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## **CRISIS RESPONSE IN LATIN AMERICA: IS THE “RAINY DAY” AT HAND?**

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## Abstract

This paper examines the countercyclical policy options available to Latin American countries in the face of the current global economic crisis, concluding that most of the major countries in the region appear to possess the fiscal space (as measured by credible fiscal sustainability and debt headroom) to run prudent countercyclical fiscal deficits. Those countries should undertake a constrained fiscal expansion focused on productive public spending and financed by “rainy day” funds—large stocks of foreign exchange reserves that they have accumulated during recent years—rather than by market borrowing. The recent surge in multilateral financial activity to alleviate market illiquidity, whether intended for reserve or budget support, strengthens the case for this policy prescription: with multilateral support, the appropriate policy response is more expansionary, and its financing is less reliant on market borrowing.

**JEL Classification:** E62, E63, F34.

**Keywords:** countercyclical policy, fiscal space, international reserves, multilateral financial support.

## **1. Introduction**

The current financial crisis is widely expected to be the most severe and widespread that the international economy has experienced since the Great Depression of the 1930s. Although it originated in the United States, the crisis has very quickly spread internationally. Developing countries in particular have been affected through various channels, both financial and real. The financial channels include sharp contractions in domestic asset prices and capital outflows, while the real channels include reductions in export volumes, declines in the prices of primary commodities, and reduced flows of workers' remittances.

The worldwide nature of the crisis has generated a debate within both affected nations and all of the major international financial organizations about the appropriate nature of the policy response. The complicating factors in addressing this issue are that the crisis has manifested itself in different forms in different countries, that the effectiveness of the policy instruments available to confront it is likely to differ country by country, that each country faces country-specific constraints and tradeoffs in deploying such policy instruments, and that countries differ in the weights that they place on different policy objectives. Not surprisingly, therefore, there has been much international disagreement about appropriate policy responses, and individual countries have implemented quite different policies.

This paper considers the challenge of crisis policy from the perspective of Latin America. Its particular concern is with the role that countercyclical monetary and fiscal policies should play in response to the crisis and, more specifically, whether there is scope for a moderate fiscal expansion to attempt to ameliorate the contractionary effects of the crisis on real economic activity. As the justification of such policies crucially depends on country-specific conditions, we illustrate some of the important factors to consider with the case of the seven largest economies in the region (the LAC-7 countries, consisting of Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela). We answer in the affirmative for many countries, advocating in those cases a program of "constrained" fiscal expansion financed with multilateral support and drawing down some of the large stocks of foreign exchange reserves that the countries have accumulated as "rainy-day" funds during recent years.

The structure of the paper is as follows: in the next section we describe how the crisis has been transmitted to Latin America—i.e., the nature of the shocks that these economies have experienced in recent months. Section 3 then examines the factors that influence the expected degree of vulnerability of these countries’ macroeconomic performance to shocks of these types in light of the reforms that Latin American economies have undertaken during recent years. Section 4 describes policy responses that have been implemented elsewhere and considers the pros and cons of implementing similar policies in Latin America. One important consideration in this regard is the very different set of constraints that may operate on countercyclical policies in Latin America from those that are relevant in the countries whose policies are described in Section 4. These constraints are considered in Section 5. Section 6 presents our case for constrained fiscal expansion in the region, while Section 7 describes and evaluates some potentially serious objections to our recommendations. The paper’s arguments are summarized in the concluding section.

## **2. Transmission to Latin America**

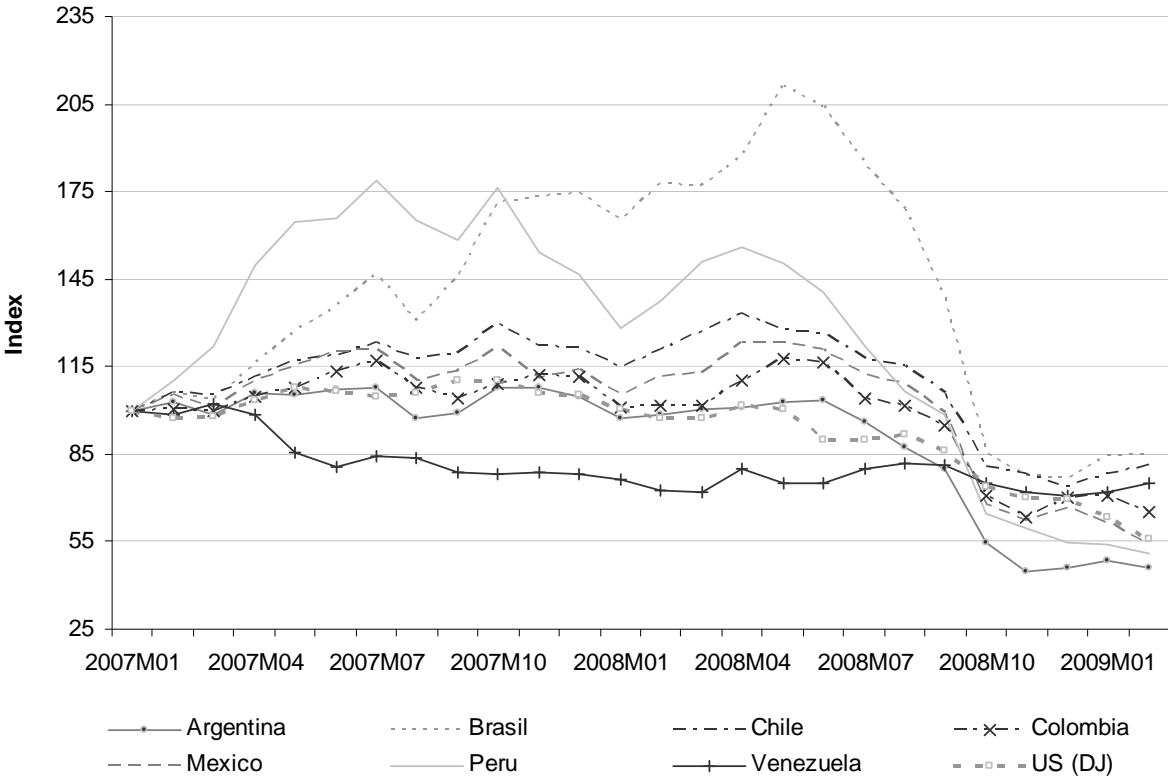
From the perspective of Latin America, the preceding description of the origins of the crisis and its mechanisms of international transmission leads to two observations: a) the crisis is of external origin, and b) its mode of transmission has been both real and financial. While both of these observations are readily apparent to even the most casual observer of the international economy, they are worth highlighting because they have implications for the magnitude of the shock in the region as a whole, its distribution across countries, and the feasibility of alternative policy responses. The following subsections describe the aspects of the external shock experienced by all the major countries of the region.

### ***2.1 Widespread Uncertainty and Collapsed Asset Values***

All projections for the world economy have become more uncertain as the crisis has deepened and confidence in the competence of policymakers in the major industrial countries has waned. In the face of the sharp increase in economic uncertainty, political uncertainty has also increased. While no country in Latin America has yet undergone political upheavals such as those in Iceland and Latvia, public confidence in the political system—often in any case fragile in the region—has been undermined by the crisis in a number of countries. This is especially true for

countries reliant on political proximity and economic integration with advanced economies. The increase in worldwide economic and political uncertainty has acted like a “monsoon effect” that has sharply reduced productive asset values and can be expected to reduce investment throughout the region, at least over the near future. This collapse in asset values for the seven largest Latin American countries during the second half of 2008 is evident in Figure 1. Stock market indexes in these countries held up well in the first half of the year but began to decline in sympathy with asset prices in the United States in June, and they shared the sharp contraction of the Dow-Jones Industrial Average in October.

**Figure 1. Stock Market Indexes for LAC7 and US Dow Jones (January 2007=100)**



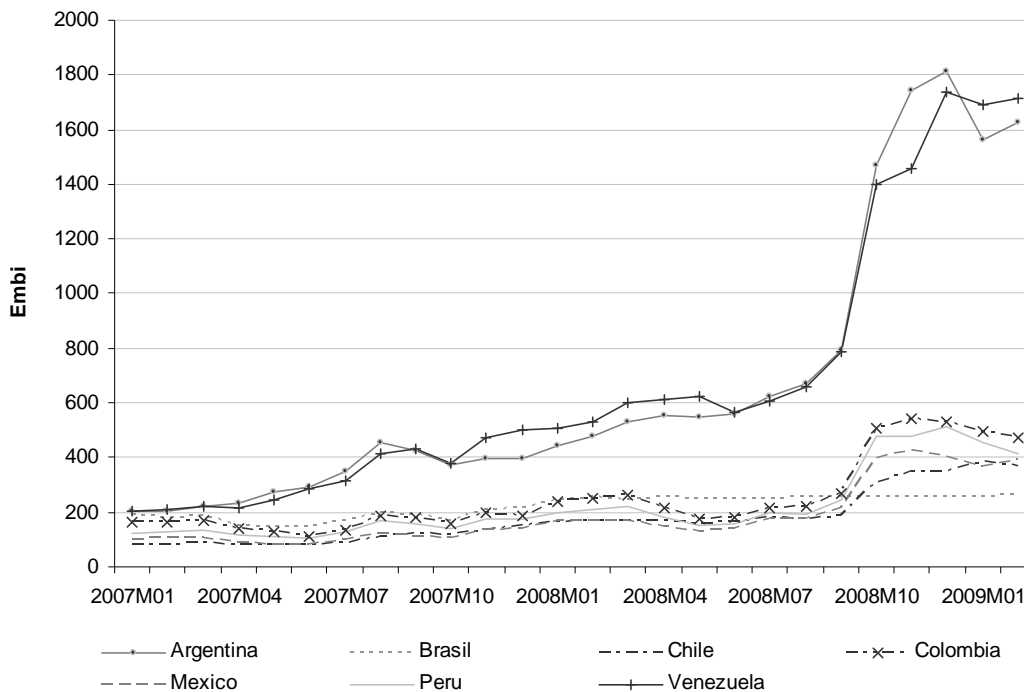
Source: Latin Macro Watch (LMW), Inter-American Development Bank (IDB, 2009).

**2.2 Increased External Borrowing Costs and Large Capital Outflows**

While heightened uncertainty has permeated the economic environment, one of its manifestations in Latin America has been a sharp increase in the costs of access to international financial markets, despite deep reductions in policy interest rates throughout the industrial world.

The reason, of course, is that country risk premia have risen very sharply, as shown in Figure 2. In effect, this increase in public sector external borrowing costs was accompanied by an even more pronounced surge in corporate sector costs. Another manifestation has been a substantial shortening of maturities of rolled-over debt (what Izquierdo and Talvi, hereafter IT, 2009, call “financial precarization”).

**Figure 2. EMBI Spreads for LAC7**



Source: LMW, IDB (2009).

The increase in the perceived risk of assets issued by Latin American governments and firms has also resulted in capital outflows from the region and in some cases a complete loss of access to external funding by private firms.

### ***2.3 Sharply Reduced Export Demand***

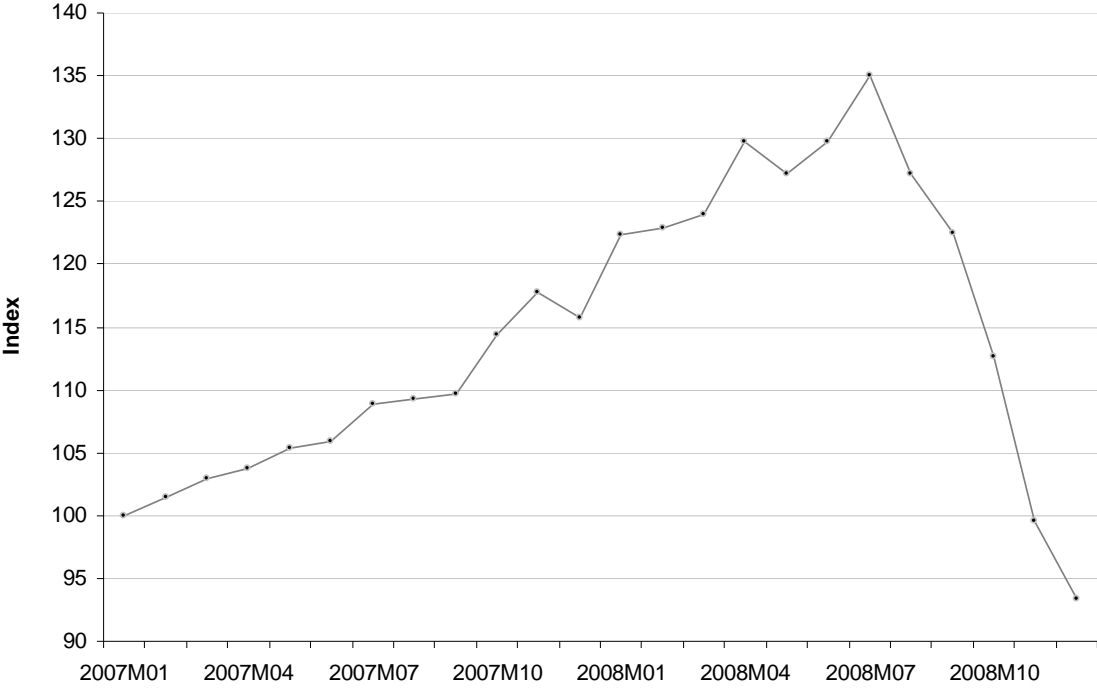
The collapse in real economic activity in the region’s major trading partners has resulted in a commensurate collapse in demand for the exports of all the countries in the region, since Latin American exports are heavily oriented toward Western Europe and the United States. As shown in the top panel of Figure 3, import volumes for all OECD countries contracted by about a third from their peak in July 2008 to the end of the year. The resulting contraction in the exports of

the LAC7 countries is shown in the bottom panel of the figure. While this factor and others listed immediately above have been relevant for all Latin American countries, other manifestations of the crisis have been more idiosyncratic

**2.4 Adverse Changes in Terms of Trade**

The prices of primary commodities have fallen dramatically worldwide since the summer of 2008, although they are not too far from their level at the beginning of 2007 (Figure 4a) and generally remain high by historical standards. The price of crude oil, for example, fell by more than two thirds, which was obviously very damaging for the region’s main oil exporters, including Venezuela, Mexico, and Ecuador.

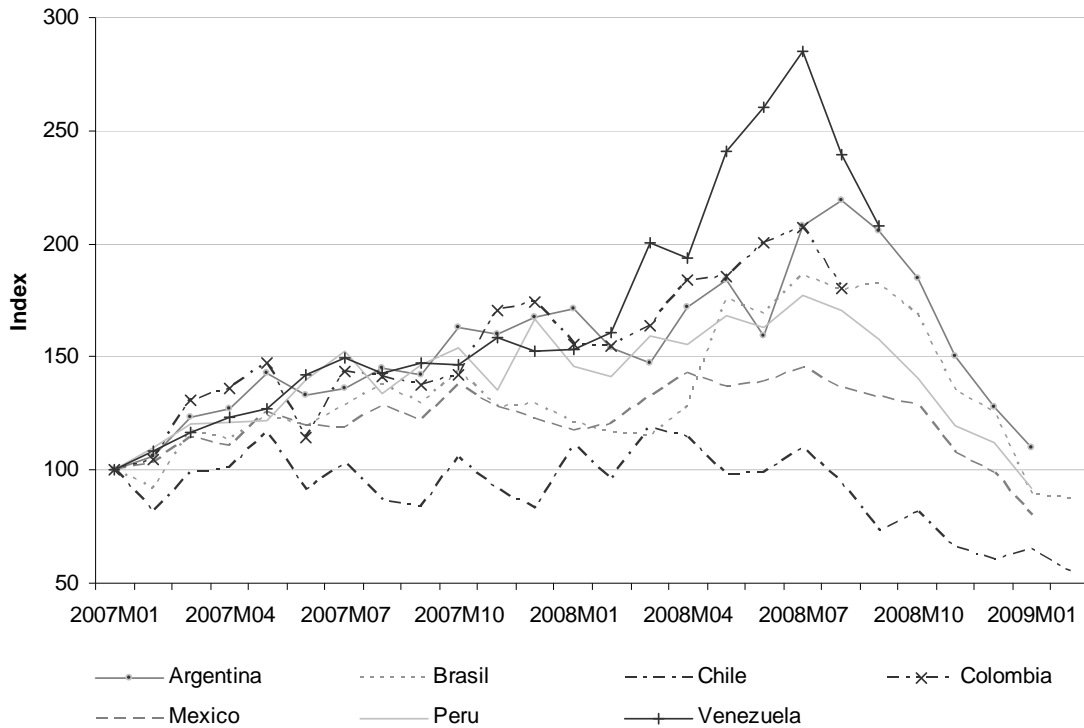
**Figure 3a. Import Volume, All OECD Countries (January 2007 = 100)**



Source: OECD (2009).



**Figure 3b. Index of US Dollar Export Values, in LAC7 (January 2007=100)**



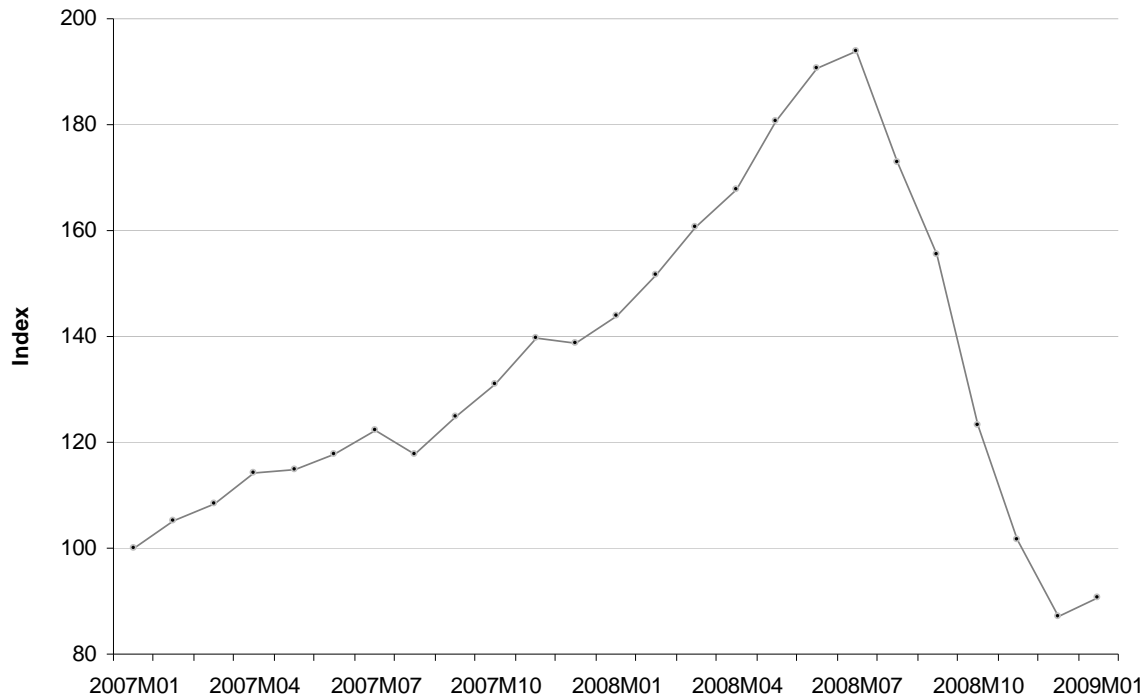
Source: LMW, IDB (2009).

At the same time, oil-importing countries, such as Chile, Uruguay, and the Central American economies have benefited from lower oil prices. However, the reduction in oil prices has only ameliorated the deterioration in the terms of trade that many of these countries would otherwise have suffered through declining prices of their own primary exports (e.g., copper in Chile, beef in Uruguay, coffee in Central America). As shown in the bottom panel of Figure 4, countries like Argentina, Brazil, and Colombia continued to enjoy more favorable terms of trade at the end of 2008 than they had at the beginning of 2007, while for Chile, Mexico, and Peru, the situation was decidedly worse. Nevertheless, for all of these countries the trend in their terms of trade was downward after the early fall.

### 2.5 Reduced Flows of Worker Remittances

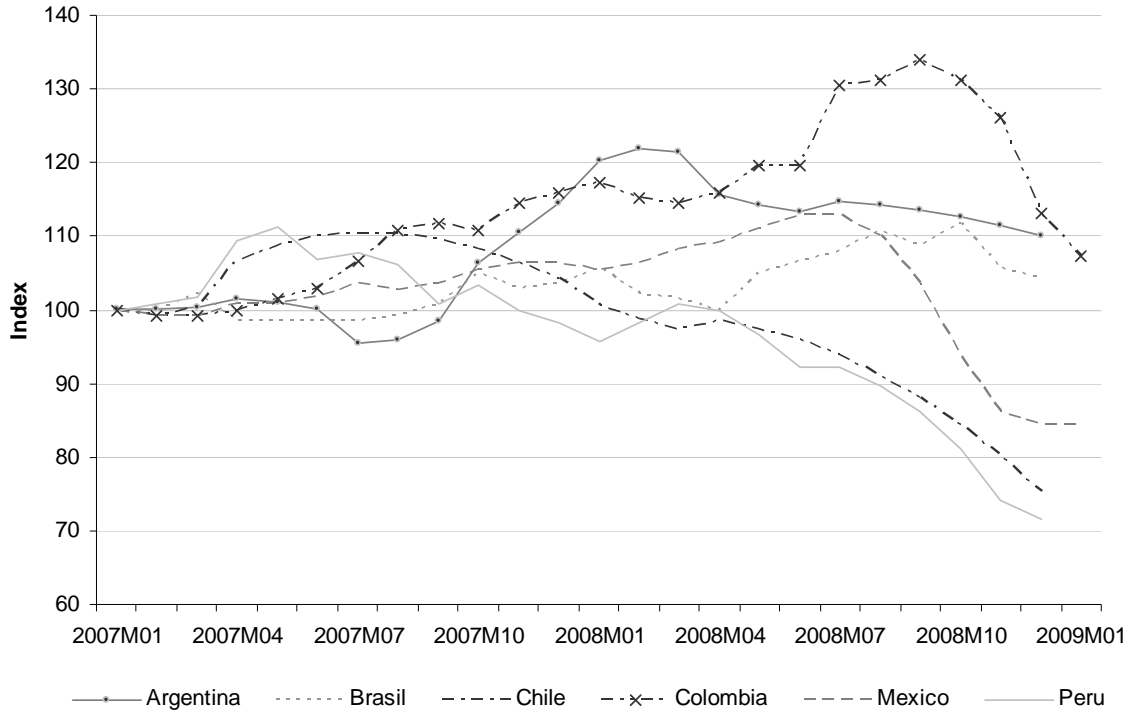
A final channel of transmission that has been important in Latin America, but with greatly differing effects from country to country, has been a significant reduction in remittance inflows as the result of reduced economic activity in the countries to which workers from the region have migrated, especially the United States. This factor has been especially important in Mexico and various countries in Central America that are large remittance recipients (especially El Salvador, Guatemala, Haiti and the Dominican Republic), but also for South American countries like Ecuador, which have a large number of workers abroad.

**Figure 4a. All-Commodities Price Index (January 2007=100)**



Source: IFS (2009).

**Figure 4b. Terms of Trade in LAC7 (January 2007=100)**



Source: LMW, IDB (2009). Note: Information for Venezuela not available.

It is worth noting that, from the perspective of the region as a whole, the shock is likely to be larger than it would have been before the market-oriented reforms of the 1990s. While the crisis is of external origin, Latin American economies have become more open both commercially and financially in recent years. Not only does this imply a greater macroeconomic challenge for policy, but a greater political one as well. Market-oriented reforms have already become highly unpopular in many parts of the region because of their failure to deliver the expected growth payoff and to address the challenge of inequality. To the extent that these reforms are also associated with increased macroeconomic instability, there may be significant pressure for the policy response to feature a significant slowdown or even reversal of market-oriented reforms.

### **3. Vulnerability**

The implications of the crisis-associated shocks just described for Latin American economies depend on the extent of vulnerability that characterizes these economies. Vulnerability determines the difference between a downturn and a crisis and therefore affects the nature of the required response. In the event of a crisis, the priority is to “put out the fire”—i.e., to attack the incipient crisis aggressively with little regard for potential side effects. In the event of a downturn, though—even a severe one—the use of more conventional stabilization policies is required. The former is precisely the policy challenge that faces the industrial economies, whose situation is now clearly one of crisis: they need to correct the factors that sent their economies into sharp decline—specifically, the freezing-up of credit markets—at the same time that they adopt more conventional stabilization measures to reactivate economic activity.

In this respect, the news is relatively good in Latin America: while the reforms of the 1990s may have left the region more exposed to external shocks, they have at the same time probably made it more resilient in the face of such shocks.

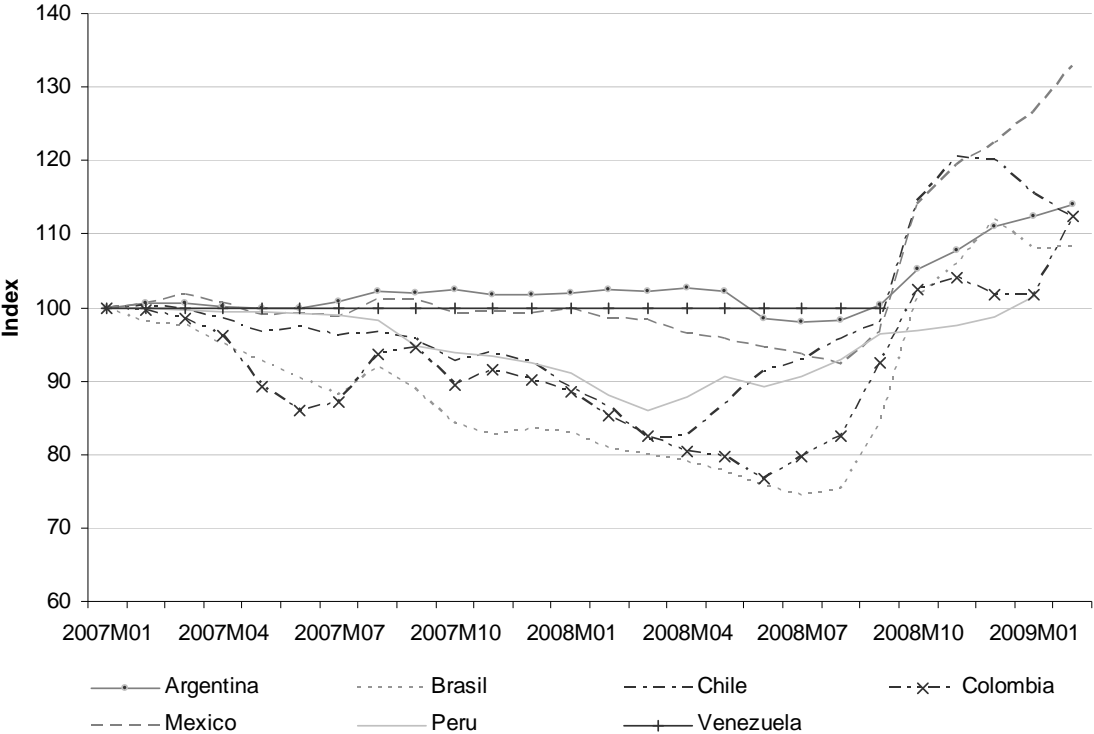
There are several reasons to be optimistic in this regard. First, a key source of macroeconomic vulnerability is the health of the financial system, as the United States and several other industrial countries have rediscovered to their dismay. As the result of financial reforms undertaken over the past decade and a half, including improvements in financial regulation and supervision, enhanced competition in the financial system, and in some cases the recent resolution of banking crises, the financial systems of Latin American countries are healthier today than they have been in the past. The entry of foreign banks has also significantly contributed to the health of the system. Moreover, Latin American financial institutions did not acquire the “toxic assets” that are causing so much trouble in developed countries, so they did not experience the direct hit suffered by financial institutions in many industrial countries.

Second, central banks have been strengthened as macroeconomic institutions in several of the major countries in the region. Not only have they been accorded legal independence, but they have taken responsibility for maintaining low and stable inflation rates, and to a significant extent they have achieved that goal in recent years, enhancing their credibility.

Third, many of the major countries in the region have transitioned to more flexible exchange rate arrangements, reducing vulnerability to the disruptive discrete exchange rate depreciations that are associated with currency crises and providing an automatic stabilizing

effect in response to external financial shocks. As shown in Figure 5, bilateral exchange rates against the US dollar indeed depreciated in all of our seven countries when the external financial environment turned adverse in the fall of 2008. Moreover, despite still being pronounced in some countries, financial dollarization has declined in the region, reducing the impact of a factor that has weakened or even reversed the otherwise expansionary effect of exchange rate depreciation in the past.<sup>1</sup>

**Figure 5. Bilateral US Dollar Exchange Rate Indexes in LAC7 (January 2007=100)**



Source: IFS (2009).

Fourth, fiscal reforms have enhanced the flexibility of fiscal systems in some cases and many countries in the region have demonstrated both the political will and economic ability to make significant fiscal adjustments. Coupled with the reform of fiscal institutions in some countries (such as the Structural Balance Rule in Chile and the Fiscal Responsibility Law in

<sup>1</sup> To the extent that currency mismatches are induced by fixed exchange rate regimes combined with lax financial regulation, improved regulation and more flexible exchange rate management could be behind the reduction in the extent of such mismatches in Latin America.

Brazil), these reforms should have enhanced fiscal credibility while at the same time strengthening the effects of automatic fiscal stabilizers. As a result, public debt stocks as a proportion of GDP have generally declined over the past several years (Figure 6).

**Figure 6. Aggregate Public Sector Debt to GDP, in LAC**

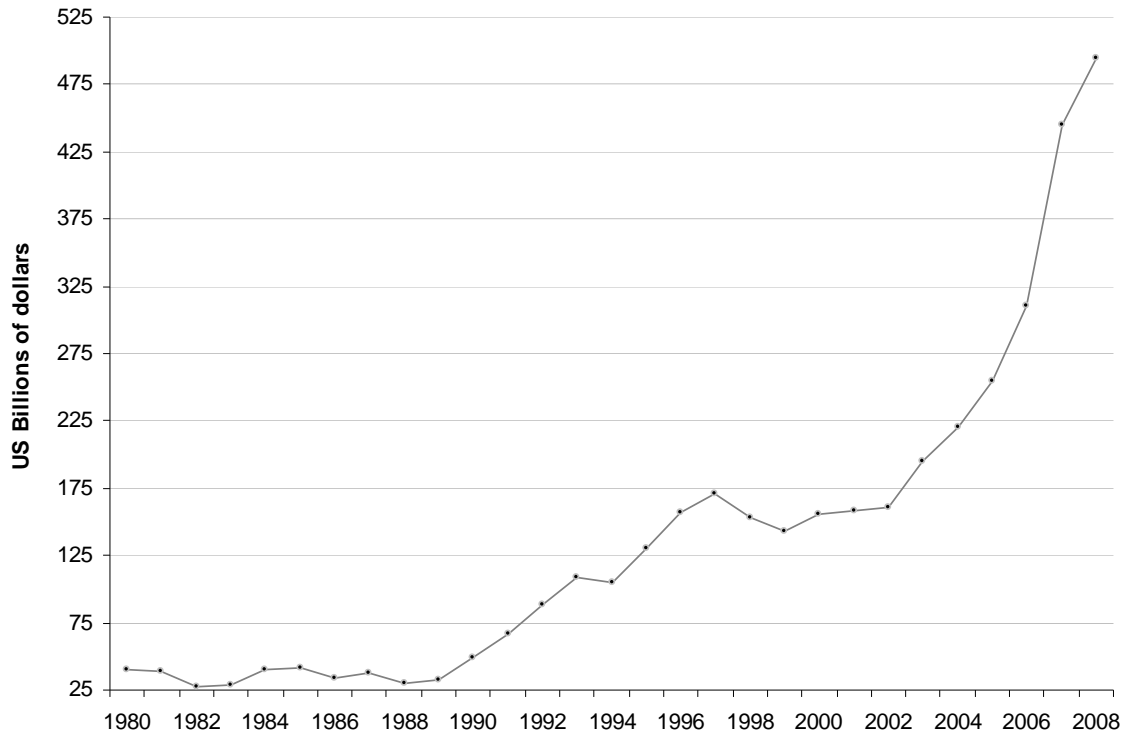


*Source:* LMW, IDB (2009).

*Note:* Estimation based on data available for countries representing more than 90 percent of regional GDP.

In addition to these institutional reforms in the financial sector, monetary, exchange rate, and fiscal policy areas, a specific policy decision has also contributed to reducing the region's vulnerability to adverse external shocks: the accumulation of large stocks of international reserves (Figure 7). These reserves have been accumulated both to serve as self-insurance against sudden stops of capital inflows (i.e., to serve as "rainy day funds"), as well as to prevent undesired appreciation of domestic currencies. They now represent large stocks of liquid public sector assets that can be deployed to prevent excessive exchange rate depreciation, if desired, or to finance temporary fiscal deficits or other fiscal outlays to support recovery, if necessary.

**Figure 7. Aggregate International Reserves in LAC, 1980-2008**



*Source:* WEO, April 2009. Stock of reserves at year-end, billions of US dollars.

These reserves are now being strengthened by liquidity agreements with the United States Federal Reserve System (e.g., Brazil and Mexico have benefited from liquidity commitments of \$30 billion each) and massive IMF resources pledged by G20 countries to be used in new low-conditionality programs. At the time of writing, the IMF has reached precautionary liquidity agreements with several countries in the region for a total of over \$60 billion.

All of these factors suggest that the large external shock that the current crisis represents for Latin America may be less disruptive than the region's history would suggest. Most important, perhaps, is that the sudden disruptions associated with banking and currency crises are less likely, that financial and macroeconomic policy institutions have more credibility (thereby making short-run deviations from medium-term policy stances less disruptive to expectations), and that policymakers have means at their disposal to counter shocks, in the form of large reserve stocks, that have not been available in the past.

On the other hand, it would be easy to exaggerate the good news. First, the reforms mentioned above have not been carried out uniformly throughout the region, and in many cases they are both recent and fragile—i.e., it may be far too early to take credibility gains for granted. Second, aside from increased financial and real openness, some countries have implemented reforms that may have made them *less* resilient in the face of the types of shocks that the region is currently experiencing. For example, formal dollarization in Ecuador and El Salvador has deprived these countries of monetary and exchange rate policies as stabilization instruments. Finally, and perhaps most importantly, although public debt stocks have been reduced significantly relative to the size of the relevant economies, they remain uncomfortably large for many countries in the region, and few countries have achieved a state of safe fiscal solvency. This not only makes the perceived solvency of their governments vulnerable to increased public sector debt-servicing costs, but also makes it more difficult to undertake a countercyclical fiscal response, as we shall discuss below.

#### **4. Countercyclical Options for Latin America**

To date, the policy response to the crisis in industrial countries has focused on restoring the health of the financial system where that has been imperiled and attempting to sustain aggregate demand in order to avoid a continued sharp contraction of real economic activity. Inflation has largely dropped off the radar screen as a primary policy concern—in fact, *deflation*, if anything, has become a more prominent worry. Outside Latin America, some emerging-market economies, most prominently China, have responded by adopting expansionary monetary and fiscal policies. The policy response in industrial countries has taken several forms.

##### ***4.1 Expansionary Monetary Policy***

All of the major central banks in industrial economies have moved to near-zero policy interest rates. For example, the daily average federal funds rate in the United States was at approximately 0.2 percent in early March of 2009, and the European Central Bank, the Bank of England, and the Bank of Japan have all similarly lowered their policy rates to near-zero levels.

##### ***4.2 “Quantitative Easing”***

In countries where credit markets have frozen up, public agencies, especially central banks, have essentially taken up the financial intermediation function by purchasing the liabilities of financial



intermediaries, purchasing mortgages, and even engaging in direct lending to manufacturing enterprises. In the United States, the Federal Reserve System initially funded these operations by selling U.S. government obligations, which were in high demand as the result of the international flight to safety, but since the late summer and fall of 2008 it has done so by dramatically expanding the monetary base (more than doubling the size of its balance sheet), in a process referred to as “quantitative easing.”

#### ***4.3 Recapitalization of Financial Institutions***

Where credit has frozen up because of doubts about the solvency of financial institutions, industrial-country governments have also moved aggressively to try to restore the health of the system by recapitalizing it, providing funds to financial institutions in return for non-voting shares. The governments of the United States and the United Kingdom in particular have acquired large stakes in their countries’ financial sectors.

#### ***4.4. Fiscal Expansion***

With policy interest rates already at near-zero levels, many industrial countries—and some emerging market countries—have undertaken substantial countercyclical fiscal expansions to supplement monetary policy. The United States has been particularly aggressive in this regard, enacting a program of spending packages and tax cuts that is expected to result in a fiscal deficit in excess of 12 percent of GDP in 2009. Much more modest fiscal expansion packages have also been implemented in Japan and Western Europe, and a relatively ambitious one in China.

Should Latin America respond to the crisis in a similar manner? There is at least one obvious reason to give an affirmative answer, and three similarly obvious ones to answer in the negative.

Prima facie the answer ought to be “yes” because of the similarity of many aspects of the economic downturn to be addressed. As in countries such as China, Latin American countries face a very deep contraction in aggregate demand. At the same time, as in industrial countries, inflation is not a serious policy concern at present in the vast majority of Latin American countries. Instead, the worry is that the externally-driven reduction in aggregate demand will induce severe reductions in real economic activity, as already began to happen in the fourth quarter of 2008 in countries such as Brazil and Mexico. The value of fiscal and monetary flexibility—in which many countries in the region have made substantial investments—is

precisely so that policy can play a stabilizing role in situations such as that which presently exists.

On the other hand, a negative answer is suggested by three considerations. The first of these is that the shock currently affecting Latin America is different from that afflicting countries such as the United States and the United Kingdom. Specifically, at least so far it has not manifested itself in the form of a domestic financial crisis, but as a combination of adverse real and financial external shocks of large magnitudes. Thus the financial sector component of the policy responses undertaken by these countries is not necessary in Latin America, unless domestic financial sectors become imperiled by the external shock. This is a potentially important observation, because it may play a role in considerations concerning the desirability of a countercyclical policy response in the region, as discussed below. In fact, it may make countercyclical non-financial policy more powerful and necessary.

Second, the effectiveness of countercyclical policies—particularly fiscal policy—may be quite different in Latin America from what it is in relatively large and relatively closed industrial countries such as the United States and Japan, or in a large and relatively closed emerging economy like China. If fiscal stimulus is ineffective in open economies such as those in Latin America because it simply leads to additional spending on foreign goods, then little could be gained by stimulating domestic aggregate demand through countercyclical fiscal policies. However, it is important to note that, since this is a global crisis, demand leakages through imports are systemically valuable, and therefore low GDP multipliers in open economies are not a valid argument against countercyclical policy from a *multilateral* viewpoint.<sup>2</sup>

Finally, and most importantly, the constraints on the implementation of countercyclical policies may be quite different in Latin America from what they are in the countries that have implemented large countercyclical programs to date. These constraints, to which we now turn, may substantially alter their payoff and feasibility.

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<sup>2</sup> Even in the most open Latin American countries, there would be a justification for policy action coming from engaging in fiscal stimulus as part of a wide and coordinated international effort from which they benefit.

## **5. Constraints on Countercyclical Response**

Interpreting the shock as a combination of adverse external real and financial shocks, and the objective of policy being to sustain domestic aggregate demand and avoid disruptions in the normal flow of credit, there are in principle three types of macroeconomic policies that can be deployed: monetary, exchange rate, and fiscal policies. These are subject, however, to several constraints in responding to the crisis, which are described in the subsections below.

### ***5.1 The Trilemma***

The trilemma tells us that when financial integration is high, monetary and exchange rate policies are not independent. Thus the first question that policymakers in the region need to consider is whether or not to financially de-link and impede capital outflows, as Malaysia did in September 1998. Assuming that the answer is no, because the long-run benefits of financial integration are judged to be worth its current short-run costs, and that *de facto* financial integration is sufficiently high in the region to preclude the independence of monetary and exchange rate policy, the policy instruments boil down to two: monetary/exchange rate policy and fiscal policy.

### ***5.2 The Exchange Rate Regime***

Monetary/exchange rate policy, however, is not an option for all countries in Latin America. Specifically, it is not an option for countries that maintain *de jure* hard exchange rate pegs (such as the dollarized economies of Ecuador and El Salvador), or *de facto* ones (countries that have chosen to maintain stable nominal exchange rates relative to a major currency like the US dollar). For such countries, the next question is whether they are willing to use exchange rate policy by either altering the exchange rate regime (for *de jure* hard pegs) or by altering the exchange rate (for *de facto* ones).

### ***5.3 The Monetary Policy Regime***

For countries that are prepared to countenance some reasonable degree of exchange rate flexibility, which appears to be the prevalent case, monetary/exchange rate policy is a countercyclical option. In such countries, higher risk premia in international financial markets result in higher domestic interest rates and depreciation of their currencies. Real depreciation is

appropriate from a countercyclical perspective in order to prevent the increase in domestic interest rates from resulting in an excessive contraction of aggregate demand. The question is whether monetary policy should go further in an expansionary direction, as it has in industrial countries.

One potential constraint on monetary expansion is the monetary policy regime on which the central bank's anti-inflationary credibility is predicated. For inflation-targeting countries where the central bank's credibility depends only on the inflation outcome, this constraint should not be binding, because the net result of the adverse aggregate demand shock is likely to be deflationary. But if the central bank's credibility depends on the growth of the money stock or the behavior of the exchange rate, this may constrain the amount of monetary expansion that policymakers are willing to undertake. Under current crisis circumstances, this credibility constraint is unlikely to be binding.

#### ***5.4 Currency Mismatches***

Even if the previous constraint does not bind for monetary policy, it may not be possible to rely on real exchange rate depreciation to sustain demand for domestic goods where currency mismatches remain important. This is the traditional “fear of floating” argument against activist monetary policy in emerging-market economies, and in view of the high degree of dollarization that persists in a number of countries in Latin America—despite progress in recent years—it is a constraint on policy that needs to be taken seriously.

#### ***5.5 Fiscal Sustainability and Solvency***

Structurally high interest rates reflect the risk of fiscal insolvency resulting from high debt that oftentimes exceeds the capacity to generate the fiscal balances that would be required to service it in full. Latin American countries whose fiscal sustainability is precarious may find it very costly to undertake expansionary fiscal policies that imply larger fiscal deficits because their issuance of new debt may increase the market's perceived risk of these governments' becoming insolvent. This would further increase their borrowing costs and in turn intensify the fiscal sustainability challenge faced by these countries. An unsustainable fiscal path eventually entails either fiscal adjustment to retain solvency or debt restructuring, both of which are costly processes. Either way, Latin American countries that find themselves with precarious fiscal

solvency may lack the “fiscal space” needed to undertake a general fiscal expansion, even though the crisis has certainly created the “macroeconomic space” for them to do so.

This constraint also applies to quasi-fiscal policies such as countercyclical credit policies to ease financial intermediation to segments of the private sector cut off from the normal flow of credit, such as exporters left without trade credit by international banks or small enterprises crowded out by large corporations turning to local bank financing after finding difficulties with external financing. To the extent that these policies only involve intermediation, there is no fiscal deficit and fiscal sustainability is unaltered. However, any recovery risk would amount to a contingent debt that would encumber fiscal solvency.

### ***5.6 High Cost of Borrowing and Liquidity Risk***

Larger fiscal deficits can be financed either by issuing new public sector liabilities or by drawing down public sector assets. The former is currently very costly for all but the least risky countries in the world because of low risk appetite in international markets. High cost of public borrowing in Latin America is a constraint on countercyclical fiscal stimulus because only high return expansions, including extending credit to the private sector, are worth the financial cost of borrowing to finance them. The latter financing modality, in the form of liquid foreign exchange reserves, is currently yielding very low returns and therefore provides a tempting means to finance countercyclical fiscal deficits. However, reserve-financed fiscal expansion is subject to two important constraints.

First, to the extent that creditors’ perception of sovereign risk depends on the public sector’s *net* debt, the use of foreign exchange reserves to finance fiscal deficits would increase debt-servicing costs in the same way as would the issuance of new government debt to private creditors. However, if high public sector borrowing costs have arisen for exogenous reasons—e.g., through the “monsoon effects” mentioned previously—and are not very sensitive to fluctuations over the relevant range in the size of the public sector’s net debt, then drawing down such assets would have little effect on the public sector’s debt servicing costs.

Even in this benign case, however, there is a second constraint. The true opportunity cost of reserves has two components: the financial return on reserves and the liquidity benefits that they offer, in the form of protection against a self-fulfilling “sudden stop” of financing, to which even a solvent government may be vulnerable. This protection represents an implicit “liquidity

premium” on reserves, which makes them worth holding even when they offer a low financial yield. The costs of reserve financing should thus include this foregone liquidity premium. To the extent that Latin American countries are vulnerable to liquidity crunches, this premium could be high. Since the current crisis may develop into a full-blown liquidity crisis where access to credit markets is lost, the high cost of financing a fiscal expansion may remain a constraint even when reserves offer a seemingly low-cost alternative to borrowing, because prudence may suggest a limit on the use of reserves.

### ***5.7 Fiscal Rules***

Finally, even countries with no fiscal sustainability concerns and strong liquidity positions may be constrained by inflexible fiscal rules that limit their ability to run fiscal deficits that can be technically justified and can be comfortably financed, as was the case with the Growth and Stability Pact in the European Union. In Latin America, Chile has a structural budget rule calling for a fixed structural fiscal balance over the cycle. This rule is to be commended because it ensures fiscal sustainability (while delivering smooth public spending determined by trend public revenue) while being cyclically neutral. In the absence of an escape clause, countries such as Chile that are bound by credible fiscal rules may not have the option of implementing a fiscal response that would increase the structural deficit beyond the bounds set by such rules without endangering the credibility of the rule.

## **6. The Case for Constrained Fiscal Expansion**

Combining the arguments made in the last two sections, a case can be made that it may not be appropriate for fiscal policy to respond countercyclically in Latin America. If fiscal policy multipliers are small (as they might be in the more open economies in the region), then the amount of domestic aggregate demand stimulus that could be obtained for any given increase in public sector indebtedness through debt-financed spending increases or tax cuts may be too small to compel national authorities to undertake a countercyclical fiscal response. This argument becomes stronger if, as is currently the case throughout the region, debt financing is extremely expensive. It becomes even stronger if, as is the case for some countries in the region, public sector debt stocks are already high relative to the debt-servicing capacity of the relevant

governments, so that any increases in fiscal deficits would call for future fiscal adjustment and tend to threaten fiscal insolvency.

However, an alternative argument makes a persuasive case for fiscal expansion, possibly even in cases such as those described immediately above. Start from the observation (or contention) that the social rate of return on well-designed public sector investments is likely to be quite high in Latin America at present. There are at least two reasons to believe that this may be so. First, past resource misallocations during booms in the region, and extended periods of fiscal stringency during busts, have severely depleted the public sector capital stock in the region, indicating that public investments in areas such as infrastructure, health, education, and internal security may have a high social payoff. Second, the opportunity cost of many of the resources that would be absorbed by such spending may be near zero at present, since the crisis will create substantial unutilized productive capacity in the region.

In addition to their potential for positive aggregate supply effects, it is quite likely that the aggregate demand effects of productive public expenditures of the types described above would prove to be stronger than would be suggested by simple analyses of fiscal multipliers based on the degree of openness of these economies.

This is true for a number of reasons. First, it matters what the government spends the money on. Expenditures on infrastructure, health, education, and internal security are likely to be heavily nontraded-intensive, providing a direct stimulus to domestic production. In the parlance of the current debate over stimulative spending proposals in the U.S. Congress, spending of this type is “job-creating.”

Second, as mentioned above, the desire of private agents to move assets out of the region has created substantial pressure for nominal exchange rate depreciation in Latin America, at the same time that inflation rates have remained low. To the extent that the implied real exchange rate depreciation is allowed to happen, it should be expected to create expenditure switching in favor of domestic goods in subsequent rounds of private-sector spending induced by the initial fiscal stimulus, increasing the fraction of such spending that is used to purchase domestic goods.

Third, to the extent that productive public investment reduces bottlenecks in domestic production and/or induces favorable expectations about the domestic availability of factors that are complementary to private physical capital, it should also be expected to stimulate domestic private absorption through both consumption and investment. This creates the potential for a

significant “crowding in” effect that would increase the aggregate demand impact of the fiscal expansion.

Fourth, fiscal policy in the form of credit to viable segments of the private sector cut off from normal credit channels due to the liquidity crunch, in countries where the financial system is not supporting credit demand appropriately, may also have large social returns. Depending on the countries, external credit to the private sector saw a pronounced surge in interest rates, outstripping that of sovereign borrowing, or an outright sudden stop. Furthermore, faced with substantial uncertainty, in some countries local banking systems resorted to a wait-and-see lending strategy with respect to the least creditworthy segment of borrowers which feeds into the macroeconomic slowdown.

Fifth, in addition to these positive aggregate supply and demand effects, there may be a more urgent reason to favor investment-intensive fiscal expansion (including active targeted credit policies) in Latin America at the present time: if such spending can indeed ameliorate the effects of the adverse shocks on domestic economic activity, and if there are threshold effects in financial sector solvency, then minimizing the contraction in domestic economic activity to the greatest extent possible may be critical to protect the domestic financial systems in Latin American countries. The objective would be to avoid having the external shock trigger domestic financial crises that would have the potential of greatly magnifying the real as well as financial effects of the international crisis in Latin America. To date, Latin America has largely escaped the financial sector collapse and domestic credit freezes that have made the crisis so severe in several OECD countries. But financial systems in Latin America are fragile, and a sufficiently sizable real shock may be enough to threaten the perceived solvency of these systems. It is urgent to avoid such an outcome, which would not only substantially magnify the adverse short-run real effects of the crisis, but would also increase its fiscal costs and make its resolution much more complicated.

Finally, aside from its macroeconomic effectiveness, an additional reason to look favorably on an increase in public investment spending and credit policies in Latin America under current circumstances is that it takes up less “fiscal space” than other possible expansionary fiscal programs. Specifically, because public investment stimulates future output, it increases future tax revenues and thus partly provides the means to service the additional debt



(or make up for the lost revenue from reserves) to finance it. Prudent credit policies in the midst of a poorly functioning financial system would create “fiscal space.”

### ***6.1 The Problem of “Fiscal Space”***

The obvious question, however, is whether there is any “fiscal space” to undertake such a program in the first place. As discussed above, an expansionary fiscal package that does not square with a credible sustainable rule going forward may trigger a harmful increase in default risk spreads. This is especially likely, of course, if the initial debt level is high relative to a government’s debt-servicing capacity. There is indeed evidence that the effect of fiscal stimulus packages in high-debt economies is worse than in low-debt economies, and that the overall effect on growth is often negative (IMF, 2008). In what follows we discuss the limits that fiscal space imposes on countercyclical fiscal expansion in Latin America.

The first observation to make is that, as shown in Figure 6 above, debt/GDP ratios among Latin American countries are currently low by the standards of recent years, leaving perhaps unused borrowing capacity. This capacity could be enough to finance temporarily low fiscal balances resulting from the slowdown plus any additional countercyclical expansion. But the “fiscal space” implied by this unused borrowing capacity would not in itself validate a countercyclical expansion, that is to say a reduction in the structural primary surplus, if the current value of the structural primary surplus in these countries is *already* low enough to imply an increasing debt/GDP ratio in the future.

Is that the case? To answer that question we need to compare the current values of the structural primary surpluses in these countries to the values that would be required to sustain the current low debt/GDP ratios. To do so, we conduct a traditional sustainability calculation for each of the LAC7 countries.<sup>3</sup>

The situation for the LAC7 countries in 2007 is illustrated in Table 1. The first column shows the public debt ratio in each country as of end-2007, and the second column shows the primary structural balance required for debt sustainability (the “target” structural balance). The latter is based on the assumptions of a 3 percent real growth rate and a 400 basis point spread

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<sup>3</sup> To abstract away from valuation effects, we will assume in the exercise below that the relevant real exchange rate was in long-term equilibrium, so that, on average, there are no valuation changes arising from real exchange rate changes. This assumption appears reasonable; exchange rate flexibility in most countries has avoided any major real overvaluation that could cause a permanent debt explosion going forward.

over a real interest rate of 3 percent (i.e., a long-run real interest rate of 7 percent), along with the target balance augmented by a 1 percentage point security margin for higher debt countries.<sup>4</sup> The next three columns provide a range of estimations of the 2007 *structural* primary balances in each of these countries. The first two estimations of the structural primary balance are based on different methods of isolating structural revenues from the observed series, in one case based on a standard filtering and in the other based on a filtering method designed to mimic the Chilean fiscal rule (after adjusting for structural breaks); see Izquierdo and Talvi (2008) for details. The first method may be appropriate for countries with temporary revenues closely associated with the GDP cycle, but it would be inappropriate for countries with substantial revenues linked to volatile commodity prices, such as Chile. The second method is appropriate for Chile and may be appropriate for other countries with sizable commodity-linked revenues. In this sample of countries, Mexico and Venezuela are more sensitive than Chile to a drop in commodity prices, and Argentina, Brazil, Colombia and Peru are less so.<sup>5</sup> The column that follows, which we will use as our main reference structural primary balance for the purpose of this illustration, selects one or the other estimate of the structural primary balance from the previous two columns, depending on whether revenues are more or less commodity-sensitive than Chile's.<sup>6</sup>

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<sup>4</sup> The security margin was added to Argentina, Brazil and Colombia, countries with debt/GDP over 30 percent. We point out that in this illustration the long-run real interest rate net of GDP growth is the same for all countries (4 percent), which may be unrealistic.

<sup>5</sup> Even though, with the exception of Brazil, their public commodity revenue exceeds 2 percent of GDP.

<sup>6</sup> This discrimination between commodity and non-commodity structural revenue is in the spirit of Vladkova-Hollar and Zettelmeyer (2008).

**Table 1. Fiscal Sustainability in LAC-7 as of 2007 (percentage of GDP)**

	Public Debt	Target Primary Balance	Structural Primary Balance			Required Structural Adjustment	Default Risks
			Traditional HP Filter*	“Chilean” Fiscal Rule	Reference		EMBI Spreads
			%	%	%		%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Argentina	55.6	3.2	2.4	-3.0	2.4	0.8	300
Brazil	72.9	3.9	3.9	1.7	3.9	0.1	200
Chile	14.6	0.6	6.8	1.6	1.6	-1.0	100
Colombia	48.6	2.9	2.7	3.2	2.7	0.2	150
Mexico	23.0	0.9	1.6	-1.9	-1.9	2.8	150
Peru	29.6	1.2	2.5	-0.4	2.5	-1.3	150
Venezuela	19.5	0.8	0.1	-8.5	-8.5	9.3	350

*Source:* LMW (IDB, 2008) and Bloomberg. Notes: \* 2006. (1) Total Public Debt % of GDP, (2) Total Public Debt (% of GDP - end of period) \*(0.07-0.03), (3) and 4) from Table 1 of Izquierdo and Talvi (2008), plus “Interest Payments: % of GDP”, (6) (2)-(5), (7) Average 2007, rounded to the nearest 50.

Column (6) presents the structural adjustment that would be required to stabilize the current debt/GDP ratio, calculated as the shortfall between the estimated structural primary balance (reported in the “reference” column) and the target. By this calculation, most countries are very close to the value of their structural primary balance that would be required to stabilize their debt/GDP ratios at their current values. An exception is Venezuela and, to a lesser extent, Mexico. Alternatively, if the Chilean fiscal rule in column 4 is used instead as a measure of structural balance for all countries except Brazil (the only one whose commodity-linked revenues do not exceed 2 percent of GDP), then Argentina would also fall into that group.

What does this imply about “fiscal space” in the region? In relation to countries not far off their sustainable target, there is nothing particularly desirable about structural primary surpluses that would sustain current debt/GDP ratios in these countries. Because debt/GDP ratios have come down fairly dramatically for the LAC7 countries as a group from 2003 to 2007, smaller-than-sustainable values of the structural primary deficit—i.e., values that would imply an *increase* in the debt/GDP ratio—are unlikely to impair perceived fiscal solvency in most of these countries, as long as they are transitory, unless there are other risk factors. Since the analysis above shows that most LAC7 countries are not currently exploiting this fiscal space, it implies that there is room for transitory fiscal expansions.

An alternative, market-based indicator of available fiscal space is given by the perceived default risk on external debt, as revealed by sovereign spreads. As indicated in column (7), in 2007 Argentina and Venezuela were in a class of their own (their spreads were about twice as large as the other countries'), even prior to the recent global increase in spreads of risky securities that pushed theirs to default levels. While this may be a noisy signal of sustainability (because it may also reflect a transitory bias towards a preference for not adjusting to make debt payments), it is nevertheless a relevant one for our purposes, and it is largely consistent with our findings when indebtedness indicators are combined with sustainability calculations.

Our analysis therefore suggest that countercyclical fiscal policy cannot reasonably be ruled out as a valid policy aspiration in Latin America on grounds of inadequate "fiscal space," although the scope for such policies may indeed be constrained by solvency concerns in some countries. Specifically, the evidence above suggests that Chile is in a relatively comfortable situation in which fiscal space is clearly not a constraining factor, while Brazil, Colombia and Peru also have fiscal space for countercyclical expansion, though it is more limited than in Chile. In the case of Mexico fiscal policy already implies a pace of increase in the debt/GDP ratio that would suggest caution about further expansion, unless it is limited and of short duration, although Mexico's low debt level may afford it some leeway. For Argentina, any fiscal stimulus package expanding spending beyond its trend (countercyclical spending) would probably add to a deviation from the target structural primary balance and may be deemed too risky in light of the country's debt level and its recent fiscal experience. Finally, Venezuela is very far from fiscal sustainability and would probably be ill-advised to consider further fiscal expansion.

We take this exercise as an illustration of the kind of considerations that countries should make to determine their fiscal space and the extent to which countercyclical fiscal policy would be appropriate in their circumstances. The above evidence is not enough to reach firm conclusions except in the most extreme cases, but it is enough to show that the question of how to participate in the multilateral effort of countercyclical fiscal policy in this global crisis is relevant in Latin America.

## ***6.2 Fiscal Space and Fiscal Rules***

The conclusions above are based on the assumption that fiscal policy as of 2007 is representative of future fiscal policy—in other words, that future fiscal policy will follow past experience. That

assumption may be realistic but is certainly restrictive. If policies can be freely reset, then in the vast majority of countries an optimal fiscal path would call for some countercyclical expansion in the face of the current severe slowdown, followed by future adjustments. In effect, these countries would like to be able to commit to such adjustments, but may lack the credibility to deviate from past behavior. The space for beneficial countercyclical fiscal policy would be larger if countries were able to credibly commit to a change in the fiscal policy regime—specifically, to a fiscal policy rule that delivers larger structural balances in the upturn than have been recorded in recent years, instead of one that spends a fraction of the temporary revenues in boom periods, because temporarily high revenues make fiscal balances look misleadingly healthy. We would like to argue that this is a historical opportunity for countries to implement institutional reform establishing a credible commitment to strengthen future fiscal balances based on a structural fiscal framework. In this way, it would be more credible that the required adjustment would be made in the upturn, and efficient countercyclical fiscal policy in the current crisis would not become a negative signal regarding fiscal solvency.

The key to reform would be to establish an independent and reputable agency to produce and disclose the structural position of the fiscal accounts in such a way that national debate on fiscal aggregates would revolve around these structural estimations. Such a step would make it substantially more difficult to spend away temporary revenues in boom times under the cover of good headline balances. A more complete reform would further establish an overall target for the structural primary balance well within the sustainability threshold in order to ensure that high debt ratios decline over time (as in Chile). Ideally, reform would also provide for a countercyclical target rule so that countercyclical policy does not require discretionary changes to the rule.

The benefits are clear. First, it is technically sound because it allows the stabilization of tax rates and public spending, cum countercyclical policy. Second, it would substantially enlarge fiscal space by attracting more financing from the market and multilaterals (to be discussed in the next section), thereby allowing much larger scope for a countercyclical response to the current downturn. Not only are the benefits clear, but from a political economy viewpoint the time may be right for reaching consensus. The establishment of a structural fiscal framework in this downturn would not come accompanied by a drastic adjustment to the actual fiscal balance, as would happen in boom times, but rather by a more popular fiscal expansion.

Of course, any other form of shoring up future fiscal discipline would also serve the purpose of relaxing the sustainability constraint and allowing more fiscal stimulus. For example, there is evidence in G7 countries that discretionary countercyclical policy is asymmetric and generates a debt bias but automatic stabilizers such as unemployment insurance do not (IMF, 2008). The reason is that automatic stabilizers are temporary, while discretionary policy tends not to be reversed after the downturn. Therefore, the introduction of automaticity into fiscal policy (contingent rules) contributes to the credibility of discipline. More generally, addressing some of the long-term imbalances such as deficits in pension programs would also help to shore up sustainability and open more space for fiscal action in this downturn. *Contrario sensu*, the introduction of difficult-to-revert measures and increases in future liabilities shrink the scope for countercyclical policy.

## **7. Is the “Rainy Day” at Hand?**

One objection to the “fiscal space” analysis of the previous section is that it ignores the temporarily high real borrowing costs that countries in the region face. However, such costs would be borne only if larger fiscal deficits were financed by issuing new debt. That is not the only option available to them.

As shown in Section 3, Latin American countries have accumulated large stocks of foreign exchange reserves in recent years. The motivation for this accumulation has in part been as a form of self-insurance i.e., as “rainy day” funds. The opportunity cost of these reserves can be measured in two ways: as the foregone domestic investment that they could otherwise have financed, or as the cost of the additional public debt that would have been required to sterilize their monetary effects. We have argued in previous sections that the social rate of return on productive public spending or targeted credit policies may be particularly high under present conditions, and have documented that the cost of public sector debt in Latin America has been increased by the crisis, at the same time that the crisis itself, as well as the monetary policy response in industrial countries, has reduced interest rates on public sector securities in the United States. The upshot of these arguments is that, however measured, the opportunity cost of reserves in Latin America has become very high at the same time that their *financial* returns have become very low. Ignoring for the present the liquidity premium on reserves (but see below), the implication is that *there is a case for reserve-financed countercyclical fiscal policy in Latin*

*America*, since the governments of the region can “borrow” more cheaply by drawing down reserves than by issuing debt on current market terms. In other words, the “rainy day” for which the reserves were accumulated is at hand: this is an opportune time for Latin America to convert a significant portion of its foreign exchange reserves into productive public spending. The large stocks of foreign exchange reserves accumulated in recent years provide the needed funding for such investments, and the aggregate demand contraction resulting from the crisis provides the “macroeconomic space.” Why not use reserves to finance countercyclical fiscal expansion? There are two arguments to avoid doing so, as discussed below.

### ***7.1 Fear of Floating***

The first argument is that reserves are needed to avoid exchange rate depreciation. If the central bank seeks to defend the exchange rate in the face of a desired change in the composition of private portfolios from domestic assets to U.S. government liabilities, it would have to accommodate the private sector’s increased demand for foreign securities by absorbing domestic securities in exchange for some part of its foreign exchange reserves. If the central bank does *not* accommodate this desire, then the domestic currency would depreciate until the private sector is once again expecting a risk-adjusted rate of return on domestic securities that is commensurate with what it can expect to earn on foreign securities. In the first case the central bank’s reserve stock would be at least partially depleted, while in the second case it would not. If reserves are *not* depleted by central bank intervention in the foreign exchange market—i.e., if the nominal exchange rate is allowed to depreciate to accommodate the shift in the private sector’s portfolio preferences, then the existing stock of foreign exchange reserves is available to finance deficit spending by the government.<sup>7</sup> This scenario assumes a floating exchange rate, though one which would absorb only the initial depreciation associated with the increase in risk premia, and not the additional depreciation that would be implied by central bank financing of fiscal deficits.

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<sup>7</sup> This could be accomplished by the sale to the central bank of the government securities required to finance such deficits. When the government spends the proceeds of those sales, the central bank would prevent further depreciation of the currency beyond what is required to accommodate the initial portfolio shift by re-absorbing the increase in the base through sales of dollars in the foreign exchange market, resulting in a depletion of reserves with an unchanged base. The upshot is that the exchange rate depreciates by the amount required to accommodate the initial portfolio reallocation, and the subsequent government deficits are financed by drawing down reserves.

There is nothing magical about this particular combination, however. In principle, fiscal expansion and real exchange rate depreciation could *both* be called upon to stimulate domestic economic activity in Latin America, so one could argue that fiscal expansion should not be reserve-financed, but rather money-financed—i.e., the central bank should not sterilize the monetary effects of the government securities that it purchases to finance larger fiscal deficits. Indeed, one could go further and suggest that the central bank could be even more aggressive in pursuing an expansionary monetary policy—not only refrain from sterilizing, but actually intervene in the *opposite* direction by purchasing not just newly-issued government securities, but also existing ones. In other words, central banks in the region could emulate the Fed by increasing the size of their balance sheets to provoke additional depreciation of the domestic currency. Under current conditions one could argue that this is unlikely to be inflationary. Such a policy runs into at least two potential constraints, however, not faced by the Fed: those posed by currency mismatches and those posed by the past inflationary history of many countries in the region.<sup>8</sup>

The extent to which exchange rate depreciation can complement fiscal expansion in stimulating aggregate demand in individual countries depends on the degree to which currency mismatches in such countries would cause exchange rate depreciation to create domestic financial disruption by impairing the net worth of domestic financial institutions, firms, and governments with foreign currency liabilities that exceed their foreign currency assets. Such vulnerability creates a ceiling beyond which the price of foreign exchange would trigger a domestic financial crisis, thus affecting not only the desirable mix between fiscal expansion and exchange rate depreciation, but also the extent to which debt-financed fiscal expansion is feasible. Countries that are highly vulnerable to dislocations arising from such mismatches will require larger minimum reserve levels than those that are not so vulnerable, and they will have devoted more of their original cumulated reserve stocks to preventing the exchange rate depreciation associated with the portfolio shift implied by the increase in risk premia on domestic assets.<sup>9</sup>

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<sup>8</sup> These constraints have figured prominently in the “fear of floating” literature (see Calvo and Reinhart, 2002).

<sup>9</sup> In extreme cases, the reserve-financed fiscal program proposed in the last section would simply not be feasible for such countries. If public investment is nevertheless perceived as highly productive, their fiscal options would be to undertake such spending on a pay-as-you-go basis (i.e., through balanced-budget spending), to incur high-cost debt (if possible) in order to fund higher-return projects, or to rely only on automatic stabilizers.



The inflationary history of many countries in the region could also limit the effectiveness of this strategy. If exchange rate pass-through remains important, or if monetary expansion undermines the anti-inflationary credibility of central banks, upward pressures on domestic prices could emerge even in the context of deficient capacity utilization. This would not only diminish the extent of real depreciation that would be associated with any degree of nominal depreciation, but would also compound the macroeconomic challenge by adding the problem of inflation to that of recession.

The point at which these constraints become binding depends on the impact of the crisis on the demand for monetary base in Latin American countries. If the crisis has expanded the demand for base money, this facilitates the financing of fiscal deficits through seignorage, rather than by drawing down foreign exchange reserves. If the opposite is true, then some of the central banks' foreign exchange reserves would have been required to limit the extent of exchange rate depreciation to what it would have been in the absence of a change in the demand for base money, leaving correspondingly less room for reserve-financed fiscal deficits.

## ***7.2 Exposure to Future Liquidity Risk***

The second argument is that a strategy of spending reserves is too risky, because it would leave countries exposed to future liquidity risks. This can be viewed as a claim that the “rainy day” analysis above undervalues the opportunity cost of reserve financing by ignoring the liquidity premium—i.e., by implicitly assuming that financing is always available for prospectively solvent governments on normal terms. But liquidity risk could clearly become a major consideration if the global financial crisis threatens to produce a temporary sudden stop of external financing. In this case countries with difficult or no access to financing—that is, those undergoing a sudden stop—would be forced to rely on their own reserves to finance their flow payment obligations with a stock, and would therefore become increasingly exposed to liquidity risk as time passes.

Vulnerability to such creditor panics actually varies substantially across countries in Latin America. An important factor underlying such vulnerability across countries is the maturity profile of their public debt. Table 2 shows indicators of the public sector financing gap that would emerge for various countries if, on top of expected fiscal deficits, market debt were not

rolled over (short-term debt plus amortization payments on other debt falling due in 2009/10 plus the estimated fiscal deficit).

**Table 2. Liquidity Risk in LAC Countries**

Spread (EMBI) (May 2009)	Public Sector Financing Gap (% of GDP, Average 2009-2010)*		
	Under no Market Debt Roll-over		
	>10	>4 & <10	<4
>800	Jamaica	Argentina Venezuela Dominican Republic	Ecuador Belize
>400 & <800		El Salvador	Guatemala Uruguay
<400	Brazil	Costa Rica Colombia Mexico	Panama Peru Chile
n.a.	Guyana Barbados	Suriname Nicaragua Haiti Bolivia	Paraguay Honduras

*Source:* Authors' compilation based on national statistical office data.

*Notes:* Short Term public commercial (external + internal) debt at remaining maturity plus financial deficit as % of GDP. \*Trinidad & Tobago and Bahamas not available.

As the table indicates, there are a number of countries with a sizable potential financing gap for which the dominant factor is public market debt amortization to be rolled over (short term debt at remaining maturity). The wide range of variation of sovereign risk spreads across countries in the region may indeed partly reflect vulnerability to liquidity risk, rather than more conventional solvency considerations. For perspective, it is worth noting that the regular public sector financing needs described in this table dwarf the funding required for countercyclical fiscal policy, which for the region as a whole could amount to less than 10 percent of the total (see estimations in Izquierdo and Talvi, 2009).

What are the implications of this regional exposure to liquidity risk? An obvious interpretation is that the liquidity premium on reserve holdings is quite high indeed, implying that market borrowing, even at high current rates and short maturities, would be preferable to (less expensive than) drawing down reserves to finance countercyclical fiscal policies. But the

recommendation to passively continue with market financing as long as it is accessible (i.e., until a liquidity crunch occurs) is not unassailable. The reason is that the indicators of financial vulnerability in Table 2 may actually be rather misleading, in several ways.

First and foremost, this time an external sudden stop of market financing would not necessarily imply a sharp fiscal contraction. Domestic debt is now the prevalent form of public market debt for many countries in the region, including Brazil and the rest of the larger countries, which are shown in Table 2 as facing relatively high liquidity risk. Aggregate market rollover needs in Latin America are less than 15 percent external. Therefore it can be argued that the risk spreads noted above, which are applicable to external debt, overstate potential risks associated with access to financing for such countries. In fact, domestic sources of finance are often captive (e.g., pension funds). To some extent this may make them more a form of taxation than of market borrowing, but in any case this leaves them in the role of providing funds when needed, and therefore of protecting against sudden stops of external funds.<sup>10</sup>

Second, a sudden stop in external market financing does not mean a sudden stop in all external financing. In fact, official creditors are playing an important role in ameliorating a potential liquidity crunch. Official lending is “stepping up to the plate” in this global crisis and increasing its financial support to several countries, thus alleviating the constraint imposed by costly and unreliable external market debt. This holds true for the Inter-American Development Bank and the World Bank, which are rapidly expanding their programs and lending in large volumes to sovereigns all across Latin America for fiscal and quasi-fiscal spending in the tens of billions. This also holds true for the International Monetary Fund, which received very substantial new funding at the last G20 meeting to back up the international reserves of developing countries, and to lend if need be, and has already signed agreements with several Latin American countries for more than \$60 billion. These efforts follow the \$30 billion credit lines that the U.S. Fed has made available to Mexico and Brazil in the past few months. The

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<sup>10</sup> However it is not clear that these tax-like sources of finance can be stretched much further, and if they cannot be then the risk information on external debt may still be a relevant indicator of liquidity risk at the margin. Argentina is an example of a country in which there is a solid domestic anchor to ensure the bulk of the required fiscal financing despite a lack of access to external credit, but that still faces a challenge in finding sources of finance for its stimulus package.

point is that the weakness of external credit markets in the current crisis is being increasingly offset by a strong response by official creditors.<sup>11</sup>

Third, even if a sudden stop of overall external market funding materializes and mandates a current account adjustment, the economic damage likely to be done by that adjustment is likely to be much smaller than in the past. This is so because countries in LAC are not currently running large current account deficits, implying smaller required changes real exchange rates (and current accounts) if a sudden stop materializes, as well as because the reduction in the severity of currency mismatches in many countries of the region implies that any real exchange rate adjustments required would tend to be much less financially disruptive than they have been in the past.

Fourth, in any case, as mentioned above, countries have accumulated substantial reserves to meet financing needs in a downturn like the current one, amassing reserve stocks to the tune of half a trillion dollars in the aggregate, a figure that is very high by historical standards (as previously shown in Figure 7). A clear example is Chile, which saved the temporary portion of copper-related revenues during the boom years in a \$20 billion fund which is now available to finance its fiscal spending and would have gone a long way toward achieving that goal even if Chile had suffered from a sudden stop. As a consequence of these reserve stocks, liquidity indicators are at record highs. Figure 8 shows the evolution of international reserves ( $R$ ) relative to all external debt coming due in 2008, or short-term debt at remaining maturity ( $S$ ). This liquidity indicator  $r = R/S$  is in the spirit of the so-called Guidotti-Greenspan indicator, which has a conventional associated safety threshold of 100 percent. Figure 9 shows current values for individual countries, almost all of which exceed that threshold.<sup>12</sup>

Finally, given the values of reserve stocks and countries' flow financing needs, the liquidity value of reserves stocks at the margin (and thus the size of the liquidity premium) depends on the duration of any sudden stop of external financing. A countercyclical stimulus package of some 2 percent of regional GDP over the next two years, under conservative assumptions on its net impact on the fiscal deficit, entails a reserve loss of less than 10 percent of

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<sup>11</sup> Official lenders able and willing to extend financial assistance under these circumstances would be enabling countries not only to implement appropriate countercyclical policies but, in some cases, to avoid enormous unnecessary costs associated with fiscal retrenchment in a severe recession. Multilaterals have an important countercyclical role to play in relaxing a financing constraint that may condemn countries to inaction or even to procyclical adjustment when a more active fiscal policy would be advisable.

<sup>12</sup> This indicator underestimates the situation in countries with sizable short-term foreign bank deposits (included in the denominator) offset by bank international reserves (excluded from the numerator).

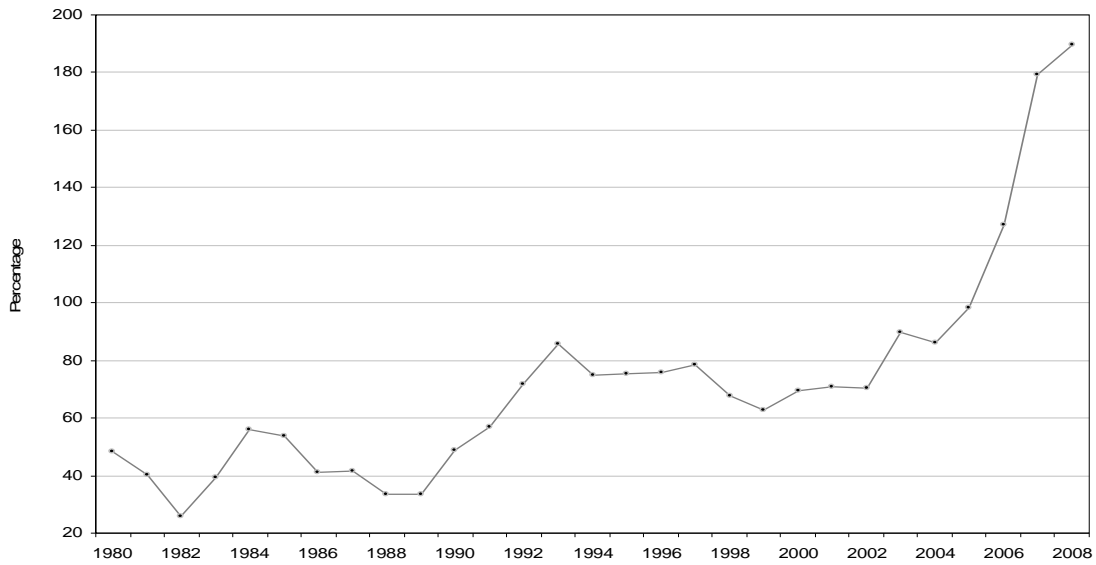
the total. Assume that 10 percent of existing reserves are indeed used to finance such a package. If the duration of any liquidity crunch is sufficiently short as to nevertheless leave ample reserves even after such reserve use, the foregone liquidity benefit of such reserves (and thus the liquidity premium that should be attached as a cost to their use) is essentially zero. The same is true if the crunch were to last long enough to exhaust reserves even without reserve financing of the fiscal expansion. Abstaining from a fiscal response in order to hoard reserves would therefore be useful—and reserve use should therefore be charged a liquidity premium at the margin—only in the very unlikely event that the liquidity crunch is just the right size, neither too small (no need) nor too large (no use).<sup>13</sup>

Abstaining from active fiscal policy to hoard reserves would be largely ineffective to deal with the exogenous uncertainty of a continuing (or deepening) global liquidity crisis. Another implication of the same observation is that in order to make a substantial difference fiscal policy would need to produce a drastic adjustment, rather than simply abstaining from fighting the slowdown: it does not appear plausible to deny otherwise appropriate countercyclical fiscal policy on grounds of financial prudence without also concluding that there would be a need for drastic procyclical fiscal adjustment.

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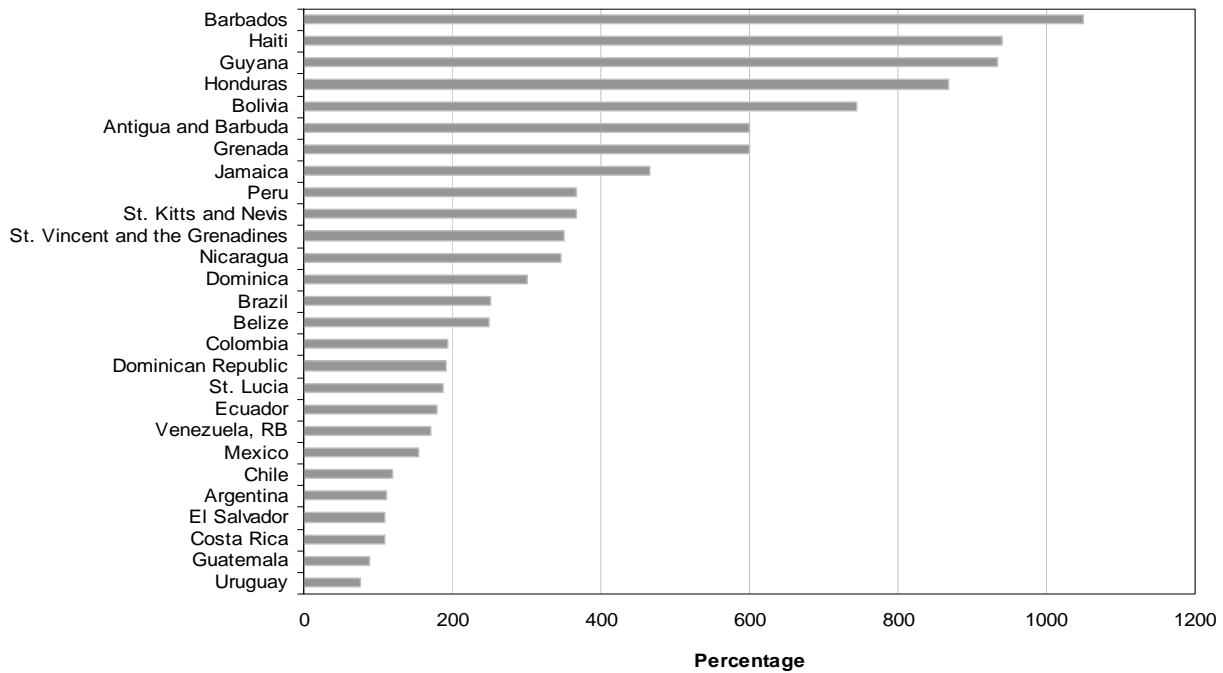
<sup>13</sup> In the latter case the adjusting variable would have to be either special financing from official creditors willing to support multilateral demand stimulus or debt restructuring.

**Figure 8. Aggregate External Liquidity (Guidotti-Greenspan Indicator)**



*Source:* WEO, April 2009. Aggregate stock of reserves at year-end as percentage of aggregate outstanding short-term debt at remaining maturity.

**Figure 9. External Liquidity Indicator for Individual Countries, 2008**



*Source:* WEO, April 2009. Percentage of stock of reserves at year-end, to short-term debt outstanding, remaining maturity basis. TTO, PRY, PAN, BHS and SUR not displayed (exceed 1,250 percent).

In any event, irrespective of whether countercyclical fiscal policy is carried out and, more generally, the size of the public sector borrowing requirements, there is the policy question of whether, on the margin, countries should borrow from markets or utilize reserves instead. It is useful to note in this comparison that the liquidity squeeze produced by reserves-financed spending is not necessarily far greater than that resulting from debt-financed spending when debt becomes “precarious” in the terminology of IT, because in that case rolling over debt is also costly in terms of liquidity. Perhaps surprisingly, if the maturity of debt rolled over is sufficiently short, using reserves may actually be a preferable option in terms of liquidity. Consider, for example, the benchmark steady state case in which  $r = R/S$  period after period, where short-term debt at remaining maturity  $S$  is a fraction  $2/(m+1)$  of overall debt (here  $m$  is the average maturity of total debt; see the Appendix).

As long as debt is rolled over at the same maturity  $m$ ,  $r$  remains constant. Now consider a shock in which debt is instead rolled over at a shorter maturity  $m'$ . If the credit crunch is severe and only short-term loans, say  $m'=1$ , are available, the liquidity gap between reserve and loan financing is  $(r - (1+p^*)) / p^*(1+p^*)$ , where  $p^* = (m-1)/m$ . Then, if the initial liquidity ratio is large, utilizing reserves to pay off debt instead of rolling it over may actually *increase* the liquidity ratio. The appendix shows that if rolled over debt is all short term ( $m'=1$ ), this surprising result is guaranteed to obtain when initial liquidity is above 200 percent ( $r > 2$ ).<sup>14</sup> The upshot is that in a liquidity crunch, the additional liquidity cost of using reserves instead of refinancing with short-term debt may be small.

Our arguments in this section for reserve financing rather than issuing new debt can readily be given a simple formal interpretation. Let  $F$  = amortization + budget deficit be the amount that a government needs to finance each period by using reserves or rolling over debt. Suppose that  $M$  is the amount of new market debt issued (for now we assume that there is no non-market lending) and  $W$  the amount financed with reserves. Between the two they have to satisfy the total public sector financing requirement, so that  $M + W = F$ . The level of reserves in the subsequent period is  $(R - W)$  and the stock of short-term debt in that period is  $(a + M)$ , where  $a$  is predetermined amortizations, to which amortization of new borrowing  $M$  is added (to simplify notation, the unit period coincides with its maturity, so by definition  $m'=1$  and amortization is full). The liquidity indicator in the next period is therefore given by  $r = (R - W)/(a$

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<sup>14</sup> As time passes, the conditions for this result become tighter.

+  $M$ ). Let the (net) cost of borrowing be  $cM$ , where  $c > 0$  is the gap between the market interest rate on new debt and the financial return on reserves. Suppose that the liquidity value of reserves is given by  $qr$ , where  $q$  is a parameter that determines the weight given to the liquidity indicator  $r$ . The value of  $q$  would depend on the various factors discussed in this section, such as the actual costs associated with any credit crunch and the likelihood that such a crunch would actually become binding. The optimal financing decision can therefore be expressed as the solution to the following problem:

$$\begin{aligned} \underset{\{M, W\}}{\text{Max}} \quad & qr - cM && \text{where } r = (R - W)/(a + M) \\ \text{s.t.} \quad & M + W = F \end{aligned}$$

In this formulation we take financial needs  $F$  as given and focus on the portfolio allocation of funding sources. The solution is given in the Appendix. For very large  $q$ , only liquidity matters. Barring the case mentioned above, in which initial reserves are so plentiful that using them is the best way to protect liquidity, in the “normal” case (identified in the appendix) reserves would therefore not be used. In fact, new borrowing would cover not just full debt rollover plus the budget deficit, but also additional borrowing in order to accumulate reserves ( $W < 0$ ). In other words, an extreme focus on liquidity risk ought to lead to a policy recommendation of full market debt rollover and more. However, when the various reasons discussed above cause the weight  $q$  assigned to liquidity risk to be moderate (or more precisely, when the cost of market borrowing is very large relative to the return on reserves, so that  $q/c$  is moderate), the optimal strategy is a mixed solution involving some use of reserves and some borrowing. In that case, it is important to notice that, *ceteris paribus*, a larger initial stock of reserves  $R$  leads to a higher use of reserves  $W$ , and therefore less market borrowing  $M$ , in the optimal solution.

Official financial support would ease the liquidity crunch by providing financing at medium and long-term maturities (and low cost). To simplify, let us assume that official lending  $L$  has a grace period so that it does not impact next-period amortization, and that its cost is equal to the return on reserves, so that we need not keep track of its net cost. Let us additionally assume (without loss of generality as we will see) that official creditors lend to reserves, so that initial reserves are now  $R + L$ . Then, replacing  $R$  with  $R + L$ , the maximization problem above remains the same. In particular, the effect would be that financing out of reserves ( $W$ ) increases.



Alternatively, if official creditors lend for budget support, so that there is a new funding source  $L$  in the constraint ( $M+W+L=F$ ), it is easy to see that the problem would be unchanged. In fact, solving the constraint for  $W$  and substituting, in both cases  $r = (R + L + M - F)/(a + M)$ , and therefore nothing changes. Lending for reserve support (or backing them up) is the same as lending for budget support (or “refinancing short-term market debt”). The way in which official creditors provide liquidity is irrelevant to the country’s decision to borrow from markets.<sup>15</sup> Under any form, official financial support boosts “effective” reserves.

The model above is incomplete because it is conditional on public financing requirements  $F$ , which is of course a policy variable at the center of the question of countercyclical fiscal policy. A more complete model would recognize that there is a tradeoff between its financing costs, minimized above, and its benefits  $f(F)$ , assumed to be subject to decreasing returns ( $f' > 0$ ,  $f'' < 0$ ). Expressing official lending  $L$  as an additional financing item, the model becomes:

$$\begin{aligned} & \underset{\{M, W, F\}}{\text{Max}} \quad qr - cM + f(F) \\ & \text{s.t.} \quad M + W + L = F \end{aligned} \quad \text{where } r = (R - W)/(a + M)$$

This model is solved in the Appendix. The model previously considered concentrates the problem on a given spending  $F$ . The new piece added by this more complete model is how exogenous variables affect the determination of optimal fiscal policy  $F^*$  and, consequently, its financing. As mentioned, it is easy to check by substituting  $W$  from the budget constraint into the function, that official lending  $L$  and initial reserves  $R$  play the same role: what matters is  $R+L$ . The appendix shows that when either reserves or official lending increases, optimal fiscal policy  $F^*$  is larger but market borrowing  $M^*$  is smaller: expanding fiscal policy would be financed by official lending and reserves. Multilateral lending, whether for reserve support or for budget support, contributes to the “rainy day” case argued in this paper as an optimal response.

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<sup>15</sup> Official creditors could only influence such decisions by imposing conditionality that distorts the country’s perceived optimal tradeoff.

## **8. Summary and Conclusions**

Many countries in Latin America have accumulated very large “rainy day” funds as contingencies against adverse macroeconomic events, partly at the expense of productive public investments that could otherwise have been implemented with those funds. The rainy day appears to be here—with a vengeance! The question is whether these contingency funds should now be utilized to cushion domestic economies against the consequences of the most severe international crisis since the 1930s.

This paper has argued that it would be appropriate to do so. Well-managed reserve-financed public investment programs in Latin America would fill an important deficiency in the availability of productive public goods and would stimulate domestic aggregate demand, thereby minimizing the effects of the adverse external shocks that the crisis has generated on real economic activity. By doing so, such financing would safeguard the health of domestic financial sectors, avoiding the triggering of mechanisms that would greatly magnify both the real and financial effects of the crisis. The amount of “fiscal space” available to undertake such spending varies from country to country, but the cushion afforded by the foreign exchange reserves that were accumulated during pre-crisis years provides a source of financing that can be advantageously drawn upon by countries that are not constrained by currency mismatches or extensive exchange rate pass-through.

The increased resources for multilateral liquidity provision that are being deployed by the international community reinforce the case for reserve financing of active fiscal policy. This is true irrespective of whether official lending takes the form of reserves support or budget support; this distinction is irrelevant for the country’s decision concerning financing with reserves or through market borrowing.

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## Appendix

### 1. Shock to the Steady-State Liquidity Case

Suppose that a country contracts new loans each year in the amount  $S$ , with a uniform maturity of  $m$  years. In steady state, the outstanding debt  $D$  consists of the sum of the surviving principals  $S/m, 2S/m, \dots, mS/m=S$  on the debt contracted over the previous  $m$  years. The amortization due each period (on loans contracted over the previous  $m$  periods) is  $S = 2D/(m+1)$  (we refer to this as “short-term debt at remaining maturity”). As long as debt due  $S$  is rolled over at the same maturity  $m$ ,  $S$  and  $D$  remain constant and, assuming reserves  $R$  are constant as well, so does the liquidity ratio  $r = R/S$ .

In a credit crunch, however, new loans are available only at maturity  $m' < m$ .

We consider the following two alternatives:

#### 1. Roll over Debt

In this case, in the next period  $S' = S(1+p)$ , where  $p = (m-m')/mm' = p = 1/m' - 1/m > 0$ . This is obtained as the sum of new amortization  $S/m'$  and predetermined amortization of the loans contracted over the previous  $m - 1$  years  $(m-1)S/m = p^*S$ . Liquidity in the following period becomes  $r(1) = r/(1+p) < r$ . Notice that when there is no change ( $m' = m$ ), the steady state obtains ( $p = 0$ ). In the extreme case in which  $m' = 1$  (short term rollover),  $p = p^* = (m-1)/m$ .

#### 2. Pay with Reserves

In this case reserves diminish by the amount of the amortization payment due, to  $R' = R - S$ , while payments due in the following period diminish to  $S' = Sp^*$  (only predetermined amortization). Therefore  $r(2) = R'/S' = (R - S)/Sp^* = (r - 1)/p^*$ .

When maturity contraction is maximal ( $p = p^*$ ) and therefore the liquidity concern is at its highest, the liquidity gain of paying with reserves is

$$\begin{aligned} r(2) - r(1) &= (r - 1)/p^* - r/(1 + p^*) \\ &= [(r - 1)(1 + p^*) - rp^*]/p^*(1 + p^*) \\ &= (r - 1 - p^*)/p^*(1 + p^*) \end{aligned}$$

Perhaps surprisingly, in this case,  $r > 2$  is a sufficient condition for the use of reserves to improve the liquidity indicator in the following period—i.e., for  $r(2) > r(1)$ .

## 2. Optimal Funding of Public Sector Borrowing Requirements

The public sector solves:

$$\text{Max}_{\{M\}} (q/c)r - M \quad \text{where } r = (R + M - F)/(a + M)$$

$$\text{Let } k = (a - R + F) > 0. \text{ Then}$$

$$r = k/(a + M)^2 > 0 \text{ and}$$

$$r'' = -(2k)/(a + M)^3 < 0$$

$$\text{FOC: } (q/c)r' - 1 = 0$$

$$\text{SOC: } (q/c)r'' < 0$$

When  $k > 0$  (the “normal” case), liquidity improves when debt is rolled over instead of paid off ( $r' > 0$ ) and the above problem has a unique interior solution  $M^*$ . It is easy to check that  $M^*$  is directly related to the weight  $(q/c)$ :  $dM^*/d(q/c) > 0$ .

The comparative statics with respect to initial reserves  $R$  yields  $dM^*/dR < 0$ . To see this, consider the derivative with respect to  $R$  of the FOC which, apart from the factor  $q/c > 0$ , yields  $-1/(a + M)^2 < 0$ .

The complete model, again substituting  $W$  into the function yields:

$$\text{Max}_{\{M, F\}} qr - cM + f(F) \quad \text{where } r = (R + M - F)/(a + M)$$

$$\text{FOC } M: qr_M - c = 0$$

$$\text{FOC } F: qr_F + f' = 0$$

$$r_M = \frac{a - (R + L - F)}{(a + M)^2} > 0 \quad (\text{"normal case"})$$

$$r_{MM} = \frac{-2r_M}{a + M} < 0 \quad r_{MF} = \frac{1}{(a + M)^2} > 0$$

$$r_F = \frac{-1}{a + M} < 0 \quad r_{FF} = 0$$

Assuming that  $f(F)$  is sufficiently concave (reducing spending to gain liquidity is increasingly costly), the SOC of the enlarged problem ensures an interior minimum  $\Delta = q r_{MM} f'' - q^2 r_{FM}^2 > 0$ .

Totally differentiating the FOCs with respect to  $L$  (or  $R$ ) and solving, it is easy to check that the comparative statics with  $L$  (or  $R$ ) yields:

$$dF^*/dL = dF^*/dR = \frac{q^2 r_{MF}^2}{\Delta} > 0$$

$$dM^*/dL = dM^*/dR = \frac{q r_{MF} f''}{\Delta} < 0$$