

INEQUALITY IN A LOWER GROWTH LATIN AMERICA

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Foreword

This semiannual report – produced by the Office of the Chief Economist for Latin America and the Caribbean (LAC) of the World Bank – reviews the economic and financial outlook for the LAC region at a time when growth in the region and most of the world has decelerated significantly.

As usual in this series, Chapter 1 reviews the configuration of global risks and assesses the outstanding short term opportunities and challenges facing the LAC region. We document the significant slowdown in economic activity across the region, and explore the possibility of this being the ‘new normal’. In Chapter 2 we assess if the major social gains achieved during the ‘Golden Decade’, in particular the decline in inequality, will hold in this less supportive environment, and discuss alternative policy responses to preserve and further the equity gains in the region.

This report was led by Augusto de la Torre, Regional Chief Economist, Eduardo Levy Yeyati, External Consultant, Guillermo Beylis, Research Economist, with Tatiana Didier, Senior Economist, Carlos Rodríguez Castelán, Economist, and Sergio Schmukler, Lead Economist. We would like to thank Daniel Lederman, Julian Messina, Marcela Sanchez-Bender, Sergio Jellinek, as well as by members of the Regional Leadership Team of the Latin America and the Caribbean Region of The World Bank for their invaluable comments. Emmanuel Chávez, Tania Diaz-Bazán, Magali Pinat, Martin Sasson, and Daniel Valderrama provided outstanding and inexhaustible research assistance.

October 2014

Executive Summary

The middle-income world seems to have entered a phase of slower growth. While economic activity is firming up in the G7 (a 2.1 percent growth rate estimated for 2014), most of the large developing economies are expanding at a pace significantly below the heights of their recent past. In particular, China, India, and Eastern Europe have registered comparable slowdowns of about 3 percentage points relative to their respective peaks. And while the South East Asia (excluding China) has avoided a major deceleration, Latin America and the Caribbean (LAC) seem caught in the broad-based and synchronized downturn in the emerging group: growth in LAC has been decelerating since 2012 to an estimated rate of only 1.2 percent for 2014, compared to the 4-5 percent rates that characterized the “golden” pre-global crisis years.

Although growth for the region as a whole is projected to rebound to 2.2 percent in 2015, it is not clear whether the slowdown is bottoming out. It is even less clear what the “new normal” non-inflationary trend would be for LAC once growth begins to pick up. What is clear is that the current slowdown is not the typical crisis-laden bust that used to come after the debt-fueled booms in the Latin America of the 1980s and 1990s but rather a downturn phase of a more conventional (yet still incomplete) business cycle—an unprecedented experience for a region historically accustomed to a sharp stop-go pattern. It is also clear that neither the catch up from the crises of the late 1990s nor the supportive global winds will be there to propel the region in the near future. If the historical growth record in LAC can serve as a guide, absent vigorous productivity oriented reforms, a “new normal” of around 3 percent per year would be as good a guess as any for LAC taken as a whole.

It is well known that the recent period of fast-growth in LAC was associated with significant poverty reduction and a visible decline in measured income inequality. Given the prospects of lower growth, however, it is natural to wonder whether and to what extent these social equity gains are at risk, and what policy levers may be available to enhance or at least preserve them going forward. Answering these questions requires a better grasp of what has really happened with inequality in the region and, in particular, of the links between macroeconomic factors and inequality. This report sheds light on these issues by reassessing how the story we have been telling about inequality holds against alternative measures—including the often underrepresented top earners and correcting for the typically overlooked inflation differentials across income levels—and identifying the drivers, especially the macro ones, of inequality changes. It closes with a discussion of policy implications.

LAC’s inequality story line goes as follows. As measured by Gini coefficients, the fall of household income inequality in LAC since 2003 was significant in magnitude, unprecedented relative to the region’s history, and quite unique in the world. And it was largely driven by a decline in labor income inequality which, in turn, was the reflection of a reduction in returns to education, i.e., a fall in the skill premium. This narrative hinges crucially on the calculation of inequality measures using data from household income surveys. But do these data convey the inequality reality appropriately, given the well-known limitations? There are in effect strong reasons to be cautious.

For starters, Gini coefficients for LAC are not readily comparable to those in other emerging regions, typically calculated using expenditure (rather than income) survey data. In addition, household income surveys do not capture well the top income earners, who have a higher-than-average nonresponse rate and, because surveys do not capture well capital income, the most important source of income for the very rich, a propensity to underestimate them. Moreover, survey-based Gini coefficients measure inequality in the distribution of nominal income, thereby implicitly assuming that the consumption basket is the same across different income levels.

To address these limitations, this report does the following. First, it complements survey data with data from (anonymous) tax records for the few LAC countries for which such data are publicly available and calculates an augmented Gini. It finds that, while the new Gini suggests a much higher level of inequality (confirming that there is considerable income concentration at the very top), its evolution over time—especially in non-crisis times—tracks closely the conventional survey-based measure (suggesting that the income of the very rich has not been diverging away from mean income, contrary to what many may have expected).

Second, the report assesses the consistency of the evolution of the inequality measures with the evolution of labor shares in the national income and finds that, whereas the decline in labor shares (which in LAC was milder than elsewhere) was indeed associated with a rise of income at the very top, there is no systematic association with the evolution of the Gini. In other words, changes in labor shares appear to be a good proxy of income changes at the top but not of changes elsewhere.

Third, the report documents that consumption baskets are indeed quite different across income groups. Using information on the composition of expenditures for different income classes (for seven LAC countries for which data are readily available), it builds the relevant consumption baskets and estimates inequality in the distribution of purchasing power by appropriately deflating incomes, i.e., by using the inflation rates that suit the relevant consumption baskets. It finds that, when this more realistic measure is used, inequality in LAC did in fact decline but less than is commonly believed.

With respect to the drivers of changes in inequality, the report first revisits a puzzle that has been highlighted in previous reports of this series: the decline in the returns to education in the region during its fast-growth period. While more research is required, the report presents evidence in favor of supply-related hypotheses. The expansion of education coverage implied a change in the socio-economic background of the entrants to the educational system which, given that often the quality of education is inferior for the poor than for the rich, may have reduced the average performance (and, in turn, the average wage) for a given level of education. This effect may have been compounded by the slow digestion by the market of an excess supply of educated workers, and by a drop in the average quality of tertiary education associated with its rapid expansion.

The report then places a special focus on the macroeconomic drivers of inequality. It finds that it is through changes in the employment ratio (i.e., the share of the economically active population that is employed) rather than growth per se that matters most for inequality. This should not be surprising: in developing economies with incomplete unemployment insurance and limited access to saving instruments, being employed may mark the difference between a middle-class income and a subsistence government transfer. At the same time, because tradable goods (particularly foodstuffs) weigh more in the consumption basket of the poor, changes in the real exchange rate are also found to affect inequality, via its effect on real wages, albeit less forcibly than changes in employment. While the final score depends on the relative corrections of tradable food prices and the exchange rate, the equity loss due to a lower real wages in the down cycle should be weighed against the equity loss due to job destruction. All things considered, the evidence favors growth (employment) stability over exchange rate (wage) stability as an equity-friendly response to cyclical demand fluctuations.

The previous findings link to a key message of this report, namely, that LAC is at present much better positioned, from the macroeconomic policy standpoint, to favor this equity-friendly option. In the past, LAC's penchant for boom-bust cycles implied that labor markets adjusted during crises via contractions in employment and major declines in real wages driven by bouts of inflationary spirals. While in today's LAC real wage adjustment is more constrained by low-inflation and downward rigidity, the region's much improved monetary policy framework (based on inflation targeting and managed exchange rate flexibility) provides greater shock absorption and space for counter-cyclical policy. In particular, the depreciation of a flexible currency can help dampen a cyclical downturn in employment by shifting the weight towards prices (by reducing the real wage measured in terms of tradables) and away from quantities (by switching aggregate demand in favor of domestically-produced goods and by stimulating export production). Thus, the greater exchange rate

flexibility that LAC now enjoys should make macro adjustments in the downturn less regressive than in the past. Even after taking into account the greater tradability of the low-income consumption basket (which makes it more sensitive to the exchange rate pass through to prices), a more flexible exchange rate regime should cushion the social equity losses in the slowdown.

Whither then inequality in a low-growth LAC going forward? The context does not bode well for income distribution. Weaker labor markets and reduced fiscal resources will test labor income distribution and social protection programs that were helpful in reducing inequality. But the outlook depends on the starting point. LAC countries with flexible exchange rates and low debt ratios can cushion employment without rekindling inflation, and can prudently borrow to finance the cyclical fall in revenues. Instead, countries with limited access to external capital, or near full employment and facing inflation pressures will have to create some policy room the hard way, by adjusting fiscal spending so as to create space for a looser monetary policy. In addition, the incipient stage of financial development is here as much a deficit as it is an opportunity: better access to saving instruments (including mortgages) for low- and middle-income households should help diversify income away from wages, mitigating the cyclical softening of labor markets.

Given social pressures, however, countries may opt for a (suboptimal) path of least resistance: keep government absorption high, with the view of keeping employment and consumption high, despite falling revenues, and borrow expensively in international markets to finance the consequent widening of their fiscal and current account deficits. The incentives to do so may be boosted by abundantly liquid international financial markets in search for yield, a situation that may prolong beyond the normalization of monetary policy in the advanced economies. Needless to say, a borrowing bonanza could risk creating new balance of payment vulnerabilities down the line, or making real exchange rates less competitive, thereby hindering longer-term growth prospects.

As LAC maneuvers prudently out of the down cycle, it will be crucial to keep in mind that while high employment is essential to promote progressive redistribution, it is not automatically associated with productivity growth. Ultimately, a strong growth-with-equity reform agenda in LAC will have to seek a mutually supportive interaction between employment and productivity. This can neither rely on the progressive redistribution effects that the expansion in education coverage had in the past, nor can it count on a borrowing binge—as the former is bound to taper off and the latter would be at the expense of future growth. Only a combination of prudent macro policy with vigorous productivity-oriented reforms can ultimately succeed. However, we need to bear in mind that not all forces push in the same direction, at least in the short run. An effective productivity agenda is likely to prioritize knowledge content which would, other things equal, lead to a technology-driven widening of the skill premium. This may unwind some of the equity gains of the past, unless of course the expansion of education coverage goes hand in hand with advances in the quality of primary, secondary, and tertiary education, such that the supply of skills keeps up with demand and the skill premium in check. Thus, efforts to equalize opportunities for human capital formation, particularly by broadening the access to high quality education regardless of socio-economic background, must be at the core of the search for shared prosperity in LAC.

Chapter 1:

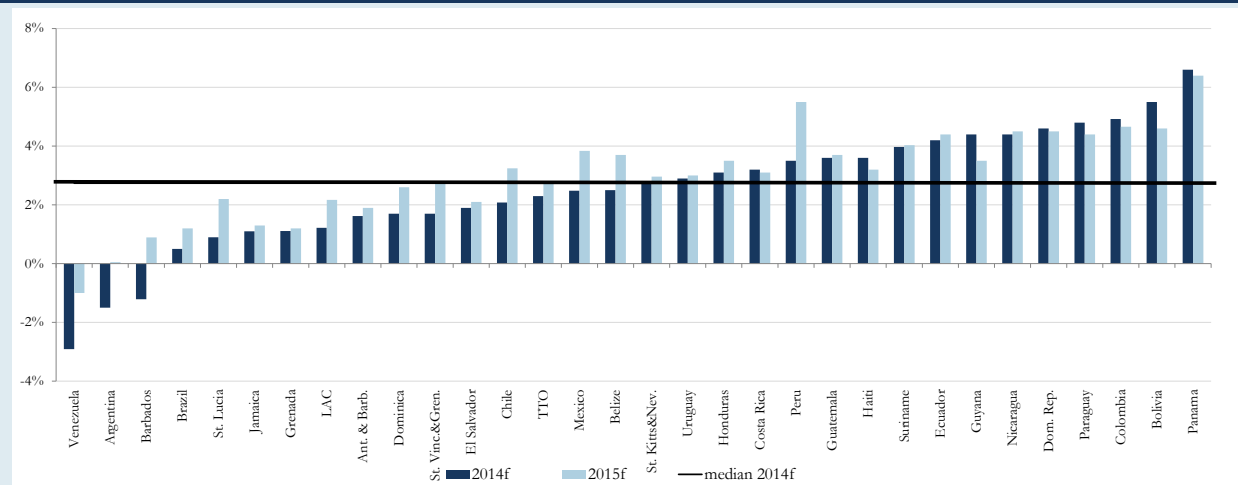
The New Normal

Introduction

The world seems to have entered a phase that resembles what many have called “the new normal,” characterized by a slower growth post global financial crisis. LAC has accompanied this worldwide trend by growing more slowly. In fact, the region is expected to grow at about 1.2 percent during 2014 and 2.2 percent during 2015, still with significant heterogeneity across LAC countries (Figure 1.1). This regional growth, calculated on a weighted average basis, reflects to a large extent the growth performance of Argentina, Brazil, and Venezuela, which are projected to grow below the regional average. In effect, the median growth rate for the region in 2014 is 2.7 percent, indicating that half of the countries in LAC are expected to grow at or above this rate. Among the top performers in 2014 are Bolivia and Panama as well as Colombia, Dominican Republic, Nicaragua, and Paraguay. A number of other Central American countries also have growth rates above the median regional growth rate.

Nonetheless, this slow regional growth has prompted some to argue that the LAC region is in the midst of a great deceleration and this slowdown in growth raises a number of challenging questions. In particular, how important is the deceleration in LAC relative to its recent past? Is the deceleration LAC-specific or part of a more generalized phenomenon affecting all or most emerging economies? Is LAC already in the lowest part of a cycle or is LAC posed to further decelerate or even contract? If and when LAC reaches the trough of the cycle, what will be the new trend (the “new normal”), absent major structural reforms? How much below the previous trend, even when supported by tail winds, will LAC growth be? Is LAC’s deceleration affecting consumption significantly or mainly investment and government expenditures? How have inflation and unemployment reacted to the deceleration?

FIGURE 1.1. Real GDP Growth Forecasts within LAC



Notes: Forecasts are based on the latest Consensus Forecasts, WEO, and the World Bank’s GEP estimates, and in some cases, are adjusted according to projections by the World Bank’s country economists. Sources: WEO (April 2014), Consensus Forecasts (September 2014), and GEP (June 2014).

What is the room for counter-cyclical policies to cushion the deceleration and avoid a large and socially wasteful output gap? Do we even have a good idea of what potential output is likely to be in the future?

This chapter sheds new light into some of these questions by analyzing in detail LAC’s recent growth performance, how it compares to the recent past, how much it is linked to the international context, as well as the policy challenges and risks that the region faces ahead.

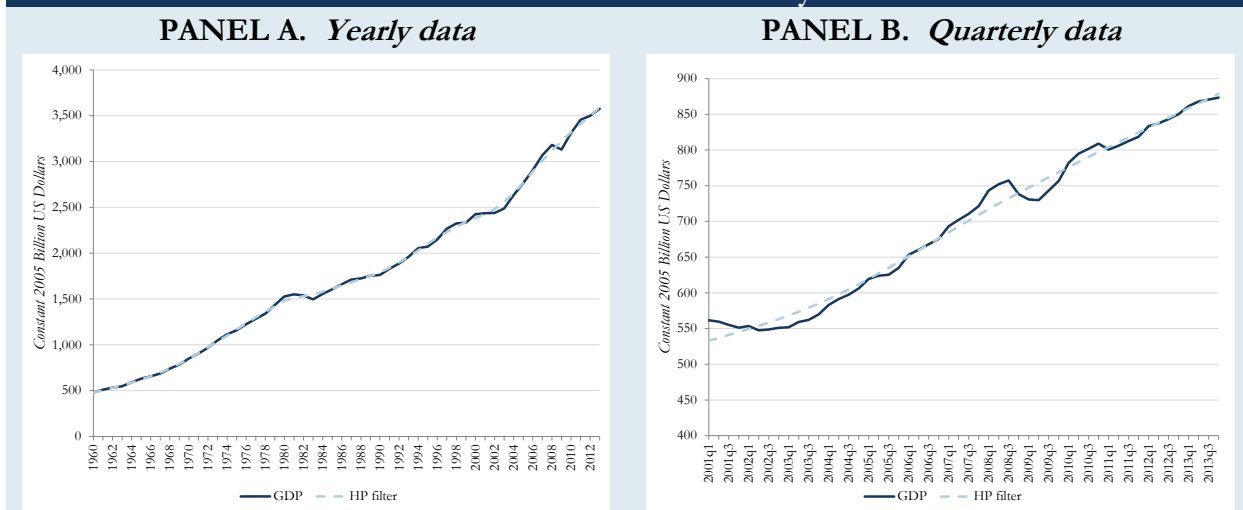
The Great Deceleration: Perspectives and Prospects

To better grasp the extent of the deceleration it is useful to compare LAC’s growth performance relative to its own past and to the performance of other relevant countries.

Following a strong (post-2009 global crisis) recovery, and starting in 2011, growth in the LAC region as a whole has been falling and has been rather dismal (Figure 1.2). It averaged 2.3 percent per year on a weighted average basis during the 2011-2014 period. This performance indeed fares poorly when compared to LAC’s recent “golden years,” when growth averaged 4.5 percent. However, this performance is to a large extent comparable to LAC’s own history. The average growth rate for 2011-2014 is not much below that in 1990-2010 as a whole (3.2 percent) and not much above that in the 1980s (1.5 percent).

Taking a closer look at the 2000s, using higher-frequency quarterly data, the region also shows a substantial deceleration with more cycles around trend growth. Growth started to pick up in 2003, until the global financial crisis of 2008-2009, rebounding to high growth in the immediate crisis aftermath (2009-2010). In fact, between Q1 2003 and Q4 2008, LAC grew at 5.3 percent per year. And even adding the crisis years, up to Q4 2010, LAC grew at 4.8 percent per year. In the more recent quarters (Q1 2011-Q4 2013), however, the region slowed down to 2.9 percent per year. The yearly data show similar but slightly lower estimates, 3.9 percent and 4.7 percent, for the 2003-2010

FIGURE 1.2. Evolution of Real GDP in LAC: Trend vs. Cycle



Notes: In Figure 1.2, the GDP data are based on the aggregate for the LAC region. In Panel B, the regional aggregate includes only countries for which quarterly data were available, namely: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Mexico, Paraguay, Peru, and Venezuela. The trend in GDP was calculated using the Hodrick-Prescott filter, using the widely accepted values of smoothing parameters for yearly (6.25) and quarterly (1600) data. Sources: National Sources (Haver Analytics), IFS, and WDI.

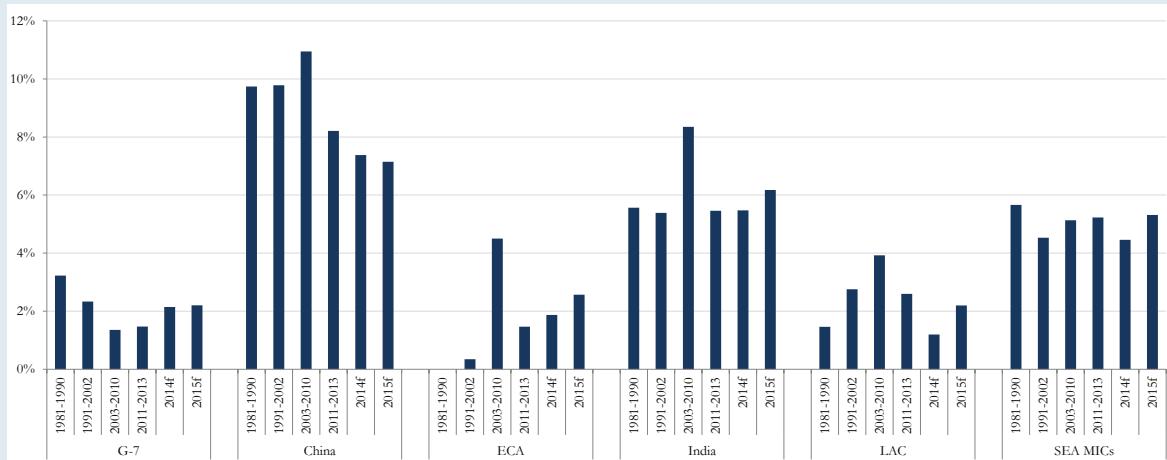
period, depending on whether 2009 (the year when the global crisis hit LAC the hardest) is included or excluded.

It is not clear whether LAC is already at the bottom of the business cycle. It is even less clear what the “new normal” will be—that is, what will the potential (non-inflationary) growth rate be once the worst of this deceleration phase is over. A very imperfect measure of trend growth—namely, that calculated using a simple Hodrick-Prescott (HP) filter—does suggest that the “new normal” is unlikely to be the rate of growth that LAC experienced during its golden years. One may even argue convincingly that LAC’s growth over the golden years was artificially high. It was boosted by strong external tail winds, including rising terms of trade, very high growth in China, and historically low (actually negative in real terms) world interest rates. The admittedly imperfect de-trending of LAC’s growth calculated using the HP filter for the over the 2001-2013 period suggests that the region grew well below trend during 2002-2003 and also for most of the 2011-2013 period, the years when the great deceleration ensued, following the post global crisis recovery (Figure 1.2, Panel B).

Whereas the international context boosted growth in LAC during the golden years, it does not seem to offer much hope for higher growth in LAC in the near future. The growth forecasts for 2014 and 2015 in the rest of the world are not much faster than those observed in the recent past, except in a few cases (Figure 1.3). With a somewhat similar performance to the LAC region, countries in the G-7 and ECA are expected to grow at about 2.1 and 1.9 percent on average during 2014, respectively. Among the emerging economies in our sample, only the South East Asian Middle-Income Countries (SEA MICs), China, and India are expected to deliver strong growth rates in 2014, at about 4.5, 7.4, and 5.5, respectively.¹

However, growth has decelerated significantly in almost all emerging regions relative to the recent past. Growth was indeed higher in previous decades almost everywhere, and especially so during the

FIGURE 1.3. Average Real GDP Growth Rates by Region



Notes: This figure shows the simple average of the yearly real GDP growth rates. The historical data are based on regional aggregates, whereas 2014 and 2015 figures reflect the weighted average of growth rate forecasts across countries within each region. The ECA region comprises Croatia, Czech Republic, Hungary, Lithuania, Poland, Russian Federation, and Turkey. The SEA MICs includes Indonesia, Malaysia, Philippines, and Thailand. Sources: WDI, WEO (April 2014), Consensus Forecasts (September 2014), and GEP (June 2014).

¹ In this Report, the group of the SEA MICs comprises the following economies: Indonesia, Malaysia, Philippines, and Thailand.

2003-2008 period, prior to the sharp contractions observed during the global crisis. Importantly, the extent of the deceleration in LAC is not the worst, comparatively speaking, when computing the decline in the growth rate in percentage points between the average of 2011-2013 and 2003-2010. Measured this way, countries in ECA suffered the largest deceleration, with a drop of over 3 percentage points (Figure 1.4, Panel A). China and India follow closely, dropping more than 2.7 percentage points each. In contrast, the decline in LAC has been of 1.3 percentage points. Only the South East Asian MICs are growing at a similar rate than the past. But even in their case, growth rates are barely higher in 2011-2013 compared to 2003-2010. If the forecasts for 2014 are taken into account, a similar or even larger deceleration is observed across the emerging world (Figure 1.4, Panel B). For China in particular, the deceleration becomes even larger. Furthermore, the Hodrik-Prescott decomposition of trend and cycle for China does not seem to suggest an imminent pickup in growth (Figure 1.5, Panel A, and Table 1.1).

In contrast, growth in the developed world is accelerating. For instance, the G-7 economies are doing relatively well vis-à-vis its recent past. But even in these cases, the growth rates are not much higher than in the earlier part of the 2000s, only 0.3 (0.1) percentage point higher in 2011-2014 (2011-2013) vs. 2003-2010 (Figure 1.5, Panel B, and Table 1.1). Whereas the U.S. is showing positive signs, with upward revisions in its GDP growth, it is unlikely it will boost global growth significantly.

Overall, the prospects for world growth seem to be significantly more moderate, consistent with the view of a lower “new normal” for the world as a whole. This is driven by the dynamics in both developed and developing countries, and because the current relative rebalancing in growth toward developed countries does not fully compensate for the deceleration in growth in developing ones, particularly in the large emerging economies, with the deceleration in China arguably playing a pivotal role.

FIGURE 1.4. The Great Deceleration

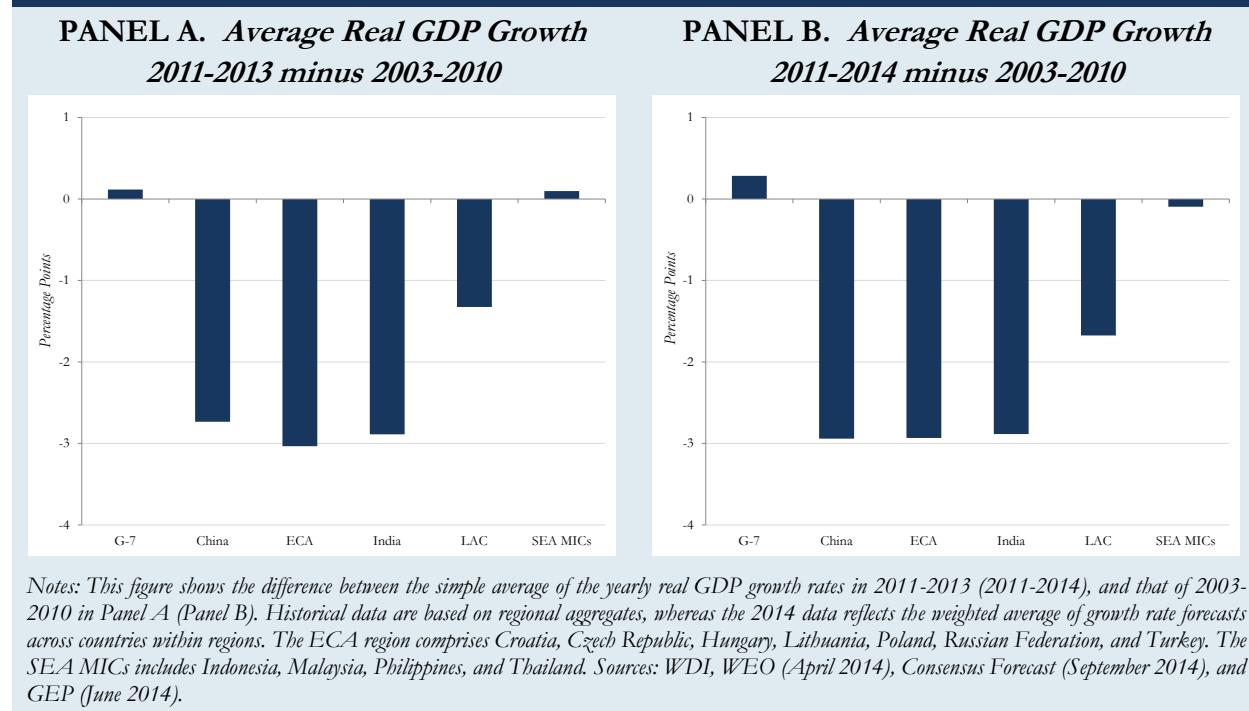
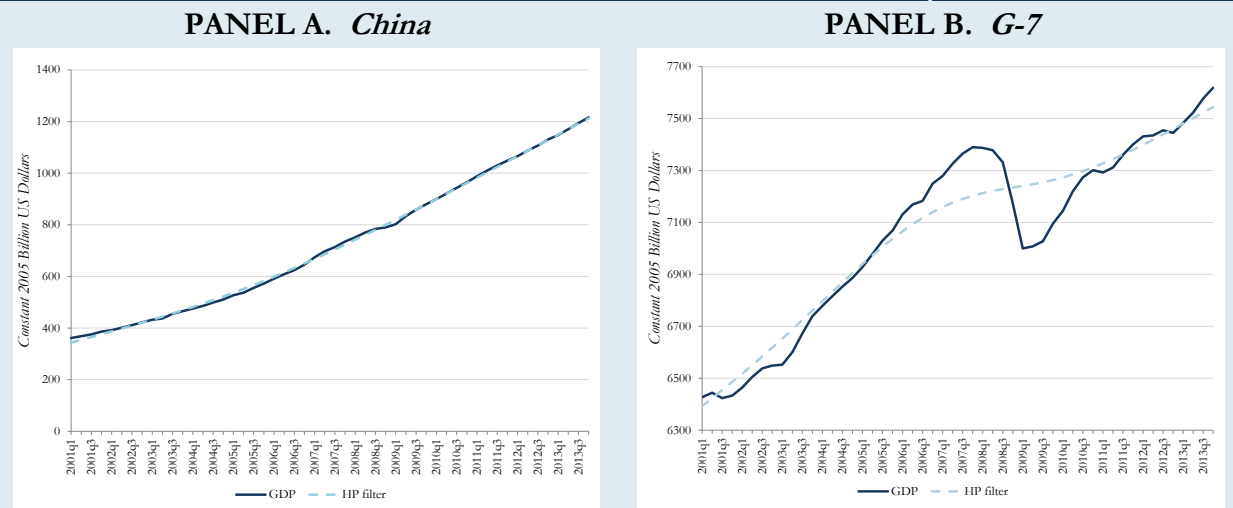


FIGURE 1.5. Evolution of Real GDP around the World: Trend vs. Cycle

TABLE 1.1. Average Real GDP Growth around the World, Quarterly Data

	Annualized Real GDP Growth		
	2003q1-2008q4	2003q1-2010q4	2011q1-2013q4
China	10.6%	10.5%	7.8%
G-7	1.5%	1.4%	1.4%

Notes: In Figure 1.5, Panel B, the GDP data are based on the aggregate for the G-7 economies. The trend in GDP was calculated using the Hodrick-Prescott filter, using the widely accepted values of smoothing parameters for yearly (6.25) and quarterly (1600) data. Table 1.1. shows the annualized rates based on the simple average of quarterly growth rates for each of the sub-periods reported. Sources: National Sources (Haver Analytics), IFS, and WDI.

In particular, the trend growth rates in developed countries, albeit higher than in the past 5-6 years, have a limited upside, not least due to their higher income level, the limits to stimulative policy actions in several fronts (in particular in the fiscal side), the difficulty in reincorporating the recently displaced labor force, and their slower-growing demographic trends, among other factors. In effect, developed countries are unlikely to generate much more stimulus for the global economy (maybe except in the Euro zone), as they are converging toward a growth path that seems to be above trend, thus requiring less stimulative aggregate demand measures. Led by their monetary policy authorities, developed countries are converging to a more stable growth pattern, with fewer downside risks than in the past and with ongoing reforms in the U.S., Europe, and Japan aimed at boosting the supply side. Therefore, the recent relative pickup in growth in developed countries, particularly the U.S., is unlikely to compensate for the deceleration in growth in the developing nations (even barring any further adjustment problems in the Euro zone).

In the case of developing countries, the largest shift has occurred in China, as noted above. It is already on a lower growth path (hovering around 7 percent per year) that, nonetheless, is more consistent with its higher income level and labor cost structure as well as with the expected gradual rotation of its domestic demand away from investment toward consumption. The rapid pace of industrialization and urbanization that took place in China over the past 30 years or so is unlikely to continue in the coming years. Moreover, growth in China faces some important downside risks, associated especially with the possible need for financial system deleveraging. Some large developing countries, in particular India and Russia, face a series of internal problems and thus some uncertainty in terms of a return to rapid growth rates. Perhaps the bright spots in developing countries continue to lie in Africa and the

South East Asian MICs (as mentioned above). These bright spots, however, do not seem large enough to pull LAC into a higher growth path.

In sum, LAC has decelerated substantially, especially relative to its golden years (2003-2008), when its growth performance was aided significantly by favorable external winds. But LAC is not alone in the growth deceleration. Its behavior seems to be connected to changes in the international scenario driven by, perhaps, a more moderate and to some extent more sustainable growth pattern in developed and developing countries alike. Relative to the more volatile years around both the global financial crisis and the European crisis, the international context appears more stable for LAC but less of a driving force. This makes the prospects for a rapid return to high growth rates less likely. The changes in the global context have affected different parts of LAC differently, as discussed in the next section.

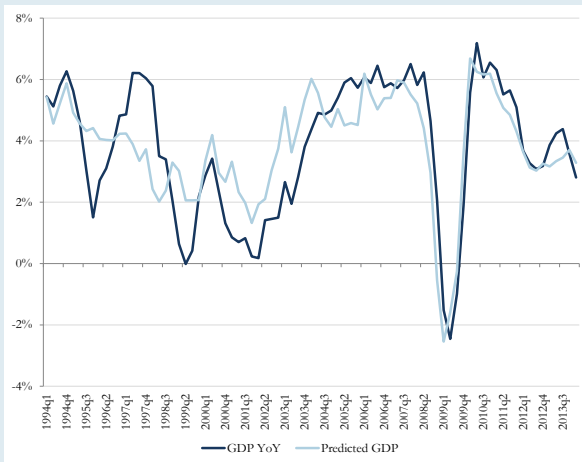
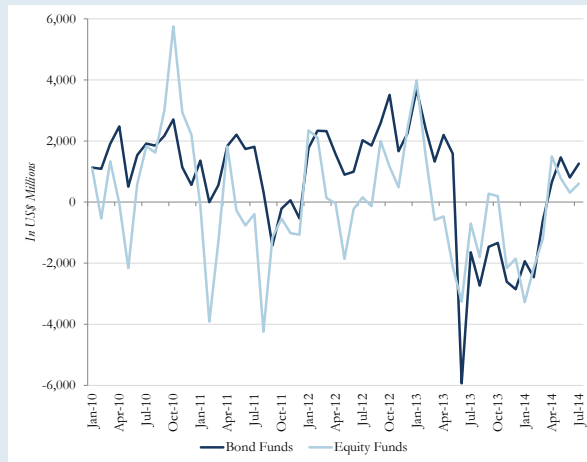
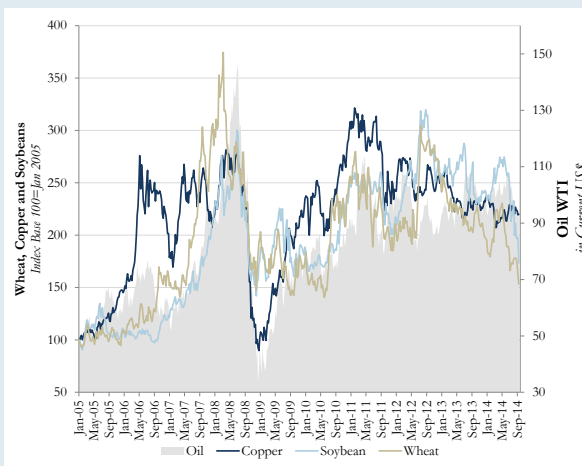
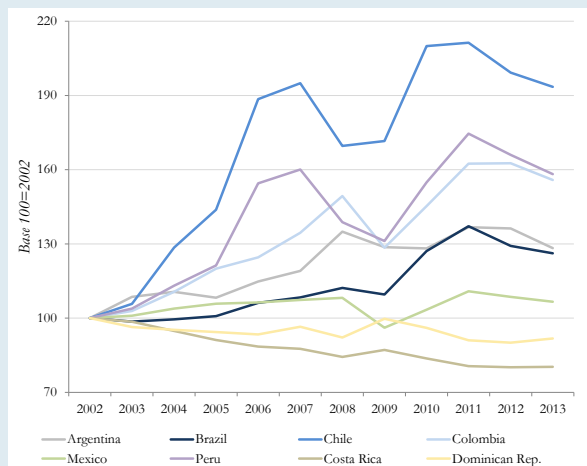
What is Behind the Deceleration and How Has It Impacted LAC Countries?

It is fairly clear that at least part of the deceleration in LAC reflects global factors. To explore this more formally, and as done in previous reports in this series, we compare the average growth rate of countries in the region vis-à-vis the average growth rate predicted by an econometric model where cyclical growth rates are a function of three external drivers, namely, external demand (captured by G7 and Chinese growth), commodity terms of trade (proxied by the CRB, a commodity price index), and international liquidity (as measured by the yield for the 10-year U.S. Treasury bill).² The results indicate that since the early 2000s, regional growth has closely mirrored the growth rate predicted by the external factors in the model (Figure 1.6, Panel A). Moreover, global factors carried some weight in explaining the recent deceleration in the region, as illustrated by the decline in both the average observed and predicted growth rates in LAC between 2010 until the end of 2012 and the their relative stability since then.

The relative weight of the different external factors seems to have shifted in the past few months. The financial risks associated with global liquidity seem to have subsided. In fact, portfolio flows to the region have resumed in recent months (Figure 1.6, Panel B). Hence, the two most important external factors adversely hitting LAC seem to be the falling commodity prices and the deceleration in China, affecting in particular the current account of the countries dependent on commodity exports, notably South American ones (Figure 1.6, Panel C). There is however some heterogeneity in how these factors are hitting commodity exporters in the region, as suggested by changes in countries' terms of trade—Chile and Peru seem harder hit than Brazil and Colombia for example (Figure 1.6, Panel D).

Although lower growth is affecting most of the region, in light of this heterogeneity in the manner in which global factors might have been affecting LAC countries, it is not surprising that there is also substantial heterogeneity in the extent of the growth deceleration across LAC countries. To be sure, domestic idiosyncrasies also play an important role in this growth deceleration.

² This econometric model captures the correlation between these external factors and growth. It does not imply that economic performance in the region can be exclusively attributed to the external factors; at the very least, local factors explain the significant deviations of individual growth rates from the common trend.

FIGURE 1.6. Global Factors
PANEL A. Global Wind Model for GDP Growth

PANEL B. Capital Flows to LAC-6 Countries

PANEL C. Commodity Prices

PANEL D. Terms of Trade


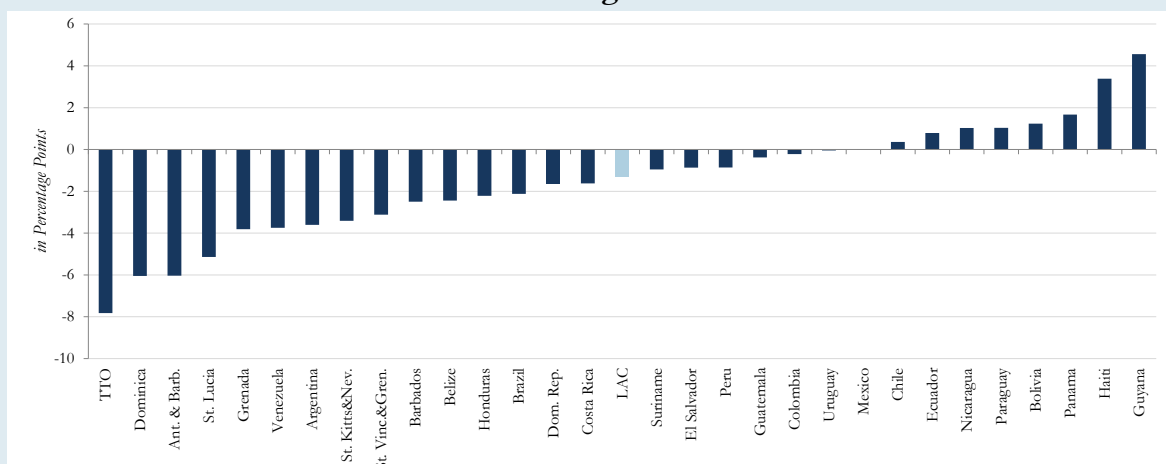
Notes: In Panel A, averages are taken over a set of 16 LAC countries with available quarterly GDP data, namely: Argentina, Brazil, Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Jamaica, Mexico, Panama, Paraguay, Peru, Uruguay, and Venezuela. This average predicted value shown is calculated by averaging the fitted values of country regressions of GDP growth on G-7 growth, China's growth, the CRB commodity index, and the U.S. 10 year Treasury rate. Panel B shows equity and bond mutual funds flows, aggregated across LAC-6 countries: Argentina, Brazil, Chile, Colombia, Mexico, and Peru. Panel D shows the terms of trade of goods only. Sources: Bloomberg, CEPAL, EPFR, and WDI.

A large number of countries suffered significant declines in their growth rates, especially relative to the pre-global financial crisis period but also when including the crisis years (Figure 1.7 Panels A and B, respectively).³ Several of the countries with significant contractions are among the larger economies in the region. The fall in growth rates in large countries like Argentina, Brazil, and Venezuela has been most noticeable. For example, relative to 2003-2008, Venezuela's growth rate contracted 3.7

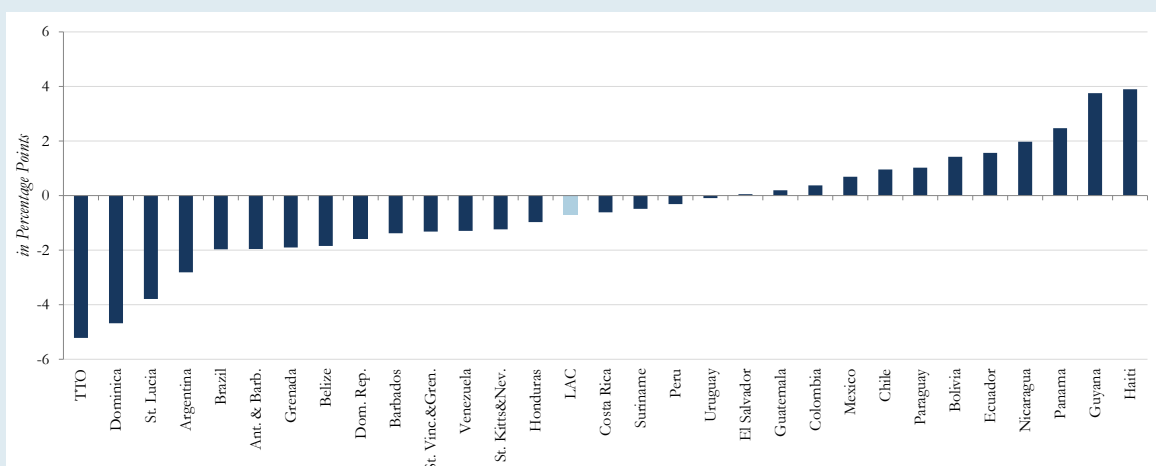
³ This deceleration is calculated based on the average 2011-2013 real GDP growth rates. If the period 2011-2014 (based on current forecasts for 2014 growth rate) is considered instead, an even greater deceleration in growth rates would be observed in most countries in the LAC region.

FIGURE 1.7. The Great Deceleration within LAC

PANEL A. Excluding the 2009-10 Period



PANEL B. Including the 2009-10 Period



Notes: This figure shows the difference between the simple average of the yearly real GDP growth rates in 2011-2013 and that of 2003-2010 in Panel A (Panel B). The figure also shows the regional (weighted) average of changes in GDP growth rates. Sources: WDI.

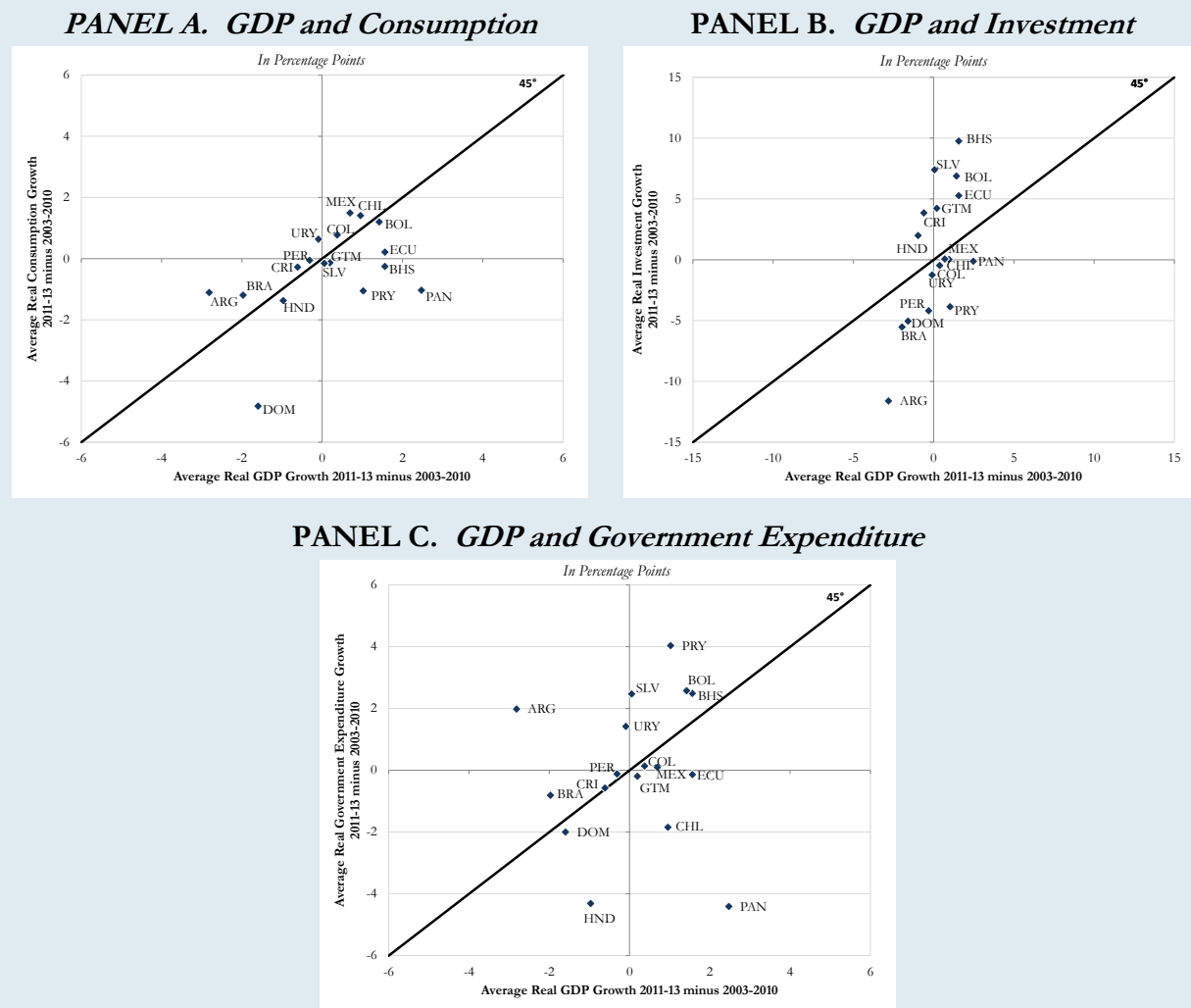
percentage points, Argentina 3.6 percentage points, and Brazil 2.1 percentage points. Moreover, a number of the countries with significant deceleration in growth rates in 2011-2013 had exceptional performance for most of the 2000s. For instance, the growth rate of Trinidad and Tobago fell from 5.7 percent each between 2003 and 2010 to 0.5 percent in 2011-2013. Another good performer, Peru also suffered a decline, contracting slightly less than a percentage point during this same period. A deceleration in growth rates is also observed across most of the economies in the Caribbean, with declines in growth rate ranging from -5.2 percent (Trinidad and Tobago) to 1 percent (Barbados).

On the bright side, Haiti features prominently among those countries in the region for which growth actually accelerated between 2011-2013 vis-à-vis 2003-2010 (or 2003-2008). A number of Central American countries as well as some South American countries also belong to this group of countries with improvements in their growth performance over this period. As noted above, many of them are in fact expected to be among the top performers in the LAC region in 2014. Notable examples are Bolivia, Ecuador, Guyana, Nicaragua, and Panama. But given the relative size of the economies with

improvements in growth performance, they do not fully compensate for the slowdown elsewhere in the region. These patterns underpin the lower growth rate for the region taken as a whole.

The deceleration in GDP growth has been accompanied in most cases by an almost one-for-one fall in consumption growth (Figure 1.8, Panel A). But investment decelerated significantly more than GDP, especially in the large countries of the region, such as, Argentina, Brazil, and Peru, and to a lesser extent Colombia, Uruguay, and Paraguay (Figure 1.8, Panel B). In contrast, government expenditures display a more varied reaction across the LAC region. In several countries, the growth rate of government spending has actually increased in 2011-2013 vis-à-vis 2003-2010, despite the deceleration in GDP growth rates— notable cases are Argentina and Uruguay (Figure 1.8, Panel C). The change in the rate of growth in government spending has fallen below the change in GDP growth especially in Chile, Honduras, and Panama. How much of this change in the rate of growth of government spending is due to intentional counter-cyclical policy versus other factors is, however, difficult to ascertain. Nonetheless, it can be argued that the rise in the rate of growth in government

FIGURE 1.8. The Great Deceleration in GDP and Its Components



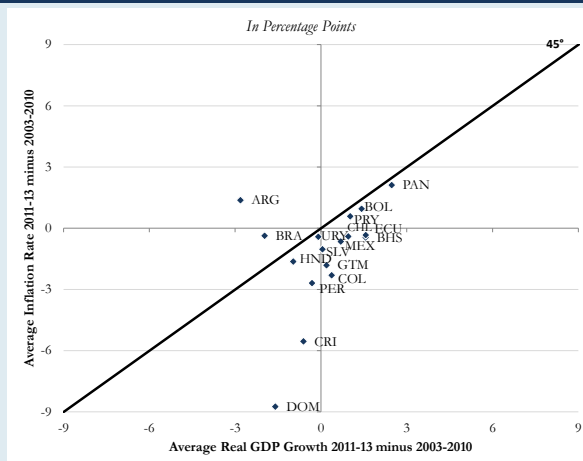
Notes: This figure shows the difference between the simple average of the yearly real growth rates in GDP in 2011-2013 and that of 2003-2010 in the x-axis against the analogous difference in the real growth rates of consumption (Panel A), investment (Panel B), and government expenditures (Panel C) in the y-axis. Sources: National Sources and WDI.

expenditures relative to that of GDP can have pro-cyclical effects in the cases where inflation pressures are non-trivial and inflation is running above policy targets (e.g. Brazil and Uruguay).

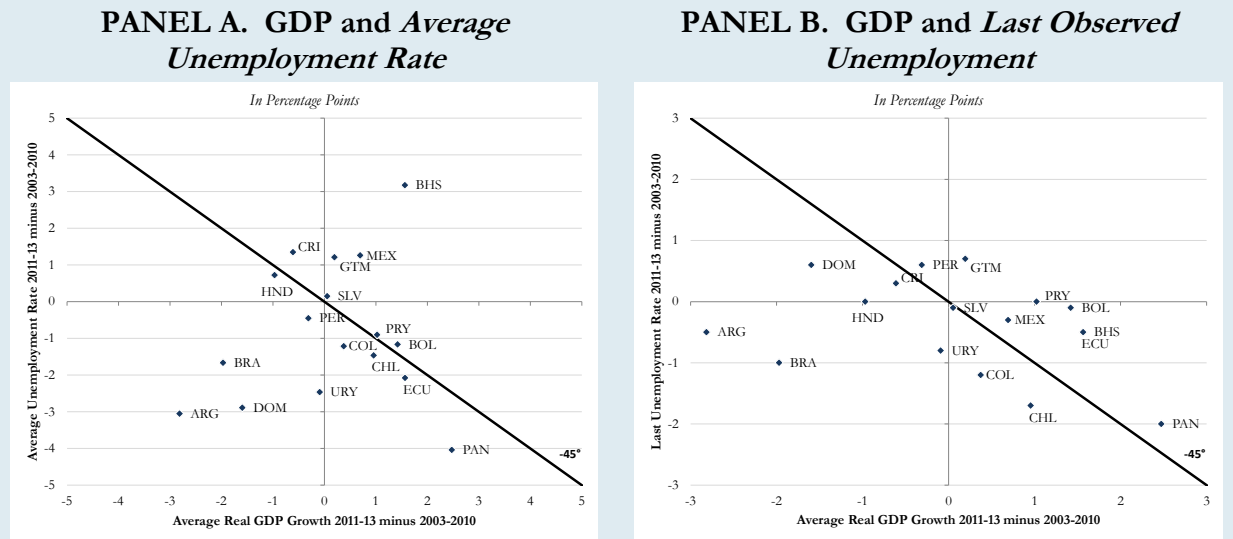
Broadly speaking, the deceleration in GDP growth rates has been partly matched by a deceleration of inflation rates and an increase in unemployment. In effect, the countries that suffered the largest slowdown/deceleration in GDP growth rates tended to have large decreases in inflation rates (e.g., Colombia, Costa Rica, the Dominican Republic, Honduras, and Peru), while those that decelerated the least had smaller contractions in inflation or, in some cases, even higher inflation rates (e.g. Bolivia, Panama, and Paraguay) (Figure 1.9). Unemployment, too, tended to respond to the slowdown, particularly so in the later years. When comparing the change in unemployment during 2011-2013 versus 2003-2010, unemployment decreased in the countries that grew faster and tended to increase in the other countries, with the notable exceptions of Argentina, Brazil, the Dominican Republic, and Uruguay (Figure 1.10, Panel A). When comparing instead the difference in unemployment rates between 2013 and 2010, unemployment is even more aligned with the performance in GDP (Figure 1.10, Panel B).

In sum, the deceleration in growth rates in LAC is fairly generalized albeit with significant heterogeneity across countries. It is not focused on a particular component of GDP, although investment has been hit hardest. Some governments seem to have tried to compensate for the decline by increasing public sector expenditure, but it is unclear whether the GDP growth rate would have been significantly lower in the absence of such expansions in government spending. In some case, moreover, government seems to have complicated the efforts of monetary authorities to keep inflation within target. Thus far, the deceleration has not been reflected in much higher unemployment rates. This is somewhat puzzling given that low inflation rates in most LAC countries and downward nominal wage rigidity would in principle lead to greater quantity adjustments in the labor market. This apparent puzzle puts a premium on further research aimed at gaining a better understanding of the

FIGURE 1.9. The Great Deceleration in GDP and Inflation



Notes: This figure shows the difference between the simple average of the yearly real growth rates in GDP in 2011-2013 and that of 2003-2010 in the x-axis against the difference in the average inflation rate in 2011-2013 and that of 2003-2010 in the y-axis. Sources: National Sources and WDI.

FIGURE 1.10. The Great Deceleration in GDP and Unemployment


Notes: This figure shows the difference between the simple average of the yearly real growth rates in GDP in 2011-2013 and that of 2003-2010 in the x-axis against the difference in the average unemployment rate in 2011-2013 and that of 2003-2010 in the y-axis (Panel A) or against the difference in the unemployment rate in 2013 and 2010 in the y-axis (Panel B). Sources: National Sources and WDI.

ways in which labor markets are actually adjusting in LAC today.⁴ In any case, it is possible that, to the extent that growth does not pick up soon, labor demand is likely to contract, exerting further pressure on fiscal accounts to the extent that governments are compelled to provide a safety net.

Policy Challenges

The main policy challenges for LAC are linked to the difficulty in predicting global developments and in ascertaining where the “new normal”—i.e., the trend (non-inflationary) growth rate—lies. The general softening of external demand growth (despite the modest pickup of growth in the U.S.) may warrant some counter-cyclical policy, as long as inflation pressures and inflation expectations remain subdued and as long as such policy aims mainly at smoothing out the convergence to the “new normal” (to the extent that the “new normal” can be identified). In other words, to the extent that potential growth has declined worldwide, counter-cyclical policies in LAC make sense mainly to the degree that they can allow a smoother transition to the new lower-growth scenario. Trying to counterbalance more permanent forces that push toward slower trend growth with local demand-side policies would only bring short-term benefits, while risking a rekindling of inflation or higher debt. Counter-cyclical policies cannot determine the trend in GDP; they can only dampen the fluctuations around the trend. This said, the difficulty in adequately calibrating aggregate demand policies in the region cannot be understated given the uncertainty surrounding the “new normal” trend growth.

For starters, counter-cyclical policy capacity varies greatly across the region. Only a few countries (notably, Bolivia, Chile, and Peru) have both room to borrow *and* fiscal savings (which were accumulated during the golden years). These are the countries where the fiscal muscle could be more safely used counter-cyclically, if and when needed. Moreover, only a few countries (those endowed

⁴ A first step in the direction of understanding the main structural changes in LAC’s labor markets can be found in the forthcoming World Bank LAC Regional Study “*The Fall of Wage Flexibility: Labor Markets and Business Cycles in Latin America and the Caribbean since the 1990s.*”

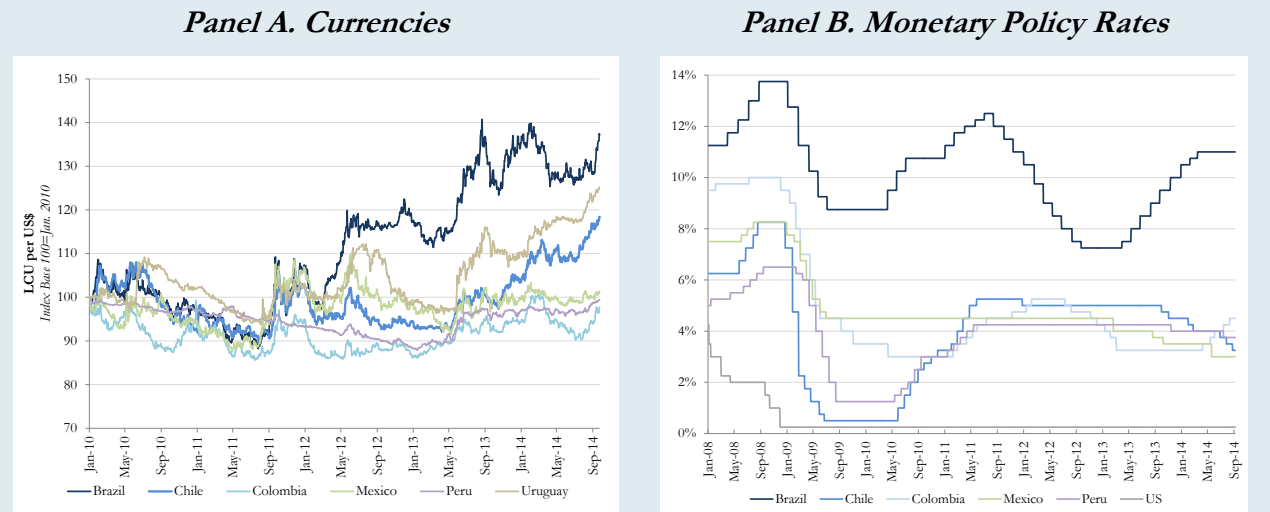
with robust inflation targeting-cum-flexible exchange rate regimes) have authentic capacity for counter-cyclical monetary policy. Yet not all can put it to work, as some (notably Brazil) face inflation pressures despite the sharp deceleration in GDP growth. To stay on the safe side, therefore, countries in LAC should make efforts to shift the macro policy mix in favor of a looser monetary and tighter fiscal policy mix.

The external front in particular poses several other challenges for policy makers in LAC. Because the developed economies are on the path to recovery, monetary policy is expected to normalize there, with QE eventually fully withdrawn and interest rates back at positive real levels. This will likely put pressure on capital flows to LAC and on domestic monetary policies, with possible tensions on sovereigns and corporations that have increased their reliance on external borrowing over the past years. In fact, the prospects of monetary policy normalization in the developed world, together with the softer world demand and declining commodity prices, have already had some effect on capital flows, exchange rates, and monetary policy rates in the region. Several currencies in the region have depreciated substantially since 2011, and even more so since 2013 (Figure 1.11, Panel A). A few countries, notably Brazil, have had to tighten their monetary policy rates, despite the economic slowdown, to tame inflation expectations (Figure 1.11, Panel B).

Moreover, uncertainty remains as to whether China's post crisis expansion in investment and credit has led to unsustainable projects and non-performing loans that might cripple its financial system, its fiscal stance, and more generally its economy, resulting in further growth deceleration. This is particularly important for LAC countries that depend on China for their exports and that have counted on China's investments in their own economies. Another source of risk for the global economy is the array of conflicts that pervade in Central Asia and the Middle East. To the extent that these conflicts affect gas and oil markets in particular and global trade more broadly, they will impact LAC countries.

The rebalancing of growth from developing countries to developed ones is likely to continue impacting different LAC countries differently. For instance, demand for commodities may decline because of a widespread slowdown in the developing world. Those with great dependence on exports linked to developing countries' growth, such as Argentina, Brazil, and the Pacific countries are likely to continue suffering more; more so if developed countries do not fully compensate for the deceleration in developing countries. In fact, commodity prices and LAC's terms of trade have already experienced downward pressures, as noted above, affecting the current account of countries dependent on commodity exports. The deterioration in commodity prices has been linked, on the demand side, to China's slowdown and, on the supply side, to a larger expected production of both shale gas and agricultural production in the U.S. On the other hand, the countries whose economies are more dependent on the U.S. (such as Mexico, Central America, and much of the Caribbean) are likely to continue benefitting, to the extent that the U.S. sustains its expansion. And the commodity-importing countries are likely to have more breathing room in their external accounts.

The domestic sources of risk are also many and vary greatly across LAC countries. Some countries are at higher risk of more pronounced slowdowns and higher inflation than expected, notably Argentina and Venezuela and to some extent Brazil as well, though for very different reasons. These countries already saw their exchange rates depreciate substantially, which might eventually help. But, partly because of concerns with the pass-through to domestic prices, they may have less room to ease their monetary stance. Because these countries weigh heavily on LAC due to their size, they might exert additional pressure on neighboring countries. At the other end, countries in the Pacific—such as Chile,

FIGURE 1.11. Currencies and Policy Rates in LAC Its


Notes: Uruguay is not shown in Panel B because the Central Bank adopted a monetary-aggregate policy in July 2013 to substitute its previous policy of setting a monetary rate. Source: Bloomberg.

Colombia, and Peru—face lower inflation risks and have started smoothing their growth slowdown with monetary easing and other counter-cyclical measures.

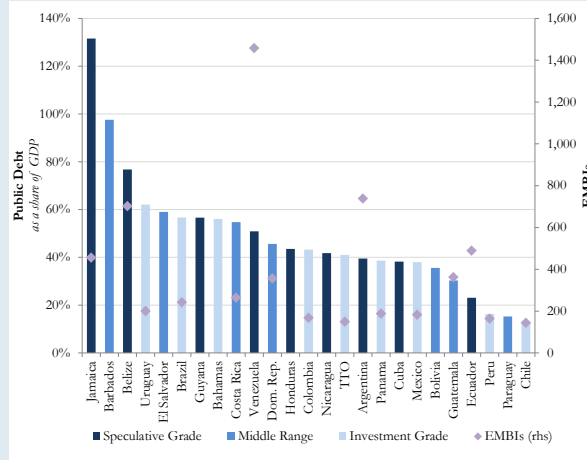
As noted, a big question is related to the trend vs. cycle discussion and where countries stand with respect to their own trend growth. To the extent that trend growth has declined worldwide, it will be unavoidable for LAC to grow more slowly than in the past decade, absent vigorous productivity-oriented reforms. Lower growth, in turn, would likely enter into tension with social demands, hence fiscal pressures, especially in the still highly unequal Latin American societies.

The tension between slower growth and high social equity expectations may be resolved through increased borrowing (and wider current account deficits), as a way to keep aggregate demand (especially consumption) and social spending high. The incentives to do so may be arguably strong considering that, on the one hand, international financial markets will likely remain liquid, even after the normalization of monetary policy rates in the advanced economies, and, on the other, many of the larger countries in the region have significant borrowing space and display high country risk ratings. To be sure, there are significant differences in this regard within the region. Among the countries with greater borrowing capacity are Chile and Peru, which have low public debt to GDP ratios and investment grade ratings, as they would face low borrowing costs (Figure 1.12). Some countries within this group, however, also saved more during the good times and, hence, would be less pressed to borrow. Other countries in the region also have low debt to GDP ratios but low ratings (speculative grade ratings, at the extreme)—if they could access markets, they would have to pay relatively high interest rates. Yet other countries, such as Brazil and Uruguay, have investment grade ratings, hence face relatively low borrowing costs, but have higher debt to GDP ratios, thus less space for prudent borrowing. While differences in debt-viability fundamentals are significant across LAC countries, markets unfortunately cannot be counted on to exercise sufficient discipline in case willingness to borrow rises sharply in the region. In effect, because the abundant liquidity stimulates an avid search for yield among investors, there may well be a tendency in international financial markets to underprice risk. Policy makers in the region would thus do well in not being guided only by the costs of borrowing, but to manage whatever borrowing room they have prudently. A borrowing binge would clearly be

unadvisable, as it could risk creating balance of payment vulnerabilities or making real exchange rates less competitive, thereby hindering longer-term growth.

How serious a risk is actually the growth slowdown to the viability of further shared prosperity? The challenges associated with lower growth and inequality are likely to dominate LAC's policy conversation going forward. This puts a premium on better understanding the inequality phenomenon in LAC, and this is the topic of the next and main chapter of this report.

FIGURE 1.12. Borrowing Capacity within LAC



Notes: This figure shows the total public debt as a ratio of GDP in 2013 across countries in the LAC region. The bars in the figure are colored according to the sovereign country rating of each country as of October 2014. For those countries with available data, the figure also shows the EMBI spreads, as of October 2014. Sources: Bloomberg, EIU, and Institutional Investor.

Chapter 2:

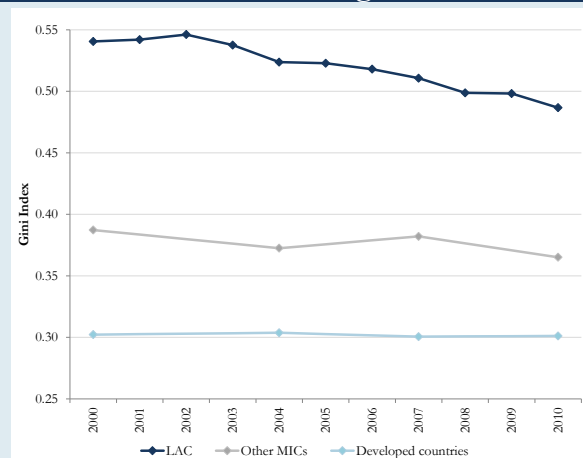
Facts, Myths and Fears about Latin America's Inequality Gains

Introduction

Inequality is becoming a key policy concern across the world. From the growing concentration of income in the hands of top earners in developed countries to the underwhelming progress in income distribution in fast growing economies, the question on how development and growth may translate into a less unequal society is an overriding concern in the policy agenda that intersects macro and microeconomic issues (OECD, 2011). In this context, LAC represents a special case: with the predictable exceptions and the inevitable ups and downs, in most countries the 2000s were characterized by above-trend growth and a significant reduction in inequality –at least judging by traditional measures based on household surveys (Figure 2.1.).

This stellar record, however, may need to be reassessed. Recent tax-based studies that place the focus on top earners have cast doubt on the robustness of those benign results. Are we measuring the evolution of inequality correctly? Moreover, all conventional inequality measures deflate income using the headline CPI, despite the well-known fact that the consumption basket (and actual inflation) varies with the level of income. How does the story change once we revise inequality using decile-specific inflation rates? Finally, conventional wisdom suggests that part of the virtuous equity

Figure 2.1. Evolution of the Gini Index across Regions



Notes: Markers in the series signal years where the Gini Index is calculated. LAC countries include Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Mexico, Panama, Peru, Paraguay, El Salvador and Uruguay. Developed countries include: Canada, Denmark, Estonia, Finland, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Slovak Republic, Slovenia, Spain, United Kingdom and United States. Other MICs include: Malaysia, Philippines, Thailand, Croatia, Poland, Romania and Turkey. Sources: LIS, OECD Stats, Povcal, SEDLAC.

changes was related to the above average growth that characterized most of the 2000s. How much of the progress was indeed due to growth rates that are unlikely to persist now that the world and the region face a generalized slowdown?

While the pro-poor nature of the combination of social policies and growth during the 2000s in most Latin American countries is generally recognized, there is still debate about the actual drivers behind the reported reduction in income inequality in the region, performance, which appears to be highly idiosyncratic given that income inequality has been rising almost everywhere else in the world, regardless of growth performance. Structural changes in LAC over the past 25 years are behind the current spell of macro and financial stability which is, for most of the region, a relatively new phenomenon. This implies that the period from which we can extract valuable information about the connection between growth and social equity is rather short, and in many cases does not even comprise a full economic cycle. Indeed, simplifying, one could view the new millennium as a long up cycle (fuelled by the recovery from the financial stress from the 90s and early 2000s and by tailwinds of stable and fast global growth, low financing costs, and favorable terms of trade) briefly interrupted by the bust and rebound of the global crisis, and followed by a down cycle of still uncertain length and depth. If so, the current cycle is in the region not only unique (it is arguably the first conventional business cycle, as opposed to the traditional boom-bust pattern) but most probably still ongoing. Hence, any empirical exploration of the link between growth and inequality would then inevitably be somewhat speculative in nature.

In this context, the long-run dividends of the 2000s in terms of greater equality have been recently cast into doubt due to a number of reasons. On the one hand, now that growth—and with it, fiscal capacity—is softening, and some LAC economies are close to or at full employment, the two key pillars behind progressive redistribution (fiscal transfers and more educated workers with more and better paid jobs) are likely to weaken. Preliminary evidence shows that the equality trend is flattening (Cord et al., 2014) or even reverting in the past two years (Burdin 2014).

This concern is compounded by the great heterogeneity of inequality data (see Box 1) including, most notably, new evidence based on income tax records reported in the World Top Incomes Database (WTID), that points at a different, albeit not necessarily contradictory story. Namely, that the share of income perceived by households in the top percentiles may have increased sharply during the past decade, not only in OECD countries but also in emerging economies (including the three Latin American countries for which data series for the top 1 percent have been made publicly available).⁵ These findings, which have been attributed to the fact that returns to capital exceeded economic growth (and, more specifically, exceeded labor and transfers income) during the period of analysis, tend to point at an unpromising prognosis that has fuelled a critical national and international debate on inequality. In the particular case of LAC, results based on income tax records reveal a greater income concentration at the very top, which qualifies the conventional view of a broad decline in inequality based on household surveys that tend to misrepresent top earners (see Box 2).⁶

⁵ The WTID currently reports data for 1997-2004 for Argentina, 1993-2010 for Colombia and 2009-2011 for Uruguay.

⁶ Note, however, that the revision should not necessarily undo the recent pro-poor bias of growth in LAC, as measured, for example, by the ratio of income growth of the bottom 40% over the median income growth, the median-to-mean-income growth ratio (Birdsall and Szekeley, 2003), or the ratio of income growth of the top 20% over that of the middle class (typically, deciles 7, 8 or 9).

Box 1: The Inequality Quilt: Comparing Datasets

In a forthcoming Special Issue of the Journal of Economic Inequality, Ferreira and Lustig (2014), report important discrepancies in their assessment of 6 micro databases: CEPALStat, IDD (OECD), LIS, POVCAL (World Bank), SEDLAC (CEDLAS and The World Bank), WTID (World Top Incomes Database). They also find “devastating” differences between the secondary-sourced WIID (World Income Inequality Database compiled from micro data sources by the UN-WIDER), on the one hand, and SWIDD (Standardized World Income Inequality Database, collected by Frederik Solt and used by the IMF’s Fiscal Monitor e.g., Ostry et al., 2014) or Branko Milanovic’s All The Ginis, on the other (which, at least in earlier versions, intertwined heterogeneous sources for individual countries, leading to spurious within-country dynamics).

The assessment highlights the relevance of data source selection. Based on a careful analysis guided by the editors of the JEI’s Special Issue, we selected our Ginis prioritizing micro databases, according to the following criteria: SEDLAC for LAC,⁷ LIS for developed economies, The World Bank’s ECA Poverty Lab for Eastern Europe and POVCAL for the rest. In addition, the sources’ heterogeneity and imperfect comparability, including the fact that Ginis are built alternatively on surveys of income (e.g., LAC) and expenditure (e.g., developing Asia), casts some doubt on the precision of cross-section results, and advises the use of panels that control for fixed effects, as we do in this report.

The reconciliation of both streams of empirical research opens at least two groups of policy-relevant questions. The first one relates to the measurement of income distribution: Are we gauging inequality correctly? To what extent LAC’s recent gains towards equality are robust to alternative data sources? How are inequality changes altered if we measure purchasing power more carefully by decile, that is, if we deflect nominal income by decile-specific inflation rates rather than the CPI? The second group of questions concerns the current trends in income distribution: Is LAC’s progress towards equity in the 2000s a one-off phenomenon, hence, a thing of the past that will not hold in the future? To what extent inequality depends on the macroeconomic cycle? What is the role, if any, of relative price movements (most notably, the real exchange rate, food inflation, or administered utility prices) on inequality?

We follow this set of questions to organize the discussion about the present and the future of inequality in the region and where income distribution may be heading in light of ongoing macroeconomic trends.

What inequality? Getting the Record Straight

Any empirical diagnosis of the evolution of inequality in the region needs to reconcile the alternative data sources and make sure they tell the same story or, if not, make a good case for the selection of one data source over the others. Both household survey- and tax-based data have their own limitations.

⁷ SEDLAC provides harmonized, income-based numbers to improve cross-country comparability of data from official household surveys. For that reason, the numbers may be different from official statistics reported by governments and national offices of statistics.

Box 2: Income Inequality: Definition and Sources

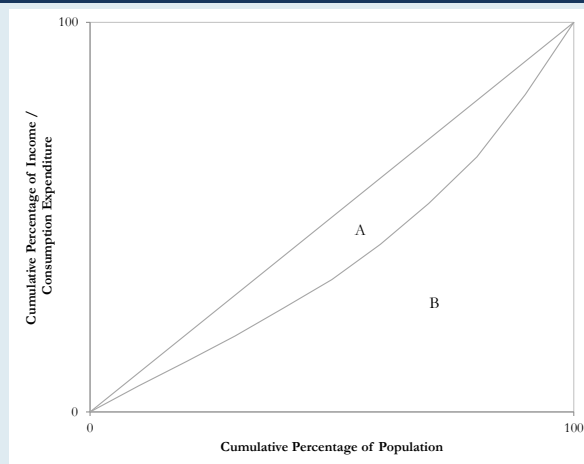
Inequality indicators measure the dispersion of income or consumption expenditure across individuals or households within a country. The Gini coefficient, the most common of these indicators, is defined as a ratio of the areas delimited by the Lorenz Curve and the 45 degree line, as depicted in Figure B2.1. The Lorenz curve measures the cumulative distribution of income by percentiles of population (sorted from poorest to richest). The Gini is the ratio of areas A/(A+B) in Figure B2.1, and can be represented by the formula: $G = 1 - \frac{1}{N} \sum_{i=1}^N (y_i + y_{i-1})$, where y_i is the income of individual (or household) i and N is the total population of the economy. In a Lorenz Curve, the top 1 percent or top 0.1 percent of the income distribution are narrowly discernible on the horizontal axis from the vertical endpoint. While any changes at the very top end would be lost at the end of the graph, changes in their incomes are capable of significantly impacting the inequality index (Atkinson and Piketty, 2007). Other alternative measures of income inequality include the Theil Index and the Atkinson Index.

“Missing the Top”: Calculating Income Inequality Using Household Survey Data

Household surveys are the most commonly used source of data for measuring income (and consumption) inequality. Household surveys have several advantages, including their frequency and availability for a good number of countries. But they also have important limitations, notably, not adequately capturing the incomes of the top earners (because the rich have a higher than average non-response rates or underreport their income.⁸ This can lead to under-estimation of the Gini coefficient and other inequality measures (Atkinson and Piketty, 2007; and, Diaz-Bazan, 2014).

One way to mitigate the under-estimation of income inequality due to missing information at the top of the income distribution is to use data from tax administration records, which contain information on firms and individuals that are not usually captured by household surveys.

Figure B2.1. The Gini Coefficient and the Lorenz Curve



Source: LCRCE.

⁸ The issue of non-response is more pronounced in the case of richer countries, where refusal rates increase with income levels (see Meyer et al., 2009, on the issue of nonresponse in the United States).

Nonetheless, data on tax records is often not representative of the poorest percentiles of society (Diaz-Bazan 2014). Thus, tax records provide a more comprehensive representation of the top of the income distribution but at the expense of underrepresenting a large part of the bottom of the distribution.

Income tax data and Pareto approximation

In recent years, several studies have focused on the right tail of the income distribution using administrative records. However, since tax records are confidential, using this source of data to measure income inequality requires tackling the problem of information loss due to data anonymization. Several countries, in particular those members of the OECD, have used different methodologies of data anonymization to publish their statistics, balancing transparency of the data with confidentiality. One method used to publish tax income data while preserving privacy is presenting the information in the form of income intervals, usually divided into components of aggregate income such as wage income, capital income and earnings from business activities.

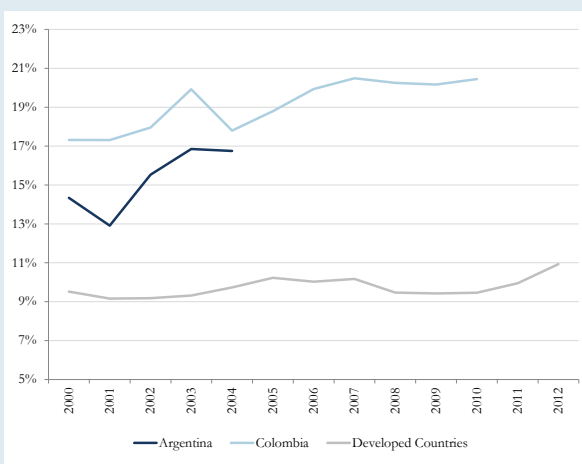
In cases when the observed income intervals are available it may be possible to reconstruct (approximately) the real income distribution. To achieve this, some assumptions are needed with respect to the distribution of income within each bracket. A common assumption is that the right tail of the income distribution follows a Pareto law (Atkinson and Piketty, 2007). Under this assumption, the proportion of the population with income higher than a value y is: $H(y) = \left(\frac{k}{y}\right)^\alpha$ where k and α are constants. The cumulative total income above y , divided by the mean μ , is given by: $G_i(y) = \frac{a}{a-1} \frac{y_i}{\mu} H_i$, which implies that the mean income above y is a constant multiple $\frac{(a-1)}{a}$ of y . The relative shares of the groups, with H_i and H_j shares of the population, are given by: $\frac{S_i}{S_j} = \left(\frac{H_i}{H_j}\right)^{(a-1)/a}$.

The tax-based data paint distribution dynamics in emerging economies that are remarkable similar to those in OECD countries, and even within the emerging group, despite ostensibly different economic structures and cycles, and despite the occurrence of localized emerging market crises that would be expected to impact the income distribution in the affected countries in a very idiosyncratic way. A case in point: South Africa presents an almost identical evolution of income distribution than the rest of the (developed) British dominions: New Zealand, Australia or Canada (Figure 2.2., Panel A and B). And, because income taxes apply only to a minority of the population in the developing world, the information from tax files needs to be complemented by other data sources so as to appropriately trace the full income distribution. Moreover, tax data is prone to its own variants of misreporting, related to tax avoidance and evasion (which one would expect to be more relevant for the very rich, and more prevalent in developing economies).

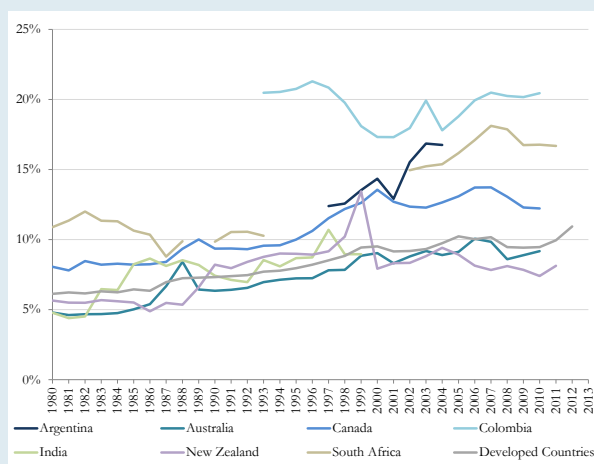
Moreover, the temporal dynamics of tax-based inequality measures can be affected by factors that may be only loosely related or quite unrelated to the distribution of income. For instance, a reduction in informality, an increase in the effectiveness of tax collection or even a change in the minimum taxable income could yield, *ceteris paribus*, a spurious increase in the estimated top 1

Figure 2.2. Top 1 Percent Income Share

Panel A. Latin American and Developed Countries



Panel B. Selected Countries



Notes: In Panel A the series for developed countries was constructed by averaging top 1 percent income shares across the following countries: Australia, Canada, Denmark, Finland, France, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, United Kingdom and United States. In Panel B, the average for developed countries includes the following countries: Denmark, Finland, France, Ireland, Italy, Japan, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom and United States. Source: Top World Income Database.

percent share.⁹ Finally, there is the practical problem of availability: they are available only for a limited sample of (mostly developed) economies. In particular, tax-based data from WTID are available only for three countries in LAC (Argentina, Colombia and Uruguay).

Household survey data, for its part, tends to systematically understate income, particularly of high income households. This is not only because surveys tend to miss the very rich but also because capital rents, an important source of income for the high-income sectors, is often ignored or understated.¹⁰ Since surveys systematically misrepresent high-income households and collect the income from capital very imperfectly at best, the correlation between the total household income inequality and labor income inequality may be biased upward, as the latter may systematically underestimate the former. And while we can measure with some confidence the evolution of the dispersion in wages, there is more uncertainty regarding the evolution of inequality in household income.

Can survey and tax-based measures be reconciled empirically? A first glance, pooling all available observations, the income at the top 1 percent looks positively correlated with the Gini coefficient, as expected, even after controlling for the degree of development, which is, in turn, inversely associated with higher concentration of income at the top (Figure 2.3, Panel A). However, a closer look reveals that the correlation is largely cross section (between groups). This is borne out by LAC data (Figure 2.3, Panel B), which show that for Argentina, Colombia and Uruguay the significant and positive

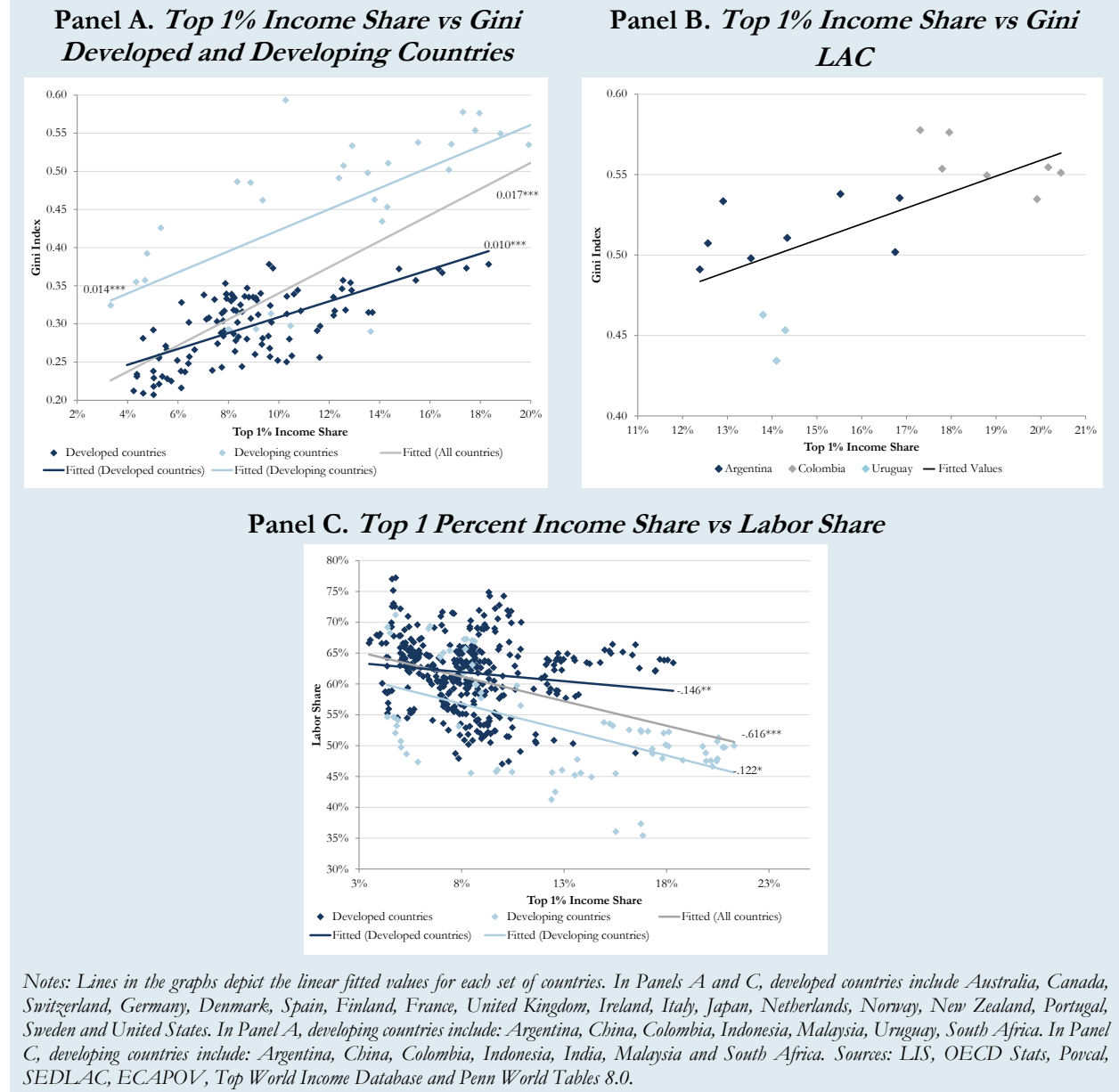
⁹ For example, the coverage of income taxes in Argentina (one of the three LAC countries in the WTID) tends to increase continuously with inflation (as the minimum taxable income threshold remains nominally constant) and to decrease discretely with the infrequent updating of the threshold, regardless of the income perceived by formal workers.

¹⁰ Last but not least, the data is still largely silent regarding the link between income and wealth, a dimension that we do not address in this report (because of the absence of hard data for the region) but that may become key now that the region may be facing a period of moderation (if not stagnation) in terms of real wages and fiscal transfers.

coefficient in a pooled regression of Ginis on the share of income of the top 1 percent reflects mainly cross-sectional differences (Figure 2.3, Panel B).

One way to bridge the gap between the evolution of the income distribution from household surveys and the income share of top earners is to track the evolution of labor shares in national income. In principle, one would expect that labor shares should be associated with a lower Gini coefficient and with lower income concentrations at the top (in particular, at the top 1 percent). Intuitively, because income from capital tends to be concentrated in the top percentiles, a larger capital share of national income would imply that a larger share of income goes to top earners (see Box 3. Labor Shares).

Figure 2.3. Top 1 Percent Income Share, Labor Share, and the Gini Index

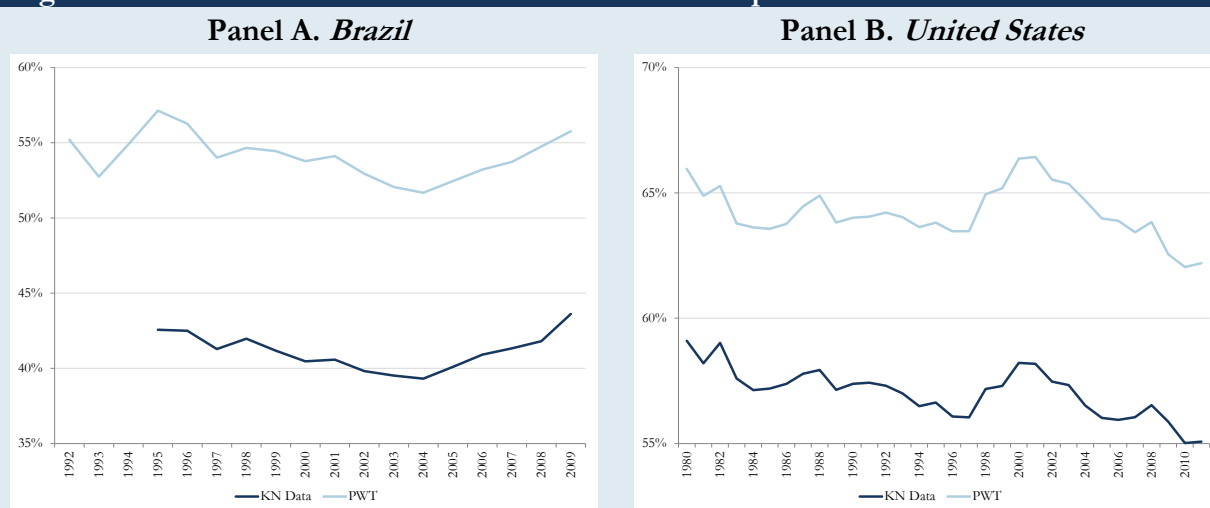


Box 3: Labor Shares and the Treatment of the Income of the Self Employed

We have a fairly good understanding of the evolution of the labor share. However, the variable is not without problems, for example, associated with the treatment of the income of the self-employed that, in developing economies, represent a substantial portion of the labor force. Because of that, estimating labor shares is a challenge. The naïve labor share reported in the national accounts excludes income of the self-employed (“mixed” income) that conflates labor compensation and capital gains in proportions that are not directly observable. The new version of the Penn Tables (PWT8.0, Inklaar and Timmer, 2013) incorporates an adjustment method that allocates this mixed income in a way that minimizes the potential bias associated to this identification problem.

Gollin (2002) proposes three alternative allocation methodologies to adjust the naïve labor share: i) assume all mixed income is labor (which gives the upper bound of labor share estimates); ii) assume that the self-employed use labor and capital in the same proportion as in the rest of the economy; and iii) assume that self-employed earn the same average wage as employees. According to Inklaar and Timmer (2013), the ‘same-wage’ assumption may be a good proxy in advanced economies where the share of employees in the total number of workers is 85-95 percent. However, in emerging economies where this share is well below 50 percent and characterized by lower skills and wages, using information on the wages of employees will overstate the labor income of self-employed. For these countries, because most self-employed workers are active in agriculture (see Timmer, 2012) that typically uses very few fixed assets, they adjust labor by adding all of value added in agriculture to labor compensation of employees. From the comparative analysis of these alternative adjustment methodologies they choose a “best estimate” adjustment approach based on the following rules: i) adjustments based on mixed income; ii) if mixed income is available but the naïve labor share exceeds 0.7, the naïve share is used directly; iii) if there is no mixed income data and the naïve share is below 0.7, the smaller of the “same-wage” and the “agricultural value added” adjustments is used.

Figure B3.1. Labor Shares: Penn World Tables and Corporate Labor Shares



Notes: This figure compares the evolution of labor shares from the Penn World Tables and from Karabarounis and Neiman (2013), who propose an alternative estimation based on country-level statistics on labor shares in the corporate sector. Sources: Karabarounis and Neiman (2013) and Penn World Table.

More recently, Karabarbounis and Neiman (2013) propose and report an alternative estimation based on country-level statistics on labor shares in the corporate sector, immune to the problem of statistical imputation of wages from mixed income. Figure B3.1 compares the evolution of labor shares sourced from the Penn Tables and from Karabarbounis and Neiman (2013): while both predictably differ in levels, their evolution seems to be highly correlated, so we can safely use the former for our empirical analysis.

In continental Europe, labor shares have been falling strongly since the 1980s, while in the US, the drop is more pronounced in the 2000s. A priori, these drops should be correlated with a larger concentration of income at the top of the distribution, and therefore with growing inequality in household income. In South Asia and China, where household income inequality rose, labor shares also declined. By contrast, in LAC the fall in labor shares was smoother and household income inequality also declined. Does this indicate that we are not that far off the truth when inequality in LAC is measured only based on the income reported in the surveys?

While both inequality proxies (the one based on survey data and the one based on tax data) are negatively correlated with labor shares, as expected, when we consider LAC as a whole, that connection disappears with a closer look at the within-country changes (Figure 2.3, Panel C). This might not be surprising if we keep in mind that survey data tend to understate capital income, which is better captured by tax data. Thus, as the labor share rises, top earners' shares in labor income decline but Gini coefficients are barely affected.

A more rigorous comparison of the cross-section and dynamic variability of survey- and tax-based measures confirms the insights from the previous figures. In contrast with what a casual look may suggest, the correlation between both measures is, if anything, rather weak (Table 2.1). For the few countries for which there is data from both sources there seems to be no correlation between the two measures, possibly due to the fact that tax data in developing economies tend to represent only a small minority of the population. Along the same lines, only the top 1 percent share exhibits a close correlation with labor shares over time (Table 2.2 and Figure 2.3, Panel C).

Table 2.1 Gini and the Top 1 Percent Income Share

	Gini Full Sample Between Effects (1)	Gini Full Sample Fixed Effects (2)	Gini Delevoped Between Effects (3)	Gini Delevoped Fixed Effects (4)	Gini Developing Between Effects (5)	Gini Developing Fixed Effects (6)	Gini LAC Between Effects (7)	Gini LAC Fixed Effects (8)
Top 1% Inc Share	1.971*** (0.491)	0.488*** (0.119)	1.289*** (0.359)	0.554*** (0.124)	1.178 (0.849)	0.163 (0.302)	1.643 (1.097)	0.030 (0.465)
Constant	15.494*** (4.931)	28.627*** (1.143)	18.187*** (3.226)	24.733*** (1.085)	32.967** (10.462)	43.515*** (3.729)	24.783 (17.478)	51.530** (7.482)
Observations	141	141	108	108	33	33	18	18
R-squared	0.412	0.211	0.447	0.317	0.278	0.014	0.692	0.001

*Notes: This table shows regressions of the Gini Coefficient and the income share of the top 1% earners. The full sample of countries includes Argentina, Australia, Canada, China, Colombia, Switzerland, Germany, Denmark, Spain, Finland, France, United Kingdom, Indonesia, Ireland, Italy, Japan, Malaysia, Netherlands, Norway, New Zealand, Portugal, South Africa Sweden and United States and Uruguay. The set of developing countries is Argentina, China, Colombia, Indonesia, Malaysia, Uruguay and South Africa. The remaining countries in the sample are classified as developed. * denotes statistical significance at 10%; ** at 5%; *** at 1%. Standard errors in parenthesis. Sources: LIS, OECD Stats, Povcal, SEDLAC, ECAPOV and Top World Income Database.*

Table 2.2 Labor Share and the Gini Index

Panel A. All Sample

	Gini Between (1)	Top 1% Between (2)	Gini Within (3)	Top 1% Within (4)
Labor Share	-75.254*** (13.585)	-18.788** (8.352)	-8.791 (8.079)	-30.177*** (4.042)
Constant	78.962*** (7.648)	20.546*** (4.991)	45.130*** (4.333)	27.239*** (2.441)
Observations	337	454	337	454
R-squared	0.376	0.180	0.015	0.295

Panel B. Developed, Developing Countries and LAC

	Gini Developed (1)	Top 1% Developed (2)	Gini Developing (3)	Top 1% Developing (4)	Gini LAC (5)	Top 1% LAC (6)
Labor Share	-19.391*** (5.640)	-30.194*** (4.635)	-1.150 (13.507)	-30.059*** (4.877)	4.530 (19.696)	-25.741 (11.617)
Constant	41.315*** (3.475)	27.004*** (2.866)	47.740*** (6.584)	28.440*** (2.586)	50.382*** (9.596)	29.942 (5.406)
Observations	128	380	209	74	137	26
R-squared	0.142	0.300	0.000	0.265	0.003	0.202

*Notes: Tables in Panels A and B show regressions of the Gini Coefficient or the top 1% income share with respect to labor shares. The countries in the Gini Coefficient regressions are Argentina, Australia, Austria, Belgium, Bolivia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Croatia, Czech Republic, Denmark, Dominican Republic, Estonia, Finland, France, Germany, Greece, Guatemala, Honduras, Hungary, Iceland, Indonesia, Ireland, Israel, Italy, Korea, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom, United States and Uruguay. The countries included in the top 1% income share regressions are Argentina, Australia, Canada, China, Colombia, Switzerland, Germany, Denmark, Spain, Finland, France, United Kingdom, Indonesia, India, Ireland, Italy, Japan, Malaysia, Netherlands, Norway, New Zealand, Portugal, South Africa, Sweden and United States. * denotes statistically significant at 10%; ** at 5%; *** at 1%. Standard errors in parenthesis. Sources: LIS, OECD Stats, Povcal, SEDLAC, ECAPOV, Top World Income Database and Penn World Table.*

In sum, there is generally no reason for which both sources would tell the same inequality story. More precisely, we cannot simply assume that the information in tax records, were it available for most LAC countries, would confirm the virtuous story of increased shared prosperity told by surveys.

Given that sources do not correlate, and that both paint an incomplete picture, the empirical story and its implications will depend on the source selected. This, in turn, depends on both the question at hand and, crucially, on data availability. While the top 1 percent may be a good measure of income concentration from a political perspective (as in the growing power of the rich to control the political and economic process), it says little of the distribution of the other 99 percent. And while the top shares may be relevant for cross-country comparisons, the scarcity of tax data eludes any dynamic analysis (of changes over time for a given country) of the kind at the core of this section. However,

one should be aware that survey data, by looking mostly at labor and transfer income and understating capital income, overstates the incidence of some of the drivers of pro-poor redistribution, such as employment and wage changes (both in levels and composition), extended pension coverage or conditional cash transfers.

Fortunately, the diversity of sources may not be so critical for our purposes to the extent that the bias is systematic. A recent study on income distribution in Colombia illustrates this bias by showing that, once survey data is completed with tax data on the income of top earners, Ginis move up significantly (Díaz Bazán 2014).

However, this leaves open the question that is most relevant for the current report: Does the story of a fairly generalized decline of income inequality in LAC over the last decade stand once survey data is complemented with tax-based data, so as to enhance the measurement of capital income and the income of the very rich? Survey data on Latin American incomes have been sending a fairly clear message, namely, that income inequality among LAC households has been falling mainly as a reflection of a fall in labor income inequality that is due, in turn, to the compression of the education premium (Lustig, 2013; The World Bank, 2013). But is the pro-poor growth pattern in the surveys due to an underreporting of capital income and a higher non-response rate among top earners which would, in turn, magnify the incidence on measured inequality of the fall in the skill premium?

Adding the Rich: Does LAC's Pro-poor Story Hold?

As noted, the Gini coefficient only tells one side (in fact, one tail) of the story: as tax based measures show, the top 1 percent fared relatively well during the years of pro-poor growth. Does that mean that, by following survey data, we have been telling a story that is not true –or, more precisely, that characterizes only part of the picture? In other words, does the pro-poor growth story still hold once we incorporate the missing top earners to the distribution? While the data are scant (only three countries in LAC have publicly available tax-based data on top earners and only for a few years), the preliminary answer seems to be a qualified yes: while the magnitude of the Gini coefficients certainly increases when the rich are added to the picture, their temporal evolution is surprisingly similar to that reported in the survey-based studies.

How can we reconcile household surveys and tax files into one single diagnosis of the inequality path in LAC? Because tax records capture more accurately the income of the top percentiles while surveys do a better job for the rest, one methodology often used to construct the whole distribution curve is to use the former for the top percentile and the latter for the rest (Alvaredo, 2011). Díaz Bazán (2014) proposes a similar approach that endogenizes the threshold for the change in the data source to be the income level at which individuals are not required to file income taxes and therefore no tax-based data can be inferred. Alternatively, to have a preliminary glance at how this “complete” income distribution evolved over time we can simulate this approach by building “synthetic” distributions that overlap the distribution based on the tax-based data provided by the WTID (namely, the average income of the top 0.01, 0.1, 0.5 and 1 percent) with the distribution based on household income surveys.¹¹ Moreover, we can use the change in the average income of top earners to build Growth Incidence Curves (GIC) that plot income growth by percentile correcting for the previously

¹¹ Because only a small minority of the population file taxes in LAC (for example, in Colombia tax records cover roughly 1.5%), data on top earners' income shares is available only for the top 1%.

misrepresented top income tail, and compare them with the ones entirely based on survey data. Box 4 describes summarily these exercises. The same conclusion could be drawn from the synthetic Gini in Uruguay, although with two qualifications: the distance between the survey based and the revised Gini widens and we only have three years of data, which does not allow to identify whether the widening reflects the reversion of the impact of the global crisis on asset returns or a more persistent bias.

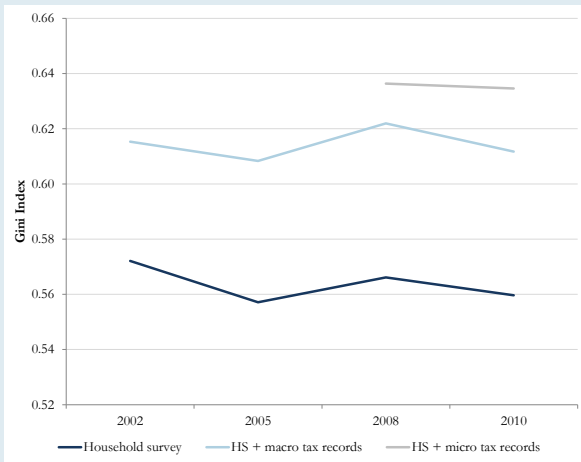
With the due caveats of any approximation, the results for Colombia are both predictable and reassuring. On the one hand, complementing survey data with tax records in the synthetic approach, by increasing the income of top earners, brings the Gini up by 5 points in Colombia (Figure 2.4). The difference is even larger when we complete the Colombian survey data using micro data directly: the Gini now increases by another 2 to 3 points. On the other hand, the revision does not alter the evolution of the Gini over time: the revised Gini remains largely parallel to the Gini calculated solely on the basis of household surveys. The same can be said of the revised GIC: top earners make much more than reported in the surveys, but their income does not diverge over time from the income of lower percentiles.

This contrasts with the results for Argentina, for a period that includes the crisis years 2001 and 2002. While the Gini coefficients with and without tax data move in parallel in tranquil times, they diverge visibly in crises times (the period from 2001 to 2003), when the income of top earners grew significantly more than that of the rest. The case of the Argentine crisis is interesting because it is atypical (or, rather, typical of a very specific set of conditions). In 2001, Argentina had had a ten-year peg to the US dollar and, partially as a result, was financially dollarized, so that high income households with savings capacity would have an important long position in dollars (the flipside of the short dollar position of the government and local corporates). Then, the 200 percent real devaluation in 2002 following the collapse of the peg triggered for these households a valuation gain in pesos that more than offset the negative effect of the crisis on labor income and on the labor share in national income. Unfortunately, tax data for more recent years are not available, so one can only speculate that, as the real wage and the labor share rebounded with the post-2002 recovery, part of the rise in the revised Gini was reverted. However, the persistence of the real devaluation (and, as a result, of the revaluation of the dollarized savings of the rich) probably meant that the Gini declined to a higher level than its average in the 1990s.

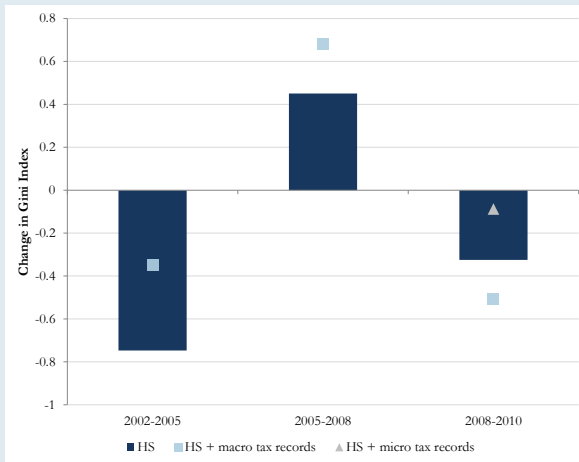
Which of the cases is closer to a pattern? Colombia, where the evolution of the Gini is fairly robust to the inclusion of tax data, or Argentina, where the combination of financial dollarization and a huge real devaluation widened the distance between the two measures? The truth is probably in between, depending on the saving patterns of the country and the volatility of nominal variables. Financially dollarized economies facing important real exchange rate depreciations probably suffer regressive redistributions in the form of valuation gains of high income savers, who tend to be long in dollars. However, in the case of a not financially dollarized country under a flexible exchange rate regime that faces business cycles with relatively smooth exchange rate corrections, the income growth of the rich relative to the rest can go, as in Colombia, either way. Following this argument, while we believe that extending this exercise to the rest of the region could shed more light on the determinants of income distribution over time, we feel confident that the trends in income inequality unveiled by the household survey data are a good approximation to the real Gini for much of LAC.

Figure 2.4. Adding the Rich: Changes in the Gini Index for Colombia and Argentina

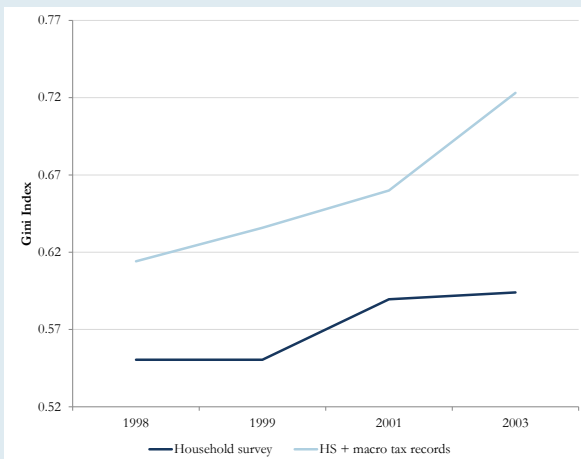
**Panel A. Gini Coefficients
Colombia 2002-2010**



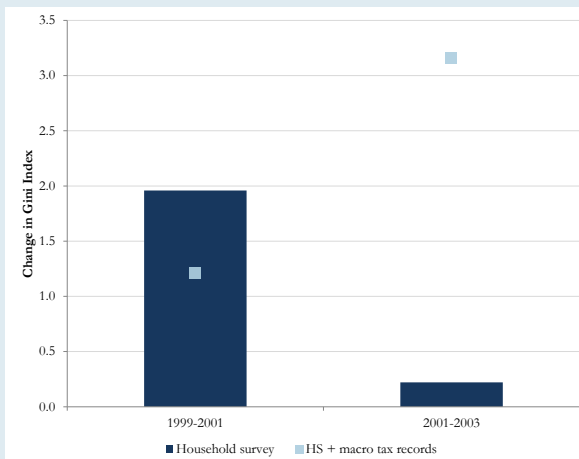
**Panel B. Change in Gini Coefficient
Colombia 2002-2010**



**Panel C. Gini coefficients
Argentina 1998-2003**



**Panel D. Change in Gini Coefficient
Argentina 1998-2003**



Note: Lighter lines correspond to the Gini Index calculated from the “synthetic” income distribution and the darker lines correspond to the Gini Index calculated using household surveys. Sources: For Colombia, World Bank calculations from SEDLAC for household per-capita income up to percentile 99, on data from The World Top Incomes Database (2014) for personal income of the top 1%, on data from Alvaredo and Londoño (2013) for adjusted income of household surveys to tax records and on data from DIAN for micro tax records. For Argentina, World Bank calculations from SEDLAC for household per-capita income and personal income up to percentile 99 of the earners, and on data from The World Top Incomes Database (2014) for personal income of the top 1%.

Since data coverage for the region is still far broader when it comes to surveys than tax records, and the variation of the Gini coefficients does not change much with the correction for the top earners, in what follows of this report we focus our analysis on the inequality measures based on survey data.

Box 4: Income Inequality & Top Earners: The Case of Colombia

To address the misreporting of top earners in survey data, recent research has studied the income inequality using tax administrative records (Atkinson and Piketty, 2007).¹² Tax records contain extensive information about individual and firms, providing valuable input for the measurement of inequality but suffering of a strong limitation that is a significant misrepresentation of the bottom of the income distribution. However, tax reports include only a share of the population (rather small, in many developing countries), and the larger part of the income distribution needs to be extrapolated or completed from other sources.

Since changes in the share of total income can have significant effects in overall measure of income inequality, Atkinson (2007) proposed a methodology to estimate a more accurately the Gini coefficient: he shows that, assuming that top earners are a very small (in the limit, infinitesimal) group receiving a finite share S of total income, the Gini coefficient G can be approximated as $G^*(1 - S) + S$, where G^* is the Gini coefficient of the population excluding top earners. Alvaredo (2011) extended this methodology for a small but not infinitesimal group of top earners.

More recently, Diaz-Bazan (2014) proposed a new methodology that combines data from both household surveys and tax records. The crucial innovation is the choice of an income threshold such as the fraction of population above (below) the threshold is well represented by tax records

Building on this effort, we can use tax and survey data to approximate income distribution curves even in those cases for which we do not count with detailed tax records. First, we take as a baseline the data from household surveys and impute to the top one percent earners in the household survey the mean value of the tax-based “top 1% average income” in The World Top Incomes Database. Then, assume that these new “top earners” have a similar household composition as the top one percent reported in the household survey, and recalculate their household per-capita income. Finally, the Gini coefficient of this synthetic income distribution is recalculated.

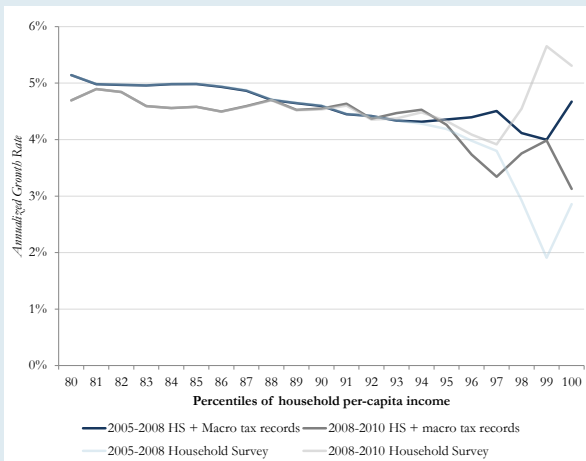
Two main findings follow from this exercise. First, somewhat predictably, **including information from top earners scales-up the Gini coefficient**. For instance, the Colombian Gini in 2010 goes from 0.56 (the benchmark official number) to 0.61 (Figure 2.4., Panels A and B), a value even higher than the 0.59 reported by Alvaredo and Londoño (2013), possibly because they estimate the income inequality of individual incomes rather than of household per-capita incomes.

Second, **accounting for top earners does not change the short-term inequality trends as measured by the Gini coefficient**. Contrary to our initial concerns (namely, that the decline in LAC’s Ginis may be reverted once we complete the picture with the missing top earners), the trend continued to be benign, albeit somewhat weaker. For example, the drop in Gini for the synthetic income distribution was smaller than for the official Gini between 2002 and 2008 (in line with Alvaredo and Londoño, 2013), but larger between 2008 and 2010.

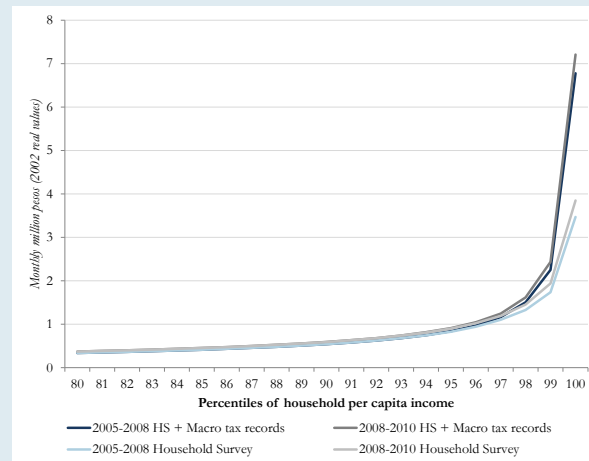
Note that this exercise distributes the income of the top one percent earners included in tax administrative records to their “synthetic” families to generate a new distribution of household per-capita income. Therefore, the behavior at the top of the growth incidence curve may experience changes starting in the 95 percentile of income as the income of the top earners is distributed to other members that may have zero incomes (figure B4.1, Panel A). Thus, when focusing in the

Figure B4.1 Growth Incidence Curve and Pen's Parade Including Top Earners for Colombia

**Panel A. Growth Incidence Curve
Percentiles 80-100, 2005-2010**



**Panel B. Pen's Parade Curves
Percentiles 80-100, 2005-2010**



Note: Darker lines correspond to the “synthetic” income distribution and the lighter lines correspond to the income distribution from household survey. Sources: World Bank calculations based on SEDLAC for household per-capita income up to percentile 99, and on data from The World Top Incomes Database (2014) for personal income of the top 1%.

growth rates for different percentiles of income distribution, the behavior at the top of the growth incidence curve is different to the official figures when using data from tax records. For instance, between 2008 and 2010 the growth rates of the top earners of the “synthetic” income distribution that includes information of tax records were lower than the growth rates of the top earners captured in the household survey only. The opposite occurred over the previous period from 2005 to 2008. Nonetheless, the level of the incomes of those in the top of the income distribution changes significantly when including the information from tax records (figure B4.1, Panel B).

What Explains the Inequality Decline in the 2000s? Cycle, One-Offs and Puzzles

There are number of concerns associated with the interrelation of macroeconomic cycles and trends that remain to be addressed in the literature. How does the macroeconomic cycle affect income distribution? More specifically, what was the role that growth and the real exchange rate played in the benign evolution of the wage distribution in the 2000s? And, in light of this, given the current slowdown in growth and currency depreciations, are we now facing a trend reversal in LAC's inequality?

While the pro-poor nature of the combination of social policies and growth during the 2000s in most Latin American countries is generally recognized (as has been documented, for example, in The World

¹² In order to understand changes in labor and capital incomes one needs to be able to put them into historical perspective with high quality. Unfortunately, household surveys are no longer enough (they cover some countries post 1970 or post 1980) to measure these changes.

Bank, 2014 and Lustig et al., 2013, as well as in previous semiannual reports under this series), there is still debate about the long-run dividends of these policies in the terms of equality of opportunities.

Now that growth –and with it, fiscal capacity– appears to be slowing down in the region, and economies are close to or at full employment, two key pillars behind progressive redistribution (fiscal transfers and more educated workers with better paid jobs) are likely to weaken. Indeed, recent studies document that inequality ceased to fall in many countries in the years following the global crisis (Cord et al., 2013) and even started to reverse (Burdin 2014).

One needs to emphasize an important caveat when tackling the cyclical nature of inequality in the region: we have not seen this scenario in the recent past. More precisely, growth dynamics in LAC were mostly characterized by deep financial crises and sharp recoveries, instead of traditional business cycles. And while the region’s macro economy may now be moving more towards the latter, we may have not seen a full cycle yet. Indeed, so far into the 2000s, most LAC countries have experienced long up cycles interrupted by a sharp output drops triggered by the global crisis and equally sharp recoveries, followed by the first stages of what looks like more conventional, down cycles. In other words, we are still transiting the cycle and may not yet have the whole picture.

In this light, any attempt to relate micro and macro variables for the region of today will inevitably be speculative in nature. We can only infer the incidence of the growth deceleration from the not strictly comparable experience of the 1990s and the partial evidence on the drivers of income distribution during the acceleration period –evidence that additionally is blurred by the fact that the idiosyncratic behavior of inequality in LAC in the 2000s (the fact that it generally improved while it worsen elsewhere in the world) may reflect to a large extent one-off factors unrelated to the cycle.

With this caveat in mind, to explore the cyclical nature of inequality we need two essential ingredients: a good account of the evolution of inequality, and a good understanding of the main drivers of this evolution.¹³

Labor Income Compression: Hypotheses

The recent literature on inequality in LAC highlights two main factors behind the recent gains: in order of importance, the change in the distribution of labor income and the broadening of government transfers and, for the countries in the Southern Cone with increasingly inclusive pay-as-you-go systems, the broadening of pensions coverage (Cord et al., 2014). It is not surprising then that this literature has focused on the recent evolution of labor income in the region, the key driver of the income equalization of most of LAC. It is by now widely recognized that the reduction in household income inequality is largely as reflection of a reduction in labor income inequality. To the question of what is behind the reduction in labor income inequality, available evidence points to a clear factor, the decline in the returns to education. In contrast to what we observe in the US and other high income

¹³ Lerman and Yitzhaki (1985) show that the Gini coefficient can be expressed as the sum product of three scalars: $G = \sum_{k=1}^K R_k G_k S_k$, where K are the different income sources (labor, transfers, pensions, etc.), S_k is the participation of source k in total income, G_k is the Gini coefficient corresponding to income source k , and R_k is a ratio of two covariances that reflects the relation between the concentration of income source k and total income.¹³

In turn, defining the pseudo-Ginis $P_k = R_k G_k$, the total change in the Gini coefficient can be expressed as a weighted average or pseudo-Ginis: $\Delta G = \sum_{k=1}^K S_{k,t} (P_{k,t} - P_{k,t-1}) + h$, where h is a residual that can be ignored as long as $S_{k,t}$ does not differ too much from $S_{k,t-1}$, which is typically the case for short intervals.

economies, Latin America has seen a reduction in the wage differential between workers with higher levels of education relative to those of lower levels of education.

What is really behind the reduction in the returns to education and, hence, in the wage differential? How is it related with macroeconomic and cyclical factors? As Lustig and Higgins (2013) mention, this phenomenon has been attributed to changes in the relative demand and supply of education (hence skills) and to policy-related factors, such the rise of the minimum wage and declining informality (alternatively, growing unionization). More specifically, the education premium could be triggered by (micro) supply factors (such as the extension of education coverage and the increase of the relative supply of skilled workers, the inclusion of students from lower income households, the entry of women into the labor force, or a deterioration of the quality of education) and by (macro) demand aspects, such as real devaluations or relative price changes that may affect differentially sectors with diverse demand for skills.

In principle, the premiums do not seem to be systematically correlated with macroeconomic variables; at any rate, the evidence tends to be more supportive of the supply hypotheses (see Box5).

Box 5: What is behind the Narrowing of the Education Premium?

The literature has identified a number of reasons behind this complex phenomenon, which could be broadly grouped into 1) demand factors (e.g., reduced demand for skills); 2) supply factors (e.g., a change in the relative supply and the composition of the labor force by education group), and 3) changes in the quality of education (including a potential mismatch between skills supplied by the labor force and those demanded by the market).

The demand hypothesis has to do with changes in the demand for workers with higher education, for a given supply of skills. For example, countries that move towards the production of goods with low skill content, or intensive in low-skilled workers (for example, countries that export unprocessed commodities), are often expected to reduce their demand for workers with higher education leading over time to a decline in the education premium (and in observed wage and, in turn, total income inequality). This demand story has been attributed, in the context of LAC's wage compression, to a Dutch Disease-type phenomenon, whereby the currency appreciation associated with improved terms of trade (in turn, driven by the commodity boom) led to a process of de-industrialization that eliminated high-skilled jobs in the manufacturing sector in favor of low skill positions in the primary, construction and service sectors (Gasparini et al., 2011).¹⁴ Under this hypothesis, we should see a decline in the share of the labor force (and a deeper wage compression) in skill-intensive sectors relative to the rest. Conversely, now that the commodity cycle seems to come back to its secular declining trend, we should expect a reversal of the effect, to the extent that industrial production regains price competitiveness and increases its demand for skilled labor (De la Torre, Messina Pienknagura, 2012).

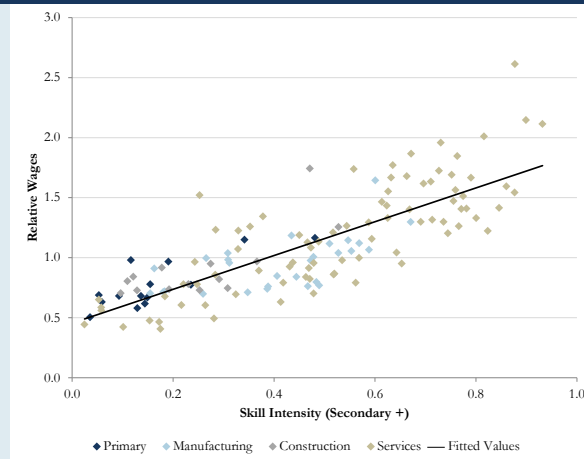
The evidence so far fails to confirm this story. As documented in our Spring2013 report, while the correlation between skills (years of education) and wages remained stable (Figure B5.1), sectors that on average demand more education grew comparatively more over the period, contradicting the

¹⁴ “This hypothesis may be stated as follows. The extended boom in commodity prices induced, through the appreciation of the real exchange rate, a substantial reallocation of resources (including labor) from non-commodity tradable sectors to non-tradable sectors. Provided that the latter are relatively less intensive in skilled labor, this reallocation would reduce the skill premium and the returns to education, bringing down wage inequality.” (Messina)

premise of a demand shift towards low-skill sectors (Figure B5.2 Panels A and B). Indeed, the implicit assumption that services (the winners in terms of labor creation) are characterized by less skill intensive activities is not clearly validated by the data: contrary to popular views, tertiarization, the driving force behind the shifts in labor demand, tends to create better jobs (De la Torre et al., 2013).

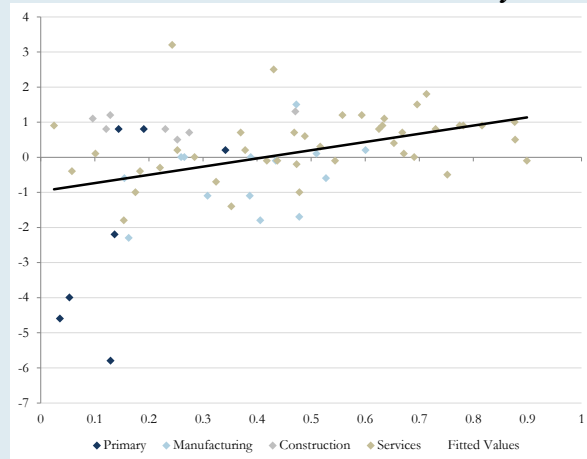
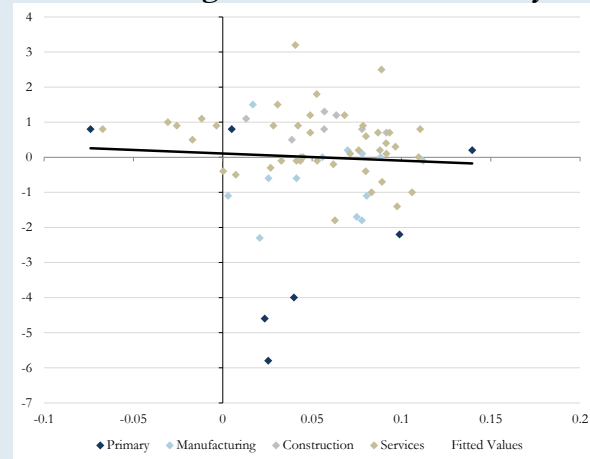
The problem for supply side explanations is that most supply-side factors show a rather steady increase during the 1990s and 2000s (with no clear kinks), whereas the return to education rose during the part of the 1990s and fell mainly during the 2000s, a rise and fall pattern similar to that observed for the Gini. One supply-side hypothesis, the labor income compression hypothesis, which focuses on the changes in socio-economic composition of entrants into the education system, may be a good candidate for an explanation. This hypothesis relates to the fact that the extension of the education coverage provided access to education especially for those coming from the lower end of the income distribution. To the extent that, for a given educational level, children of poorer households have a lower educational performance, or have unobserved characteristics that make them earn lower wages than their peers from richer households, the expansion in access to education can have an adverse effect in the education premium.¹⁵

Figure B5.1 Relative Wages and Education Intensity



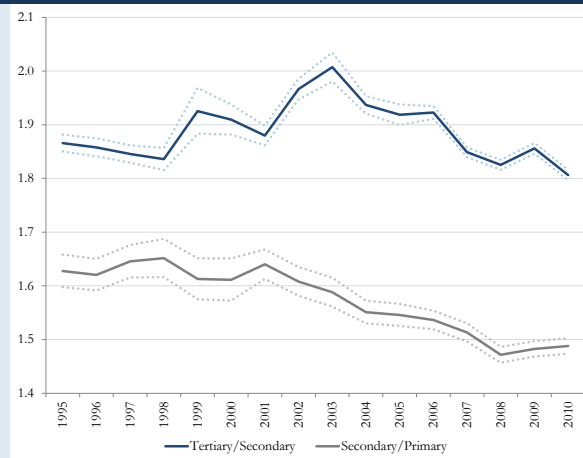
Notes: Countries included are Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Uruguay. Sectors are defined as Timmer and de Vries (2007). Relative wages are measured as the ratio of the average wage in a given sector and the average wage in the economy. Education intensity is measured as the share of workers in a given sector with a high school degree or a college degree. Changes are measured in the time span between 2002 and 2010. Sources: LCRCE Spring 2013, based on data from SEDLAC.

¹⁵ For example, many studies show that caregivers from richer households spend more resources (time and money) in activities that foster early childhood development. This can have an impact on the academic performance of children and on the compensation received in the labor market.

Figure B5.2 Change in Labor Share and Education: Levels and Changes by Sector
Panel A. Change in Share of Employment and Initial Education Intensity

Panel B. Change in Share of Employment and Change in Education Intensity


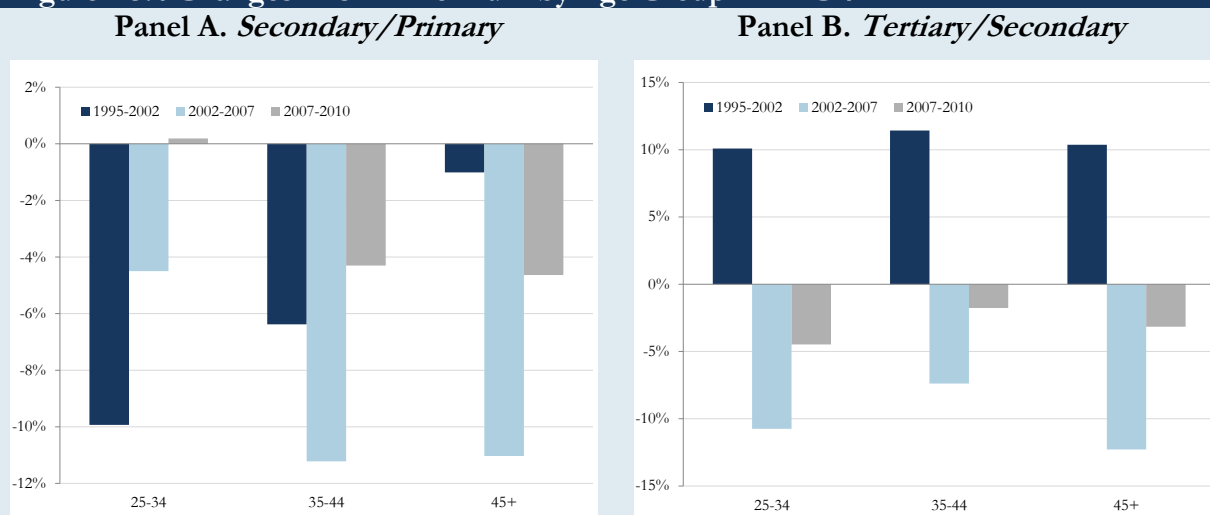
Notes: Countries included are Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Uruguay. Labor shares are measured as the fraction of the labor force working in a given sector. Education intensity is measured as the share of workers in a given sector with a high school degree or a college degree. Changes are measured between in the time span between 2002 and 2010. Sources: LCRCE Spring 2013, based on data from SEDLAC.

More specifically, if the composition of medium and higher education shifted to a larger share of students from the lower end of the income distribution, one should expect the wage received by the average worker with secondary or tertiary education to be lower today than it was in the past. This hypothesis is consistent with the timing of the decline in tertiary/secondary and the secondary/primary wage premium: the former starts falling in the early 2000s whereas the latter declines already in the 1990s (Figure B5.3). Similarly, the decline appears to have started in the late 90s within the younger age group, only to show up in older age groups by the mid-2000s (Figure B5.4 Panels A and B). The average number of years of education per decile points in the same direction: it grew more in lower deciles than it did in the top ones, as the extension of the coverage had a bias that favored low income households. This hypothesis may be reinforced considering that, in tandem with an expansion of access to secondary and tertiary education for the poor, they may have been also a deterioration, at the margin, of the quality of educational institutions.

Figure B5.3. Skill Premia in LAC-7


Note: LAC-7: Light colored lines represent 95% confidence intervals. Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Uruguay. Skill premia for LAC are estimated according to equation: $\ln(wage_{it}) = \beta_0 + \beta_1(\text{years of schooling}_{ij}) + \gamma X_{it} + u_{it}$ where $wage_{it}$ is the wage of individual i at time t , $\text{years of schooling}_{ij}$ are years of schooling of individual i at time t , X_{it} is a vector of individual characteristics which include age, age squared, gender, ethnicity, and interactions of these variables, and u_{it} is an idiosyncratic shock. Source: LCRCE Spring 2013, based on data from SEDLAC.

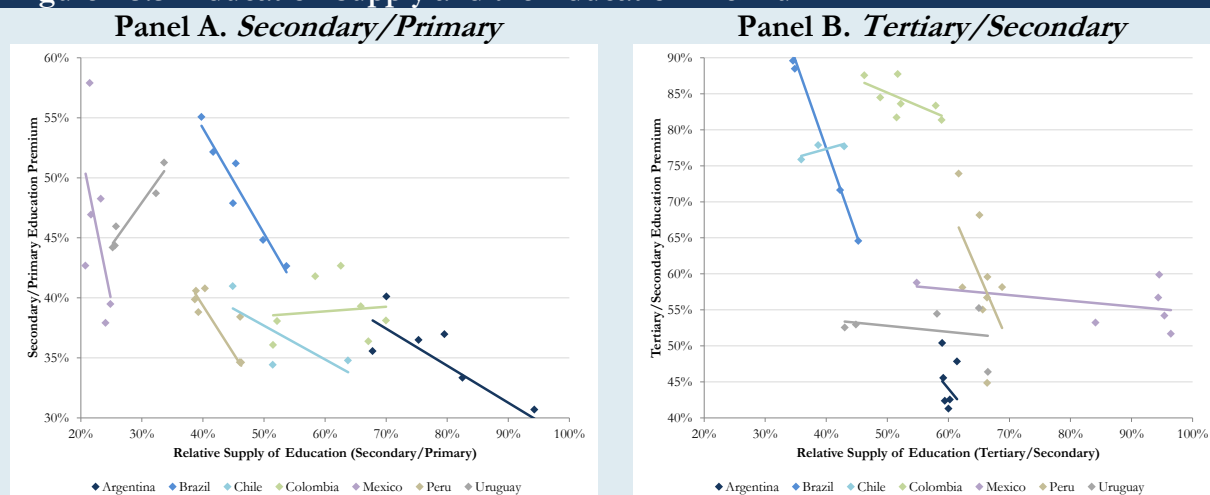
Figure B5.4 Changes in Skill Premium by Age Group in LAC-7



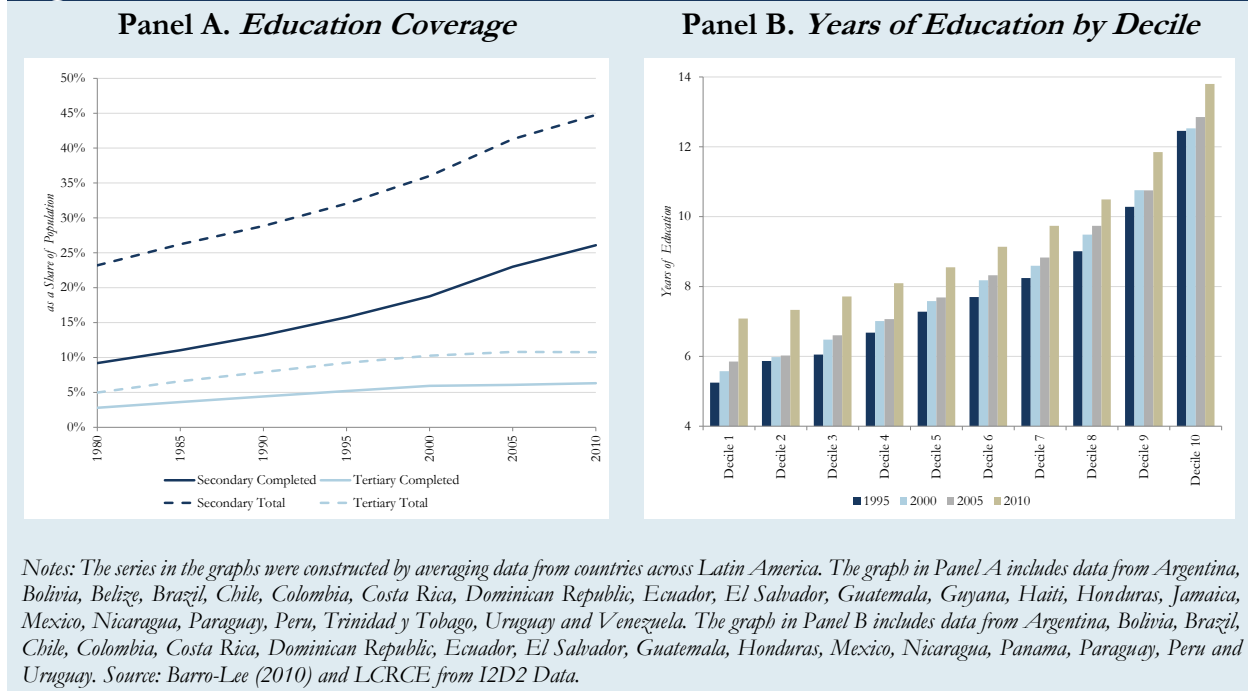
Note: Countries include Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Uruguay. Salaried workers. Skill-premia are calculated according to equation: $\ln(\text{wage}_{it}) = \beta_0 + \beta_1(\text{years of schooling}_{ij}) + \gamma X_{it} + u_{it}$ where wage_{it} is the wage of individual i at time t , $\text{years of schooling}_{ij}$ are years of schooling of individual i at time t , X_{it} is a vector of individual characteristics which include age, age squared, gender, ethnicity, and interactions of these variables, and u_{it} is an idiosyncratic shock. Source: LCRCE Spring 2013, from SEDLAC.

An alternative, complementary supply-side story highlights that a country that experiences an increase in the number of workers with secondary and tertiary degrees (holding quality constant) would also see a decline in the education premium, if everything else is kept constant (Levy Yeyati and Pienknagura, 2014). Here, the evidence is supportive in the 2000s: country by country, the expected negative correlation between relative supply of skills and the skill premium is verified in almost all cases (Figure B5.5). But it fails to explain why the rise in the education premium in the early 1990s did not worsen income distribution. At any rate, the decline in inequality in LAC in the 2000s and its connection with education and the skill premium remains an open debate in search of more systematic research.

Figure B5.5 Education Supply and the Education Premium



Notes: Skill-premia is estimated according to equation: $\ln(\text{wage}_{it}) = \beta_0 + \beta_p(\text{No Secondary}_{it}) + \beta_T(\text{Tertiary}_{it}) + \gamma X_{it} + v_{it}$ where wage_{it} is the wage of individual i at time t , No Secondary_{it} is a dummy variable which takes value 1 if individual i has no High School degree at time t , Tertiary_{it} is a dummy variable which takes value 1 if individual i has at least a College degree at time t , and X_{it} is a vector of individual characteristics which include age, age squared, gender, ethnicity, interactions of these variables and sector fixed effects. Sources: LCRCE Spring 2013, from Barro and Lee (2010) and SEDLAC.

Figure 2.6. Education in Latin America


If anything, the supply story points at a structural, non-recurrent (rather than cyclical) factor: the extension of education coverage towards the poorer segments of the population. Under this explanation, a reversal in the trend of declining returns (and, in turn, inequality) may be driven not by lower growth but rather by diminishing marginal improvements in education inclusion, particularly in tertiary education (Figure 2.6, Panels A. and B.).¹⁶

Beyond the Gini Index: Growth Incidence Curves and the Elusive Top Earners

While the Gini (or any other summary statistic) has the beauty of summarizing a complex concept in a single figure, the truth is that sometimes its very simplicity may obscure differences that are relevant to explain the nature of its evolution and its relation with other economic variables. In particular, given the well-known sensitivity of the Gini to its tails, and the ongoing debate about the misrepresentation of top earners in survey data, it is critical to evaluate whether changes in the coefficient are driven by the relative income growth of the lower or the upper tail –and, as we will highlight below, how the coefficient changes once the misrepresentation of top incomes is attenuated.

One way to complement the analysis based on Gini coefficients is to compute Growth Incidence Curves (GICs) that track changes in reported income by income percentile. Thus, a downward sloping GIC would indicate pro-poor income growth, and the opposite would be the case for an upward sloping curve. In turn, a U shaped curve would signal a relative improvement of the poor and rich tails at the expense of middle-income individuals.

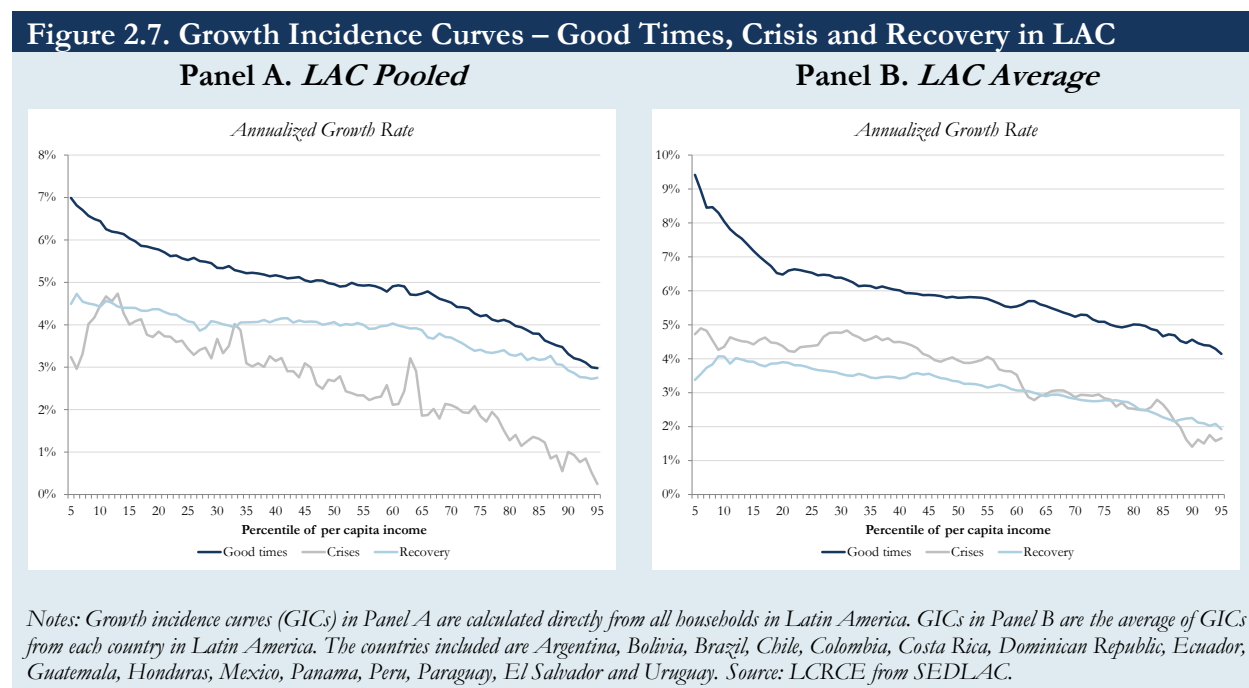
¹⁶ As Lustig and Lopez Calva (2010) argue, “the upgrading of skills of the poor...will soon face the “access-to-tertiary education” barrier – mainly due to the low quality education that the poor receive in basic and secondary levels – and thus the decline in inequality is not likely to continue when that barrier is reached.”

What was the shape of this GIC in the 2000s? Was it visibly different in the good period before the global crisis? Has it recovered its pre-crisis shape in recent years? More generally, is there a pattern that we can discern that distinctly characterizes income changes across income levels during the up cycle, the crisis drop and the recent recovery towards a slow growing environment?

A first look at the region as a whole (which tends to reflect the situation in larger countries at the expense of the small ones), as well as at the average of the region's Gini coefficients, shows a pattern that is in line with the evidence discussed above (Figure 2.7). As the figure shows, the downward sloping nature of the curve is there before and after the crisis (somewhat flatter and, predictably, lower for the latter period). More importantly, while it inverts its slope for the bottom percentiles (implying a lower relative income growth for low income workers and some loss of employment), for the most part it has the same slope and is even steeper during the crisis, indicating that the sudden output drop in 2009 did not induce a reversal of the pro-growth nature of income growth that characterized the past decade.

As noted, we need to bear in mind that the 2008-2009 crisis is not necessarily a good example of the ongoing down cycle: output dropped sharply, briefly (that is, without inducing long spells of unemployment) and reversibly (recovering almost as rapidly and with no permanent effect on terms of trade or economic structure) and the fall was mitigated by countercyclical expenditure policies. On the other hand, it is hard to find complete economic cycles in LAC in the recent past, plagued as it was by episodes of financial stress or contagion or full blown crises accompanied by sharp output drops. In other words, the behavior of inequality indicators around the 2008-2009 crisis may be closer to those emerging market crises than to a conventional down cycle as the one the region seems to be presently facing.

Needless to say, the shape of the GIC has exhibited considerable dispersion within the region during the crisis, as the individual charts show (Appendix I), with hump-shaped GICs for 2008-2009 in



Argentina, Bolivia, Brazil, Paraguay and Uruguay, indicating in most cases a partial reversal of the relative gains of lower income individuals, as well as an underperformance of higher income ones. In addition, it can be seen more clearly the plateauing of the curve for the recent “recovery” period, which in some cases (Bolivia, Colombia, Honduras, Mexico, Peru, Uruguay) already shows an incipient reversion.¹⁷ Interestingly, GIC completed with data from tax records do not significantly alter the picture: top earners make more money and push up the Gini, but the income of the rich do not necessarily grow faster than the rest. In other words, our reliance on survey data is likely to give an accurate account of equity gains and losses.

What do we take away from this comparison? First, that the gains in equity were not a fluke of the data but a fairly well-behaved rotation of growth income curves, with changes following a relatively monotonic function of income levels. The exception, as noted, are top earners that may have grown faster than the median, reshaping the GIC into an uneven U form. Second, the slowdown and partial reversal in equity gains cannot be attributed to the global crisis, rather, it has been gradual and coincided with the recovery. The finding that the crisis episode does not coincide with a visible change in the distribution of income changes across income levels is consistent with the view that the sharp and brief output drop in 2009 did not affect income the way a conventional business cycle will. However, it is also consistent with the hypothesis that developments in income inequality are not systematically connected with macroeconomic cycles.

How Does Inequality Relate to the Cycle? From Macro to Micro

The economic literature provides mixed evidence on what are the macroeconomic factors contributing to inequality (see Box 6). Most studies contend that better infrastructure and a better educated labor force reduce inequality, whereas higher inflation leads to higher inequality. Evidence is not as strong when it comes to financial depth and openness to trade. But, most importantly, the available evidence is largely based on cross-country results, which in turn may be influenced by the well-known heterogeneity in the way in which inequality is measured in different countries. Moreover, these studies say little about the short-run, cyclical effects of growth variations on income distribution that is at the center of this report. Hence, the novelty of our analysis, as well as the need to controls for long-standing, hard-to-identify, country-specific characteristics by resorting to panel analysis that control for country fixed effects.

Here we zoom in on the recent past to examine the macro determinants of inequality, as a way of assessing how inequality may change in the future. More precisely, we analyze how the key macroeconomic shocks of the 2000s (the real exchange rate, productivity growth, employment) correlate with wage inequality, the labor share and the distribution of income (as measured from household surveys, as well as the new augmented measured corrected for capital income) to get a glimpse, based on our prognosis in section 1, of what is to be expected from the macro environment in terms of inequality in the near future.

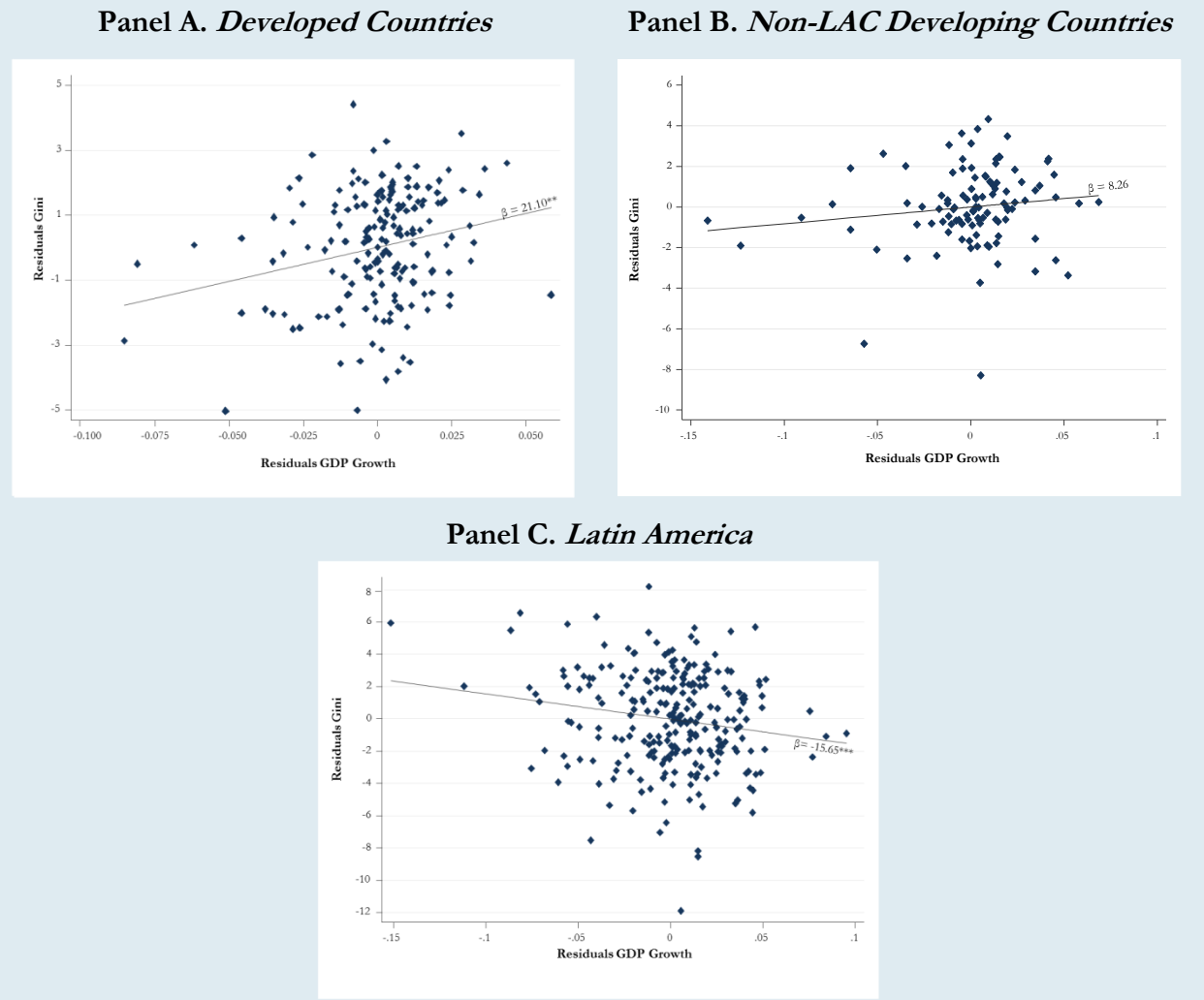
A quick naïve look at the link between growth and inequality presents contradictory results. Growth appears positively correlated with inequality in LAC, but negatively correlated everywhere else (see Figure 2.8, Panels A, B, and C). This back-of-the-envelope result, which is in line with the conventional wisdom that inequality declined in LAC and worsened elsewhere in a context of generally solid global

¹⁷ On this, see Cord et al. (2014).

growth, nonetheless masks the channels through which the macro picture influences income distribution.

The macroeconomic literature searching for a causal connection between equity and growth has yielded mixed results (see Box 6). Most studies resort to cross-section tests that may reflect hard-to-control country-specific factors or reverse causality (indeed, the larger share of this literature looks into this direction of causality, namely, whether inequality conditions growth) rather than the direct causality from growth (and, more specifically, cyclical changes in growth rates) to inequality that is at the core of this report. Indeed, inequality seems to be largely correlated with factors that change slowly within countries but are quite diverse across countries (Li and Zhou 1998). Moreover, inequality datasets are incomplete and not comparable, and measured inequality tend to present source-specific

Figure 2.8. Correlation between Growth and Inequality



Notes: * denotes statistical significance at 10%; ** at 5%; *** at 1%. Developed countries are Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Iceland, Israel, Italy, Japan, South Korea, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom and United States. Non-LAC developing countries include China, Croatia, Hungary, Indonesia, Lithuania, Malaysia, Philippines, Poland, Romania, South Africa, Thailand, Turkey and Vietnam. Countries in Latin America include: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Panama, Peru, Paraguay, El Salvador and Uruguay. Sources: LIS, OECD Stats, Povcal, SEDLAC, ECAPOV and WDI.

(and, as a result, region- and country type-specific) biases. To reconcile the unbalanced and heterogeneous nature of the inequality data with our focus on the correlation of macroeconomic variables and inequality over time, in our regressions we use a panel approach with country effects on data that covers primarily the period starting in 1980.

Formally, assuming away capital gains, inflation-adjusted household income for decile i can be expressed as $y_i = \frac{w_i L_i + \text{cash transfers} + r K_i}{p_i}$, where the denominator is total income and p_i is the price index for decile i .

Box 6: Macroeconomic Determinants of Inequality: What the Literature Tells Us

In the process of development, economic growth adjusts the distribution of resources across sectors, factor endowments and relative prices. In turn, these changes directly affect income distribution. Kuznets (1955) first introduced the idea of a link between development and inequality by focusing on productivity differentials across sectors with varying importance in the economy. His argument emphasizes the structural transformation of people and resources shifting from a rural-agricultural dependent economy to an urban-industrial one. **Kuznets suggests that income distribution worsens over the initial stages of development and improves at later stages.** As an economy undergoes a sectoral reallocation, individuals that move experience an increase in per capita income that raises the economy's overall degree of inequality. Later, when the agricultural sector shrinks and the industrial sector expands, overall inequality declines. Another approach argues that technological progress may lead to higher inequality where the poor sector utilizes old technology and the rich sector one that uses more advanced techniques (Helpman 1997; Galor and Tsiddon 1997; Aghion and Howit 1977). Mobility from old to new requires the adoption of new skills. Hence, in this context, technological innovations such as electrical power and factory systems tend to initially increase inequality. Eventually inequality decreases as less people remain in the old sector and those that moved to new technology catch up to their counterparts. With this approach **inequality would depend on when a technological change was introduced into the economy.**

A number of cross-country studies have assessed what are the determinants of inequality. Dollar and Kraay (2002) evaluate whether the poor benefit from economic growth by regressing the income of the lowest quintile of the population on average growth; their analysis indicates that pro-growth policies benefit the poor as much as everyone else in society. Barro (2000) performs a similar cross-country analysis but finds contrasting results: he finds that secondary schooling is associated with less inequality; however, unlike Dollar and Kraay, he finds that greater openness to trade increases inequality, especially in poorer countries. Similarly, Li and Zhou (1998) analyze the growth-inequality relationship over a 40-year period and find that, contrary to Kuznets' predictions, inequality is relatively stable over time and differs significantly across countries. The authors find that variables associated with financial market imperfection (depth of the financial sector and initial land distribution) have a much stronger influence on inequality than those associated with political economy (measure of civil liberties and initial level of secondary schooling). **Their results suggest that inequality is largely determined by factors that change slowly within countries but are quite diverse across countries.**

It follows that changes in the inflation-adjusted income distribution would depend on the distribution and evolution of: 1) wages, 2) employment; 3) returns on capital, 4) capital, as well as on relative prices (to which we come back at the end of the section).

Gini coefficients based on survey data capture primarily the first two terms within brackets. Then, at this exploratory level, candidate macroeconomic controls for this inequality measure, in addition to real GDP growth, would include employment variables (the employment ratio, the average real wage), fiscal spending (the government consumption-to-GDP ratio, related to the transfer and pension channels) and relative prices that may affect the demand of skills (the real effective exchange rate and the terms of trade) in line with the demand hypothesis of the narrowing of the education premium. In addition, we control for tertiarization (the share of the service sector in total output).

Finally, to complement the macro variables, we need to control for the skill composition of the labor force as the driver of the supply hypotheses mentioned in Box 6. We do this in two alternative ways. First, we include the education Gini (a Gini coefficient computed from the years of education by percentile) to proxy for the distribution of skills: a lower education Gini would signal a more equal distribution and, to the extent that wages reflect education (see Figure B5.1), a more equal distribution of labor income.¹⁸ Alternatively, we include the education premiums (secondary to primary and tertiary to secondary), which, to the extent that education is positively correlated with initial income, should be positively correlated with labor income inequality.

Table 2.3 summarizes the results. Results now tend to be consistent between LAC and the rest of the world. Growth is no longer significant, as its influence is captured by more specific channels, most notably, employment, which is strongly and negatively correlated with inequality as expected. Interestingly, real wages are associated with higher inequality, highlighting a possible trade off with employment or, more generally, a tradeoff between quantity and price adjustment of the labor market over the cycle –the results, from an equity perspective, tend to favor the latter.

Tertiarization is also negatively correlated with inequality. Given that the growing service sector is characterized by higher skill intensity and average wages, the link between tertiarization and equity is unlikely to come from a depression of skilled wages. As we noted above, the underpinnings of the wage compression in LAC deserve a more careful study.

Terms of trade appears to be correlated with a decline in inequality, although one has to bear in mind that the data does not fully capture the recent reversion in the commodity cycle. The link with the real exchange rate is less straightforward, as it more than reverts in one year, suggesting that, if anything, a more appreciated currency is associated with more inequality. Finally, government spending shows the expected sign but is never significant.¹⁹

Column (4) brings the education Gini into the picture, with the expected sign for LAC but not significant outside the region. Within LAC, the use of the SEDLAC dataset does not alter significantly the results, and the inclusion of the education premiums further improves the fit of the model. Overall, our tests confirm statistically what has been extensively argued in the recent literature: the role of the

¹⁸ The education Gini is calculated, alternatively, from the I2D2 dataset that includes countries in and outside LAC and, for the tests on the LAC sample, from the data available from SEDLAC.

¹⁹ Other variable suggested in the literature such as various measures of financial and economic development and openness are significant in cross section tests but not over time.

education premium in the evolution of inequality. They also show that the result cannot be extended to the rest of the world, leaving open the question of what makes LAC special in this regard.

To characterize the growth-inequality link one cannot ignore the potential reverse causality, namely, the one that goes from inequality to growth. Three arguments support the view that more unequal economies grow faster: 1) Kaldor's hypothesis that the marginal propensity to save of the rich is higher than that of the poor (formalized by Stiglitz (1969) and Bourguignon (1981)); 2) investment indivisibilities: in the absence of well-functioning stock markets, wealth needs to be sufficiently

Table 2.3 Growth, Education and Inequality

	Gini All (1)	Gini No LAC (2)	Gini LAC (3)	Gini All (4)	Gini No LAC (5)	Gini LAC (6)	Gini LAC (7)	Gini LAC (8)
GDP growth	2.760 (4.911)	10.920* (5.953)	-2.255 (6.996)	3.970 (5.276)	9.922 (5.947)	0.138 (6.173)	2.961 (5.235)	0.675 (5.662)
Employment/Pop	-0.242*** (0.079)	-0.090 (0.083)	-0.325** (0.116)	-0.141 (0.119)	-0.253** (0.100)	-0.144 (0.148)	-0.213 (0.134)	-0.221* (0.123)
Wage	9.08e-06*** (2.61e-06)	2.63e-06 (3.12e-06)	1.68e-05*** (2.65e-06)	7.38e-06** (2.94e-06)	-1.44e-06 (2.39e-06)	9.68e-06* (4.93e-06)	5.15e-06 (4.23e-06)	7.79e-06** (3.28e-06)
Govmnt Expend	-0.067 (0.135)	-0.273 (0.177)	0.160 (0.207)	0.148 (0.162)	-0.314 (0.213)	0.254 (0.213)	0.148 (0.252)	0.261 (0.180)
Terciarization	-0.263** (0.103)	0.089 (0.098)	-0.572*** (0.152)	-0.214* (0.115)	0.083 (0.138)	-0.321 (0.193)	-0.094 (0.165)	-0.268* (0.149)
Terms of trade	-0.048** (0.018)	-0.019 (0.024)	-0.053** (0.023)	-0.064*** (0.018)	0.015 (0.031)	-0.071*** (0.022)	-0.056** (0.023)	-0.025 (0.022)
REER	-0.027*** (0.010)	-0.031 (0.024)	-0.028** (0.012)	-0.037*** (0.011)	-0.050** (0.019)	-0.033*** (0.010)	-0.027*** (0.007)	-0.015** (0.005)
Lagged REER	0.043*** (0.016)	0.065** (0.025)	0.033* (0.017)	0.041** (0.017)	0.100*** (0.022)	0.030* (0.014)	0.024* (0.012)	0.017 (0.011)
Education Gini				54.339*** (17.652)	0.807 (17.264)	61.691** (21.380)		
Educ Gini (from SEDLAC)							78.702*** (15.654)	
Secondary Premium								20.175*** (5.731)
Tertiary Premium								16.103** (6.009)
Constant	75.532*** (7.918)	34.507*** (6.469)	106.183*** (10.204)	52.226*** (13.973)	39.904*** (13.222)	59.703** (20.676)	44.526*** (13.661)	65.215*** (8.734)
Observations	328	163	165	235	78	157	163	155
R-squared	0.226	0.129	0.350	0.412	0.338	0.486	0.555	0.524

*Notes: The table shows the results of a regression of the Gini coefficient. REER is the Real Effective Exchange Rate. When the Education Gini is not included in the regressors, the set of countries in the regressions is Argentina, Australia, Austria, Belgium, Bolivia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Croatia, Czech Republic, Denmark, Dominican Republic, Ecuador, El Salvador, Estonia, Finland, France, Germany, Greece, Guatemala, Honduras, Hungary, Iceland, Indonesia, Ireland, Israel, Italy, Japan, Korea, Lithuania, Luxembourg, Malaysia, Mexico, Netherlands, New Zealand, Nicaragua, Norway, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom, United States, Uruguay and Venezuela. When the Education Gini is included as a regressor, countries in the regressions are Argentina, Austria, Bolivia, Brazil, Chile, Colombia, Costa Rica, Croatia, Denmark, Dominican Republic, Ecuador, El Salvador, Estonia, Finland, France, Germany, Greece, Guatemala, Honduras, Hungary, Iceland, Indonesia, Ireland, Italy, Lithuania, Mexico, Netherlands, Nicaragua, Norway, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Thailand, United Kingdom, United States, Uruguay and Vietnam. * denotes statistical significance at 10%; ** at 5%; *** at 1%. Standard errors in parenthesis. Sources: LIS, OECD Stats, Povcal, SEDLAC, ECAPOV, ILO, WDI, UN Statistics.*

concentrated in order for economic agents to be able to cover large sunk costs and thereby engage in entrepreneurial activities, and 3) incentives: in an economy where all agents have the same preferences, greater taxation reduces the return to savings, thus lowering the incentives to accumulate capital and hence the rate of growth (see for instance, Basu 2006). Nonetheless, there is no shortage of theoretical models showing the opposite, namely, that equality could indeed enhance growth. Most of these models rely on some form of market failure (such as imperfect capital markets inhibiting optimal investment, as in Kanbur and Spence (2010), Aghion *et al.* (1999) or Banerjee and Newman (1993).

A recent review by Birdsall and Szekely (2003, p 6) concludes that “empirical evidence from cross-country studies supports the general proposition for the case of developing countries that those with high levels of income inequality have experienced lower levels of growth”, as in Persson and Tabellini (1994) and Alesina and Rodrik (1994). However, these studies are based on cross-sectional tests; more recent panel studies tend to reach mixed results.²⁰ The exception is Ostry *et al.* (2014), which find that lower net inequality is correlated with faster growth, with a cross-sections approach that controls for inequality using lagged Gini sourced from Solt’s (2009), a dataset that mixes heterogeneous data sources for individual countries. Overall, then, the macroeconomic evidence for a causal connection between equity and growth is not particularly strong.

A Final Twist: Income-specific Inflation-adjusted Inequality

As noted, the standard inequality inflation figures published by national statistical agencies are based on CPIs which are constructed as weighted averages of individual households’ price indices, with weights given by their respective shares in aggregate consumption expenditure. This implies that the official inflation rates generally reflect the inflation rate faced by richer households (who have higher levels of consumption, and hence weigh more in the index) creating the so-called ‘plutocratic bias’ (Prais 1958).

As a result, standard CPI inflation provides a misleading measure of the inflation actually faced by poor households, the more so the more unequal the distribution of aggregate consumption across households. Since consumption baskets vary across households and inflation rates vary across goods, the inflation faced by households across the expenditure specter may vary considerably. The fact that different households face different inflation rates also means that changes in the distribution of real income or expenditure across households are driven not only by changes in the commonly-measured distribution of nominal income or expenditure, but also by the time path of their respective inflation rates.

We explore these issues for the case of LAC, exploiting the available information in the household expenditure surveys of Brazil, Chile, Colombia, Mexico, Nicaragua, and El Salvador. As a first step, we construct harmonized consumption categories that are comparable across countries.²¹ Second, we

²⁰ Barro (2000) finds, in developing (but not developed countries), that inequality reduces growth, whereas Forbes (2000) finds the opposite and Banerjee and Dufló (2003), in a cross-section analysis, show that “changes in inequality (in any direction) are associated with reduced growth in the next period.” Finally Voitchovsky (2004) argues that the effects are different at either end of the distribution, with inequality at the top end positively associated with growth, and inequality at the bottom end negatively associated with growth.

²¹ The expenditure categories are: Food and non-alcoholic beverages, Alcoholic beverages and tobacco, clothing and shoes, housing (including utilities), furniture and housing goods, health, transportation, communications, culture and leisure, education, restaurants and hotels, and other goods and services.

calculate the consumption basket for each decile of the expenditure distribution. Finally, we construct decile-specific inflation rates by multiplying product specific inflation rates obtained from national statistical agencies to the decile-specific consumption baskets.²²

Figures 2.9, Panels A-C (and Appendix II) illustrate the differences of expenditures across consumption categories for households in the second decile when compared with households of the ninth decile. We also present the consumption basket used for construction of the standard CPI (the plutocratic consumption basket); the plutocratic bias becomes evident as this basket resembles more closely the consumption patterns of richer rather than poorer households.

Some features of the consumption pattern deserve attention: as expected, poorer households devote a considerable share of their budget to food consumption while they represent a significantly smaller share for richer households. On the other hand, expenditures on transportation (which includes fuels) and communication, as well as culture, leisure, restaurants and hotel expenditures represent a larger share of expenditures for higher income households.

In Figure 2.10 we graph the ratio between the annualized inflation during the 2000's faced by households in decile 2 and the inflation faced by households in decile 9.²³ In all cases, except for Chile, inflation rates for poorer households were higher than for richer households. Most notably, for Peru and Ecuador the annualized inflation rates are over 10 percent higher for the poorer households when compared to households in decile 9. These are significant differences that accumulate over time (particularly in the past decade as food inflation often exceeded CPI inflation) and can have important implications on the real welfare of households across the income or expenditure distribution.

Most relevant for our study is the impact of this differential inflation rates across the income distribution on the evolution of real income inequality: theoretically, with an appropriate pattern of household inflation rates, it is possible to observe a decline in nominal inequality even though the real income or expenditure distribution may have become more unequal. To assess this effect, we use our decile-specific inflation rates to deflate nominal incomes of each decile.²⁴ We then compute the Gini index for the nominal distribution of income (*gini nominal*) as well as the Gini index for the decile-specific deflated incomes (*gini deflated*).²⁵

²¹ In our effort to construct comparable consumption baskets across countries, the specific categories may differ in the exact list of products included to those of statistical agencies. As such, our inflation rates are not directly comparable, and in fact differ, from official inflation rates.

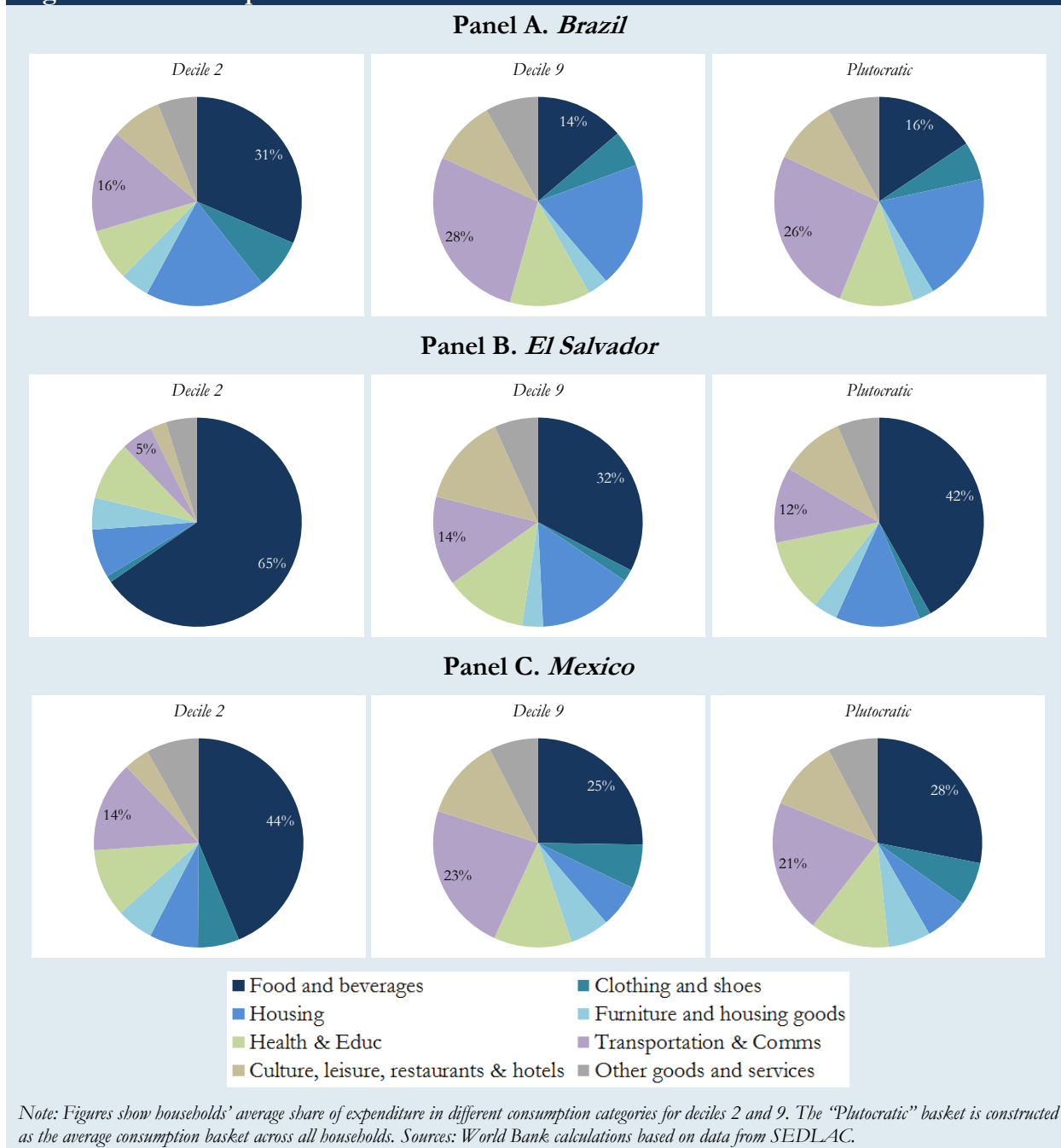
²² In our effort to construct comparable consumption baskets across countries, the specific categories may differ in the exact list of products included to those of statistical agencies. As such, our inflation rates are not directly comparable, and in fact differ, from official inflation rates.

²³ Due to data limitations on product-specific inflation rates, the actual years under consideration vary by country.

²⁴ We construct our measure of deciles using the distribution of nominal income. We then apply the specific inflation rates to these groups.

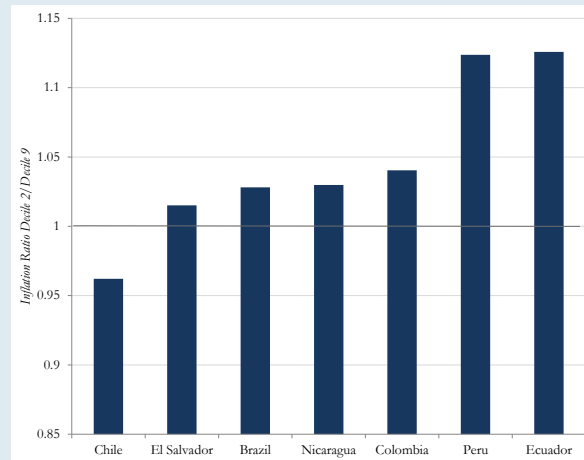
²⁵ We should note some caveats to our analysis. First, although we made an effort to harmonize and make consumption baskets comparable across countries, there are differences in the specific set of products included in each consumption category. Moreover, these definitions differ from the definitions used by national statistical agencies; as a result, our inflation rates may differ and are not strictly comparable with official inflation rates. Finally, we calculate the consumption basket for each decile using one expenditure survey – and we use these weights to calculate inflation rates for several years. Although consumption baskets do not change significantly over time, by holding the consumption basket constant over time, we are ignoring substitution effects between products, and substitution effects over quality – the so-called quality change bias. This issue has been explored empirically for the U.S. by Hagemann (1982), who finds that the top income

Figure 2.9. Consumption Baskets across the Income Distribution



decile had experienced lower inflation than the rest; by contrast, Garner, Johnson and Kokoski (1996) find very little difference in the inflation faced by poor households and by the general population. For the U.K., Crawford and Smith (2002) find that poorer households experienced significantly lower average rates of inflation than rich households over 1976-2000. Closer to our study, Goñi, López and Servén (2006) study the effects of differential inflation on the income distribution for nine episodes from four Latin American countries (Brazil, Colombia, Mexico, and Peru) and find that standard CPI inflation typically reflects the inflation faced by a rich consumer located in the 80 to 90 percentile of the distribution of consumption expenditure. Additionally, for their time period (late 80's and 90's), they found that the inflation faced by richer households was higher than for poorer households, and hence the increases in nominal inequality generally exceeded the actual changes in real inequality.

Figure 2.10. Ratio of Inflation Rates across the Income Distribution

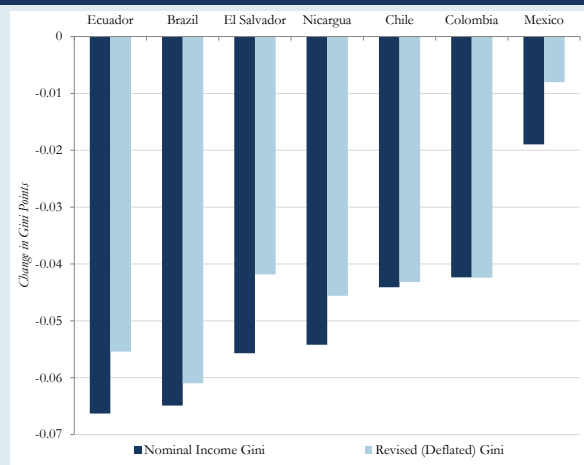


Notes: The figure depicts the ratio of the annualized inflation rate faced by households in decile 2 and decile 9. The annualized inflation rates are calculated using the following years: Brazil 2001-2011, Chile 2000-2011, Colombia 2001-2012, Ecuador 2006-2012, Mexico 2002-2012, Nicaragua 2005-2009, and El Salvador-2012. Sources: World Bank calculations based on data from SEDLAC and National Accounts.

Indeed, revising the Gini with decile-specific rates of inflation reveals that the fall in inequality observed during the 2000s may have been smaller than previously measured. In Figure 2.11 we compare the decline (in absolute terms) of the Gini of nominal income and that of the revised (deflated) Gini. In all cases, the equity gain narrows when we account for differential inflation rates, although the results clearly differ by country. For Brazil, Chile and Colombia the differences are small, while for Ecuador, El Salvador, Mexico, and Nicaragua they are significant (1.4 Gini points for El Salvador, 1.1 for Ecuador and Mexico).

Although accounting for differential inflation rates does not overturn the key message of previous studies (inequality declined during LAC’s ‘Golden Decade’), it does highlight the importance of

Figure 2.11. Change in Nominal Gini and Deflated Gini in the 2000’s



Notes: The Revised (Deflated) Gini is obtained after deflating households’ incomes with a different price index for each decile. The price index is constructed using average households’ consumption baskets in each decile and product specific inflation rates. The initial and final years for each country are: Brazil 2001-2011, Chile 2000-2011, Colombia 2001-2012, Ecuador 2006-2012, Mexico 2002-2012, Nicaragua 2005-2009, and El Salvador 2000-2012. Sources: World Bank calculations based on data from SEDLAC and National Accounts.

considering measures of real income as opposed to the traditional nominal income inequality, particularly in times of persistent real shocks that introduce long-standing relative price changes.

Fear of Devaluation – Distributional Impacts

Two specific concerns are often invoked behind the “fear of depreciation” – that characterized many emerging economies in the 90s. The first is linked to adverse balance sheets effects arising from the presence of currency mismatches (most notably, private and public foreign currency denominated debt, including dollarization of domestic deposits and loans). The second is the concern with the pass-through of a more depreciated exchange rate to inflation (Calvo and Reinhart (2002)).

As we have argued in previous reports,²⁶ this situation has changed dramatically in the 2000s. Two important structural changes in the region (de-dollarization and low inflation) have rendered these two fears far less relevant in recent years, changing the scope for the exchange rate to play its countercyclical role as in a traditional Mundell-Fleming world for the first time in decades.

In this section we re-explore the fear that relates to the potential inflationary consequences of a sudden exchange rate correction or, more generally, the pass-through from exchange rates into consumer prices. In the context of Latin American economies, this pass-through was due in the past, alternatively, to the impact of exchange rate changes in import prices (the traditional channel usually studied in the literature) as well as to implicit or explicit indexation to the exchange rate in moderate to higher inflation environments. But the gradual disappearance of price indexation and the growing credibility of central banks (particularly those embracing inflation targeting) have caused the pass-through to decline in the 2000s, emulating what was a stylized fact also for advanced economies a decade earlier.

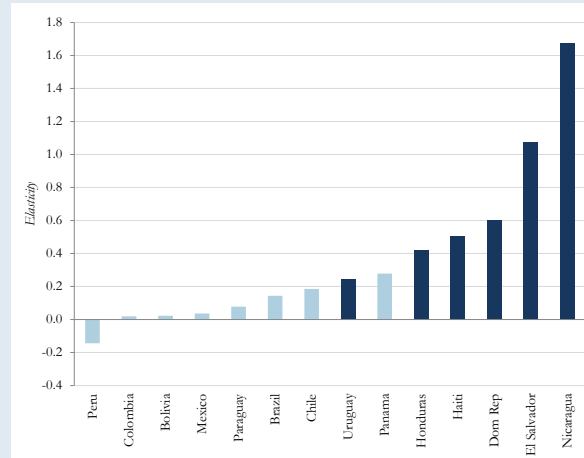
Pass-through for LAC, with the exception of some small Central American economies, has systematically fallen in the 2000s throughout the region and remains low. Figure 2.12 shows the results of a country-by-country regression of CPI on the nominal effective exchange rate (NEER), the HP-filtered output gap, and the lagged dependent variable, all in log changes, for our country sample. The results of this exercise are consistent with those of Mihaljek and Klau (2008) and in Ghosh (2013) – pass-through in LAC declined significantly in the last decade and lies now at very low levels.

Associated with the fear that depreciation leads to higher levels of inflation is the concern that the pass-through may be higher in products that represent a higher share of the expenditure of poorer households, therefore disproportionately affecting the poor. We explore this possibility by replicating the exercise described above but now with decile-specific inflation.

The evidence suggests that in fact depreciation may affect the inflation faced by households in lower deciles more than households in richer deciles. Figure 2.13 plots the pass-through estimates of decile-by-decile and country-by-country regressions of decile-specific price indices on the nominal exchange rate, the HP-filtered output gap, and the lagged dependent variable, all in log changes. Panel A shows that for all countries (except Colombia) where the pass-through is low, there is a clear regressive tendency, that is, the inflation rates of poorer households are higher than for richer

²⁶ See Latin America’s Deceleration and the Exchange Rate Buffer – October 2013

Figure 2.12. Pass-through Estimates Across Countries



Notes: The figure depicts coefficients estimated from a regression of the log change in the Consumer Price Index with the log change in the Nominal Effective Exchange Rate. We include the output gap and the lagged dependent variable as controls. Dark colors reflect statistically significant coefficients at the 95% level. Lighter shades reflect coefficients not statistically different from zero. Sources: World Bank calculations based on data from WDI and IFS.

deciles. Panel B, shows that this is also true where pass-through rates are higher, although the pattern is less clear for the case of Nicaragua. These results suggest that even though depreciation generally does not translate into significantly higher rates of inflation, there may be distributional effects that should be considered by policymakers.

It is straightforward to illustrate this bias in a more systematic way, by showing how deviation of the inflation-adjusted Gini correlate with external drivers of inflation such as the exchange rate or food inflation. We do that in two steps: we first regress the adjusted Gini on the regular Gini to estimate the deviation, controlling for country effects as before. Next, we regress the residuals from the previous equation on the real effective exchange rate and on an international food inflation index.²⁷ The links have expected sign and are statistically significant in both cases (Table 2.4): the difference between inflation-adjusted and conventional Gini coefficients increases with food inflation and decreases with appreciations. In particular, the overestimation of the inequality gains during the recent commodity was likely offset by exchange rate flexibility and appreciation in commodity exporters. No surprise then that the larger differences between the two Ginis arise in non-commodity exporters like Mexico, or formally or financially dollarized economies like Ecuador, El Salvador, or Nicaragua.

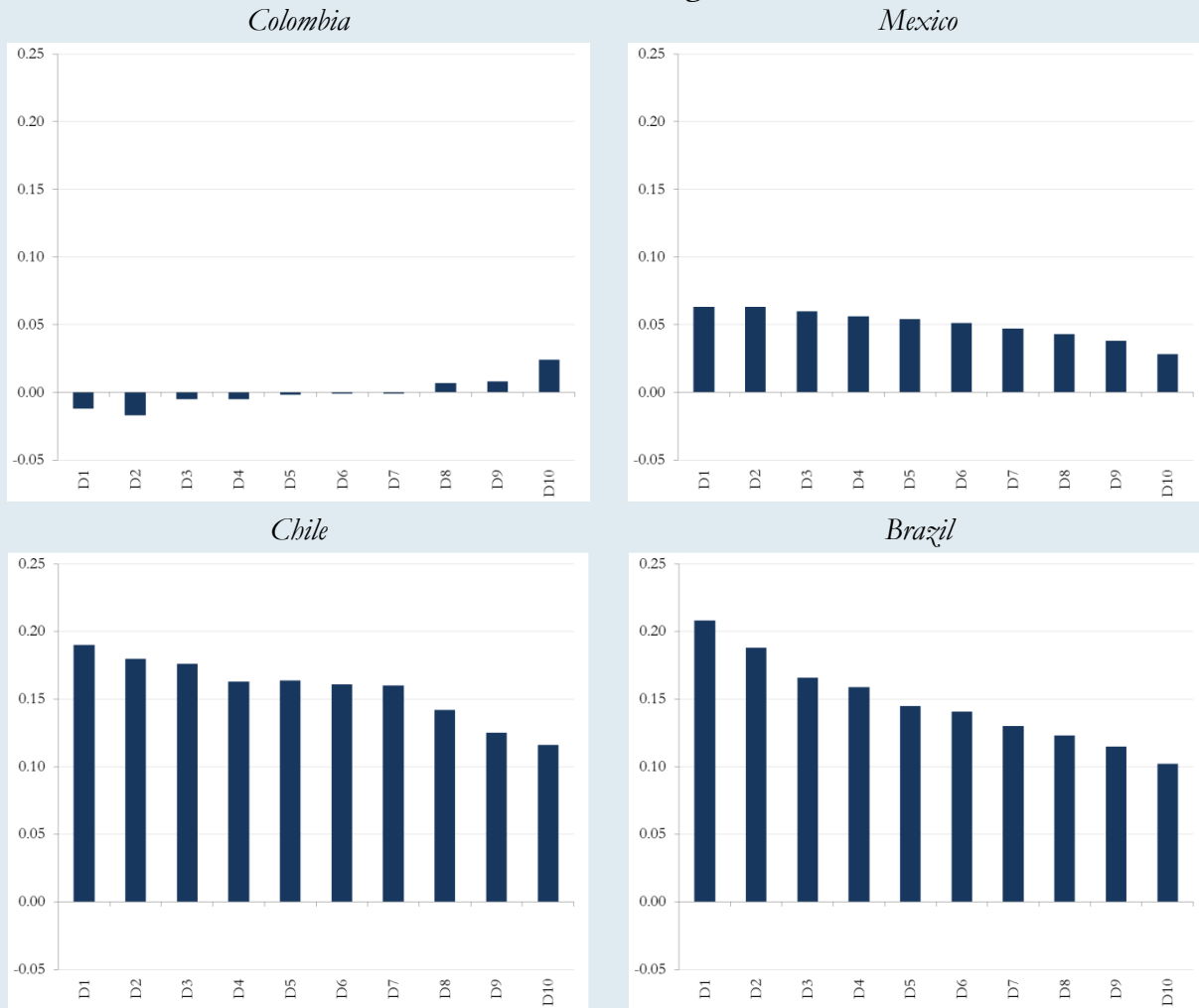
Inequality in the Down Cycle: Will the Gains Hold?

As noted, there is no precedent: LAC “cycles” were mostly driven in the past by sharp output drops triggered by episodes of financial stress (banking, currency and debt crises) followed by sharp recoveries, a pattern that, we argue, is far from the smoother, more traditional fluctuations that we witnessed in the 2000s. And, simplifying, we could say that we have seen only about three fourths of the latter, as the current protracted cycle, briefly interrupted by the global crisis, is only recently entering its weaker phase. As a result, the past only offers imperfect clues to answer the question of

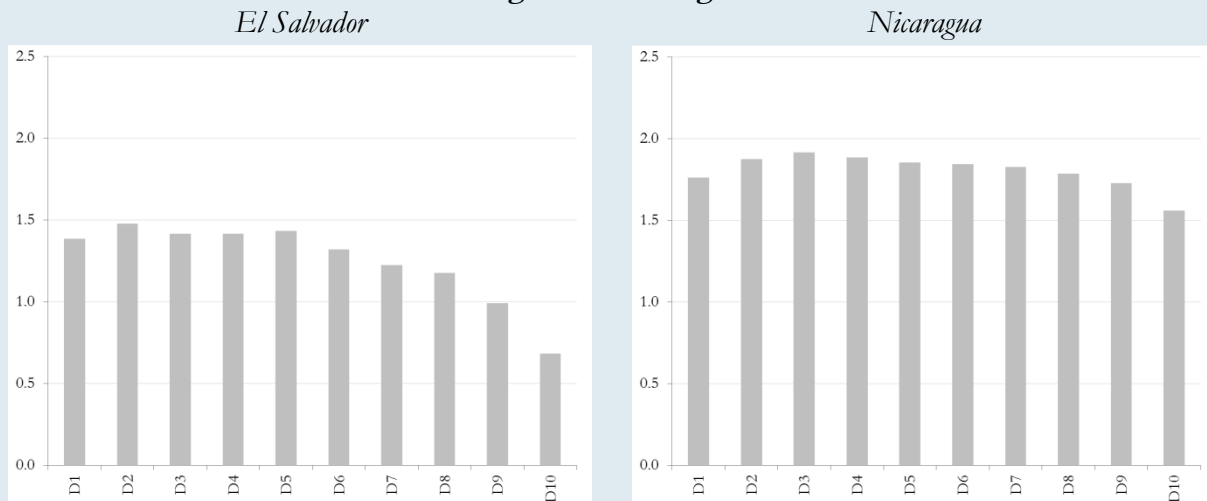
²⁷ More formally, we run $gini_{i,t} = \alpha + \beta \text{ adjusted } gini_{i,t} + \varepsilon_t + \mu_{i,t}$, extract the residuals and estimate $\mu'_{i,t} = \gamma + \delta REER_{i,t} + \lambda \text{ food inflation}_t + \eta_i + v_{i,t}$.

Figure 2.13. Pass-Through Estimates within Country by Decile

Panel A. Low Pass-through Countries



Panel B. High Pass-through Countries



Notes: The figure depicts coefficients estimated from a regression of the log change in the decile-specific Price Index against the log change in the Nominal Effective Exchange Rate. Output gap and lagged dependent variable included as controls. Sources: National Statistical Offices and SEDLAC.

Table 2.4 Exchange Rate, Food Prices and Inequality

	Deflated Gini LAC (1)	Deflated Gini LAC (2)	Residuals LAC (3)	Residuals FE LAC (4)
Gini Index	0.889*** (0.010)	0.900*** (0.018)		
REER	-0.011*** (0.003)		-0.016*** (0.002)	-0.016*** (0.004)
NEER	-1.60e-05 (9.99e-05)			
Food Price Index			0.005** (0.001)	0.005** (0.002)
Constant	6.743*** (1.016)	5.828*** (1.010)	0.831*** (0.216)	0.541*** (0.193)
Observations	51	51	51	51
R-squared	0.987	0.996	0.266	0.266

Notes: Residuals regressed in columns (3) and (4) come from residuals in the regression shown in column (2). Column (4) includes fixed effects. REER is the Real Effective Exchange Rate. NEER is the Nominal Effective Exchange Rate. Countries included in the regressions are Brazil, Chile, Colombia, Ecuador, El Salvador, Mexico, Nicaragua and Peru. * denotes statistical significance at 10%; ** at 5%; *** at 1%. Standard errors in parenthesis. Sources: SEDLAC, IFS, UN FAO and National Accounts.

the section. With that caveat in mind, there are a few relevant findings in the previous sections that can guide our prognosis of inequality as we move forward.

Perhaps the most obvious, and empirically robust, macroeconomic driver of inequality is the employment ratio. This should not be surprising: in developing economies with fragmentary social safety nets and, in particular, limited unemployment insurance and concentrated access to financial savings, being employed may mark the difference between a middle-class income and a subsistence government transfer. A casual inspection of the country specific GICs in the early 2000s, which were in many cases associated with initially low employment ratios, shows how a considerable portion of the improvement in the Gini index can be accounted for by the fast income growth of the lower tail.

The benign influence of employment contrasts with the finding that higher wages tend to correlate positively with inequality. While the result deserves a more careful, country and period-specific exploration, one could in principle relate it with a quantity-prices trade off in the adjustment of labor markets. More precisely, absent a safety net and from an equity perspective, the results appear to favor employment stability over wage stability as the optimal response to cyclical demand fluctuations. Or, from a macroeconomic policy standpoint, exchange rate flexibility: to the extent that employment is one of the main channels, if not the key one, through which the cycle influences income distribution, and that it is often critically exposed to an economic slowdown, a more rigid exchange rate regime would place the burden of adjustment more heavily on employment, with negative equity dividends.

Does exchange rate flexibility mean lower inflation-adjusted wages? Probably. Indeed, because their consumption basket is more tradable (think, for example, of the greater incidence of food), a real devaluation hits more heavily low income households, as we showed above. However, this effect is likely to be largely offset by the ongoing decline in commodities and, in particular, international food inflation, reversing the pro-rich bias of inflation in the past decade. The final score will depend, of course, on the relative corrections of commodities and the exchange rate. But, at any rate, the negative effects of lower real wages in the down cycle under a flexible exchange rate regime should be weighed

against the cost in terms of unemployment (or its close substitutes: underemployment and informality).

The future incidence of the other drivers of LAC's inequality decline are more difficult to fathom. As we mentioned, the skill supply effect that drove down the premiums is likely to taper off, particularly at the tertiary level. Moreover, if the region finally finds its way to a development profile that prioritizes knowledge content, we may see a technology-driven widening of the premium that unwinds some of the equity gains of the past –particularly if the broadening of education coverage does not go hand in hand with advances in the quality of primary and secondary education.

Also, while it failed to show a significant effect in our tests, fiscal spending may have played an important role in countries like Argentina or Brazil where the broadening of pay-as-you-go and largely non-contributory pensions contributed substantially to the decline in inequality. Again, the prognosis is not good, as further broadening is unlikely.

What does this tell us about possible policy responses? While policy cannot be tailored to specify needs disregarding the full picture, there are indeed margins that may help cushion the inequality in the low growth years, or even foster further gains, while keeping with ongoing policies.

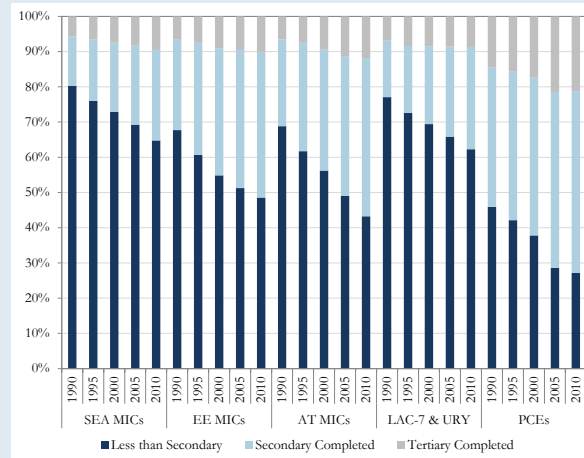
For example, there is still room to go in the secondary school enrollment in the region, which today largely lags other middle income countries (Figure 2.14). The growing importance of education as a policy priority in the region –which, crucially, is also gaining momentum among voters– makes it more likely that we see progress on this front, both by allocating more resources and, in response to underwhelming scores in international tests, by rising education standards.²⁸ Whether this depresses or enhances the education premium and, in turn, inequality is not a priori obvious, as it depends on a number of supply and demand factors, on whether the new entrants to secondary school are correlated with their initial income and, more formally, on the inequality measure of choice. But one would expect that bringing an important portion of the low income population up in the education ladder should generally improve the distribution of labor income.

Similarly, as we highlighted in our Fall 2013 Macro Report, more flexible exchange rates are one of the reasons why the region traded the pain of financial crisis and sharp output drops for the smoother fluctuations of conventional cycles. Continuity in the move towards managed exchange rate flexibility in the region would be a plus: a countercyclical depreciation of the exchange rate can help mitigate both the weaker domestic demand and its costs in terms of lower employment.

The monetary-fiscal mix, by contrast, is more difficult to evaluate from the equity standpoint. While one would expect externally-financed fiscal spending increases in times of faltering private demand, LAC's capacity to borrow counter cyclically is yet to be tested –and, in many countries with steep sovereign credit risks or significant foreign-denominated debt ratios, it may not even be an appealing proposition. In those cases, a slowdown may force policy makers to change the composition of fiscal spending, cutting down on already low investment ratios by crowding in private sector funds, to attenuate the adjustment of pension benefits and public sector payrolls. The way in which fiscal

²⁸ It has to be noted that the impact of quality, perhaps the most important margin in the region at this point, on inequality is more ambiguous.

Figure 2.14. Education Coverage Across Regions



Notes: LAC-7 & Uruguay: Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay, and Venezuela. SEA MICs: Indonesia, Malaysia, Philippines and Thailand. EE MICs: Estonia, Hungary, Poland, and Slovakia. PCEs: Australia, Canada, New Zealand, Norway, and Sweden. AT MICs: South Korea, Singapore, and Thailand. Source: Barro-Lee (2010).

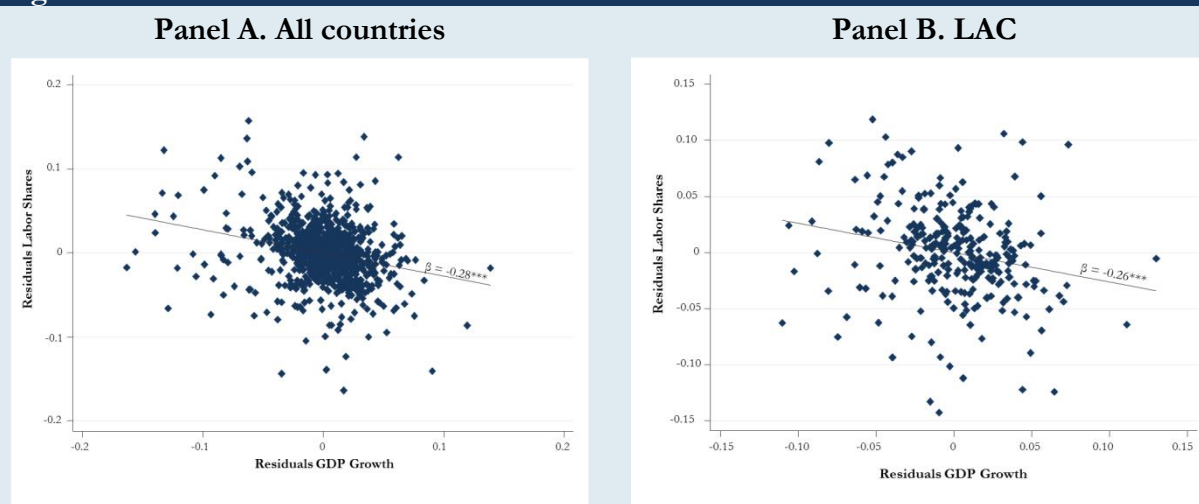
restraint is achieved in a sustainable and equitable way is today the key fiscal challenge faced by the region.

In turn, the margin for a looser monetary policies would depend on the net inflationary effect of a more depreciated exchange rate, on the one hand, and the combination of feeble demand and a decline in the price of tradables (especially, food inflation), on the other. Countries with inflation persistently close to the ceiling of the central bank comfort zone may have little firepower on this front. Unfortunately, the channels through which monetary policy affects inequality (inflation, capital rents) are too complex and under researched to jump to policy conclusions.

Although most of our analysis was conducted based on survey data, we showed that the inclusion of data from tax records to correct the Ginis from the potential underreporting and lack of response of top earners does not change much the inequality story in tranquil Colombia, although it painted a more pro-rich development in crisis Argentina. However, even if, as we argued in past reports in this series, the conditions for the home brewed financial in the region are no longer there, there remains the question of the effect of returns to capital on the divide between the very rich and the rest. Assuming that the relative outperformance of top earners lies in their capital gains, the latter will be determined by three factors: i) the realized returns to capital; ii) the capital share (or their complement, the labor share) in total output, and iii) the concentration of capital (and therefore, of its rents).

The first factor reflects the total return on a portfolio that conflates fixed and variable income securities (e.g., bond and stocks) as well as real assets (e.g., real estate) and, given current forecasts, is likely to post lower numbers than in the 2000s. While we are far from fully understanding the determinants of the evolution of labor shares, a simple panel test of labor shares against growth (controlling for time-varying factors with year dummies) shows a negative link between labor shares and growth (Figures 2.15, Panels A. and B.). Judging from these results, labor shares may stabilize or even rebound with the slowdown:

Figure 2.15. Added Variable Plots: Labor Shares and Growth



Notes: *** denotes statistical significance at 1%. Countries included in Panel A are Argentina, Australia, Austria, Belgium, Bolivia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Croatia, Czech Republic, Denmark, Dominican Republic, Ecuador, Estonia, Finland, France, Germany, Greece, Guatemala, Honduras, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Jamaica, Japan, Korea, Lithuania, Luxembourg, Malaysia, Mexico, Netherlands, New Zealand, Norway, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Slovak Republic, Slovenia, South Africa, Spain, Suriname, Sweden, Switzerland, Thailand, Trinidad and Tobago, Turkey, United Kingdom, United States, Uruguay and Venezuela. Countries in Panel B include Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Honduras, Jamaica, Mexico, Panama, Peru, Paraguay, Suriname, Trinidad and Tobago, Uruguay and Venezuela. Sources: Penn World Table and WDI.

Finally, we have no way to measure the concentration of capital in the region, but we can speculate. As we noted in our Spring 2013 Report, the significant reduction of income inequality throughout the region begs the question about whether it translated into a reduction in wealth inequality. In other words, how much of the relative rise in income of the low and middle classes was saved for the rainy days (or for retirement) or invested in the children's education, as opposed to consumed or, in the worst case, leveraged through the banking system to finance an even greater consumption (that is, to spend in advance). With a few exceptions in the region, consumption of durables (TV sets, cars) broadened at the expense of house ownership, the quintessential savings vehicle of the middle classes.²⁹

If this prior is true, a key policy response relates to financial inclusion in a very specific way: making the financial sector a better saving/investment agent for low- and middle-income households. More precisely, creating and promoting savings instruments that are simple enough to attract unsophisticated savers and can shield them from inflation (or from the urge to consume for lack of better options). Or, alternatively, financing access to the paradigmatic saving instrument of the middle classes: real estate, by developing mortgage markets.

Overall, the near future does not bode well for LAC's equity gains, which have already started to show signs of exhaustion. But, far from a full reversal, we expect a plateau, as many of the key drivers are structural or will unwind to levels that are still much higher than the initial points. Moreover, policies

²⁹ Is it possible, we asked in the Spring 2013 Report, that because middle and low income household income gains are largely consumed, the progressive income redistribution ultimately tend to accrue to corporate profitability (and corporate shareholders) leading to a regressive redistribution of wealth? Unfortunately, not only is there virtually no available wealth data but rents are generally imperfectly captured by surveys (and captured by tax records only for a small rich minority) so changes in the distribution of capital may go undetected.

already underway (exchange rate flexibility, education efforts) and policies easily achievable (the customization of financial services for the low and middle income saver) can push gains further even in this unsupportive context. As a result, the answer to the question in this section is a qualified yes, provided policymakers understand in time that the new context requires new policy responses. History only repeats itself in the absence of policies.

Appendix

Figure A.I. Growth Incidence Curve for LAC Countries

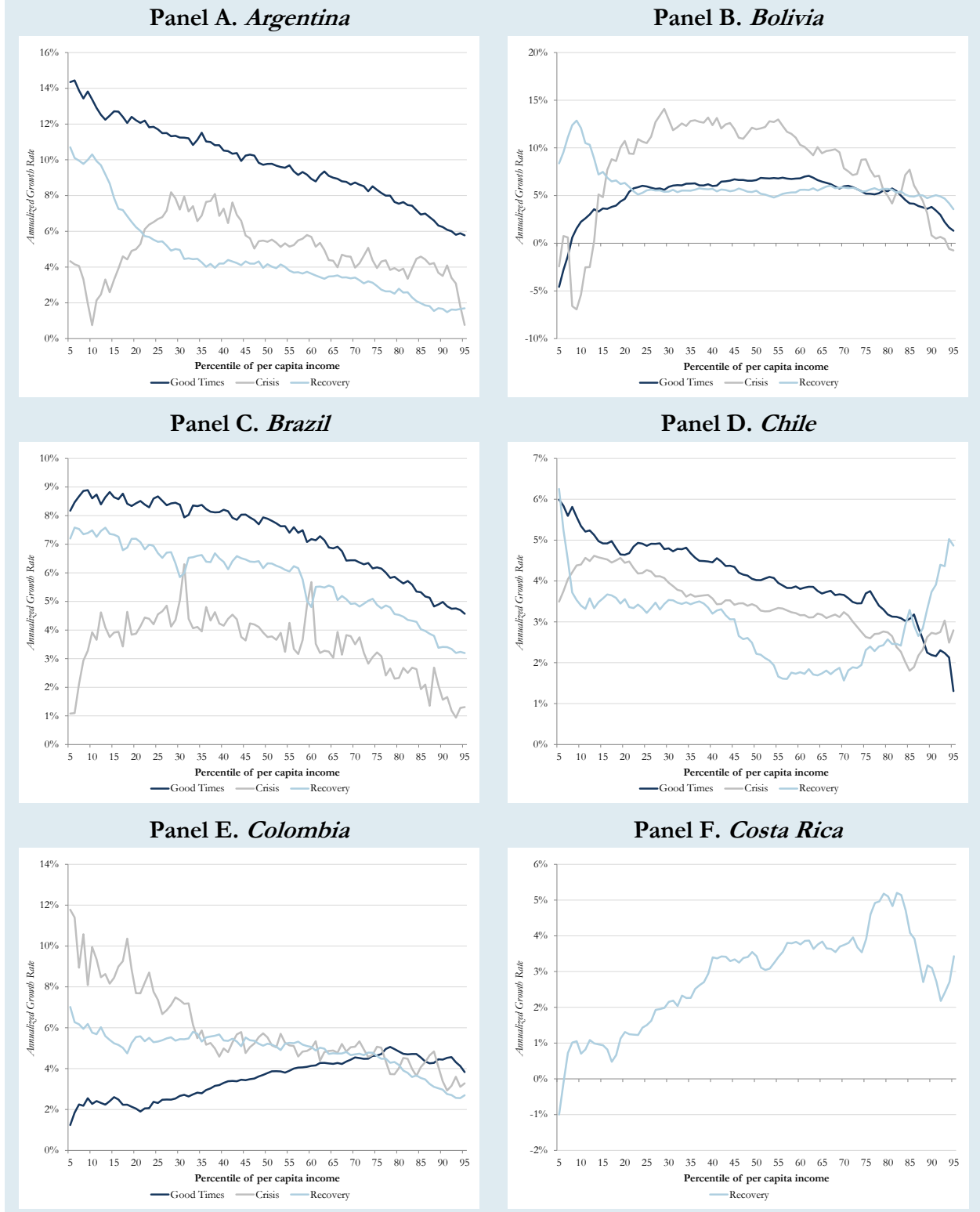
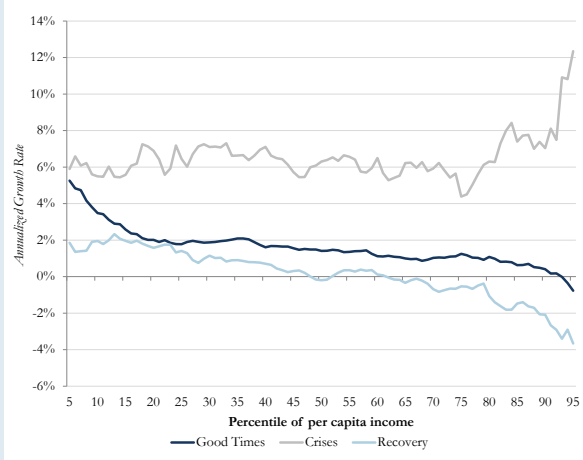
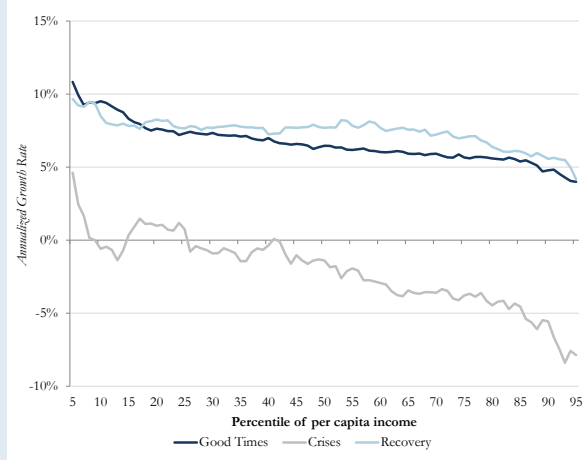


Figure A.I. (cont) Growth Incidence Curve for LAC Countries

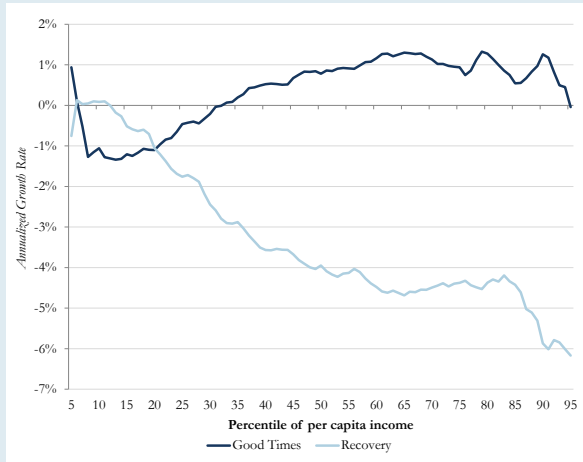
Panel G. Dominican Republic



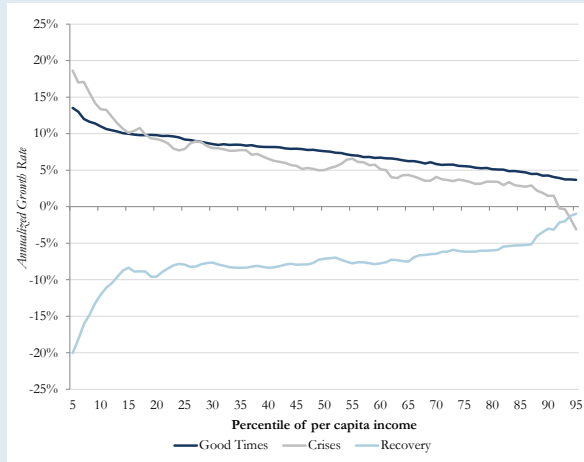
Panel H. Ecuador



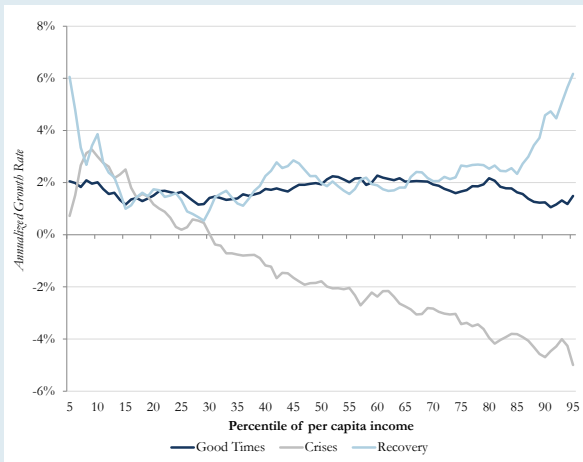
Panel I. Guatemala



Panel J. Honduras



Panel K. Mexico



Panel L. Nicaragua

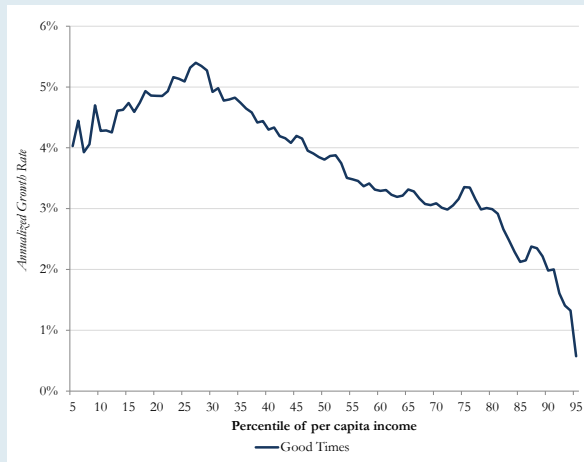
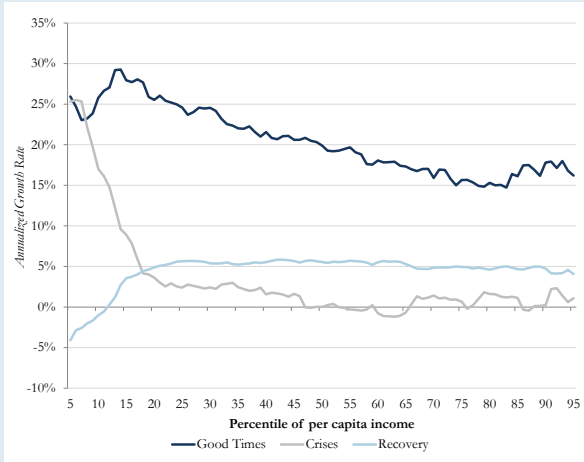
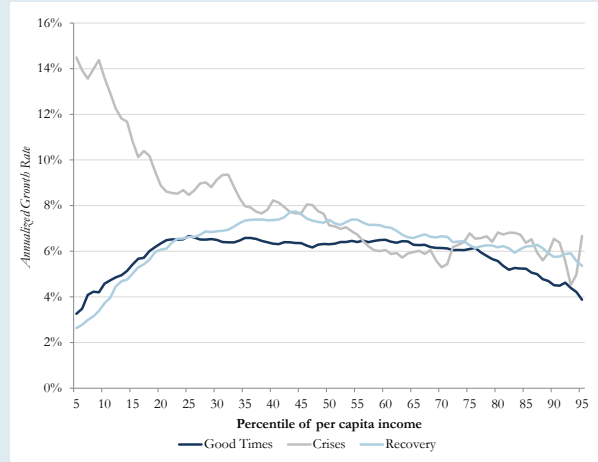


Figure A.I. (cont) Growth Incidence Curve for LAC Countries

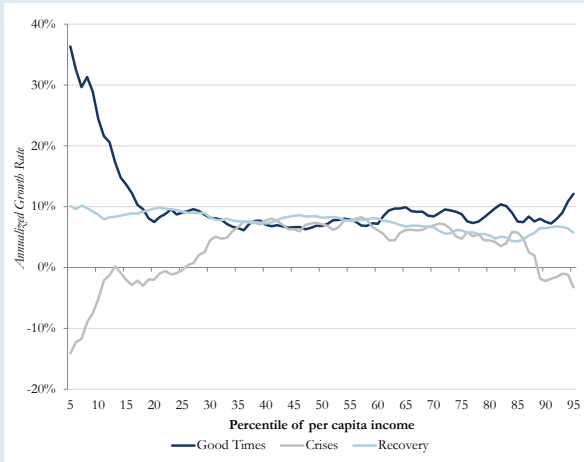
Panel M. Panama



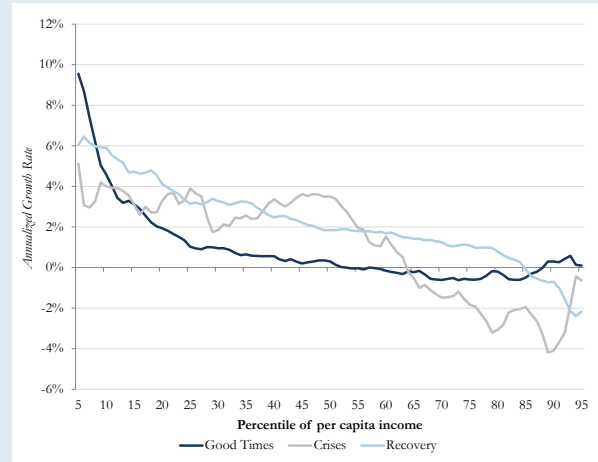
Panel N. Peru



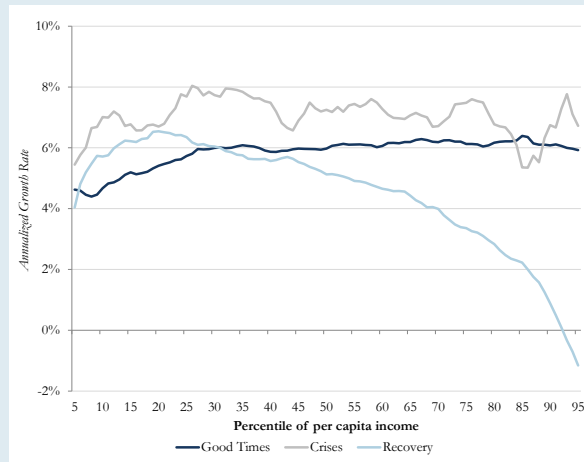
Panel O. Paraguay



Panel P. El Salvador

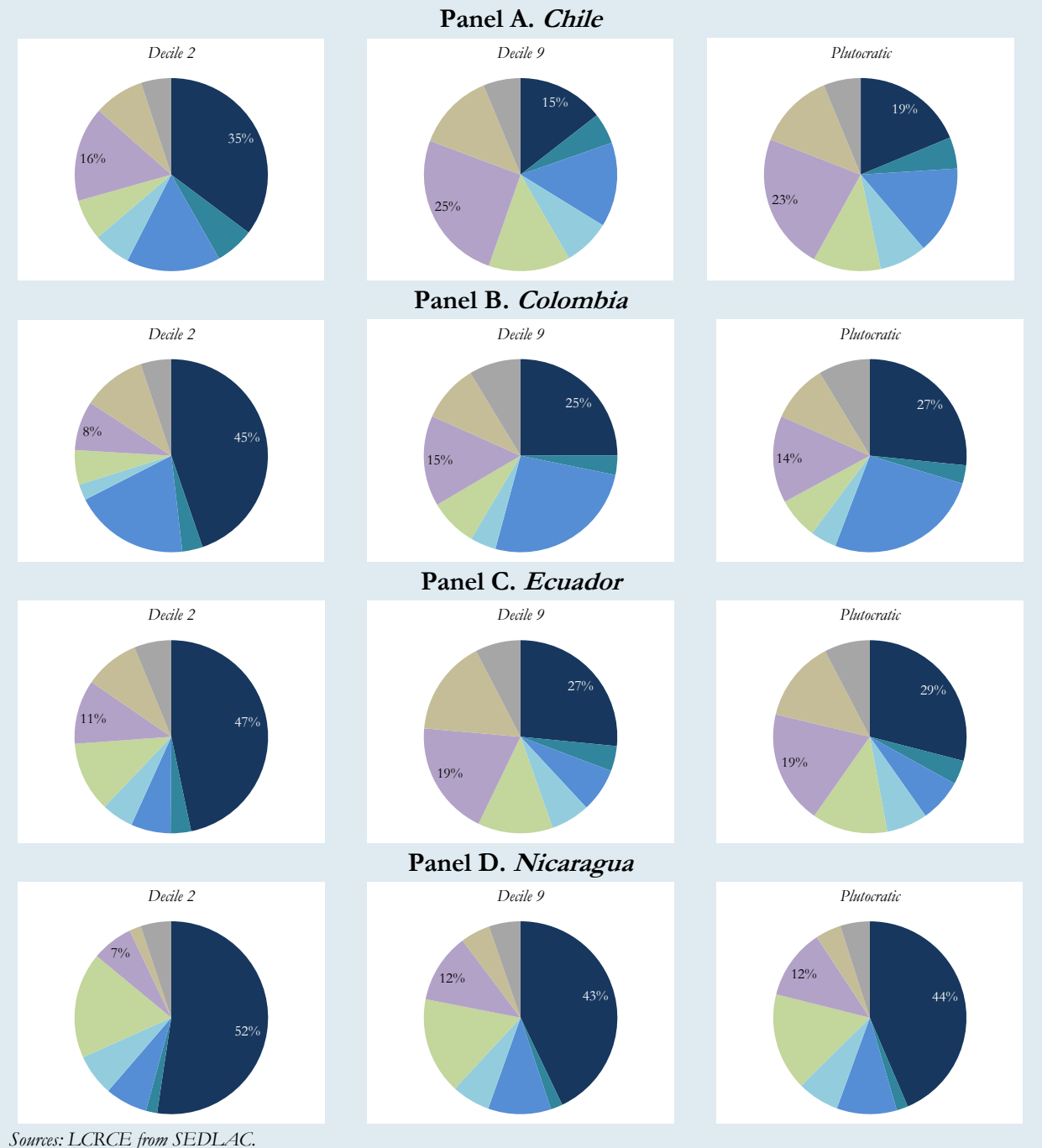


Panel Q. Uruguay



Sources: LCRCE from SEDLAC.

Figure A.II. Consumption Baskets Across the Income Distribution



Sources: LCRCE from SEDLAC.

References

- Aguion, P., E. Caroli and C. Garcia-Penalosa (1999). "Inequality and Economic Growth: The perspective of New Growth Theories," *Journal of Economic Literature*, Vol. 37(4), pp. 1615-1660.
- Aghion, P. and Howitt, P. (1977). "Endogenous Economic Growth," MIT Press, Cambridge, USA.
- Alesina, A. and Dani, R. (1994). "Distributive Politics and Economic Growth," *Quarterly Journal of Economics*, Vol. 109, pp. 465-489.
- Alvaredo, F. (2011). "A note on the relationship between top income shares and the Gini coefficient," *Economic Letters*, Vol. 110, pp. 274-277.
- Alvaredo, F., T. Atkinson, T. Piketty and E. Saez. (2014) "The World Top Incomes Database," <http://topincomes.g-mond.parisschoolofeconomics.eu/>.
- Alvaredo, F. and Londoño, J. (2013). "High incomes and personal taxation in a developing economy: Colombia 1993-2010," CEQ Working Paper, No. 12.
- Atkinson, A. (2007). "Measuring Top Incomes: Methodological Issues," In Atkinson and Piketty (Eds.). *Top incomes over the twentieth century: A contrast between continental European and English-speaking countries*, Oxford University Press, pp. 18-42.
- Atkinson, A. and Piketty, T. (2007). "Top Incomes over the Twentieth Century: A Contrast Between Continental European and English-Speaking Countries," Oxford: Oxford University Press.
- Banerjee, A. and Duflo, E. (2003). "Inequality and Growth: What Can the Data Say?," *Journal of Economic Growth*, Vol. 8, pp. 267-299.
- Banerjee, A. and Newman, A. (1993). "Occupational Choice and the Process of Development," *Journal of Political Economy*, Vol. 101(2), pp. 274-298.
- Barro, R. (2000). "Inequality and Growth in a Panel of Countries," *Journal of Economic Growth*, Vol. 5, pp. 5-32.
- Barro, R. and J.-W. Lee (2010). "Barro-Lee Educational Attainment Dataset," <http://www.barrolee.com/>
- Basu, K. (2006). "Globalization, Poverty, and Inequality: What is the Relationship? What Can Be Done?," *World Development*, Vol. 34(8).
- Birdsall, N. and Szekeley, M. (2003). "Bootstraps, not band-aids: poverty, equity and social policy," Center for Global Development Working Papers, No. 24.
- Bourguignon, F. (1981). "Pareto-Superiority of Uegalitarian Equilibria in Stiglitz' Model of Wealth Distribution with Convex Savings Function," *Econometrica*, Vol. 49(6), pp. 1469-1475.
- Burdin, G. (2014). "Are Worker-Managed Firms More Likely to Fail Than Conventional Enterprises? Evidence from Uruguay," *Industrial And Labor Relations Review*, Vol. 67(1), pp. 202-238.
- Calvo, G. and Reinhart, C. (2002). "Fear of floating," *Quarterly Journal of Economics*, Vol. 117, pp. 379-408.
- Cord, L., O. Barriga, L. Lucchetti, C. Rodriguez-Castelan, L. Sousa, D. Valderrama (2014) "Inequality Stagnation in Latin America after the Global Financial Crisis of 2007-09". Mimeo, World Bank.
- Crawford, I. and Smith, Z. (2002). "Distributional Aspects of Inflation," The Institute for Fiscal Studies, Commentary No. 90.
- De la Torre, A., J. Messina and S. Pienknagura (2012). "The Labor Market Story Behind Latin America's Transformation: LAC Semiannual Report, October 2012," World Bank Other Operational Studies, No 11884, The World Bank.

- De la Torre, A., S. Pienknagura and E. Levy Yeyati (2013). “Latin America and the Caribbean as Tailwinds Recede: In Search of Higher Growth, LAC Semiannual Report, April 2013,” World Bank Other Operational Studies, No. 13266, The World Bank.
- Diaz-Bazan, T. (2014). “Measuring Inequality From Top to Bottom,” Mimeo (Forthcoming).
- Dollar, D. and Kraay, A. (2002). “Growth is Good for the Poor,” *Journal of Economic Growth*, Vol. 7, pp. 195-225.
- Feenstra, R., R. Inklaar and P. Timmer (2013). “The Next Generation of the Penn World Table,” Penn World Table, <http://www.ggd.net/pwt>.
- Ferreira, F., and M. Lugo. (2013) “Multidimensional poverty analysis: Looking for a middle ground”. The World Bank Research Observer.
- Forbes, K. (2000). “A Reassessment of the Relationship between Inequality and Growth,” *American Economic Review*, Vol. 90(4), 869–887.
- Galor, O. and Tsiddon, D. (1997). “Technological Progress, Mobility, and Economic growth,” *The American Economic Review*, Vol. 87, pp. 363-382.
- Garner, T., D. Johnson and M. Kokoski (1996). “An Experimental Consumer Price Index for the Poor,” *Monthly Labor Review*, Vol. 119, pp. 32-42.
- Gasparini, L., G. Cruces and L. Tornarolli (2011). “Recent Trends in Income Inequality in Latin America,” *Economia*, 11(2), 147-190.
- Ghosh, A. (2013). “Exchange Rate pass-through, Macro Fundamentals and Regime Choice in Latin America,” *Journal of Macroeconomics*, Vol. 35, pp. 163–171.
- Gollin, Douglas. (2002). “Getting income shares right”. *Journal of Political Economy*, Vol. 110(2), pp. 458-474.
- Goñi, E., H. López and L. Servén (2006). “Getting Real About Inequality: Evidence from Brazil, Colombia, Mexico, and Peru,” World Bank Policy Research Working Paper, No. 3815, The World Bank.
- Hagemann, R. (1982). “The variability of inflation rates across household types,” *Journal of Money, Credit and Banking*, Vol. 14, pp. 494-510.
- Helpman, E. (1997). “General Purpose Technologies and Economic Growth,” MIT Press, Cambridge, USA.
- Inklaar, R., and M. Timmer. (2013) “The relative price of services”. *Review of Income and Wealth*.
- Kanbur, R. and Spence, M. (2010). “Equity and Growth in a Globalizing World,” The World Bank.
- Karabarbounis, L. and Neiman, B. (2014). “The Global Decline of the Labor Share,” *The Quarterly Journal of Economics*, Vol. 129(1), pp. 61-103.
- Kuznets, S. (1955). “Economic Growth and Income Inequality,” *The American Economic Review*, Vol. 45, pp. 1-28.
- Lerman, R. and Yitzhaki, S. (1985). “Income inequality effects by income source: a new approach and applications to the United States,” *The Review of Economics and Statistics*, Vol. 67(1), pp. 151-156.
- Levy Yeyati, E. and S. Pienknagura. (2014). “Wage compression and the decline in inequality in Latin America: Good or bad?”. VOX Research-based policy analysis and commentary from leading economists, <http://www.voxeu.org/article/wage-compression-and-falling-latin-american-inequality>.
- Li, H. and Zou, H. (1998). “Income Inequality is not Harmful for Growth: Theory and Evidence,” *Review of Development Economics*, Vol. 2, pp.318–334.
- Lustig, N. (2013). “How Committed to Equity are Latin American Governments? The Impact of Social Spending and Taxes on Inequality and Poverty in Latin America: Argentina, Bolivia, Brazil, Mexico, Peru and Uruguay,” *Commitment to Equity, The Inter-American Dialogue*, Tulane University.

- Lustig, N. and Higgins, S. (2013). "Commitment to Equity Assessment (CEQ) Handbook: Estimating the Incidence of Social Spending, Subsidies, and Taxes," Commitment to Equity, Tulane University, The Inter-American Dialogue, CIPR.
- Lustig, N. and Lopez, C. (2010). "Declining Latin America inequality: Market forces or state action?," VOX Research-based policy analysis and commentary from leading economists, <http://www.voxeu.org/article/declining-latin-american-inequality-market-forces-or-state-action>.
- Mihaljek, D. and Klau, M. (2008). "Exchange Rate Pass Through in Emerging Market Economies: What has Changed and Why," In Bank of International Settlements, Transmission Mechanisms for Monetary Policy in Emerging Market Economies.
- Meyer, B., K. Wallace and J. Sullivan (2009). "The under-Reporting of Transfers in Household Surveys: Its Nature and Consequences," National Bureau of Economic Research, No. 15181.
- Ostry, D., A. Berg, and T. Charalambos. (2014). "Redistribution, Inequality, and Growth". International Monetary Fund.
- Persson, T. and Tabellini, G. (1994). "Is Inequality Harmful for Growth?," The American Economic Review, Vol. 84(3), pp. 600-621.
- Prais, S. (1958). "Whose cost of living?," Review of Economic Studies, Vol. 26(1), pp. 126-134.
- Solt, F. (2009) "Standardizing the world income inequality database". Social Science Quarterly. Vol. 90(2), pp. 231-242.
- Stiglitz, J. (1969). "Distribution of income and wealth among individuals," Econometrica, Vol. 37(3), pp. 382-397.
- Timmer, M. (2002). "Climbing the Technology Ladder Too Fast? New Evidence on Comparative Productivity Performance in Asian Manufacturing," Journal of the Japanese and International Economies, Vol. 16(1), pp. 50-72.
- Timmer, M. and G. de Vries. (2007). "A Cross-country Database For Sectoral Employment And Productivity in Asia and Latin America, 1950-2005," GGDC Research Memorandum GD-98, Groningen Growth and Development Centre, University of Groningen.
- Voitchovsky, S. (2005) "Does the profile of income inequality matter for economic growth?." Journal of Economic Growth. Vol. 10(3), pp. 273-296.



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