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**Inter-American Development Bank**  
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## Abstract<sup>1</sup>

This document analyzes the patterns of fiscal and monetary policy in five economies of the Latin American Southern Cone (Argentina, Brazil, Chile, Paraguay and Uruguay) during four episodes of international crises: 1994, 1997-1999, 2001 and 2008. In contrast with earlier episodes when most countries in the region applied procyclical fiscal and monetary policies, the response of the five countries to the 2008 crisis was countercyclical. On the fiscal side, countries had a larger fiscal space in 2008 to implement a countercyclical policy thanks to increases in primary balances, improvements in sustainability indicators and a reduction in financing needs in the years before the crisis. On the monetary side, the capacity to implement countercyclical policy was supported by a shift towards more flexible exchange rate regimes, and monetary policy regimes that enhanced transparency, reduced price volatility and increased the credibility of monetary authorities. For countries to be able to implement countercyclical responses in future crisis episodes, the fiscal authorities should reverse expansionary measures during good times and Central Banks should meet their inflation targets to preserve fiscal space and anchor inflation expectations.

**JEL Codes:** E52 E62 F3

**Keywords:** Crisis, Fiscal Policy, Monetary Policy, Cyclicity

## 1. Introduction

After a long history of procyclical fiscal and monetary policy, emerging markets and developing countries tended to react to the 2008 international crisis by applying countercyclical macroeconomic measures. The present document analyzes this change in the cyclical pattern of policies in the Latin American Southern Cone (SC) region comprising Argentina, Brazil, Chile, Paraguay and Uruguay, with a focus on events of international economic turmoil.<sup>2</sup>

With this purpose in mind, we center our attention on four international crisis episodes relevant for SC economies: the Mexican crisis of 1994, the sequence of crises at the end of the

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<sup>2</sup> The procyclicality of fiscal and monetary policy in emerging markets and developing countries has been documented by Kaminsky et al. (2005). The change in the cyclical patterns of fiscal policy has been analyzed by Frankel et al. (2011) and the change in the patterns of monetary policy by Vegh and Vuletin (2012). While these papers focus on the behavior of policy along the business cycle over long periods of time, other documents like Didier et al. (2011) and IMF (2010) have focused their attention on the policy response to the 2008-2009 global crisis. Goldman Sachs (2011) and De Gregorio (2012) focuses the analysis on Latin American economies.

nineties (Asia 1997, Russia 1998 and Brazil 1999), the Argentinean crisis of 2001 and the United States crisis of 2008. We describe the fiscal and monetary policy responses in SC countries during the above-mentioned episodes, compare the 2008-2009 response to the one observed in the aftermath of earlier events and analyze possible explanations behind changes in the pattern of macroeconomic policy in times of crisis.

The findings suggest that the pattern of fiscal and monetary policy during the 2008 crisis was countercyclical. With some exceptions, namely Chile, this pattern was in sharp contrast to the policy responses observed in earlier crises. Changes in the macroeconomic policy framework and more robust financial positions help to explain the different policy response this time. On the fiscal side, the main factors were an increase in primary balances in the years before the crisis, improvements in sustainability indicators and low to negligible financing needs. On the monetary side, the shift towards more flexible exchange rate regimes and the implementation of monetary policy regimes that enhanced transparency and increased the credibility of monetary authorities were determinant factors in almost all SC countries.

The rest of the document is organized as follows. Section 2 describes the four international crisis episodes and analyzes their impact on output growth, commodity prices, exports, international reserves and capital flows. Section 3 describes the patterns of fiscal and monetary policy around each episode and seeks to explain the differences between the policy response to the 2008 crisis and the ones observed during previous crises. Section 4 analyses the behavior of fiscal and monetary variables in the years after the crisis, in order to assess whether there is room for further countercyclical action should a new international crisis affects SC economies. Section 5 concludes.

## **2. Four Crisis Episodes in the Southern Cone**

Over the past two decades, there have been four episodes of international economic turmoil that affected the Southern Cone through different contagion channels. These episodes correspond to the Mexican crisis of 1994, the succession of international crises at the end of the nineties (Asia in 1997, Russia in 1998 and Brazil in 1999), the Argentinean crisis of 2001 and the global financial collapse originated in the United States in 2008. The top panels of Figure 1 present details of the dating procedures for these episodes, which include the identification of local peaks in emerging market sovereign spreads. These are the dates that are considered as the temporal

center of each crisis in the analysis. The only exception is the Mexican crisis where there is not EMBIG data available at that time, so we use December 1994, when the peso experienced a large devaluation, as the center of that episode.

Usually, during crisis episodes, the sizable increases of sovereign spreads and large capital outflows imply that these events correspond to periods in which emerging economies face difficulties in tapping resources from international credit markets (panels B and C of Figure 1). The 2008 crisis stands out among recent crisis because of the size of the shocks as well as its global scope (panel D of Figure 1). Interestingly, as it will be discussed later in this section, in spite of being hit by larger shocks in 2008-2009, SC economies fared much better in relative terms than in previous episodes of international economic turmoil. This seems to have been the outcome of a combination of factors including the application of countercyclical policies and some exogenous developments that helped to mitigate the negative effects of the crisis.

## **2.1. Impact on Output**

Since we are concerned with the impact of four episodes of international crisis on the five SC economies, there are potentially twenty events that could be analyzed. However, it is not the case that all episodes were relevant for all SC countries (see Figure 2). We define an event as relevant if it satisfies at least one of the following conditions:

(a) a year-on-year contraction in quarterly real GDP is observed within a year from the beginning of the episode.

(b) the year-on-year quarterly GDP real growth rate within a year from the beginning of the crisis is below the average rate corresponding to the last two years before the crisis.

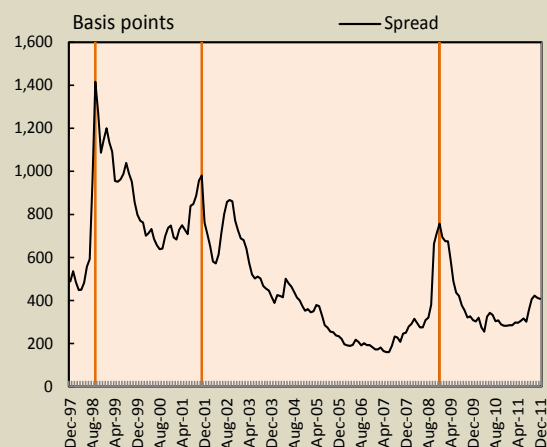
Twelve events were identified using the first condition. These are the crisis of 1994 in Argentina and Uruguay, the crises of the nineties in Argentina, Brazil, Chile, Paraguay and Uruguay, the crisis of 2001 in Paraguay and Uruguay and the crisis of 2008 in Brazil, Chile and Paraguay. Two further events were identified using the second condition: the 2008 crisis in Argentina and Uruguay. The case of the impact of the Argentinean crisis on Argentina itself is ruled out because we focus on the impact of international (non-domestically generated) crises. The list of events is presented in Table 1. These events are the focus of the impact and policy response analysis performed in the rest of this section and in Section 3.

**Figure 1. Four Crisis Episodes that Affected the Southern Cone**

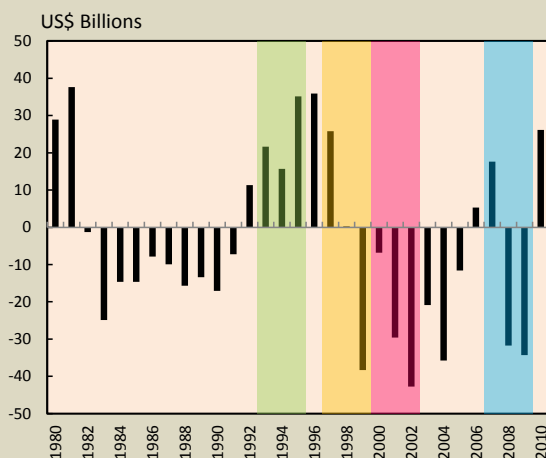
**A. The Episodes**

Episode	Important dates	EMBIG spread local peak
Mexico (1994)	December 1994: devaluation of the Peso	n/a
	July 1997: devaluation of the Baht	
Asia/Rusia/Brasil (1997-1999)	August 1998: devaluation of the Ruble and sovereign default	Sep-98
	January 1999: devaluation of the Real	
Argentina (2001)	December 2001: sovereign default	Nov-01
	January 2002: collapse of the currency board	
USA (2008-2009)	September 2008: Lehman Brothers files for bankruptcy protection	Dec-08

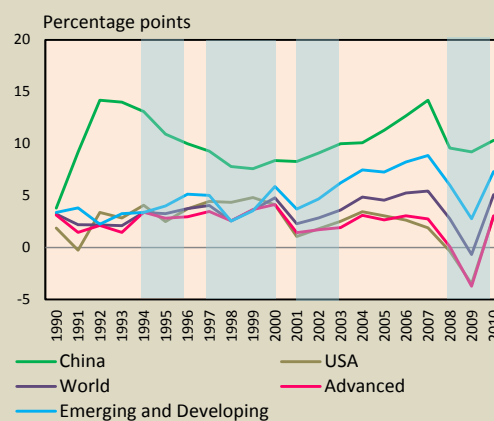
**B. EMBIG Spreads**



**C. LAC: Net Private Capital Flows**  
(Excludes FDI)



**D. GDP Growth by Regions**

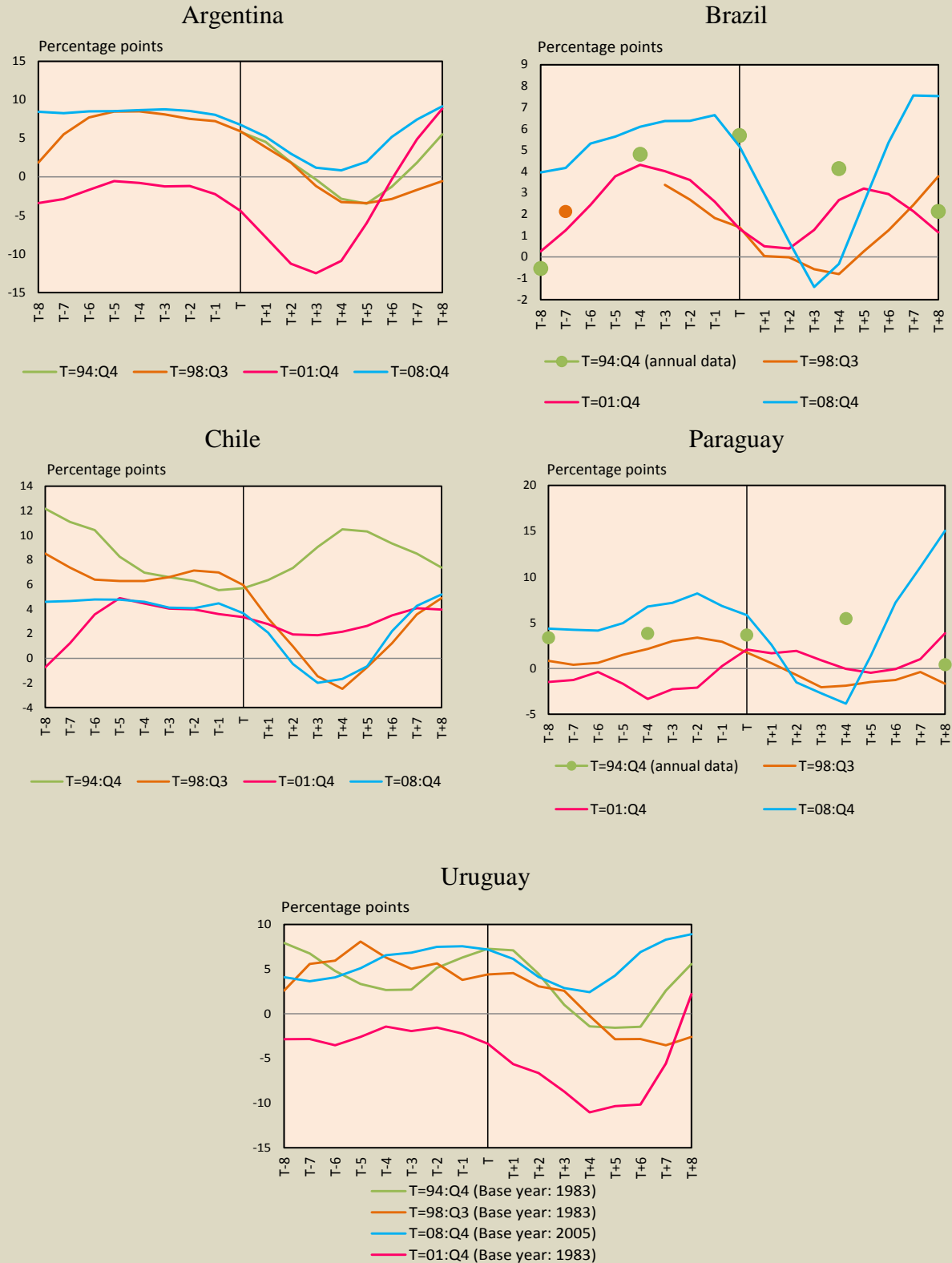


Source: prepared using Bloomberg, WEO (IMF) and official country data.

**Table 1. Crisis Episodes**

Crisis Episode	Centered around	Country				
		Argentina	Brazil	Chile	Paraguay	Uruguay
Mexico	T = Dec 94	x				x
Asia/Russia/Brazil	T = Sep 98	x	x	x	x	x
Argentina	T = Nov 01				x	x
US	T = Dec 08	x	x	x	x	x

**Figure 2. Real GDP Growth During Crisis Episodes**  
(Four Quarters, Accumulated)



Source: prepared using IFS (IMF) and official country data.

These international episodes affected the SC economies essentially through two channels: trade and finance. The trade channel may include declines in the demand for exports by partner countries and drops in the international prices of commodities exported by SC countries. The finance channel operates through “sudden stops” in the inflow of capital and the raise in the cost of borrowing. We now analyze and gauge the importance of those two channels in the four crisis episodes.

## **2.2 The International Trade Channel**

During the crisis of 2008, the configuration of trading partners helped to reduce the size of the shock faced by SC economies. Although all the countries in the region experienced sizable contractions in the value of their commodity and manufacture exports in 2009, the impact of the crisis could have been much larger had China not become such an important SC trade partner in recent years. Table 2 presents the five main trade partners of the SC region around the four crisis episodes. The most evident difference between 2006-2010 and the previous five-year periods is the marked increase in China’s participation as a trading partner of SC economies accompanied by a large decrease in the participation of the United States.

The first panel of Figure 3 depicts the weighted average business cycle of the main SC trade partners around each crisis episode, including intra-SC trade. Clearly, the two episodes characterized by sizable international demand swings were 2001 and 2008. However, the countries that increased their share export destinations for the region grew at a higher rate around 2008 than those countries whose shares dropped. They also experienced a smaller swing in growth rates in the aftermath of the crisis. To illustrate this point, panel B of Figure 3 presents the evolution between 2006 and 2010 of the average real GDP growth rate of the five main SC trade partners in the 1996-2000 period and that of the five main SC trade partners in the 2006-2010 period. The figure suggests that the international shock experienced by the region in 2008 would have been even greater had China not played such an important role as trade partner.

Although the Southern Cone was favored by the composition of its trading partners group during the crisis of 2008, this does not mean that the trade shock was not a large one. In fact, all the countries in the region experienced contractions in the value of their commodity and manufacture exports in 2009. In the cases of Argentina, Brazil, Chile and Paraguay these

contractions correspond to the lowest export growth rate in the whole 1990-2011 period (see Figure 4).

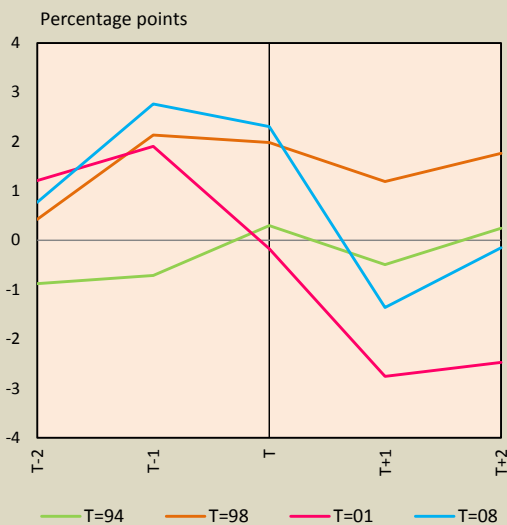
**Table 2. Southern Cone: Main Trade Partners**  
(Percent of total exports)

1992-1996		1996-2000		1999-2003		2006-2010	
United States	21%	United States	22%	United States	25%	United States	14%
Japan	9%	Japan	8%	Japan	6%	China	14%
Netherlands	8%	Netherlands	7%	Netherlands	6%	Netherlands	6%
Germany	6%	Germany	5%	China	5%	Japan	5%
Italy	5%	Italy	5%	Germany	5%	Germany	4%
Sum	49%	Sum	47%	Sum	46%	Sum	43%

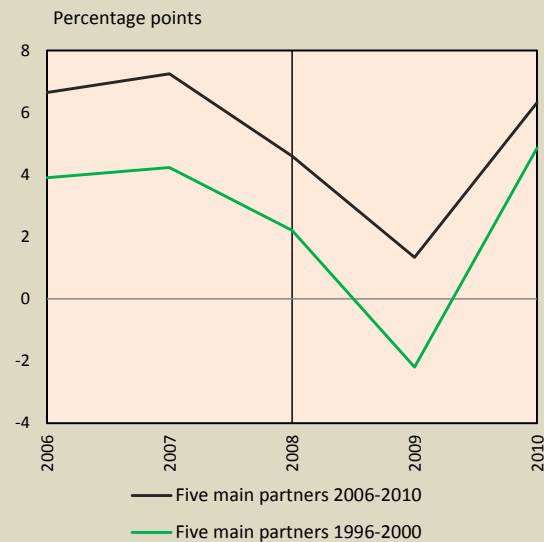
Source: prepared using DOTS (IMF) data.

**Figure 3. International Trade Partners: GDP Dynamics**

**A. Main Partners: GDP Cycle**  
(Deviation from HP trend)



**B. Main Partners: GDP Growth 2006-2010**

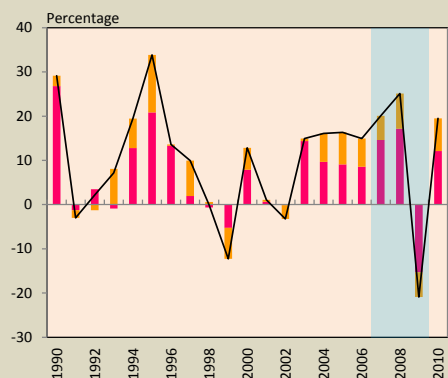


Source: prepared using IFS (IMF), WEO (IMF) and DOTS (IMF) data.

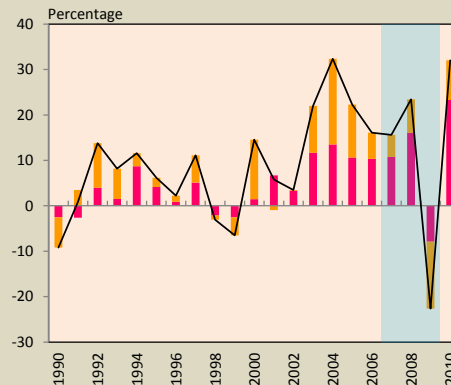
# Figure 4. Exports: Annual Rate of Change

— Total Exports (growth rate)    Commodity exports (contribution)    Manufacture exports (contribution)

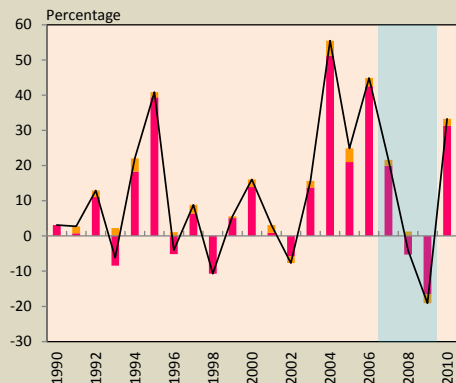
Argentina



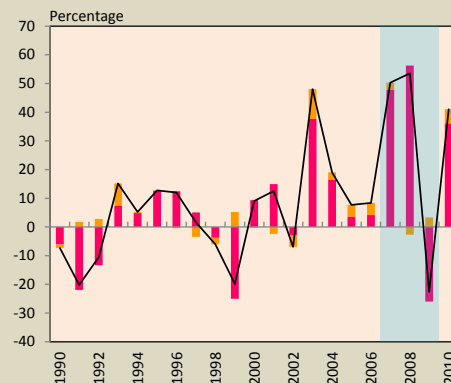
Brasil



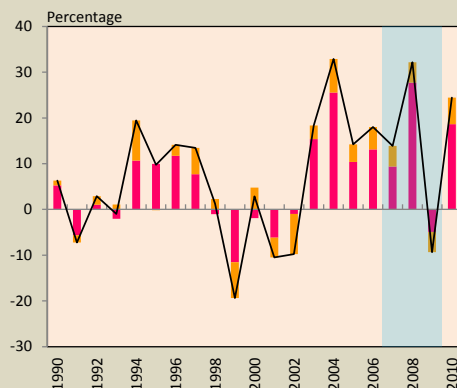
Chile



Paraguay



Uruguay



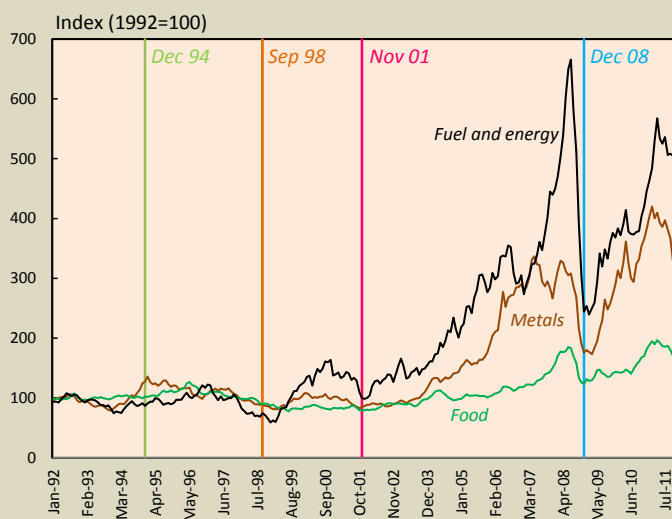
Source: prepared using WTO data.

The contraction in exports in 2009 is largely explained by a sharp reduction in export prices. This collapse extended to all types of commodities and occurred after a long time of booming prices particularly for metals and fuel and energy products (Figure 5).

Under certain assumptions, it is possible to compute the losses in export revenues due to the fall in export prices. The estimates of export revenues losses are presented in Table 3.<sup>3</sup> The price effect is particularly large for Chile, with an impact around 14% of 2009 exports and 4% of 2009 GDP.

In spite of this reduction in commodity prices and exports, the 2008 crisis had comparatively milder effects on economic activity than those observed in previous crisis episodes. To illustrate this point, Figure 6 plots the swings in the real GDP growth rate for each SC country in a five-year time window around each crisis against the swings in the weighted real GDP growth rate of its five main trade partners in the same time window.<sup>4</sup> Despite the large magnitude of the 2008 trade shock, the fact that the points corresponding to the 2008 crisis tend to be closer to the 45° line than other points suggests that the countries of the region fared relatively better in the last global crisis than in the past.

**Figure 5. Commodity Prices**



Source: WEO (IMF)

3 The exercise assumes that (i) the supply and demand functions for commodities are continuous, (ii) the demand function is linear and decreasing and (iii) the supply function is either linear and positive sloping or completely vertical.

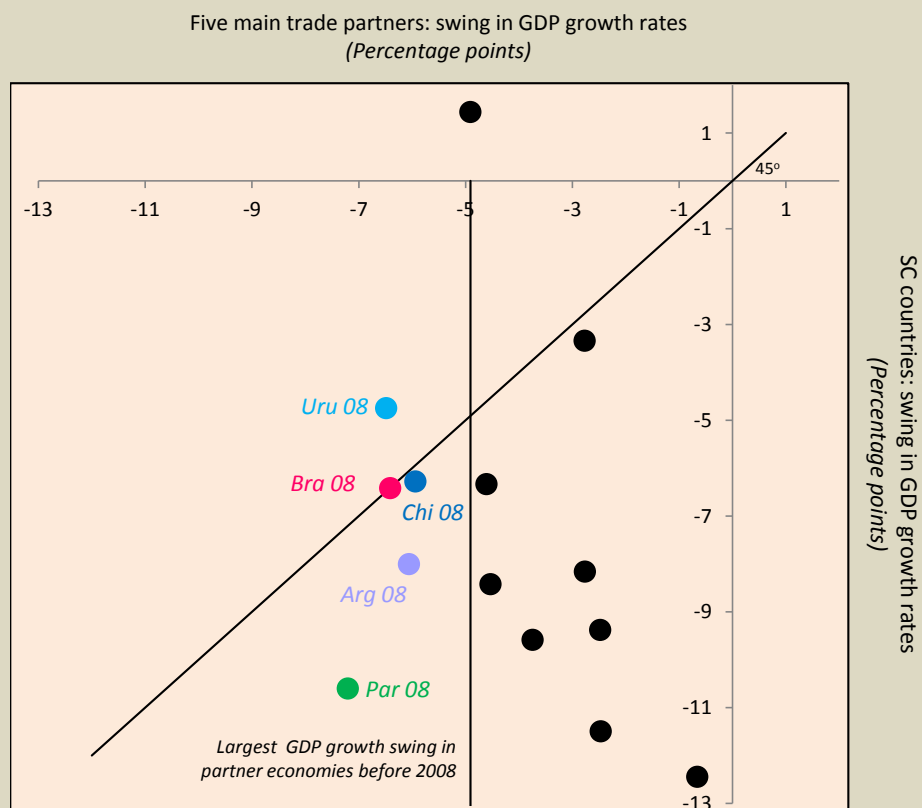
4 For each episode, the GDP growth swing measures are computed as:  $s^k = \min(g_T, g_{T+1}, g_{T+2}) - \max(g_{T-1}, g_{T-2})$  and  $s^k_{partners} = \min(g^*_T, g^*_{T+1}, g^*_{T+2}) - \max(g^*_{T-1}, g^*_{T-2})$ ;  $k = \text{Argentina, Brazil, Chile, Paraguay, Uruguay}$ ;  $T = 1994, 1998, 2001, 2008$ . Where  $g$  is the annual growth rate of country  $k$  and  $g^*$  is the weighted average of the annual growth change of country  $k$ 's five main trade partners around episode  $T$  (the weights correspond to the share of country  $k$ 's exports to each partner economy).

**Table 3. Argentina, Chile and Brazil:  
Impact of the Drop in Commodity Prices**

	Total exports	Commodity exports	Price of commodity exports	Loss due to price effect in commodity exports			
	Percent change 2008-2009	Percent change 2008-2009	Percent change 2008-2009	Percent of 2009 total exports		Percent of 2009 GDP	
				Min	Max	Min	Max
Argentina	-20%	-43%	-16%	4.7%	12.5%	0.8%	2.2%
Brazil	-23%	-15%	-13%	6.2%	7.2%	0.6%	0.7%
Chile	-18%	-18%	-17%	13.2%	14.2%	4.1%	4.4%

Source: prepared using WEO (IMF) and official data.

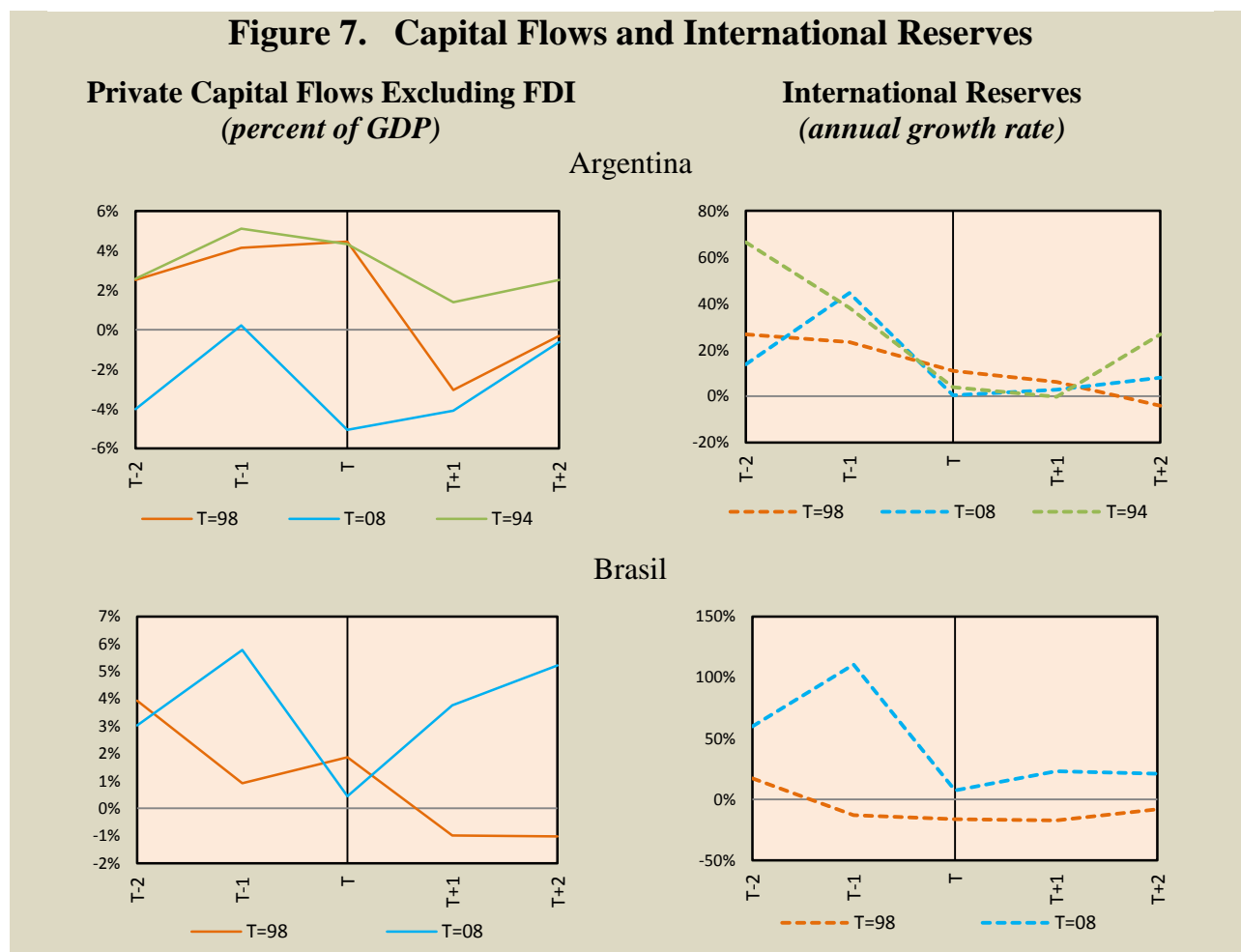
**Figure 6. GDP Growth Swings Around Crisis Years**



Source: prepared using WEO (IMF), IFS (IMF) and DOTS (IMF) data.

### 2.3. The Financial Channel

Similar to the dynamics observed in the trade channel, in the case of the financial channel SC economies suffered a significant shock in 2008, by comparison to other episodes. Regarding the dynamics of private capital flows excluding Foreign Direct Investment (FDI), in the larger countries, the crisis at the end of the nineties was associated with swings from net capital inflows to net capital outflows. There was, however, a countercyclical accumulation of international reserves. In contrast, the data do not seem to show a clear pattern in Paraguay and Uruguay (see Figure 7).

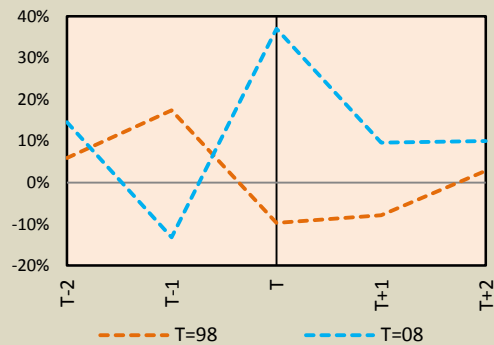
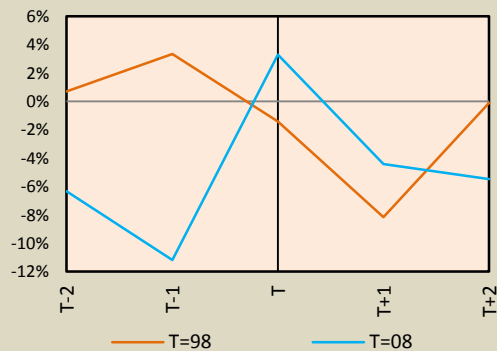


**Figure 7. Capital Flows and International Reserves (cont.)**

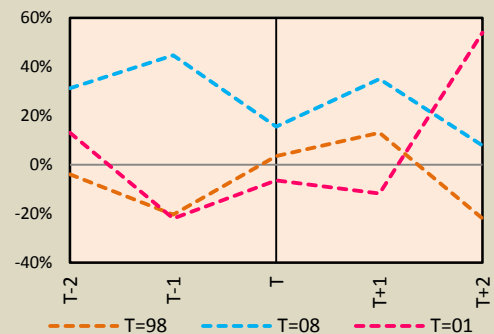
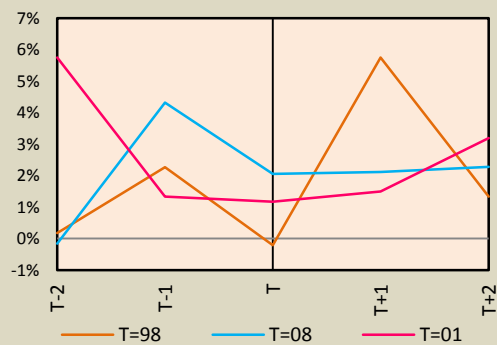
**Private Capital Flows Excluding FDI**  
(percent of GDP)

**International Reserves**  
(annual growth rate)

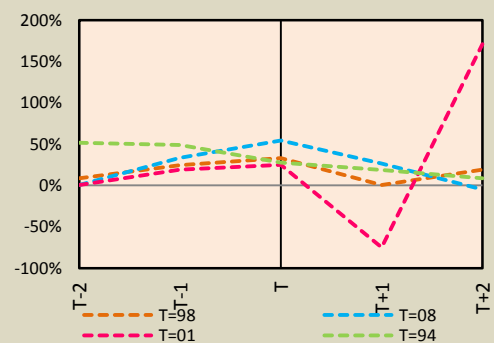
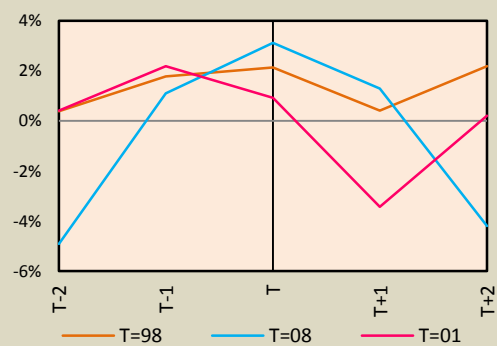
Chile



Paraguay



Uruguay

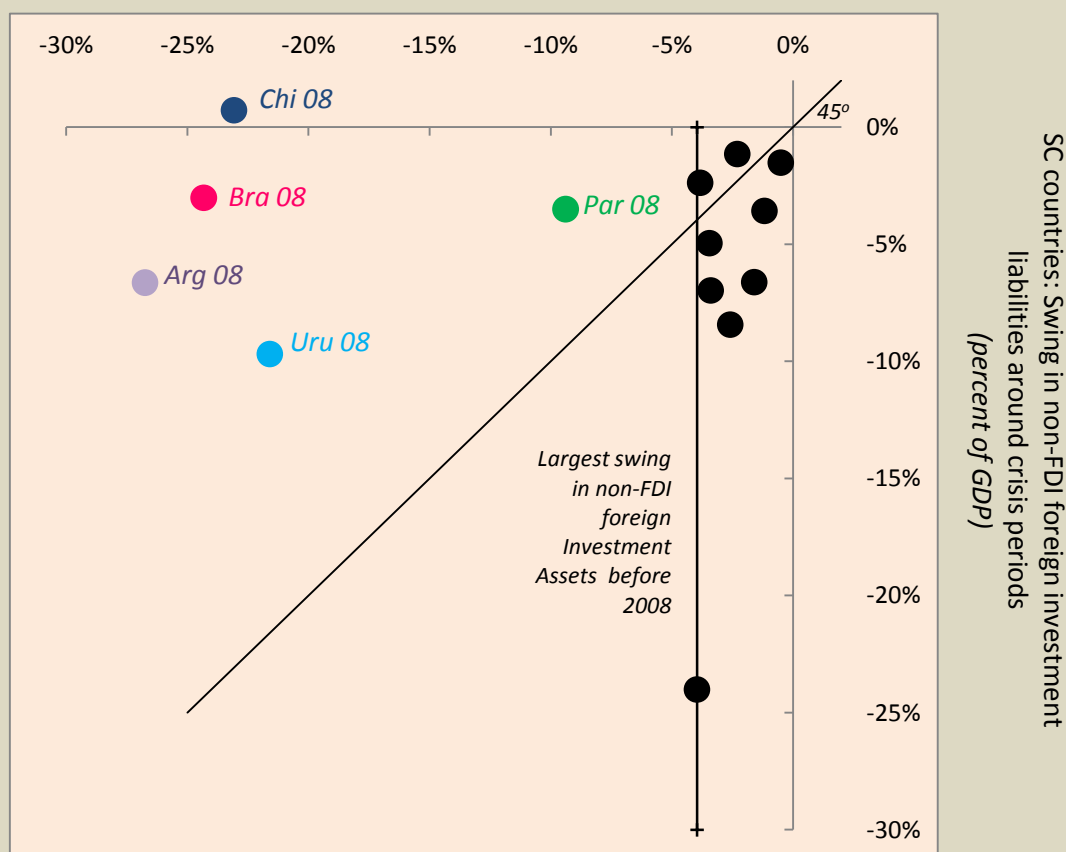


Source: prepared using WEO (IMF), IFS (IMF) and official country data.

The crisis of 2008 hit the Argentinean economy in a context of either negative or incipient capital net flows, exacerbating capital outflows in 2008 and 2009. In the case of Brazil, foreign private capital flows had been increasing in the years before the crisis and while net capital flows were still positive during the 2006-2010 window, they fell sharply in 2008. Both countries experienced sizable reductions in their pace of reserve accumulation in 2008. In contrast, the behavior of the Chilean economy was markedly different, experiencing net capital inflows and increasing international reserves in 2008.

**Figure 8. Capital Flow Swings Around Crisis Years**

Five main portfolio investors: Swing in worldwide non-FDI foreign investment assets around crisis periods  
(percent of GDP)



Source: prepared using WEO (IMF), IFS (IMF) and CPIS (IFS) data.

As in the case of the trade channel, it can be argued that the sudden stop in the 2008 episode had some special features that distinguish it from previous events. In particular, the global reduction in the flows of non-FDI assets purchases by investors in SC countries was much larger than in previous episodes. However, this retrenchment was less focused in SC countries. In other words, although the worldwide sudden stop was more severe, SC liability flows were comparatively less affected. To illustrate this, Figure 8 plots the swing around crisis periods in the worldwide flows of *non-FDI foreign investment assets/GDP* ratio of the ten main foreign portfolio investors in each SC economy against the swing in the country's total flows of *non-FDI foreign investment liabilities/GDP* ratio.<sup>5</sup> Points above the 45-degree line correspond to cases where the retrenchment from SC positions was smaller than the general retrenchment, which is clearly the case in 2008.

### 3. Fiscal and Monetary Policy Responses

The 2008 crisis was a different one, not only because of its global scope and the size of the shocks that hit SC countries, but also because of the ability shown by SC economies to implement countercyclical policies changing the usual size and direction of fiscal and monetary measures in bad times. This policy response was a major reason why, despite the magnitude of the external shock, SC economies fared much better than in previous episodes of international economic turmoil.

#### 3.1. Fiscal Policy in Crisis Episodes

Over time emerging economies and developing countries have tended to follow procyclical fiscal policies (Gavin and Perotti, 1997; Kaminsky et al 2004). With the exception of Chile, SC economies have also followed this trend (table 4). Therefore, over the past thirty years, real fiscal balances in the SC have tended to worsen during periods of economic expansion and to improve during recessions.<sup>6</sup> In contrast, the response of SC countries in the aftermath of the 2008 crisis

5 In this exercise, the swing measures are  $s^k = \min(l_T, l_{T+1}, l_{T+2}) - \max(l_{T-1}, l_{T-2})$  and  $s^k_{partners} = \min(a^*_T, a^*_{T+1}, a^*_{T+2}) - \max(a^*_{T-1}, a^*_{T-2})$ ;  $k = \text{Argentina, Brazil, Chile, Paraguay, Uruguay}$ ;  $T = 1994, 1998, 2001, 2008$ . Where  $l$  is the absolute change in the flow of *portfolio and other investment liabilities* (as a share of GDP) observed in country  $k$  and  $a^*$  is the absolute change of the weighted average of the worldwide flows of *portfolio and other investment assets* (as a share of GDP) corresponding to the ten countries with the highest share of portfolio asset flows in country  $k$  as identified by the IMF's Country Portfolio Investment Survey (CPIS).

6 Correlations between the fiscal balance and GDP usually capture the dynamics of endogenous macro results and not necessarily that of policy decisions. Some authors have suggesting using the real primary balance as an alternative measure, since developing countries tend to pay a higher interest rate on their sovereign debt during recessions (Neuemeier and Perri, 2005). Kaminsky et al. (2005) highlight the high correlation between public revenues and GDP; therefore, these authors recommend using public spending as a more precise measure of fiscal policy.

was atypical not only because of the countercyclical direction of policy but also because of the size of fiscal impulses, defined as the adjustment in the real structural primary balance.<sup>7</sup> As it will be explained below, this was possible because of previous improvements in primary balances combined with lower principal and interest payments, which resulted in an important reduction in the level of financing needs faced by SC governments.

In the aftermath of the 2008 crisis, the largest fiscal impulse, as a share of GDP, took place in Chile. Although Chile had already followed a countercyclical fiscal policy during the 1998 crisis, the size of the fiscal impulse in 2008, at 4.2% of GDP, was four times greater than that applied in 1998, at 1.2% of GDP (Figure 9). This stimulus is explained by both an increase in primary spending and a reduction in revenue. In 2009, the increase in real primary spending reached 2.7% of GDP, mainly related to subsidies and personnel compensation<sup>8</sup>. Public investment also played an important role with an increase of 0.4% of GDP.<sup>9</sup> Tax revenue, on the other hand, fell by 18% in real terms. This was not just the result of a reduction in economic activity, but of different types of tax cuts.<sup>10</sup> Official data on structural fiscal revenue show a decrease equivalent to 1.5% of GDP.<sup>11</sup>

**Table 4. Correlation Between Real GDP and Fiscal variables**  
(Correlation between annual changes)

	Real Fiscal Balance	Real primary Balance	Real Primary Spending
Argentina	-0.16	-0.66	0.84
Brazil	-0.22	-0.37	0.35
Chile	0.32	0.52	0.06
Paraguay	-0.18	-0.44	-0.03
Uruguay	-0.23	-0.14	0.72

*Time coverage:* 1980-2011.

\*Fiscal balances were normalized by GDP.

*Source:* Own calculations using WEO (IMF) data.

7 In this study fiscal impulse is computed as follows: Fiscal Impulse = {[Structural Revenues(t) - Primary Expenses(t)]\*(Price Level(t-1)/Price Level(t)) - (Structural Revenues(t-1) - Primary Expenses(t-1))}/(PIB in (t)). The GDP deflator is used rather than de IPC deflator.

8 Among the most important measures are a temporary increment in housing subsidies, temporary transfers to vulnerable families and a subsidy to low-wage young workers (18 to 24 years old).

9 The investment plan launched in 2009 focused on rural and urban roads, housing and risk-mitigation infrastructure.

10 Some of the tax policy measures are the temporary suspension of postal-stamp taxes, the earlier-than-expected- devolution of personal income tax withholdings and the temporary reduction of social security contributions.

11 Total real fiscal revenue fell by an amount equivalent to 4.8% of GDP. An important share of this is explained by the reduction in the price of copper which led to a 40% drop in copper-related public revenue.

The fiscal impulse was also sizable in Brazil, where the stimulus responded to a combination of measures aimed at increasing government spending and reducing tax revenues. The increase in real primary spending reached 1.7% of GDP explained, as in the case of Chile, by increases in subsidies and personnel compensation. Investment in infrastructure and housing also played an important role.<sup>12</sup> On the revenue side, the government applied temporary rate reductions to several taxes.<sup>13</sup> These reductions together with the general contraction of economic activity led to a fall in government revenues of 0.7% of GDP in real terms. Our own estimations of cyclically adjusted series show that structural revenue increased by 0.2% of GDP. As a result, in sharp contrast to the negative impulse after the 1998 crisis (-2.5% of GDP), the size of Brazil's fiscal impulse in the aftermath of the 2008 crisis was 1.5% of GDP. It is worth mentioning that the fiscal impulse computation presented here does not take into account the stimulus channeled through Brazil's National Development Bank (BNDES). In January 2009, the Treasury recapitalized BNDES by an amount equivalent to 3.3% of GDP. This allowed BNDES to increase its disbursements in 50%, reaching 1.4% of GDP at the end of 2009.<sup>14</sup>

In the case of Paraguay, the fiscal impulse around the 2008 crisis was smaller than in previous episodes. This is mainly explained by a 28.5% increase in tax revenues in real terms in 2009 which led to an increase in structural revenues of 1.5% of GDP.<sup>15</sup> On the expenditure side, the government policy was clearly expansionary; real primary spending increased by 2.5% of GDP. As in the cases of Brazil and Chile, this increase is primary explained by spending in subsidies and personnel compensation. Public investment increased by an amount equivalent to 1% of GDP mainly through funding provided by multilateral organizations. Thus, Paraguay's fiscal stimulus during the crises was about 1% of GDP, below the one observed in the 1998 and 2001 episodes.

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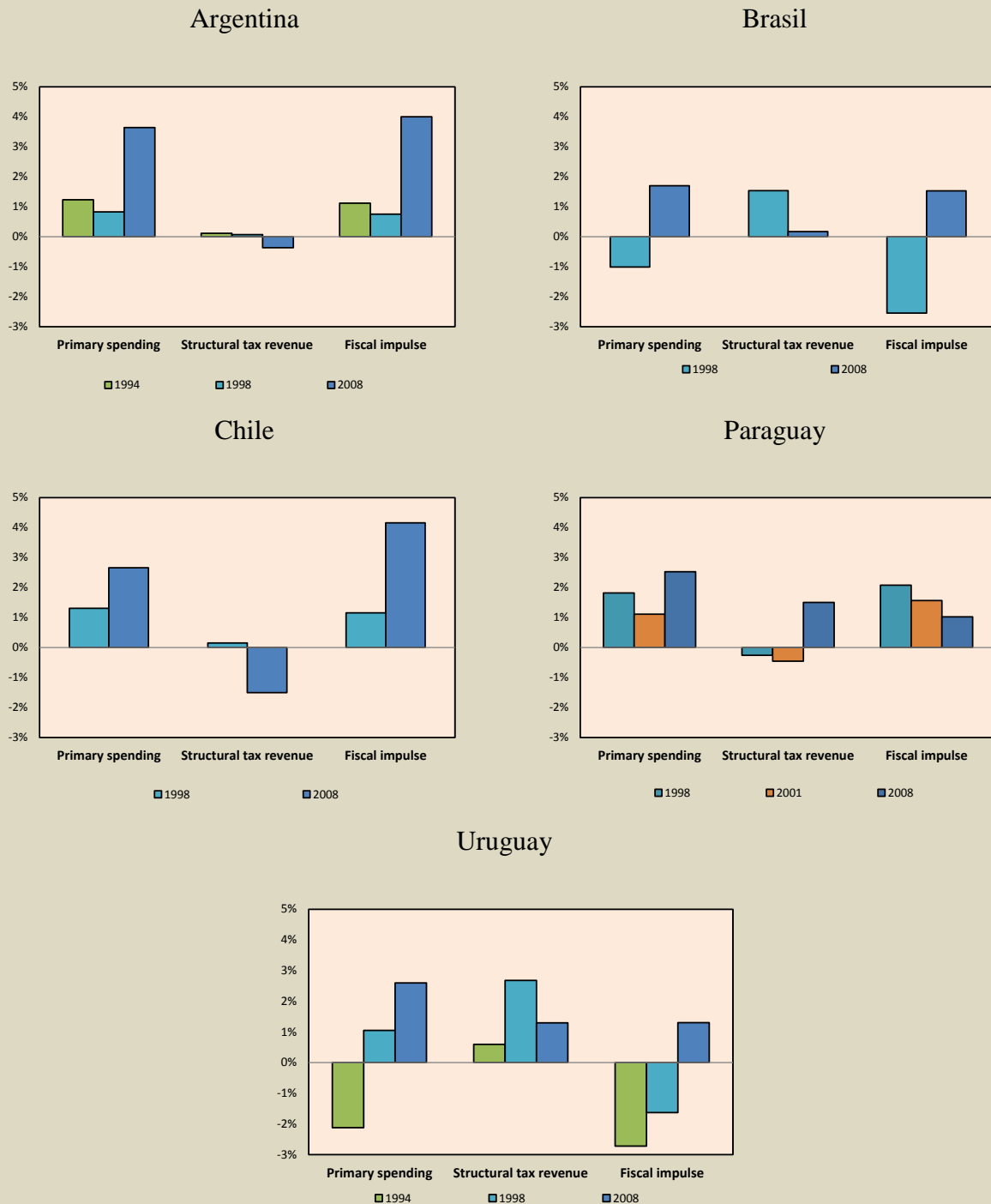
12 The government expanded its public investment program by an amount of US\$4.2 billion in 2009. It also launched the "*Minha Casa, Minha Vida*" housing program with a total cost of more than US\$15 billion in subsidies and US\$33 billion in investments.

13 Among the most important tax policy measures are the reduction of the industrialized products tax rate, the reduction in the financial transactions tax rate and a change in the income categories related to the personal income tax.

14 Although BNDES-channeled stimuli are not reflected in the government fiscal accounts, they do have an important quasi fiscal effect because BNDES resources are usually lent at below-market rates even lower than the Central Bank's monetary policy rate.

15 The increase in the income tax rate in 2009 responds to time mismatch in payments of this tax made by businesses. The income tax paid at the beginning of each year corresponds to profits obtained during the previous year.

**Figure 9. Fiscal Impulse**  
(Percent of pre-crisis GDP)



Source: prepared using official data. Nominal values were deflated using the CPI except for the case of Argentina where the GDP deflator was used instead.

Fiscal policy in the aftermath of the 2008 crisis was also expansionary in Argentina and Uruguay with primary spending increases of 3.6% and 2.6% of GDP, respectively. In both cases nearly 50% of that increase is explained by higher spending in wages and social security (pensions). Investment played a secondary role explaining only 10% of the overall spending increase. Cyclically-adjusted tax revenues decreased by an amount equivalent to 0.4% of GDP in Argentina and increased by an amount equivalent to 1.2% of GDP in Uruguay. The fiscal impulse in Argentina reached 4% of GDP, much greater than that observed in previous crises, while in Uruguay, where the impulse in previous crisis episodes had been always negative, it reached 1.3% of GDP.

Thus, in contrast with previous episodes, fiscal policy in the Southern Cone was countercyclical in 2008-2009. The rest of the section seeks to explain the factors behind this change in the size and direction of policy responses.

### **3.1.1. Possible Explanations behind the Pattern of Fiscal Policy**

There are two factors to consider when analyzing a country's capacity to implement countercyclical fiscal policy in times of crisis: (i) the country's level of financing needs which, if high, can translate into large short-run burdens on public finances, constraining the government's ability to allocate resources to demand-boosting programs and (ii) the country's fiscal sustainability, which is a key factor in determining the economy's capacity to tap into fresh resources from domestic and foreign financial markets.

The 2008 crisis hit the region at a time in which SC economies counted with a larger level of liquid resources than in the past. This is explained mainly by the accumulation of large stocks of international reserves during the booming period before the crisis. In the case of Chile, the economy also had access to resources from the Copper Stabilization Fund. On top of these, SC countries had been consolidating their fiscal position in the years before 2008 so that by the time crisis hit the region the five economies were running primary surpluses (see Table 5).

**Table 5. Primary Balances**  
(Percent of GDP)

	Argentina	Brazil	Chile	Paraguay	Uruguay
1994	1.2	n.a.	5.2	2.0	-1.4
1998	0.9	1.1	4.7	-0.3	0.9
2001	0.6	1.7	3.6	0.2	-0.8
2008	3.1	2.4	5.0	3.1	1.1

*Source:* prepared using official data.

Chile: does not include copper-related gross revenue.

Not only did SC economies enter the crisis with a higher level of resources than in the past, but they also faced lower liquidity needs. This is explained by three factors. First, by 2008 the economies of the region had been experiencing a deleveraging process that led to important reductions in their debt/GDP ratios (see table 6). Between 2001 and 2008, Argentina and Brazil were able to cut their debt/GDP ratio by five percentage of GDP while Chile did so by more than fifteen percent of GDP. In Paraguay, the central government debt decreased from 8.6% of GDP to 3.4%. Uruguay was the only country with a higher debt/GDP ratio in 2008 than in 2001; however, the country showed large reductions in public debt since its internal crisis in 2002. Second, during this deleveraging process, the countries with the highest levels of debt improved their debt maturity profiles particularly reducing short run (one year or less) allocations. As a result, Argentina, Brazil and Uruguay experienced reductions in their 2008 principal payments with respect to the 2002-2007 average (see Table 7, left panel). Third, the countries faced lower borrowing costs which, combined with the reductions in their sovereign debt levels, resulted in lower interest payments (see Table 7, right panel).

Therefore, the improvement of primary balances combined with lower principal and interest payments resulted in an important reduction in the level of financing needs faced by SC governments, which in turn allowed enough room for those economies to adopt a countercyclical fiscal policy in the 2008-2009 crisis episode.

**Table 6. Gross Debt**  
(Percent of GDP)

	Argentina	Brazil	Chile	Paraguay	Uruguay
1994	31.3	n.a.	48.3	n.a.	47.0
1998	37.6	51.8	33.2	n.a.	30.7
2001	53.8	68.0	35.8	8.6	53.4
2008	48.8	63.0	18.5	3.4	63.3

Source: prepared using official data.  
Paraguay: data covers only the central government.

**Table 7. Principal and Interest Payments**  
(Percent of GDP)

	<i>Principal Payments</i>		<i>Interest Payments</i>	
	2002-2007 average*	2008	2002-2007 average	2008
Argentina	15.7	6.0	1.8	1.7
Brazil	17.0	11.7	7.2	5.5
Chile	1.7	1.0	0.9	0.5
Paraguay	1.9	1.8	1.2	0.7
Uruguay	10.8	3.8	4.6	3.3

Chile and Paraguay: data covers only the central government.  
\*2006-2007 for Paraguay  
Source: prepared using official data.

**Table 8. Potential GDP Growth**  
(Annual percentage rate)

	Argentina	Brazil	Chile	Paraguay	Uruguay
1994	3.0	2.2	6.6	2.5	2.8
1998	1.9	2.4	4.9	1.4	1.3
2001	2.1	2.8	4.2	1.6	1.0
2008	6.0	3.9	4.3	4.3	4.7

Source: estimated using official data.

Moreover, SC economies entered the 2008 crisis with much stronger sustainability indicators than in previous episodes. Following conventional public debt sustainability analysis we focus our attention on three variables that play a key role in determining the fiscal sustainability of a country: the level of debt as a share of GDP, the medium-term growth rate of real output and the real interest rate.

The reduction in debt/GDP ratios was already discussed in previous paragraphs. Regarding medium-term output growth, Table 8 presents potential GDP growth rates for each SC country at the time of each of the international crisis episodes analyzed in this document.<sup>16</sup> With the exception of Chile, all SC economies entered the 2008 crisis with higher trend-GDP growth rates than in the past.

Regarding borrowing costs, the decreasing trend in both, EMBI spreads and US Treasury Bill yields observed in the years before the crisis lead to a reduction in the real interest rate that SC economies needed to pay in order to allocate sovereign debt.

The combination of these three factors, lower debt-to-GDP ratios, higher trend growth and lower interest rates implies that at the onset of the 2008 crisis, SC economies needed a lower primary balance than the observed one in order to keep their current level of debt constant over time (Table 9). The only exception is Uruguay, where the required primary balance is larger than the observed one. This is nevertheless explained by a weather shock that increased the production costs of the public energy company by an amount close to 1.7% of GDP.

**Table 9. Primary Balances Required to Maintain the Current Debt-to-GDP Ratio Constant Over Time**

	1994		1994		1994		1994	
	<i>Required</i>	<i>Observed</i>	<i>Required</i>	<i>Observed</i>	<i>Required</i>	<i>Observed</i>	<i>Required</i>	<i>Observed</i>
Argentina	1.5	1.2	2.2	0.9	3.1	0.6	0.5	3.1
Brazil	n.a	n.a.	2.9	1.1	3.5	1.7	1.9	3.9
Chile	n.a	5.2	n.a.	4.7	1.3	3.6	0.5	8.4
Paraguay	n.a	2.0	n.a.	-0.3	0.5	0.2	0.1	3.1
Uruguay	2.4	-1.4	2	0.9	3.7	-0.8	1.4	1.1

*Source:* prepared using official data. Paraguay: figures correspond to the central government. The analysis assumes a real interest rate of 7% in 2008 and 8% afterwards.

<sup>16</sup> Potential GDP corresponds to the GDP trend obtained using the Hodrick-Prescott (HP) filter.

Finally, it is important to highlight that in all cases but Paraguay, the economies of the region have been able to achieve large improvements in the currency composition of their sovereign debt allocations. While at the beginning of the 2000-2010 decade, domestic currency instruments represented less than fifteen percent of public debt in SC countries, by 2008 domestic debt represented 60% of total debt in Chile and Brazil, nearly 50% in Argentina and 30% in Uruguay.

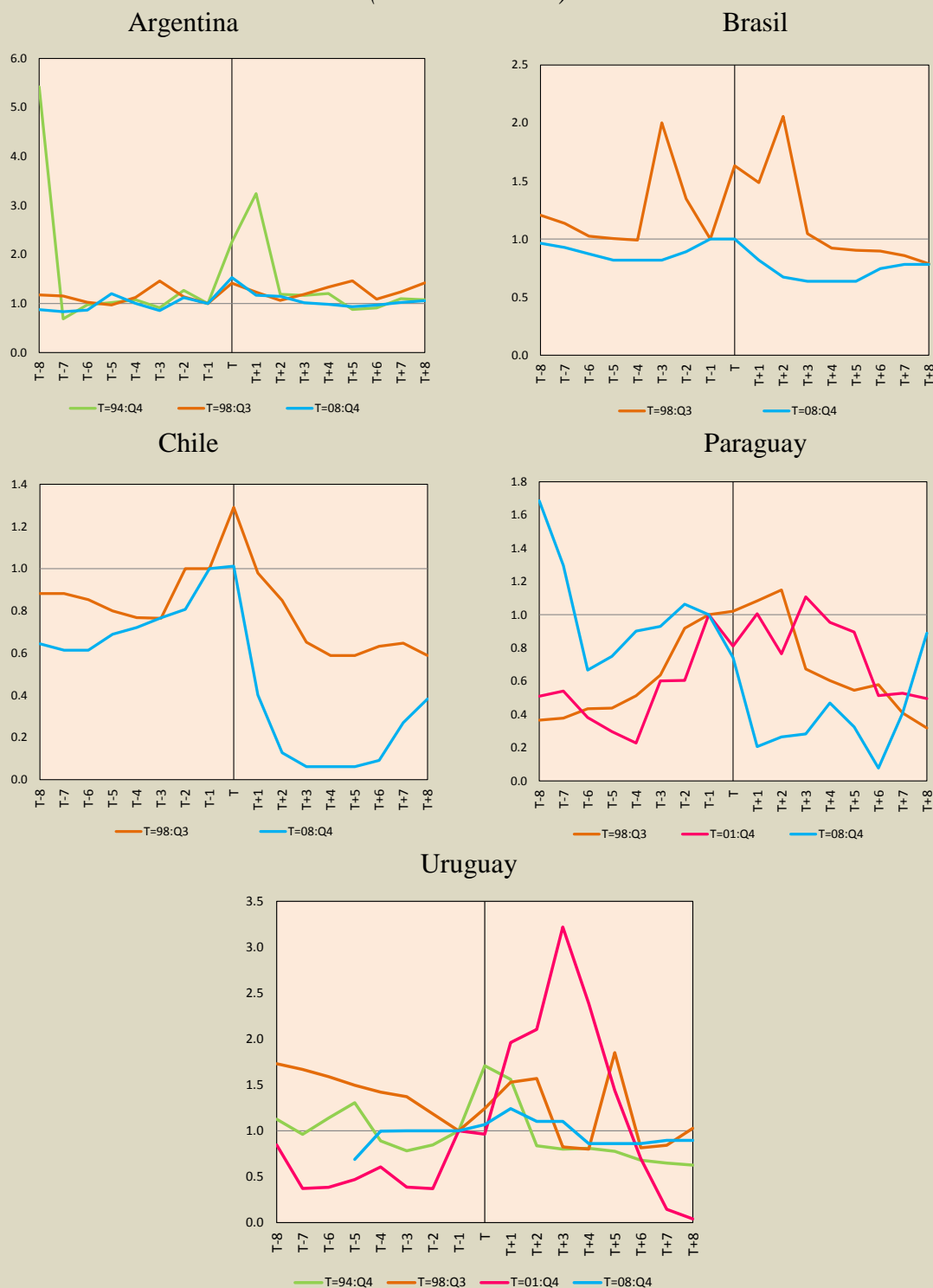
### **3.2. Monetary Policy in Crisis Episodes**

It is widely recognized that in the past, emerging markets and developing countries have tended to follow contractive monetary policies during output retrenchments along the business cycle (Kaminsky et al 2004). Recently, Vegh and Vuletin (2012) found evidence that over the last decade about one third of developing countries have shifted from procyclical to countercyclical monetary policy. This section explores whether this was also the case for SC economies.

During the 2008 financial global crisis, Brazil, Chile and Paraguay cut their reference interest rates at some point. In the case of Brazil, this response was in sharp contrast with the one observed in 1998-1999, when monetary policy was strongly procyclical. In turn, Chile and Paraguay had already reduced the interest rate in the aftermath of the 1998 crisis, but the magnitude of the cut was much larger during the last crisis. In contrast, there were no significant interest rate reductions either in Argentina or in Uruguay during 2008-2009. However, it is worth highlighting that interest rates did not show significant upward jumps as it did in previous crisis, when monetary policy had been procyclical (see Figure 10).

Two factors seem particularly important in explaining the change in the pattern of monetary policy in the 2008 crisis. First, the adoption of more flexible exchange rate regimes, and second the implementation of monetary policy frameworks in almost all SC countries that enhanced transparency and reduced price volatility. As a matter of fact, with the exception of Argentina, up to day all SC economies have adopted an inflation targeting scheme.

**Figure 10. Monetary Policy: Reference Interest Rates**  
(Index  $T-1 = 1$ )



Argentina: money market rate. Brasil: money market rate (1996-2000) and monetary policy rate (2006-2010). Chile: monetary policy rate. Paraguay: weighted average of monetary regulation rates (IRM). Uruguay: call rate (1992-1996, 1996-2000, 1999-2003) and monetary policy rate (2006-2010).

Source: prepared using IFS (IMF), LMW (IADB) and official data.

### 3.2.1 Exchange Rate Flexibility

As documented by Kaminsky et al. (2005), capital flows in developing countries are strongly procyclical and, therefore, crises are usually characterized by capital outflows that tend to put the exchange rate under severe depreciation pressure. In this context, policy makers usually fear that a sharp depreciation may deepen the crisis by causing further capital outflows leading to widespread bankruptcy of economic agents indebted in foreign currency. Therefore, in such a situation, it seems preferred to increase interest rates and defend the domestic currency in spite of the contractionary effects of this policy.

As a result, monetary procyclicality is closely related to the need to defend the domestic currency. Thus, the smaller the balance sheet effects of a nominal depreciation, the less urgent the need to defend the exchange rate, and the larger the space for monetary expansion. This seems to have been the case of SC economies during the 2008 crisis. As shown in Figure 11, the region faced the 2008 crisis with lower levels of debt, deposit and credit dollarization than in previous episodes, putting SC economies in a better position to bear the burden of nominal depreciation.

This change in dollarization levels coincides with the adoption of more flexible exchange rate regimes, not only regarding *de jure* arrangements but also the *de facto* management of exchange rate policy. As illustrated by Figure 12, over time, SC countries have experienced an increase in the relative volatility of the exchange rate with respect to international reserves and interest rates.<sup>17, 18</sup>

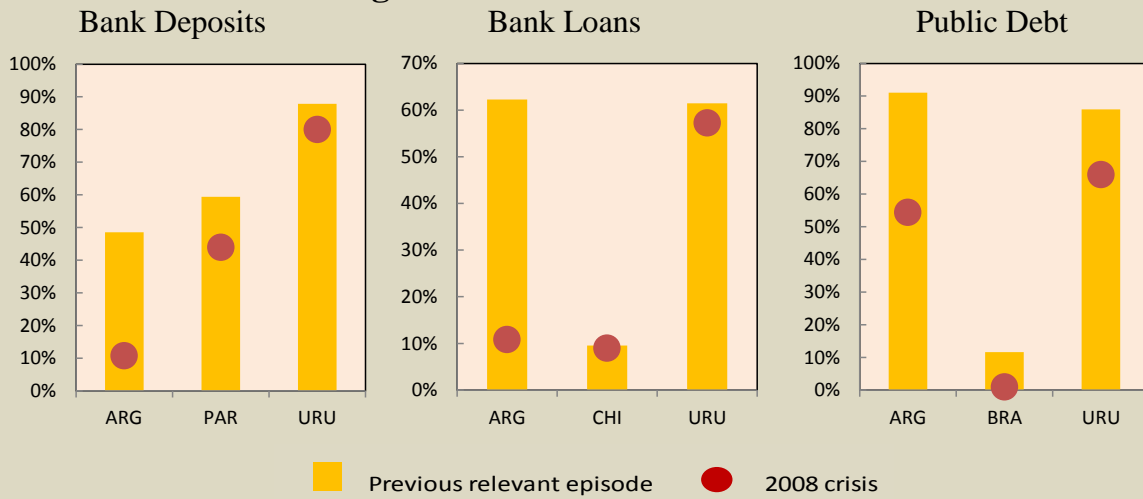
Then, the 2008 crisis occurred at a time when SC domestic currencies were allowed to float more than in the past and in which large fluctuations in the exchange rate had a smaller potential impact through balance sheet effects on public and private debt. Overall, this allowed the exchange rate to work as a shock absorber depreciating sharply at the onset of the crisis and eventually returning to more moderate fluctuations (see figure 13).

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17 The dates used to compute the standard deviations in each country correspond to periods of different exchange rate arrangements as recorded in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions and systematized in the companion datasets to Reinhart y Rogoff (2004) and Ilizetzi et al. (2008).

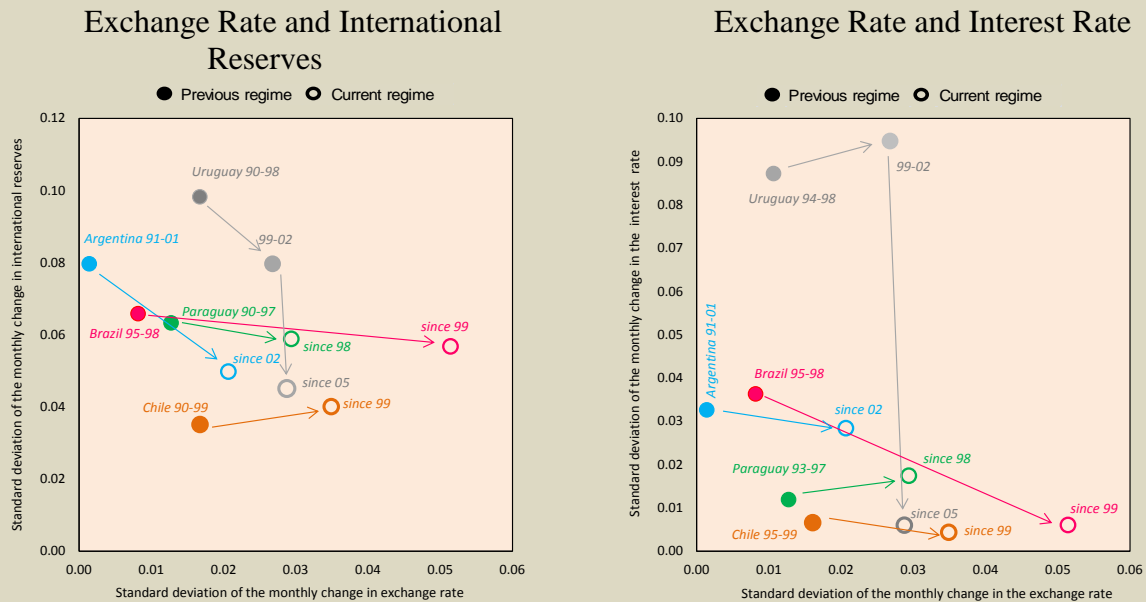
18 The exercise is motivated by Calvo and Reinhart (2000, 2002) who find evidence suggesting that in a large number of developing countries under flexible exchange rate regimes the variability of the exchange rate is relatively low with respect to that of other variables like international reserves and the interest rate and with respect to the one observed in developed economies.

**Figure 11. Dollarization Levels**



Source: prepared using LMW (IADB) data.

**Figure 12. Changes in Exchange Rate Volatility**



Source: prepared using IFS (IMF) and LMW(IADB) data.

### 3.2.2 Monetary Policy Frameworks

In general, in a context of relatively flexible exchange rates, the space for monetary policy depends not only on the current levels of inflation and the interest rate but also on public's expectations formation process and the degree of credibility of the monetary authority.

In this scenario, it is not hard to imagine a crisis situation in which, in spite of the downward pressures that aggregate demand contractions put on inflation, the central bank is reluctant to implement expansionary monetary measures because of fear of the impact that this policy may have on expected inflation. Then, credibility is an important asset for a central bank interested in consistently applying countercyclical policies over time.

In the Southern Cone, the shift towards more flexible exchange rate regimes discussed earlier in this section has been accompanied, at different stages, by the adoption of inflation targeting schemes in Brazil, Chile, Paraguay and Uruguay which, as explained later in the document, seems to have helped increase the credibility of monetary authorities. By making the inflation target explicit, inflation targeting not only provides a nominal anchor but also a focal point that may anchor inflation expectations.<sup>19 20</sup>

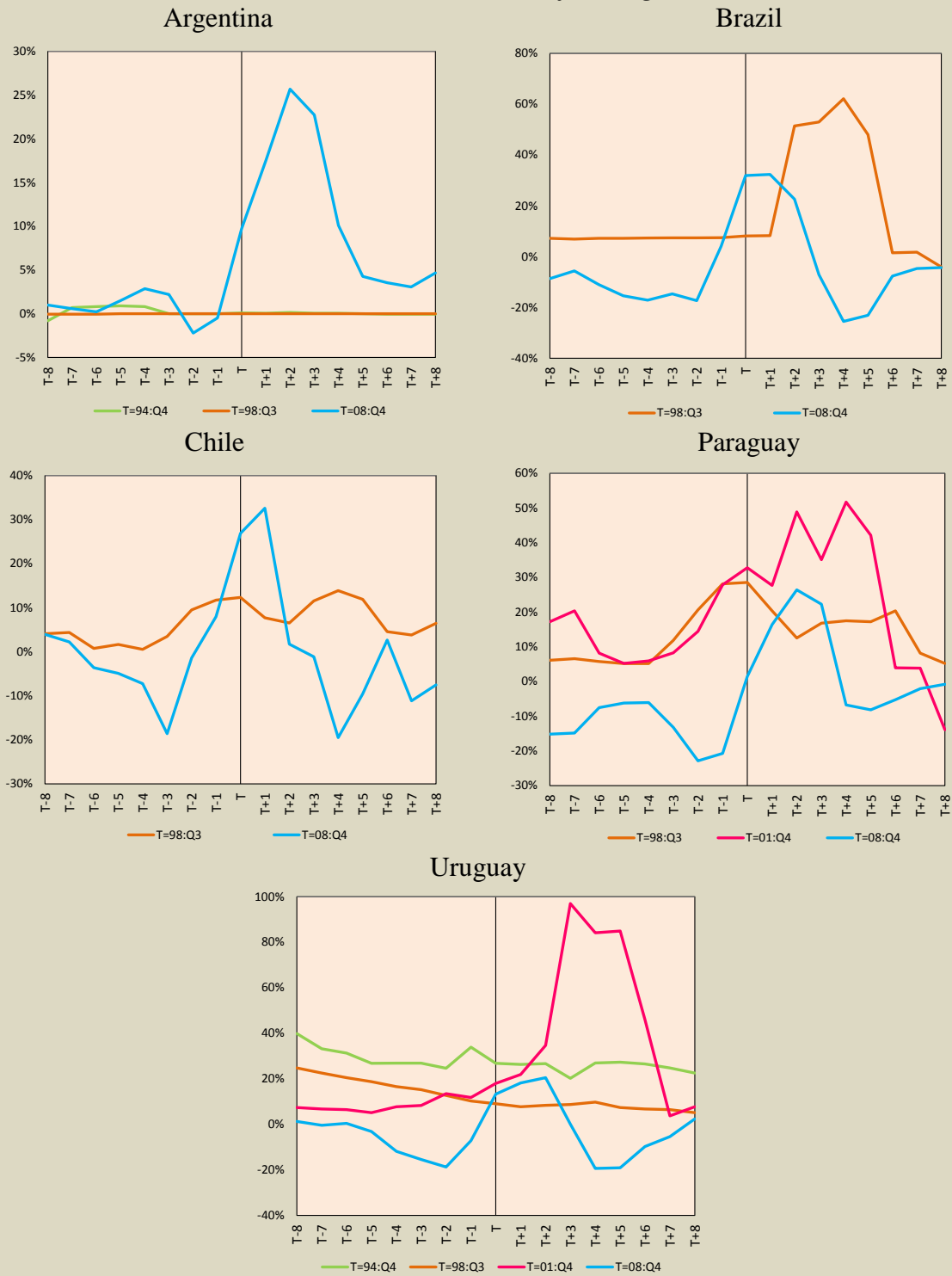
Although Chile has been applying this approach to some degree from the beginning of the nineties (Chile started the transition to the inflation targeting regime from 1991), it was not until 1999 that the inflation targeting scheme became fully operational. In turn, Brazil adopted this framework in 1999. Eventually, Paraguay started to apply a referential inflation target in 2006 and Uruguay adopted an inflation targeting framework in September 2007, although the Central Bank began to announce an inflation target since the end of 2004. In contrast, Argentina continues using the monetary aggregates as nominal anchors.

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19 Analyzing the experience of Chile, Corbo and Schmidt-Hebbel (2001) find that the gradual implementation of an inflation targeting system contributed to the reduction of the inflation level through reductions in expected inflation. In a more general sense, these authors find that Latin-American economies that had adopted inflation targeting schemes by the time they wrote their paper (Brazil, Chile, Colombia, México and Peru) performed relatively better than non-targeters in terms of sacrifice ratios, inflation levels and output volatility.

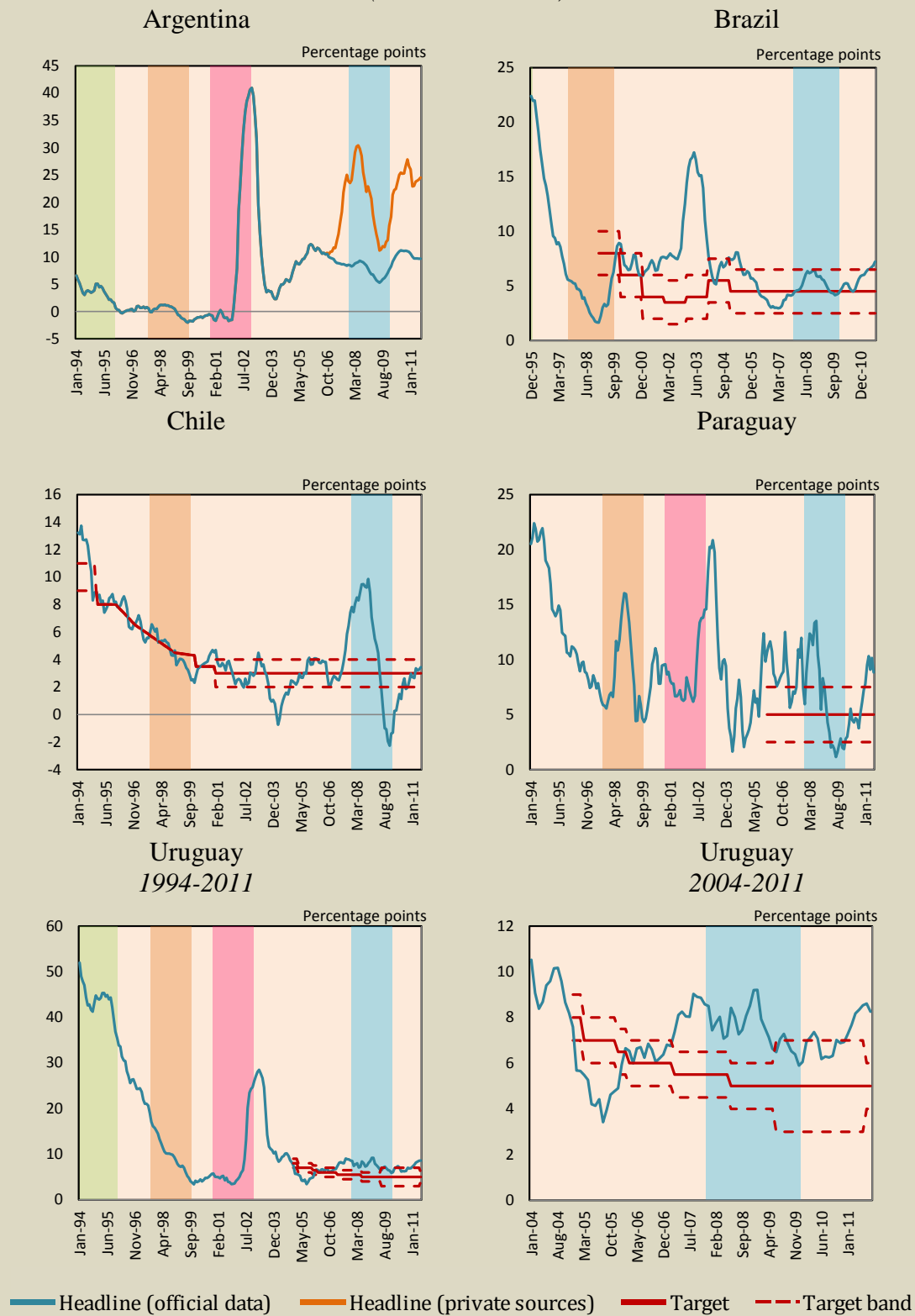
20 Using a propensity score matching methodology for a large sample of developing and emerging economies, Lin and Ye (2009) find that the level and variability of inflation are in average lower for inflation targeters than for non-targeters.

**Figure 13. Exchange Rate**  
(lc/US\$, annual rate of change)



Source: prepared using IFS (IMF), LMW (IADB) and official data.

**Figure 14. Inflation Dynamics**  
(12-month rate)



Source: prepared using official and private data sources

In the aftermath of the 2008 crisis, inflation in SC countries stayed relatively contained due to the economic contraction and in the case of Chile and Paraguay it reached levels even under the inferior limit of the reference target range (see Figure 14).<sup>21</sup> Overall, for those SC economies that adopted an inflation targeting scheme, it could be argued that this framework might have played a significant role as useful benchmark instrument for policy makers regarding the economy's momentum and the potential implications of their policy strategies.

### **3.2.3. Credit as a countercyclical instrument**

It is worth mentioning that among the monetary and financial policies implemented in the SC region in order to counteract the negative effects of the 2008-2009 crisis, besides the use of instruments such as liquidity lines, capitalization of banks, bank's provisions, reduction or reserve requirements, cuts on reference rates and market rates, some countries also applied a credit policy with a clear countercyclical flavor.

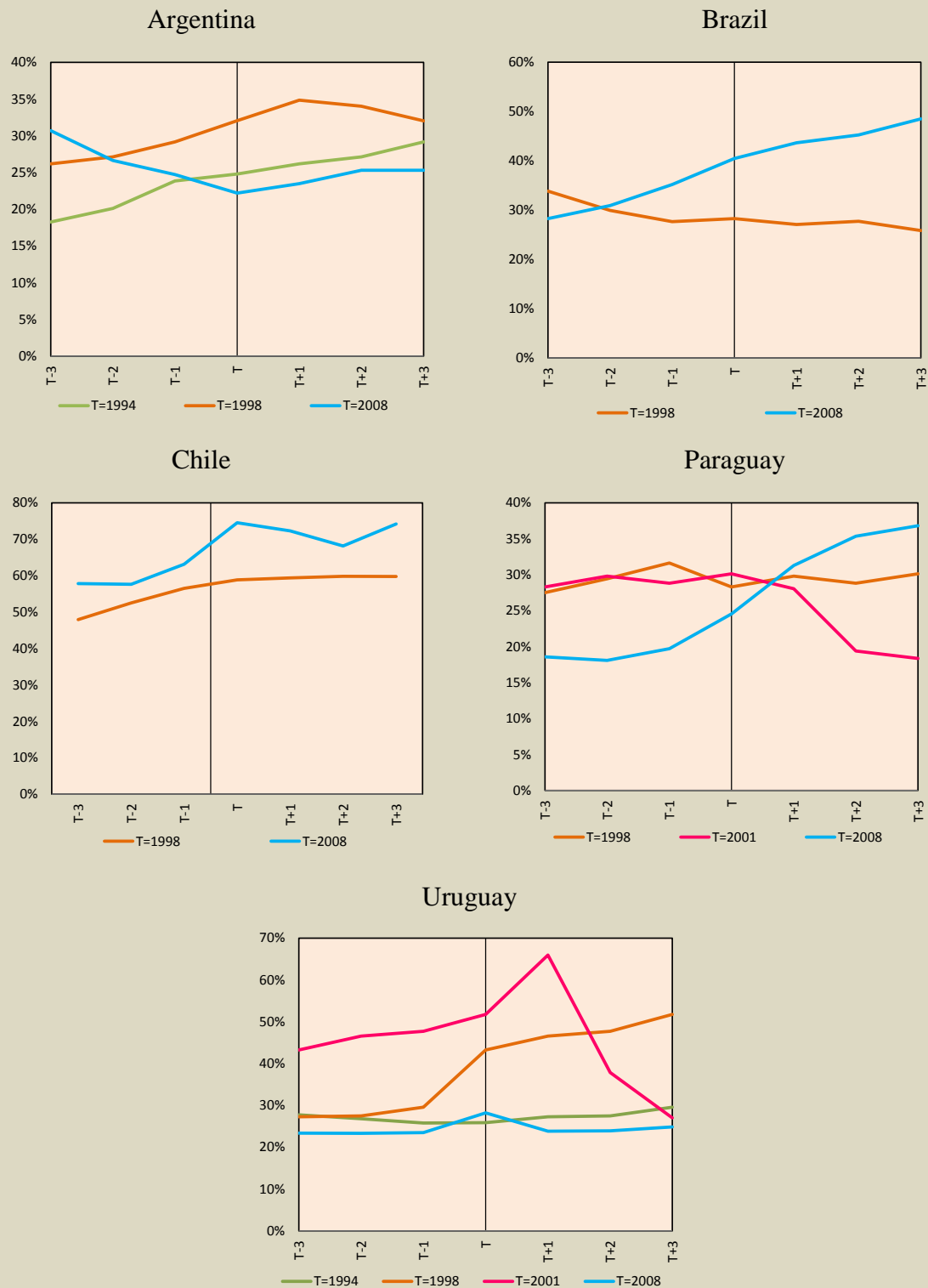
Specifically, Brazil is the economy that stands out for having used credit deliberately as a countercyclical instrument in the aftermath of the 2008 crisis. Other economies in the region that also used credit with this purpose did so in a less intense fashion. Overall, in terms of credit as percent of GDP, both in Brazil and in Paraguay, this variable increased significantly after the crisis. In turn, in Chile, credit as percent of GDP suffered a slight contraction but it managed to maintain its high level and eventually it returned to its peak reached in 2008. In contrast, in Argentina and Uruguay the credit expansion as percent of GDP in the aftermath of the crisis did not show a countercyclical pattern (see Figure 15).

In the specific case of Brazil, total credit as percentage of GDP went from 40% in 2008 to 44% in 2009 maintaining its upward trend in the following years. Indeed, in 2011 it reached almost 50% of GDP. It is worth mentioning that credit by public banks went from being one third of total credit in the financial system in September 2008 to be 42% at the end of 2009. Besides, in contrast to the episode of 1998, in the crisis of 2008 credit from public banks did not shrink and rather kept growing significantly (Figure 16). In real terms, credit by official banks grew 32% in 2008 and 27% in 2009, while in the following years it kept expanding at a rate around 15%.

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21 Since the early 90's, there has been a downward trend in the inflation's levels in all SC economies except for Argentina, where the trend of inflation actually picked up in three out of four of the crisis episodes.

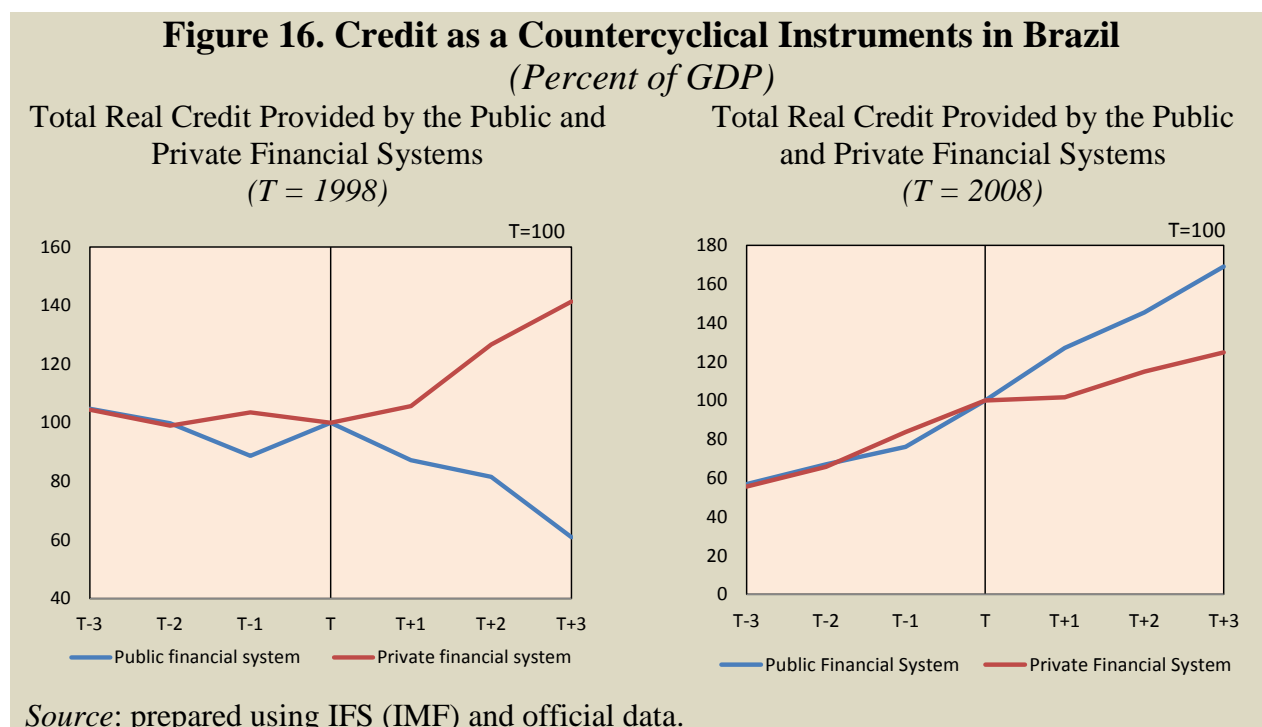
**Figure 15. Total Credit**  
(Percent of GDP)



Source: prepared using IFS (IMF), LMW (IADB) and official data.

Regarding bank credit to the private sector, although this variable was growing at an annual rate of 24% in real terms in 2008, its expansion rate reduced to 8% in 2009 but managed to recover its dynamism in 2010 expanding at 15% and keep growing the following year. Finally, in the case of Brazil it is important to highlight the fact that the credit policy was much more strategic in the sense that it focused not only on preserving liquidity in the financial system but also on allocating resources in a compulsory way and under preferential interest rates to those areas considered as priorities such as to the agriculture and housing sectors.<sup>22</sup>

In turn, in Paraguay, total credit grew from 25% of GDP in 2008 to 31% in 2009 and kept its upward trend in the following years. Nevertheless, in this case, the expansion in credit was mainly the outcome of the excess liquidity in the market. At the same time, bank credit to the private sector also increased significantly in real terms from 2008 onwards, reaching a 75% growth by the end of 2009 with respect to its level in 2008. This contrasts with the two previous relevant crisis episodes, as credit remained constant in 1998 and contracted in 2001.



<sup>22</sup> The prioritized sectors include housing, agriculture and manufacturing. More specifically, a Law was passed that established that 25% of short-term deposits in commercial banks had to be channeled to rural sector loans, at a fixed annual interest rate. The Law also established that 65% of deposits in savings accounts had to be used for real estate financing.

In Chile, even though the level of credit as per cent of GDP fell from 75% in 2008 to 72% in 2009, this variable eventually returned to the peak reached in 2008. Nevertheless, credit in Chile was also used to offset the effects of the crisis. The Government's strategy consisted basically of a set of measures focused on small and medium enterprises through the launching of new credit instruments and guarantees and the capitalization of several state institutions. Overall, credit to the private sector in real terms did not expand in 2008 but it was less countercyclical in magnitude than in the previous crisis episode in 1998.

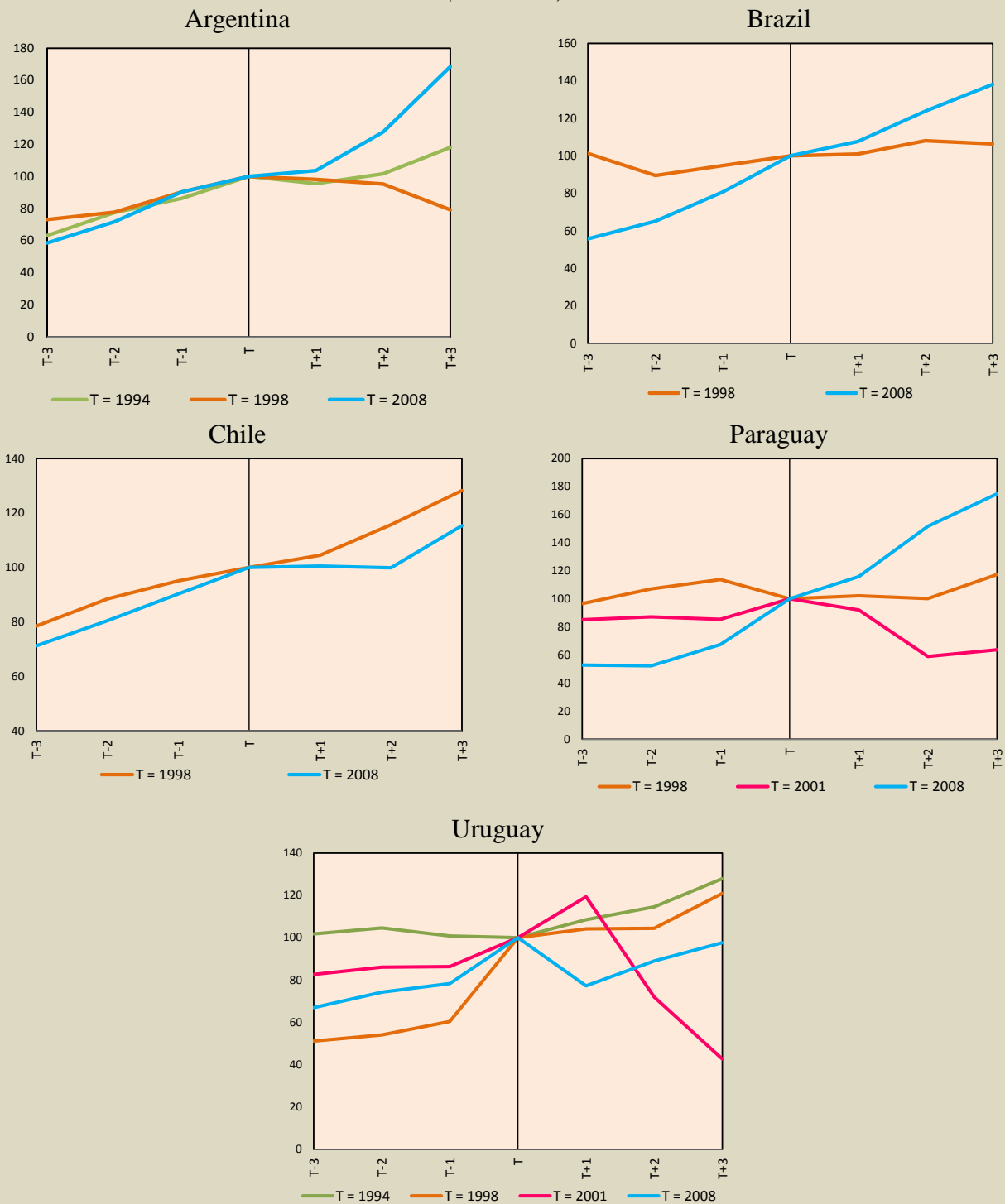
As it was mentioned before, neither Argentina nor Uruguay experienced significant changes in credit as per cent of GDP after the 2008 crisis. Nevertheless, in contrast to the previous relevant episodes, in the case of credit to the private sector in Argentina, this variable grew significantly from 2008 onwards. Private credit expanded around 70% in real terms between 2008 and 2011 (Figure 17). This was the consequence of the level of liquidity in the financial market rather than the outcome of a specific countercyclical credit policy.

#### **4. Policy Space**

An interesting and relevant question is whether the countercyclical policy response in the SC region to the 2008-2009 crisis is an isolated event or signals a permanent change in the application of stabilization policies that promises to attenuate the business cycle from now onwards.

The answer to this question depends on having enough room to once again apply countercyclical policies in the face of new international shocks. For instance, if an economy suffers from reserve depletion or the sustainability of public debt is under question, then the space to apply such policies is significantly reduced. Moreover, the sustainability of countercyclicality also depends on the effectiveness of the undertaken policies, which in general requires having credible fiscal and monetary authorities. For example, if agents lose confidence that inflation will remain close to the target announced by the Central Bank, then expected inflations could increase reducing the effectiveness of monetary policy. Overall, in order to preserve credibility and the space for countercyclical policies, it is required that the stimuli implemented during crises be removed during good times so that the direction of stabilization policies is reversed when the business cycle goes from recession to recovery.

**Figure 17. Real Bank Credit to the Private Sector**  
( $T = 100$ )

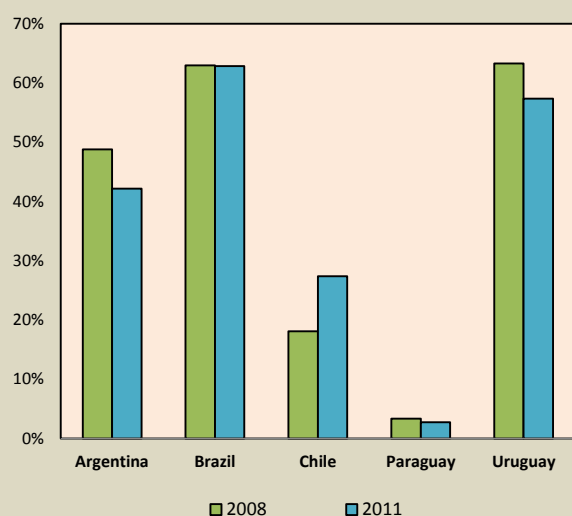


Source: prepared using IFS (IMF) data.

## 4.1 Fiscal Policy Space

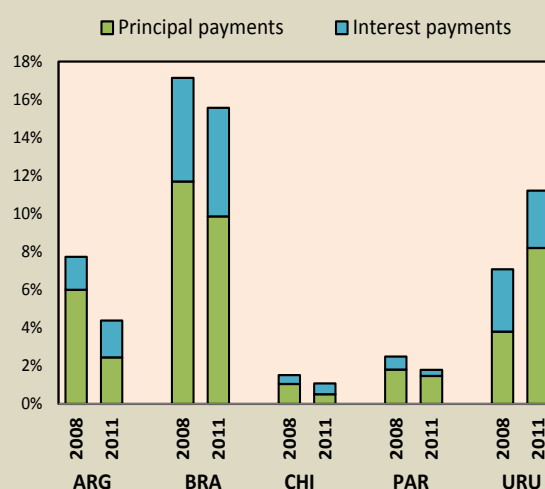
Regarding fiscal policy, the space to apply countercyclical policies would depend on both being able to access liquid resources and on fiscal sustainability. In terms of access to liquid resources, SC economies are still in a relative favorable situation. This is the result of having accumulated important levels of international reserves when capital flows were abundant in the region. Besides, some countries have taken further measures to assure financing liquidity. For instance, Uruguay has been applying an active policy of pre-financing, issuing bonds and opening contingent credit lines with international organizations. Paraguay, instead, has negotiated several lines of rapid disbursement with multilateral organizations, while Chile has accumulated additional resources in the Copper Stabilization Fund thanks to the rise in its price and that country's structural fiscal policy.

**Figure 18. Public Debt**  
(Percent of GDP)



Source: prepared using CEPAL, LMW (IADB) and official data.

**Figure 19. Principal and Interest Payments**  
(Percent of GDP)



Source: prepared using CEPAL, LMW (IADB) and official data.

Nevertheless, it is worth of mention the fact that in some SC countries the financing needs are currently higher than they were in 2008 as a consequence of lower primary fiscal balances.<sup>23</sup> The fiscal stimuli implemented in 2009 led to deteriorations in the fiscal balances. In the following years, although some stimulus measures were withdrawn, fiscal balances did not come back to pre-crisis levels. In fact, in the majority of cases a further deterioration is observed (See Figure 20). This trend certainly contradicts the hypothesis of graduation from fiscal procyclicality. Although these economies were able to reduce revenues and raise primary expenses during the crisis, the fiscal stimulus was not fully reversed during the economic expansion of 2010 and 2011.

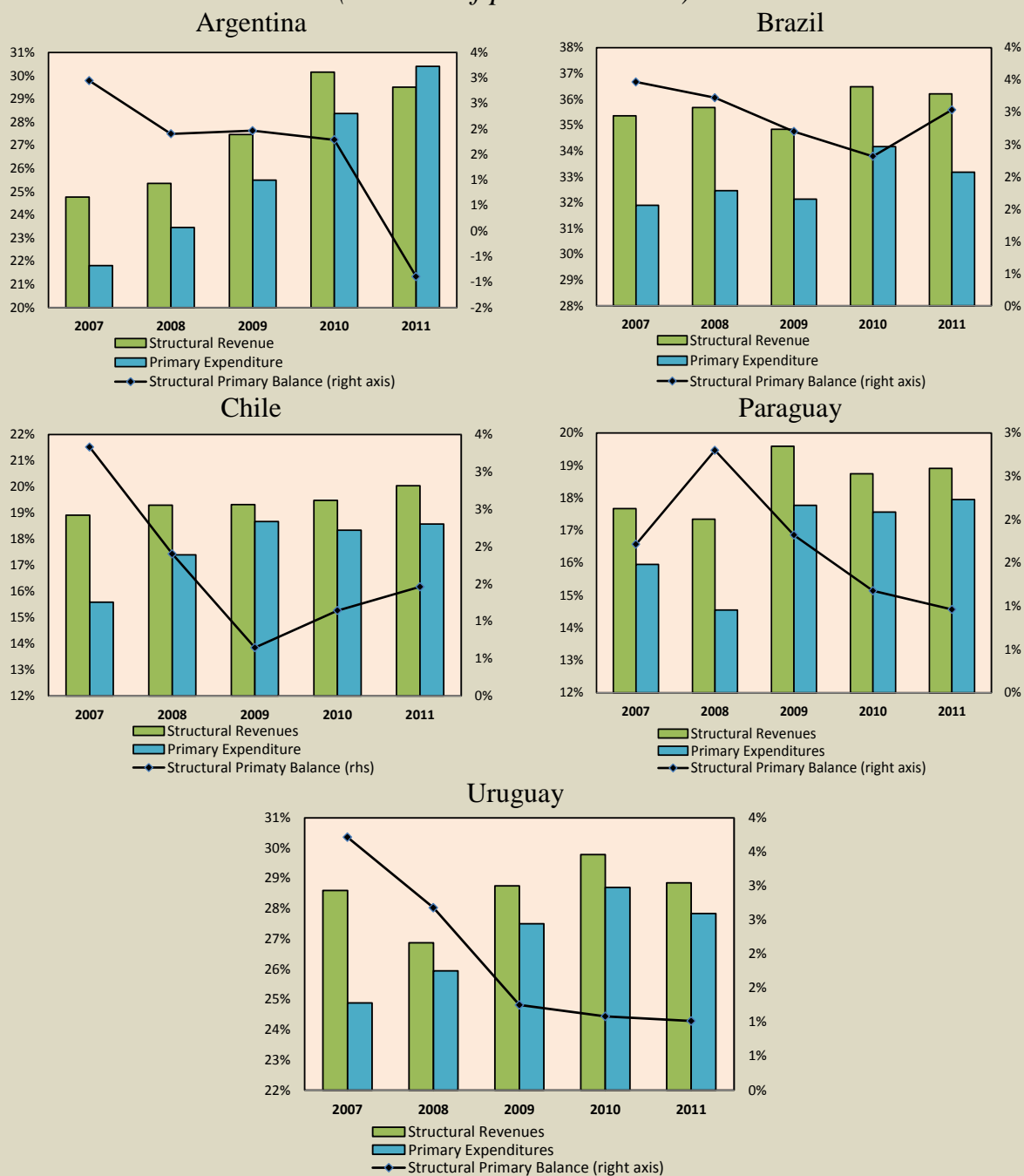
Given the recent deterioration of fiscal balances, an interesting question to analyze is whether SC countries, although having enough liquid financing resources, could risk fiscal sustainability when carrying on a new round of fiscal stimuli. To answer this, a simple exercise was conducted to simulate the evolution of fiscal balances and public debts. The exercise assumes that, for each country, GDP falls in 2012 by half of the seasonally-adjusted quarterly accumulated contraction during 2008-2009. For instance, in Chile the quarterly GDP seasonally adjusted fell in 4Q2008 and 1Q2009, with an accumulated contraction of 3.5%. The exercise then assumes that real GDP in Chile falls by 1.75%. Also, it is assumed that SC economies do not grow at all within the second year.

Regarding fiscal balances, the model assumes that countries implement stimulus measures in 2012 that are of the same size, as percentage of GDP, as the ones applied in 2009 and that these measures are maintained during the following year, 2013. As for exchange rates, the exercise assumes that the variation in 2012 equals the variation observed in the first six months after the collapse of Lehman Brothers. The variation observed in the following six months is assigned to 2013. Finally, IMF WEO projections are used for the evolution of the GDP deflator.

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23 Financial needs are defined as the difference between scheduled debt services (amortizations and interests) and the primary fiscal balance.

**Figure 20: Structural Balance**  
(Percent of potential GDP)



Real values are computed using the CPI except in Argentina where the GDP deflator was used.

Source: prepared using official data and CSC estimations.

The simulated results suggest that the lowest increases in debt to GDP ratio would be observed in Argentina and Uruguay (see Figure 21). This is mainly due to two factors. First, the GDP contractions assumed for Argentina and Uruguay are lower than for other countries. Second, the assumed inflation rates are higher, which leads to larger reductions in the ratio of debt denominated in domestic currency to GDP. In turn, in Paraguay, debt to GDP would rise significantly, mainly because the strong fall in GDP and the domestic currency depreciation. Likewise, debt to GDP ratio in Chile would also increase strongly, in this case due to the large size of the stimuli. Finally, in Brazil, the increment in the debt to GDP ratio would be due to both, a higher GDP contraction and the size of the stimuli.

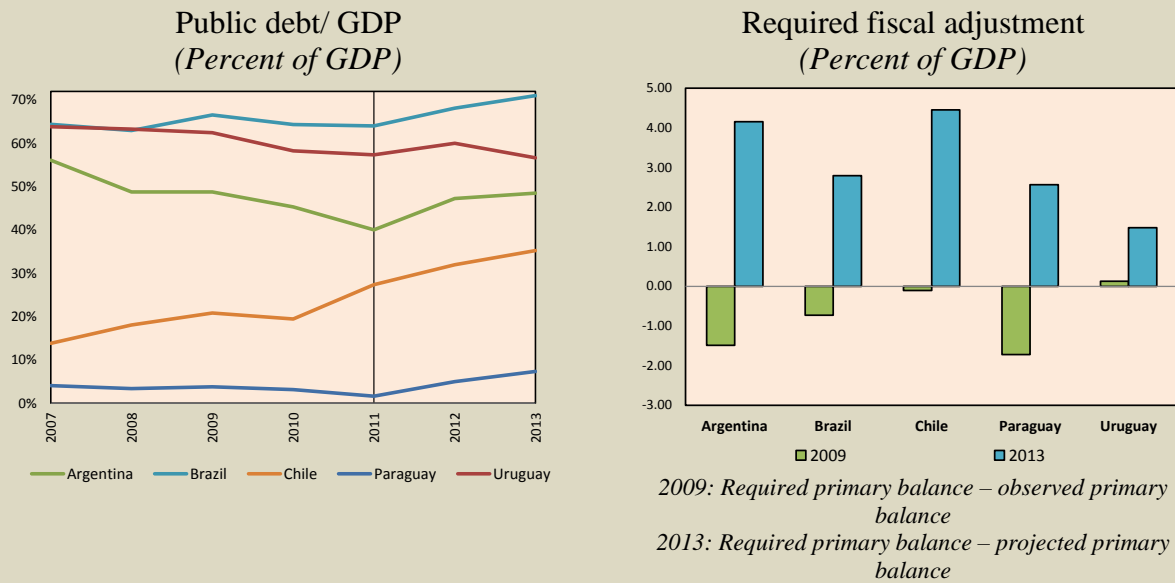
Given the simulated levels of debt and primary fiscal balances, we calculate the required adjustments needed in order to stabilize the debt-to-GDP ratio (see Figure 21). The results indicate that all countries would need to improve their fiscal balances if they want to stabilize the debt-to-GDP ratio. This contrasts sharply with what was observed in 2009, when for most countries a fiscal adjustment was indeed not needed in order to stabilize the debt-to-GDP ratio. In short, although a new round of countercyclical policies alike the set implemented in 2008 would not boost debt to an extreme level, the deterioration of fiscal balances will require countries to undergo a process of fiscal adjustment in order not to increase the burden of their debts.

Finally, it is worth mentioning that the accumulation of large reserve stocks and the extension of the maturity profile of external debt in the region improved the coverage capacity of external liquidity needs, which in turn potentially provide more space for effective countercyclical fiscal and monetary policy. In fact, in all countries except for Argentina and Paraguay, the ratio of international reserves to debt with residual maturity of one year or less, the so-called *Guidotti-Greenspan* ratio, is higher in 2011 than in 2007.<sup>24</sup> Moreover, in all cases this ratio is equal or above the value of one, which is considered a minimum desirable value for this indicator (see Figure 22).

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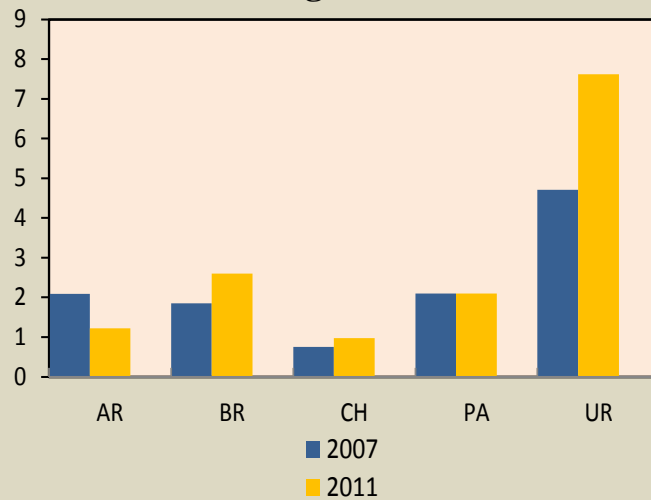
<sup>24</sup> This includes the external private and public short-term debt, up to and including one year, plus the principal repayments of the long-term external debt maturing within one year.

**Figure 21: Fiscal Simulations**



Source: prepared using WEO (IMF) and official data.

**Figure 22: Reserves Coverage of Short-Term External Debt**



Source: prepared using official data.

## 4.2 Monetary Policy Space

### 4.2.1. Credibility of the Inflation Target

Under a context of exchange rate flexibility, regarding the space for further countercyclical monetary stimuli in the face of a new international economic crisis, the space to do so would depend not only on the level of inflation and the reference interest rate, but also on the inflation expectations and on the credibility of monetary authorities.

Thus, even though in a situation where an economic contraction brings the inflation rate down, the monetary authorities might have no enough room to apply a countercyclical monetary policy if they fear that the measure might push inflation expectations upwards. Thus, the credibility of monetary policy turns to be an important policy asset for a Central Bank which is engaged in having a long-term stabilizing role through countercyclical policies.

Within this context it becomes relevant analyzing whether the process of adopting inflation targeting schemes in almost all SC countries has been accompanied by an increase in the monetary policy credibility. In this regard, Figure 23 displays the difference between the pre-announced inflation target by the Central Bank in each country and the inflation expectation reported in official surveys as our proxy for monetary policy credibility. For Brazil and Chile data goes from 2001 to 2011 and for Uruguay from 2005 to 2011. In the case of Paraguay there was not enough data to conduct the analysis.

The findings suggest that in the case of Chile, the SC country with the largest experience in inflation targeting, the deviation of expectations from the target have already converged to a low and stable level. In Brazil, those expectations also show a downward trend towards low levels, reaching the lowest gap just one year before the 2008 global crisis. In turn, in Uruguay this convergence seems to still require more time to be achieved.

Thus, both Brazil and Chile entered the 2008 crisis with high levels of credibility, a factor that may have played an important role in allowing their central banks to apply the aggressive interest rate cuts described earlier in the document.

Besides, as shown in the previous section, flexible exchanges rate regimes provided an effective mechanism to diminish the impact of the external shock in 2008. So, the SC inflation targeters allowed their real and nominal exchange rate to depreciate widely during the crisis. In turn, during 2010, with the resurgence of capital flows into the region, they accumulated most

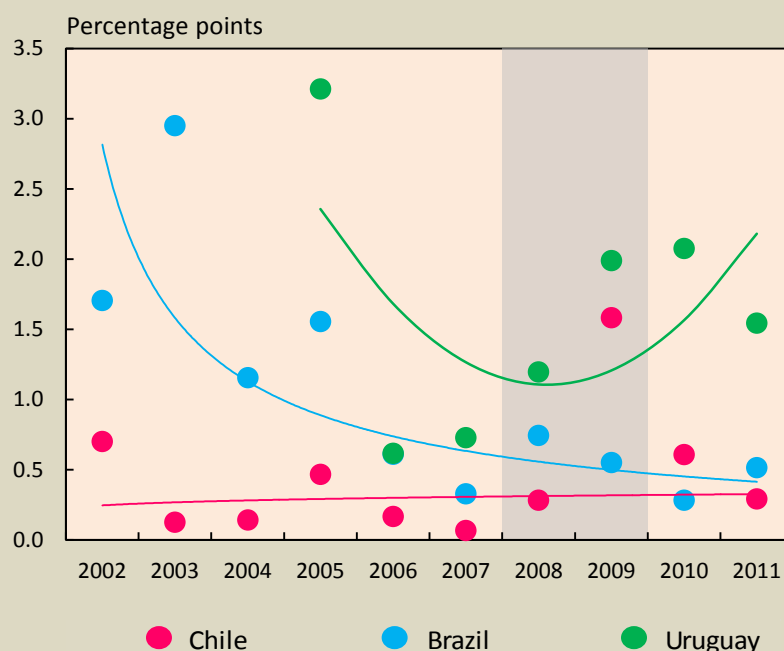
reserves through the sterilization of those resources in order to slow down the appreciation of the domestic currency (IADB, 2012).

Therefore, it could be argued that in the case of those SC targeters where inflation expectations maintained well anchored, the mix of flexible exchange rate and inflation targeting would allow more space for an effective countercyclical monetary policy in face of a new global crisis. In particular, SC targeters would have more degrees of freedom for a stabilizing monetary policy the more they enhance their communication regarding policy instruments so that inflation expectations are kept well anchored.

#### 4.2.2 Credit and its associated risks

Other aspects to consider when assessing the space for further monetary stimuli in the face of a slowing demand are the level and quality of credit. As it has been explained before, while SC economies maintained low levels of debt, “quasi-fiscal” policies through public bank’s credit acceleration were intensively applied in the region during the 2008 financial shock, particularly in Brazil and Chile. As a consequence, for most SC economies the stock of credit to the private sector, as a percentage of GDP, by the end of 2011 was higher than it was before the 2008 crisis.

**Figure 23. Difference Between Expected Inflation and Inflation Targets**



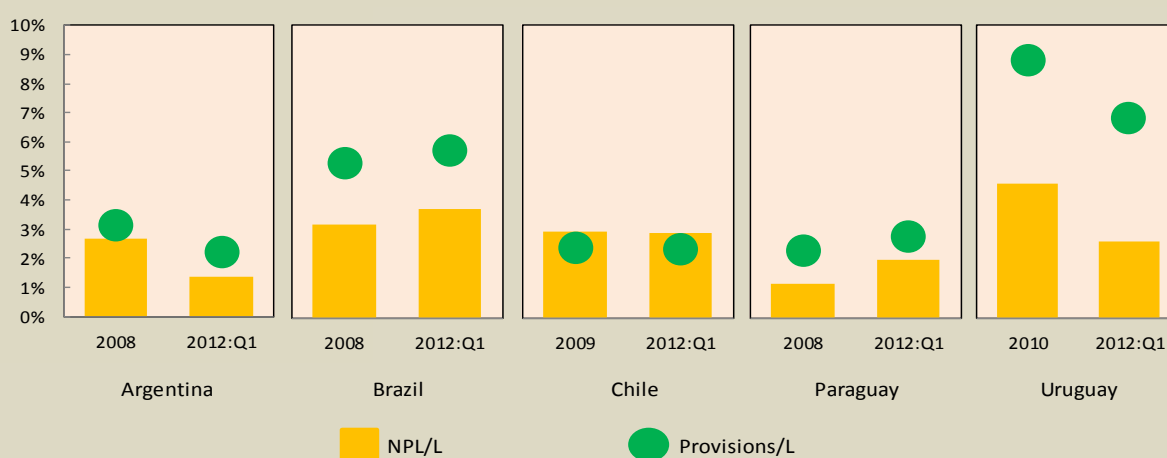
*Source:* prepared using official data.

When credit has been expanding above its long-term trend and its acceleration continues apace, this usually implies potential risks to the financial system when the quality of the financial system's portfolio deteriorates. This risk may go unnoticed during the expansionary phase of the business cycle, when the level of non-performing loans (NPL) tends to remain low. However, this situation could be reverted during the recessive phase, when debtors' ability to face their liabilities deteriorates (Elekdag et al., 2011).

In the aftermath of the 2008 global financial shock, credit quality deteriorated in the SC region. Nevertheless, this relative rise in the level of NPL was offset by an increment in provision ratios in all SC countries.

Looking at recent data, there seems to be only a sort of few red flags. For instance, in Brazil, the NPL ratio increased 2.3 percentage points in household credit between 2010 and the first quarter of 2012, reaching 8%. On the other hand the level of provisions as percent of total portfolio is 5.7%. In turn, in Paraguay, the NPL ratio has increase from 1.3% in 2010 to 2% in the first quarter of 2012, while provisions have increased to 2.8%. In Chile, the NPL ratio has already reached the level of 2009, 3%, while provisions are still 2.3% in the first quarter of 2012 (see Figure 24).

**Figure 24. Non-Performing Loans and Provisions**



*Source:* Prepared using official data.

Interestingly, in Argentina, the NPL ratio has decreased from 3% at the end of 2009, its peak after the crisis, to 1.4% in the first quarter of 2012. Likewise, in Uruguay, the ratio has reduced from 4.6% in 2010 to 2.6% in the first quarter of 2012. In this case however, this Figure is strongly biased by the strategy implemented by Banco Hipotecario de Uruguay (a state-owned mortgage bank) seeking to eliminate accumulated NPL in the aftermath of the 2002 crisis. Therefore, when excluding this bank from the computation, the NPL ratio has rather raised from 1.0% in 2010 to 1.4% in the first quarter of 2012. However, the level of provisions is close to 7%.

Moreover, it is important to keep in mind that the level of capital adequacy weighted by risk assets remains above the required international standards of Basel II, set at 12% in all SC countries. Therefore, despite the weaker global economic environment and a deceleration in the majority of the domestic economies observed in the first half of 2012, banks in the region still maintain robust portfolios, however further credit expansions used as a countercyclical instrument might jeopardize banking sector sustainability.

Last, taking into account the lagged effect of an expansionary monetary policy on inflation and of the risks associated with credit acceleration on both the level of prices and the stability of the financial system, some SC countries adopted a set of policy instruments usually referred to as macro-prudential instruments. These tools allowed those economies to increase the degrees of freedom to apply a monetary policy with stabilization purposes.

Thus, among the most pro-active countries in the SC region, Brazil stands out for either introducing or modifying macro-prudential instruments to attenuate credit's procyclicality. In particular, Brazil applied a wide set of instruments including capital requirements, reserve requirements on bank deposits and limits on foreign exchange positions. Likewise, Uruguay also applied instruments like dynamic provisioning, reserve requirements on bank deposits and tools to manage foreign exchange credit risk (Tovar et al., 2012). It is important to mention that even though the use of macro-prudential instruments seems to increase the degrees of freedom in the use of monetary policy with stabilization purposes, these instruments can have some important costs associated to their use. For instance, according to Lim et al. (2011), the use of reserve requirements might be effective in reducing credit procyclicality in the short term; however, these authors found evidence that these instruments tend to be complicated, expensive in their

implementation and they require constant calibration and adjustment to market conditions to keep their effectiveness.

## **5. Conclusions**

The 2008 crisis was a global event characterized by larger shocks than those observed in previous international crises. Southern Cone economies weathered the storm fairly well. Relative falls in output and capital inflows were in general smaller than in previous crisis episodes and by 2010 the region was back on its pre-crisis growth track.

Several exogenous factors like the quick recovery of commodity prices and the importance of China as an international trade partner may be behind the region's good performance in the aftermath of the crisis. However, endogenous factors like the application of countercyclical macroeconomic policies may also have played an important role.

Indeed, in sharp contrast with previous crises, during 2008-2009 the economies of the region were able to implement aggressive fiscal and monetary countercyclical measures. On the fiscal side, the capacity to implement a countercyclical policy was favored by the increase in primary balances in the years before the crisis, improvements in sustainability indicators and a reduction of the level of financing needs. On the monetary side, the shift towards more flexible exchange rate arrangements and greater levels of central bank credibility after the implementation of inflation targeting systems.

Looking forward, the main challenge for the region is to ensure that this countercyclicality is sustainable over time. On the fiscal front, this requires countries to be proactive in the reversion of fiscal stimuli in good times, in order to save resources for future rainy days. On the monetary front, countries should aim at further reductions dollarization levels and keeping inflation dynamics under control, in order to avoid the need to anchor inflation expectations through the nominal exchange rate that would limit the role of this variable as a shock absorber in times of crisis.

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