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## Is the Eurozone on the Mend? Latin American Examples to Analyze the Euro Question

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## **Latin American Examples to Analyze the Euro Question**

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**July 2014**

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## Abstract<sup>1\*</sup>

Several European countries face challenges reminiscent of those faced by the emerging economies of Latin America. The economic booms in some peripheral Euro-zone countries financed by large capital inflows; the credit and asset price booms and then the busts including Sudden Stops in capital flows; the strong interaction between sovereign debt and domestic banking systems; the role of foreign banks and contagion; and all in the context of a fixed exchange rate, are familiar plotlines for Latin American audiences. For those Euro-zone countries that built up large Euro-denominated external liabilities, Latin America's experience is particularly relevant and worrisome. Still, Europe may be in a better position to navigate a path out of the crisis given cooperative mechanisms that were absent in Latin America, particularly the availability of massive liquidity support. Nonetheless, while such support buys time, it does not guarantee success. This paper argues that reflecting on Latin America's experience provides useful lessons for Europe to improve the chances for a successful resolution.

**JEL classifications:** E61, F33, F34, F36, F53, G01

**Keywords:** Latin America, Financial crisis, Euro, Debt overhang, Banking crisis, Sudden Stops, Real devaluations, Currency union, Fiscal devaluation

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## 1. Introduction

Many peripheral Euro-zone countries are suffering from financial and competitiveness problems reminiscent of previous Latin American challenges. Drawing on these experiences, our aim is to provide a comparative analysis with a focus on Sudden Stops, competitiveness and growth issues, the relation between sovereigns and banks and the resolution of debt problems—all areas where, unfortunately, Latin America has considerable history (see Table 1 in the Appendix for a list and taxonomy of crises in Latin America).

We conclude that relevant and useful lessons can be drawn, although we are fully aware that there are also significant differences between the challenges on the two continents. While some Latin American countries adopted hard currency arrangements, there is no close analogy to the common currency and its associated set of institutions. We argue below that while the currency union may complicate the recovery, those institutions provide a set of strategies and instruments to address the crisis that were not available to Latin American countries. A case in point is the powerful European Central Bank (ECB). The IMF, and in some cases bilateral lending, provided assistance during some Latin American financial crises, but the ECB (and Euro-system financing more generally) has played a wider and deeper role in financing Sudden Stops in private capital flows and maintaining lower interest rates in the Euro-zone, which we argue has been critical to the survival of the common currency itself.

Our analysis suggests that while current crises in Europe are more complex and potentially more perilous than previous crises in Latin America, Europe also stands a better chance of successfully navigating the dangers, due in large part to the availability of better tools to tackle the problems. Nevertheless, the path is uncharted, and success is by no means guaranteed. Our contribution is to highlight the areas in which the Latin American experience may be useful in shedding light on current European policy challenges.

Disentangling the underlying factors responsible for a crisis is a difficult task. The Argentine crisis of 2001/2002 provides perhaps the closest analogy to the current dilemmas facing some countries in Europe's periphery, in terms of overall complexity and certain features such as Sudden Stops in capital flows, currency rigidity and the relation between banks and sovereigns. The crisis in Argentina has been the object of numerous and diverse retrospective

analyses concerning its diagnosis and, a fortiori, applicable treatment.<sup>2</sup> In particular, whether the main cause of the collapse was fiscal unsustainability, a lack of competitiveness related to the rigidity of the currency board, or other factors remains contested. It has been suggested that there were multiple equilibria, and a particularly bad one emerged due to the interaction of the anticipation of a potential break of the currency board, low growth, concerns regarding fiscal sustainability and vacillation from the international official sector about continuing financial support.<sup>3</sup> Diagnosing the underlying factors of the European crises with precision while events are still unfolding is ill-advised. Furthermore, the political support needed in democratic societies may impose critical limitations on feasible policy responses, both in crisis and core countries. To ensure effectiveness of the policy responses, it may be prudent to control risks on all fronts, without disregarding any of them a priori, and bear in mind political economy limitations on policy decisions. It is in this agnostic spirit that we recommend the reader to consider the relevance of the Latin American experience analyzed below.

The paper is organized as follows. In the next section the experience and implications of Sudden Stops in capital flows are outlined. In particular, a model that is motivated by the Latin American experience, which illustrates the links between Sudden Stops, required adjustments and debt sustainability, is calibrated to a set of Euro-zone countries. This then leads to a discussion regarding underlying competitiveness and growth in Section 3. The link between banks and sovereigns is discussed in Section 4, and Section 5 pulls the various strands together to consider the resolution of debt problems as may be required. Section 6 concludes.

## **2. Facing the Challenge of Sudden Stops**

### ***2.1 Calibrating a Latin American Model to Europe***

In common with several economies of the Euro-zone in the 2000s, Latin American countries in the 1990s ran current account deficits and built up large external liabilities. On the one hand, such periods of strong capital inflows are to be welcomed, as they fuel investment and higher growth. However, at the same time they may give rise to vulnerabilities and in particular to the risk of a Sudden Stop or a reversal in capital flows. Sudden Stops occur when foreign investors reduce holdings of domestic assets (collapse in gross capital inflows) and/or when local investors

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<sup>2</sup> For a review of the Argentine crisis, see Cline (2003).

<sup>3</sup> See Powell (2002).

suddenly accumulate foreign assets (surge in gross capital outflows). Regardless of how they materialize, Sudden Stops affect the financing of the overall balance of payments. As a result, an affected country that was running a current account deficit has to abruptly close it. This is usually done through large real exchange rate depreciations.

In this section we review some of the dimensions of the vulnerability to Sudden Stops and compare the Latin American and the Euro-zone cases. We argue that, while there are clearly differences in institutions and available policy responses, the vulnerabilities in the Euro-zone in this regard are analogous to those in Latin America and hence the Latin American experience should be of considerable interest both in terms of the analysis, to gain an understanding of the true nature of the problem, and in terms of implications and hence potential remedies.

Figure 1 plots capital inflows into Latin America in the 1990s and selected peripheral Euro-zone countries in the 2000s. There were considerable net capital inflows to Latin America in the 1990s, of around 6 percent of GDP, fueled by gross inflows of around 8 percent of GDP. The drop in 1995 is the Tequila crisis which hit Mexico and Argentina in particular and, as can be seen, net flows fell to below 4 percent of GDP that year, a forewarning of things to come. Gross inflows to the peripheral countries in Europe dwarfed those of Latin America and the Caribbean (LAC), but net inflows were of about the same order—around 5 percent of GDP—until about 2005. From 2005 and until the financial crisis, net inflows rose dramatically, particularly for the case of Ireland but also in other peripheral countries, and the average for this group reached over 30 percent of GDP. Several Latin American countries suffered a Sudden Stop in net flows in the late 1990s driven mostly by a fall in gross inflows, although there is also evidence of a rise in outflows (see Table 1 in the Appendix for a list of Sudden Stops in Latin America). Argentina was a particular case given its crisis in 2002 but, as can be seen in the figure, the fall in gross inflows and net inflows preceded the Argentine crisis, whereas it followed the 1997 Asian crisis and particularly the 1998 Russian default. In the case of the Euro-zone countries the Sudden Stop was even more dramatic, with net flows turning negative by 2010 and a severe collapse in gross inflows.



**Figure 1. Comparison of Capital Flow Dynamics in Selected Latin American and Euro-zone Countries**

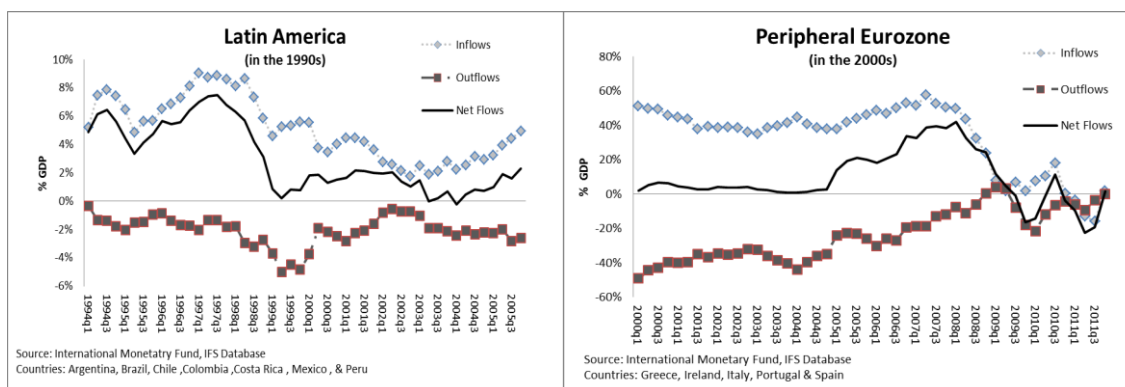
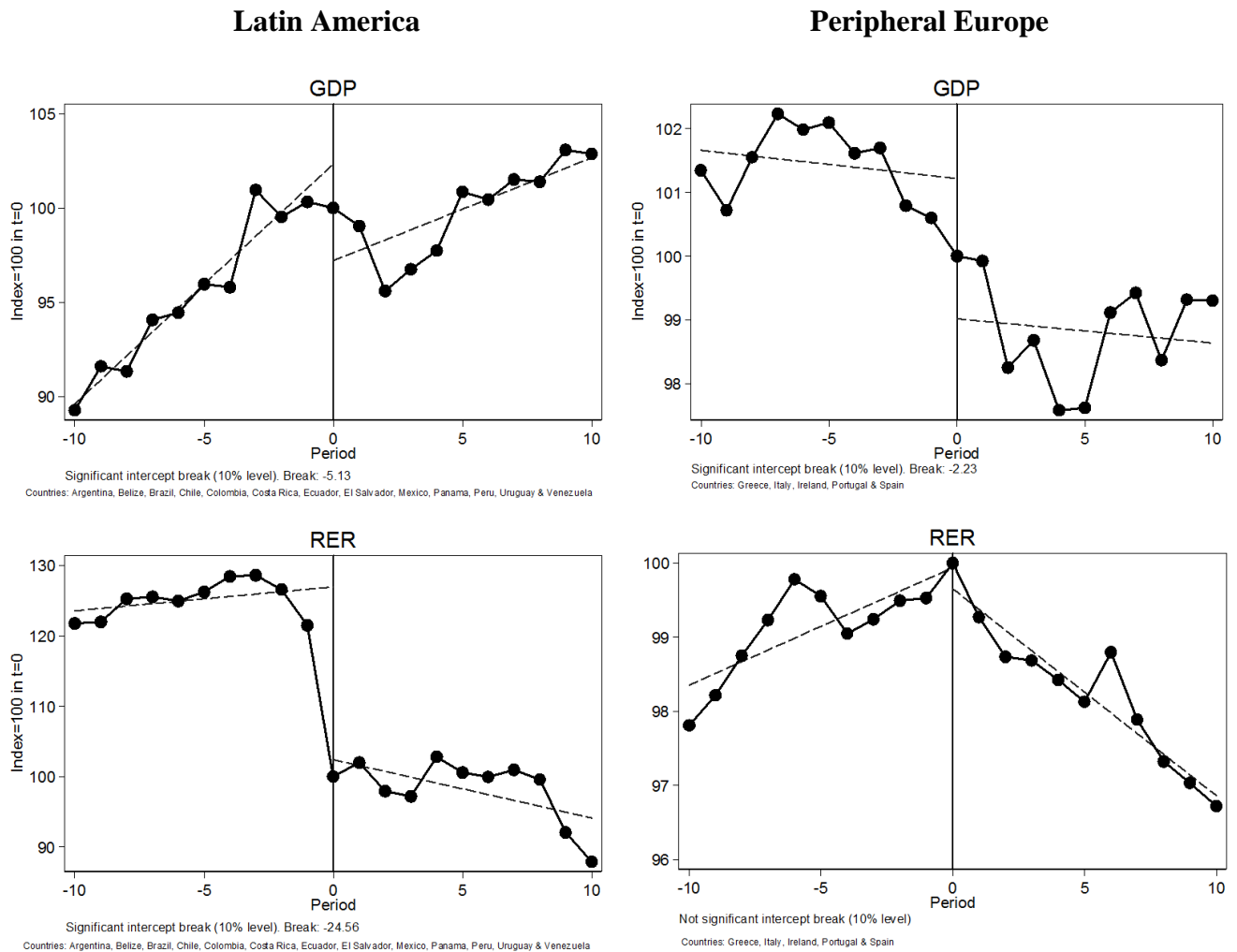


Figure 2 compares the average change in GDP and the real exchange rate depreciations of Latin American countries in the 1990s and Euro-zone countries over the period of identified Sudden Stops.<sup>4</sup> As can be seen, Sudden Stops in both continents were associated with significant declines in GDP. An interesting difference however is that Sudden Stops in Latin America were associated with significant and immediate real exchange rate depreciations. This has not been the case in Europe's periphery although, as shown in the figure, there is evidence of a change in trend.<sup>5</sup> Namely while there were real appreciations before the Sudden Stop these changes to real depreciations occurred afterward. We come back to this point below.

<sup>4</sup> See Cavallo et al. (2013) for a new suggested taxonomy of Sudden Stops and a review of the different types of Sudden Stops in advanced and emerging countries and how they have changed over time.

<sup>5</sup> Formally, the intercept dummy on the relevant regression was not significant for a break in the real exchange rate around the Sudden Stop, indicating no immediate impact on the real exchange rate.

**Figure 2. Capital Flows in Selected Latin American and Euro-zone Countries**



*Source:* Authors' calculations based on Cavallo et al. (2013)

In the Latin American case, the disruptive nature of Sudden Stops was compounded to a large extent by liability dollarization and by the low ratio of tradable to total output in many countries. For a given current account deficit, the smaller the tradable component of output in an economy, the larger the required real exchange rate depreciation to close the current account deficit when external financing dries up.<sup>6</sup> Large real exchange rate depreciations, in turn, may be disruptive because they increase the cost of servicing foreign currency debts, triggering bankruptcies and large output costs.<sup>7</sup>

<sup>6</sup> See Cavallo and Frankel (2008).

<sup>7</sup> See Calvo, Izquierdo, and Mejía (2008).

Given the existence of substantial Euro-system financing, the European case is somewhat different, but only to a degree.<sup>8</sup> Any external financing shortfall imposed by the crisis on peripheral economies that is not offset by liquidity support from external sources needs to be accommodated; therefore adjustment remains a problem. While the ability of the ECB to do what it takes to provide balance of payments support compares favorably with that of IMF support to help offset Sudden Stops in Latin American countries, it cannot resolve the crisis if underlying economic fundamentals call for adjustment. Despite European economies in general being more open and with larger tradable sectors, the currency union eliminates the possible use of the nominal exchange rate to engineer the depreciation in the real exchange rate and may induce a recessionary adjustment to dampen domestic demand. However, with low growth, high unemployment, and protest movements in some countries, the market may not always consider the irreversibility of the Euro as absolute. This may then compound the problem, pushing interest rates higher to compensate for currency redenomination risks. Again, the Euro-system backstop is critical to maintaining lower interest rates to give a chance for growth to recover and to ensure debt sustainability.

To consider the issue of debt sustainability in the presence of a Sudden Stop more closely, in the remainder of this section we adapt and apply the model of Calvo, Izquierdo and Talvi (2003) to the case of various European nations. The idea of this model is to consider how countries that suffer a Sudden Stop of capital flows make adjustments in their current accounts to ensure the balance of payments remains in balance. If net capital inflows fall from a substantial positive figure to zero then, failing other forms of financing, net exports must rise (i.e., the absorption of tradable goods has to fall to restore equilibrium in the balance of payments). In order to engineer such an adjustment the country must become more competitive and that implies a real exchange rate depreciation or, in other words, a reduction in the price of non-tradables versus tradables. This adjustment process in turn may have implications for debt sustainability.

Formally, consider the case of a small open economy that is running a current account deficit before a Sudden Stop hits. By definition (abstracting for simplicity from non-factor payments to foreigners):

$$CAD = A - Y^* \quad (1)$$

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<sup>8</sup> For a review of policies in the Euro-zone refer to IMF (2013b). In this paper we refer to Euro-financing as a general term to include liquidity support from the ECB, the program of Outright Monetary Purchases and other support within the Euro-system.

where  $CAD$  is the current account deficit,  $A$  is the absorption of tradables goods and  $Y^*$  is the supply of tradable goods. As shown in Calvo, Izquierdo and Talvi (2003), a measure of the percentage fall in the absorption of tradable goods needed to restore equilibrium in the balance of payments when financing dries-up is:

$$1 - \omega = \frac{CAD}{A} \quad (2)$$

where  $\omega$  is the share of the domestic supply of tradable goods in the absorption of tradable goods (i.e.,  $\omega = Y^* / A$ ). Equation (2) suggests that the magnitude of the required fall in the absorption of tradable goods, in the aftermath of a Sudden Stop, depends (positively) on the size of the outstanding current account deficit, and (negatively) on the country's trade openness (i.e.,  $A$ ).

Assuming homothetic preferences, the fall in the demand for tradable goods must be matched by a proportional fall in the demand for non-tradable goods. Given that the price of tradables is determined from abroad, and assuming for simplicity that the supply of non-tradable goods is fixed in the short-term, the price of non-tradables must fall to accommodate the shock. This, in turn, means that the real exchange rate has to depreciate. Given a linear demand function for non-tradable goods, the required percentage change in the real exchange rate following the Sudden Stop is:

$$-dp = (1 - \omega)/\chi \quad (3)$$

where  $p$  is the relative price of the non-tradable goods, that is, the inverse of the real exchange rate, and  $\chi$  is a parameter that captures the price elasticity of the demand for non-tradable goods. This implies that  $-dp$  is the required depreciation of the real exchange rate in the aftermath of a Sudden Stop.

What are the implications for debt sustainability? Key parameters are the initial debt-to-GDP ratio, and the currency composition of debt, including the share of debt in foreign currency, or specifically priced in terms of tradables in the context of the model. The debt-to-GDP ratio can be expressed as:

$$b = (B + EB^*)/(Y + EY^*) \quad (4)$$

where  $E$  is the real exchange rate (defined as the price of tradables relative to non-tradables),  $B$  is debt payable in terms of non-tradables,  $B^*$  is debt payable in terms of tradables,  $Y$  is output of non-tradables, and  $Y^*$  is output of tradables. Total country GDP is made up in part of tradable ( $Y^*$ ) and in part of non-tradable production ( $Y$ ). The assumption here is that debt is denominated

either in the price of non-tradables (which may be thought of as domestic currency debt) or in the price of tradables (which might be considered as debt in an external currency unit).

Consider two cases: in the first case, if 100 percent of debt is denominated in the price of non-tradables (i.e.,  $B^* = 0$ ) but only some part of GDP is made up of non tradables (and the other part in tradables); in this case equation (4) is reduced to  $b = B/(Y + EY^*)$ ; therefore the real depreciation in the aftermath of a Sudden Stop (i.e., an increase in  $E$  of size equal to  $-dp$ ) has the effect of *reducing* the debt to GDP ratio ( $b$ ). Hence the adjustment process required to ensure that the balance of payments remains in balance actually implies an improvement in debt sustainability. Of course, debt sustainability may be harmed by other issues such as a fall in growth or a rise in the interest rate. However, contrast this to the case where all debt is denominated in the price of tradables (i.e.,  $B = 0$ ) and, for simplicity, assume that all output is non-tradables (i.e.,  $Y^*=0$ ). In this case equation (4) is reduced to  $b = EB^*/Y$ ; therefore the same real depreciation causes the value of GDP to shrink relative to the value of the debt. The debt to GDP ratio then rises and debt sustainability suffers. These extreme examples illustrate how Sudden Stops can increase or decrease the initial debt-to-GDP ratios depending on the initial composition of debt and output.

The Calvo, Izquierdo and Talvi (2003) model then combines a standard debt sustainability type methodology—i.e., assessing what is the required primary surplus to stabilize the initial debt-to-GDP ratio—with the potential effects of a relative price adjustment based on the currency denomination of debt and the composition of output. The starting point for virtually all standard methods of calculating debt sustainability is a government's current period budget constraint, which states that the portion of debt payments falling due (inclusive of interest) that cannot be covered by the primary surplus is financed with new debt.<sup>9</sup> In the long run, for debt to be sustainable, the government must be able to meet the following condition:

$$s = \frac{(r-g)}{1+g} b \quad (5)$$

where  $b$  is the level of debt as a share of GDP,  $r$  is the real interest rate,  $g$  is the growth rate of the economy, and  $s$  is the government's primary surplus as a share of GDP.

One of the motivations for the development of this model was the fact that Latin American countries tended to be heavily dollarized; sovereigns and the private sector alike had

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<sup>9</sup> See Buiter (1985) and Blanchard (1990).

significant debts denominated in nominal dollar contracts. Hence any negative shock that implied a required adjustment in the current account and hence that required a real devaluation had a negative impact on debt sustainability (via increasing the debt to GDP ratio,  $b$ ). These shocks included negative terms of trade shocks, such as a fall in commodity export prices but particularly Sudden Stops in capital flows. In the case of Latin America, a massive Sudden Stop was experienced in the late 1990s, particularly after the 1988 Russian default. The model clearly demonstrated the potential danger of dollarized debts and the potential advantage of escaping what has been termed “original sin.”<sup>10</sup>

In the case of Europe, a pertinent question is the treatment of Euro debt. Consider the case of a Euro-zone country. If a Euro-zone country suffers a Sudden Stop and has no other sources of financing it has to adjust and as discussed that implies a real depreciation in order for the balance of payments to remain in balance. As the country has adopted the Euro, the value of which is not determined by that country’s particular set of circumstances, but rather that of the Euro-zone as a whole, it is clear that having Euro debt is just like having debt in foreign currency. In the context of the Calvo, Izquierdo and Talvi (2003) model it is akin to having debt denominated in tradables and not in non-tradables. This suggests that the country in question would suffer in a similar fashion to the economies of Latin America in the face of a Sudden Stop, and a real depreciation would have a negative impact on debt sustainability.

In order to analyze the magnitude of this potential problem we calibrated and ran the model for a set of European peripheral countries as of 2012 using medium-term historical averages for growth and interest rates following standard practice.<sup>11</sup> The results are shown in Table 2.

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<sup>10</sup> Original sin has been defined as the lack of an ability to issue debt in one’s own currency; see Eichengreen and Hausmann (1999).

<sup>11</sup> Following Calvo, Izquierdo and Talvi (2003), for calibration purposes, the absorption of tradable goods ( $A$ ) is proxied by imports, and the supply of tradable goods ( $Y^*$ ) is proxied by exports. See Appendix Table 2 for the key parameter values used in the model for each country.

**Table 2. Results from a Simulation of a Sudden Stop Debt Sustainability Model**  
(Growth and interest rates are medium term averages; debt, and other economic characteristics are as of 2012.)

Country	Required RER Depreciation (-dp)	Initial Debt/GDP	Estimated Debt/GDP (conditional on -dp)	Actual Primary Surplus (%GDP)	Required Primary Surplus to Stabilize Debt/GDP (based on Hist. Interest Rates)	Required Primary Surplus to Stabilize Debt/GDP (based on High Interest Rates)
Portugal	9.9%	123.0%	130.1%	-0.8%	5.0%	7.6%
Italy	4.6%	127.0%	131.0%	2.3%	3.6%	6.2%
Greece	25.9%	158.6%	187.3%	-1.2%	15.5%	19.2%
Spain	8.6%	84.1%	88.8%	-7.9%	1.0%	2.7%

Source: author's calculations based on the calibration of the Calvo et al (2003) model. Parameter values ( $\chi=0.4$ ) are as in the baseline model. GDP growth rates and interest rates are medium term historical averages for the selected economies; debt stocks and other economic variables are as of 2012. High interest rate scenario in the last column is calibrated at 2 percentage points above the historical (average) real interest rate for each country.

Following standard procedures in the literature, we calculate the primary surplus required to stabilize the debt/GDP ratio at a given level. This is done using the long-term discrete time version of the debt equation:  $s = (r-g)/(1+g)b$ ; where  $b$  is the debt/GDP ratio,  $r$  is the real interest rate,  $g$  is growth of real GDP, and  $s$  is the primary fiscal surplus. In other words,  $s$  is the primary surplus required to stabilize the debt/GDP ratio for a given interest rate, growth rate of the economy and the initial stock of debt

The first three columns indicate, for the parameters employed, the required real depreciation ( $-dp$ ) for each country—assuming the materialization of a Sudden Stop that forces each country to close the outstanding current account deficit; the actual debt level (i.e., initial  $b$ ); and the estimated new debt level assuming that real depreciation is actually achieved.<sup>12</sup> Hence, in the case of Spain for example, an estimated 8.6 percent real depreciation would be required; the debt level by year end 2012 was 84.1 percent of GDP, and the estimated new debt level taking into account the initial composition of debt and output would, with that real depreciation, be some 88.8 percent of GDP. The most startling case illustrated is that of Greece, where it is estimated that a further 26 percent real depreciation would be required to restore the balance of payments balance, and this would then increase the debt level from 158 percent of GDP to 187 percent of GDP. However, it should be stressed that the assumption here is that no new financing is available. If at the other extreme the Euro-system financed a Sudden Stop in private flows completely, then no adjustment would be required at all. This does not, however, appear to be a full solution, and in fact the Euro-system would have to maintain financing forever. Thus the Euro-system would have to continue to increase assets in the country, and the country would have increasing Euro-system liabilities until such time as the adjustments indicated took place or another solution was implemented.

Based on the model simulations reported in Table 2 for selected Euro-zone countries, one might take the view that (apart from Greece) the required depreciations and the effects on debt levels are not that dramatic. This reflects in part that the Euro-zone countries are economies with

<sup>12</sup> The parameters employed in the simulation are 1984-2012 historical averages and are detailed in the Appendix. As is standard practice in considering long-run debt sustainability, medium to long-run averages of the critical parameters are employed, as the concern here is medium to long-run debt sustainability. In this simulation we use an elasticity of how tradables respond to the real exchange rate of 0.4 (i.e.,  $\chi = 0.4$ ), following Calvo, Izquierdo and Talvi (2003). In the Appendix we also give results using an elasticity of 0.8; the quantitative results change but not the overall messages.

relatively large tradable sectors, such that the required real depreciations and the ensuing impacts on initial debt-to-GDP ratios are relatively small. Still, the primary surpluses required to avoid debt levels increasing further are considerably higher than the actual 2012 levels (Table 2, columns 4 and 5). While the primary surplus to stabilize this new debt level is estimated to be about 1 percent of GDP for the case of Spain, the 2012 primary balance was actually a deficit of almost 8 percent of GDP.<sup>13</sup> The higher debt levels tend to exert even greater pressure on the fiscal accounts to ensure debt sustainability. The final column of table 2 calculates the required primary surplus if interest rates were 2 percent higher than the historical levels. This gives some indication of the sensitivity of the required fiscal adjustment to interest rates given the extra pressure of higher debts due to the required real depreciations. For some countries this gives very high required primary surpluses, such as 20 percent for Greece and 7.6 percent for Portugal. For Spain, an even larger adjustment from the current negative primary balances is implied. These estimates underline the importance of a lender of last resort such as the ECB, and Euro financing more generally, in order to maintain lower interest rates.

Moreover, several of the peripheral European countries continue to have high unemployment. The Calvo, Izquierdo and Talvi (2003) model does not consider such problems. Indeed, it might be interpreted as a full employment model or, in other words, the estimated required real exchange rate depreciations are those that would maintain the economy at full employment. This suggests that the required depreciations detailed in Table 2 would not necessarily reduce the existing unemployment levels but rather would be required in order to effect adjustment and for the situation not to get worse. This then raises the question of how much adjustment in the balance of payments to date has been effected through a required change in relative prices and how much has been simply through a reduction in demand and recession. Table 3 details the results of running the model in the years 2010, 2011 and 2012 for two countries: Spain (which is in the Euro-zone) and the United Kingdom (which is not).

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<sup>13</sup> For a recent detailed analysis of Spain's fiscal position, please refer to IMF (2013a).



**Table 3. Sudden Stop Debt Sustainability Model, Spain vs. the United Kingdom.**

Country	Year	Required RER Depreciation (-dp)	Initial Debt/GDP	Estimated Debt/GDP (assuming all debt is in tradables)	Estimated Debt/GDP (assuming all debt is non- tradables)
Spain	2010	38.1%	61.3%	76.7%	55.5%
	2011	29.9%	69.1%	82.3%	63.3%
	2012	8.6%	84.1%	88.8%	81.8%
UK	2010	19.4%	79.4%	89.6%	75.0%
	2011	9.9%	85.4%	91.0%	82.8%
	2012	25.7%	90.3%	105.0%	83.5%

Source: author's calculations based on the calibration of the Calvo et al (2003) model. Parameter values ( $\chi=0.4$ ) are as in the baseline model. GDP growth rates and interest rates are medium term historical averages for the selected economies; debt stocks and other economic variables are as of the end of the corresponding year.

The results indicate that in 2010, Spain would have required a real depreciation of some 38 percent if external financing had dried-up completely. In 2011 this figure fell to 30 percent, and in 2012 it fell again to the 8.6 percent quoted above. If these real depreciations had actually occurred, this would have pushed the debt-to-GDP ratio from the initial values (column 4) to the higher estimates as detailed in column 5. Interestingly, those estimated levels are not too far off the trajectory of the actual debt to GDP ratios. However, as we discuss in the next section, Spain does not appear to have experienced the real depreciations estimated as required by the model. Rather, Spain attracted other sources of financing—mostly official financing through the ECB—and while net exports have risen, arguably this has been more a result of reduced domestic demand than price adjustment. We would then argue that this modeling exercise suggests that if Spain does not obtain access to new private capital flows, and yet wishes to reduce the stock of Euro-system financing and get back to somewhere close to the level of unemployment of 2010, then it will have to continue the adjustment process and engineer greater real depreciation. Consequently, the debt-to-GDP ratio will have to continue to rise. A pessimistic assumption in this regard would be that Spain still requires a 38 percent real depreciation, and this would increase the debt ratio by another 15 percent of GDP. While this seems overly pessimistic, as some price adjustment has occurred and Spain will surely have recourse to further Euro financing and may indeed obtain access to private capital given the Euro-system's backstop, the results underline that further significant price adjustment and increases in debt ratios may be forthcoming.

Whether private capital flows resume to a country in Spain's type of position may be subject to a type of Catch-22 situation.<sup>14</sup> If debt is sustainable, then it is to be expected that private capital will flow back and then the adjustment detailed in the model may not actually be necessary. But in order to demonstrate sustainability, the adjustment may be required. There may even be multiple equilibria in such a setting. A best case might be that Euro financing allows whatever adjustment is required considering *only* real factors, and it makes unnecessary the "excessive adjustment" that is required under the assumption of a Sudden Stop. But it seems likely, and the experience of Latin America suggests, that the private sector will force significant adjustment beyond that minimum before private capital flows will return to significant levels. In the next section, we will consider the underlying competitiveness issues.

Table 3 also includes information regarding the United Kingdom as an interesting comparator case. Assuming that all UK debt is in pounds and thus not indexed to another currency or to inflation, it can be considered, for the purposes of the Calvo, Izquierdo and Talvi (2003) model, to be denominated in UK non-tradables. The model indicates a 20 percent real depreciation would have been required for the balance of payments to adjust, assuming a Sudden Stop and no other access to private capital. Now, with debt denominated in non-tradables, the real depreciation would provoke a *reduction* in the debt ratio from 80 percent to 75 percent of GDP. This shows the value of having debt denominated in the same units as domestic non-tradables as opposed to the nominal Euro debt of Euro-zone countries or dollar debts, prevalent in Latin America in the 1990s. Note that if UK debt had been denominated in tradables (which would have been the case if the United Kingdom had joined the Euro), then a real depreciation of 20 percent (the estimate of the required real depreciation in 2010) would have increased UK debt from 80 percent to about 90 percent of GDP. As can be seen, the estimate of the required real depreciation in the United Kingdom fell significantly in 2011 to just 9 percent, but then increased in 2012 to as high as 25 percent.<sup>15</sup> Curiously perhaps, the UK real exchange rate has actually appreciated. In fact, there is little evidence that the United Kingdom now suffers from a Sudden Stop in private capital flows at all, and hence these estimates of required depreciations—required

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<sup>14</sup> Joseph Heller's famous phrase refers to the problem of a bomber pilot in World War II, where claiming insanity was one way to avoid flying the dangerous missions over enemy territory, but if a pilot claimed that due to insanity they could not fly those missions then clearly they were not insane at all.

<sup>15</sup> The estimated required real depreciation for the UK fell in 2011 because the current account deficit shrank to 1.3 percent of GDP in 2011 from 2.5 percent of GDP in 2010. Similarly, the estimated required real depreciation increased in 2012 because the current account deficit increased to 3.5 percent of GDP in 2012.

if there were a Sudden Stop—may not be particularly relevant. Interestingly, some attribute the United Kingdom’s rapid re-access to private external capital to the fact that the country has its own Central Bank, its own monetary policy and its own currency, with debt denominated in that currency. Thus, as illustrated, depreciations will tend to help rather than harm debt sustainability.

To complete the analysis, Table 3 also illustrates a counterfactual assuming that Spanish debt was denominated in a Spanish non-tradable price unit. As can be seen, this would have implied that in 2010, if the required real depreciation of 38 percent had been effected, then debt would have *fallen* from 61 percent to 55 percent. It is tempting to suggest that there would then be a great advantage in Spain leaving the currency union. However, this would only be the case if Spain not only left the union, but also transformed the denomination of debt from Euros to a new domestic currency unit—a new peseta, for instance. Of course, this suggestion further ignores the huge transition costs that this would entail, which are discussed in further detail in the next section.

## ***2.2 Coping with Sudden Stops: Cyclical vs. Structural Challenges.***

Drawing the lessons from the Latin American experiences for Europe, the challenge for governments facing Sudden Stops is to smooth the adjustment to a tighter external financing constraint. In a review of policy responses to Sudden Stops in Latin America, Cavallo and Izquierdo (2009) document the crisis resolution mechanisms of the late 1990s for eight Latin American countries. They conclude that successful crisis resolution is more likely to be achieved when countries are able to stimulate the economy through expansionary macroeconomic policies during the external credit crunch. Nevertheless, unless the international community is prepared to step in with large sums of largely unconditional money to bridge a protracted fiscal gap, a successful crisis resolution requires that each country finance its own stimulus by saving when times are good. Given that countries in distress are rarely able to fend for themselves on the fiscal front, a lesson from the Latin American experience is that external financial packages are the crucial financing mechanism to smooth the post-Sudden Stop adjustment. This explains, for example, why Mexico recovered fairly quickly in the aftermath of the Tequila Crisis in 1994 after receiving a US\$ 50 billion package that was partially financed by the U.S. government, whereas Argentina’s economy collapsed when the IMF withdrew its support in November 2001.

In the case of Europe, impediments to expansionary macroeconomic policies are particularly relevant because Euro-zone countries do not control their monetary policy and peripheral countries experiencing Sudden Stop symptoms have very limited fiscal cushions. However, while individual countries may lack the tools to implement countercyclical policies, those tools do exist at the Euro-zone level. Of course, using those tools would inevitably entail a reallocation of resources within the European Union from creditworthy to less-creditworthy countries. Such support is reminiscent of a standard external financial package, which would carry moral hazard risks to the extent that it is given as a transfer or lent with credit risk.

On the structural front, a lesson from the Latin American experience is that the longer it takes for private capital flows to resume, the more likely it is that solvency will be at risk and require some form of debt restructuring and/or growth-oriented policy reforms to restore it. In the late 1990s, when the effects of the Asian and Russian financial crises began to be felt in Latin America, there was still a lot of confusion about the nature of the shock and its possible implications. The region had only recently recovered from the contagion effects of the Tequila banking crisis of 1995, and for a time it was believed that the 1998 crisis would be similar; that is, the credit crunch would be short-lived and contagion would ultimately be contained. But things proved to be quite different: three years into the crisis, capital flows had not yet returned to the region at normal levels. Assessing the damage caused by liquidity stress and the point at which liquidity problems cease to be temporary is critical to policymaking. For example, in the case of Argentina, more than three years into the credit crunch, the authorities were still working under the assumption that liquidity could be restored, and they bought additional time by pursuing a debt swap that pushed obligations forward in time. When the authorities finally switched strategies in late 2001 by launching an orderly debt restructuring program to reduce the debt burden to sustainable levels, the IMF also changed strategies by withdrawing financial support due to disagreements with authorities over the macroeconomic framework.<sup>16</sup> The unfortunate timing precipitated the events that led to a disorderly sovereign debt default, the end of the currency board, and the collapse of the domestic financial system.

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<sup>16</sup> Argentina's vulnerability made it clear that a protracted Sudden Stop requiring substantial real exchange rate depreciation almost inevitably called for debt restructuring, given Argentina's substantial liability dollarization. However, there is reason to believe that the restructuring process could have been much more orderly had it been conducted with continued international support.

Dealing with Sudden Stops is difficult because there may be conflicts between the cyclical challenge (to stimulate the domestic economy) and the structural challenge (to adjust to a permanently tighter financing constraint). From a cyclical standpoint, expansionary macroeconomic policies may help to smooth the adjustment. If countries are not able to finance the stimulus themselves—as is usually the case—external official assistance is needed. In the context of the present discussion in Europe, the implication is that without Troika financial support—including decisive intervention by the European Central Bank to backstop stress in sovereign debt markets—countries that are exhibiting Sudden Stop symptoms in peripheral Europe would likely experience a disorderly adjustment leading to costly outcomes (perhaps with exit from the Euro-zone by one or more countries).

However, to the extent that a Sudden Stop in a country is underpinned by structural factors (for example, insolvency due to debt overhang and weak growth prospects), external resources alone are no solution. In that case, unconditional external financial assistance would only serve the purpose of delaying an otherwise unavoidable adjustment in the economy to a permanently tighter financing constraint. Countercyclical policies financed with external financial assistance can allow time for economies to adjust, but they are no substitute for structural reforms aimed at reducing the underlying vulnerabilities and restoring long-term growth. Troika financial support would not be a solution by itself. External support ought to be conditional on the country strengthening its structural weaknesses.

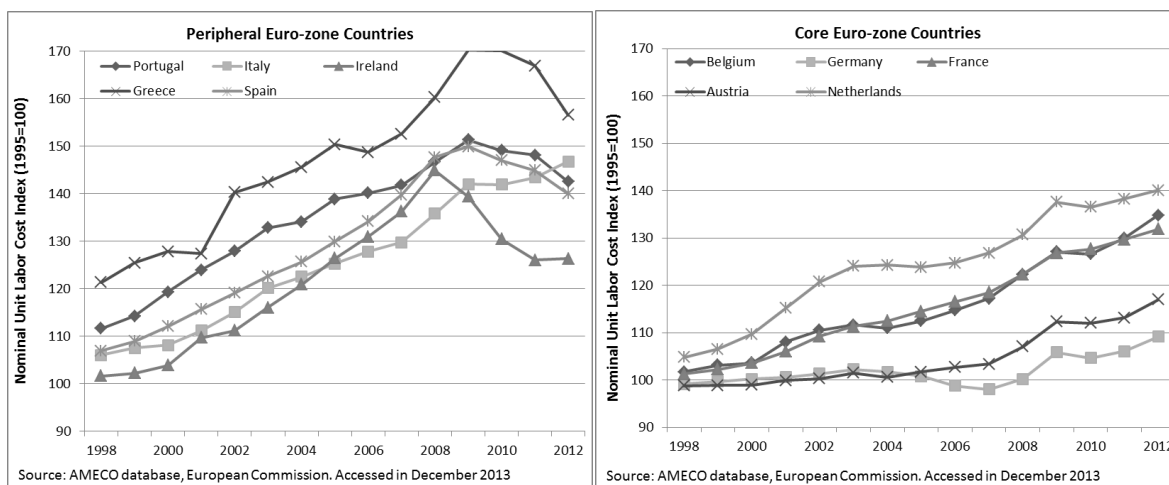
### **3. On Competitiveness and Growth**

Restoring robust growth is an essential part of resolving financial crises, increasing the denominator of the debt to GDP ratio reduces high debt burdens, improves tax collection and tends to increase both the quantity and the quality of bank assets. Moreover, one central problem (perhaps *the* problem) of the Euro-zone has been the differences in competitiveness which led to the build-up of large external liabilities in some countries, increasing their vulnerability to Sudden Stops. In this section we consider the nature of this underlying problem and how it might be rectified, drawing on experiences in Latin America.

### 3.1 The Competitiveness Problem

A lack of competitiveness may be at the root of low growth in peripheral Euro-zone countries affected by the financial crisis. Consider Figure 3 below, which compares unit labor costs across Euro-zone countries. Nominal unit labor costs are a measure of competitiveness as they divide nominal remuneration to labor by (real) output. It is clear that some core Euro-zone countries have had a very different trajectory than others in the periphery. Indeed, it is quite astounding that Germany's nominal unit labor costs are only about 10 percent higher than their 1995 values, whereas the peripheral countries' nominal unit labor costs increased by as much as 40-70 percent by 2009.

**Figure 3. Nominal Unit Labor Costs: Peripheral and Core Euro-zone Countries**  
(Index 1995=100)



German inflation has also been lower than that in other periphery countries and so a graph of real compensation to labor, if one uses countries' CPI as the deflator, does not look the same and in fact real compensation to labor has grown faster in Germany than in both Italy and Spain. Moreover, it is not that labor productivity in Germany has been extremely high, and in fact according to OECD data, was outpaced by that in Portugal, Greece and Ireland over the period, but more that German workers received less as a share of output.<sup>17</sup> However, while understanding the underlying cause is of interest, the relevant fact for the purposes of the

<sup>17</sup> See Lapavitsas (2012) for an interesting analysis of these indices for Euro-zone countries.

discussion here is that nominal unit labor costs, the better measure of competitiveness in the common currency, have been quite divergent across countries.

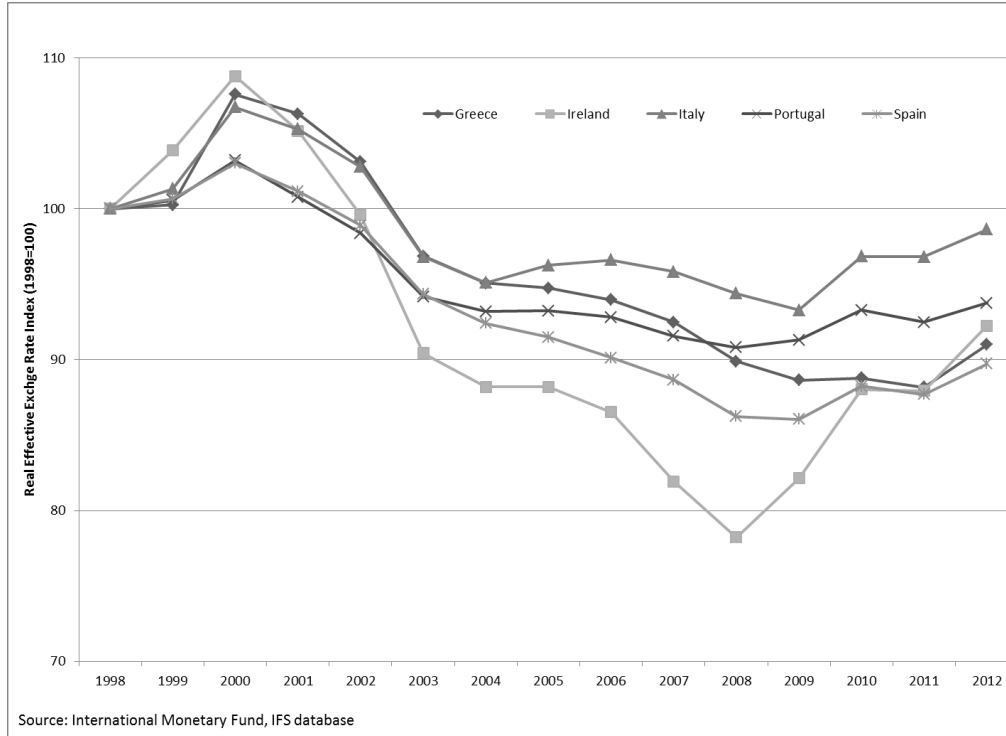
The countries that suffered a loss in competitiveness were also more affected by the financial crisis. They therefore have to adjust not just to restore competitiveness but may also need to adjust much more to generate higher net exports to replace net capital inflows, assuming they do not count on other new financing. So the question now is: what can countries do?

Given the common currency, one route is to attempt to engineer the real depreciations through reductions in wages and in prices. To some extent this is happening. Figure 3 shows that nominal unit labor costs have been falling in most peripheral countries since the financial crisis. However, there has been a mixture of price adjustment and labor shedding, with more wage adjustment in Ireland and more labor shedding in the case of Spain.<sup>18</sup> A further piece of evidence is provided by Figure 4, which plots the Real Effective Exchange Rates for a set of Euro-zone countries. A decrease implies a real appreciation and, as can be seen, there were substantial appreciations up until the crisis of 2008. Since then, real exchange rates have been adjusting. The most dramatic reversal again being that of Ireland, which has depreciated the real exchange rate by over 15 percent, while in Spain it has depreciated by about 4 percent from the peak to 2012 according to this measure.

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<sup>18</sup> See IMF (2013b) for further comment and analysis.

**Figure 4. Real Exchange Rate for Peripheral European Countries**



While there have been real depreciations, they have in general been less than the estimated required depreciations detailed in the previous section. At the same time, the fall in demand and the recessions have been severe. One interpretation is that as price adjustments have been sluggish, with the brunt of the adjustment through reduced demand and on employment. Another interpretation, however, is that real depreciations through prices are themselves contractionary. Given that debts are denominated in nominal currency, as domestic prices fall debts in real terms increase. Balance sheets suffer, particularly for firms in the non-tradable sectors, and deleveraging sets in. This experience seems similar to that of Latin America and particularly that of Argentina during the currency board period. The generally deflationary environment from 1998 to the crisis in 2002 was considered to have had a negative impact on growth.<sup>19</sup>

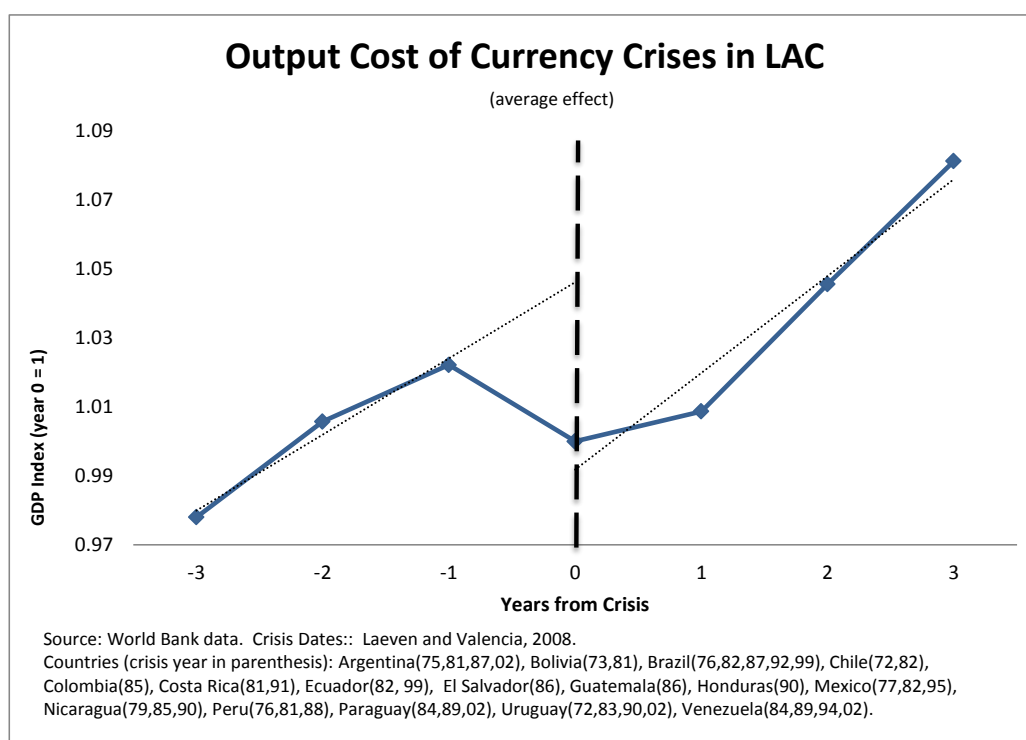
At the same time, nominal devaluations may trigger inflation, high volatility and overshooting. The Latin American experience, illustrated in Figure 5, does not support the notion that growth can be restored painlessly by devaluing local currencies. A simple event study

<sup>19</sup> See Cline (2003) for a review.



shows that currency crises (i.e., large nominal devaluations) in Latin America led to output drops of 2 percentage points on average during the crisis years and that output drops persisted at least three years after the crisis. The bottom line is that currency “freedom” is no panacea, and is in fact a double-edged sword, an instrument with very costly side effects in the presence of financial dollarization. Devaluation has often led to inflation running out of control and triggered high inflationary costs.

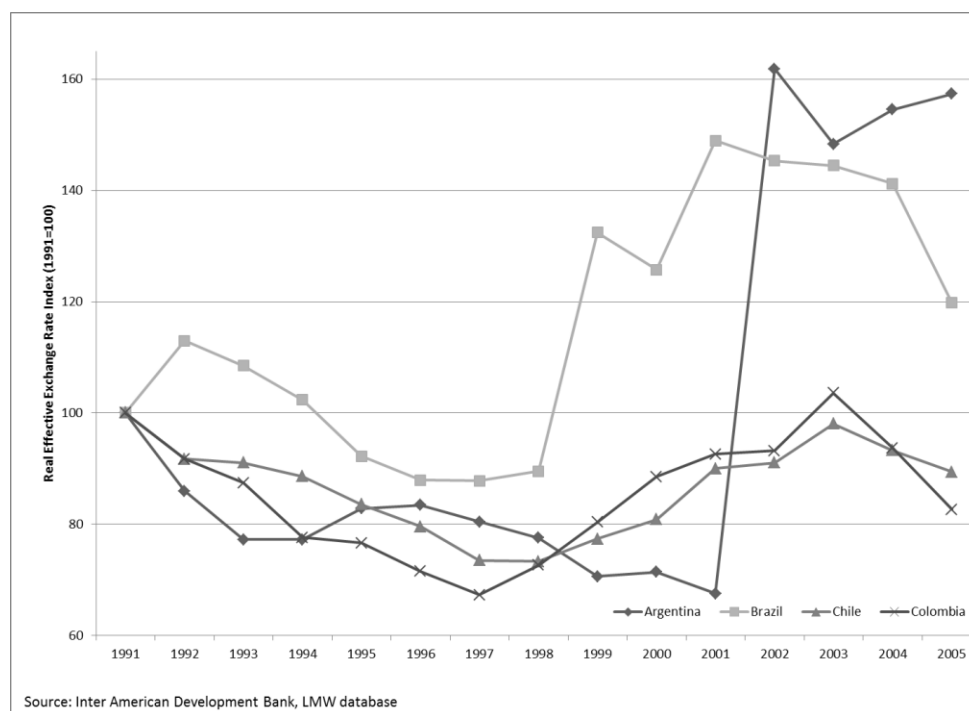
**Figure 5. The Output Cost of Currency Crises in LAC**



However, several countries in the region did abandon pegs despite the costs involved. Figure 6 shows real depreciations comparing Latin America in the 1990s. In this figure an increase is a real depreciation. For example Brazil and Argentina both appreciated through the early part of the 1990s, and both countries used a fixed exchange rate as part of a stabilization plan that brought inflation down. However, Brazil abandoned that system in 1999 and devalued, resulting in a sharp real depreciation. This had a deleterious effect on Argentina, whose currency, pegged through the currency board arrangement to the US dollar, appreciated in real terms, as Brazil is Argentina’s largest trading partner. As is well known, the currency board finally collapsed in 2002 with the largest recession in the entire (volatile) history of the country. Also

shown in the figure is the experience of Chile, which slowly transformed its monetary system from one of exchange rate bands to a fully-fledged inflation targeting system from 1992 onwards. As can be seen, while Chile appreciated in the early 1990s, it managed to engineer a real depreciation in part through a depreciation of its nominal currency from 1998 to 2003.

**Figure 6. Real Exchange Rate for Latin American Countries, (1991–2005)**



It is interesting to compare these experiences with the present case of Euro-zone countries. On the one hand, the estimates in the previous section coupled with the divergence in unit labor costs since the inception of the Euro suggest there is a substantial amount of real depreciation that is required in Euro-zone countries. In the case of Spain, for example, the current account has approached balance, and so some have argued that the adjustment process has now surely terminated. The current account, however, has reached balance at close to zero real GDP growth and at high levels of unemployment. The dilemma is that, to return to a more normal growth path that would make significant progress in reducing unemployment, it appears that further adjustment is required. At the same time, that adjustment will imply deflation, which is itself contractionary and hence risks pushing unemployment even higher. In the case of

Argentina and Brazil, the real depreciations that were required did not prove to be politically feasible under the fixed exchange rate systems of those countries, and maxi-nominal devaluations were pursued despite the costs involved. In Chile, the floating exchange rate did help to attain a more substantial real depreciation.

In the case of the Euro-zone, nominal devaluations are precluded. What can countries then do to regain external competitiveness, while avoiding the perils of deflationary adjustment? To the extent that a portion of the foreign trade in Euro-zone countries is with countries outside the zone, then in principle a coordinated strategy to reduce the value of the Euro would facilitate the adjustment process. Similarly, a higher level of Euro inflation in core countries would provide space to peripheral countries to open an inflation gap in order to regain competitiveness without incurring the macroeconomic costs of deflation. Indeed, the measure of peripheral inflation that high Euro inflation would afford could also be helpful in diluting nominal wage contracts impeding the adjustment necessary for full employment and competitiveness down the road. Of course, this assumes that, in contrast, wages in core countries are renegotiated to incorporate Euro inflation. In the Latin American experience, inflation played a key role in resolving several financial crises by diluting debts in local currency and allowing a rapid reduction in real wages at full-employment levels (nominal wages, being sticky in nominal terms, tend to impede adjustment in both the public and the private sectors). In the case of the Euro-zone, the scenarios of a weaker Euro and higher Euro inflation could materialize only if there is cooperation between countries. In particular, it would require the ECB to introduce these objectives explicitly into its objective function. Whether this is feasible depends on the governance structure of the ECB and the European Union, and the connections of these with domestic political consideration in Euro-zone member countries. These topics are beyond the scope of this paper.

Beyond these coordinated strategies, fiscal devaluation is a further possible alternative to currency devaluation without the risks of inflation. Fahri, Gopinath and Itskhoki (2011) define fiscal devaluation as a set of unilateral fiscal policies that implements the same real allocation as under a nominal devaluation, but holding the nominal exchange rate fixed. Two sets of policies have been proposed: i) a uniform increase in import tariffs and export subsidies; and ii) a uniform increase in Value Added Taxes (VAT) and a reduction in payroll taxes (to make the price of domestic output cheaper relative to that of domestic absorption).

There is limited experience in Latin America with successful fiscal devaluations.<sup>20</sup> Argentina implemented those policies before the crisis exploded in late 2001 through a series of sectoral “competitiveness plans” that lowered labor costs in certain economic sectors by allowing firms to expense payroll taxes against the VAT. In addition, the government levied a uniform tariff on imports of final goods that was transferred to exporters. These policies were ultimately insufficient to avert the crisis in Argentina because the fiscal situation deteriorated sharply and the country lost access to credit, including from the IMF. European countries would have a larger scope for fiscal devaluation because they have more extensive and better-enforced tax systems (and external support to allow these policies time to work). In the case of Europe, the relevant question is: how much fiscal devaluation would be required to achieve the necessary reduction in labor costs to restore competitiveness in peripheral countries? This is a key issue that has received some attention in the media and discussion forums, but it is still not center stage in policy discussions in Europe.<sup>21</sup> The effectiveness of fiscal devaluations would be strengthened if the relatively more competitive countries in the European Union applied opposite measures (i.e., fiscal revaluations) to strengthen the competitiveness of peripheral countries within the Eurozone.

It would be a significant omission if we did not also discuss the other alternative, namely an exit from the Euro. There is no doubt that a flexible exchange rate arrangement may be useful to facilitate necessary relative price changes in the face of external shocks and, in retrospect, perhaps this is a factor that was not sufficiently appreciated. However, in all likelihood, exiting the Euro and introducing a new currency would imply breaking up existing domestic contracts such that they could then be expressed in the new local currency, and this would likely result in high levels of uncertainty, a further dramatic drop in investment, capital flight and a deeper economic crisis. The new local currency might well then be shunned as a store of value, which would lead to financial “Euroization.” In turn, this might lead to financial controls and debt default on foreign debts whose terms cannot be converted into local currency.

Latin America does not have many examples of such phenomena, the closest being Argentina in 2002 when the currency board finally collapsed, leading to “asymmetric pesoification” of dollar contracts and controls on financial dollarization. It would be hoped that a

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<sup>20</sup> Fernández-Arias and Talvi (1999) were early proponents of fiscal devaluation in the Latin American context.

<sup>21</sup> See Cavallo and Cottani (2010); de Mooij and Keen (2012); IMF (2011).

European country would find more efficient techniques than Argentina did, which as mentioned prompted a severe economic crisis. However, there might be an analogy in that with the IMF's withdrawal at the end of 2001, Argentina was really left on its own to find a resolution technique, and the country went through four Presidents in one month. One might argue that the political upheavals contributed substantially to a poor set of policy choices that exacerbated the crisis leading to large economic costs. If a country in the Euro-zone exited the common currency without the cooperation of its European partners one can imagine a similar political crisis occurring which would not be conducive to finding policies to avoid an economic crisis. Indeed, as a matter of political economy it seems highly unlikely that a country in the Euro-zone would choose such a route, unless the domestic economic situation had become quite untenable politically. To the extent that the domestic situation became so desperate with little investment and massive capital flight, it could be argued that much of the costs of a Euro exit had already been paid. A lesson from Latin America is then that only under such quite appalling circumstances would a Euro exit be seriously contemplated by a sitting Government.

### ***3.2 Structural Reforms in Latin America***

A further way to stimulate growth is through a program of structural reforms. To what extent did structural reforms promote growth in Latin America? Structural reforms in Latin America, particularly in the 1990s in areas such as trade liberalization and financial reforms, had significant (but transient) effects on growth.<sup>22</sup>

What are the implications for Europe today? Applying the lessons from the Latin American experience to Europe in this area too loosely would be unwarranted. In the areas in which Latin America had the most reform in the 1990s (e.g., trade openness and financial market reform), European countries arguably do not need reform. Instead, in the area of labor markets, where European countries have more room to reform in the direction of liberalizing markets, Latin America did not pursue deep reforms. There are clearly parallels when it comes to differences in implementation capacity. Some aspects of the reform agenda for Greece were ambitious, to say the least, given the Latin American experience. A further important lesson from

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<sup>22</sup> The central focus of the reforms first adopted in the late 1980s was largely to liberalize markets and remove controls on the allocation of productive resources. A common criticism was that reforms were too much a one-size-fits-all approach without paying particular attention to country circumstances and particularly implementation capacity. This was particularly true of reforms that needed local monitoring through subnational entities. See Lora and Panizza (2002).

Latin America is that the crisis itself may present opportunities to implement growth-enhancing reforms. Crises are, in essence, periods in which important policy decisions altering the status quo are made both within countries and in the international arena. The experience in Latin America shows that it is more likely that growth-enhancing reforms will be implemented in the aftermath of crises in countries where political institutions foster cooperative behavior.<sup>23</sup> Arguably, these empowering conditions are more likely to be met in European countries, where the institutional framework is generally stronger. Furthermore, the political union embodied in the supranational nature of the European Union facilitates cooperative outcomes by meshing together the interests of countries, while in Latin America regional political integration was not as deep. To the extent that political union is preserved to a substantial degree amidst the crisis, it is more likely that reform impulses could be stronger and more resilient in Europe.

#### **4. Sovereigns and Banks**

One of the critical issues in the Euro-zone is the relationship between banks and sovereigns. Latin America has had several significant banking crises of particular interest for analyzing banking crises linked to public debt crises, which often go hand in hand and reinforce each other (and underlie the high incidence of twin banking and debt crises in the region). When the public sector finds itself temporarily cut off from access to financing, recourse to bank liquidity by means of financial repression may be a second best option. However, banks loaded with sovereign debt, either as a result of financial repression or by choice, inherit the risk of a debt crisis. Conversely, deeper financial systems may yield a substantial growth dividend, but at the expense of making banking crises more costly to resolve when they occur (see the Appendix for a comparison of the fiscal costs of banking crises in Latin America and Europe). In particular, resolving banking crises after expansions that turn unsustainable usually draws fresh resources from the public sector, causing a substantial jump in public debt. Latin America has had interesting experiences, both successful and unsuccessful, in dealing with what can be a “fatal embrace.”

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<sup>23</sup> Cavallo and Cavallo (2011) study the conditions under which crises can lead to growth-enhancing reforms and conclude that this will depend on the prevailing institutional framework at the time of the crisis, with democratic regimes being the most conducive to growth-enhancing reforms. In a similar vein, Tommasi (2004) argues that even though crises might facilitate the introduction of some policy reforms, in general, how well those policies are implemented depends on the quality of the implementation of those policies, which in turn is conditioned by the country's overall institutional environment.

An important element of some banking crises that have been successfully resolved is the use of mechanisms to contain and isolate the banking crisis, minimizing the interaction with sovereign risk. If liquidity risks appear to be at play in a situation of bank distress, experience shows that it is paramount to swiftly provide ample liquidity, in accordance with the traditional Bagehot doctrine, rather than to wait to confirm whether that treatment is necessary and will be effective for the problem at hand. In late 1994, at the outset of the Tequila crisis, Argentina's Central Bank was heavily constrained in acting as a liquidity lender of last resort, due to a set of complementary policies associated with the currency board. However, as the crisis grew from a set of small wholesale banks to a wider set of larger institutions, those rules were altered to allow the central bank to use its "excess reserves" to assist the heavily dollarized Argentine banking sector (which did not have deposit insurance before the crisis). These policies helped to contain the crisis. Due to the sovereign risk link, it is better to err on the side of overtreatment than let preventable bank liquidity problems end up infecting sovereign debt.

Fundamental bank insolvency problems are more difficult to address because insolvent banks require additional capital to operate. Nevertheless, the principle of minimizing the entanglement between banking crisis resolution and sovereign debt still applies. If public debt sustainability is at risk, it is better to err on the side of resolution mechanisms that economize public resources. For example, in the case of Argentina in the immediate post-Tequila period, new resolution mechanisms were introduced to allow banks to be reorganized into a "good bank" and a "bad bank," which then allowed the good bank to be sold and the bad to be liquidated. Allowing the largest part of existing problem institutions to remain viable and minimizing very costly liquidations helped to minimize the burden of resolving the aftermath of the Tequila banking crisis. These resolution techniques were then copied in some other Latin American countries including Guatemala, which promptly used them to resolve one of that country's larger banking institutions.

The catastrophic crisis that took place in Argentina in 2002 when the currency board broke down is an example of how explosive banking and debt risks can be when the two are mixed. To begin with, increasing political and sovereign risks contributed to bank runs in late 2000 and through 2001. Crisis resolution in Argentina conflated risks by penalizing bank assets through currency conversion (i.e., pesoification) at asymmetric conversion rates which, in turn, were compensated with public debt. This arrangement extracted the remaining capital from

healthy banks and failed to inspire confidence in depositors, who could only be prevented from running by enacting highly punitive controls. Argentina emerged from the experience with a minuscule and dysfunctional banking sector and, despite a deep debt-restructuring haircut, substantial public debt.

In contrast, Uruguay, facing a similar but arguably larger shock (resulting in part from the Argentine debacle), minimized entanglement by allowing foreign banks in a strong financial position to take care of their depositors themselves and sort out loan renegotiations with their clients on a private, bilateral basis. As for the remaining institutions, all available external resources were pooled to ring-fence and fully secure the payment system, while the maturities of time deposits were gradually stretched by legal fiat to help stabilize the system by itself. In parallel, public debt was restructured separately with bondholders at large (a tactic that also followed a minimalist approach of stretching maturities and restoring pre-crisis interest rates). This divide-and-conquer strategy was successful in diffusing the financial crisis and allowing normalization thereafter.<sup>24</sup> Nevertheless, it would not have been possible without external support. First, foreign banks were not made part of the problem, thus simplifying resolution of the crisis. Second, the IMF and other multilateral institutions put together a line of credit large enough to credibly shore up the resolution strategy for the banking system, and were generally supportive of the debt-restructuring strategy.

The contrasting examples of crisis resolution in Argentina and Uruguay suggest that in these cases, the presence of foreign banks was not the main determinant of the adjustment process. In both countries, the share of foreign-owned banks was large; yet in the case of Argentina, the decisions of the government precluded foreign banks from stepping-in to provide financing to its subsidiaries or branches. Moreover, in Uruguay there was a greater willingness to allow banks to fare on their own, while in Argentina a comprehensive solution was sought, perhaps to protect some of the more vulnerable public banks. In these cases, domestic political economy factors that shaped the crisis resolution were significant.<sup>25</sup>

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<sup>24</sup> See Fernández-Arias (2007).

<sup>25</sup> In this respect, the experience of Europe is different because the structure of the domestic banking industry seems to be playing a more predominant role. Gros and Alcidi (2013) compare the adjustment patterns in peripheral Euro-zone countries to non-Euro-zone countries in the union (Baltic countries). The large degree of foreign ownership of banks proved to work as a loss absorber in the Baltic countries, while the legacy of the banking crisis in some of PIIGS is likely to weigh for a long time on a still-incomplete adjustment process.



These experiences hold important lessons for some European countries with fragile public debt situations whose banking systems are under stress. First and foremost, entangling banking crisis risks with sovereign debt crisis risks is a recipe for disaster. There is a high premium on keeping these risks separate. Depending on the circumstances, this general principle may take different forms. If liquidity considerations due to contagion or panic are at work, it is important to swiftly provide ample liquidity even if some resources are put at risk, rather than wait for more clarity. The spread of banking risk to sovereign risk may be a point of no return. On the other hand, if banking problems are more fundamental (e.g., bad real estate loans), liquidity remedies will be ineffective and decisive banking crisis resolution must be implemented, but always with an eye to minimizing fiscal liabilities. In the Latin American experience, some of the methods utilized to this end include the following measures: the privatization of troubled public banks; the reluctance to recapitalize banks with public money to salvage institutions; and the use of a minimalist approach of reducing the size of the required support and attendant contingent public liabilities, leaving healthy banks free from interference and concentrating resources in key functions, such as the payment system.

Financial dollarization in the banking system was a further complicating factor in the Latin American experience, as Central Bank support required committing scarce international reserves or relying on multilateral help, as opposed to printing money to back up local currency bank liabilities. It might be argued that this complication is absent in Euro-zone countries, as the ECB can provide unlimited bank support in Euros. Nevertheless, ECB decisions are mediated by a cooperative arrangement requiring the agreement of others, as opposed to being under sovereign control as in the case of a country's own Central Bank. In any event, the protection of the sovereign is, of course, maximized when financial resources to support the banking system are external. In the European context, EU institutions (not just the IMF) may support bank liquidity and provide credit lines to implement needed bank support. It is clear that for the purpose of minimizing entanglement, it is preferable that these resources not be sovereign guaranteed. While this was an unthinkable privilege in the case of Latin America, it may be feasible in the context of EU supranational entities, to the great advantage of smaller European countries that effectively count on the support of the larger sovereigns.

## **5. Implications for Sovereign Debt and Resolution of Debt Problems**

The Latin American debt crises of the 1980s, ominously known as the Lost Decade, may turn out to have useful lessons for Europe now. While most of the crises were caused by fiscal excess leading to mounting public debt that suddenly became unsustainable when external borrowing conditions changed, their lessons do not apply exclusively to fiscally profligate economies such as Greece. For starters, the socialization of private debt—a scenario that applies to Ireland and may in the course of time apply to Spain—contributed significantly to excessive public debt in Latin America (e.g., Chile’s excessive public debt resulted from a bank bailout). More generally, irrespective of how debt unsustainability originated, the resulting fiscal adjustment and debt restructuring hold lessons for all countries with impaired access to credit.

Having lost access to market financing, countries were forced for some 10 years to rely on external official financing and focus on fiscal adjustment. Commercial debt obligations, mostly in the form of foreign bank loans in hard currency, were managed through protracted rescheduling (since they were issued in foreign currencies, they could not be reduced through inflation). This form of debt management was first supported by the United States Federal Reserve and then through a multilateral strategy called the Baker Plan. This strategy was designed to diffuse the threat of a banking crisis in the United States and the United Kingdom that could result from major international banks’ inability to absorb impaired sovereign loans. The region lived through a period of chronic recession in which income per capita actually declined by about 10 percent on average for the largest countries. Three major forces combined to push the region into a decade-long contraction.

First, fiscal austerity proved inimical to growth. In particular, the collapse of public investment and infrastructure maintenance reduced economic productivity and return to private investment (inflationary financing of public deficits led in some cases to high inflation, further contributing to distorted investment incentives). Second, the unyielding debt overhang acted as an implicit tax on investment (the fruits of growth would increase countries’ capacity to pay and then be captured by external creditors) and, possibly more importantly, created deep uncertainty as to how the burden of the ultimate costs would be distributed across different economic agents. The debt overhang was dead weight on economic activity, paralyzing investment until it could be eradicated. Third, balance-of-payments pressures further constrained economic activity. A substantial portion of the adjustment took the form of import contraction (in response to large

real depreciation) which, because it is intensive in machinery and productive inputs, further depressed investment and production.

The passive strategy of protracted debt rescheduling securing just enough liquidity to keep countries afloat led to chronic depression and debt unsustainability. After several years, a new multilateral strategy eventually emerged, prompted by the start of social upheaval. This new strategy, the Brady Plan, recognized that the debt overhang needed to be eliminated through deep debt reduction. Multilateral institutions lent long-term substantial amounts to finance discounted debt buybacks or financial enticements (e.g., collateral) of the so-called Brady bonds to be exchanged for bank loan debt. Brady bonds were tailored to creditors' circumstances, but they all entailed substantially lower debt obligations over time. The external official sector facilitated bilateral debt restructuring between countries and creditor banks, arguably to the benefit of all parties involved.

At the same time, it was also recognized that debt reduction would only pave the way to recovery. To effectively use the new opportunity for economic recovery by lifting the cloud of the debt overhang, it was imperative that the policy framework be geared toward encouraging investment (both high-return, domestic investment opportunities and secure savings from abroad to finance them). Countries became eligible for the Brady Plan only after meeting these investment readiness requirements. Starting in 1989, one country at a time, debt in Latin America was restructured. Markets were forward-looking, recognizing that the new regime emerging from the cleanup offered good business opportunities for both foreign direct investment (FDI) and portfolio flows (which were plentiful shortly afterwards).<sup>26</sup>

What lessons of interest to the European Union do these experiences offer? First, correct diagnosis of the nature of the financial crisis in the affected country is crucial. Financial distress caused by panic/contagion or other transient market conditions can be remedied by liquidity provision. Otherwise, if the crisis is not counteracted with ample external liquidity to cover any temporary dislocation in financial markets and prevent deteriorating fundamentals from validating a market run (as in the traditional bank run paradigm), it will cause real damage, possibly leading to full-fledged debt crises. Yet at the same time, if the fundamentals themselves are the problem, liquidity alone will only feed debt unsustainability. How is it possible to know whether external liquidity provision is enough? It is paramount to discern the factors behind the

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<sup>26</sup> Fernández-Arias and Montiel (1996).

extreme financial distress in affected European countries and determine why it has been resistant to liquidity support so far. The persistence of financial distress despite liquidity support is sufficient reason to refocus current policy debate on seriously considering the issue of debt overhang and debt restructuring as a policy alternative.

Second, when economic fundamentals underpin financial stress, liquidity provision to problem countries may simply postpone the day of reckoning. Fiscal adjustment may be insufficient or even counterproductive to right the economy, even if fiscal profligacy is the root cause of the problem. Debt overhang, fiscal contraction, and worsening capital accounts tend to reinforce one another in depressing economic activity. While a first attempt to stabilize the economy on the basis of liquidity support and fiscal austerity may be given the benefit of the doubt, a vicious cycle of low growth and prohibitive market financing costs should not be allowed to go unchecked, as it did in Latin America during the Lost Decade.

Third, a debt overhang is a permanent drag on growth. Debt restructuring to eliminate debt overhang should be considered as soon as it becomes reasonably clear that excessive debt cannot be reduced by prudent fiscal adjustment and expected growth. Liquidity provision to avoid disorderly debt default makes sense as a stopgap measure but digs a deeper hole over time if debt is unsustainable. Furthermore, it compromises the liquidity provider, which is increasingly exposed to credit risk and may eventually be unable to offer financial support when debt restructuring becomes unavoidable. Experience shows that recognizing debt restructuring as part of the solution is a difficult decision and one that is often excessively delayed (Sturzenegger and Zettelmeyer, 2007). Parties involved usually have incentives to postpone needed restructuring for far too long: creditors benefit from any upside and, perhaps, debtors pass on political responsibility.

Fourth, external multilateral intervention has a key role in helping to ensure that debt restructuring is orderly and constructive, to the benefit of creditors (and financial stability in creditor countries) and debtor countries.<sup>27</sup> In this regard, the cooperative institutions of the Eurozone such as the ECB compare favorably with the lack of a system to restructure sovereign debts more generally. If by restructuring the debt overhang is removed, this can be a winning proposition for all parties.

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<sup>27</sup> See Fernández-Arias (2011) for a proposal to reform the international financial architecture aimed at empowering multilateral institutions to intervene systematically in debt crisis resolution, consistently integrating their supporting roles in the areas of liquidity, economic adjustment and debt restructuring.

Fifth, concerns about market reluctance to invest after a debt restructuring have generally not been borne out by experience. Debt restructuring that was justified by fundamentals and certified by multilateral institutions following the logic of bankruptcy proceedings has tended not to have negative consequences for regaining market access.

## **6. Conclusions**

Latin America provides a number of useful lessons concerning the need to provide swift and ample external liquidity support to mitigate the financial stress caused by Sudden Stops of capital flows, spikes in sovereign risk, and banking system instability. Arguably, limited external support was behind the depth of Latin America's great collapses. At the same time, as the Latin American failed experience with the Baker plan for debt restructuring in the 1980s shows, if underlying fundamental problems are at the root of financial distress, liquidity alone is no cure. It even becomes counterproductive over time because it allows the rot to deepen and embroils official liquidity providers in credit risk.

The Latin American experience with Sudden Stops appears particularly relevant for peripheral European countries with large external liabilities. In our estimation, the full implications of a lack of access to private capital markets, the need for relative price adjustments to boost net exports and the implications for debt sustainability may not yet be fully appreciated in the Euro-zone context. Adjustments in real exchange rates are likely to continue to increase debt ratios.

The Latin American experience is then that a debt overhang can be deleterious to growth because it acts as an implicit tax on investment, especially in the absence of clear rules for its resolution. Fiscal contraction may easily fail to reduce the debt overhang to the extent that it depresses economic activity. The recognition that debt reduction is in order tends to be delayed, leading to a protracted state of recession, and sometimes social unrest or political instability. The Latin American experience shows that orderly debt reduction in the right economic environment for growth can be the solution to growth recovery and renewed capital inflows. Where debt restructuring is needed, multilateral support conditional on an appropriate policy framework appears to be instrumental to ensuring that debt reduction is a solid base for recovery.

Another relevant lesson from Latin America is that entangling banking crisis risks with sovereign debt crisis risks is a recipe for disaster. If bank troubles require injecting more capital

into banks, banking crisis resolution must be implemented with an eye to minimizing emerging fiscal liabilities. In the Latin American experience, some of the methods utilized to this end include the privatization of troubled public banks; the liquidation rather than the re-capitalization of some banks; and a minimalist approach to only address problem banks and target assistance to preserve key functions of the banking system, such as the payment system.

In all cases, successful crisis resolution requires restoring economic growth to reduce high debt burdens, improve bank assets and reduce the probability of political backlash. External official support to troubled economies can provide time for economies to adjust, but it is no substitute for structural reforms aimed at reducing structural vulnerabilities and restoring long-term growth. The experience in Latin America shows that it is more likely that growth-enhancing reforms will be implemented in the aftermath of crises, especially in supportive institutional environments.

The Latin American experience—as it relates to some of the fundamental policy choices concerning financial distress in public debt markets and the banking sector, as well as fiscal adjustment and low growth—is relevant to peripheral Euro-zone countries. Some of the policies concerning how to deal with Sudden Stops, debt restructuring, banking crisis resolution, countercyclical policy and structural reforms for growth are directly applicable depending on each country's specific circumstances. However, the ability to effect a real exchange rate depreciation to promptly regain competitiveness that has been so prevalent in Latin America is severely impaired for countries in the Euro-zone. Lacking this policy instrument makes the European problem more complex and, in a sense, more worrisome than in Latin America.

On the other hand, the existence of the European Union creates possibilities that were not available in Latin America. The scope for regional cooperation is much larger. Supranational institutions, such as the European Central Bank, are able and ready to play supporting roles to national policies concerning sovereign debt, the banking system, and general balance-of-payments support. Furthermore, the core of the European Union is resourceful and in a position to help. While currency devaluation is not an option, cooperation could enlarge the scope of alternative competitiveness policies, such as complementing fiscal devaluation in less competitive economies with fiscal revaluation in core countries in the Euro-zone, and buy time for these policies to work gradually. None of these conditions of regional cooperation were available to Latin American countries, which could only count on limited, and not necessarily

reliable, multilateral senior loans. Having these resources of international cooperation available makes the European problem easier to solve.

The fact that the Euro-zone has more tools to address the complex problems that peripheral countries in Europe are currently facing does not guarantee success. The Euro-zone is navigating through uncharted waters and determining the correct course of action for policymakers in crisis and core countries alike is difficult and requires innovation. Furthermore, democratic governance in European countries may limit the policy space of national governments trying to find a cooperative solution.

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## Appendix

### 1. *History of Financial Crisis in Latin America (Table 1 provides a list of recent crises in Latin America.)*

**Table 1. Recent Crises in Latin America**

Country	Systemic Banking Crisis	Currency Crisis	Sovereign Debt Crisis	Sudden Stops
Argentina	1980, 1989, 1995, 2001	1975, 1981, 1987, 2002	1982, 2001	2001
Bolivia	1986, 1994	1973, 1981	1980	1982
Brazil	1990, 1994	1976, 1982, 1987, 1992, 1999	1983	
Chile	1976, 1981	1972, 1982	1983	1982, 1983, 1998
Colombia	1982, 1998	1985		1998, 1999
Costa Rica	1987, 1994	1981, 1991	1981	1981, 1996
Dominican Republic	2003	1985, 1990, 2003	1982, 2003	
Ecuador	1982, 1998	1982, 1999	1982, 1999, 2008	1983, 1999
El Salvador	1989	1986		1979
Guatemala		1986		
Mexico	1981, 1994	1977, 1982, 1995	1982	1982, 1994, 1995
Nicaragua	1990, 2000	1979, 1985, 1990	1980	1986
Panama	1988		1983	2000
Paraguay	1995	1984, 1989, 2002	1982	2002
Peru	1983	1976, 1981, 1988	1978	1998
Uruguay	1981, 2002	1972, 1983, 1990, 2002	1983, 2002	2002
Venezuela	1994	1984, 1989, 1994, 2002, 2010	1982	1994

Source: Systemic Banking Crisis, Currency Crisis & Sovereign Debt Crisis: Laeven & Valencia (2013). Sudden Stops: Cavallo & Frankel (2008)

### 2. *Assumptions Used for the Calibration of the Calvo, Izquierdo and Talvi (2003) Model to Europe*

**Table 2.**  
**Long-Run Averages for Selected Economic Variables used to Calibrate the Calvo et al (2003) Model to European Countries**

Country	Real GDP Growth	Real Interest rate on Debt	Exports /GDP	Current Account Balance/GDP
	(avg 1984-2012)	(avg 1984-2012)	As of end 2012	As of end 2012
Portugal	1.4%	5.3%	39.1%	-1.5%
Italy	1.1%	3.9%	30.2%	-0.5%
Greece	1.3%	9.6%	25.4%	-2.9%
Spain	2.6%	3.7%	32.2%	-1.1%
UK	2.5%	3.5%	31.7%	-3.5%

Source: Authors' calculations based on International Monetary Fund, IFS database.

### 3. Results from a Simulation of a Sudden Stop Debt Sustainability Model for Alternative Elasticity Assumption (i.e., $\chi=0.8$ ).

**Table 3.a.**

Country	Required RER Depreciation	DEBT (% GDP)	Estimated New Debt (% GDP)	Primary Surplus (%GDP)	Required Primary Surplus to Stabilize Debt using Hist. Interest Rates (% GDP)	Required Primary Surplus to Stabilize Debt using Higher Interest Rates (% GDP)
Portugal	5.0%	123.0%	126.6%	-0.8%	4.9%	7.4%
Italy	2.3%	127.0%	129.0%	2.3%	3.5%	6.1%
Greece	12.9%	158.6%	173.4%	-1.2%	14.3%	17.7%
Spain	4.3%	84.1%	86.5%	-7.9%	0.9%	2.6%

Source: author's calculations based on the calibration of the Calvo et al (2003) model. Alternative parameter values ( $\chi=0.8$ ). GDP growth rates and interest rates are medium term historical averages for the selected economies; debt stocks and other economic variables are as of 2012. High interest rate scenario in the last column is calibrated at 2 percentage points above the historical (average) real interest rate for each country.

Following standard procedures in the literature, we calculate the primary surplus required to stabilize the debt/GDP ratio at a given level. This is done using the long-term discrete time version of the debt equation:  $s = (r-g)/(1+g)b$ ; where  $b$  is the debt/GDP ratio,  $r$  is the real interest rate,  $g$  is growth of real GDP, and  $s$  is the primary fiscal surplus. In other words,  $s$  is the primary surplus required to stabilize the debt/GDP ratio for a given interest rate, growth rate of the economy and the initial stock of debt

**Table 3.b.**

Country	Year	Required RER Depreciation (-dp)	Initial Debt/GDP	Estimated Debt/GDP (assuming all debt is in tradables)	Estimated Debt/GDP (assuming all debt is non-tradables)
Spain	2010	19.0%	61.3%	69.4%	58.3%
	2011	15.0%	69.1%	76.0%	66.1%
	2012	4.3%	84.1%	86.5%	82.9%
UK	2010	9.7%	79.4%	84.6%	77.1%
	2011	5.0%	85.4%	88.2%	84.1%
	2012	12.9%	90.3%	97.9%	86.8%

Source: author's calculations based on the calibration of the Calvo et al (2003) model. Alternative parameter values ( $\chi=0.8$ ). GDP growth rates and interest rates are medium term historical averages for the selected economies; debt stocks and other economic variables are as of the end of the corresponding year.

### 4. Fiscal Costs of Banking Crises in Latin America and in Europe

**Table 4.**

