

The Vulnerability and Resiliency of Latam Countries to Global Shocks: The 2008-2009 Global Recession Case

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Note

In November 2009, Professor Morss taught a course at the University of Palermo Business School on the global recession. Students were required to write a paper on how an individual Latin American country had been affected by the Western banking collapse and the global recession. This paper summarizes the findings in those papers and goes further to analyze in more detail how the countries were affected by these two external shocks. Some results and data is not identical to the student's papers because we updated all the information.

We include the student's papers at the final of the background papers. Ecuador and Mexico cases were written by Diego H. Gauna and Elliott R. Morss.

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Introduction

The global credit freeze and recession provide an excellent opportunity to test Latam countries for resiliency to external shocks. We selected eight Latam countries to study. They represent 92.3 % of the total GDP, 90.6 % of total Exports, 83.1 % of total population and 98.7 % of the Stock Market Capitalization of listed companies.

Country Background

As Table 1 shows, Brazil has by far the largest area, population, and GDP in Latin America. Mexico has the greatest population density and is also the largest exporter of the group.

Table 1 | **Data on Latin American Countries, 2008**

Region	Population (in mil.)	Land Area (km ²)	Pop. Density	GDP (US\$ bil.)
Brazil	191,971,506	8,514,877	23	1,333
Mexico	106,350,434	1,964,375	54	1,023
Colombia	44,534,000	1,141,748	39	208
Argentina	39,876,118	2,780,400	14	262
Peru	28,836,700	1,285,216	22	107
Venezuela	27,943,249	912,050	31	228
Chile	16,758,114	756,102	22	164
Ecuador	13,478,600	283,561	48	53

More information, including GDP growth rates, foreign direct investment, debt, global trust in government, sovereign interest spread, doing business rating, export dependency (on one or two commodities, on one or two primary importers), remittances, stock market importance, fiscal balance, trade balance) will be included in later sections where we attempt to explain differences in resiliency among countries.

Research Methodology

The global economy was recently subjected to two major shocks. The first was the Western banking collapse. This started in mid-2008 causing a global asset loss (stock market and real estate) in early 2009 of US\$36 trillion. The resulting “wealth effect” led to a major reduction in global demand causing the second major shock – the global recession. In many part of the developed world, the recession continues, but there is evidence elsewhere that recoveries are underway.

The question to be addressed in this article is: what sort of impact did these two shocks have on the largest 8 Latam countries?

The timing of both shocks is known and data on their effects are available. The analytical model used is reflected in Table 2 where the major shocks and their effects are represented.

Table 2 | **Shock Model**

Event/Sector	Domestic Effects	Foreign Effects
Global Credit Freeze		
Financial Sector	No Asset Backed Securities Deposits Up	Letters of Credit Delayed
Government Policy	Interest Rates Down Reserves Increased	
Asset Loss		
Stock Market	Equities Sold	Equities Sold
Real Estate	New Investments Delayed	Capital Delayed
Wealth Effect/ Global Recession		
Government Policy	Consumption Down Investment Down Fiscal Stimulus	Exports Down Remittances Down
Overall Impact	GDP Trade Balances Government Deficit	Foreign Direct Investment
Recovery	Stock Market Real Estate Consumption Investment GDP Trade Balances Government Deficit	

1. Credit Freeze

a. Stock Market

Table 3 presents data on stock market losses for Latin American countries and the rest of the world. At one point, global markets had lost \$36 trillion while Latam countries were

down \$1.1 trillion. Latam countries have recovered far more rapidly than the rest of the world: Argentina,

Chile, Colombia and Mexico markets are now higher than they were at their peak before the credit freeze. In contrast, global markets are still down \$17 trillion.

Table 3 | Stock Market Reaction

Index	Index High	Index Low	Hi-Low % Loss	Hi-Low \$ Loss (US\$ bil.)	Index April 2010	Hi-April 2010 % Gain. Loss (-)	Hi-April 2010 Gain, Loss (US\$ bil.)
S&P Euro Index	1,858	728	-60.8%	-7,210	1,198	-35.50%	4,211
Nikkei 225 (Japan)	18,239	7,569	-58.5%	-2,590	11,339	-37.8%	1,675
S&P 500 (US)	1,558	683	-56.2%	-10,350	1,178	-24.4%	4,492
S&P Asia 200	6,749	3,145	-53.4%	-6,850	4,907	-27.3%	3,501
S&P Lat Am 40	59.51	21	-64.7%	-850	50	-16.6%	218
TSX (Canada)	14,984	7,591	-49.3%	-810	12,267	-18.1%	298
Argentina (Merval)	2,339	829	-64.6%	-22	2,450	4.7%	-2
Brazil (Bovespar)	73,516	29,435	-60.0%	-642	70,668	-3.9%	41
Chile (IPSA)	3,499	2,101	-39.9%	-149	3,835	9.6%	-36
Colombia (IGBC)	11,439	6,461	-43.5%	-62	12,198	-6.6%	-9
Mexico (Mexbol)	32,721	16,869	-48.4%	-227	33,600	-2.7%	-13
Peru (IGBVL)	23,790	6,054	-74.5%	-24	15,464	-35.0%	11
Venezuela (IBVC)	62,013	34,172	-44.9%	-4	58,361	-5.9%	1
Total 7 LA Countries				-1,130			-6
Total				-29,790			14,388
Total Adjusted*				-36,000			17,388

* Adjustment based on Bloomberg data.

For Latin American countries, did these asset losses have a significant wealth effect and cause consumption and investment to fall? That depends on who bore the losses. Table 4 provides one useful indication – the total stock market value as a percent of GDP.

Table 4 | **Stock Market Importance**

Region	Stock Mkt. Cap % of GDP
Chile	130%
Brazil	103%
Peru	99%
Colombia	49%
Mexico	39%
Argentina	33%
Ecuador	9%
Venezuela	?

Source: World Bank

Taken at face value, the table suggests that any stock market fluctuation would have a greater impact in Chile than in Ecuador. However, this is not conclusive because it does not allow for foreign holdings of stock. For example, if a large portion of a country's equities are held by foreigners, stock market losses should not have a significant wealth effect domestically.

According to World Bank data, the net portfolio inflows to Latin America and the Caribbean totaled about US\$53 billion in the 2005-2007 period. According to the *World Federation of Exchanges*, the total capitalization of the Latam stock markets we are examining was US\$2.2 trillion at the end of 2007, falling to US\$1.1 trillion a year later. This suggests that foreign holdings were quite insignificant as a per cent of the total.

b. Real Estate

The credit freeze, and resulting stock market losses in Western nations, resulted in large part from a sharp downturn in the real estate. It does not appear a similar downturn occurred in Latin America. Real estate data on prime office space is presented in Table 4.

Table 5 | **Real Estate in Major Latam Cities**

City	Vacancy		Lease Price Change	Sales Price Change
	End 2008	end 2009	End 08 - 09	End 08 - 09
Buenos Aires	6.4%	9.0%	-20.0%	no change
Caracas	1.0%	3.5%	6.0%	20.0%
Lima	1.9%	8.4%	no change	no change
Mexico City	4.0%	7.8%	-23.0%	no data
Rio de Janeiro	3.1%	3.7%	9.0%	no data
Santiago	1.0%	3.4%	no change	no change

Source: CB Richard Ellis (cbre.com)

Vacancy rates in all cities increased somewhat in 2009, but that was mostly the result of new space becoming available. Lease prices have fallen significantly in Both Buenos Aires and Mexico City, but even in those cities, there is considerable optimism. In short, Latin American countries are not suffering the massive real estate collapse that took place in Western nations.

c. Banking

Despite the Western banking collapse, there was no panic and little stress in the banking sectors of our countries. High international reserves and almost no exposure to Asset Backed Securities kept the crisis from spreading into our countries. Deposits increased as a result of the crisis with clients liquidating investments for cash.

2. Global Recession Effects - Overall Impact

In order to assess the effects of the global recession, we developed three indices for our countries:

- Vulnerability – how much did each GDP fall immediately as a result of the two external shocks;
- Resiliency – how much has the growth rate of each country recovered since the recession, and
- Volatility – taken together, how much did the growth rate fall and how much has it come back.

These indices are defined more precisely and provided for our countries in the following paragraphs.

Vulnerability

It is useful to have an overall measure of the external effects of global recession on our Latam countries. For this, we have developed a vulnerability index – how much did the recession cause the GDP growth rate to fall at first. More specifically, we define our Vulnerability Index (VullI) as the percent change in GDP due to the changes in exports, remittances and foreign direct investment caused by the global recession.

Exports

A significant portion of the shock effect was translated to Latam countries via a reduction in export demand. The effects of this reduction on Latam economies depended on the importance of exports in their economies. Data on this are presented in Table 6.

Table 6 | **Export Reduction Effects of the Shocks in Real Terms**

Country	Exports/GDP	Exports		GDP Effects	
		2009	2010 est.	2009	2010
Mexico	30%	-15.19%	9.6%	-4.58%	2.89%
Venezuela	18%	-12.88%	4.2%	-2.29%	0.75%
Ecuador	38%	-5.90%	4.8%	-2.26%	1.84%
Chile	40%	-5.60%	9.5%	-2.22%	3.76%
Colombia	19%	-8.16%	4.8%	-1.51%	0.89%
Brazil	14%	-10.28%	7.3%	-1.42%	1.01%
Argentina	13%	-6.41%	8.9%	-0.85%	1.18%
Peru	28%	-2.48%	4.7%	-0.68%	1.30%
World	29%	-14.4%	4.3%	-4.18%	1.25%

Source: Central Banks for each country and Prospects for the Global Economy 2010, World Bank.

In the table, countries are ranked by the size of the negative impact on GDP in 2009. It is not surprising that the countries in which exports are most important were at the top of the list. In the cases of Venezuela and Chile, it is also noteworthy that a single commodity (Venezuela – oil, Chile – copper) dominated exports. There was a sharp reduction in Brazil's exports, but because exports are not important in Brazil relative to other Latam countries, the GDP effect was less.

It is also notable that most Latam countries were less affected by the shocks than the world overall. Only Mexico's exports fell more than the world overall. And the estimated export recovery in 2010 is better in all countries except Venezuela than for the world.

Besides size, it is important to analyze the export composition because a high dependence on single or limited number of commodities, such as oil and copper, increase the degree of vulnerability to the global recession. The following table shows the Export Concentration Index³ for the year 2008:

3. Expressed as Herfindahl-Hirschmann indices derived from three-digit SITC product categories. The Herfindahl-Hirschmann index is defined as the sum of squares of the percentages of the shares of each commodity as a proportion of total exports. Results are normalized and range from 0 (atomistic market) to 1 (maximum concentration).

Table 7 | **Export Concentration Index**

Country	2008
Brazil	9.02%
Argentina	14.54%
Mexico	15.34%
Colombia	20.07%
Peru	25.60%
Chile	39.10%
Ecuador	52.57%
Venezuela	85.73%

Source: UNCTAD.

Remittances

As can be seen by Table 8 remittance income, mostly from the US, is quite important to several Latam countries.

Table 8 | **Remittance Income as a Percent of GDP**

Region	Remittances/GDP	Remittances 2008-2009 Change	GDP Effect
Ecuador	6.10%	-11.60%	-0.71%
Colombia	2.40%	-18.00%	-0.43%
Mexico	2.60%	-15.80%	-0.41%
Peru	2.10%	-4.17%	-0.09%
Argentina	0.30%	-12.50%	-0.04%
Venezuela	0.10%	-8.60%	-0.01%
Brazil	0.40%	1.80%	0.01%
Chile	0.00%	n.a.	0.00 %

Source: Remittances Watch, World Bank and the central banks of each country.

The table shows that the drop in remittances was higher in Colombia, although its effect over GDP is higher in Ecuador because of the importance of remittance income for the Ecuadorian economy.

Foreign Direct Investment

The following table includes estimates from ECLAC on net foreign direct investments (FDI) to Latam countries for both 2008 and 2009. As can be seen, the global recession

caused FDI to fall in all of our countries except Peru and Brazil, countries whose prospects for growth are most favorable.

Table 9 | Foreign Direct Investment (as % GDP)

Region	FDI/GDP	FDI 2009	GDP Effect
Brazil	1.70%	-42.41%	-0.72%
Chile	5.84%	-16.33%	-0.95%
Peru	3.16%	-31.25%	-0.99%
Mexico	2.01%	-50.73%	-1.02%
Venezuela*	0.29%	n.a.	-1.09%
Colombia	3.44%	-31.96%	-1.10%
Argentina	2.28%	-49.67%	-1.13%
Ecuador	1.82%	-68.83%	-1.25%

* Venezuela has been experiencing a net outflow of FDI. Consequently, for this table, we used the absolute change in FDI for this table.

Source: Foreign Direct Investment in Latin American and Caribbean, ECLAC, May 2010.

Total External Impact

Table 10 provides summary data on the external impact of the shocks based on the sections above, being the sum of each impact our vulnerability index.

Table 10 | Total External Impact

Country	Exports	Remittances	FDI	Vulnerability Index (Vull)
Mexico	-4.58%	-0.71%	-1.25%	-6.54%
Ecuador	-2.26%	-0.41%	-1.02%	-3.69%
Venezuela	-2.29%	-0.01%	-1.09%	-3.39%
Chile	-2.22%	0.00%	-0.95%	-3.17%
Brazil	-1.42%	0.01%	-1.10%	-2.51%
Colombia	-1.51%	-0.09%	-0.72%	-2.32%
Peru	-0.68%	-0.43%	-0.99%	-2.10%
Argentina	-0.85%	-0.04%	-1.13%	-2.02%

It appears that are our countries fall into three groupings:

- Mexico was extremely vulnerable to the external shocks;
- Venezuela, Ecuador y Chile were somewhat less vulnerable, and
- Brazil, Argentina, Peru and Colombia were least impacted by the shocks.

Resiliency

In addition to a Vulnerability Index, we developed a Resiliency Index (RI). The RI measures the extent to which a countries GDP growth rate returned to where it was prior to the recession. More specifically, it is defined as the forecasted growth rate for the 2010-2011 period as a percent of pre-recession growth rate defined above such that an Index of 100 would mean complete recovery.

Table 11 | **GDP Resiliency Index (RI)**

Country	Before Recession	After Recession	Resiliency Index
Chile	4.63	5.36	116
Mexico	4.23	4.26	101
Brazil	4.82	4.8	100
Ecuador	3.19	2.38	75
Peru	8.3	6.15	74
Colombia	7.24	3.13	43
Argentina	8.56	3.25	38
Venezuela	9.01	-1.14	-13

Source: Data from ECLAC and Central Banks for each country
Forecasts are from WEO, IMF, April, 2010.

Finally, we constructed a Volatility Index (VoII). We define VoII as simply the sum of the downturn and upturn GDP growth changes as presented in the following table.

Table 12 | **GDP Volatility Index**

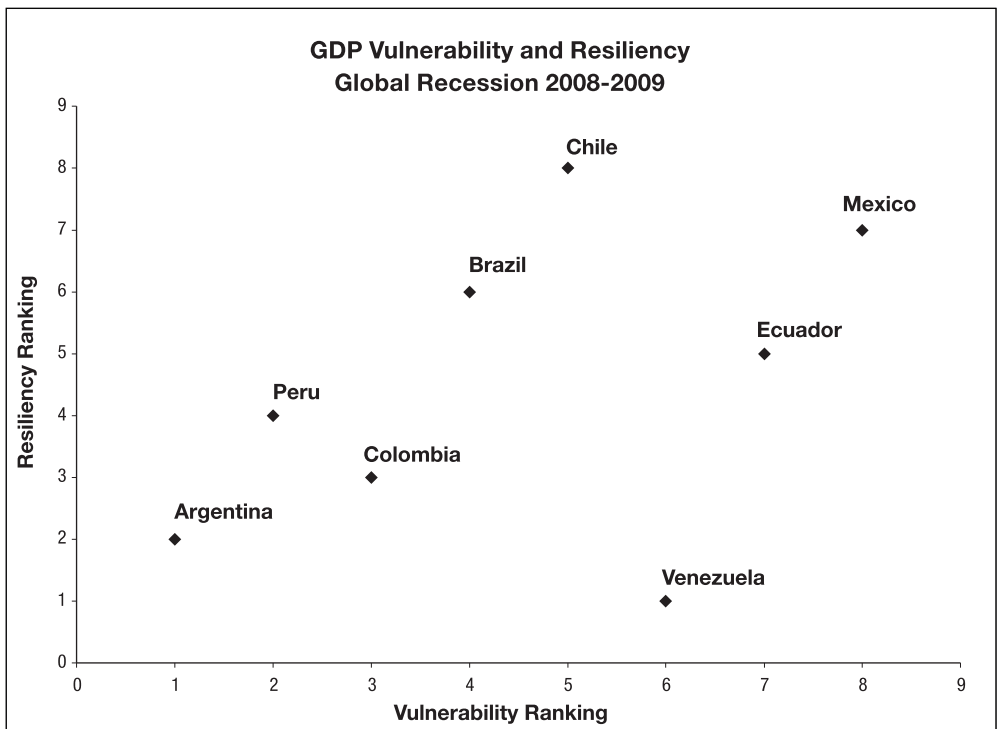
Country	Recession	Rebound	VoII
Ecuador	2.83	2.02	4.85
Colombia	6.88	2.77	9.65
Brazil	5.01	4.99	10.00
Argentina	7.66	2.35	10.01
Peru	7.44	5.29	12.73
Chile	6.13	6.86	12.99
Mexico	10.73	10.76	21.49
Venezuela	12.30	13.44	25.74

To analyze the relationship between vulnerability, resiliency and volatility, we ranked countries so that a “better” VuII, RI and VoII score would get a higher ranking, where better means low vulnerability, high resiliency, and low volatility. So, for example, Argentina gets an 8 ranking on VuII, Chile gets an 8 ranking on resiliency, and Ecuador gets an 8 ranking on volatility.

Table 13 | **Rankings**

Country	VuII	RI	VoII
Brazil	4	6	3
Colombia	3	3	2
Ecuador	7	5	1
Peru	2	4	5
Chile	5	8	6
Argentina	1	2	4
Mexico	8	7	7
Venezuela	6	1	8

Chart 1 | **The Relationship Between Resiliency and Vulnerability**



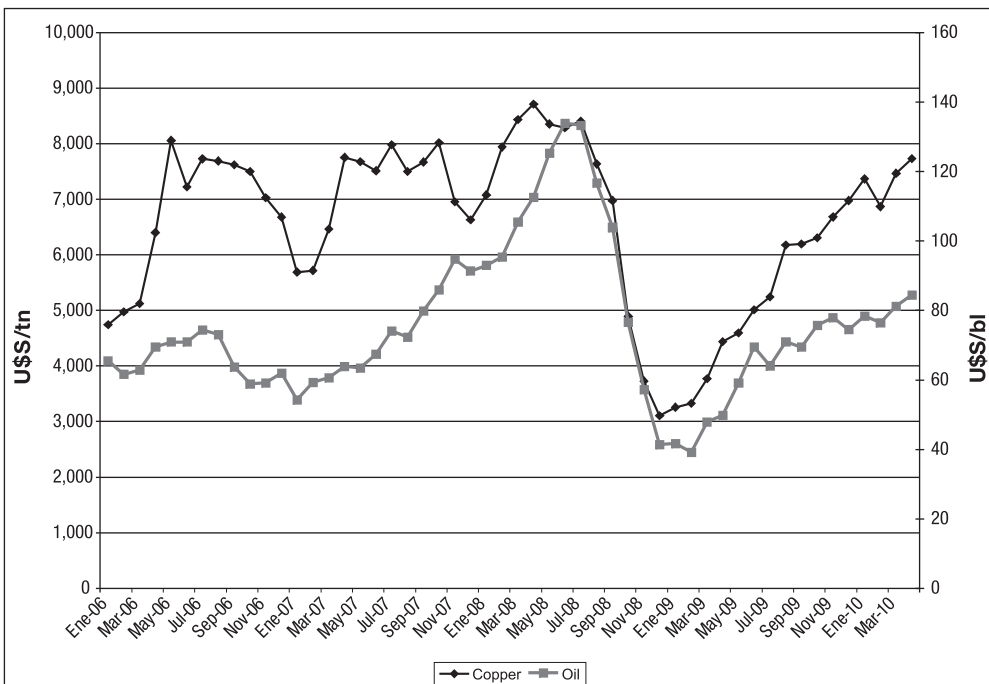
Venezuela is undoubtedly the country with the worst performance during the global recession. It has the sixth ranking in the Vulnerability Index and the lowest in the Resiliency Index.

There is no clear relationship between vulnerability and resiliency. However, one can see certain relationship between sub-groups:

- Peru, Colombia and Argentina as a group have low vulnerability and low resiliency;
- Ecuador and Mexico are relatively vulnerable with high resiliency;
- Venezuela is vulnerable with no resiliency;
- Chile is highly vulnerable and the most resilient, and
- Brazil is in the middle in both rankings.

Ecuador, Mexico, and Chile depend strongly on commodity prices for exports. As a consequence, they were vulnerable because of the collapse in commodity prices at the onset of the global recession. Chile's rebound depended importantly on the quick recovery of the copper price. As Chart 2 illustrates, the copper price recovered more rapidly than the oil price. And that might explain why Chile has a higher resiliency score than Mexico or Ecuador.

Chart 2 | Oil and Copper Prices



Source: Chart based on IMF data.

Argentina, Peru and Colombia are not as dependent on exports and consequently had lower vulnerability and resiliency ratings.

In Brazil, there is an on-going domestic dynamic, just like there is in China. China's exports fell 34% in 2009. Exports are 37% of China's GDP which means the export decline should have caused a decline in china's GDP of 11.5% unless other dynamics were at work. In fact, China's GDP growth rate only fell from 9% in 2008 to 8.7% in 2009. The same probably holds for Brazil – that is, there is a powerful internal economic dynamic that keeps the country growing.

Government Policy Reactions to Shocks

The external shocks influenced the domestic economies of our countries in ways described above. But what did the governments of the countries do to mitigate these effects? In what follows, we describe what they did using exchange rate, monetary, and fiscal policies.

Prior to the external shocks, most of our countries were growing rapidly, and government policy was focused on containing excess aggregate demand and inflation.

Table 14 | **Latam Countries' GDP Growth and Inflation**

Country	GDP Growth		Inflation	
	2006	2007	2006	2007
Argentina	8.5	8.7	9.8	8.5
Brazil	4.0	6.1	3.1	4.5
Chile	4.6	4.6	2.6	7.8
Colombia	6.9	7.5	4.5	5.7
Ecuador	4.7	2.0	2.9	3.3
Mexico	4.9	3.3	4.1	3.8
Peru	7.7	8.9	1.1	3.9
Venezuela	9.9	8.2	17	22.5

Source: IMF, "Western Hemisphere Regional Outlook", May 2010

Governments were also concerned about the relationship between exchange rates and inflation, not wanting to put their exporters at a competitive disadvantage in capital markets.

a. Monetary Policy

The Western banking collapse and credit freeze changed everything. Most central banks immediately considered what they could do to insure that their banks did not fail. They relaxed restrictions on banks and offered them more liquidity. Whereas a number of central banks had been buying US dollars with their currency before the collapse, they reversed course and started selling dollars to help satisfy the dollar demand that panicked customers believed US dollars offered. Several countries arranged loans with the IMF.

Colombia borrowed US\$10.5 billion and Mexico US\$47 billion from the IMF. Mexico already had in place a US\$30 billion currency swap facility in place with the US government.

It is important to note that in Latin America that countries have different monetary policy approaches:

- a. Brazil, Colombia, Chile, Peru and Mexico follow explicit inflation-targeting regimes, in line with most of the developed countries.
- b. Argentina and Venezuela have central banks with weak autonomy, leaving the room for uncontrolled expansion in monetary aggregates. They do not have inflation targets.
- c. Ecuador uses the US dollar as its currency, so there is no room for monetary policy.

Inflation-targeting involves setting a target inflation rate and having the monetary authority focus its policies on not allowing inflation to exceed or fall much below the target rate.

Table 15 shows the evolution of the monetary policy in our countries:

Table 15 | Interest Rates for Monetary Policy

Country	Interest Reference Pre-Recession*	Last Interest Reference Rate (May 2010)	Change in Policy Rate
Chile	8.25%	0.50%	-7.70%
Colombia	9.50%	3.00%	-6.50%
Peru	6.50%	1.25%	-5.25%
Brazil	13.75%	9.50%	-4.25%
Mexico	8.25%	4.50%	-3.75%

Source: Central Banks for each country. * At the end of 2008.

It is clear from the table that our countries used interest rate policy aggressively to counter the global recession. The difference in policy between these 5 countries as compared with Argentina and Venezuela is notable. These 5 countries relaxed monetary policy and it had no effect on the inflation rate. On the other hand, Argentina and Venezuela have inflation rates above 20 %, mainly because of the uncontrolled increase in monetary aggregates. While neither country uses interest rates as a monetary policy instrument, rates also dropped in these countries following the onset of the recession. In Argentina, the overnight interest rate fell from more than 11% at the end of 2008 to 9% in May 2009. Venezuela has almost no operations in the interbank system, but there is some evidence to suggest a fall in rates as well.

Table 16 | **Inflation Targets in Latam Countries**

Country	Inflation Target	Target Range	Actual Inflation 2008	Actual Inflation 2009
Brazil	4.5 %	2.5-6.5 %	5.9 %	4.3 %
Chile	3.0 %	2-4 %	8.7 %	1.5 %
Colombia	3.0 %	2-4 %	7.0 %	4.2 %
Peru	2.0 %	1-3 %	6.7 %	0.2 %
Mexico	3.0%	2-4%	6.5%	3.6%
Argentina*	None	None	7.2 %	6.5 %
Venezuela	None	None	31.9 %	28.9 %

Source: Central Banks for each country and ECLAC.

* Inflation Statistics in Argentina are questioned by outside observers. Some estimate inflation above 20 % in 2008 and 2009.

b. Fiscal Policy

As the world moved from a banking crisis into a global recession and the external effects described above started to be felt, governments initiated a wide variety of programs to stimulate their economies. It is very difficult to quantify the effects of these policies, but a rough approximation can be gained by examining data from various sources.

It would be valuable to have some idea of the quantitative impact of the government stimulus packages. However, such estimates are difficult to make because of the wide variety of elements included in the packages.

However, the International Labor Organization did a study of stimulus packages and included 4 of our countries: Argentina, Brazil, Chile, and Mexico. Also, LatinFocus reported that Peru's stimulus package amounted to 3.2% of GDP. These packages will impact the economies over the 2009-2010 period. It does not appear that either Colombia or Venezuela has developed a stimulus package, and Ecuador is limited in what it can do because it uses the US dollar as its currency.

Table 17 | **Stimulus Packages as Percent GDP**

Mexico	4.7%
Argentina	3.9%
Peru	3.2%
Chile	2.3%
Brazil	0.2%

Source: ILO <http://www.ilo.org/public/english/bureau/inst/publications/discussion/dp19609.pdf> and LatinFocus

It is unknown how good these estimates of stimulus packages actually are, so it is worth looking at changes in overall government budgets for another indicator of fiscal efforts to mitigate the global depression. In Table 18, the primary balance of the public sector of our countries is presented.

Table 18 | **Primary Sector Balances**

Country	Public Sector Primary Balance (% GDP)					Balance Change 2008-2009
	2006	2007	2008	2009	2010 (est.)	
Chile	8.5	9.5	5.8	-3.9	-1.4	9.7
Peru	4.1	4.9	3.7	-0.7	-0.2	4.4
Venezuela	0.5	-1.2	-1.2	-4.4	3.0	3.2
Ecuador	5.8	4.1	0.4	-2.8	-2.9	3.2
Mexico	1.8	1.3	1.1	-2.0	-0.8	3.1
Colombia	2.9	3.2	3.2	0.6	-0.1	2.6
Argentina	4.0	2.4	2.7	0.2	-0.8	2.5
Brazil	3.2	3.4	4.0	2.1	3.3	1.9

Source: IMF, "Western Hemisphere Regional Outlook", May 2010

The final column represents the change in the balance between 2008 to 2009. This column provides another estimate of the net stimulus impact of our governments. Unfortunately, these changes include revenue drops that probably had little or no stimulatory impact. Consider Chile as an example. Much of its 9.7% change results from a drop in copper revenues, and it is highly unlikely that these reductions had the same stimulatory impact that a reduction in individual income tax rates would have had. In light of these problems on the revenue side, we examine changes in government expenditures only below.

Table 19 | **Changes in Government Expenditures**

Country	Public Sector Primary Expenditure (% GDP)					Expenditure Change 2008-2009
	2006	2007	2008	2009	2010 (est.)	
Chile	19.2	19.9	22.6	26.0	25.5	3.4
Colombia	24.3	24.1	23.0	26.4	24.8	3.4
Argentina	25.9	29.1	30.6	33.8	34.6	3.2
Mexico	19.6	20.1	21.8	24.4	22.5	2.6
Brazil	32.8	32.3	32.5	34.2	33.3	1.7
Peru	21.3	20.9	22.9	24.4	24.4	1.5
Ecuador	21.6	24.8	33.0	32.8	34.2	-0.2
Venezuela	36.9	34.2	31.9	30.3	33.6	-1.6

Source: IMF, "Western Hemisphere Regional Outlook", May 2010

We conclude that these figures provide a good approximation of the fiscal stimulus packages developed by the governments of our countries. Ecuador, because it uses the US\$ as its currency, could not afford a stimulus package, while the Venezuelan government did not launch a stimulus package. It is notable that although the Colombian government did not announce a stimulus package, its expenditure increase effectively provides as significant a stimulus as in any of our countries.

In Table 20, we present a comparison of the total external impact with the government stimulus from the table above.

Table 20 | **External Shocks and Government Stimulus**

Country	External Impact	Government Stimulus	Net
Mexico	-6.54%	2.60%	-3.94%
Ecuador	-3.69%	0.20%	-3.49%
Venezuela	-3.39%	1.60%	-1.79%
Brazil	-2.51%	1.70%	-0.81%
Peru	-2.10%	1.50%	-0.60%
Chile	-3.17%	3.40%	0.23%
Colombia	-2.32%	3.40%	1.08%
Argentina	-2.02%	3.20%	1.18%

It should be noted that a lower Net should not necessarily be taken as a measure of the appropriateness of the government's policy. The Mexican government probably anticipated a rebound in commodity prices and consequently did not want to provide an excessive stimulus. Ecuador could not afford a larger stimulus. The government of Venezuela appeared oblivious to the global recession. The governments of Brazil, Peru, and Chile provided stimulus packages close to what was needed. In both Argentina and Chile, important elections were being held which might have contributed to the large stimulus efforts.

c. Exchange Rate Policy

Exchange rates are extremely important in Latin America, and as Table 20 shows, most Latam currencies increased in value relative to the US dollar in years preceding the global recession. In fact, during this period, most Latam currencies had gained so much value relative to the US dollar that central banks were buying US dollars to mitigate the effect of their stronger currencies on the competitive position of their exporters.

In the panic that immediately followed the credit freeze, everyone wanted US dollars, and so all Latam currencies fell in value from the end of 2007 to the end of 2008, with the currencies of Brazil and Chile losing the most. To counter these declines, the governments of several of our countries started buying their own currencies with dollars. During 2009, the currencies of all countries with flexible exchange rates strengthened with the exception of Argentina. Peru's currency is now worth more than it was before the credit freeze. In

early 2010, Venezuela devalued its currency by 100% relative to the US dollar. The Argentine and Venezuelan currencies are the only ones that continue to lose value, although, due to the high-inflation environment in both countries (above 20 % annually), it is probable that their currencies are appreciating in real terms.

Table 21 | Latam Exchange Rates vs. US\$ (end of period)

Country	Percent Change		
	2005-2007	2007-2008	2008-2009
Brazil	24.4%	-32.2%	25.6%
Chile	3.5%	-26.8%	19.6%
Colombia	11.8%	-11.4%	8.8%
Peru	10.2%	-4.7%	8.0%
Mexico	-2.7%	-26.6%	5.4%
Ecuador*	0.0%	0.0%	0.0%
Venezuela**	-53.6%	4.5%	-14.0%
Argentina	-4.0%	-9.5%	-10.1%

Source: LatinFocus. *Ecuador uses the US\$ as its currency.

** Market Estimation of Black Market Exchange Rate from www.controldecambios.com

The official exchange rate for the Venezuelan currency was fixed at 2.15 Bolivars per US dollar in the 2005 – 2008 period. In March 2010, the official rate was devalued to 4.30 Bolivars per dollar. The actual market value of the Bolivar is much lower. For example, today's estimate is 8.10 Bolivars per US dollar. In Table 21, we use an estimate of the black market rate.

A significant portion of the changing currency values reflects foreign confidence or lack of confidence in a country's policies. One indicator of confidence is the interest spread between the interest rate at which a country can borrow in international markets relative to the US Treasury borrowing rate.

Table 22 provides this data for our countries as of March 2010.

Table 22 | Interest Spreads for Latam Countries, February 2010

Country	Spread (bps)
Chile	132
Peru	179
Mexico	196
Colombia	211
Brazil	212
Argentina	806
Ecuador*	822
Venezuela	989

LatinFocus, March 2010

External Shocks, Government Policy Reactions, and Overall Country Growth

In Table 23, countries are ranked in accordance with how the economies actually performed relative to the external shock and the government's policy response. A negative number in the final column means actual performance was worse than what had been predicted by the shock and policy response. A positive difference would mean the internal dynamic of overall economy was more powerful than the combined effect of the recession and the government's counterpolicy.

Table 23 | **Exogenous Shocks and Actual GDP Change**

Country	External Impact	Government Stimulus	Net	Actual GDP Change	Difference
Mexico	-6.54%	2.60%	-3.94%	-6.50%	-2.56%
Chile	-3.17%	3.40%	0.23%	-1.50%	-1.73%
Venezuela	-3.39%	1.60%	-1.79%	-3.29%	-1.50%
Colombia	-2.32%	3.40%	1.08%	0.36%	-0.72%
Argentina	-2.02%	3.20%	1.18%	0.90%	-0.28%
Brazil	-2.51%	1.70%	-0.81%	-0.19%	0.62%
Peru	-2.10%	1.50%	-0.60%	0.86%	1.46%
Ecuador	-3.69%	0.20%	-3.49%	0.36%	3.13%

For five of our countries, this was not the case: GDP growth was actually less than we predicted. What can explain the differences? Several things:

- The total external impact/policy responses are in Keynesian terms, the “first round impacts”; actual changes in GDP will include effects from “later rounds”.
- For our bigger countries, like Brazil, there is an on-going domestic dynamic, just like there is in China. China's exports fell 17% in 2009; exports are 37% of china's GDP which means the export decline should have caused a decline in China's GDP of 6.3%. In fact, China's GDP growth rate only fell from 9% in 2008 to 8.7% in 2009! The same probably holds for Brazil – that is, there is a powerful internal economic dynamic that keeps the country growing.
- The magnitude of the domestic market and the management of the exchange rate policy also need to be emphasized. With a large internal market, the economy can substitute local production for imports if the local currency weakens. With a negative shock and a flexible exchange rate, the local currency will lose value, thereby stimulating exports and reducing imports, adjusting the current account. But with a fixed exchange rate, all the adjustment has to be done via a reserve decrease or with a sharp adjustment in the local economy.

The Ecuador case is quite surprising. It has a small internal market and uses the US dollar as its currency. Here, the external impact should be greater. The dollar increased in

value during the crisis which means imports became cheaper from neighboring countries while at the same time its exports became more expensive to neighbors.

Conclusions

Our major conclusions from this exercise are presented below.

- The stock markets of Latam countries sold off as sharply as Western markets at the outset of the crisis. However, in most cases, they have recovered far more rapidly than is true for other regions.
- The real estate markets in Latin America have shown very little weakness following the real estate collapse in Western nations. This could be due to the role of “safe investment” that families in Latam countries assign to real estate and the low percentage of families that have debt mortgages.
- Despite urgings from Western banks and academics⁴ to increase leverage and risk, the Latam banks have pursued more conservative courses and have shown little stress during the financial crisis. The banks did not hold or trade a significant amount asset backed securities (ABS).
- The global recession impacted our countries primarily through three external sector paths – exports, remittances, and foreign direct investment, with the fall in exports being the single most important source.
- Countries with exports dominated by one commodity (copper or oil) were initially hardest hit – however, the prices of both commodities recovered rapidly so the exports of these countries have recovered.
- Countries where exports were less important or where exports were not concentrated in a few items showed less vulnerability and volatility, *e.g.*, Brazil.
- All our countries except for Ecuador and Venezuela used monetary and fiscal policies to counter the global recession. Ecuador could not afford a stimulus package while the impetus behind Venezuela’s policies is unclear.
- Central banks with inflation-targeting policies are already considering interest rate increases in the belief that the recession is over. For example, Brazil raised interest rates last week.
- Credit spreads have recently fallen for all our countries except Argentina and Venezuela. The high spreads in these two countries reflect international misgivings over government policies.
- All of our countries with the exception of Venezuela will show positive GDP growth in 2010, but projected growth rates will be far below those registered before the global recession hit. This could in some way be a blessing inasmuch as growth rates for most of our countries in the 2006 – 2007 period were probably not sustainable.

4. Paul L. Freedman and Reid W. Click, “Banks That Don’t Lend? Unlocking Credit to Spur Growth in Developing Countries”, *Development Policy Review*, 2006, vol. 24, issue 3, pages 279-302

Data appendix

Quarterly evolution of real gdp by country based on central bank data for each country.

