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THE FISCAL IMPACT OF THE INTERNATIONAL FINANCIAL CRISIS ON LATIN AMERICAN AND CARIBBEAN ECONOMIES[1]

Technical Note

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ABSTRACT

The main objective of this Technical Note is to provide a simple framework to determine the short-term **fiscal impact** of the international financial crisis on Latin American and Caribbean (LAC) countries, i.e., fiscal financing needs/gap by country (or fiscal liquidity impact). In addition, it will provide a framework to evaluate fiscal sustainability by country (or fiscal solvency impact). In both cases, and depending of the particular country under analysis, transmission mechanisms (variables) will be identified, and sensitivity analysis will be carried out to determine the robustness of their impact. Given that LAC economies are quite heterogeneous, the standard framework will require adjustments to reflect each individual case under analysis. The Note also proposes to start the analysis on those countries with relatively weakest initial conditions as defined by countries with primary and overall fiscal deficits.

Current Situation—In Flux

The global financial crisis is still unfolding, and financial markets remain fragile and volatile. At this point, it is not yet clear what will be the final impact on the real global economy. However, there is a general consensus that a global economic slowdown is highly likely, resulting from the financial distress alongside with commodity price changes and sluggish export markets, despite the coordinated efforts to stabilize the global financial market. It is well known that in advanced countries, the crisis has been driven by a loss of confidence and trust, with the effects spreading to consumers and firms, which had so far weathered the recent price hikes in oil and commodities well but were now experiencing sharply slowing demand. With regard to emerging economies, despite their cooling momentum, they are expected to provide a source of resilience, benefiting from productivity growth and improved policy frameworks. However, the longer the financial crisis lasts, the more the emerging economies' growth is likely to be affected.

With respect to LAC region, more specifically, it is expected to deal with the current global shocks better than in previous crises reflecting the progress many countries have made in improving their macroeconomic fundamentals over the past decade. However, there is consensus among forecasters and economists that the global credit freeze/crunch, a slowdown (if not recession) in the USA and commodity-price declines will take a toll on the resource-rich region—next year regional growth forecast is now around 1.5%, down from about 3.5% before the crisis. In addition, there are still a number of further downside risks. Commodity prices remain elevated but could fall further in line with the experience in previous global downturns. Lower food and fuel prices would bring welcome relief for some countries, in particular low-income commodity importers in Central America and many Caribbean countries, but for the region as a whole, strong commodity prices have been a major factor in bolstering fiscal and external positions and driving growth in recent years. A further sharp fall would have considerable adverse implications for the region's fiscal and external positions.

In many countries of the region the fiscal situation will likely come under stress at a time when there will be increased need to maintain a safety net for those low-income households who would be affected by the slowdown. Regarding the slowdown in the USA, it is clear that Mexico's growth is going to be hit and the countries in Central America are the most exposed to the reduction in demand taking place in the USA. In addition, there are significant wealth effects across the region that will affect consumption and investment, and thus economic growth. For example, Brazil's stock market was down significantly last week (50% from this year's high) and its currency has suffered its deepest declines since the nation's 1999 economic meltdown. Mexico burned about 10% of its international reserve last week trying to slowdown the drop in the pesos.

The currency's fall (by 16% this month so far) has exposed currency mismatches in balance sheets (of even blue chips companies), weakening their position to access to credit.

Fiscal Impact—Potential Transmissions

In general, the fiscal impact of the financial crisis will be both on revenues and expenditures. On revenues, there are two main channels (i) GDP growth and (ii) price of commodities. In most countries the evolution of their GDP has a significant effect on their fiscal revenues. In some of them, highly dependent on royalties and taxes on commodities, the price of those commodities has an independent and direct fiscal impact.

LAC countries are quite heterogeneous and no serious assessment can be done of the continent vulnerabilities to the current crisis by bundling all its countries together. We could, however, identify channels through which the crisis may affect all of them albeit with more or less virulence.

Fiscal balance is achieved when countries are able to raise enough revenues to cover their fiscal expenditures (above the line equilibrium) and, at least, obtain enough financing to cover the interest costs of their public debt in order to avoid its unsustainable expansion, i.e., explosion. So, to ensure fiscal sustainability, countries must achieve a high enough level of primary balance that will warrant a stable or declining trajectory of the debt-to-GDP ratio.

The primary balance is affected by public sector expenditures, including debt interest payments, and revenues. The financing to cover shortfalls in primary balance and to sustain a non-explosive public debt will depend on the access to both domestic and foreign financial markets and of the credibility of the country's macroeconomic policies, particularly fiscal policies. In addition to fiscal policies, primary balance and debt financing are affected by real GDP growth and prices including changes in the overall price level (inflation), exchange and interest rates. The crisis will affect all of these variables.

On revenue, the basic sources of government revenues are taxes, both indirect and direct, as well as rents from state monopolies such as oil and minerals. Tax revenues in the region could be roughly divided as 60% from sales (indirect) and 40% from income (direct), including payroll, and both sources of revenues are highly positively correlated with income—this however varies from country to country. Reduction in aggregate demand abroad (e.g., USA and Europe) would likely result in fewer exports, affecting profits and income tax revenue. For LAC countries importing oil and some basic commodities, the price reduction would be positive but would result in less indirect tax revenues. For the ones overly dependent on oil and commodities exports for direct government revenues, price and quantity reductions could have a significant impact. The

overall effects of the crisis on trade balance will vary from country to country, depending, among other things, on their foreign trade structure and foreign exchange regime.

On expenditure, the flexibility to "tighten the belt" and adjust for hard times will depend on the proportion of entitlements or other measures to reduce expenses in the budget. In many countries, there is much "earmarked" expenditure, be it to social sectors (e.g., health, education or pensions) or to sub-national governments. The lower the current balance (difference between current revenues and expenditures), there will be less flexibility to adjust. Depending on the duration and intensity of the crisis, there will be increased pressure for governments to extend their social safety net actions to mitigate the adverse effects on the poorest segments of society.

On public debt, the most obvious implication of the crisis will be growing difficulties in its financing. Therefore, whenever possible, increased primary balances should be sought to reduce the debt financing requirements. For countries with weak economic and political institutions, the safe level of the net public debt to GDP ratio is likely to be low. If there is a history of sovereign default, the safe level of public debt is likely to be even lower. Weak borrowers will have to generate larger and earlier primary surpluses than more credit-worthy borrowers. Countries that made more use of hard currency borrowing during normal times are now in disadvantage during this period of financial turmoil.

As indicated above, the crisis will impact on the region's GDP and revenues (as they are positively correlated), and consequently on the fiscal stance of LAC countries. Some of the potential channels and impacts on GDP (and revenue) include:

Exports and terms of trade. A world-wide economic slowdown or recession will impact LAC countries by affecting their exports (quantities and prices) and by cutting liquidity (financing balance of trade deficits.) Countries that will suffer more will be countries with significant commodities exports (for example Argentina, Bolivia, Ecuador, Mexico, Peru, and Venezuela) and countries with significantly negative balance of trade.

Remittances. This is an important source of income for some LAC countries (e.g., Central American Countries, Ecuador and Mexico) and those countries will see remittances significantly reduced.

Interest rate. They will increase and reduce borrowing from banks, not only investment but working capital may be affected. LAC countries may face significant increases in the cost of issuing new debt either fresh or to restructure old debt.

Exchange rate. Due to uncertainties, the demand for US dollar may increase leading to currency depreciation (e.g., Mexico). Dollarized economies such as Ecuador, Panamá and El Salvador will be directly affected, reducing their competitiveness.

Demand for money. The GDP contraction can be exacerbated if there is an increment in demand for money leading to contraction in aggregate demand.

Moreover, in a context of exchange rate depreciation and higher interest rates, countries with weak banking systems (e.g., Bolivia, Guatemala) may experience banking distress or crisis, requiring additional fiscal resources to stabilize the banking system. Unexpected depreciation will impact banks non-performing portfolio in dual currency, highly dollarized economies (e.g., Bolivia, Paraguay, and Peru)

Fiscal Liquidity and Sustainability Analysis—Proposal

The complexity of the global financial crisis, its repercussions on financial markets and economies (as indicated above), together with initial conditions of macroeconomic policies, including fiscal position and the type of fiscal policies (pro- or counter- cyclical) in LAC countries, call for tackling, first, the country's financing needs.

Thus, this Note proposes to proceed calculating/estimating the gap, by country, as follows:

PB: Primary Balance (Before Crisis) Plus or Minus **Changes en PB** (After Crisis) Plus or Minus **Xs** (Other Flows-Before Crisis, i.e., Fund Accumulations, Other Savings, Extraordinary Flows) Pus or Minus **Changes in X** (After Crisis) Minus **Amortizations** = **Net Financing Needs** Minus Identified Sources of Financing (Bonds, Loans) = **Net Financing Gap**

The financing needs and gaps should be estimated for at least two years into the future. In addition, a sensitivity analysis should be carried out to determine how these variables will vary with changes in the underlined components (e.g., how sensitive is PB to changes in revenues resulting from changes in GDP). We will compare, contrast these estimated gaps with others available in the market, including IMF´s and World Bank´s.

Secondly, the analysis should include, by country, the sustainability of the fiscal path. This will be based on sustaining a feasible debt-to-GDP ratio path over time[2]. More specifically, it will be based on (for details see Annex):

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[2] See for example "The Economics of the Government Budget Constraint", 1990 by Easterly and Fisher or "Some Thoughts on the Role of Fiscal Policy in Stabilization and Structural Adjustments

$S \square (\tilde{r}n)b$

 Where:

S: Primary Balance (Surplus) as a proportion of GDP, which denotes the excess of revenues over non- interest expenditures; **r** is the real interest rate.

n: the growth rate of real GDP; and

b: is the total (domestic and foreign currency-denominated) debt as a share of GDP

Thus, according to this formulation, if the real interest rate is, say, 8 percent, the real growth rate 5 percent and the debt to GDP ratio fifty percent, then a primary surplus of 2.5 percent of GDP could stabilize the debt-to-GDP ratio.

In other words, if the outcome of the current unfolding financial crisis affects either or both the interest rate or the GDP growth, the fiscal policy response to ensure a sustained debt-to-GDP ratio will have to be centered in an increased primary balance. The sustainability analysis should include a path overtime to ensure the debt to GDP ratio is non-explosive. As in the liquidity impact (financing needs), a sensitivity analysis should carried out to determine how these variables will vary with changes in the underlined components. We will also compare and contrast these analyses with others available in the market, including IMF's and World Bank's analyses.

Initial Conditions

Initial fiscal condition of each individual country will be of critical importance to asses how and if the country will successfully weather the storm. Among the initial conditions are the existence of primary and overall fiscal balance, the size of international reserves, the size of the public debt and how much is foreign denominated, the dependency of commodity prices and the fiscal elasticity relative to GDP changes. It's proposed the financing needs and sustainability analysis start with countries with the weakest initial condition (as measured by primary and overall fiscal deficits, prior to the crisis).

The table below summarizes some the key macro-fiscal indicators that will have to be monitored in order to indicate the capacity of each particular country to face the challenges of the current financial crisis and make the necessary fiscal adjustment to ensure fiscal sustainability.

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in Developing Countries", 1990 by Willem Buiter, as well as the recent "Fiscal Sustainability", 2004, by the same author.

Some Key Indicators for Initial Conditions and Fiscal Impact

Revenues	Expenditures	Debt	External Exposure
Current T/GDP	Interest payment/G	Primary balance/GDP	Exchange rate regime (fl. fx mix,$)
Terms of trade	Personnel / G or R	Total balance/GDP	Reserves/fx debt
Taxes on Imports	Entitlements / G	Total D/GDP	Reserves / M
Taxes on Exports	Debt service/G or R	Fx D/GDP	Remittances/M or X
Commodities export revenues	K expenditures/G	Domestic D / GDP	Diversification X
GDP growth	Inflation	Domestic interest rate	Concentration trade partners
		Average D payment period (years)	Current account / GDP
			FDI/total investments
			Net foreign assets
			Dependency on food/oil imports

Annex: Fiscal Sustainability Analysis

The global economic recession and financial crisis will have impacts on the both the fiscal position and the external current account of LAC. We will focus primarily in the former, using the fiscal sustainability equation.

More specifically, for a given definition of the public sector, let GDP_t be the economy's gross domestic product (GDP) in period t, D_t be the net stock of public sector debt, PS the public sector's primary surplus, X_t the amount of seignorage financing, g the (constant) rate of growth of GDP, and i the (constant) average interest rate on public sector debt. In the standard framework for the analysis of debt sustainability[3], the increase in debt is a function of the level of debt multiplied by the interest rate, and of the government's primary surplus adjusted for seignorage financing of the budget. This is expressed as:

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[3]See, for example, " The Economics of the Government Budget Constraint," 1990 by Easterly and Fisher

$$D_{t=1} - D_t = iD_t - PS_t - X_1$$

For consistency with the analysis conducted in other Chapters, our definition of "government" is the Consolidated Public sector. Since in Colombia direct Central Bank financing of the fiscal deficit has been phased out and institutional arrangements are such that the independence of the Central Bank is credible, we assume in our projections that the likelihood that the government would result to inflationary financing of the deficit is negligible. However, the balance of the Central Bank is included above the line (as a government revenue item directly included in the calculation of the primary surplus), as is done in other Chapters. In this case, the increase in the debt stock can be simplified to:

$$D_{t+1} - D_t = iD_t - PS_t$$

Rearranging terms and dividing both sides of the equation by $GDP_{t+1} = (1 + g)$ GDP_t, we obtain:

$$\frac{D_{t+1}}{GDP_{t+1}} = \frac{1+i}{1+g}\frac{D_t}{GDP_t} - \frac{1}{1+g}\frac{PS_t}{GDP_t} D_{t+1}$$

To simplify this expression, debt-to-GDP and primary-surplus-to-GDP rations are expressed in lower case:

$$d_{t+1=} \frac{1+i}{1+g}d_t - \frac{1}{1+g}ps_t$$

This difference equation describes the behavior of the debt-to-GDP ratio given constant interest and GDP growth rates, and given a sequence over time of primary surpluses. It can be shown that if:

$$\text{Lim}_v \to \infty \left[\frac{1+g}{1+i}\right]^{v-t} d_v = 0$$

holds, them the debt-to-GDP ratio is no explosive. Applying this condition to the difference equation given above, yields:

$$d_t = \left(\frac{1}{1+i}\right)\sum\left(\frac{1+g}{1+i}\right)^{v-t} ps_v$$

This states that to avoid a no explosive debt-to-GDP ratio, the public sector must generate a sequence of primary surpluses (relative to GDP) such that the net present value of the sequence is worth al least as much as the debt-to-GDP ratio at time *t*. If we further assume that future primary surplus-to-GDP ratios are constant and making use of established results on the summation of sequences, it can be shown that:

$$ps = (i - g)d_t$$

The expression can be interpreted as saying that a stable debt-to-GDP ratio is obtained when the ratio of the primary surplus to GDP is equal to the difference between the interest rate and the economy's rate of growth, multiplied by the current debt-to-GDP ratio.