All That Glitters May Not Be Gold

Assessing Latin America's Recent Macroeconomic Performance

Research Department
Inter-American Development Bank

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Foreword

This report is based on work carried out at the Research Department of the Inter-American Development Bank in the course of 2006 and 2007. Preliminary versions of this work were presented at the XXIV, XXV and XXVI Meetings of the Latin American Network of Central Banks and Finance Ministries, held at the Bank in October 2006, May 2007, and October 2007.[1]

The report reflects views the Department held even before the complex events that have characterized financial markets since late July of 2007. If anything, these events highlight the importance of the thesis discussed here.

The report was coordinated by Alejandro Izquierdo and Ernesto Talvi, with contributions from Luis Catao, Eduardo Cavallo, and Andrew Powell.[*] The views expressed in this report do not necessarily coincide with those of the management of the Inter-American Development Bank or of its Board of Directors.

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Table of Contents

Introduction

T he past five years have been exceptionally good times for Latin America, an impression that one could argue is largely shared by both the official community and financial markets. Although there is some recognition that in part this has been due to a very favorable external environment—strong world growth, high commodity prices and benign financial conditions—this strong performance is largely attributed to substantial improvement in the region's fundamentals. According to this view, the improvement in fundamentals will not only allow the region to sustain high levels of growth, but also make it less vulnerable to adverse external shocks and financial crises, a combination that has often derailed Latin America's economic expansions. "This time is different" is a view that is increasingly winning supporters, especially in light of the recent subprime turmoil, which so far has barely affected Latin America's bond prices. It is fair to say that this view seems to have much in its favor, especially when considering the basic facts.

Or does it? In this report we will go beyond initial perceptions to examine whether Latin America's performance and fundamentals are as sound as they appear at first sight. We will argue that "not all that glitters is gold" and that maybe "this time" is not necessarily that different. After all, it is often the case that fragilities are both generated and easily missed in good times. Nonetheless, it is critical to highlight from the start that the report's intention is not to present a gloomy picture of an otherwise promising reality. On the contrary, the report's aim is to present an alternative perspective in order to avoid either complacency or the "irrational exuberance" famously noted by Alan Greenspan, instead bringing into focus the macroeconomic policy challenges that logically follow from this alternative perspective. Our hope is that both policymakers and multilateral organizations will find this material stimulating enough to precipitate a useful—and in our view, necessary—debate.

The analysis is carried out from a regional perspective. For our purposes the "region" consists of the seven largest countries, namely, Argentina, Brazil, Chile, Colombia,

Mexico, Peru and Venezuela (henceforth LAC-7), which account for 91 percent of Latin America's GDP.[2] This proves to be a useful abstraction for two reasons. First, it calls attention to common trends and systemic patterns that are easily lost when the analysis is pursued from an individual country perspective. Clearly, the performance of Latin American countries has enough in common for such an abstraction to be meaningful. Second, although not all countries fit the regional pattern perfectly in every single dimension, either by similarity or by contrast this abstraction serves as a useful benchmark to gauge the behavior of individual countries.

The rest of this report proceeds as follows. Section 2 reviews the facts that serve as the basis for the "this time is different" view of the region. Section 3 goes beyond perceptions to challenge that view in several dimensions: growth performance, fiscal policy, the composition of public spending, public debt management and the region's external position. We conclude that "all that glitters may not be gold" and that growth performance and fundamentals are weaker than meets the eye. Section 4 briefly explores whether the decoupling of Latin America's bond prices from the meltdown in a wide array of risky assets following the recent subprime turmoil that began in late July of 2007 should be interpreted as evidence of the strength of the region's fundamentals. The final section concludes with a tentative set of policy topics for discussion.

Current Perceptions on Macroeconomic Performance in LAC: "This Time Is Different"

After the period of crisis and stagnation that followed the Russian crisis in August 1998, LAC-7 grew at a meager 0.4 percent between 1999 and 2002. However, in the last five years Latin America has exhibited a revival of external capital inflows, a boom in asset prices, a strengthening of domestic currencies, and solid growth performance. Since the fourth quarter of 2002, regional growth has been close to 6 percent per year—the highest rate since the 1970s, and far above the region's lackluster long-run average growth of 3 percent. Moreover, the growth rate during the current expansion has been stronger than in the previous expansionary cycle, 1991–97, when LAC-7 displayed an average growth rate of 4.6 percent per year (see Figure 1, Panel a).

Moreover, the current expansion has been associated with remarkably subdued inflation rates. With few exceptions, inflation has remained under control during the current expansion, averaging around 5 percent for LAC-7 as a whole.[3] In sharp contrast, inflation averaged 21 percent per year during the 1991–97 boom (see Figure 1, Panel b).

Latin America's recent positive performance owes a great deal to sound macroeconomic and financial policies. Regarding fiscal policy, the current expansion has been associated with major improvements in the fiscal position, reflected in the region's overall surplus of 1.5 percent of GDP in 2007 (see Figure 1, Panel c). With the exception of Brazil (which has a sizeable primary fiscal surplus, but an overall deficit due to a high debt service burden), LAC-7 countries are currently in balance or have a fiscal surplus. In contrast, at the peak of the previous expansionary period LAC-7 exhibited a fiscal deficit of 0.9 percent of GDP, and all countries except Chile had a fiscal deficit.

Recent improvements in the fiscal position, coupled with strong growth and a substantial appreciation of the real exchange rate (26 percent since 2002), have resulted in a significant reduction in public debt levels from 51 percent of GDP in 2003 to 35 percent of GDP in 2007 (see Figure 1, Panel d). Although public debt levels are similar to those prevailing prior to the 1998 crisis, there have been major improvements

FIGURE 1 **Latin America's Recent Macroeconomic Performance**

a. Economic Activity
(LAC-7, GDP Annual Growth)

b. Inflation
(LAC-7 median, CPI Annual Variation)

c. Fiscal Balance
(LAC-7, % of GDP)

d. Public Debt*
(LAC-7, % of GDP)

See footnotes on page 5.
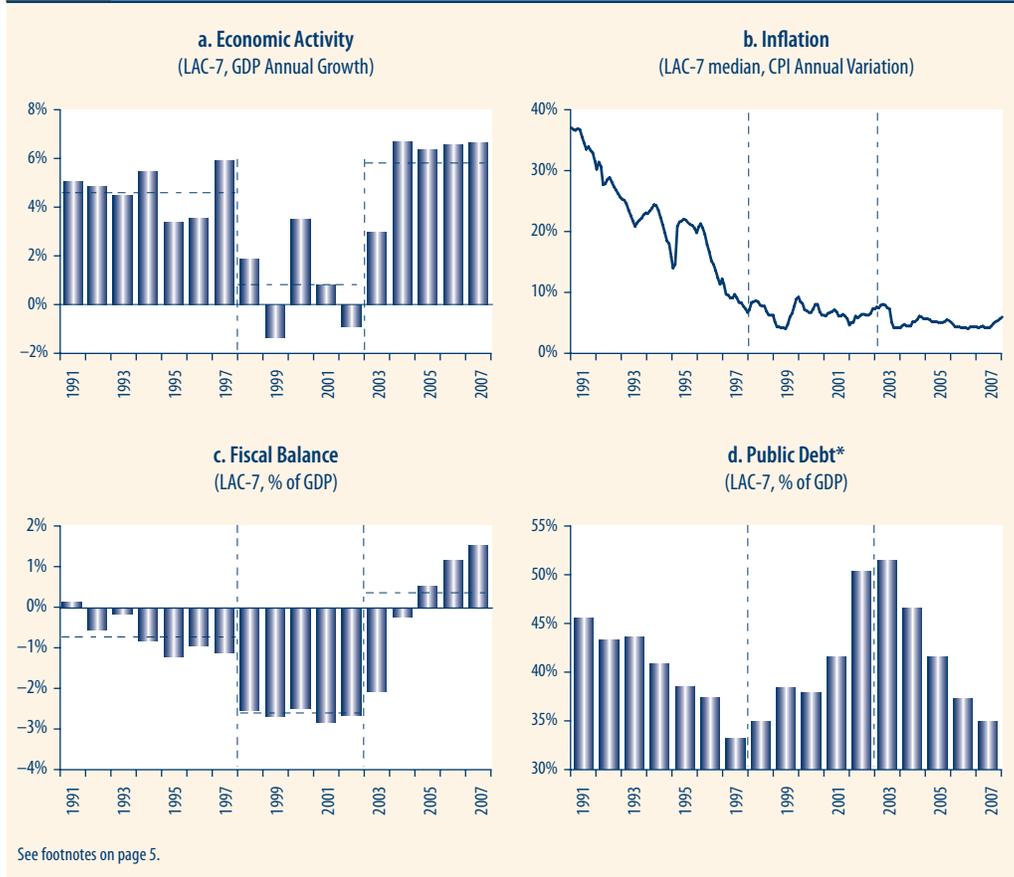
in debt composition. The share of foreign currency debt in total public debt fell from 65 percent in 1998 to 38 percent in 2007 (see Figure 1, Panel e). Thus, exposure to insolvency stemming from balance-sheet effects has been effectively reduced.[4] Moreover, maturities have lengthened: public debt maturing in the next twelve months has declined from 6.9 percent of GDP in 1997 to 4.8 percent of GDP in 2007, and from 72 percent to 55 percent in terms of international reserves net of central bank sterilization liabilities (in spite of a slight increase in nominal terms).

Exposure to external financial vulnerability also seems to have been largely reduced. In contrast to previous expansions associated with large current account deficits and thus, heavily dependent on a steady flow of external financing (which eventually collapsed), the current expansion has been accompanied by improvements in the current account. In fact, LAC-7 exhibited a current account surplus of 2.2 percent of GDP in 2007, compared to a deficit of 3.0 percent of GDP in 1997 at the

FIGURE 1 **Latin America's Recent Macroeconomic Performance** (*continued*)

e. Debt Composition
(LAC-7, Foreign Currency Debt, % of Total Debt)

f. Current Account
(LAC-7, Billions of US Dollars and % of GDP)

g. International Reserves**
(LAC-7, Billions of US Dollars)

h. Credit Ratings***
(Latin America)

LAC-7 is the simple average of the seven major Latin American countries, namely Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela, except otherwise noted. These countries represent 91 percent of Latin America's GDP.

Data sources: based on national sources, WEO, Bloomberg and Cowan, Levy Yeyati, Panizza and Sturzeneger (2006).

*Adjusted by Argentina's debt exchange.

** LAC-7 is computed as the sum of Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

***Latin American countries included in the Emerging Bond Market Index (EMBI) Index with data availability since 1997. Average of numerical scale transformation of S&P credit ratings; see Powell and Martínez (2008).

onset of the 1998 crisis in the aftermath of the Russian debacle (see Figure 1, Panel f). Thus, exposure to Sudden Stops in capital flows has been mitigated, given that Latin America's economies are now net savers rather than borrowers. This reduces vulnerability to standstills in international liquidity that could compromise current account deficit financing and result in real exchange rate meltdowns and traumatic macroeconomic adjustments.[5]

Moreover, during the current expansion there has been a strong build-up of international reserves. They now stand at an unprecedented level close to 400 billion dollars, more than twice the region's reserves at the onset of the 1998 crisis and a large

war chest in the event of a global liquidity crunch (see Figure 1, Panel, g). With a better net foreign liability position at hand, the probability of a Sudden Stop in capital flows should be smaller.[6]

According to the tenets of the view that "this time is different," the combination of Latin America's exceptional macroeconomic outcomes and strong fundamentals place the region in a privileged position to engage in sustained growth and make it less vulnerable to adverse changes in external conditions than at any other time in recent history. This view appears to have been validated by the market: credit ratings have improved significantly during the current expansion (Figure 1, Panel h), and the region as a whole is only a notch below investment grade status. More importantly, recent turmoil in US financial markets, especially in the US High Yield (US HY) bond market, was met with a relatively subdued reaction in Latin America's bond markets.[7] In contrast to past experience, while sovereign spreads have risen (by about 160 basis points since July 2007), they have risen less than historical relationships would have predicted given the sharp rise in several indicators of risk in international markets that followed the onset of the subprime mortgage crisis. This financial decoupling and reduced exposure to financial turmoil in international capital markets is an apparently powerful testimony to the region's new-found strength.

Beyond Perceptions:
All that Glitters
May Not Be Gold

E valuating performance and fundamentals in the midst of an external bonanza is not an easy task. When a boat is sailing fast in favorable winds it is difficult to assess how much of that speed is attributable to the captain's ability.

From a policy perspective, it is particularly relevant to understand properly these signs of success, because perceptions of current policies and fundamentals shape how authorities view potential limitations to sustained growth and whether they need to undertake further effort to reduce vulnerability to adverse changes in the external environment. For a proper evaluation of the strength of the current expansion and the region's policies and fundamentals, it is necessary to filter out the effects of favorable winds that are beyond the control of the authorities. Selecting appropriate filters to judge current performance across several dimensions is obviously not an easy task, and there is always the risk that filter selection could be biased in some respects. Whatever filters are adopted, they must take into account the impact of major forces at play in Latin America's performance and the expanding body of research devoted to policy evaluation. The aim of this section is to go beyond perceptions to evaluate whether, upon closer examination, Latin America's performance and fundamentals are as sound as they appear to be at first glance. The challenge is to separate good policies from good luck.

3.1 Growth Performance

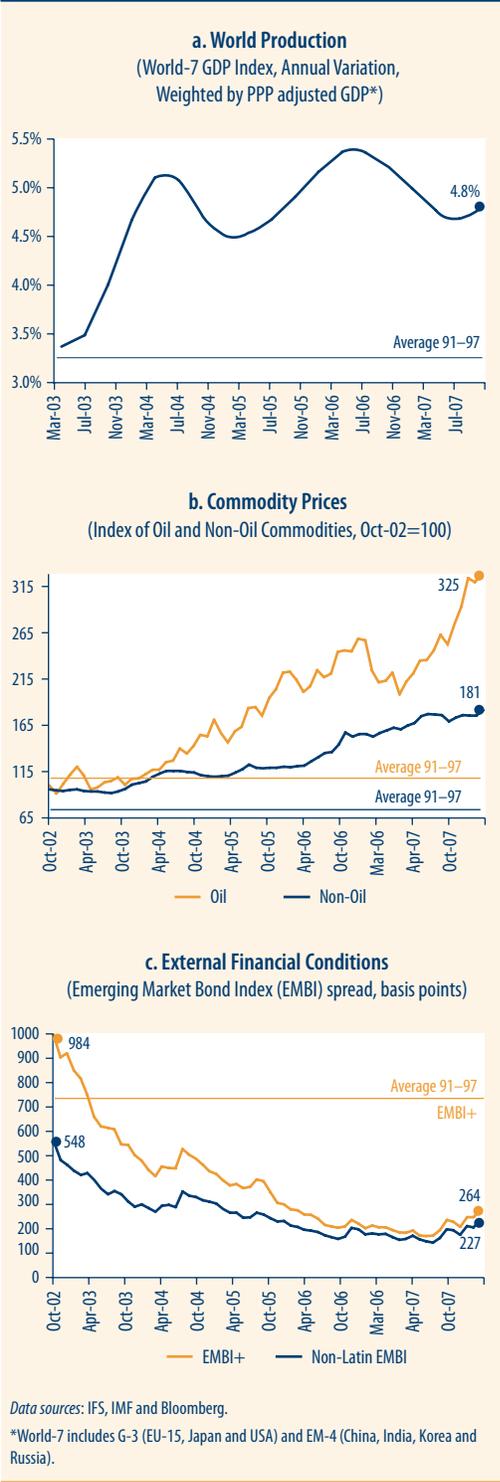The first dimension that needs to be addressed is whether growth performance is as exceptional as it appears at first glance. Empirical evidence strongly suggests that external factors such as world growth, commodity prices and international financial conditions for emerging economies (EMs), play a key role in accounting for economic fluctuations in the region. Figure 2 clearly illustrates that the external environment

has improved significantly during the current expansion phase, meriting a closer examination of this particular issue. Moreover, during the current expansion external factors facing the region have been unusually favorable when compared to external conditions prevailing during the previous expansion of 1991–97. As illustrated by Figure 2, during the current expansion, world growth was 1.4 percentage points stronger, commodity prices 76 percent higher, and Emerging Market Bond Index (EMBI) spreads about 400 basis points lower than during the 1991–97 expansion.

In this context, recent empirical macroeconomic work suggests that the current exceptional growth performance in LAC-7 is largely attributable to the exceptional improvement in external conditions—i.e., had this substantial improvement in external conditions been known in advance, the predicted growth rate for the current expansion period would have been quite close to the observed average rate of approximately 5.6 percent for the 2003–2006 period (see Figure 3, Panel a).[8, 9] If, instead, a forecast of LAC-7 GDP growth had been constructed for the period 2003–2006 conditional on forecasts for external variables based on estimated historical patterns derived from the empirical work referred to earlier, average growth would have been predicted at about 3.8 percent—almost 2 percentage points less than the observed growth rate—a much less im-

FIGURE 2 **External Conditions for Latin America**

a. World Production
(World-7 GDP Index, Annual Variation, Weighted by PPP adjusted GDP*)

b. Commodity Prices
(Index of Oil and Non-Oil Commodities, Oct-02=100)

c. External Financial Conditions
(Emerging Market Bond Index (EMBI) spread, basis points)

Data sources: IFS, IMF and Bloomberg.
*World-7 includes G-3 (EU-15, Japan and USA) and EM-4 (China, India, Korea and Russia).
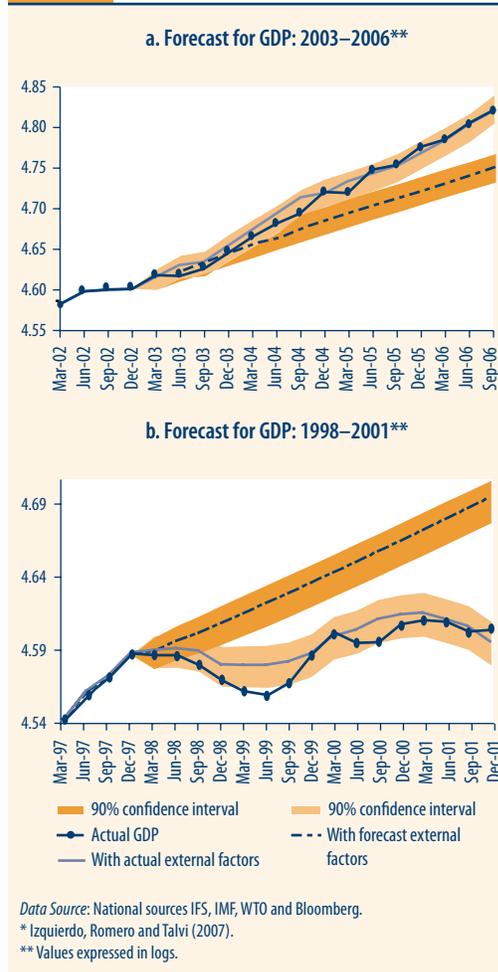
pressive number when compared to the 3 percent historical rate.[10] In summary, once the impact of the large improvement in external conditions is removed from the current expansion, the LAC-7 underlying growth rate appears to be less than exceptional.[11]

But what if the external environment were to remain favorable for the foreseeable future? The empirical analysis presented here suggests that, even if the favorable external environment persists, one may expect growth rates to slow down significantly, because some of the improvements in external variables may have level effects rather than growth effects.[12] For example, it has been argued that the large increase in commodity prices faced by the region is the result of changes in the world economy due to the emergence of China as a global player. Therefore, high commodity prices are here to stay and no declines are to be expected in the near future. Yet, even if this were the case and commodity prices were to remain at higher levels, under a variety of plausible assumptions in the context of a simple small open economy model,

FIGURE 3   **GDP Forecasts Conditional on External Variables: Bonanza vs. Crisis***

a. Forecast for GDP: 2003–2006**

b. Forecast for GDP: 1998–2001**

90% confidence interval   90% confidence interval
Actual GDP   With forecast external factors
With actual external factors

Data Source: National sources IFS, IMF, WTO and Bloomberg.
* Izquierdo, Romero and Talvi (2007).
** Values expressed in logs.

their impact would not necessarily lead to sustained growth, but rather have a level effect on GDP.[13] Firms may adjust their production scale by choosing a higher capital stock matching higher commodity prices, but everything else constant once optimal production levels consistent with new prices have been reached, a slowdown could occur. To the extent that there exist adjustment costs, convergence to new production levels could show up as higher GDP growth along several periods, but in essence growth rates should be high only temporarily until convergence to desired new and higher output levels is attained.

Using a model to filter out the effects of favorable changes in the external environment might reasonably be viewed with skepticism; after all, conclusions are only

as good as the model from which they are derived. With this caveat in mind, Latin America's growth rate during the current expansion may be compared with those of other emerging regions. This comparison is illustrated by Figure 4, which shows that, despite its apparently exceptional performance during the current expansionary phase, Latin America has trailed behind every other emerging region, including Africa. Admittedly, this evaluation strategy lacks the structure of the previous exercise in that it does not account for potentially

FIGURE 4 **Growth in EMs: A Comparative Perspective** (Real GDP, 2003–2007 annual growth)

Data Source: WEO.

different external shock sizes across regions—most notably in terms of trade.[14] The results nonetheless suggest that, unless there are good reasons to believe that external conditions have been notably different across regions—and in particular more favorable to the rest of the world than to Latin America—the region's performance relative to that of its peers has been less than impressive.

To a certain extent this should come as no surprise. In spite of exceptional external conditions, Latin America's private investment and productivity during the current expansion have not performed significantly better than during the first four years (1991–1994) of the previous expansion period.[15] The prospect of future economic growth is an important determinant of the profitability of investment opportunities. If economic agents expect sustained economic growth, the forces of private investment should be unleashed and one should observe exceptional investment growth. However, the evidence indicates that there has not been a disproportionate allocation of resources to investment during the current expansion. Depending on the indices used to calculate real private investment the conclusions can vary. If the investment deflator is used, the average annual growth rate of private investment in LAC-7 measured at constant prices for the period 2003–2006 is 14.9 percent, compared to an average of 12.2 percent observed for the period 1991–1994 (see Figure 5, Panel a). However, if the GDP deflator is used, the average annual growth rate of private investment for the period 2003–2006 is 11.9 percent, similar to the 11.7 percent observed for the period 1991–1994. Moreover, considering the median of LAC-7 instead of the mean, results are even more suggestive: a 10.5 percent annual growth rate for 2003–2006 vis-à-vis 10.6 percent for 1991–1994, when figures are deflated by the investment deflator, and a 5.0 percent annual growth rate for 2003–2006 vis-à-vis 11.2 percent for 1991–1994, when using the GDP deflator. These mixed figures fail to support the idea

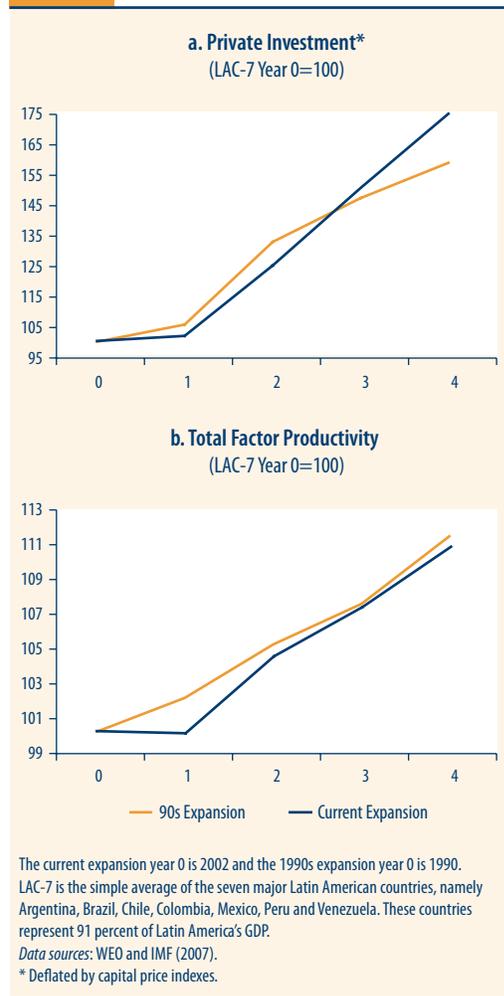that investment performance has been exceptional during the current expansion compared to the previous one.

The argument made above could be challenged if there were evidence that productivity had increased substantially throughout the current expansion. However, if anything, total factor productivity growth in LAC-7 has been lower in the current expansion period 2003–2006 than in the period 1991–1994 (2.5 percent vs. 2.7 percent annually, respectively), and it is still the lowest among emerging regions, averaging less than 1 percent per year since 1990 (see Figure 5, Panel b).

In sum, the dynamics of private investment in physical capital and total factor productivity growth over the current phase of economic expansion provide little indication of substantially improved fundamentals.

FIGURE 5 **Investment and Productivity**

a. Private Investment*
(LAC-7 Year 0=100)

b. Total Factor Productivity
(LAC-7 Year 0=100)

— 90s Expansion   — Current Expansion

The current expansion year 0 is 2002 and the 1990s expansion year 0 is 1990.
LAC-7 is the simple average of the seven major Latin American countries, namely Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. These countries represent 91 percent of Latin America's GDP.
Data sources: WEO and IMF (2007).
* Deflated by capital price indexes.

3.2 Fiscal Policy[16]

A prima facie characterization of fiscal policy during the current expansionary cycle, based on the behavior of the observed fiscal balance, would conclude that the region's fiscal position has improved significantly, now enjoying a fiscal surplus in excess of one percent of GDP. However, this conclusion would be misleading. Since the current expansion has been associated with strong output growth, sharply higher commodity prices and thus a sharp increase in fiscal revenues, the fact that the observed fiscal position has improved is not necessarily an indication of a restrained expenditure policy, so much as a reflection of the endogenous response of revenues to improvement in the macroeconomic environment. To appropriately characterize fiscal policy during the current expansion period, the effect of cyclical fluctuations on fiscal accounts must be extracted in order to capture the discretional components of fiscal policy.

One way to control for cyclical fluctuations is to compute the structural fiscal balance.[17] Traditional methodologies for computing structural fiscal balances, applied by international organizations such as the OECD, the IMF and the EU, basically apply a three-step procedure. The first step involves estimating potential output and the corresponding output gap (defined as the difference between observed and potential output). This can be conducted basically by two methods: using time-series regression methods or estimating a production function. The second step is to estimate the elasticities of the different components of the fiscal accounts to the output gap. Finally, the effect of cyclical components is extracted by applying output elasticities to revenues and expenditures and computing the structural fiscal balance.

Although these measures are commonly used in a wide range of countries, they may not be fully satisfactory in regard to Latin American economies for at least two reasons. First, while the standard procedure focuses on output cycles, in several countries fiscal revenue cycles are also associated with commodity price fluctuations (e.g., Chile, Colombia, Mexico and Venezuela). Second, several of the traditional methodologies apply techniques for smoothing fiscal account components that were designed taking into account macroeconomic volatility of developed countries, which are not necessarily well suited for more volatile environments such as those of EMs.

An alternative to the above is to "implicitly adopt" the methodology followed by Chile since 2001 as a way of extracting the effect of macroeconomic fluctuations on EM fiscal accounts.[18, 19] This methodology addresses some of the technical issues discussed above, while at the same time adopting the elements of a fiscal rule that has been praised by academics and market analysts as an example of sound intertemporal fiscal management, i.e., a conservative approach that calls for saving the boom to a large extent until conclusive evidence is obtained that the boom is indeed not part of a cycle, but a permanent one.[20]

Chile's Structural Fiscal Rule is based on targeting an annual structural surplus.[21] It defines the structural balance as the difference between structural fiscal revenues and observed fiscal expenditures. Structural fiscal revenues, in turn, are defined as the level of revenues that would have prevailed if output were at its potential level and the price of copper and molybdenum (a copper byproduct) were at their long-run level.[22] Both potential output and the reference price of copper are determined by two committees of independent experts.[23]

While the Chilean rule may not be directly replicated for other Latin American countries, which do not have such committees, a "statistical equivalent" can be obtained by extracting a measure of the degree of "Chilean caution." This is done by estimating the extent to which Chilean authorities smooth their fiscal revenues when they calculate structural revenues and the structural fiscal balance.[24] Chile's smoothing
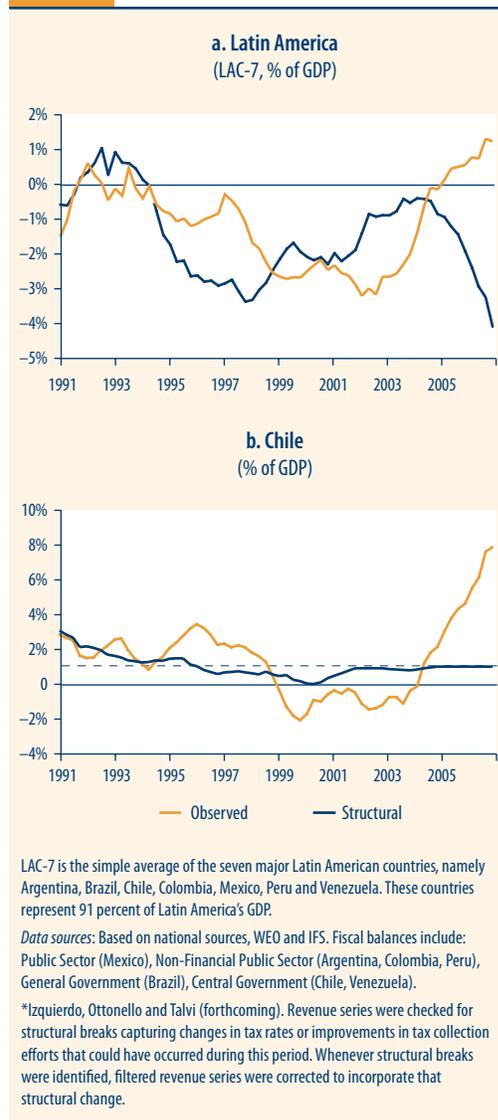
parameter is then applied to other countries in the region to calculate their structural fiscal balances.[25]

Figure 6 displays the LAC-7 structural balance based on "à la Chile" structural balance computations.[26] Contrary to the picture that emerges by looking at the observed fiscal balance, this structural fiscal measure indicates that the fiscal position of the region has deteriorated throughout the current expansion. Moreover, although LAC-7 displays an observed fiscal surplus in excess of 1 percent of GDP, it has a structural fiscal deficit of 4 percent of GDP—no smaller than the level in 1998 prior to the Russian crisis.[27] This is in sharp contrast to Chile, where the structural fiscal balance has remained stable at around one percent of GDP throughout the current expansion. As illustrated in Table 1, using the proposed measure Chile is the only country in the region that actually has a structural fiscal surplus.

A quantitatively different conclusion on the soundness of public finances in the region would have been reached had traditional (HP filter) techniques been applied to calculate adjusted revenues. As shown in Table 1, structural deficits are still larger than observed fiscal deficits, but they would look smaller than "à-la Chile" structural deficits. Nonetheless, even with this less demanding measure, most countries would display a deficit rather than a surplus. For the reasons stated previously, it is not clear that this is the best way to adjust revenues in EMs, where external factors have an important say in economic fluctuations. Additionally, from a policy perspective, it may be worthwhile to have insurance i.e., larger savings given existing uncertainty about

FIGURE 6 **Observed and Structural Fiscal Balances***
(Structural Balances following the "Chilean Fiscal Rule")

a. Latin America
(LAC-7, % of GDP)

b. Chile
(% of GDP)

Observed — Structural

LAC-7 is the simple average of the seven major Latin American countries, namely Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. These countries represent 91 percent of Latin America's GDP.

Data sources: Based on national sources, WEO and IFS. Fiscal balances include: Public Sector (Mexico), Non-Financial Public Sector (Argentina, Colombia, Peru), General Government (Brazil), Central Government (Chile, Venezuela).

*Izquierdo, Ottonello and Talvi (forthcoming). Revenue series were checked for structural breaks capturing changes in tax rates or improvements in tax collection efforts that could have occurred during this period. Whenever structural breaks were identified, filtered revenue series were corrected to incorporate that structural change.

TABLE 1	**Fiscal Balances by Country** (Dec–06, % of GDP)		

| | Observed Fiscal Balance | Structural Fiscal Balance | |
Country		Traditional HP Filter**	'Chilean' Fiscal Rule*
Argentina	1.8%	0.6%	−2.2%
Brazil	−3.0%	−3.3%	−4.9%
Chile	7.7%	6.1%	1.0%
Colombia	−0.5%	−1.2%	−0.1%
Mexico	0.1%	−0.8%	−4.5%
Peru	2.1%	0.6%	−1.8%
Venezuela	−0.2%	−2.0%	−16.0%
LAC–7	**1.1%**	**0.0%**	**−4.1%**

LAC-7 is the simple average of the seven major Latin American countries, namely Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. These countries represent 91 percent of Latin America's GDP.

Data sources: Based on national sources, WEO and IFS. Fiscal balances include: Public Sector (Mexico), Non-Financial Public Sector (Argentina, Colombia, Peru), General Government (Brazil), Central Government (Chile, Venezuela).

*Izquierdo, Ottonello and Talvi (forthcoming). Revenue series were checked for structural breaks capturing changes in tax rates or improvements in tax collection efforts that could have occurred during this period. Whenever structural breaks were identified, filtered revenue series were corrected to incorporate that structural change.

**HP = Hodrick Prescott; lambda = 1600 (quarterly data).

the persistence of the current bonanza. This is exactly what Chilean authorities have been doing, interpreting much of the current bonanza as temporary.[28]

But what if the current external bonanza were to persist, and thus the increase in revenues were to a large extent permanent? Given the relatively high levels of public debt in most of the countries in the region (a topic taken up in the section 3.4), one could still argue that countries should take advantage of the revenue bonanza to reduce public debt at a more rapid rate in order to prevent financial distress in the event of a negative shock. The great benefit of having very low debt levels or even becoming a net creditor, is that exposure to financial crisis stemming from adverse financial external shocks is largely eliminated. In this respect, it is interesting to note that Chile, the country in LAC-7 with the smallest public debt, has been the most fiscally cautious country during the current expansion. This suggests that Latin American countries more indebted than Chile should be undertaking a greater fiscal effort.[29]

3.3 Revenue Bonanza and Government Expenditures

The deterioration in the structural fiscal balances of the region during the current expansion is due to the fact that total public expenditures have risen significantly, *pari*
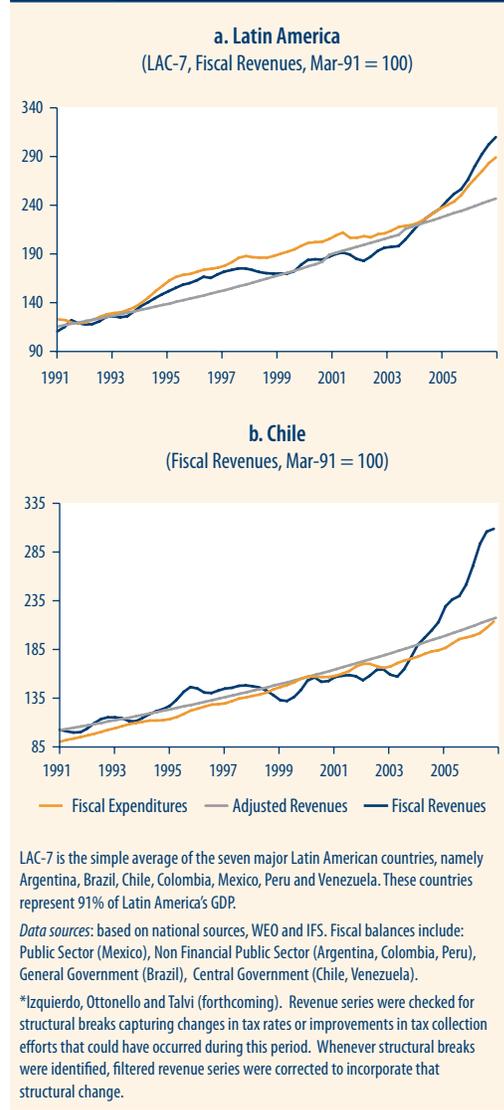
passu with the boom in revenues. Figure 7 shows that, on average, LAC-7 has spent 77 percent of the revenue bonanza since 2002, again in sharp contrast with Chile, where only 34 percent of the revenue bonanza has been spent.

At first glance, the increase in total expenditure in LAC-7 relative to that of revenues in the current expansion seems more subdued than the previous expansion (77 percent vis-à-vis 96 percent for the 1991–1994 period).[30] This situation seems even more encouraging when the increase in primary expenditure as a share of the increase in total revenue is considered, since the difference across periods is greater (73 percent during the current expansion vs. 104 percent during the previous expansion).

But these unconditional measures fail to account for the effects of and differences across cycles. To address this deficiency it is useful to compare the increase in primary expenditures relative to that in revenues during the current expansion with the corresponding increase during the 1991–1994 expansion controlling for the output gap. This comparison reveals, first, that fiscal policy in LAC-7 has been significantly pro-cyclical (at conventional levels of statistical significance) during the entire 1970–2007 period. Second, there is evidence of higher pro-cyclicality during the current expansion and less pro-cyclicality during the expansion period of 1991–1994 relative to all other times.[31]

Pro-cyclicality in government spending need not be a serious problem in and of itself if the revenue bonanza were utilized mainly to increase investment spending. Public investment spending may not only increase future output, but it may also represent

FIGURE 7	**Fiscal Revenues and Expenditures*** (Adjusted Revenues following the "Chilean Fiscal Rule")

a. Latin America
(LAC-7, Fiscal Revenues, Mar-91 = 100)

b. Chile
(Fiscal Revenues, Mar-91 = 100)

Fiscal Expenditures — Adjusted Revenues — Fiscal Revenues

LAC-7 is the simple average of the seven major Latin American countries, namely Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. These countries represent 91% of Latin America's GDP.

Data sources: based on national sources, WEO and IFS. Fiscal balances include: Public Sector (Mexico), Non Financial Public Sector (Argentina, Colombia, Peru), General Government (Brazil), Central Government (Chile, Venezuela).

*Izquierdo, Ottonello and Talvi (forthcoming). Revenue series were checked for structural breaks capturing changes in tax rates or improvements in tax collection efforts that could have occurred during this period. Whenever structural breaks were identified, filtered revenue series were corrected to incorporate that structural change.

a flexible budget item that can be adjusted in times of revenue shortfalls and limited access to international capital markets.

To assess this issue, it is convenient to turn to the composition of government expenditures. Investment expenditure in LAC-7 as a share of primary spending is currently at its lowest level in thirty years and only about half that of emerging Asia.[32] In the aftermath of the Russian crisis, public investment fell from 17 percent of primary spending in 1998 to 13 percent in 2002. This fact is a natural outcome of recessions, since investment spending is usually cut by a larger proportion than current spending. However, investment expenditure as a share of primary spending failed to recover to pre-crisis levels during the current expansion. This does not imply that public investment is not increasing; in fact, it is. But so far it is doing so at a rate that leaves the depressed share of 2002 relatively unchanged. This implies that the sharp increase in public spending during the current expansion was unduly biased against capital spending. From a growth perspective, this is particularly problematic since, as seen in Section 3.1, private investment is not displaying an outstanding performance either. An additional implication is that expenditure flexibility in LAC-7 (measured by the ratio of investment expenditure to primary spending) is currently at one of its lowest points, leaving the region with less room to cope with adverse external shocks.

3.4. Public Debt Management

Section 2 showed that public debt levels as a share of GDP have declined substantially during the current expansion. However, this is a typical phenomenon during expansions, given that in general the latter are accompanied by real exchange rate appreciation and output increases away from trend. A way to compensate for this cyclical behavior is to compute structural public debt levels, i.e., levels of public debt adjusted by the cyclical component of output and that of the real exchange rate, and by differences between structural and observed fiscal balances reported previously.[33] In contrast to observed debt-to-GDP ratios, structural ratios have been rising slightly throughout the current expansion and are now hovering around 50 percent of GDP, a relatively high level according to IMF criteria for EMs (see Figure 8).

However, given the observed changes in debt composition during the current expansion—i.e., less dollarization, larger maturities, and a larger proportion of debt at fixed interest rates—it could be argued that Latin America could sustain higher levels of debt since these changes make debt less risky. Yet, it can also be conjectured that currency denomination, maturity profile, and fixed-rate shares are themselves dependent on the very favorable external environment: it is easier to issue long term and at fixed rates when interest rates are expected to fall, and to issue in domestic currency when
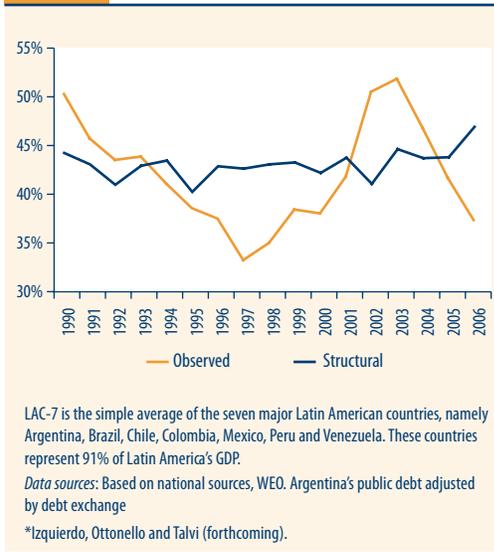
the currency is expected to appreciate. Nevertheless, if expectations regarding the direction of interest rates and the exchange rate were to change, adjustments in debt composition across the abovementioned dimensions could tilt towards riskier debt very quickly.

To explore this issue, total central government domestic debt was split into "safe" and "risky" debt ratios.[34] One of the benefits of new available datasets is that, given their level of detail on debt composition across different dimensions, it is possible to compute riskiness quite precisely, averting the double-counting issues so common in debt datasets.[35] For the exercise at hand, the ratios of foreign-currency debt to total debt, short-term debt to total debt, and variable interest rate-debt to total debt, were consolidated into a measure of risky debt. Figure 9, Panel a, shows the behavior of LAC-7 domestic debt riskiness throughout the 1990s and until 2005, the last period available in the dataset used. The behavior of debt composition clearly displays a cyclical element. In 1993, about 60 percent of domestic debt lay in the risky category, but by 1999, in the aftermath of the Russian crisis, that figure had increased to about 80 percent. This measure declined steadily throughout the current bonanza, all the way down to 56 percent in 2005. Given the cyclical pattern observed in the data, there is reason to caution against relying heavily on current debt composition figures to assess risk levels of public debt.

Examples of the speed at which debt composition can change on the eve of a financial crisis are provided by the cases of Mexico in 1994 and Brazil in 1998 (see Figure 9, Panel b). For the case of Mexico, official data on domestic debt discriminating only by currency composition is used to explore changes in this particular dimension of riskiness on the eve of the crisis in December 1994.[36] By 1993, Mexico's domestic debt indexed to foreign currency was less than 5 percent of total domestic debt. This share increased sharply in just one year to almost 67 percent as investors lost confidence in local currency instruments and demanded foreign currency instruments on rollover operations. Had the riskiness of Mexican debt to changes in the exchange rate been evaluated at the end of 1993, the conclusion would have been that it was very low. However, one year later, and immediately prior to the

FIGURE 8 **Observed and Structural Public Debt***
(LAC-7, in % of GDP)

Observed — Structural

LAC-7 is the simple average of the seven major Latin American countries, namely Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. These countries represent 91% of Latin America's GDP.
Data sources: Based on national sources, WEO. Argentina's public debt adjusted by debt exchange
*Izquierdo, Ottonello and Talvi (forthcoming).

FIGURE 9 Risky Debt and Liquidity Risk Ratios

a. Debt Riskiness*
(LAC-7 excluding Peru, Risky Debt, % of Total Domestic Debt)

b. Changes in Debt Composition:
Two Revealing Examples

c. Liquidity Risk Ratios**
(LAC-7)

d. Changes in Liquidity Risk Ratios:
Two Revealing Examples

LAC-7 is the simple average of the seven major Latin American countries, namely Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. These countries represent 91 percent of Latin America's GDP.

Data Sources: Based on national sources, Jeanne and Guscina database, WEO and WDI.

* Risky debt includes foreign-currency debt, short-term debt and variable interest rate debt.

** The liquidity risk ratio is the ratio of external public debt amortizations in the next twelve months to international reserves net of central bank short-term liabilities.

devaluation of the Mexican peso in December 1994, the currency composition of the debt and its vulnerability to exchange rate movements had changed both abruptly and significantly.

Another case in point is Brazil's crisis in 1998. A peculiarity of Brazilian domestic debt is that a large share, although issued in domestic currency, is indexed to short-term interest rates, or SELIC rates. Using official data on domestic debt discriminating by dollar and SELIC-indexed instruments, a measure of riskiness was constructed including these two categories. [37] As shown in Figure 9, Panel b, in August 1997 only 28 percent of total domestic debt could be considered risky. Prior to the devaluation of the *real* in January 1999, however, this share soared to 90 percent. Such drastic

examples provide evidence of how debt composition can change abruptly when financial crisis strikes.

It is evident from the data that progress has been made in changing debt composition toward safer levels. However, the "mutation factor" illustrated above cautions against judging the riskiness of public debt purely on the basis of its observed composition, rather than on the basis of the composition that would prevail under stress.

There is also another side to this mutation factor: the liquidity risk of external public debt. This liquidity risk is proxied by the ratio of external public debt amortizations due in the next twelve months to international reserves net of central bank short-term liabilities.[38] Figure 9, Panel c shows the LAC-7 liquidity risk ratio since the 1990s. Except for the disproportionate jump observed in 2002—mainly due to Brazil's behavior, addressed below—there seems to be a cyclical pattern as well: liquidity risk ratios improved after the Mexican crisis of 1994, reaching their lowest value for the 1990s at 72 percent in 1997—prior to the Russian crisis. After the Russian crisis, this ratio worsened to close to 106 percent in 1999 and eventually recovered during the current expansion, reaching a low of 55 percent in 2007. This behavior suggests that both debt maturity and reserve accumulation are pro-cyclical, putting a note of caution against yielding to the temptation of interpreting current liquidity risk levels as safe.

Liquidity ratios can also mutate very abruptly and significantly as external conditions change. A couple of examples provide good insight about the speed at which these changes can take place. Figure 9, Panel d depicts the cases of the Mexican crisis of 1994 and the Brazilian crisis of 2002. In both cases, the liquidity risk ratio of external public debt multiplied by a factor of four within a year.

3.5. External Position

One of the main arguments of the "this time is different" view of Latin America is that, unlike previous booms, the region now displays current account surpluses, and thus, it does not depend on volatile external financing to propel the current expansion, making financial crises less likely.[39]

The question is whether a current account surplus position is likely to insulate the region against a global liquidity crunch.[40] Under these circumstances, why would Latin America suffer from a global liquidity crunch that brings the economy to a halt for lack of finance? After all, a current account surplus implies the region is a net lender to the rest of the world, and net lenders can always finance themselves by simply refusing to lend.

Although this argument seems compelling, it may be missing two relevant dimensions. First, it is important to separate stocks and flows. A country with a current ac-
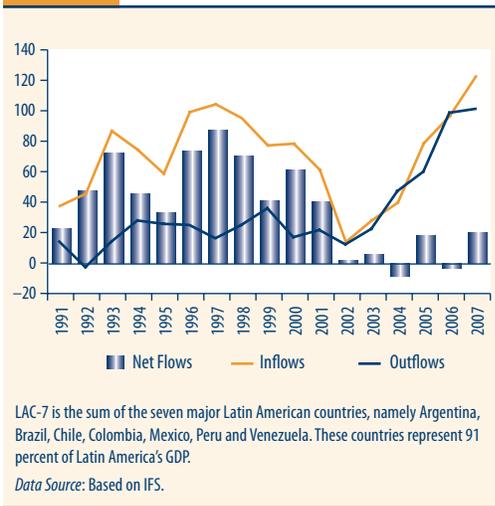
count surplus might still find it difficult to roll over existing stocks of debt during a global liquidity crunch.[41] A particularly useful example to illustrate this point is Korea prior to the Asian crisis. In 1997, Korea had a small current account deficit of 1.5 percent of GDP that turned into a surplus of 12 percent of GDP one year later, in spite of massive assistance by multilateral institutions.

Second, a current account surplus does not guarantee that every sector in the economy is a net lender. This observation is especially relevant for Latin America, which in the last five years has enjoyed a sizable improvement in its commodity export prices and terms of trade. Thus, for example, when computed according to terms of trade prevailing in the first quarter of 2002, the LAC-7 current account would display a deficit equivalent to about 5 percent of GDP, similar to the region's current account deficit prior to the Russian crisis. To the extent that commodity-producing sectors saved a large share of their price improvement, indeed a plausible assumption, non-commodity sectors would likely be net borrowers in international financial markets to the tune of 5 percent of GDP.

The hypothesis of heterogeneous sectoral current accounts, with some sectors of the economy displaying large surpluses and others in deep deficit, is consistent with recent behavior of the capital account in Latin America. As shown in Figure 10, although net capital inflows have been very small throughout the current expansion cycle, this has occurred amidst a surge in gross capital inflows accompanied by equally large gross outflows, a very different pattern from that observed in the 1991–97 expansion, in which net flows were clearly positive and large, and much of the action was largely determined by swings in gross capital inflows rather than in capital outflows.[42] Heterogeneous sectoral current accounts are thus in line with a situation in which some sectors increase their exposure to foreign lending while other sectors—amongst which gainers from the large improvement in the terms of trade are a natural candidate—ship their savings abroad.[43]

FIGURE 10 **Capital Flows to Latin America**
(LAC-7, Billions of US Dollars)

Net Flows — Inflows — Outflows

LAC-7 is the sum of the seven major Latin American countries, namely Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. These countries represent 91 percent of Latin America's GDP.
Data Source: Based on IFS.

Indirect evidence of heavy borrowing activity abroad can be obtained by analyzing the components of the capital account and the behavior of bank credit. First, the

international loans component of the financial account of the balance of payments for the non-bank private sector, suggests that the latter has been actively engaged in this type of borrowing during the current expansion, displaying an increase in liabilities that only in 2006 exceeded 20 billion dollars for LAC-7.[44] Moreover, credit to the private sector in LAC-7 has increased at a very rapid rate of 16 percent per year in real terms during the current expansion. Since there is a strong correlation between gross capital inflows and credit by domestic banks to the private sector—a pattern that seems to hold this time as well—this constitutes a further indication that although aggregate current account figures show a current account surplus, some sectors are borrowing abroad, be it directly or indirectly through the domestic banking system.

What would happen if turmoil hits international financial markets for EMs and capital stops flowing to net borrowers? Under a heterogeneous current account scenario, a current account surplus is unlikely to insulate the region from a tightening in global liquidity conditions. Why? The experience of previous expansions in Latin America suggests that it is very unlikely that those in the private sector who accumulated surpluses abroad will be willing to repatriate international liquidity to bail out the rest of the economy when foreigners are running for exits.[45]

What about economies in which the government is a major commodity producer? There the picture is potentially different. Let us consider the case of Chile, a country that has largely saved its terms-of-trade bonanza, generated large fiscal surpluses and accumulated the proceeds in a stabilization fund. In principle, Chile is in a position to greatly alleviate the effects of a liquidity crunch by using these resources. But this may not necessarily occur in practice. In the first place, it would be necessary to identify the sectors that are in need of financing, not an easy task. Second, it would be necessary to find an efficient mechanism to mobilize those resources to those sectors. Third, these policy actions need to be politically viable. Although it would be easy for Chile to use the resources of its stabilization fund to finance government spending in periods of falling revenues—that is precisely the reason why stabilization funds are set up in the first place—it may be a politically complex proposition to mobilize those resources into what would be perceived as a bailout of private firms undergoing financial distress. In summary, it may be unwise to take too much comfort in the region's current account surplus. Potentially relevant vulnerabilities currently hidden behind the current account surplus position could emerge in the event of a global liquidity crunch.

3.6. International Reserves

Although the preceding arguments could somewhat weaken the conviction that a current account surplus position should immunize the region against a Sudden Stop in

external financing, one could still argue that the record build-up of international reserves observed in the region provides an effective buffer in the event of a global liquidity crunch.[46] However, most of the international reserve build-up that occurred during the current expansion was matched by an equally large increase in monetary liabilities due to unsterilized or sterilized exchange rate intervention. In other words, the build-up in international reserves thus far has not been largely driven by a genuine accumulation of assets, say through the accumulation of fiscal surpluses. Thus, these reserves may

not necessarily be available when they are most needed. In principle, reserves are ultimately what is owned and not what is owed, and if what is owed will be claimed just at the time when reserves must be used, the insurance value of reserves diminishes.[47]

To provide a more accurate picture of this issue it is useful to measure the availability of international reserves relative to some measure of monetary liabilities. Figure 11, Panel a, shows the LAC-7 ratio of international reserves to M2, a typical indicator of financial vulnerability. Although international reserves in the region have doubled in nominal terms, as indicated in Section 2, the reserve position looks less strong when measured relative to monetary liabilities. In fact, current values of international reserves relative to M2 do not differ significantly from those prevailing at the onset of the previous crisis (current levels stand at about 40 percent, almost identical to levels prevailing before the Russian crisis hit, standing at 42 percent). In contrast, East Asian countries—albeit departing from much lower levels—have doubled this ratio, now coming much closer to the Latin American group.

FIGURE 11   International Reserves-to-M2 Ratios
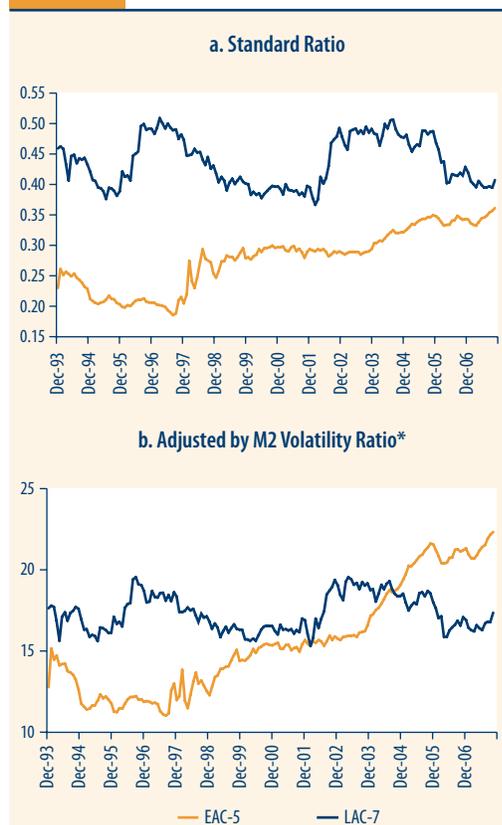
a. Standard Ratio

b. Adjusted by M2 Volatility Ratio*

EAC-5   LAC-7

LAC-7 is the simple average of the seven major Latin American countries, namely Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. These countries represent 91 percent of Latin America's GDP.

EAC-5 is the simple average of Indonesia, Korea, Malaysia, Philippines and Thailand.

Data Source: IFS.

* For simplicity, monetary aggregates in real terms were assumed to follow a random-walk with drift. Volatility of these processes was estimated at each point in time and used to adjust M2 values. Thus, adjusted reserves-to-M2 ratios are computed as $R/(M2 \times \sigma)$, where R stands for reserves and σ is the volatility of changes in real M2.

It can be argued that the reserves-to-M2 ratio is not strictly comparable across countries since the volatility of demand for monetary aggregates may differ substantially across countries.[48] For this reason, a second set of comparisons was made adjusting the reserves-to-M2 ratio by M2 volatility. [49, 50] Results are shown in Figure 11, Panel b. Once again, the current adjusted ratio for LAC-7 is not very different from that prevailing at the onset of the Russian crisis (17 vs. 16.4, respectively). Behavior is starkly different for emerging Asia, where adjusted ratios almost doubled. Moreover, after adjusting for volatility, emerging Asia has now surpassed Latin America in terms of this indicator of financial vulnerability, despite having much greater financial depth than Latin America.

It could be argued that the region has moved toward more flexibility in terms of exchange rate management policies, rendering the ratio of M2 to international reserves a less reliable indicator of vulnerability. However, in the past, there has been substantial exchange rate intervention during financial crises. Monetary authorities have tended to show reluctance to allow the exchange rate to float in such instances due to inflation and balance sheet concerns, i.e., what has come to be known as "fear of floating."[51] Although currently lower dollarization levels in principle make a smaller degree of exchange rate intervention a distinct possibility, the region has not yet been tested for the large exchange rate depreciation pressure that is so typical of systemic financial crises.[52] Additionally, to the extent that dollarization levels display cyclical behavior, debt currency composition could worsen quickly, and the need for intervention may arise accordingly.

3.7. Taking Stock

At first glance, Latin America's growth performance since 2003 has been exceptional compared to both its historical average of 3 percent per year and to previous expansions. Moreover, macroeconomic fundamentals have improved significantly and appear much stronger than they were prior to the August 1998 Russian crisis that sent the region through a prolonged period of crisis and stagnation.

However, removing the veil of external bonanza uncovers a host of vulnerabilities that are not immediately apparent: growth, investment and productivity performance have been less than impressive; the fiscal position is weaker than meets the eye and fiscal policy has been highly procyclical, i.e., expenditures increased *pari passu* with the revenue bonanza and were mostly geared towards current expenditures; public debt levels remain high, while changes in composition, i.e., currency denomination and maturity profile, may be themselves a function of the external bonanza; and international reserves are not high when measured relative to monetary liabilities, while the current

account surplus and the very limited net inflows of foreign capital will not necessarily insulate the region against a global liquidity crunch.

Although it is certainly true that credit ratings have improved dramatically since 2003, they are not higher than they were prior to the Russian crisis. Stronger fundamentals would have called for higher ratings (See Figure 1, Panel h). Those in disbelief of the accurateness of credit ratings to reflect fundamentals would argue that one should look at sovereign spreads instead. The fact that the latter have fallen dramatically during the current expansion is usually mentioned as evidence of the region's improvement in fundamentals. However, as recent research suggests, external conditions (particularly US HY spreads and Chicago Board's Options Exchange Volatility Index, or VIX) also affect sovereign spread behavior.[53] By end 2006, average spreads for LAC-7 stood at 200 basis points. If, instead, external conditions had been set at the levels prevailing at the beginning of the current expansion, spreads would have stood at 560 basis points, a difference of 360 basis points that cannot be dismissed when considering regional performance.

To summarize, none of the vulnerabilities identified above is in and of itself a destabilizing factor. However, there is reason to believe that, when put together, they call for a reevaluation of the region's stance. This does not lessen the relevant progress that the region has made in strengthening macroeconomic fundamentals. It is precisely because these achievements need to be sustained that this reevaluation is necessary.

Is the Current Subprime Crisis a Measure of the Region's Strength?

Since mid-2007, the US subprime mortgage market crisis has expanded to a wide variety of assets including the US HY bond market, and the end of this crisis is nowhere in sight. Moreover, the subprime crisis and the associated credit crunch is now contributing to a real fear of a recession in the US economy.

However, while emerging economy asset prices have traditionally been very closely correlated to asset prices in the US, during the current subprime crisis, correlations have been much lower than would have been predicted given those historical relationships. While EMBI spreads and emerging economy Credit Default Swaps (CDS) spreads have widened, there has been nothing like the movements seen in previous crisis episodes. Indeed, while US HY bond prices have fallen by 11 percent since July 2007, Latin American bonds have remained largely unchanged. This subdued response of Latin America's debt markets in the midst of a meltdown in the US HY market has been construed by many observers as powerful evidence of the strength of Latin America's fundamentals, suggesting that the region is now immune to the effects of global financial turmoil episodes.

Or is it? Surprisingly, both EMBI bond prices in Emerging Asia and Emerging Europe responded to the subprime crisis in much the same way as Latin America's bond prices (see Figure 12, Panel a). This result, if only driven by fundamentals, would imply that Latin America's fundamentals and those in other regions are quite similar.

So the next logical step is to look at fundamentals themselves. This is done for the set of countries included in JP Morgan´s EMBI.[54] These countries are classified into three groups: countries with strong, mixed and weak fundamentals. A country with strong fundamentals is defined as a country that displays both a current account and a fiscal surplus; a country with weak fundamentals is a country that displays both a current account and a fiscal deficit; and a country with mixed fundamentals is a country that has a surplus in one dimension and a deficit in the other. Averages range from a current account surplus of 7.4 percent of GDP and a fiscal surplus of 4.0 percent of

GDP for the group with strong fundamentals, to current account and fiscal deficits of 3.9 and 3.0 percent of GDP, respectively, for the group with weak fundamentals. To obtain some sense of the dispersion among this set of EMs, consider the cases of Chile and El Salvador that belong to the strong and weak fundamentals group, respectively. While Chile enjoys a current account surplus of 3.6 percent of GDP and a fiscal surplus of 7.7 percent of GDP, El Salvador has a current account deficit of 4.7 percent of GDP and a fiscal deficit of 2.9 percent of GDP.

The behavior of bond prices of these three groups of emerging countries is illustrated in Figure 12, Panel b, and it is exactly as it would have been expected: since July 2007, bond prices of countries with strong fundamentals have increased by more than those of countries with weak fundamentals (2.2 percent vs. 0.7 percent, respectively), while bond prices in countries with mixed fundamentals increased somewhere in between (1.6 percent). However, the differences in bond price performance among the three groups of emerging countries are not only small in absolute terms (in fact, the hypothesis that the mean increase for the three

| FIGURE 12 | **Emerging Markets' Reaction to US Subprime Crisis** (US High Yield and Emerging Markets Bond Index, Bond Price Equivalent, 23-Jul-07 = 100*) |

a. Bond Prices by Region

Asia — US High Yield — Emerging Europe — Latin America

b. Bond Prices in Emerging Countries with Strong, Mixed and Weak Fundamentals**

Mixed Fundamentals — US High Yield — Strong Fundamentals — Weak Fundamentals

Data Sources: Bloomberg.

*Authors' calculations assuming an 11 percent coupon and 10-year maturity

** A country with strong fundamentals is defined as a country that displays both a current account and a fiscal surplus, a country with weak fundamentals is a country that displays both a current account and a fiscal deficit, and a country with mixed fundamentals as a country that has a surplus in one dimension and a deficit in the other.

groups is equal cannot be rejected), but they also pale in comparison with the fall in the US HY bond market (11 percent).[55] If countries in Latin America covered by the EMBI were to be classified into the same three groups as above, very similar results would be obtained.

Although this analysis suggests that fundamentals do help in determining a country's bond price reaction to the subprime crisis, it also casts serious doubts on fundamentals being the key driving force behind Latin America's decoupling. If that were the case,

one would have expected countries with strong fundamentals to perform much better during the current subprime crisis than countries with weak fundamentals.

This then begs the question of why bond prices in every emerging region and in every country within these regions, regardless of the strength of its fundamentals, was able to decouple from the subprime crisis. One possible explanation relates to the source of the crisis. This event was related to subprime mortgages in the US and thus, detonated at the center, which prompted the Federal Reserve to intervene massively, and in all likelihood helped to isolate the crisis and prevent contagion into other asset markets, thus limiting collateral damage.

This decoupling stands in stark contrast with the behavior of EM spreads at the time of the Russian crisis, when spreads skyrocketed relative to US HY spreads. However, developments in the aftermath of the Russian crisis differed from the current subprime crisis in two respects. First, unlike the subprime crisis, which detonated at the center, the financial crisis of 1998 detonated at the periphery, more specifically in emerging market Russia. Moreover, the Federal Reserve did not provide liquidity as aggressively, as the US financial markets remained largely unscathed. Thus, differences both in the origin of the shock as well as in hard-currency liquidity provision may lie behind the observed differences in the behavior of EM spreads then and now.

Taking Advantage of the Current Bonanza: A Tentative Set of Policy Topics for Discussion

Because "all that glitters may not be gold," the insights of this report suggest that Latin American countries could benefit if they took advantage of the external bonanza to further improve macroeconomic fundamentals. This is not to deny that substantial efforts have been made by most countries in recent years, nor to deny that macroeconomic management has noticeably improved. Rather, it is to argue that existing uncertainty about future developments in the world economy calls for a cautionary approach to policy. Policymakers should resist the temptation of taking comfort in favorable tailwinds alone, working resolutely toward the achievement of goals that take into account cycles in the international economy, commodity prices and world financial conditions.

In particular, the current upsurge in international liquidity following intervention by monetary authorities in the United States may further blur the picture. Lower exposure of EMs to subprime assets and relatively attractive yields make them good candidates—at least in the short run—for additional capital inflows. This fact, in turn, may exacerbate the problems stressed by the "all that glitters may not be gold" hypothesis as macroeconomic indicators improve even further—at least temporarily—in spite of the jitters of the US economy. Such complacency may be particularly misplaced because eventually, interest rates in the US could increase substantially as the Federal Reserve fights the inflationary consequences of its current actions, once financial turmoil is averted.

It must be stressed from the start that the set of policies to be discussed in this section is not an exhaustive one; rather, it is limited to those policies that follow naturally from the framework presented in previous sections or that are consistent with the thrust of the report. Furthermore, this section does not intend to provide a detailed account of policy prescriptions that need to be analyzed at the individual country level.

Several aspects highlighted in this report suggest that further advancements in the strengthening of fiscal rules are needed. In this respect, moving towards fiscal rules that

target structural rather than observed budget surpluses, as Chile does, would constitute a considerable improvement relative to current arrangements. By adjusting revenues to account for cyclical fluctuations in both the economy and commodity prices, structural budget rules will go a long way toward preventing pro-cyclical government spending. Furthermore, they will also help to sustain a more rapid path of public debt reduction in times of plenty, which leaves countries better prepared to confront the rainy days, thus reducing exposure to the possibility of painful financial and debt crisis.

In that respect, a policy worth exploring further is to set specific structural fiscal targets in a manner consistent with the reduction of *structural* public debt to reduce financial exposure. Many countries in the region still display levels of public debt that are substantially above those typically considered as safe, in spite of the fact that implicit liabilities in pension systems are often not fully registered in official debt figures and contingent liabilities are not properly accounted for.[56] Reducing debt to safe levels is particularly important, since relying too heavily on the reduction of the riskiness of the debt through changes in composition can be an insufficient strategy given the speed at which debt composition can change on the eve of a crisis. Good management in terms of debt composition geared toward safer debt is welcomed, but it should be pursued in tandem with structural debt reduction strategies.

Fiscal rules could also be strengthened to ensure adequate levels and quality of public investment. Public investment is not only a key complement of private investment, it is also relatively more flexible than current expenditures—many times synonymous to entitlements—and thus helpful in coping with budget cuts in times of distress. Public investment as a share of primary expenditures has declined significantly in the region to a meager 13 percent, half the size prevailing in Asian countries and substantially below the levels of the early 1990s. In this context, increasing the share of expenditure channeled to investment is not only good short-run macroeconomic policy but also good long-run growth policy.

Another important policy dimension to bring to the discussion is that regulation and supervision of the banking system matters, very specially during a credit boom. The rapid increase in domestic bank credit should be a source of concern for the region. In the past, credit booms have been too frequently followed by financial busts. In the boom period, competition between lenders becomes paramount and proper risk assessment may be sacrificed in order to maintain market share. Moreover, during a boom phase, the mere fact that new credits are deemed as good credits makes banks' delinquency ratios decline. While some financial systems are growing from a small base, and even though there have been many improvements in regulation and in supervision, and financial systems have been strengthened by the entry of foreign banks, there remain significant concerns from the current growth rates in household and in some cases corporate debt. Indeed, recent events have shown that sophisticated banks from

developed countries supervised by regulators with wide powers and more resources than their Latin American counterparts is not a guarantee of avoiding problems.

The key point is that it is in this boom phase that regulation and supervision should be strengthened. When the boom is over and credit growth subsides, that is when the problems appear, but also when it is frequently too late to prevent financial distress. Countries should be ensuring that banks' capital ratios and provisions are growing pro-cyclically and as a percentage of assets, not just in dollar amounts. Moreover, in sectors where credit growth is very strong (consumer credit being one example) supervisors should ensure that banks' risk management processes take a very cautious view of clients' risks and ensure that competitive pressures do not lead to a diminishing of the risk management process. In common with the arguments regarding fiscal policy, there should be a very strong measure of leaning against the wind in regard to the management of the credit boom witnessed in Latin America today.

Another dimension of macroeconomic policy that emerges from this report relates to the build-up of international reserves. First best policies regarding insurance against external shocks would call for contingent contracts (be it in the form of net payments conditional on the realization of external variables such as non-regional aggregate EMBI spreads or commodity prices) or contingent credit lines, rather than self insurance via reserve accumulation. Yet, in the absence of a strong supply of this type of instruments, building a strong international reserve position to avert Sudden Stops in international financial flows has been recognized as an important (albeit second best) policy objective. However, there is good reason to believe that the way reserve accumulation takes place is relevant at the time of assessing their insurance value. Prima facie, it would be desirable to pursue increases in international liquidity through the accumulation of resources that do not have a liability counterpart (e.g., stabilization funds) rather than through sterilized or unsterilized intervention. Although the region displays greater exchange rate flexibility than in the past, the bulk of the reserves were obtained through large issuance of monetary liabilities that accompanied reserve accumulation. It could be argued that acquiring reserves through exchange rate market intervention, although costly, could work as an insurance policy, given that central banks would have "reserves in hand" in the event of a crisis.[57] However, monetary liabilities may still pose a serious threat under pressure from large adverse external shocks, if these liabilities claim the reserves just at the time they are most needed, thus reducing their insurance value.

Preliminary evidence suggests that the performance of private investment during the current expansion has not been particularly strong relative to past expansions. Certainly, the external environment cannot be blamed for this behavior, as current external factors have been much more favorable this time around. Although this report does not dwell on the elements conducive to higher investment levels, such as a better

business climate, attention also needs to be paid to creating conditions conducive to increasing investment and raising productivity, essential elements to ensure that the current growth process is long-lasting and less dependent on favorable international conditions. It is precisely in favorable times that countries in the region should be laying the groundwork to ensure that the high growth rates of recent years can be sustained into the future.

To sum up, the emphasis of the report is not meant to diminish in any way the substantial achievements of the region in recent years. Furthermore, none of the vulnerabilities uncovered in this report would on its own be sufficient to precipitate a crisis of the type the region has experienced in the past. That said, a careful and balanced reevaluation of Latin America's strengths and weaknesses is in order, to ensure that the current expansion is not derailed by weaknesses that can be avoided or rectified with prudent policies.

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Fiscal Bonanza and Public Expenditure: Estimation Results

I n order to measure fiscal pro-cyclicality, two sets of estimations were performed. The first set consists of regressions of changes in the (log of the) primary expenditure-to-revenue ratio against the output gap. Dummies for each expansionary period (interacted with the output gap) are also included in order to gauge whether the current expansion was more (or less) pro-cyclical than the expansion of 1991–1994 after controlling for the cycle. The second set of estimations uses the standard measure of fiscal balances employed in the work of Gavin and Perotti (1997) among others, i.e., changes in the primary deficit as a share of GDP, which then becomes the dependent variable of a regression against the same variables previously described. Both sets of estimations are displayed in Table 2.

First and foremost, both sets of regressions show that LAC-7 fiscal policy has been significantly pro-cyclical (at conventional levels of statistical significance) over the entire 1970–2007 period. A main question of interest is whether LAC-7 fiscal policy has been more pro-cyclical in the present upswing relative to previous ones (1991–94 and 1977–81). This can be gauged by the sign and magnitude of three dummy variables (interacted with the output gap) included in the regressions (D77–81, D91–94 and D03–07) which take a value of 1 for those expansionary sub-periods and zero otherwise: if the sign is positive and statistically significant, then the answer is yes.

The first set of results using pooled an OLS regression of changes in the (log of the) primary expenditure-to-revenue ratio shows significant evidence of more pro-cyclicality during the current expansion, and less pro-cyclicality for the expansion period of 1991–1994 relative to all other times at the 5 percent level of significance (see column 1 in Table 2, Panel a). This evidence diminishes when including fixed effects, or accounting for first-order country-specific autocorrelation. However, if anything, given the sign of estimated coefficients, there is no evidence that the current expansion has been less pro-cyclical than past expansions. Similar results are obtained for the second set of regressions using the primary deficit as a share of GDP (see Table 2, Panel b).

TABLE 2   **Measures of Pro-Cyclicality in LAC-7: Comparing Upswing Phases**

	a. Dependent Variable $\Delta\left(\dfrac{g^p}{t}\right)$			b. Dependent Variable $\Delta\left(\dfrac{fb^p}{y}\right)$		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
HP gap	0.92	0.88	0.89	0.18	0.17	0.15
	(2.05)**	(2.46)**	(2.62)**	(1.75)*	(1.69)*	(1.91)**
HPgap * D77–81	0.71	0.95	0.78	0.18	0.29	0.18
	(0.60)	(0.98)	(1.02)	(0.64)	(1.12)	(1.02)
HPgap * D91–94	−2.17	−2.10	−2.03	−0.50	−0.47	−0.43
	(−2.17)**	(−1.55)	(−1.64)	(−1.61)	(−1.28)	(−1.52)
HPgap * D03–07	1.96	1.97	2.12	0.69	0.70	0.71
	(1.96)**	(0.93)	(1.12)	(1.74)*	(1.21)	(1.33)
R-squared	0.06	0.06	0.06	0.04	0.05	0.04

Where g^p is primary expenditure, t is fiscal revenues, fb^p is primary fiscal balance and y is GDP.

Estimations were performed for LAC-7 countries for the period 1970–2007. Included observations: 235. t-ratios in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Model 1: Pooled OLS with Robust standard errors.

Model 2: Fixed Effects.

Model 3: Pooled OLS with panel corrected standard-errors (Prais-Winsten) and first-order country specific autocorrelation correction.

LAC-7 includes the seven major Latin American countries, namely Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. These countries represent 91 percent of Latin America's GDP.

Thus, without filtering for the cycle, the sheer size of the current bonanza may once again lead to a misinterpretation of fiscal efforts in the region.

Notes

1   See Talvi (2006, 2007a, 2007b).

2   LAC-7 is constructed as the simple average of the seven countries except where otherwise noted.

3   However, inflationary pressures have more recently resurfaced in many countries in the region, partly stemming from increases in commodity prices, but also partly due to efforts to prevent further currency appreciation.

4   For an analysis of fiscal sustainability under Sudden Stops with balance-sheet effects, see Calvo, Izquierdo and Talvi (2003).

5   For more on this, see Calvo, Izquierdo and Talvi (2006).

6   For an analysis of the relevance of net liability positions on the probability of a Sudden Stop, see Calvo, Izquierdo and Mejía (2004), and Calvo and Izquierdo (forthcoming).

7   In fact, Latin American asset prices reacted less to changes in global financial variables such as the Chicago Board Options Exchange Volatility Index (VIX) or US HY spreads than would have been predicted given historical relationships, see Powell and Martinez (2008).

8   These results are based on work by Izquierdo, Romero and Talvi (2007), along the seminal lines of Calvo, Leiderman and Reinhart (1992). Their model consists of a restricted vector error correction estimation linking average LAC-7 GDP behavior to that of G7 industrial output, LAC-7 terms of trade, US T-bond returns and US High Yield spreads.

9   Österholm and Zettelmeyer (2007) employ a similar model confirming the relevance of external factors, although they do not focus on this type of analysis per se, but rather on forecasts for 2007 onwards based on WEO assumptions.

10 The model's forecasts for external variables imply a continued improvement, i.e.,

increasing terms of trade, lower spreads, etc., albeit at a much lower pace than observed values.

[11] Interestingly, if the same counterfactual exercise were performed for the dismal growth period (1998–2002) that followed the severe deterioration in the external environment in the aftermath of the Russian crisis, the Izquierdo, Romero and Talvi (2007) model would have predicted the sharp slowdown in growth rates that actually ensued (see Figure 2, Panel b).

[12] This is a natural result of the fact that the Izquierdo, Romero and Talvi (2007) model finds cointegration between LAC-7 output and external variables.

[13] However, this behavior is model dependent.

[14] Additionally, it can be argued that recent growth rates should be compared against representative long-run growth rates to assess differences in current performance. When netting out average growth rates for the period 1980–2002 from average growth rates for the period 2003–2006, Latin America's ranking does not change significantly. (It changes from last to second to last.)

[15] While the region as a whole grew, on average, until 1997, we focus on the first four years of the previous expansion phase for two reasons. First, for comparability purposes we want to keep the same four-year time window used for the current expansion (2003–2006). Second, the previous expansion was disrupted in several countries in 1995 due to the effects of the 1994–95 crisis in Mexico, or "Tequila Crisis."

[16] This section draws heavily on Izquierdo, Ottonello and Talvi (forthcoming) and Ortiz, Ottonello, Sturzenegger and Talvi (2007).

[17] Hagemann (1999) or Giorno et al. (1995), for example, discuss different alternatives to compute structural fiscal balances.

[18] This implicit adoption of the Chilean rule to measure structural fiscal balances is based on work by Izquierdo, Ottonello and Talvi (forthcoming).

[19] For a description and analysis of the Chilean fiscal rule see Marcel et al. (2003), García et al. (2005), and Rodríguez, Tokman and Vega (2007).

[20] In the case of Chile, independent committees pass judgment on potential output and the reference price of copper, an issue that is addressed below.

[21] Recently changed from 1 percent to 0.5 percent of GDP.

[22] The structural fiscal balance is defined by the Chilean Fiscal Rule as follows:

$$SB_t^{CHLFR} = FB_t - T_t^{NM} + T_t^{NM}\left(\frac{Y_t^*}{Y_t}\right)^{\varepsilon} - CS_t\left(PC_t - PC_t^{REF}\right) - MS_t\left(PM_t - PM_t^{REF}\right) - T_t^M + T_t^{M*}$$

where SB_t^{CHLFR} is period t structural fiscal balance, FB_t is the observed fiscal balance, T_t^{NM} are non-mining tax revenues, Y_t^* is potential output, Y_t is the observed level of output, ε is the output elasticity of tax revenues, CS_t are physical copper sales of CODELCO (Chile's main copper company), PC_t is the copper price of CODELCO sales, and PC_t^{REF} is the reference price or long-term price of copper, MS_t is the volume of CODELCO's molybdenum sales, PM_t is price of CODELCO's molybdenum sales and PM_t^{REF} is reference or long-term price of molybdenum, T_t^M income from taxation of private mining companies, and T_t^{M*} structural income from taxation of private mining companies.

23 In the absence of a committee of independent experts, a mechanism that combines historical criteria with the opinion of experts is used to determine the long-term price of molybdenum.

24 This is done by choosing the Lagrange multiplier of a Hodrick-Prescott filter for Chilean current revenues that reproduces a fiscal balance that best matches the structural balance reported by the authorities, thus mimicking their complex rules intended to determine the level of sustainable revenues. See Izquierdo, Ottonello and Talvi (forthcoming) for technical details.

25 Before smoothing revenues by using Chile's smoothing parameter, revenue series were checked for structural breaks capturing changes in tax rates or improvements in tax collection efforts that could have occurred during this period. Whenever structural breaks were identified, filtered revenue series were corrected to incorporate that structural change. Structural change was identified using the methodology for cointegrated series proposed by Gregory and Hansen (1996).

26 The structural fiscal balance for country i in period t, sb_t^i, is thus defined as follows: $sb_t^i = r_t^{*i} - g_t^i$ where r_t^{*i} is the level of revenues adjusted according to the Chilean Fiscal Rule (corrected for structural breaks), and g_t^i are total public expenditures for country i, both in percent of GDP.

27 Even excluding Venezuela, the region still displays a structural fiscal deficit of 2.1 percent.

28 From a technical standpoint, traditional HP filter techniques would tilt in favor of assigning more of a structural role to the current bonanza given their tendency to give excessive weight to tail observations. Although the alternative "Chilean caution" method also uses an HP filter, the penalty rate (the Lagrange multiplier) is much higher, so that the structural component becomes closer to a linear trend, thus tilting results in the opposite direction to traditional methods.

29 As will become clear in the next section, the fact that debt-to-GDP ratios at current prices have been falling is in large part due to the impact of real exchange rate

appreciation and increasing GDP levels away from trend rather than to debt retirement made with fiscal savings.

30 However, both expansions look similar in this dimension when the LAC-7 median is calculated instead, showing that about 90 percent of revenue increases were matched by increases in public expenditure in both cases. Using the median instead of the mean measure could be preferable because there is evidence that public investment data for Argentina are in many instances not recorded under fiscal expenditure (mainly because the sources used to finance public investment come from fiduciary funds that are not included as a source of revenue). Since Argentina's public sector has recently invested heavily under this financing mode, it may bias average measures downwards, leading to underestimation of the increase in public expenditure relative to the increase in revenue.

31 This evidence diminishes when including fixed effects, or accounting for first-order country-specific autocorrelation. However, if anything, given the sign of estimated coefficients, there is no evidence that the current expansion has been less pro-cyclical than past expansions. A second set of estimations using a standard measure of fiscal balances—i.e., changes in the primary deficit as a share of GDP—as employed by Gavin and Perotti (1997) among others, was used, obtaining similar results. Methodology and econometric results are detailed in Appendix 1.

32 If we consider the LAC-7 median instead of the mean, the results are similar.

33 Izquierdo, Ottonello and Talvi (forthcoming) define structural public debt to GDP ratio (d_t^S) as follows:

$$d_t^S = \left[d_t + \left(fb_t - sb_t^* \right) + \sum_{i=1}^{t-1} \prod_{s=i+1}^{t} \left[\frac{\left(1 - \alpha_{s-1}\right) + \alpha_{s-1}\left(1 + \Delta e_s\right)^{1-\lambda}}{\left(1 + g_s\right)} \right] \left(fb_i - sb_i^* \right) \right]$$

$$\left[\alpha_t + \frac{\left(1 - \alpha_t\right)}{\left(1 + c_t^e\right)^\lambda} - \frac{\alpha_t c_t^e}{1 + c_t^e} \right] \left(1 + c_t^y\right)\left(1 + c_t^e\right)^\lambda$$

where d_t is the observed debt-to-GDP ratio; fb_t is the observed fiscal balance in percent of GDP; sb_t^* is the structural fiscal balance in percent of GDP (adjusted for the cyclical component of real exchange rate and GDP); Δe_s is the variation of the real exchange rate (defined as the relative price of tradable vis-à-vis non tradable goods), g_s is the growth rate of real GDP; α_t is the dollarization rate of public debt; λ is the share of tradable goods in the GDP deflator; c_t^e is the cyclical component of the real exchange rate and c_t^y is the cyclical component of GDP, both expressed

in percent deviation from trend. This equation is computed for $d_0^S = d_0$, and applies for t >1.

34 Data on central government domestic debt is based on work by Jeanne and Guscina (2006).

35 The Jeanne and Guscina (2006) dataset divides total central government domestic debt into the following non-overlapping categories: local currency, foreign currency and indexed. Each of these is, in turn, split into fixed interest rate or variable interest rate debt. Finally, each subcategory is further disaggregated into short-term (less than 1 year), medium term (1 to 5 years), and long term (more than 5 years).

36 In the case of Mexico, risky debt is computed by taking the ratio of Tesobonos (denominated in US dollars) to total domestic public debt. The latter includes Cetes, Bondes Ajusta Bonos, and Tesobonos.

37 In the case of Brazil, risky debt is constructed by taking the ratio of the sum of domestic public debt indexed to the Selic plus exchange-rate-indexed debt over total domestic public debt.

38 Short-term liabilities are netted out of international reserves because in the event of a crisis they may not be rolled-over and may directly run after hard currency.

39 As a matter of fact, this view is supported by work along the lines of Edwards (2003), Calvo, Izquierdo and Mejía (2004, 2008), and Cavallo and Frankel (2006), which shows that the probability of a financial crisis largely depends on the size of current account deficits. However, these studies do not focus on the structure of the capital account underlying the current account position, which is precisely the argument we take up in this section.

40 The arguments below very closely follow Calvo and Talvi (2007).

41 In this respect, the swift change in liquidity risk ratios documented previously is quite telling.

42 Although the behavior described above corresponds to the region as a whole, the pattern of outflows varied across countries.

43 Unfortunately, the level of disaggregation of balance of payments data does not allow for a detailed analysis of sectoral current account data, and this is an avenue that authorities may find worth pursuing in order to assess the true underlying exposure to Sudden Stops in external financing.

44 More specifically, data corresponds to liabilities pertaining to "other investments," "other sectors" of the financial account, excluding government and bank operations, contained in the analytical presentation of the balance of payments of the IMF's Balance of Payments Statistics (BoPS) database.

45 See Powell, Mohapatra, and Ratha (2002).

46 Recent work by Calvo and Izquierdo (forthcoming), suggests that an international reserves build-up counterbalances the risks brought about by liability dollarization in the banking system by reducing the probability of a Systemic Sudden Stop. The Sudden Stop is systemic when the fall in net capital flows for a given country occurs in a period of global financial turmoil (captured by a substantial rise in the aggregate EMBI).

47 However, more research is needed in this area for a full-fledged answer to this issue, comparing the insurance value of "gross reserves" (i.e., without netting out sterilization bonds) against that of reserves net of sterilization bonds.

48 For example, industrialized countries typically have small reserves-to-M2 ratios, but this is hardly a measure of financial vulnerability since demand for monetary aggregates in these countries is quite stable.

49 This measure of reserves-to-M2 adjusted for volatility was first introduced by Calvo (1996).

50 For simplicity, monetary aggregates in real terms were assumed to follow a random-walk with drift. Volatility of these processes was estimated at each point in time and used to adjust M2 values. Thus, adjusted reserves-to-M2 ratios are computed as $R/(M2 \times \sigma)$, where R stands for reserves and σ is the volatility of changes in real M2.

51 See, for example, Calvo and Reinhart (2002), and Haussmann, Panizza and Stein (2001).

52 Where crises are systemic in the sense that the fall in net capital flows for a given country occurs in a period of global financial turmoil for EMs(for example, as captured by a substantial rise in aggregate EMBI spreads).

53 Calculations presented here are based on work by Powell and Martinez (2008).

54 The emerging countries analyzed were those included in JP Morgan's EMBI G as of February 2008 with data availability: Argentina, Belize, Brazil, Bulgaria, Chile, China, Colombia, Dominican Republic, Ecuador, Egypt, El Salvador, Hungary, Indonesia, Ivory Coast, Kazakhstan, Malaysia, Mexico, Pakistan, Panama, Peru, Philippines, Poland, Russia, Serbia, South Africa, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Uruguay and Venezuela.

55 This analysis could be conducted with sovereign spreads or credit default swaps (CDS) and conclusions would be the same.

56 For a discussion of debt levels in Latin America, see Reinhart, Rogoff and Savastano (2003).

57   Work by Calvo and Izquierdo (forthcoming) suggests that international reserve build-up reduces the chances of a Systemic Sudden Stop. Due to lack of information on sterilized intervention bonds for the full list of countries in their dataset, the latter are not netted out from reserves. However, the fact that this measure of "gross reserves" (i.e., without netting out sterilization bonds) is significant suggests that "gross reserve" accumulation might work as an insurance policy.