe that the earlier improvements, which had been quite remarkable prior to the global crisis, were on average insufficient to reverse adverse pattern.

Given that unemployment is closely linked to social conditions and has significant gravitation on the incidence of poverty and income distribution, we focused in particular on its behaviour. The real exchange rates have a bearing on the behaviour of aggregate employment and, hence, on unemployment rates. Real exchange rates, in particular, explain the noticeable difference that stands out in employment creation between the first and second periods of better performance in SA economies, 1990-97 and the 2003-08.

In Central America, on the other hand, the evolution of unemployment rates is less correlated with ERs because of the region's relatively greater stability of real exchange rates, and unemployment rates are explained for the most part by the behaviour of GDP.

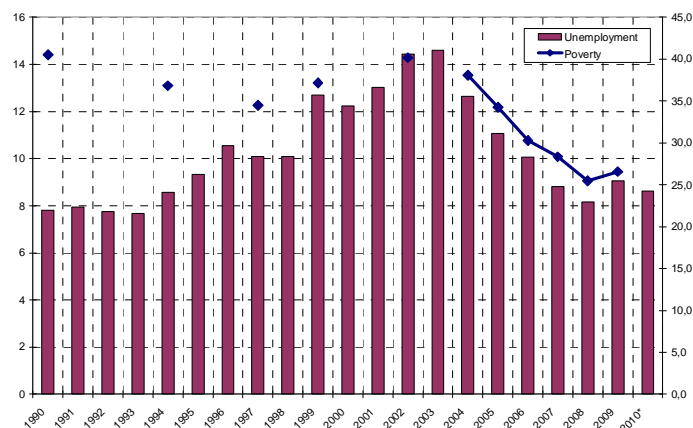
Unemployment is closely linked to poverty incidence, as can be clearly seen in Figure 16. Both variables rose after the 1997 contagion of SE Asian crises, fell again from 2003 onward with the better performance of the 2000s, but temporarily increasing again in 2009. During the expansion of 1990-97, however, poverty on average decreased despite the increasing unemployment. Hence, the favourable effects of GDP growth and disinflation or real incomes of the employed people dominated. Limited data availability on poverty incidence prevented us from conducting a similar analysis for the CA region as a whole.

Figure 15  
Average unemployment rates in SA and CA countries (% of the active population)



Source: Authors' computation based on CEPALSTAT data.

Figure 16  
Average unemployment rates (% of the active population)  
and poverty incidence (% of the population) in SA countries



Note: in this case, the group of SA countries does not include Bolivia, Paraguay and Peru because of compatibility limitations of the available data. For the same reason we do not present here data on poverty incidence for every year covered by the figure.

Source: Authors' computation based on CEPALSTAT data.

### 3.1 Econometric testing of the relationships between growth, the real exchange rates, inflation, unemployment and poverty

In this section we present econometric analyses of the effects of such macroeconomic variables as growth performance, real exchange rate evolution and inflation rates on the behaviour of unemployment and poverty rates, based on data for the years 1990-2010 for the 18 countries considered here. With the objective of providing econometric evidence to support the more qualitative analysis presented earlier, we hypothesized that faster growth and depreciated real exchange rates both favour employment and reduce unemployment. In addition, lower unemployment rates contribute to decreasing poverty rates, while higher inflation rates, on the other hand, tend to increase poverty rates. In this section, we do not attempt to test the effects of the RER on growth: our hypothesis on the positive effect of depreciated RERs on growth rests on numerous empirical studies that point to a similar conclusion.<sup>11</sup> Here we considered GDP rates and the real exchange rates as exogenous variables.

First, we assessed the effects of GDP growth rates and real exchange rates on the performance of unemployment. The estimated equation is a variant of Okun's law that takes into account the influence of the RER on the employment-output ratio. A depreciated RER has positive effects on the employment-output ratio.<sup>12</sup> Next, we estimated poverty rates as a function of unemployment and inflation rates. The unemployment equation and the poverty equation compose a model whose reduced form expresses the poverty rate as a function of the rate of growth, real exchange rate

<sup>11</sup> See, for instance, the studies surveyed in Frenkel and Rapetti (2010a)

<sup>12</sup> Theoretical discussions on the relationship between employment and the real exchange rate are presented in Frenkel (2004) and Frenkel and Ros (2006). A formal model from which the estimated relationship is derived is presented in Frenkel and Ros (2006).

and inflation rate. Complete annual poverty rates series for the 18 countries were not available. In the estimations presented here, we used poverty rates data from the ECLAC database, which collects this information from national sources. Data differed over the years and across countries, forcing us to adapt our estimation procedure to the availability of data. For instance, we estimated the unemployment equation based on rates of fluctuation within the consecutive annual trends, but we could not do the same with the poverty equation because data on consecutive yearly patterns were not available for all countries for the whole period. Thus, we estimated the poverty equation based on poverty rates for the years for which data were available. The corresponding annual unemployment rates needed to estimate the poverty equation were calculated according to a procedure that avoided endogeneity problems, as we explain below.

The estimation method was panel OLS with yearly data covering the period 1990-2010 for the 18 LA countries considered here. The estimations included fixed country-effects to control for the continually diverging levels in national unemployment and poverty rates that are caused by differences in the definitions and measurement as well as in the structure of the labour markets. The estimations also included fixed time-effects to control for the external shocks experienced by the region.

The estimated model is:

$$u(t) = g y(t) + e r(t-i) + k + \varepsilon_u(t) \quad (1)$$

$$V(t) = f U(t) + h p(t) + j + \varepsilon_v(t) \quad (2)$$

U is the unemployment rate, Y represents the GDP and R is the bilateral real exchange rate with USA (u, y and r represent, respectively, the annual rates of variation of U, Y and R), V is the poverty rate, and p is the inflation rate. The coefficients to be determined are g, e, k, f, h; i is a time lag to be determined and  $\varepsilon_u$  and  $\varepsilon_v$  are stochastic shocks.

We also used the equation only to obtain estimations of  $\varepsilon_v(t)$  to be used in place of y(t) in estimating Equation (1).

$$y(t) = a r(t-i) + b + \varepsilon_y(t) \quad (3)$$

Estimations:

The time lag  $i = 2$  (years) provides the best fit in the panel estimations of both Equations (3) and (1). The same 2-year lag provides the best fit in the estimations with the timeseries of individual countries (not shown in this section).

First, we estimated Equation (3) for the sole purpose of using its residuals in place of the series y(t) to avoid co-linearity problems in the estimation of Equation (1). The results are the following:

$$\hat{y}(t) = 0.034 r(t-2) + 0.036 \quad (4)$$

(2.061)\*\*    (21.945)\*

R-squared = 0.40

(t-statistics)

\*, \*\*, \*\*\* indicate significant at 1 per cent, 5 per cent and 10 per cent, respectively.

Total panel (unbalanced) observations = 323

White diagonal standard errors and covariance.

Then, we calculated the residuals of the estimation:

$reseq4(t) = y(t) - \hat{y}(t)$ , which are estimations of  $\varepsilon_y(t)$ , and we used these as replacement for the original series  $y(t)$  in estimating Equation (1). From the estimation of Equation (1) we obtained the following results:

$$\bar{u}(t) = -1.616 reseq4(t) - 0.299 r(t-2) - 0.002 \quad (5)$$

(-5.092)\*                      (-3.495)\*                      (-0.205)

R-squared = 0.34  
(t-statistics)

\*, \*\*, \*\*\* imply significant at 1 per cent, 5 per cent and 10 per cent, respectively.

Total panel (unbalanced) observations = 299

White diagonal standard errors and covariance.

The coefficients are both negative and highly significant. Both faster growth and more depreciated RERs tend to reduce unemployment. A 5 per cent GDP growth rate reduces unemployment rate by 8 per cent. A 10 per cent depreciation of the RER reduces unemployment rate by 3 per cent with a time lag of two years.

Next we focused on the estimation of poverty Equation (2). As was mentioned above, we needed to adapt the estimation procedure to the limitations imposed by data availability and to avoid endogeneity problems. First, we used Equation (5) to calculate the series  $\bar{u}(t)$  of the forecasted rates of variation in unemployment rates. Then, we used the series  $\bar{u}(t)$  to calculate the variable  $\bar{U}(t)$ :

$$\bar{U}(t) = U(t-1) [1 + \bar{u}(t)] \quad (6)$$

The new  $\bar{U}(t)$  variable is the product of a predetermined variable  $U(t-1)$  by the (1+ the rate of variation) of the unemployment rate forecasted with the macro variables, GDP and RER. We used the series  $\bar{U}(t)$  in place of the original series  $U(t)$  in the estimation of Equation (2). The results of the estimation are the following:

$$V(t) = 0.689 \bar{U}(t) + 0.237 p(t) + 28.032$$

(2.364)\*\*                      (3.359)\*                      (8.326)\*

R-squared = 0.96  
(t-statistics)

\*, \*\*, \*\*\* indicate significant at 1 per cent, 5 per cent and 10 per cent, respectively.

Total panel (unbalanced) observations = 143

White diagonal standard errors and covariance.

Both coefficients of the unemployment rate and the inflation rate are positive and significant. An increase of one percentage point (pp) in the unemployment rate tends to increase the poverty rate by 0.7 pp, while a similar increase in the inflation rate tends to increase the poverty rate by 0.24 pp.

When the estimation procedure utilized above was applied on a panel of ten SA countries, the generated results were similar to those obtained with the whole sample.

### 3.2 Comparison of the shocks experienced by the SA and the CA subregions

The analysis presented in this paper highlights important differences between the SA and the CA subregions with respect to both macroeconomic policies and outcomes. The econometric analysis presented above provides additional evidence in this regard.

We have run a regression of the unemployment Equation (1) separately on a panel of ten SA countries and a panel of eight CA countries, both based on annual data for the period 1990-2010. In both cases, time-fixed effects were included in the regressions. The results are the following.

In the estimation on the panel of only the CA countries, none of the coefficients are significant. One probable reason for this estimation is the low variance of the RERs of the Central American countries. In fact, the standard deviation of the RER in the whole sample is 26.1, while in the SA countries it is 32.9 and in the CA countries, 13.2. So, the lack of significance of the RER elasticity could be attributed to the nonexistence of a RER variance sufficiently high enough to generate statistically significant effects on unemployment. This conjecture is indirectly reinforced by the significant RER elasticity coefficients obtained in the timeseries estimations for individual countries where RER experienced high variance (for instance, Argentina and Colombia).

More intriguing is the lack of significance of the GDP elasticity coefficient. One possible cause could be the high correlation of the GDP growth rates with the time-fixed effects included in the estimation; in fact, the correlation between the estimated time effects and the GDP rates of growth was -0.45. Thus, the time-fixed effects were excluded from our estimation on the CA country panel. The results show an unemployment/GDP elasticity of -2.65 significant at 1 per cent. Consequently, it seems clear that the lack of significance of the elasticity obtained in the first CA panel estimation resulted from the close co-linearity between the time-fixed effects and the countries' output performance. What could be the source of such important subregional time effects?

To explore the characteristics of the common time effects in the CA countries in greater depth, we took into account the fact that the subregion is closely linked to the economy of the USA. Next we hypothesized that these countries experienced time-wise common external shocks originating in the slowdown of the US economy. To test our hypothesis, we estimated the model on a panel of CA countries in which the time-fixed effects are replaced with the US rates of growth. The following shows the results (the variable  $y_{USA}(t)$  is the annual GDP rate of growth for the USA):

$$u(t) = -2.073 y(t) - 0.124 r(t-2) - 2.249 y_{USA}(t) + 0.135$$

(-3.087)\*      (-0.643)      (-2.602)\*      (5.333)\*

R-squared = 0.29

(t-statistics)

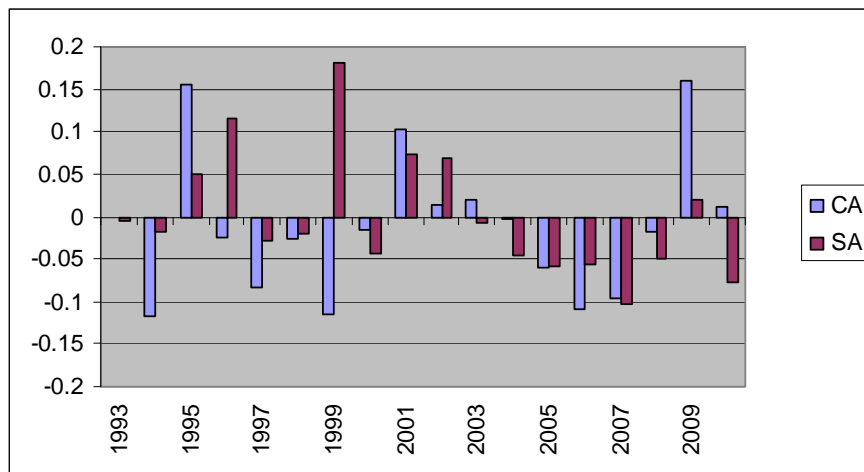
\*, \*\*, \*\*\* imply significant at 1 per cent, 5 per cent and 10 per cent, respectively.

Total panel (unbalanced) observations = 120

White diagonal standard errors and covariance.

No time effects.

Figure 17  
SA and CA time-fixed effects



Source: Authors' computation based on the panel regression as explained in the text.

The estimation shows a negative elasticity of unemployment to the US GDP coefficient significant at the 1 per cent level, with a high absolute value. In a similar estimation on the SA country panel, the American GDP coefficient lacks significance while the value and significance of the GDP and RER coefficients are similar to the estimation with time-fixed effects shown in (5) above. These results suggest that the performance of the labour market in the CA countries is strongly influenced by the economic development of their northern neighbour, in addition to the indirect effect exerted throughout its influence on the GDP of these countries. The results also underline the fact that the CA and SA subregions experience different external shocks.

The difference between the shocks experienced by the CA and SA countries can be seen clearly in Figure 17, which presents the series of time-fixed effects estimated separately on the SA and the CA country panels.

The dependent variable is (the rate of fluctuation of) the unemployment rate, thus positive bars represent an increase in unemployment, i.e., a deterioration in labour market conditions, and vice versa. The history and diverging shock effects of the two subregions can be observed from the figure. For instance, 1995 was the year in which the effects of the Mexican crisis were profound, and while both subregions suffered, the effects were much more severe in the CA subregion (which includes Mexico) than the SA region (more than 15 per cent versus 5 per cent, respectively). In 1999, the Asian and Russian crises triggered an adverse effect in the SA subregion, while the CA subregion continued to show increasing positive improvement associated with the then high rates of growth of the US economy. In 2001-02 both subregions suffered deterioration; in the CA subregion, this was associated with the contracting US economy, while in the SA subregion, it was caused by the Argentine and Uruguayan crises and the difficult economic situation in Brazil. Both subregions experienced improvement during the 2003-08 period, reflecting in the CA subregion the favourable performance of the USA, and in the SA subregion, improvement in the terms of trade and financial conditions. The year 2009 mirrors the impact of the global crisis, which induced negative effects in both subregions, but with much greater severity in Central America. Lastly, in 2010 the SA subregion showed a positive effect triggered by the fast

improvement of the trade and international financial conditions, while the CA subregion continued to exhibit negative effects, associated with the performance of the US.

#### 4 Conclusions<sup>13</sup>

If macroeconomists were asked to select the best macroeconomic policies for increasing the welfare of a developing country, a large proportion of respondents (including the authors of this paper) would indicate that these should be measures, that could induce high growth rates for output, employment and productivity in a sustainable manner.

Of course, rapid growth of productivity and employment does not ensure that inequality will begin to decrease naturally. China is the most recent example where a growth process with these favourable characteristics has been accompanied by worsening inequality indicators. However, China's macroeconomic policies are not often criticized on this basis, mainly for the reason that rapid productivity and income growth occur in conjunction with a fast increase in employment, causing lower incomes also to rise, and resulting in a subsequent alleviation of the incidence of poverty. More generally, although rapid growth of productivity and employment may not ensure a reduction in inequality, it does create conditions that facilitate a better distribution of income, because resources are growing and because an improvement in their distribution seems more viable and less confrontational in such a context.

At the opposite pole, a developing country burdened with low levels of employment and productivity could eventually enjoy improvement in inequality, but its depth and duration would be constrained by low productivity growth. In this case, the macroeconomist would probably criticize existing policies for their inability to contribute to the promotion of development and would focus on a reformulation effort aimed at promoting productivity growth and employment.

Sustainability of the rapid growth of productivity and employment is a crucial component in the eyes of macroeconomists. Achieving sustainability involves two elements. First, inflation must be under control. Considered broadly, this does not imply that the choices are limited to conventionally low inflation rates. A persistently rising inflation inevitably ends up extinguishing rapid growth through different mechanisms of which there are many examples in the LA experience. On the other hand, in addition to its adverse feedback on growth, it is well known that inflation disproportionately affects the real income of wage earners and lower-income sectors, thus having a negative outcome on distribution and welfare.

The second issue in the sustainability criterion implies that the design of macroeconomic policies should also include measures aimed at preventing financial and external crises. Macroeconomic policies have an important role in crisis prevention. In fact, stability—in the real economy, finance and the balance of payments—is the main objective of macroeconomic policies in their traditional conception. Development

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<sup>13</sup> This section draws on Frenkel (2012), where a lengthy discussion of the implementation of the guidelines can be found. The guidelines were first presented by one of the authors in Frenkel (2010).

macroeconomists have strived to widen the traditional objectives to include the promotion of development, but this does not mean a secondary role for crisis prevention. On the contrary, it should be a priority because crises have a permanent adverse impact on the trajectory of growth and persistent negative effects on income distribution.

The analysis of the macroeconomic policies implemented in LA in the 1990s highlights several important examples of growth processes (i.e., Argentina, Brazil and Mexico) in the context of controlled inflation that could not be sustained because these led to external and financial crises. Even in the case that such policies had produced an increase in welfare this would not make them advisable : not only was the hypothetical increase transient but also, because of the crisis, employment and income distribution ended up being worse than those prevailing in the pre-1990s period. In addition, these policies led to rising unemployment or slow growth of employment, both important factors contributing to the worsening of income distribution even prior to the crisis.

In this paper we have reviewed the changes and modifications in macroeconomic policies prevalent between 1997 and 2002 in several economies in the region, particularly in SA. The new configurations and their effects on relative prices, external accounts and public finances—and in the case of South America, the improvement in the terms of trade—promoted faster growth processes than in the past, and yet avoided culminating in crisis. Inflation overall remained under control (Chile, Peru, Colombia and Brazil). Argentina was the exception: the country's acceleration of inflation eroded its earlier achievements with regard to employment growth, poverty alleviation and improvements in income distribution.

The analysis developed here attempts to identify the elements of the macroeconomic policies implemented in Latin America that contributed to launching rapid growth in productivity and employment in a sustainable manner. We have also shown the effects of these processes on the poverty reduction as seen in many countries. Our analysis emphasized the role of stable real exchange rates at a competitive level in the generation of these processes.

By way of a conclusion, in this section we outline the guidelines of a macroeconomic policy regime that could make the synchronized achievement of several objectives possible—promoting growth and employment, controlling inflation and preventing external and financial crises. The guidelines are based on both the negative and positive aspects of the developing country experiences gained during financial liberalization. In this respect, Latin America represents the region with the longest experience as its incorporation into the process dates from the late 1970s. The LA experiences are mostly negative: deep real exchange rate appreciation episodes with devastating effects on employment and balance of payments and financial crises were frequent until the early 2000s. But regional performance in the post-2002 years, particularly that of the SA subregion, contrasts vividly with the three earlier decades, yet no individual LA country can be singled out as a role model for the implementation of the guidelines. Argentina, in the 2002-07 period, exemplifies a country which implemented policies that closely followed the guidelines. Other SA economies also adopted similarly-oriented policies, but at varying degrees of adherence.



A comparison of the developing countries' experiences during the 2000s, including their performance during the global crisis versus the three previous decades that were characterized by financial globalization, brings forth the crucial importance of macroeconomic policies in promoting growth, employment, financial stability and robustness vis-à-vis real and financial external shocks. In this regard we claim that there is a set of viable, consistent macroeconomic policies that contribute to the concurrent achievement of the objectives mentioned above. This contradicts with the notion of the existence of a trilemma of policy options that would make the joint pursuit of competitive RERs and active monetary policies inconsistent. In an environment like that confronting the SA countries in the 2000s, i.e., excess supply of foreign currency at an exchange rate targeted by monetary authority, the trilemma assumption does not hold and it is possible at the same time to control the exchange rate and the domestic interest rate.

The first subset of guidelines focuses on the promotion of growth and employment, the robustness of external accounts and the prevention of crises from adverse external shocks. It comprises of (i) introducing a managed floating exchange rate regime that combines exchange rate flexibility with discretionary interventions by the central bank in the foreign exchange market; (ii) a competitive level trend in the real exchange rate (RER), avoiding strong appreciations in the short run; (iii) a surplus trend in the current account of the balance of payments and moderate current account deficits in the short run; (iv) the accumulation of sizeable international reserves.

Relatively high rates of growth and employment are fostered by the competitive trend of the RER. Current account surplus plus the accumulation of reserves support the sustainability of the growth process by helping to avoid external crises and cushioning negative real and financial external shocks.

Policies involving the RER, external accounts and reserves management should be accompanied by consistent fiscal and monetary policies focused on the control of aggregate demand and inflation. An important point in this regard is that in the context of managed floating exchange rate, competitive RER levels and a surplus in the current account, a considerable degree of monetary autonomy generally exists which will allow active monetary policies to be introduced. So, the suggested guideline with regard to monetary policy introduces the fifth point: promoting active monetary policy, facilitated by sterilization of the interventions in the foreign exchange market and the nonexistence of fiscal dominance.

As mentioned below, coordination between the three macroeconomic policies—exchange rate, monetary and fiscal—is essential in this regime. In particular, monetary policy should be implemented in coordination with short-run fiscal policy. Depending on foreign exchange market pressures, capital controls may be necessary to simultaneously retain the competitiveness of RERs (or avoid appreciation) and the preservation of monetary autonomy.

As in any macroeconomic policy regime, short-run fiscal policy can be either expansionary or contractionary. Although we point out later that monetary and fiscal policies in this regime should normally have a restraining role on the aggregate demand dynamics, the sixth and last guideline refers to the orientation in fiscal accounts: ascertaining equilibrium in the fiscal accounts and moderate fiscal deficits in the short

run. The orientation focuses on allowing countercyclical policies in the short run (aggregate demand and inflation control during the boom phases and expansionary stimuli during recession) and on avoiding the accumulation of significant public debts.

Next we discuss how these elements need to be coordinated in the proposed macroeconomic policy regime.

#### *The coordination of macroeconomic policies*

A competitive RER provides a conducive environment for growth and development. This view has long been stressed by development economists and recently documented in many econometric studies.<sup>14</sup> The growth-enhancing attributes of a competitive RER operate through the enhancement of tradable sector profitability. As this sector expands, it relaxes the balance of payment constraint to growth and generates positive externalities to the rest of the economy in the form of learning-by-doing externalities and technological spillovers.

The adoption of a RER target is a singularity of the proposed macroeconomic policy regime, which we call the stable and competitive real exchange rate (SCRER) regime. In addition to the standard policy objectives of any macroeconomic regime; namely, inflation and employment and activity levels, the SCRER regime also pursues economic development as an objective. The trend of the RER is the intermediate target for such an objective, in the same way as reference interest rate or a given fiscal budget operates as an intermediate target for monetary and fiscal policies focusing on inflation and employment. Once a determined trend for the RER is adopted, exchange rate policy focuses exclusively on both granting short-term volatility of the nominal exchange rate (NER) and preserving the long-term stability of the RER. Thus, in normal times the NER cannot be oriented towards any other macroeconomic objective such as inflation or inflation expectations. The control of aggregate demand, inflation and inflation expectations rests on monetary and fiscal policy (as well as on other policies not discussed here, such as wage and incomes policies).<sup>15</sup> The role of these policies in a SCRER regime is crucial for moderating the pace of aggregate demand and inflation pressures, because the SCRER—by enhancing employment growth and capital accumulation in the tradable sector—has by itself an expansionary bias on aggregate demand. So, the three macroeconomic policies are active in a SCRER regime.

The coordination of macroeconomic policy is essential in a SCRER regime. In the first instance, the intermediate targets of fiscal and monetary policies and their design should be consistent with the stability of the RER trend target. For instance, it is difficult to preserve the stability of the RER trend in a context of accelerating inflationary expectations. This is the problem that the Argentine authorities could not resolve as of 2007 and led to a significant RER appreciation. On the other hand, a SCRER has a permanent expansionary effect on aggregate demand. Monetary and fiscal policies must take into account that effect and must be consistently designed and implemented in order to attain the multiple real and inflation objectives.

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<sup>14</sup> See, for instance, the evidence surveyed in Frenkel and Rapetti (2010a).

<sup>15</sup> For formal analyses regarding the coordination of fiscal, monetary and wage policies in a SCRER regime, see Frenkel (2008b) and Rapetti (2011).

### *The SCRER and the inflation pressure*

As discussed above, in the proposed macroeconomic regime, management of aggregate demand rests on monetary and fiscal policies because the exchange rate policy is committed to the preservation of a SCRER target and because of its expansionary bias. In normal circumstances, these policies largely have a restraining role on the aggregate demand and inflationary pressures.

The management of policies in a SCRER regime is not simple. On the one hand, there is tension between the preservation of the SCRER target and the aggregate demand and inflation control. On the other hand, the limiting role that monetary and fiscal policies should normally play in this context necessitates sophisticated political leadership. Both observations stress the importance of macroeconomic policy coordination at the highest level of the economic policy administration.

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