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Latin America's Economic Challenges: Lessons for Emerging Economies

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Latin America's Economic Challenges: Lessons for Emerging Economies¹

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Introduction

In the last quarter of the 20th century, Latin America—like many other parts of the developing world—experienced a major shift in its development strategy. From the aftermath of the Second World War up until the debt crisis of the 1980s, the region had embraced a strategy of state-led industrialization, largely (although not exclusively) oriented towards the domestic market. Following the 1980s debt crisis (and even earlier in a few countries), state-led industrialization was replaced by a new development model in which markets and integration with the global economy took center stage.

A number of “big facts” contributed to the shift in development strategy. In particular, the rapid growth of East Asia, based on manufacturing exports and outward orientation, led to a reassessment of the role of international trade as an engine of growth.³ The shortcomings of central planning and statist development models also became clear in the 1980s. For Latin America, the debt crisis of the 1980s was by far the most important “big fact” determining the shift in strategy; critics of state-led industrialization saw this crisis as a result of the preceding development model in its entirety.

The results of the new outward-oriented market-based development strategy have been disappointing (Figure 1). Overall, the recent growth performance of Latin America has been lackluster even if we leave aside the “lost decade” of the 1980s. For the period 1990-2008, the average of Latin America's per capita GDP growth rate has been 1.8 percent per year, well below the 2.7 percent yearly growth rate of the period 1950-1980 and less than the average growth rate of the world economy.⁴ The growth performance of GDP per worker is even worse: 0.7 percent per year for 1990-2008 vs. 2.7 percent in 1950-1980. This means that most of the increase in GDP per capita since 1990 has been the result of the demographic bonus resulting from the slowdown of population growth (from 2.7 percent to 1.5 percent) in the

¹ Paper prepared for the Asian Development Bank Project “Rebalancing and Sustaining Growth in the People's Republic of China.”

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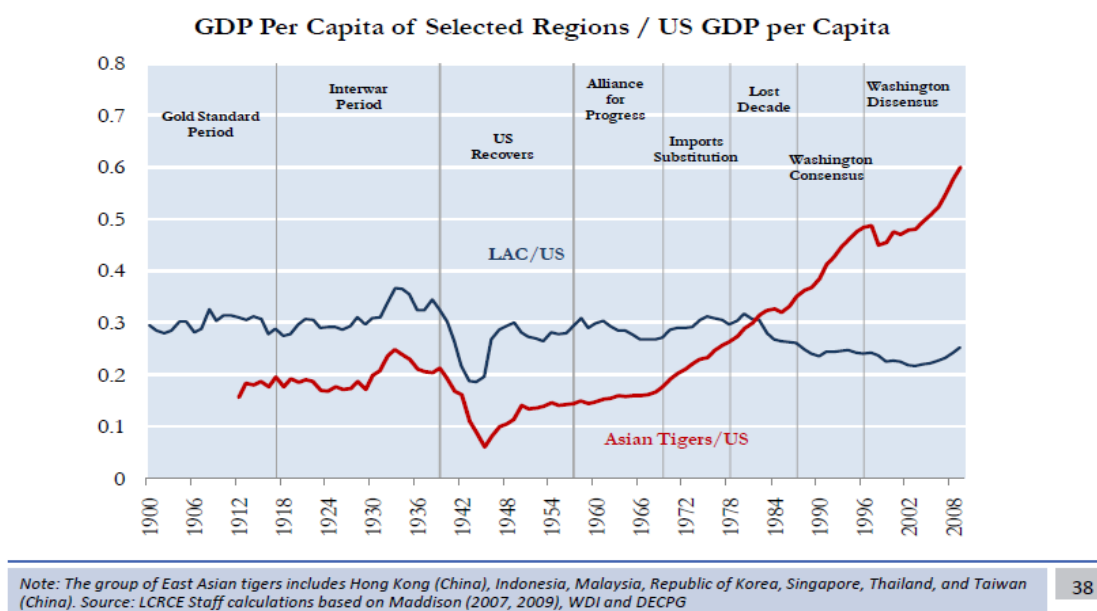
³ Lindauer and Pritchett (2002).

⁴ Ocampo and Ros (2011).

face of a still relatively fast growth of the labor force (2.6 percent per year, a rate similar to the 2.8 percent of 1950-1980).⁵

Figure 1 – Latin America’s GDP Per Capita vs. the United States: 1900-2008

100 years of growth solitude for LAC!



Source: “From Global Collapse to Recovery: Economic Adjustment and Growth Prospects in LAC,” Chief Economist Office, Latin America and the Caribbean Region, World Bank, Spring Meetings, Washington, DC, April 21, 2010.

There are seven countries that have grown since 1990 at a per capita rate above the world average, six of which have improved in this respect relative to their own past performance, while there are eleven countries that have experienced performance below the world average, and seven of them also with respect to their past record. When looking across countries there is no apparent relationship between the degree and timing of market-oriented structural reforms and growth performance. The relatively more successful countries include Chile (an early reformer), the Dominican Republic (a late reformer), turbulent and heterodox Argentina, and the more orthodox Peru. Interestingly, all of the fast growing economies under state-led industrialization, most of which have thoroughly liberalized their economies, have now underperformed in relation to their past and in relation to world trends (particularly so for Brazil and Mexico), with the major exceptions of the Dominican Republic and Panama. In

⁵ Ros (2009).

contrast, the poor performers under state-led industrialization have done better under the new paradigm.

Beyond average performance, the post-debt crisis period has also seen a good share of volatility. The collapse of growth and sharp acceleration of inflation during the “lost decade” of the debt crisis in the 1980s was followed by great progress in controlling inflation and by a recovery of growth in 1990-1997, although at a slower pace than during the years of state-led industrialization. However, following the Asian crisis, between 1998 and 2003 another “lost half-decade” occurred. The combination of a new surge in external financing and an increase in commodity prices, which had been absent since the 1970s, generated a new boom starting in 2004. The global crisis in 2008-2009 interrupted the recovery, but for most countries the recession was mild and recovery ensued. The big question mark for the region is whether the good times of high commodity prices will last or whether Latin America will face another bout of boom and bust.

As one can imagine, the economic history of Latin America during the last forty years provides a plethora of insights. There are at least four areas where the Latin American experience may be relevant for other emerging economies: macroeconomic volatility and financial instability; alternative exchange rate regimes; the slowdown in productivity growth; and the rise and fall of income inequality.

Latin America has lived through macroeconomic crises driven either by excesses of the state or the market. Fiscal crises affected countries such as Brazil and Mexico in the early 1980s under state-led import substitution. But private-led financial crises affected the Southern cone countries (Argentina, Chile and Uruguay) in the early 1980s, Mexico (1994-95), Brazil (1999) and Argentina (2001-02) under market-oriented strategies. There are lessons from crises which originated in the private/financial sector but in which the state often ended up with a large debt as a result of the insolvency of the former. Financial and capital account liberalization have their pitfalls and Latin America learned about them the hard way. Section 1 of this paper focuses on these experiences with particular emphasis on the Mexican peso crisis of 1995, a crisis that observers at the time called the first one of the 21st century.

Since the 1970s, Latin America has experimented with a whole range of exchange rate regimes. After a brief overview of the experience with fixed exchange rates, crawling pegs and currency boards, section 2 of this paper analyzes the transition to flexible (but managed) exchange rate regimes and inflation targeting in Chile, Brazil, Mexico and Peru. Flexible exchange rates and inflation targeting result in high credibility and low inflation but there are recurrent periods of exchange rate appreciation which in some countries have hurt growth.

The productivity growth slowdown is the focus of section 3. From 1950 to 1980, Latin America did quite well in terms of productivity performance (not by today's East Asian standards but by contemporaneous comparisons). This good productivity record ended with

the debt crisis of the early 1980s. While the specter of a productivity slowdown of the magnitude experienced by Latin America seems an unlikely event in the case of emerging Asia, it does not hurt to know what might have gone wrong. The paper will examine the productivity record of six major Latin American economies (Argentina, Brazil, Chile, Colombia, Mexico and Peru) since 1980 and compare it to the historical performance of the period 1950 to 1980. The analysis will distinguish between the two main tradable goods sectors (agriculture and manufacturing) and the non-tradable goods sector, where the productivity growth slowdown appears to have been concentrated, and look at both sectoral performance and the productivity gains arising from resource reallocation.

Section 4 analyzes the evolution of inequality and poverty in the region. Because most countries are middle-income ones, poverty rates are lower in Latin America than in the rest of the developing world. After rising conspicuously during the 1980s debt crisis, poverty rates started to fall since the 1990s. However, it was only in 2005 that poverty rates returned to their 1980 levels. In contrast to poverty, Latin America features the highest levels of inequality of the developing world. High concentration of income has led to rent-seeking behavior by predatory elites and this may be one of the factors that hampered growth. In addition, high inequality was one of the factors that opened the way for over-expansive fiscal policies that eventually resulted in crises. Inequality in the region has been persistently high and it rose in the majority of countries during the debt crisis and trade liberalization. On the other hand, the recent decline in income inequality which resulted from educational upgrading and targeted transfers shed light on policies in which inequality might be reduced in ways that are also pro-growth. The paper looks at the effects of market-oriented reforms on inequality and poverty as well as at the role of demographic change, human capital formation and government transfers in the recent decline in inequality.

Because each section is so distinct from the others, no attempt is made to summarize the conclusions in one comprehensive section at the end. Rather, the policy implications are discussed at the end of each section separately so that the reader can easily make the connection between the conclusions and the analysis that preceded them.

1. Macroeconomic Volatility and Financial Instability

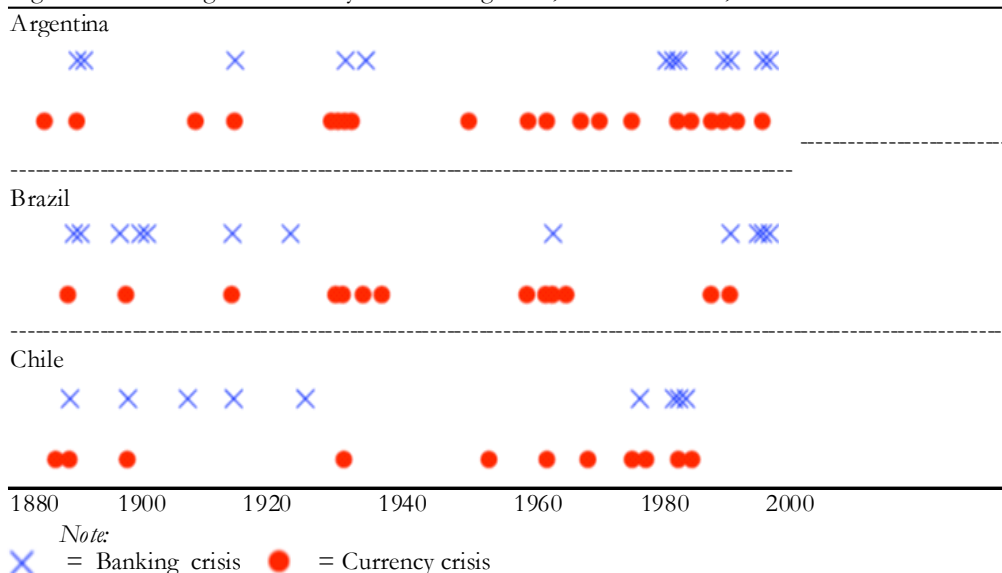
Latin America is the most crisis-prone region in the world (Table 1.1 and Figure 1.1). Crises in Latin America have spanned the whole range of possibilities: fiscal crises, public debt crises, balance-of-payments, currency crises, hyperinflation and banking or financial crises. At the risk of oversimplifying, crises in Latin America can be classified in two broad categories: state-led and market-led. At the root of the former are over-expansive fiscal policies. Market-led crises, in contrast, originate in under-regulated financial markets. While the mechanisms and actions that lead to crises in the two instances differ, one frequent common feature is a fixed (or quasi-fixed) exchange rate regime.

Table 1.1 Recurring Banking Crises, 1974-2003

Region	Average number of crises per country	Countries with recurrent crises (percent)
Latin America (excluding the Caribbean)	1.25	35
Latin America and the Caribbean	0.90	27
High-income OECD countries	0.21	0
High-income non-OECD countries	0.09	0
Eastern Europe and Central Asia	0.89	11
East Asia and the Pacific	0.38	8
South Asia	0.38	0
Middle East and North Africa	0.40	0
Sub-Saharan Africa	0.83	13

Source: Galindo, Izquierdo and Micco. 2004. Figure 1.5, p. 9.

Figure 1.1 - Banking and Currency Crises in Argentina, Brazil and Chile, 1880-2000



Source: Bordo, Eichengreen, Klingebiel, and Martinez-Peria (2000).

i. Fiscally-driven Balance of Payments Crises

The typical state-led crisis usually takes the following form.⁶ In the presence of slow-growth (and sluggish real wages) or auspicious external conditions (e.g., favorable terms of trade or cheap external credit), a government decides to implement fiscal and monetary expansionary policies to re-activate the economy and redistribute income. Because there is unemployment and excess capacity policymakers believe there is plenty of room for expansionary macroeconomic policies. In order to curb inflationary pressures stemming from sectors without excess capacity, the nominal exchange rate is kept fixed (or depreciates very slowly).

⁶ See Krugman (1979) and Dornbusch and Edwards (1991), Chapter 1.

International reserves are thought to be sufficient to support the chosen combination of expansive fiscal and monetary policies and a fixed exchange rate regime. The expansive policies pay off in the short-run: growth accelerates, real wages rise, unemployment falls and inflation subsides. Sooner or later, however, the situation unravels. Depending on the country, the boom ends when external conditions become unfavorable (i.e., terms of trade deteriorate and/or interest rates in international markets rise) or when expansionary policies proceed unabated in spite of generalized shortages and huge current account deficits. Anticipating a devaluation of the currency, capital flight accelerates and international reserves quickly vanish. The government is forced to devalue and, without access to private external credit, it eventually must resort to contractionary fiscal and monetary policies (more often than not, under the aegis of the International Monetary Fund, the only creditor remaining willing to lend).

These crises were quite common in Latin America from the post-World War II period up until the 1990s.⁷ They usually occurred under leftist or left-leaning/progressive governments who were eager to generate growth with redistribution such as Chile under Allende and Mexico under Echeverria and Lopez-Portillo in the 1970s and Peru under Alan Garcia in the 1980s. However, they also took place under right-leaning nationalist-statist governments such as Argentina's under (Isabel) Peron in the early 1970s. Some authors have called these policies "macroeconomic populism" alluding to the willingness of the government to produce favorable results quickly, regardless of how short-lived those results may be.⁸ However, whether poor macroeconomic policies were the result of populist leaders or not, underestimating the consequences of fiscal and foreign exchange constraints and high inflation always ended up in tears.

In the 1980s, domestic macroeconomic imbalances coupled with adverse world economic conditions (in particular, a sharp increase in US interest rates and the sudden stop in the availability of external credit) resulted in severe balance of payments crises in the region. In some cases, such as Mexico and Brazil, domestic imbalances were the result of large fiscal deficits which were financed with loans from foreign commercial banks. In other cases, as in the Southern cone (Argentina, Chile and Uruguay) the imbalances were driven by large private capital flows and overvalued currencies. In any case, the balance of payments crises produced sharp economic downturns in most countries in the region. Between 1982 and 1989 the accumulated GDP growth was either negative or nil for practically every country in Latin America. In countries which had suffered state-led crises, governments responded with drastic adjustment programs and far-reaching reforms. The adjustment programs implied severe cuts in fiscal deficits (including social spending) and sharp devaluations of the domestic currencies. The market-oriented reforms, broadly speaking, included three main components: trade and (foreign direct) investment liberalization, privatization and financial liberalization. In some countries, the bulk of the reforms were introduced in the 1980s, while in others during the first

⁷ See chapters in Dornbusch and Edwards (1991).

⁸ The classic piece is the already referred to Dornbusch and Edwards (1991).

half of the 1990s. As we shall see in section 3, the effect of the debt crisis was long-lasting because it placed many of the countries on a slow-growth path. It was also characterized by high and lasting social costs as poverty and inequality rose in most of the affected countries.

The 1980s were so traumatic that since then, and with few exceptions, Latin American governments have embraced cautious fiscal and monetary policies regardless of their ideological inclinations. As we shall see in section 2 of this paper, several countries—from the leftist Brazil under Lula to the center-right Mexico under Fox and Calderon—adopted flexible exchange rate-cum-inflation targeting regimes. Others adopted dollarization and have kept it in place even when leftist governments took power (Ecuador and El Salvador, for example).

As fascinating as Latin America's fiscally-driven crises might be (especially because of their region-wide presence and recurrence), the policy lessons are not really that interesting for countries in which fiscal prudence has been the norm. For the latter, it is the crises that arose under pro-market and fiscally conservative governments that should be studied and well-understood. These crises originate in an under-regulated financial market and liberalized capital accounts. Two cases stand out: the Southern Cone (Argentina, Chile and Uruguay) in the early 1980s and Mexico in the mid-1990s.⁹ We now turn to analyze them in more detail.

ii. Market-led Balance of Payments Crises: the Southern Cone in the Early 1980s

The Southern cone crises of the early 1980s have a number of common features. They erupted after an initially successful implementation of economic policies followed by military governments in Argentina, Chile and Uruguay from the mid 1970s to the early 1980s. These policies included: i) a package of market liberalization reforms comprising trade liberalization (elimination of import licenses and tariff reductions), financial liberalization (freeing interest rates and eliminating controls on the allocation of credit), capital account liberalization (promoting the free entry and exit of capital), price liberalization (freeing prices to reflect costs), and privatization of state owned enterprises; ii) a macroeconomic policy oriented exclusively to reduce inflation from initially high levels to international levels through the use of a predetermined (although not necessarily fixed) exchange rate and a fiscal policy that guaranteed an expansion of the central bank domestic credit that was consistent with the predetermined exchange rate. The role of the exchange rate was central in this approach. As further discussed in section 2, typically, the exchange rate was pre-fixed with a depreciation rate that followed a pre-announced time-table and which involved a falling depreciation rate so as to produce a declining inflation rate. Indeed, this policy was expected to lower inflation by reducing the rate of “imported” inflation (that is the reduction of inflation of imported goods),

⁹ For a discussion of the causes and mechanics of these crises see, for example, Kaminsky and Reinhardt (1999). For the experience in the Southern Cone countries in the 1970s (and early 1980s) and other countries in the 1990s see, for example, Ffrench-Davis (2001).

through the competition between foreign and domestically produced tradeable goods (that is by imposing discipline on domestic price setters), and by providing a benchmark to which inflationary expectations (and thus wage settlements) would converge.

Following a short-lived recession at the beginning of these programs (caused by fiscal and monetary contractionary policies), output expanded and inflation declined in all three countries. Yet, by 1982, Argentina, Chile and Uruguay faced a debt and balance of payments crisis similar to those which had followed state-led expansionary policies. Output contractions were deep: Chile's GDP fell 14.5 percent, Uruguay's 10.6 percent, and Argentina's 6.8 percent. What went wrong?

The three cases share a common pattern. First, the rate of currency depreciation was set below the inflation rate precisely to exert a downward pressure on domestic inflation. So, the currencies appreciated in real terms. This was aggravated by the fact that wage adjustments were indexed to past inflation as no attempt was made to eliminate wage-indexation. Second, financial deregulation led to a sharp increase in nominal (and real) interest rates. The combination of high interest rates and a relatively slow rate of depreciation meant that interest rates in dollars remained well above interest rates in international markets. This, together with capital account liberalization, attracted huge inflows of capital from abroad, most of which were intermediated by the domestic banking system. Capital inflows led to a rapid expansion of bank credit, including consumer credit, as much of these flows were deposited in the banking system. The credit boom explains why, after an initial recession, the economy recovered. In fact, in the three countries a consumption boom (including a boom of consumer goods imports) had a major role in the economic recovery. The credit expansion, however, contributed to keep inflation at rates higher than the currency depreciation. The result was an increasing overvaluation of the domestic currency which, together with the liberalization of imports and the economic recovery, led to a rapid deterioration of the trade and current account balance. To finance the current account deficit, tight monetary policy produced high interest rates which in turn attracted more capital inflows, and the credit expansion and currency overvaluation cycle was repeated. Eventually, the high interest rates led to bankruptcies and the collapse of banks as non-performing loans became pervasive. Bank failures combined with the expectations that a major devaluation was inevitable given the large current account deficit, triggered a huge wave of capital flight and thus countries simultaneously experienced a banking and a balance of payments or currency crisis.

iii. Market-led Balance of Payments Crises: the Mexico's "Peso Crisis" in 1995¹⁰

In mid-1982, Mexico was deep in economic crisis. Macroeconomic mismanagement and an adverse external environment were the primary causes. Throughout the 1980s, the Mexican government focused its economic policy on restoring stability. Inflation was curbed and

¹⁰ This section is based on Lustig (1995, 1998, 2001).

starting in 1991, the growth rate of per capita gross domestic product rates turned positive for four consecutive years, as shown in Table 1.2-the first time that per capita GDP had grown for four consecutive years since 1981. However, the recovery became unsustainable. In particular, the current account of the balance of payments deteriorated sharply. Mexico's exports grew at a slower pace and imports surged as a result of the appreciation of the peso. Mexico's output growth slowed down in 1992 and 1993, which was especially disappointing given the important market-oriented economic reforms that had been introduced since the mid-1980s. Confidence in Mexico's prospects was shattered when, at the end of 1994, Mexico ran out of international reserves and faced a serious foreign exchange crisis, which became popularly known as the "peso crisis." That caused output to drop by more than 6 percent in 1995.

Table 1.2 – Mexico: Macroeconomic Indicators

		1991	1992	1993	1994	1995	1996	1997	1998	1999
Gross Domestic Product		4.2	3.6	2.0	4.4	-6.2	5.2	6.8	4.8	3.7
GDP per capita		2.3	1.7	0.1	2.6	-7.8	3.4	5.0	3.1	1.7
Inflation ^a		22.7	15.5	9.8	7.0	35.0	34.4	20.6	15.9	16.6
Fiscal Deficit ^b		-0.5	1.5	0.7	-0.1	0.0	0-0	-0.7	-1.2	-1.1
Real Exchange Rate ^c		91.1	78.5	72.9	75.2	125.6	129.0	115.2	115.8	105.0
Real Wage ^d		6.6	8.9	7.2	3.7	-13.5	-11.1	-0.6	2.2	1.4
Current Account Balance ^e		-14.6	-24.4	-23.4	-29.7	-1.6	-2.3	-7.4	-15.7	-14.0

Note: Annual percentage change except when noted otherwise.

^a Consumer prices, annual average.

^b Percent of GDP, difference between total revenues of the non-financial public sector.

^c 1990 = 100.

^d Average real remuneration in manufacturing.

^e Billions of U.S. dollars.

Source: Lustig (2001).

Understanding what went wrong in a country that at the time was a darling of international investors and multilateral lending institutions is potentially of great importance. A salient factor can be found in Mexico's weak banking sector. Mexico's banks were privatized in the early 1990s without putting in place an adequate system of prudential regulation. And inadequate prudential regulation contributed indirectly to the peso crisis of 1995 in several ways. It led to an overly rapid expansion of consumer credit, whose counterpart was a fall in private savings and a rise in the current account deficit. In addition, the weak banking system forced a relatively looser monetary policy during 1994 than might otherwise have been warranted, because it was feared that higher interest rates could trigger a banking crisis.

After several failed attempts, by the end of 1988, it appeared that Mexico had reestablished the preconditions for growth. Fiscal and monetary discipline had been attained, and runaway inflation had been brought to a halt thanks to the 1988 stabilization program (known as “Pacto”) one of whose features was fixing the dollar-peso parity. However, a sustainable recovery required a turnaround in the flow of net resource transfers: that is, some combination of higher external credit, lower external debt payments, capital repatriation, and higher foreign investment. A series of events in 1989 and 1990 made this possible. In mid-1989, Mexico signed an agreement with its commercial banks to reduce its medium- and long-term debt under the so-called Brady Plan and signed a free trade agreement –NAFTA--with the United States and Canada. The government also re-privatized the banks (that had been nationalized in 1982) and sold several public enterprises. These events were followed by immediate capital inflows, both from new foreign investment and capital repatriation. Gross capital flows toward Mexico rose from US\$ 3.5 billion in 1989 to US\$ 33.3 billion in 1993 (Bank of Mexico, 1994). Practically nonexistent in 1989, total portfolio investment was 3.4 billion in 1990 and 28.4 billion in 1993. These investments came from pension funds and other financial intermediaries, which with growing fervor entered Latin American markets in search of better yields.

Mexico, as many other developing countries emerging from the trauma of the debt crisis, received the capital inflows with glee. The capital inflows, however, exacerbated the appreciation of the exchange rate because they put pressure on the domestic supply of non-tradeables and slowed down the inflation-reducing process. Although the 1988 stabilization program had considerable success in reducing inflation, actual inflation continued to be higher than the target and hence the real exchange rate continued to appreciate.

Capital inflows also fueled an investment and a consumption boom based on credit that, due to the inadequate regulatory framework for the newly privatized banks went too far, as indicated by the growing number of nonperforming loans since 1993. The overexpansion of domestic credit has been a phenomenon observed in past episodes of large capital inflows to countries in Latin America --particularly those with fragile banking systems and inadequate prudential regulation--. To an important degree the vulnerability of the financial system, resulting from a deficient regulatory framework, lack of transparency and weak enforcement capacity, lies at the center of the 1994-1995 Mexican crisis.

Some economists aware of the risks of Mexico's economic strategy recommended on many occasions that the government change its exchange rate policy. The government did widen the exchange-rate band slightly but it argued that a larger depreciation of the peso was not a good idea—or maybe not even feasible given the pace of capital inflows--. Moreover, the government tended to dismiss the large current account deficit as a problem because it was the result of decisions made by private consumers and investors who presumably knew what they were doing. Furthermore, from the point of view of the monetary authorities, it was more important to confirm the government's commitment with price stability than to promote

competitiveness through changes in exchange rate policy. To modify the exchange rate regime would send the wrong signal concerning stability.

It is always difficult to pinpoint the spark which began the subsequent fire—the 1995 peso crisis. However, one key factor was the change in monetary policy in the United States. Because of the sustained economic recovery and fears of inflationary pressures in 1994, the Federal Reserve decided to raise interest rates and thus slow the accelerated pace of economic activity. The result was an increase in the yields of financial instruments in the United States starting in February 1994. The flows of capital in the international market are very sensitive to interest rate changes in the United States.¹¹ Because of this, a change in external conditions—an economic recovery or a rise in interest rates in the United States—can bring about serious problems for countries which depend on attracting capital to finance their external deficits and to maintain exchange rate parity. In particular, the problems could become worse if the period of inflows was associated with bubbles in the stock markets or commodity markets and an excessive expansion of consumer credit. In the last case, the sudden flight of capital could threaten the stability of the financial system.

Higher U.S. interest rates had an adverse impact on net capital flows into Mexico, albeit gradual. At this point, the government had two options: to increase the crawl of the ceiling of the exchange rate band or even widen the band with a discrete shift, or make no change in the exchange rate policy and instead raise domestic interest rates, make use of international reserves and issue more of the dollar-denominated short-term government debt instruments (known as Tesobonos). The authorities chose the second option and decided to wait it out until expectations were reversed. As a result, interest paid on short-term government bonds rose to 16.25 percent in April 1994 and outstanding Tesobonos began to increase by leaps and bounds.

After April 1994, the dollar often was at the ceiling of the band but the information available indicated that international reserves were maintained at around US\$ 17 billion throughout most of the period until November. The Mexican Central Bank has argued that the relative stability of the international reserves during this period was a clear sign that the peso was not under unmanageable pressures. However, the huge change in the amount of Tesobonos held by the public shows that something anomalous was happening. Between March and June of 1994, the sum of Tesobonos increased from US\$ 3.1 billion to US\$ 12.6 billion; the figure rose to US\$ 19.2 billion in September and US\$ 29.2 billion in December. Throughout the year, the composition of the government's debt held by foreigners had changed radically: in December, 1993, 70 percent was in domestic peso bonds and 6 percent in Tesobonos; in December, 1994, 10 percent was in domestic peso bonds and 87 percent in Tesobonos. Clearly, many investors feared that the exchange rate policy in the end was not sustainable and preferred to hold

¹¹ Calvo (1995).

Mexican debt denominated in dollars. This means that they thought that devaluation was a real risk but there was no risk of a sovereign default.

The systematic increase in Tesobonos held by the public ought to have been seen as an unequivocal sign of the lack of credibility of the exchange rate policy. It also implied that the Mexican government was undertaking a large portion of the exchange rate risk given that these short term obligations were indexed to the dollar. This "dollarization" of the internal public debt probably explains the surprising stability of international reserves from April onwards in the face of the rise in external interest rates and the internal political uncertainty. The Tesobonos, in fact, gave a false sense of security both to the creditors and to the government. In the end, the US\$ 17 billion of Tesobonos held by foreigners was one of the principal causes of the financial crisis which followed the December devaluation: given the large magnitude of the short term debt indexed to the dollar, investors feared a sovereign default after all and began the panic selling.

Also, the assumption that the slowdown in capital inflows was temporary and reversible led to a monetary policy--especially in the last quarter of 1994--which proved incompatible with the exchange rate policy. The monetary authorities decided to "sterilize" the fall in international reserves by increasing net domestic credit and thereby keeping the monetary base approximately constant. This led to a fall in the domestic interest rates beginning in July 1994, a trend contrary to the interest rate in the United States. The expansion of net credit exacerbated the pressures on the peso.

Confronted with the panorama of falling domestic interest rates while the United States rates were rising, a current account deficit of 8 percent of GDP in 1994 and a similar deficit expected in 1995, and the memory that approximately every six years since 1976 the government abandoned its vows not to devalue, investors --in particular, Mexican investors--voted with their feet. On December 16 international reserves had dropped to around US\$ 11 billion. Faced with the situation of dwindling international reserves the government raised the ceiling of the band within which the dollar was allowed to fluctuate to 4 pesos to the dollar (a rise of about 15 percent in its value). This new ceiling was announced and took effect in the morning of December 20. Following that announcement, the value of the dollar reached the 4 peso ceiling immediately and it is estimated that in the course of two days US\$ 5 billion left the country. The markets were sending a clear message: the new exchange rate ceiling was not credible. On December 22, the monetary authorities had no other option but to switch to a floating exchange rate: i.e., the Bank of Mexico would no longer intervene to maintain the dollar within a pre-specified band. What followed was a financial "meltdown" with big spillover effects on other countries, particularly in Latin America.

The events which followed the devaluation of the peso in 1994, however, indicate that there was a serious misjudgment of the potential reaction of financial markets to a Mexican devaluation. Those investors that had their funds in the stock market or in other instruments

denominated in pesos interpreted the devaluation as a breach of contract. Their immediate reaction was to withdraw their capital as soon as possible. The outflows soon turned into a stampede and toward the second week of January, Mexico was on the verge of default and the financial markets of Latin America and other regions began to be affected in a growing and ominous way.

It became quickly evident that to calm the markets and stop the financial "meltdown," the rescue package had to be large enough to put fears of a default to rest. Otherwise, the panic selling and the spillover into other markets would not be halted. To stop the panic it was essential to find a lender of last resort. With this in mind, the U.S. administration proposed a package of loan guarantees of US\$40 billion in the middle of January. Unfortunately, the package faced great difficulties in the US Congress. When it became clear that it might not be approved, the U. S. administration proposed an alternative plan and the IMF increased its financial support sharply. At the end of January the U.S. government announced that there was a financial package ready of approximately US\$ 50 billion composed of loans from the U.S. (US\$20 billion), the IMF (US\$17.8 billion), the Bank of International Settlements (US\$10 billion), Canada (1 billion Canadian dollars) and a group of Latin American countries (US\$1 billion).

The announcement of the package stopped the panic selling but did not reestablish lasting confidence. The major challenge for the Mexican government in early 1995 was to restore its credibility. For this it was necessary to put into place a program with realistic goals, assure that short term real interest rates would be positive, specify clear monetary, fiscal and exchange rate policies and provide, in a frequent and transparent manner, the information necessary to monitor the program. The markets began to react positively towards the end of March 1995 more as a result of economic outcomes than intentions. In particular, the markets seemed to welcome the trade surplus in January and February 1995, the higher domestic interest rates, and the substantial reduction in outstanding Tesobonos. The fact that the U.S. interest rates would not continue to rise also helped to strengthen the turnaround.

Some analysts will identify the delay in changing the exchange rate policy as the principal cause of the peso debacle. What is peculiar of Mexico's policy in 1994 is not that the outgoing government tried to avoid devaluation at all costs. This is quite a typical reaction in many developing (and even developed) countries. What is more peculiar about is that, once the government had decided not to change the exchange rate policy, it did not go out of its way to make sure that the rest of macroeconomic policy --monetary policy in particular-- was congruent with this objective. In particular, it is puzzling that domestic interest rates were allowed to fall even when external rates were still rising and foreign investors were showing clear signs of nervousness by switching from domestic peso bonds to dollar-indexed Tesobonos almost in full. In any case, just as the Southern Cone crises of the early 1980s, the Mexican peso crisis of 1994-95 showed that in a global economy characterized by large and volatile capital flows, financial crises do not necessarily mean that a country has been running

large fiscal deficits. Rather, they may be the result of under-regulated capital accounts of the balance of payments and excessively liberalized domestic financial markets.

Was the Mexican peso crisis of 1995 then a result of policy mistakes or bad luck? Clearly, some of the factors contributing to the crisis were beyond the Mexican government's control. During 1994 Mexico confronted a number of political shocks such as the peasant uprising in the state of Chiapas in January, the assassination of Luis Donaldo Colosio-the PRI's presidential candidate-in March, and the assassination of the party's Secretary General in September. It also faced a rise in interest rates in the United States. Also, Mexico's experience highlights the difficulties posed by volatile capital flows. When real returns were higher in the United States and Mexico's political future became uncertain following the Colosio assassination, capital simply left. But the problem was that Mexico's response was based on the presumption that bad news (political shocks) was temporary and that good news (NAFTA, fiscal prudence, market-oriented reforms) was permanent and that capital flows would resume. This error in judgment turned out to be very costly.

iv. Conclusions

Both state-led and market-led balance of payments crises have been very costly for Latin America. Underestimating the costs of over-expansive fiscal and monetary policies almost always resulted in macroeconomic crises whose manifestations included sharp devaluations of the local currency, runaway inflation and large contractions in output, employment and real wages. Although Latin America was known for its fiscally-driven balance of payments crisis often the result of populist macroeconomic policies, since the 1980s debt crisis, most governments and politicians in Latin America have learned their lessons. That is why in several countries institutional mechanisms to keep fiscal imbalances in check have been implemented.¹² The most successful experience is that of Chile where the government follows a structural fiscal balance rule which allows it to implement counter-cyclical fiscal policies.

Market-led crisis have been very painful too. Indeed, in a global economy characterized by high capital mobility and volatility, balance of payments-financial crises can occur in the absence of fiscal imbalances and they are related to lack of adequate prudential in the financial markets and excessive liberalization of the capital accounts. This is what the experience of Argentina, Chile and Uruguay of the 1980s and that of Mexico in 1994-95 suggest. As will be discussed in the next section on exchange rate regimes, these experiences have led governments to adopt flexible exchange rate regimes and introduce stricter regulation especially in the banking sector. Flexible exchange rate regimes have proven to be less vulnerable to speculative attacks and currency crises.

¹² See, for example, Singh (2005).

2. Exchange Rate Management¹³

This section examines the Latin American experience with exchange rate management. Latin America has experimented with every exchange rate regime on earth. At present, the favored one is a flexible (but managed) exchange rate regime. Many countries have chosen to use as an anchor inflation targeting. As a consequence, credibility is relatively high, inflation is relatively low but there are recurrent periods of exchange rate appreciation which in some countries hurt growth. After a brief overview of the experience up to the 1990s with fixed exchange rates, crawling pegs and currency boards, the section will focus on the transition towards flexible exchange rate regimes and inflation targeting, in particular in Chile, Brazil, Mexico and Peru and its accomplishments and shortcomings. Special attention will also be given to the experiences of real exchange rate targeting in Chile from the mid 1980s to the mid 1990s and Argentina after the 2001-2002 crisis.

i. Exchange Rate Regimes: An Overview

As noted by Frenkel and Rapetti (2010), macroeconomic policies in Latin America have been periodically adjusted to take advantage of new favorable international conditions or to protect the economy from the negative impact of adverse external developments. Thus, changes in the international economic environment have been decisive in the choice of exchange rate regimes.

From the immediate post war period to the late 1960s, Latin American countries followed “adjustable peg” regimes as the international monetary system followed the Bretton Woods rules of fixed exchange rates against the US dollar which could be changed only under exceptional circumstances. In a number of countries characterized by relatively high inflation (by no means a majority of Latin American countries) the Bretton Woods era featured a cyclical stop-and-go dynamic resulting from the inconsistency between high inflation and fixed exchange rates: in this context, high inflation led to real exchange rate appreciation and eventually foreign exchange shortages that required a devaluation of the currency; devaluation in turn temporarily alleviated balance of payments problems but at the same time exacerbated inflation in the presence of indexation and real wage resistance. The result was another cycle of real appreciation.

Two solutions were sought to escape from this stop-and-go dynamics. In some countries, governments adopted fiscal and/or monetary reforms that led to a more stable macroeconomic framework and fixed exchange rates prevailed without major dislocations well into the 1970s. Mexico, for example, after a cycle of devaluations and inflation in the late 1940s and early 1950s managed to maintain a fixed peso-dollar exchange rate from 1954 to 1976.

¹³ This section draws on Frenkel and Rapetti’s (2010) detailed historical analysis of exchange rate regimes in Latin America

Peru, Venezuela and most Central American countries are other cases of low inflation countries with successful fixed exchange rate regimes.

Other countries (Argentina, Brazil, Chile and Colombia) adopted in the mid 1960s a passive crawling peg under which the peg was gradually adjusted according to the evolution of reserves or the gap between domestic and foreign inflation in order to give stability and sustainability to the balance of payments. In this period, unlike what will happen later in Chile in the 1980s, the authorities did not follow a systematic rule but rather determined discretionarily the adjustment path in what Williamson (1981) denominated a “decision-variant” crawling peg (Argentina in 1964, Brazil in 1968, Chile in 1965, Colombia in 1967). As shown by Frenkel and Rapetti (2010), the adoption of crawling pegs was followed by an acceleration of economic growth and non-traditional exports dynamism in all four countries. In particular, its implementation in Brazil coincided with the beginning of the so-called Brazilian economic miracle (a rate of GDP growth of about 11 percent per year from 1968 to 1973). In terms of inflation behavior, the implementation of the crawling was accompanied by an acceleration of inflation in Colombia, a constant inflation in Brazil, and a reduction in Chile.

In the 1970s, adverse international (in particular, the oil price shocks) and domestic developments led to an acceleration of inflation almost everywhere in the region. In the midst of high liquidity, inflation and low or even negative real interest rates in the international economy, the main new development in terms of exchange rate regimes was the adoption of an active crawling peg in Argentina, Chile and Uruguay following severe economic and political crises and the persistence of high inflation. Just as with the passive crawling peg, under this regime the authorities pegged the local currency to a foreign currency (or basket of currencies) but adjusted the rate gradually over time rather than undertaking sudden and unanticipated correction (as in the adjustable peg). The differences with the passive crawling peg are that now the authorities pre-committed the future path of the rate¹⁴ and used the regime for price stabilization purposes rather than to stabilize or even undervalue the real exchange rate. While inflation fell for a while, in all three cases the experiment led to substantial real exchange rate appreciation with a concomitant rapid increase in current account deficits and foreign debts, the private sector being the major recipient of external credits (for a detailed analysis of the Tablitas and the subsequent balance of payments crises, see Frenkel, 1983; Frenkel and Rapetti, 2010). Other countries also borrowed heavily from the international capital markets — an outstanding exception being Colombia — whether they continued under a passive crawling peg (Brazil) or a more or less pegged exchange rate regime (Mexico). In these cases, the public sector was usually the major recipient of foreign credits.

In the 1980s, with the collapse of international capital flows into the region and the temporary suspension on its external debt by Mexico in 1982 came a period of severe external credit rationing, sharp deceleration of growth, disorderly adjustments in the balance of payments and

¹⁴ This regime used to be called “La Tablita” which means “small table” in Spanish referring to the pre-determined periodic depreciation published in a table.

a variety of attempts at stabilization. Among these there are several heterodox stabilization programs such as Argentina (Austral Plan), Brazil (Cruzado Plan) and Mexico (Pacto de Solidaridad Económica) that used price and wage freezes along with a fixed exchange rate to bring inflation down. The Mexican “Pacto” was in the end the only one that succeeded in part because of its more conservative fiscal and monetary policies, larger international reserves and more favorable external conditions. The lost decade ended eventually around 1989-1990 when international financial conditions changed in the direction of higher liquidity and lower interest rates—and the fact that US banks had been able to “clean up” their portfolios and were better insulated from the impact of debt reduction-- that opened the door to debt restructuring agreements (the Brady plan) in Mexico (1989), Costa Rica (1989), Venezuela (1990), Uruguay (1991), Argentina (1992) and Brazil (1992). For Latin America, this new international context meant the end of external credit rationing and the beginning of the first of successive waves of large (sometimes massive) capital inflows.

Several countries took advantage of the new conditions to adapt their exchange rate regimes to fight inflation, a legacy of the debt crisis and the lost decade. The most aggressive experiment was that of Argentina which in 1991 adopted the so-called “convertibility” regime or currency board, an extreme case of a fixed exchange rate regime which mimicked the mechanism prevalent during the gold standard but instead of gold it used the US dollar reserves. This system meant an explicit legislative commitment to fix the nominal exchange rate at a certain parity (one-to-one with the US dollar) combined with restrictions on the central bank to issue domestic currency (almost exclusively in exchange for foreign currency). This regime was implemented as an attempt to provide a credible nominal anchor to stabilize the price level in the context of hyperinflation. It was successful in ending hyperinflation but lasted for too long in the context of an increasing real appreciation of the currency that ended in an economic collapse in 2001-2002.¹⁵

ii. The Transition Towards Floating Exchange Rates and Inflation Targeting

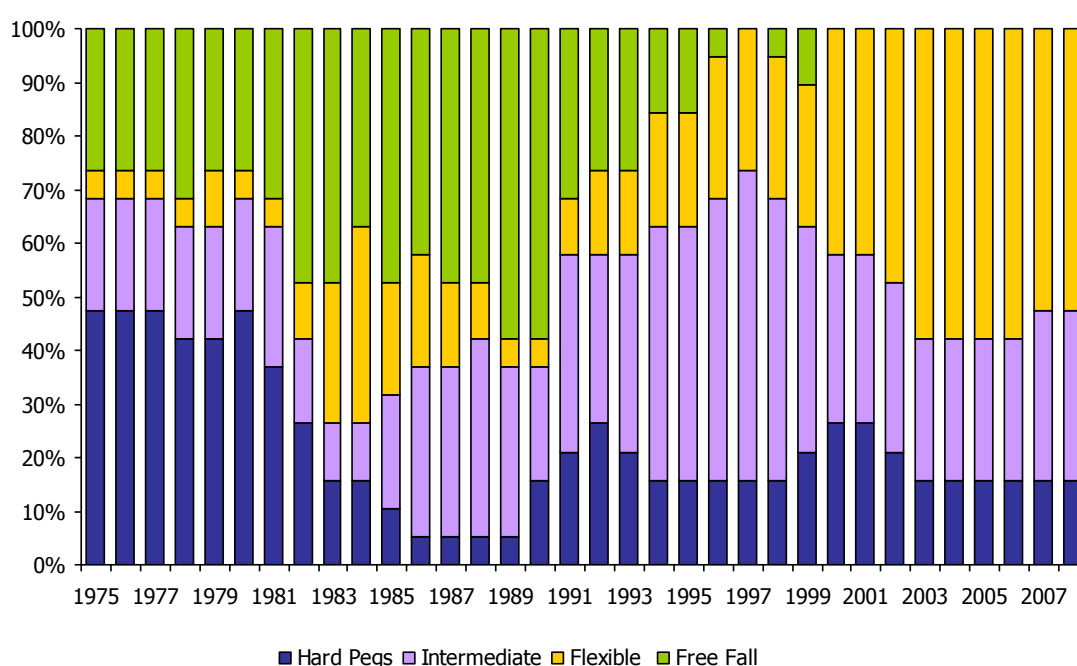
The other major development of the 1990s and 2000s has been a shift towards flexible exchange-rate regimes and inflation targeting. The shift to flexible exchange rates was preceded by a change in views among economists and policy makers regarding the vulnerability of intermediate regimes to currency crises in a world of high capital mobility. The Mexican crisis of 1994-95 that witnessed the collapse of a crawling band and the Asian and Russian crises of 1997-98 had a considerable role in this change of views and the emerging consensus, at least, in Latin America. Essentially, the consensus became that the only regimes that would really work in the long-run were one of the two extremes: a pure flexible regime or a hard peg.

As a result of this shift in views, while flexible exchange rate regimes were virtually non-existent in the late 1970s, since the early 2000s they characterize close to half of the economies

¹⁵ On the Argentine crisis, see De la Torre et al. (2002); Hausmann and Velasco (2002).

of the region (see Figure 2.1). The move went together with the adoption of inflation targeting monetary regimes. Chile and Colombia can be considered pioneers as they have been utilizing inflation targets since 1990 and 1991, respectively. Peru introduced a flexible regime in 1994 and in 2002 the Central Bank shifted from quantitative monetary targets to inflation targeting with an overnight interest rate as the main policy instrument. After the 1994-95 crisis, Mexico let the peso float and in 1999 switched to an inflation targeting monetary regime eventually using an overnight interest rate as the instrument. Brazil also joined the club of countries that opted for flexible exchange rate regime and inflation targeting in 1999 following the currency crisis at the beginning of that year.

Figure 2.1 – Exchange Rate Regimes in Latin America and the Caribbean



Source: García and Marfán (2010), based on Calderón and Schmidt-Hebbel (2008). The Y axis refers to the percentage of countries under different exchange rate regimes. Free fall regimes refer to regimes where extremely high inflation or a hyperinflation process prevailed.

Despite the declared allegiance to floating and inflation targeting, flexible exchange rates regimes in Latin America are hardly pure and there is often a significant gap between the theory and practice of inflation targeting. Central banks intervene in different ways. First, the evidence suggests that Central Banks set the target or reference interest rate in reaction to nominal exchange rate movements and not only because the nominal exchange rate is a significant transmission mechanism with important effects on inflation. Schmidt-Hebbel and Werner (2002), for example, found that the exchange rate becomes a significant argument in the monetary policy rule in periods of financial distress in Brazil, Chile and Mexico.

Moreover, intervention in the foreign exchange market is frequent in Brazil, Colombia, Mexico and Peru. Even in Chile, often considered the most pure case of inflation targeting, there have been three episodes of intervention in the foreign exchange market justified by exceptional circumstances that led to exchange rate overshooting (see De Gregorio et al., 2005, and García, 2009). From the late 1990s to the mid 2000s, intervention in the foreign exchange market appeared to be oriented towards avoiding substantial nominal depreciations. This has been taken to reveal a “fear of floating” following the expression by Calvo and Reinhart (2002) which is usually explained by two reasons. One is the inflationary consequences of substantial depreciations. A case in point is precisely the intervention by the Central Bank of Chile already alluded to in order to contain the depreciation pressures during 2001 and 2002 generated by a number of events. Another example is the intervention by the Central Bank of Brazil during the turmoil before the presidential election of 2002. A second reason for fear of floating refers to the fact that large movements in the nominal exchange rate can have important and destabilizing effects on balance sheets in dollarized economies, especially sudden depreciations of the exchange rate which cause financial distress among debtors with significant dollar denominated liabilities. Peru is the best example of a highly dollarized economy where exchange rate volatility is linked to significant redistributions of wealth and where, as a consequence, foreign exchange market intervention has had as an objective—not only inflation targeting—but also the stabilization of exchange rate fluctuations.

Between 2004 and 2008, foreign exchange market intervention took a different sign in the midst of an unprecedented surge in capital flows to developing countries. During this period, central banks in Latin American countries with flexible-cum-inflation-targeting regimes accumulated substantial foreign exchange reserves. The process was, however, far from uniform. In this period, as noted by Frenkel and Rapetti (2010), Brazil quadrupled its stock of foreign exchange reserves while Peru more than tripled it and Colombia doubled. Mexico and Chile were much less aggressive in this policy. Mexico increased reserves by 50 percent while Chile only started accumulating reserves in mid 2007 and increased them by 50 percent up to the 2008 crisis.

The main reason for this reserve accumulation has probably been to prevent excessive appreciations that would otherwise have occurred in the presence of massive capital inflows. Central banks sterilized capital inflows in part to curb the pressures towards real exchange rate appreciation. Yet, as argued by Frenkel and Rapetti (2010), this does not mean that these countries have targeted a competitive and stable real exchange rate (as was done by Chile with the crawling band from 1985 to 1995 and Argentina with the managed floating after the convertibility crisis from 2003 to 2008).

Real exchange-rate appreciations have in fact not been prevented despite the central bank intervention as central banks did not hesitate to raise interest rates to meet inflation targets when these were threatened in particular by the rise in food and energy prices beginning in 2004. (Figure 2.2) In Brazil, beginning in late 2002, the real exchange rate followed a strong and systematic appreciation trend up until the 2008 crisis when the real exchange rate reached

a level 30 percent lower than the 1980-2008 average.¹⁶ Chile's appreciation was milder but it accelerated after 2004 with the real exchange rate in mid 2008 reaching a level about 18 percent lower (a real appreciation) than the average of the 1980-2008 period. In Colombia, the path of the real exchange rate was similar to that in Brazil and by mid 2008 it was 27 percent lower than the 1980-2008 average (the lowest level in 24 years). Mexico and Peru maintained more stable real exchange rates but at very substantial levels of appreciation. In Mexico, the exchange rate followed a persistent real appreciation trend from late 1996 to early 2002 with a real exchange rate about 8 percent lower than in 1994, the year before the Tequila crisis. In Peru, throughout the 1990s and 2000s the real exchange rate was maintained at a level 28 percent lower than the 1980-2008 average.

¹⁶ Here we follow here the Latin American tradition of referring to a strong or appreciated currency as a "low" real exchange rate.

Figure 2.2 – Real Exchange Rate: Brazil, Chile, Colombia, Mexico and Peru

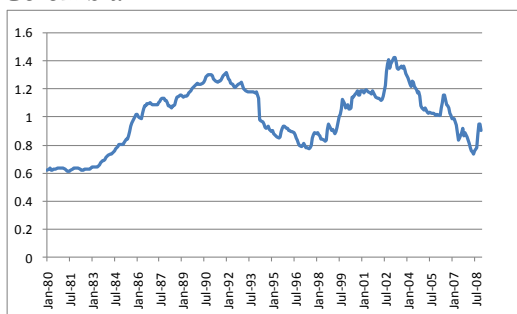
Brazil



Chile



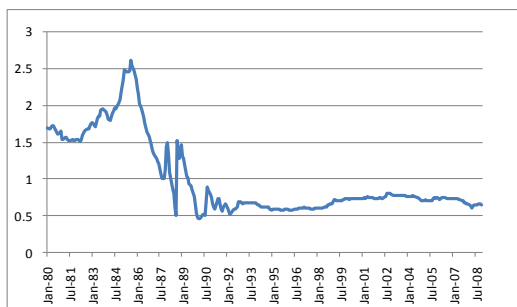
Colombia



Mexico



Peru



Source: Frenkel and Rapetti (2010).

Notes:

Brazil: Bilateral RER with the US, deflated by CPI indexes. Index 1 = average 1980-2008.

Chile: Bilateral RER with the US, deflated by CPI indexes. Index 1 = average 1980-2008.

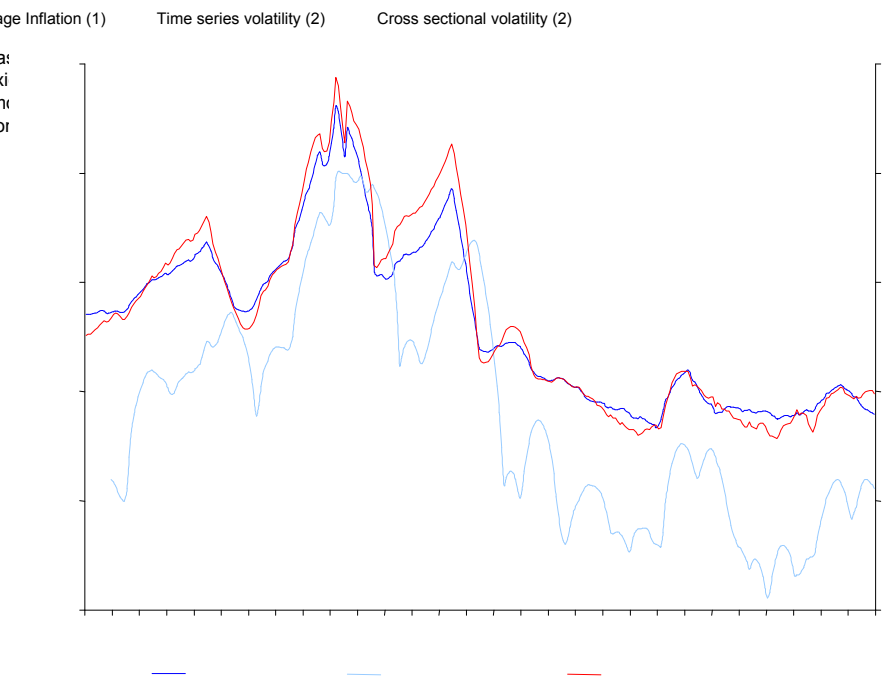
Colombia: Bilateral RER with the US, deflated by CPI indexes. Index 1 = average 1980-2008.

Mexico: Bilateral RER with the US, deflated by CPI indexes. Index 1 = average 1980-2008.

Peru: Bilateral RER with the US, deflated by CPI indexes. Index 1 = average 1980-2008.

Flexible exchange rate regimes and inflation targeting have performed well in terms of price stabilization. As shown in Figure 2.3 average inflation in the 5 inflation targeting countries fell considerably in the 1990s and remained low and stable during the 2000s.¹⁷ Both the time series and cross-country volatility of inflation rates have also fallen in this period. But the containment of inflation has been accompanied as we have seen by a trend towards appreciated currencies that may have inhibited a more rapid growth recovery. In any case, as observed in Figure 2.4, there is no clear improvement in growth performance since 2004 (the period of exacerbated appreciation) when compared to the first half of the 1990s before the region was hit by the 1994-95 Tequila crisis and the East Asian and Russian crises of 1997-98.

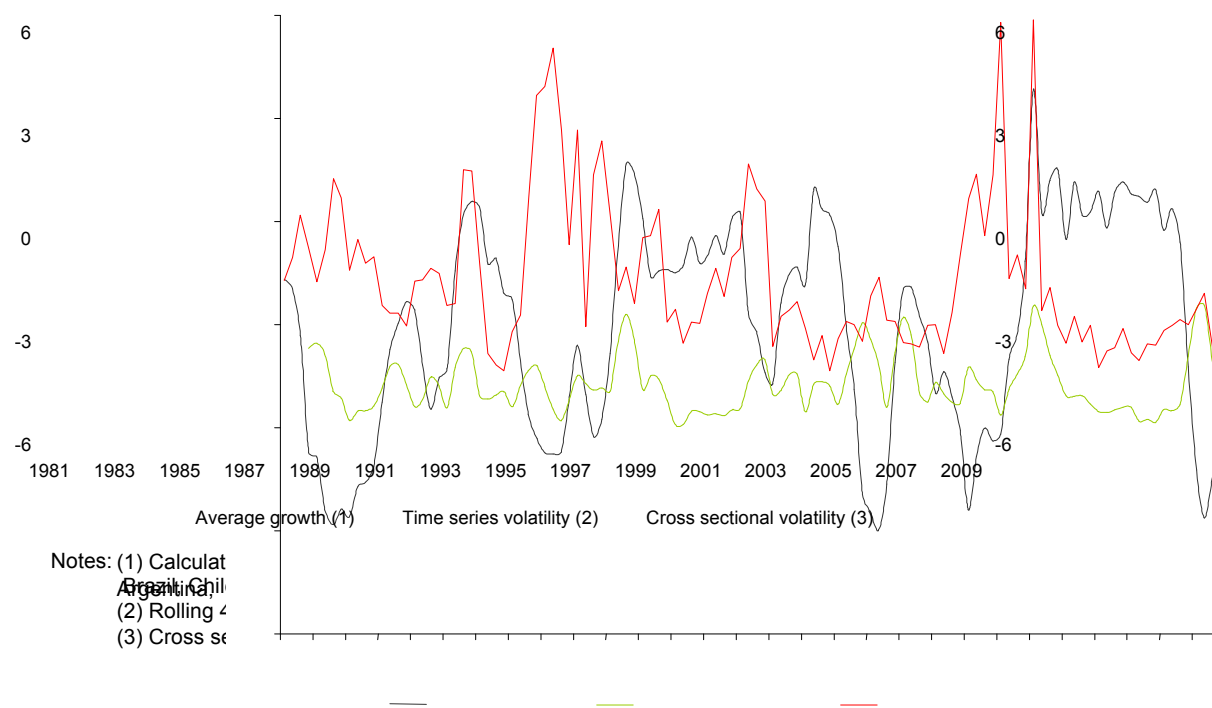
Figure 2.3 Average inflation and volatility (logarithmic scales)



Source: García and Marfán (2010).

Figure 2.4 - Average GDP growth and volatility

¹⁷ The figure also includes Argentina and Venezuela.



Source: García and Marfán (2010).

iii. Conclusions

To conclude, the Latin American experience with exchange rate regimes yields some lessons regarding the relationship between the real exchange rate, macroeconomic stability and economic growth. First, fixed or quasi-fixed exchange rate regimes in the era of high capital mobility and large capital flows almost always ended up in a balance of payments crisis and an inflationary bout following the large devaluations of the currency when the peg becomes unsustainable. Second, the real appreciation that accompanies hard pegs (including dollarization) and fixed and quasi-fixed exchange rate regimes, even if successful in reducing inflation, almost always hurts growth. Third, flexible exchange rate regimes-cum-inflation targeting successfully contain inflation and appear to be sustainable in the long-run; in some countries, however, frequent real appreciations can't be avoided and this hurts growth.

3. Alternative explanations of Latin America's productivity slowdown

In growth decomposition exercises, the decline in total factor productivity growth that has taken place in Latin America after 1980 appears to be the most important "proximate determinant" of the growth slowdown of this region, more important, that is, than the decline

in the rate of factor accumulation. Also, the productivity growth gap with the rest of the world appears to be more important than the factor accumulation gap in “explaining” the comparatively poor growth performance of Latin America in recent decades (see, for example, Pagés, 2010). This explains why productivity performance has attracted considerable and increasing attention in the explanation of the growth slowdown suffered by the region.

This section looks at the productivity growth slowdown after 1980 in six Latin American countries. The six countries include three of the fastest growing Latin American economies in the period 1950-1980 (Brazil, Colombia and Mexico) and two of the slowest growing ones (Argentina and Chile). The latter, together with Peru, are in turn the best performers among the six in the period since 1990, Chile and Peru showing in particular a quite outstanding productivity performance in the recent period. Most of these countries were large debtors by 1981-82 and suffered from the severe rationing in international credit markets that characterized the aftermath of the debt crisis of the early 1980s. Colombia, being a fiscally prudent country with a small debt, is an exception while Chile is a partial exception in the sense that, after a devastating crisis, it resumed access to external credit (in particular large inflows of multilateral financing) earlier than the other large debtors.

Since our analysis will disaggregate the economy into several sectors, we had no option, for lack of available information on total factor productivity at the sectoral level, but to concentrate on labor productivity. The estimates are based on data on value added and employment from the database of the Groningen Growth and Development Center (Timmer and de Vries, 2007) and are available for the following economic sectors: agriculture, industry (including mining, manufacturing, public utilities and construction) and services (including commerce, transport and communications, finance, and other services). The periods examined are 1950-1980 (or 1981 depending on when the peak of GDP, before the recession of the early 1980s, takes place), 1980-1990 (or 1981-1990) and 1990-2005. For Peru the first period refers to 1960-1981 due to lack of data for the 1950s.

i. The Aggregate Labor Productivity Slowdown

The productivity growth slowdown after 1980 is a generalized phenomenon. All 6 countries record a deceleration of productivity growth compared to the period before 1980 (table 3.1). Not even Chile, with the best productivity performance after 1980, was able to avoid the slowdown. The deceleration is particularly dramatic for the two star performers of the 1950-1980 period, Brazil and Mexico, where productivity growth turned negative after 1980 (the only two countries in which this happened).

Table 3.1 - Labor productivity growth in six Latin American countries since 1950

	1950-1980 ^{1/}	1980-2005 ^{2/}	1980-1990 ^{3/}	1990-2005
Argentina	0.8	0.1	-3.2	2.4
Brazil	4.3	-0.4	-1.9	0.7
Chile	2.2	1.2	-1.6	2.9
Colombia	2.1	0.7	1.5	0.2
Mexico	3.2	-0.2	-2.4	1.1
Peru	2.4	0.0	-5.6	3.4

1/ 1950-1981 for Chile and Mexico; 1960-1981 for Peru

2/ 1981-2005 for Chile, Mexico and Peru

3/ 1981-1990 for Chile, Mexico and Peru

Source: Estimates based on Timmer and de Vries (2007)

The slowdown for the whole period after 1980 appears to be in great part a result of the contraction of productivity in the 1980s after the shock of the debt crisis (table 3.1). Indeed, in 1980-1990 productivity growth turned negative in 5 of the 6 countries. The only exception is Colombia, precisely the country that did not suffer significantly from the severe credit rationing in international capital markets that characterized Latin America in the 1980s. As already noted, Colombia was not a large debtor in the early 1980s and, thus, managed to maintain a respectable output growth rate during the lost decade (see Table 3.2). In contrast, the period since 1990 has recorded a resumption of productivity growth everywhere except Colombia and in the case of Argentina, Chile and Peru at rates higher than in the pre-1980 period. Brazil and Mexico have continued to show a very sluggish growth of productivity while Colombia has recorded a deterioration of productivity performance even with respect to the 1980s.

Table 3.2. Total value added growth rate (percent per year)

	1950-1980	1980-1990	1990-2005
Argentina	2.6	-1.3	3.4
Brazil	7.5	1.3	2.2

Chile	3.6 ^{1/}	2.5 ^{2/}	5.4
Colombia	5.3	3.5	2.9
Mexico	6.5 ^{1/}	0.9 ^{2/}	2.8
Peru	5.0 ^{3/}	-1.5 ^{2/}	4.1

1/ 1950-1981 2/ 1981-1990 3/ 1960-1981

Source: Estimates based on Timmer and de Vries (2007).

ii. The Role of the Services Sector

In Table 3.3 we show the growth rates in labor productivity by sector. The sector most affected by the productivity growth slowdown is services which records negative or insignificant growth rates in all countries and has the slowest productivity growth rate everywhere after 1980.

Table 3.3 - Labor productivity growth (percent per year)

Argentina	1950-1980	1980-2005	1980-1990	1990-2005
Whole economy	0.8	0.1	-3.2	2.4
Agriculture	2.9	2.9	0.6	4.6
Industry	1.4	1.9	-2.2	4.6
Manufacturing	1.9	1.9	-2.2	4.8
Services	0.3	-0.9	-4.1	1.4
Brazil	1950-1980	1980-2005	1980-1990	1990-2005
Whole economy	4.3	-0.4	-1.9	0.7
Agriculture	2.8	3.6	3.0	4.0
Industry	4.2	-0.2	-3.1	1.8
Manufacturing	4.8	-0.9	-4.7	1.7
Services	2.0	-1.9	-3.8	-0.7
Chile	1950-1981	1981-2005	1981-1990	1990-2005
Whole economy	2.2	1.2	-1.6	2.9
Agriculture	2.0	5.1	2.9	6.4
Industry	2.7	2.2	-1.0	4.2
Manufacturing	3.9	2.1	-2.0	4.7
Services	1.2	0.1	-2.7	1.8
Colombia	1950-1980	1980-2005	1980-1990	1990-2005
Whole economy	2.1	0.7	1.5	0.2
Agriculture	2.2	1.2	2.5	0.3
Industry	2.3	0.9	1.2	0.7
Manufacturing	2.8	0.5	-0.2	1.0
Services	0.8	0.1	0.6	-0.2
Mexico	1950-1981	1981-2005	1981-1990	1990-2005
Whole economy	3.2	-0.2	-2.4	1.1
Agriculture	2.9	1.2	-0.8	2.4
Industry	2.3	0.0	-2.3	1.4
Manufacturing	2.4	0.6	-1.8	2.0
Services	1.6	-1.2	-3.4	0.1
Peru	1960-1981	1981-2005	1981-1990	1990-2005
Whole economy	2.4	0.0	-5.6	3.4
Agriculture	0.9	1.8	-0.2	3.1
Industry	2.4	1.2	-6.0	5.7
Manufacturing	3.2	0.4	-6.7	4.9
Services	0.8	-1.1	-7.5	2.9

Source: Estimates based on Timmer and de Vries (2007).

As a result, after having been a high productivity sector in 1950 with a productivity level between 265.9 percent (Brazil) and 134.0 percent (Argentina) the economy-wide average level, services by 2005 was in 4 of the countries a low productivity sector (and close to becoming so in the other two) with a productivity level between 78.8 percent (Chile) and 112.4 percent (Mexico) the average level (see Table 3.4).

Table 3.4 - Labor productivity in services (as percent of the average level)

	1950	1980	2005
Argentina	134.0	105.2	81.5
Brazil	265.9	135.0	91.1
Chile	138.8	103.0 ^{1/}	78.8
Colombia	159.6	106.6	91.8
Mexico	236.9	143.5 ^{1/}	112.4
Peru	197.7 ^{2/}	142.7 ^{1/}	109.8

1/ 1981 2/1960

Source: Estimates based on Timmer and de Vries (2007).

The deceleration of productivity in services went together with a sharp expansion of the employment share of this sector. Between 1980-81 and 2005, this share increases by 9.2 percentage points in Peru (the smallest expansion) and up to 22.4 percentage points in Brazil (the largest expansion) (table 3.5).

Table 3.5. Employment share of services (percent)

	1950	1980	2005
Argentina	44.1	53.3	72.7
Brazil	19.8	39.4	61.8
Chile	39.0	50.9 ^{1/}	67.2
Colombia	27.2	46.5	58.2
Mexico	25.4	43.8 ^{1/}	57.2
Peru	28.1 ^{2/}	42.6 ^{1/}	51.8

1/ 1981 2/1960

Source: Estimates based on Timmer and de Vries (2007).

The implication of the transformation of services into a low productivity sector and the large expansion of its share in total employment is that the productivity gains from the reallocation of the labor force from low productivity sectors (such as agriculture) to high productivity sectors in industry and (traditionally) services must have declined substantially after 1980 compared with what happened during the 1950-1980 period¹⁸. This is indeed what Table 3.6 shows. The table presents for the periods 1950-1980 and 1980-2005 a rough estimate of these productivity gains from labor reallocation, obtained as the difference between the rate of productivity growth for the whole economy and a weighted average of the productivity growth rates in agriculture, industry and services (where the weights are the employment shares of each sector at the beginning of the period). As the table illustrates, in the first period labor reallocation generated positive productivity gains in all countries with the exception of Argentina, the gains being especially significant in Brazil, Mexico and Peru. The exceptional character of Argentina is probably due to the fact that already in 1950 its economy was a relatively mature one with productivity differences across sectors that were much less significant than in countries with large, low-productivity agricultural sectors such as Brazil and Mexico. In any case, in the second period productivity gains declined everywhere (with the exception again of Argentina) and in fact turned negative in all countries except Colombia. The declines were particularly sharp in Brazil (2.7 percentage points), Peru (1.8 percentage points) and Mexico (1.1 percentage points).

Table 3.6. Productivity gains from labor reallocation (in %)

	1950-1980	1980-2005
Brazil	1.4	-1.3
Peru	1.3 ^{1/}	-0.5 ^{2/}
Mexico	0.7 ^{1/}	-0.4 ^{2/}
Chile	0.3 ^{1/}	-0.5 ^{2/}
Colombia	0.3	0.1
Argentina	-0.5	-0.4

1/ 1950-1981

2/ 1981-2005

Source: Estimates based on Timmer and de Vries (2007).

A number of factors account for the long term slowdown of productivity in the services sector. First, there has been almost everywhere a fast expansion of employment in low productivity services sectors, especially within the commerce sector, which contributes through labor reallocation effects to the poor productivity performance of the services sector as a whole. Indeed, the sectors with relatively low productivity, as shown in Table 3.7, are generally the subsector other services, which includes community, social, personal and government services, and to a lesser extent the sector comprising wholesale and retail trade (together with restaurants and hotels). This last sector shows in most countries (the only exception being

¹⁸ This point is also made by the IDB recent book (see Pagés, 2010).

Argentina) a very fast rate of employment expansion (higher than the already fast rate of growth of the overall services sector).

Second, there has been a sharp decline of productivity in the sectors with large employment shares (commerce and other services), which directly contributes to the overall poor productivity performance. The decline of productivity in the commerce sector is everywhere larger than the average decline for the whole services sector and the negative growth rates are especially high in Brazil (-3.3 percent), Mexico (-2.6 percent) and Peru (-2.3 percent), the three countries with poorest productivity performance in the overall services sector. The productivity decline in other services is less pronounced but still the productivity growth rates are negative everywhere with the exception of Colombia.

Third, there has been a genuine collapse of productivity in the finance, insurance and real estate sector with the sole exception of Colombia. This collapse has been accompanied by a very fast expansion of employment. This means that the contribution to the productivity slowdown of the performance of this sector has been ambiguous. Since this sector was generally a high productivity sector at the beginning of the period 1980-2005, the negative impact of its productivity performance was to some extent moderated by the fast expansion of employment (which by itself made a positive contribution to productivity).

All this suggests that the components of the services sector most responsible for the productivity growth slowdown and the increase in the sector's employment share are the two largest sectors (commerce and other services) that are characterized by the prevalence of low productivity activities and a relatively high share of informal employment.

Table 3.7- Productivity and employment growth in the services sectors (in %)

Argentina, 1980-2005	Productivity growth	Employment growth	Employment share	Relative productivity
Commerce 1/	-1.2	2.0	34.3	115.7
Transport 2/	0.7	3.2	9.3	130.3
Finance 3/	-2.1	4.0	8.0	101.7
Other 4/	-0.9	2.6	48.4	82.8
Total	-0.9	2.6	100	100
Brazil, 1980-2005	Productivity growth	Employment growth	Employment share	Relative productivity
Commerce 1/	-3.3	5.0	27.7	51.3
Transport 2/	-1.0	3.6	8.1	104.2
Finance 3/	-1.8	2.5	16.0	264.5
Other 4/	-1.2	4.0	48.2	81.1
Total	-1.9	4.1	100	100
Chile, 1981-2005	Productivity growth	Employment growth	Employment share	Relative productivity
Commerce 1/	-0.1	4.7	28.9	78.6
Transport 2/	2.9	3.7	12.2	85.5
Finance 3/	-3.3	8.8	6.6	348.6
Other 4/	-0.2	2.9	52.4	83.7
Total	0.1	4.2	100	100
Colombia, 1980-2005	Productivity growth	Employment growth	Employment share	Relative productivity
Commerce 1/	-1.5	4.1	38.9	79.5
Transport 2/	-0.4	3.8	9.0	196.0
Finance 3/	1.3	2.8	15.7	98.1
Other 4/	1.4	2.4	36.5	99.1
Total	0.1	3.3	100	100
Mexico, 1981-2005	Productivity growth	Employment growth	Employment share	Relative productivity
Commerce 1/	-2.6	4.6	31.8	128.2
Transport 2/	0.7	3.1	10.3	155.2
Finance 3/	-3.1	7.0	4.2	125.9
Other 4/	-0.8	2.3	53.7	70.7
Total	-1.2	3.5	100	100
Peru, 1981-2005	Productivity growth	Employment growth	Employment share	Relative productivity
Commerce 1/	-2.3	3.8	31.1	121.5
Transport 2/	-0.6	2.9	10.3	133.1
Finance 3/	-2.0	4.9	6.0	237.9
Other 4/	-0.6	1.7	52.6	65.1
Total	-1.1	2.8	100	100

1/ Wholesale and retail trade, hotels and restaurants; 2/ Transport, storage and communication; 3/ Finance, insurance and real state; 4/ Community, social, personal and government services.

Employment shares and relative productivity refer to the beginning of the period (1980 or 1981).

Source: Estimates based on Timmer and de Vries (2007).

iii. The Exogenously-driven Productivity-slowdown Interpretation

The most common explanation of the total factor productivity slowdown emphasizes market failures and policy distortions in the supply side of factor markets. This view gives a clear causal interpretation to the finding that in an accounting sense TFP growth performance is largely responsible for the fact that Latin America's growth has slowed down compared to the past and has been lagging behind that of developed and other developing economies. In this approach, the sharp change in the trend of aggregate productivity is taken to be largely exogenous in the sense of being independent from the slowdown that simultaneously occurred in the rate of capital accumulation and unaffected by the growth of output itself. This view fully acknowledges and emphasizes that the slowdown in productivity growth is largely accounted for by the performance of the services sector but this performance is attributed to a number of credit market failures and policy-related distortions that act on the supply side to keep services productivity low and stagnant.

The most comprehensive account of this explanation can be found in Pagés (2010). According to its authors, the major problem obstructing productivity growth is that “high rates of informality are shielding small firms — the vast majority of which are very inefficient — from the competition of better, more productive business models” (p. 67). These high rates of informality have in turn their origin in poorly functioning credit markets, high taxes and tax evasion and uneven coverage and enforcement of social and labor market policies.

In this view, the lack of developed credit markets contributes to high rates of informality by obstructing an efficient reallocation of capital across firms and by reducing the opportunity costs of informality (as one of the costs of being informal is the lack of access to formal credit markets). In addition, Latin America's tax regimes, characterized by a combination of high taxes and pervasive tax evasion, end up providing a large subsidy for low productivity firms thus increasing the weight of these firms with adverse effects on aggregate productivity. This subsidy to informality is exacerbated when special regimes reduce taxation for micro and small enterprises. Social protection systems in Latin America further favor informality. These systems had traditionally been based in Bismarkian regimes that provide social entitlements to formal workers based on revenues collected in labor markets. In recent times, these regimes have been complemented with social programs — such as the provision of free or low cost health insurance or conditional cash transfers that incorporate lack of formal protection as eligibility criteria — that attempt to cover those uncovered by the traditional system. In doing so, the overall result is to tax formal labor while subsidizing informality, further encouraging its expansion.

Certainly, the expansion of informality is not the only adverse consequence on productivity of these market and policy failures. For example, underdeveloped credit markets also contribute to low productivity by constraining the development of new technologies and processes or by impeding firms to cope better with macroeconomic volatility. Similarly, high taxes reduce the potential profits generated by investments in improved technologies while high tax evasion

lowers the capacity of the government to invest in productivity enhancing infrastructure and education. While these effects have to be noted, it is nevertheless the expansion of informality that is the most relevant consequence when trying to explain the behavior of productivity in the services sector.

What do we make of this explanation? A first observation is that much of the arguments presented in this approach may be more relevant to explain levels than growth rates of productivity, i.e. to explain why productivity in services is lower than otherwise rather than to explain why it has stagnated (and declined in some periods) after the early 1980s. From the perspective of explaining the productivity growth slowdown the relevant questions are: Have credit market failures worsened in recent decades? Have tax systems and tax compliance changed in the direction of favoring informal firms more than in the past? Has the coverage and enforcement of social and labor policies become more uneven?

Let us consider the evidence presented to answer these questions. It is true that financial depth (measured as credit to the private sector as percentage of GDP) relative to developed countries diminished in the aftermath of the debt crisis and up to 1990, but credit fell even more following the East Asian and Russian crises of 1997 and 1998 a period in which the worst of the productivity slowdown was already over (see Figure 6.2, p. 126, in Pagés, 2010). Regarding tax regimes and tax evasion, the book amply documents their static productivity effects but provides no evidence that changes in tax policies since 1980 may have caused the productivity slowdown. To be sure, tax evasion is likely to have increased in recent decades but, to the extent that tax systems have not fundamentally changed, this is certainly a consequence rather than a cause of the expansion of informality. Finally, recent social programs may have introduced more distortions that favor informality. But the timing of the services productivity contraction does not give support to the hypothesis that these social policies have played a major role in the productivity slowdown. The new social policies designed to cover the informal poor are largely a post 1990 development, precisely the period when productivity growth recovered.

The second major observation is that this explanation of the productivity slowdown gives little role to capital accumulation and output growth in influencing productivity performance. Yet, as we shall see later, there are good reasons to believe that these influences are very important. To be sure, the authors acknowledge that factor accumulation may influence TFP growth. For example, they refer to embodied technical progress when they say that “physical capital investment may embody new technologies to help catch up with the frontier”. As a result there is a call for more research to analyze the “question of how far addressing distortions in capital accumulation would go in increasing income via its indirect effects on increased productivity” (p. 40). Yet, in the final section of the same chapter they conclude that their analysis “suggests that policies easing physical and human capital accumulation would help improve productivity but *would leave untouched most of the productivity problem*” (p. 41) (our italics). Either more research is needed or the question has been settled but we cannot have it both ways! This leads us to the endogenous productivity explanation.

iv. The Endogenously-driven Productivity-slowdown Interpretation

An alternative explanation views the productivity growth slowdown after 1980 as largely an endogenous phenomenon determined by the generalized output growth slowdown that followed the shocks of the 1980s. In this view it is hard to believe that the sharp productivity growth slowdown in services is a cause rather than the consequence of the growth slowdown. How otherwise can one interpret the contraction of productivity in the 1980s if not as largely dependent on the aggregate demand shocks and the resulting investment and output contraction of the period?

This view of the productivity slowdown is easy to understand once we allow productivity performance to be endogenous to the growth process as argued by Kaldor (1966, 1967). This Kaldorian approach has its roots in Adam Smith and Allyn Young and relies on the so called Verdoorn's law as its main empirical basis.¹⁹ Verdoorn's law establishes a close association within manufacturing between the rate of labor productivity growth and the rate of output growth. Causality is interpreted by Kaldor as going from output to productivity growth as a result of the presence of increasing returns to scale in manufacturing, that is of static and, more importantly, dynamic (i.e. irreversible), economies of scale including in particular learning-by-doing and embodied technical progress. A Verdoorn law can also be established at the economy-wide level. In addition to the mechanisms prevailing in manufacturing, the absorption of the labor force in high productivity sectors (when these grow faster than average) or in low productivity sectors (when high productivity sectors stagnate) is another way in which the rate of output expansion indirectly influences the overall rate of productivity growth. This is both because of the productivity gains from labor reallocation and the fact that in non industrial sectors, characterized by the absence of increasing returns to scale and the presence of surplus labor, the faster the rate of employment growth, the slower tends to be the rate of productivity growth. In this way, the rate of expansion of the high productivity industrial sector also influences productivity change in the non-industrial sectors and indirectly affects the overall rate of productivity growth.

In this approach, the mechanisms behind the productivity slowdown are quite straightforward. A lower rate of capital accumulation per worker since 1980 led to a slower growth of output and employment in the high productivity (capital intensive) sectors of the economy, such as the industrial sector. The slower rate of industrial output growth meant a lower rate of increase in the flow of goods intermediated by such services sectors as wholesale and retail trade.²⁰ Because in industry output and employment growth tend to be positively related (Kaldor,

¹⁹ See, for example, Libanio, 2006.

²⁰ This by itself (i.e. independently of the expansion of informal employment) tended to reduce productivity in services. As Kaldor (1967, p. 22) puts it: "It is just as easy to sell two packages of cigarettes to a customer in a shop as one package". As a result, in commerce, "the rate of increase of productivity, provided that excess capacity exists, will in this case vary in automatic response to the rate of growth of production in the primary and secondary sectors, and the consequent growth in consumption" (p. 22).

1967), it also meant a slower rate of employment absorption in the high productivity sectors that contributed to a sharp increase in the employment share of low productivity services. These two effects — the slower rate of increase of the flow of goods and the expansion of informality in low productivity services — reduced productivity directly as well as indirectly (by reducing the productivity gains derived from labor reallocation).

In this explanation there are two key relationships: that between the rate of capital accumulation per worker and output growth in high productivity sectors and that between the latter and productivity growth in services. Tables 3.8 and 3.9 present evidence on these relationships. As shown in Table 3.8, there is a close positive association across countries and over time between the rate of growth of the capital labor ratio and the growth of industrial value added (which we use as an approximation to the growth of output in high productivity sectors). First note that in the period 1950-1980, the countries with the highest rates of capital deepening (Brazil and Mexico) are also those with the fastest industrial output growth. Then, the collapse of capital accumulation during the lost decade is accompanied everywhere by a sharp reduction in the industrial output growth rate with the sharpest reductions in the rates of capital accumulation occurring in the countries with the greatest reversals in industrial expansion: Brazil (6.7 and 8.3 percentage points respectively), Mexico (5.0 and 6.5 percentage points), Peru (5.8 and 7.4 percentage points). Colombia and Chile, on the other hand, with either no decline or a relatively moderate fall in the rate of capital accumulation have the more modest reversals in industrial growth (1.8 percentage points in both countries). The recovery of industrial growth since 1990 also shows a close association with the resumption of positive rates of accumulation almost everywhere. Again, the more significant increases in capital accumulation take place where the resumption of industrial expansion is more dramatic (although not necessarily the turnaround compared to the lost decade): Chile and Peru (with 6.1 and 4.7 percentage points increase in the rate of capital accumulation). In Brazil and Mexico, by contrast, with only a 0.6 and 2.7 percentage point improvement in the rate of accumulation, the increase in the rate of industrial growth has been very modest (2.0 and 1.8 percentage points, respectively).

Table 3.8 - Growth of capital-labor ratio and industrial value added (% per year)
1950-1980 ^{1/} 1980-1990 ^{2/} 1990-2005

	K/L ratio	VA Industry	K/L ratio	VA Industry	K/L ratio	VA Industry
Brazil	6.5	8.4	-0.2	0.1	0.4	2.1
Mexico	4.3	7.5	-0.7	1.0	2.0	2.8
Colombia	1.4	5.9	2.5	4.1	0.2	2.6
Peru	2.6	5.2	-3.2	-2.2	1.5	4.8
Chile	2.1	4.1	-1.6	2.6	4.5	4.8
Argentina	3.8	3.1	-0.9	-2.8	0.1	3.6
Average	3.5	5.7	-0.7	0.5	1.5	3.1

1/ 1950-1981 for Chile and Mexico and 1960-1981 for Peru

2/ 1981-1990 for Chile, Mexico and Peru

Sources: Capital stock estimates were provided by André Hofman; Industrial value added and employment are based on Timmer and de Vries (2007).

Table 3.9 tells a similar story for the relationship between industrial growth and the growth of services labor productivity. During 1950 to 1980, the more successful industrializing countries (Brazil and Mexico) are also those with the fastest productivity growth in services while Argentina with the slowest growing industrial sector has also the lowest rate of services productivity growth. The sharp reduction in the rate of industrial expansion in the 1980s is accompanied by negative rates of productivity growth in services with the exception of Colombia which is precisely the country with the fastest industrial expansion. The services productivity slowdown is sharpest in those countries with the strongest contraction in industrial output (Argentina and Peru). Since 1990, during the recovery period, the fastest rates of productivity growth in services take place in the countries with the fastest industrial growth (Chile and Peru). There is in fact an almost perfect positive correlation between the two variables across countries. It would seem according to the data that a rate of industrial growth of the order of 2.7-2.8 percent per year is necessary to prevent labor productivity in services from falling.

Table 3.9. Growth of industrial value added and labor productivity in services (% per year)
1950-1980 ^{1/} 1980-1990 ^{2/} 1990-2005

	VA Industry	LP Services	VA Industry	LP Services	VA Industry	LP Services
Brazil	8.4	2.0	0.1	-3.8	2.1	-0.7
Mexico	7.5	1.6	1.0	-3.4	2.8	0.1
Colombia	5.9	0.8	4.1	0.6	2.6	-0.2
Peru	5.2	0.8	-2.2	-7.5	4.8	2.9
Chile	4.1	1.2	2.6	-2.7	4.8	1.8
Argentina	3.1	0.3	-2.8	-4.1	3.6	1.4
Average	5.7	1.1	0.5	-3.5	3.1	0.9

1/ 1950-1981 for Chile and Mexico and 1960-1981 for Peru

2/ 1981-1990 for Chile, Mexico and Peru

Source: Estimates based on Timmer and de Vries (2007).

v. Conclusions

The two explanations reviewed have elements in common, the main one being that the services sector plays a key role in the slow productivity growth in Latin America, but otherwise have very different policy implications. The exogenous productivity explanation attributes the poor performance of the services sector to credit market failures and policy distortions that favor the survival and expansion of low productivity firms and advocates the removal of these failures and distortions as the key to the resumption of fast productivity growth. At the same time it downplays the role that capital accumulation can have in the recovery of growth. As the

IDB book puts it: “from a long term perspective, growth in Latin America and the Caribbean has lagged behind other emerging economies. Contrary to popular belief, low investment is not necessarily to blame for this performance. Low and slow productivity, rather than impediments to factor accumulation, provide a better explanation for Latin America’s low income compared to developed economies and its stagnation relative to other up-and-coming developing countries”(p.ix).

Contrary to this belief, and putting the IDB thesis upside down, for the endogenous productivity explanation the culprit of slow productivity growth is the low rate of capital accumulation in the region. As argued by Moreno-Brid and Ros (2009), the Mexican experience – where the rate of physical capital formation fell from 7.3 percent per year in 1960-1981 to 4 percent in 1990-2008 – illustrates some of the factors constraining investment at a low level: the low level of public investment (particularly in the area of infrastructure) which fell dramatically as a result of the type of fiscal adjustment followed after the debt crisis, an appreciated real exchange rate for most of the period since 1990 (as already argued in section 2), the dismantlement of industrial policy during the market reform period, and the lack of bank finance, especially after the financial crisis of 1994-95 following the financial liberalization process of the early 1990s. The first factor contributes directly to a slower rate of capital formation in the public sector and possibly also in the private sector, given the likely crowding in effects of investment in infrastructure. The second and third have affected private investment profitability particularly in the manufacturing sector with deleterious effects on the process of economic development. The fourth has prevented the realization of potentially profitable investment projects. Thus, in this view, a strategy for the resumption of growth should focus on macroeconomic reforms that lead to increasing rates of public investment and provide a competitive and stable real exchange rate, together with industrial and banking policies that aim to radically improve investment performance.

The fact that the poor investment performance of the region is indeed to blame for its low rate of economic growth does not mean, however, that removing market and policy failures in credit markets as well as in tax systems or social policies would be without effects on the rate of growth. But ironically, a crusade against informality, if successful, would affect output and productivity growth mostly through its effects on capital accumulation rather than by increasing directly TFP. Indeed, the main channel through which a reduction of informality would affect growth is by driving down the general level of wages in the formal sector thus increasing the rate of return on capital and stimulating capital accumulation.

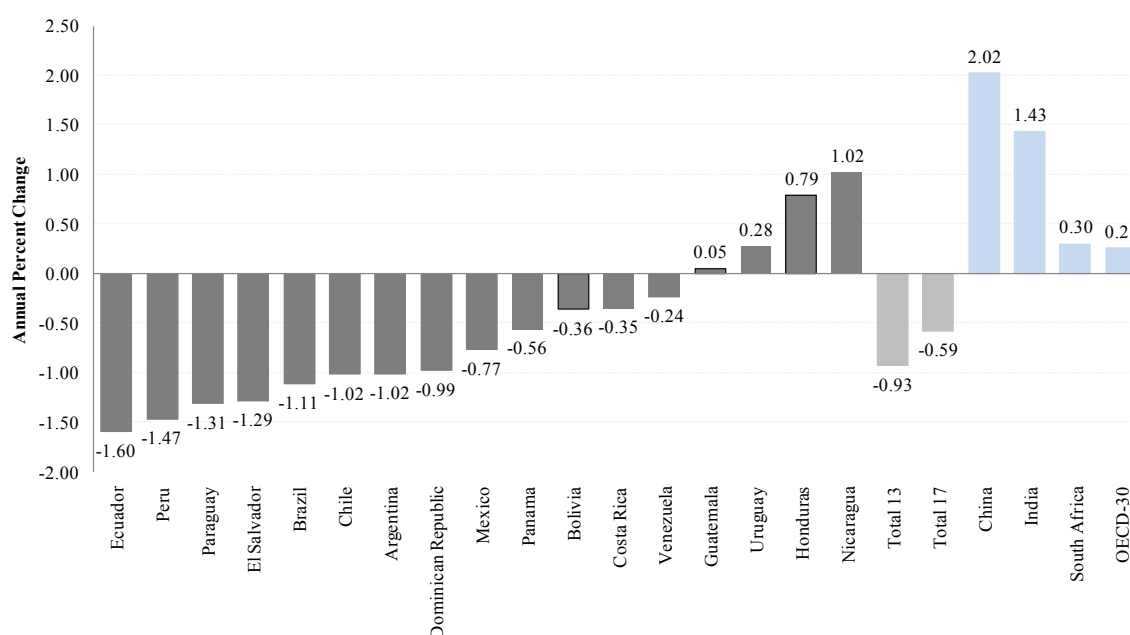
All this is not to say that reforming tax systems, eliminating credit market failures (although for reasons different from those emphasized in the IDB book), and transforming social policies are not important and necessary reforms. For example, it is clear that taxing formal labor and subsidizing informality is far from being the best way to provide social entitlements. We fully concur with the IDB book and Levy (2008) implication that social policies should be radically reformed in the direction of providing universal access to health care, education and social

security regardless of labor market status and financing the provision of these social entitlements out of general taxation.

4. The Rise and Fall of Inequality in Latin America²¹

In the last 25 years the distribution of income in Latin America has experienced two distinct trends. During the period comprehending the so-called “lost decade” of the 1980s and structural reforms of the early 1990s, income inequality increased in most of the 17 countries for which comparable data is available.²² Starting in the second half of the 1990s, inequality began to decline. Between 2000 and 2008, inequality declined in 13 of the 17 countries for which comparable data exist. (Figure 4.1) This section will explore which factors lay behind this rise and fall of income inequality in the region. After a brief overview of the regional trends, it will focus on three countries for which substantial analysis is available: Argentina, Brazil, and Mexico.

Figure 4.1 – Yearly Change in Gini Coefficient by Country: circa 2000-2008 (in percent)



Source: Authors' calculations based on data from SEDLAC (CEDLAS and The World Bank), August 2010 (<http://sedlac.econo.unlp.edu.ar/eng/>) and OECD (2010) for non-LAC countries.

Notes:

1. Data for Argentina and Uruguay are for urban areas only. In Uruguay, urban areas covered by the survey represent 80 percent of the total population; in Argentina, they represent 66 percent. The average change in the Gini for each country is calculated as the percentage change between the end year and the initial year divided by the number of years; the average for the total is the simple average of the changes by country (thirteen countries in which inequality fell). The years used to estimate the percentage change are as follows: Argentina (2008-00), Bolivia (2007-01), Brazil (2008-01), Chile (2006-00), Costa Rica (2008-01), Dominican Republic (2007-00), Ecuador (2008-

²¹ This section is based on Gasparini and Lustig (forthcoming), Lustig (2009) and Lopez-Calva and Lustig (2010).

²² See, for example, citations in Gasparini and Lustig, op.cit. In the 1980s only six of the countries had national data while the remaining seven covered urban areas (and in some countries only the large metropolis).

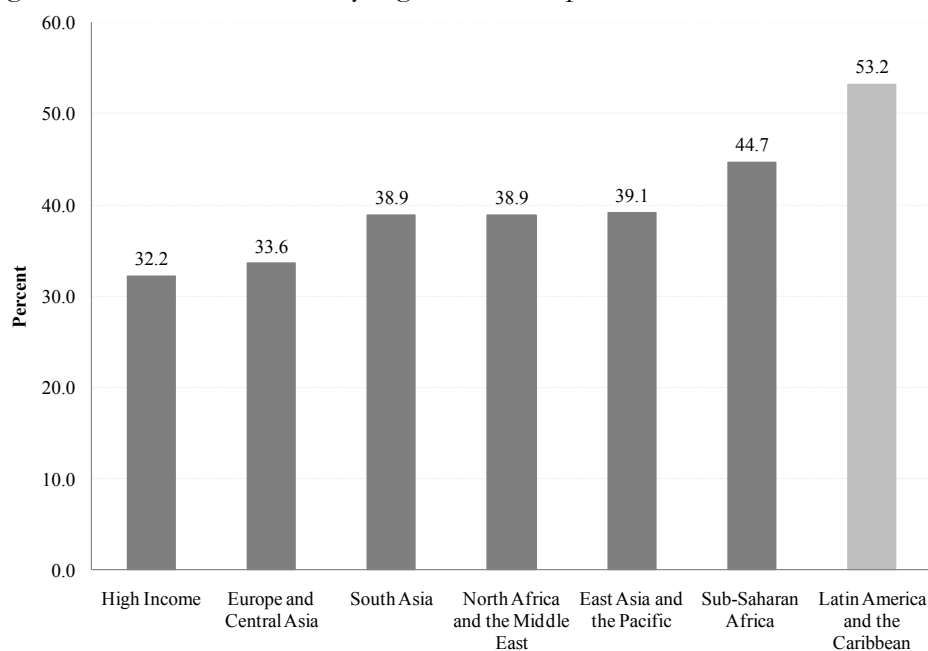
03), El Salvador (2008-00), Guatemala (2006-00), Honduras (2007-01), Mexico (2008-00), Nicaragua (2005-01), Panama (2006-01), Paraguay (2008-02), Peru (2008-01), Uruguay (2008-00), and Venezuela (2006-00). Using the bootstrap method, with a 95 percent significance level, the changes were not found to be statistically significant for the following countries: Bolivia, Guatemala, and Nicaragua (represented by black borders in the figure). In Costa Rica, the change is calculated between 2001 and 2008 because the sample weights changed since 2001. The years used in non-Latin American countries are as follows: China (1993-Mid 00s), India (1993-Mid 00s), South Africa (1993-08), and OECD-30 (Mid 80s-Mid 00s).

2. The results are robust to changes in the end points or taking the average around 2000 and 2008.

i. Latin America's Income Distribution: 1980s-2000s

Latin America is characterized by its high and persistent income inequality. During the 1970s, the income share of the bottom 20 percent equaled 2.9 percent of total income, among the lowest in the developing world.. In contrast, the share of the richest 10 percent equaled 40.1 percent, the highest in the developing world. At the end of the 1980s, the average Gini coefficient was 0.50 compared with 0.39 for non-Latin American countries. In the mid-2000s, with a Gini coefficient of .53, Latin America still was 18 percent more unequal than Sub-Saharan Africa, 36 percent more unequal than East Asia and the Pacific and 65 percent more unequal than advanced countries (Figure 4.2).

Figure 4.2 - Gini coefficient by region 2004; in percent



Source: Ferreira and Ravallion (2009).

Latin America was already a region of sharp income inequality before the debt crisis and structural reforms of the 1980s and 1990s. How did income distribution in Latin America

change when many countries had to endure stagnant or negative growth, fiscal austerity and profound economic restructuring? As mentioned above, data limitations are substantial.²³ However, the pattern is clear. During the 1980s, the Gini coefficient rose in most countries. For the countries with data at the national level (Brazil, Costa Rica, Guatemala, Mexico, Panama and Venezuela), the Gini coefficient rose in all but Costa Rica (for which the trend was ambiguous depending on the bibliographical source).²⁴ For the countries with urban data only (Argentina, Bolivia, Chile, Colombia, Honduras, Paraguay, Peru and Uruguay), the Gini coefficient rose in all but Colombia, Paraguay and Uruguay. It is important to note that it was not always the bottom 20 percent whose share fell by more (in percentage points) than that of the other groups. In several countries, it was the middle and upper-middle ranges that lost disproportionately. However, in country after country, while the bottom or the middle ranges share's shrank, the share of the top ten percent increased, sometimes substantially (with the exception of Colombia, in which it fell).

Did the increase in inequality during the 1980s and 1990s result from the debt crisis and its inevitable aftermath? Or was it a result of the policies adopted by governments to restore economic stability and growth? It is always difficult to disentangle the contribution of policies from other factors to a particular outcome, and the distribution of income is no exception. This explains why there has been a lot of controversy and conflicting evidence regarding the impact of orthodox (vs. heterodox) stabilization programs and market-oriented reforms (trade liberalization in particular) on inequality. The difficulty is compounded because there are inter-temporal (lower income today and higher income tomorrow vs. "flatter" income growth) and within groups (rural vs. urban poor, for example) trade-offs. Broadly, the basic conclusion drawn from the many studies available was "...that the impact of adjustment depends largely on the country's initial conditions, on the nature of the shock and on the characteristics of the adjustment program. A second finding was that the 'no policy' adjustment option was worse than any of the alternatives. A third finding was that different types of poor persons (rural vs. urban) could fare quite differently during the adjustment process. Conflicts can emerge between the interests of the poor and the non-poor, and among types of poor persons, when different policy combinations result in different distributive outcomes."²⁵ There is evidence, however, that suggests orthodox adjustment policies often resulted in *overkill*.²⁶ Overkill caused

²³ Between 1979 and 1990s, there were few countries for which before-and-after analysis of inequality in the 1980s could be made at the national level. Eleven countries had at least one survey in the 1980s at the national level. Among these, a strict before-and-after adjustment comparison could be made only for four: Brazil, Costa Rica, Panama and Venezuela. Surveys from Argentina, Bolivia, Colombia, Ecuador, El Salvador, Paraguay, and Uruguay did not include the rural sector. Only three countries had at least one survey that recorded total income (including nonwage and nonmonetary income): Chile, Mexico and Uruguay. Lustig (1995), Table 1A-1, p. 37. One should mention that even in the countries whose surveys collect information on nonwage income, there is every reason to believe that there gross underestimations particularly with respect to property income. A quick look at the top income levels recorded in the surveys demonstrates that the rich are not counted. Hence, existing measures may underestimate the true levels of inequality in a nontrivial way.

²⁴ The data included in this paragraph comes for a variety of sources as discussed in Lustig (1995). Also, see, Altimir (2008), Fiszbein and Psacharopoulos (1995) and Morley (1995).

²⁵ Lustig (2000).

²⁶ Taylor (1988).

poverty, and possibly inequality, to increase beyond what was necessary to restore the macroeconomic equilibrium.

Regarding the impact of market-oriented reforms on inequality, a detailed review of this vast literature goes beyond the scope of this paper. Morley (2001) does such a review and concludes “...that work shows that the recent²⁷ reforms have had a negative but small regressive impact on inequality mainly because many of the individual reforms had offsetting effects. Trade and tax reform have been unambiguously regressive, but opening up the capital account is progressive.”

The rising trend in inequality came to a halt in the second half of the 1990s (or early 2000s depending on the country). Since then, there seems to be a declining trend. The decline has been significant, both in order or magnitude and in the majority of cases in the statistical sense. The average decline for the 13 countries in which inequality fell was close to 1 percent a year. (Figure 4.1) The decline in inequality has also been widespread. Inequality has fallen in high inequality countries (Brazil) and low inequality – by Latin American standards, that is – countries (Argentina); countries with a large share of indigenous groups (Bolivia, Ecuador and Peru) and countries with a low share (Argentina); in countries governed by the left (Brazil and Chile) and in countries governed by non-leftist regimes (Mexico and Peru); in countries with a universalistic social policy (Argentina and Chile) and in countries with a traditionally exclusionary state (Bolivia and El Salvador). This widespread decline in inequality is remarkable for a region that has traditionally witnessed high and persistent—and often rising – levels of inequality. Contrary to what some observers may think, it is not just the growth dividend from the commodity boom. Inequality has declined both in fast growing countries (Chile and Peru) and slow growing countries (Brazil and Mexico), as well as countries recovering from crisis (Argentina and Venezuela). In fact, the longest periods for which the decline could be documented correspond to Brazil and Mexico, two countries whose growth rates were rather slow.

Why has inequality declined in Latin America during the last decade? Have the changes in inequality been driven by market forces such as the demand and supply for labor with different skills? Have labor market institutions such as the strength of unions or minimum wages changed? Or have governments become more redistributive than they used to be? Based on Lopez-Calva and Lustig (2010),²⁸ the evidence suggests that the decline in inequality was accounted for by two main factors: (i) a fall in the earnings gap between skilled and low-skilled workers (through both *quantity* and *price* effects); and (ii) more progressive government transfers (monetary and in-kind transfers). Demographic factors, such as a change in the proportion of adults (and working adults) per household, have been equalizing, but the

²⁷ Recent here refers to the 1980s and 1990s, depending on the country.

²⁸ In addition to the country studies included in Lopez-Calva and Lustig's book, see Eberhard and Engel (2008) for Chile, Ferreira et al. (2007) for Brazil, Gray Molina and Yañez (2009) for Bolivia and Jaramillo and Saavedra (2010) for Peru.

magnitude of their contribution has been, in general, relatively smaller.²⁹ The fall in the earnings gap, in turn, was mainly the result of the expansion of basic education over the last couple of decades, which reduced inequality in attainment and made the returns to the education curve less steep. It also results from the petering out of the unequalizing effect of skill-biased technical change in the 1990s associated with the opening up of trade and investment discussed above. In addition, in the case of Argentina, the decline in inequality seems to be driven by a pro-union stance on the part of the government and redistributive fiscal policy based on the windfall of high commodity prices.

The next section will examine the factors affecting inequality dynamics through in-depth analysis of Argentina, Brazil and Mexico.

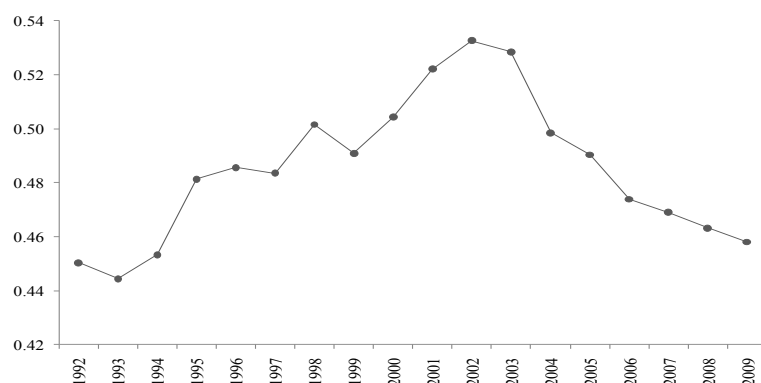
ii. The Rise and Fall in Inequality in Argentina, Brazil and Mexico

Figure 4.3 presents the evolution of the Gini coefficients for Argentina (urban), Brazil and Mexico since the 1980s (and since the 1990s for urban Argentina as previous data included the Greater Buenos Aires area only). As one can observe, the three countries went through a period of rising inequality during the years of adjustment and reform, a trend which came to a halt around 2000 (earlier for Brazil and Mexico and later for Argentina), when the Gini coefficient began to decline. As mentioned above, one of the key factors in explaining the decline in inequality was the shift in the composition of the labor force by skill and a change in the relative returns to skill (Figure 4.4).

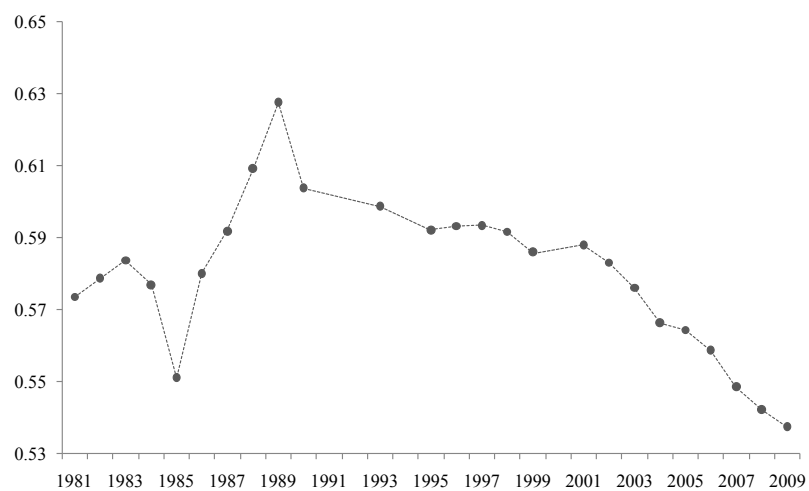
²⁹ These exercises take into account the direct/arithmetic effects of demographic changes as they manifest themselves in smaller household sizes and a higher proportion of income earners. However, demographic factors may affect the dynamics of inequality in other ways. For example, children in households that are smaller may fare better in terms of human capital accumulation and, hence, command higher incomes in the future.

Figure 4.3 – Evolution of the Gini Coefficient in Argentina (urban), Brazil and Mexico

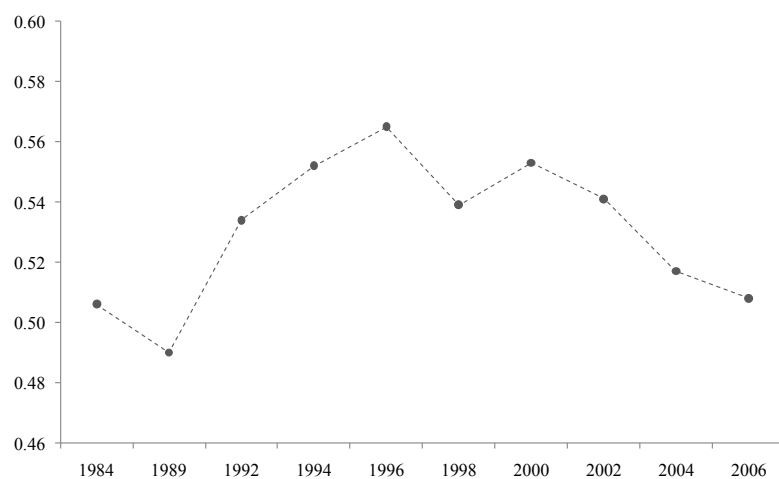
Argentina (urban)



Brazil

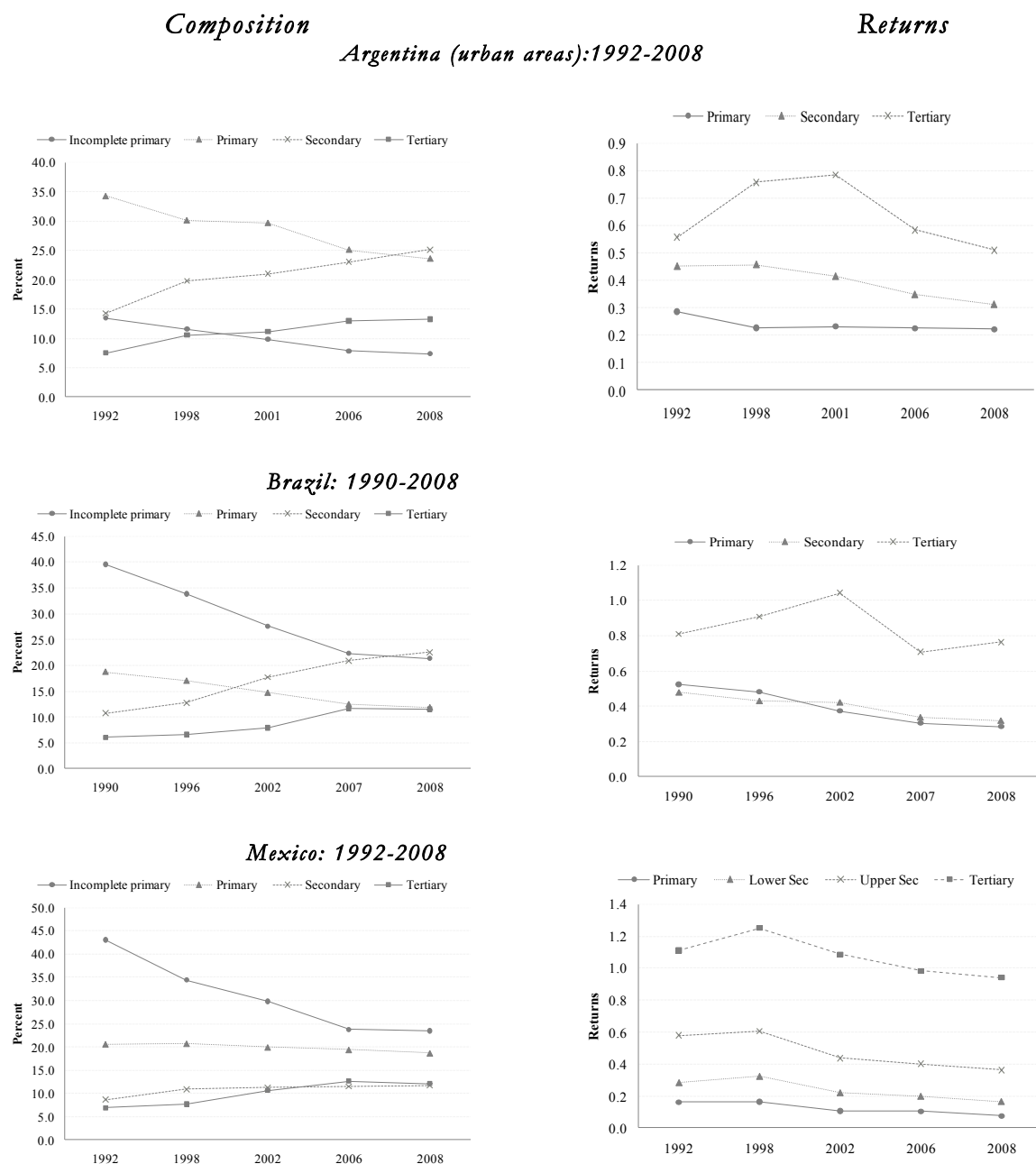


Mexico



Source: Authors' elaboration based on SEDLAC (CEDLAS and World Bank).

Figure 4.4 Composition of Adult Population by Educational Level and Returns to Education for Argentina, Brazil and Mexico



Source: Lopez-Calva and Lustig (2010). Returns for Argentina and Brazil are from SEDLAC (CEDLAS and World Bank), August 2010 (<http://sedlac.econo.unlp.edu.ar/eng/>); returns for Mexico are based on Campos-Vazquez (2010).

Notes:

1. Returns to education were calculated from educational dummy coefficients of Mincer equations, using wages from main occupation for men only. Variables for education level (college, secondary school, and primary school), potential experience, and geographic regions were included. Omitted variable was no schooling or incomplete primary school. Remunerations for men are for all workers, including wage earners, self-employed workers, and employers. Population considered was the age group from 25 years to 65 years. Data for Argentina are for urban areas only which represent 66 percent of the population.

2. Skills groups are formed by level of formal education. Educational levels correspond to completed primary school, lower- and upper-secondary school, and tertiary education. Data for Argentina are for urban areas only. In Argentina, complete primary school is achieved at 7 years, complete secondary school at 12 years, and tertiary education at 16 or more years of formal education; incomplete primary includes 6 years or less of education and no education. In Brazil, complete primary is achieved at 4 years, complete secondary at 11 years, and tertiary at 15 or more years of formal education; incomplete primary includes 3 years or less of education and no education. In Mexico, complete primary is achieved at 6 years, complete lower secondary at 9 years, complete upper secondary at 12 years, and tertiary at 15 or more years of formal education; incomplete primary includes 5 years or less of education and no education. Shares were calculated for adults only (the age group from 25 years to 65 years).

We now turn to explore the determinants of this pattern in each of the three countries.

*Argentina*³⁰

Argentina, a country well-known for its large and educated middle class in the 1960s, experienced a sharp increase in income inequality during the last thirty years. The Gini coefficient for the distribution of household per capita income in the Greater Buenos Aires (GBA) area soared from 0.344 in 1974 to 0.487 in 2006. Gasparini and Cruces (2010) show that although not uniform over time, the rising trend in inequality is statistically significant, robust to the geographic coverage of the data (whether Greater Buenos Aires only or all urban areas), choice of indicator, methodological aspects regarding the income variable, and alternative data sources. The trend is also similar when including or excluding the impact of social expenditure and taxes.

Like most of Latin America, in the 1980s Argentina experienced recurrent macroeconomic crises and high inflation with several unsuccessful stabilization attempts. The adjustment costs linked to the debt crisis were high. In 1990, real GDP was 20.8 percent less and real wages (in the manufacturing sector) were 14.4 percent lower than they had been in 1980. The evidence suggests that the crisis and adjustment caused sharp increases in poverty and were unequalizing.³¹ The headcount ratio in Greater Buenos Aires rose from 7.6 percent in 1980 to 28.5 percent in 1990. Altogether, between 1980 and 1990, the Gini coefficient for Greater Buenos Aires rose from .39 to

³⁰ Most of the section on Argentina draws from Gasparini and Cruces (2010). The data for inequality and poverty indicators in Argentina come from Argentina's main official household survey (Encuesta Permanente de Hogares, EPH), which now covers the main urban areas of the country. The EPH started in the 1970s as a survey for Greater Buenos Aires (GBA), which accounts for one third of Argentina's population, and was gradually extended later to cover all urban areas with more than 100,000 inhabitants since 1992. Since 1998 it includes 28 cities which represent two thirds of the total population. The income concept is current monetary income (no imputations for owner's occupied housing or auto-consumption). It includes government monetary transfers but no valuation of government in-kind transfers. No questions are asked regarding taxes so it is assumed that income is after taxes (including social security contributions) for wage earners and before taxes for other categories. Also see Galiani and Sanguinetti (2003) and Galiani and Porto (2010).

³¹ Unfortunately, we cannot have a full picture of these costs because prior to the 1990s, household surveys were only available for the Greater Buenos Aires (GBA) area.

.45. The 1989 hyperinflation had a very large distributional impact: poverty increased by 25 percentage points and the Gini coefficient increased by 6.3 points between 1988 and 1989.³²

In 1991, as discussed in previous sections, the government adopted the Convertibility Plan which put in place a fixed exchange rate regime supported by a currency board. The Convertibility Plan was accompanied by a series of far-reaching structural reforms which included trade liberalization and privatization of state-owned enterprises. The plan was successful in curbing inflation and growth resumed until Argentina was hurt by the contagion of Mexico's so-called "Tequila crisis" in 1995. This caused Argentina's GDP to fall by around 4 percent; however, Argentina's growth bounced back quickly. Inequality increased during the "Tequila crisis": the Gini coefficient for urban areas went up by 2.7 points in a year. In contrast to previous crises, inequality did not decline in the recovery period. After the "Tequila crisis" growth resumed until Argentina faced yet another crisis at the end of 2001, when the currency board had to be dismantled and the peso was allowed to float.

During the 1990s, income distribution in urban areas worsened substantially. In the aftermath of the 2001/02 macroeconomic crisis, income inequality declined. The period spanning from 1991 to 2006 covers two very different, almost opposite, economic policy regimes. In the 1990s, Argentina went through far reaching market-oriented reforms in a context of weak labor market institutions and limited social protection. In the 2000s, state intervention in the economy became more pervasive, labor market institutions were stronger and social protection schemes redistributed income to unskilled and semi-skilled workers.

To what extent was the rise in inequality in the 1990s associated with macroeconomic policies and structural reforms, in particular trade liberalization? Gasparini and Cruces (2010) apply a parametric decomposition to identify what contributed to the increase in inequality during the 1990s. A key finding is that the changes in returns to education for the hourly wages account for 4.6 points out of the 8.4 increase in the Gini for the equivalized household income (that is, per individual adjusted for age and gender). The increase in the returns to unobservable factors represented another 1.5 points of the 8.4 increase. These results suggest that unskilled workers lost ground both in terms of hourly wages and hours of work during the 1990s, and that these changes had a very significant role in shaping the distribution of hourly wages, earnings, and household income. Although unemployment rose sharply in the 1990s, primarily driven by an increase in labor force participation of women and younger cohorts, its *direct* contribution to the increase in overall inequality (i.e., the fact that a growing number of adults as a proportion of total members in the household were not generating earned income) was rather small. Unemployment, however, may have affected inequality because of its indirect (downward) effect on wages.³³

³² Gasparini and Cruces, op. cit.

³³ As for demographic factors, there is some evidence that a higher average number of children in middle and low-income households in the period 1980-1992 was associated with higher levels of poverty and inequality in equivalized household income. During 1992-1998 household size fell for most income groups, a change which resulted in a small reduction in poverty and negligible effects on inequality.

What was behind the sharp increase in returns to education during the 1990s? The supply of skilled and semi-skilled workers had risen considerably since 1974, so the increase in returns to education must have been driven by skill-biased changes in the composition of demand for labor. There is evidence that both the sectoral re-allocation of production and employment, and the skill intensity within sectors, changed in favor of skilled workers, in particular, college graduates. Results, thus, are consistent with capital deepening and capital widening and skill-biased technological change, in particular after the opening up of the economy in the 1990s.

Research suggests that in Argentina, trade liberalization led to an increase overall inequality and in the wage gap between skilled and unskilled workers, but that import penetration can account for a relatively small fraction of the increase in skill premium. In contrast, skilled-biased technological change and capital deepening and widening were important contributing factors. However, these changes could well have been triggered by the increased competition associated with trade liberalization and the exchange rate appreciation that followed the Convertibility Plan.

The technological and organizational changes associated with economic openness implied a rapid decline in the relative demand for unskilled and semi-skilled workers who, in the absence of compensatory social protection programs and weak labor market institutions, suffered falling living standards.³⁴ The sectoral decomposition of changes in the share of employment by educational groups suggests that the fall in the relative employment of unskilled labor was mainly accounted for by a drop in the intensity of its use within all economic sectors. In addition, the skill premium for college graduates rose rapidly while the wage gap between the semi-skilled and the unskilled did not. This result is compatible with a situation in which new technology is strongly complementary with non-routine cognitive tasks, typical of highly skilled workers with college level education. Thus, while the direct effect of trade liberalization on wage inequality seems to have been small, the indirect effect of trade and capital account liberalization, through their impact on adoption of new skill-intensive technologies of production and organization, might have been substantial, as available studies for both the broader region and for Argentina specifically appear to demonstrate.

During the 1990s, as a result of the appreciation of the peso and economic restructuring, combined with an increase in the labor force participation of women and younger cohorts, Argentina experienced a sustained increase in open unemployment. What role did unemployment play in explaining the fall in relative wages of the unskilled and semi-skilled? The direct distributional effect of higher unemployment appears to be small and there is no evidence of a systematic depressing effect from unemployment on the wages of the unskilled and semi-skilled (relative to skilled workers, that is). What impact did “credentialism”—that is, the process by which occupations traditionally performed by unskilled and semi-skilled workers become increasingly performed by skilled workers—have? This downgrading of the employment structure reduces the average wage of skilled workers and lowers the incomes of the unskilled workers who become unemployed or are forced to work fewer hours. In such a world, rising returns to skill are a consequence of this

³⁴ Although the government had created *Plan Trabajar*, an employment program, the scale at which it operated was too small to make a noticeable difference.

downgrading process and not of productivity-enhancing technical change. There is some evidence of “credentialism” during periods in which unemployment was particularly high but it was not a pervasive phenomenon. Nevertheless, in explaining the rapid rise in skill premium, it is difficult to disentangle the relative importance of positive factors such as capital accumulation and technological change versus negative factors such as unemployment and downgrading of the employment structure.

The Argentine labor market has been characterized by the presence of strong, industry-wide unions, which played a significant role in shaping the country’s social, economic and political outlook, mainly through their relation with the Peronist party. Despite the importance of unions in the Argentine economy, there is little empirical evidence of their impact on wages and income, mostly because of data availability issues. Union membership and activity diminished significantly from 1991 to 2001. The decline in union activity coincided with reforms of the 1990s, such as privatizations, trade liberalization and price stabilization. These reforms reduced the power of unions through the dissipation of rents from inefficient state-owned enterprises, protective tariffs and the inflation-induced rents. The decline in union activity during the 1990s coincided with a period of rising wage inequality. The revival of union activism, in contrast, coincided with a period of falling wage inequality observed after 2002.

From the mid-1990s, grassroots organizations emerged representing the disenfranchised—unemployed and informal workers – who traditionally did not have union or political representation. These new groups – known as “piqueteros” – played an important role in the establishment of the 2002 emergency cash transfer program, *Programa Jefes y Jefas de Hogar Desocupados* (PJJHD). These grassroots organizations strengthened their power and gained political leverage, mostly through large mobilizations of the beneficiaries.

As mentioned above, following the 2002 crisis and after experiencing a sharp increase, income inequality fell: the Gini coefficient for primary incomes (before monetary transfers) fell from .554 in 2002 to .493 in 2006. This period was characterized by unprecedentedly high GDP growth of 8 percent a year between 2003 and 2007 and a sharp fall in the unemployment rate from more than 20 percent to 8 percent. Gasparini and Cruces (2010) argue that the fall in inequality could be accounted for by the employment generation associated with the recovery, the shift in favor of more low-skilled labor intensive sectors as a result of the devaluation, the recovery of real wages that followed the overshooting of the devaluation of the peso – a recovery that was supported by a pro-labor stance on the part of the government which supported unions and collective bargaining and through higher minimum wages and mandated increases in nominal wages —, and the fading out of the effect of the skill-biased technical change that occurred in the 1990s.

It should be noted that although inequality fell substantially with respect to the crisis levels, it was not significantly different from its mid/late 1990s levels, despite the fact that per capita GDP and employment were higher, labor institutions were stronger, and a massive cash transfer program was implemented. Gasparini and Cruces argue that behind this “inequality floor” may lay the fact that

the relative productivity of unskilled and low-skilled labor remains lower than it was prior to the economic reforms and modernization of the 1990s.

After 2002, the redistribution through government monetary transfers was expanded. Gasparini and Cruces show estimates for the redistributive impact of taxes and government transfers in cash and in kind.³⁵ Overall, fiscal policy reduced the *level* of inequality by around 9 percentage points and in some periods this impact was more pronounced than in others. However, fiscal redistribution does not have a significant impact in affecting the *evolution* of inequality because the distributional impact of changes in fiscal policy (monetary and in-kind transfers, and taxes) is small when compared to changes in the distribution of primary income. This changed somewhat as the targeting of social public expenditures to the poor increased over time, in particular since the implementation of large cash transfer programs such as *Jefes y Jefas de Hogar* in 2002. The difference between the pre-transfer and post-transfer inequality increased starting in that year.

*Brazil*³⁶

Brazil has one of the highest levels of income inequality in the world. There were years when Brazil's Gini coefficient was equal to .63, almost a historic and worldwide record. During the years of crisis and adjustment in the 1980s, inequality rose significantly. In contrast to what occurred in other countries, inequality did not rise in the 1990s (it actually fell very slightly) when some market-oriented reforms were introduced and there are some indications that trade liberalization might have reduced wage inequality.³⁷ After a few years with little change, the Gini coefficient has been falling steadily since 1998. The steepest decline occurred between 2001 and 2007 when Brazil's Gini coefficient declined 4.1 percentage points from 0.593 to 0.552 (to the tune of 1.3 percent per year).³⁸ Extreme poverty and moderate poverty declined too, in spite of the fact that average GDP growth during the period was modest (of the order of 2.5 percent per year).

³⁵ The estimates include programs and spending categories financed by general government revenues (as opposed to contributions as in the case of pensions or health insurance), namely, education, health, water, sanitation, poverty alleviation programs, housing, employment policies, and most municipal services (e.g., lighting and garbage collection). They also include estimates of the redistributive impact of (federal and state) taxes.

³⁶ Most of the section on Brazil draws from Barros et al. (2010). The inequality and poverty measures are estimated using Brazil's National Household Survey PNAD (*Pesquisa Nacional por Amostra de Domicílios*). The income concept used for Brazil is equal to current monetary income plus imputed value of income in kind (but no imputations for owner's occupied housing); declared income in the surveys is after monetary government transfers and (assumed to be) before taxes.

³⁷ A microsimulation model allowed the authors to analyze which factors affected the entire distribution. (For details on the method see Bourguignon, Ferreira and Lustig, 2005). The results suggest that the poverty reducing effects of an educational upgrading of the labor force (i.e., an increase in the average years of education) and a reduction in the family size were more than compensated by the poverty increasing factors operating through the labor market: an increase in unemployment and informality, and a decline in absolute returns to education and experience. Interestingly, for the entire distribution, although (as for Argentina, Mexico and other countries) the marginal (relative) returns to higher grades in Brazil increased too (that is, between 1995 and 1976), this unequalizing factor was more than offset by the decline in absolute average returns.

³⁸ The decline in income inequality in Brazil fulfills the "Lorenz dominance" test and it is statistically significant at 1 percent confidence level. During the period 2004-07, however, the Lorenz curves cross so the fall in inequality is not unambiguous. The growth rate in income for the bottom 5 percent was below the overall average for all percentiles and less than half of the growth rate corresponding to the second quintile. (Barros et al., op. cit.)

Although Brazil fared relatively better than Argentina and Mexico in the 1980s, the debt crisis took its toll. Output growth declined from 8.6 percent per year for the period 1968-1980 to 1.5 percent per year between 1980 and 1990. Inflation was very high through most of the period. In 1980, inflation equaled 80 percent and in 1990, Brazil experienced an episode of hyperinflation when prices rose to over 1500 percent. The economically active population experienced zero net growth in their income during the 1980s. The Gini coefficient rose from .58 in 1980 to .61 in 1990 and the share of the bottom 20 percent declined from 3.6 percent to 2.8 percent in the same period.³⁹ During the “lost decade” the poor in Brazil lost disproportionately. An analysis of inequality in labor income in the six largest metropolitan areas shows that the levels of unemployment and inflation were positively correlated with income inequality.

The poor have much less effective ways to protect themselves against high inflation and, thus, inflation is a regressive tax.⁴⁰ Among the reasons for this, the poor are usually excluded from financial assets that protect people from the inflation tax and they cannot hedge through pre-purchases of consumption goods because most of their consumption goes to perishables. In addition, wage indexation is less strong for unskilled poor workers than for other workers.⁴¹ Using simple (and also partial correlations), a study shows that inflation is positively and significantly (in the statistical and numerical sense) correlated with inequality for the period 1981-1993 (which includes the years of high inflation and hyperinflation).⁴² After the economy stabilized in the early 1990s, income distribution did not change much for a few years and in 1998 it started to decline, first gradually and then, more forcefully since 2001. In contrast to Argentina, thus, stabilization in Brazil appeared to not just be equalizing in the immediate aftermath of the reduction in inflation but to have had a more lasting effect. Part of this lasting effect appears to be related to the equalizing effect that trade liberalization had on wages, which we now turn to for discussion.

As mentioned in the previous section, available empirical studies suggest that in a number of countries trade liberalization was associated with an increase in (wage) inequality primarily because the wage skill premium increased. In the case of Brazil trade liberalization produced the opposite result: the economy-wide skill-premium (defined as the ratio of the wages of skilled workers to those of unskilled workers) fell by 14.3 percent between 1988 and 1995.⁴³ Inequality indicators such as the Gini and Theil coefficients for labor incomes and hourly wages declined too. A factor that drove skill premiums up in, for example, Chile, Colombia and Mexico, was that prior to liberalization, tariffs were generally higher for industries intensive in unskilled labor (than for skill-intensive industries). That was not the case in Brazil and, thus, the changes in relative prices caused by trade liberalization had an equalizing effect through the employment and occupational reallocation that took place in response.

³⁹ Although slightly different in levels, the same change is recorded by Ferreira, Leite and Litchfield, *op.cit.*

⁴⁰ Neri (1995).

⁴¹ Cardoso (1992).

⁴² Ferreira, Leite and Litchfield, *op. cit.*

⁴³ Ferreira, Leite and Wai-Poi (2007).

After 2000, the decline in inequality in household per capita income started to accelerate. From 2001 to 2007, the per capita income of the poorest 10 percent grew 7 percent per year, a rate of growth nearly three times the national average (2.5 percent), while that of the richest 10 percent grew only 1.1 percent. Two thirds of the decline in extreme poverty can be attributed to the reduction in inequality. For the same reduction in extreme poverty to be reached through growth, it would have been necessary for Brazil's overall per capita income to have grown an extra 4 percentage points per year.

Between 2001 and 2007, there were several changes in labor markets and public policy that one would expect should have affected the distribution of post-transfer household per capita income. During this period, the wage differentials between workers who had different skills, lived in different locations, and worked in different sectors (formal/informal; primary/secondary) narrowed. Also during this period, public transfers rose (both in terms of average benefit and coverage), and the real minimum wage increased. Barros, Carvalho, Franco and Mendonça (2010) estimate the role played by changes in labor markets and government transfers in the evolution of income inequality. In particular, they focus on four dimensions: 1) changes in wage differentials by skill level, 2) changes in labor market segmentation, 3) changes in government (or public) transfers, and 4) changes in the minimum wage. The authors estimate the contribution of all these changes by applying nonparametric decomposition methods in which actual Gini coefficients⁴⁴ are compared with counter-factual ones generated by keeping some of the — depending on the method — proximate determinants of income inequality or income sources unchanged. The decomposition analysis is complemented by econometric evidence on the evolution of returns to education. The paper also compares the redistributive effectiveness of targeted transfers versus increases in the minimum wage.

Decomposition results show that practically all the recent decline in income inequality was caused by changes in the distribution of household income per adult. Changes in the distribution of the proportion of adults in the household were responsible for only eight percent of the overall reduction in income inequality. This is a reflection of the fact that the changes in dependency ratios were not disproportionately concentrated among the poor. Between 40 and 50 percent of the decline in income inequality — depending on the inequality measure — was due to changes in the distribution of non-labor income per adult; changes occurred both because inequality of non-labor income fell and the number of households receiving non-labor income rose. Changes in the distribution of labor income per adult can account for 31 to 46 percent of the decline in inequality, due to a significant growth in labor income per adult and to a moderate decline in its inequality. The contribution of changes in the inequality of access to jobs was rather limited; workers from relatively poor households were not among those that benefited the most from job creation during 2001-07.

The fall in labor income inequality was primarily due to the fall in inequality in the distribution of labor income per working adult. One factor that may explain this trend could be changes in access to education. The 1990s were marked by an accelerated expansion of education in Brazil (more than

⁴⁴ The method can be (and was) applied using any inequality measures.

twice as fast as the expansion that occurred in the 1980s) which resulted in a more equal distribution of educational attainment: the standard deviation in years of schooling fell from 4.51 in 2001 to 4.41 in 2007. Labor earnings differentials by education level declined for all levels in Brazil, particularly for secondary and higher education. Barros et al. suggest that half of the decline in labor earnings inequality (and for almost 30 percent of the decline in household per capita income inequality) was caused by the combined effect of a fall in the inequality of education and a fall in the returns to education, the latter being the predominant factor. The fall in returns (i.e., the skill premium) was the result of a combination of supply-side and demand-side factors; however, the authors do not analyze which one was predominant.

What accounts for the remaining half of the reduction in labor earnings inequality? Barros et al., *op. cit.*, argue that about 7 percent of it is accounted for by a decline in wage differentials among workers in metropolitan areas/medium-sized and small municipalities, urban/rural areas, and primary/other sectors. That is, spatial and sectoral labor market segmentation has been falling. This tendency has reduced income inequality.⁴⁵ In contrast, and despite the decline in the degree of informality over the last decade, wage differentials between formal employees and self-employed workers increased significantly while the differential between formal and informal wage-earners has remained relatively stable since 2001. Given these mixed results, changes in labor market segmentation between formal and informal workers have probably not contributed to the recent decline in income inequality.

There are a number of additional factors which could account for the “unexplained” decline of 14 percent in wage inequality but they are not analyzed in this paper. They include changes in gender and ethnic discrimination and returns to other observable and unobservable characteristics, sectoral re-allocations of production, and rural-urban migration.

As mentioned above, the decline in non-labor income inequality can account for as much as 50 percent of the decline in household income inequality. What are the determinants of the decline in non-labor income inequality? Barros et al. address this question by applying a nonparametric method which decomposes the observed changes into the contribution of changes in individual sources of income by comparing actual with counter-factual Gini coefficients. This comparison for the years 2001 and 2007 yields the following results. The contribution of changes in the distribution of income from returns to assets (rents, interest and dividends) and private transfers were unequalizing but limited. Most of the impact of non-labor income on the reduction of overall income inequality was due to changes in the distribution of public transfers: changes in size, coverage, and distribution of public transfers explain 49 percent of the total decline in inequality.

⁴⁵ Because this is a new phenomenon, of particular interest is the reduction of labor earnings differentials between metropolitan areas and small municipalities, and metropolitan areas and medium-size municipalities. The question as to what factors explain this trend remains to be answered. Perhaps there has been a relatively higher expansion of some productive sectors in the Brazilian “hinterland” as opposed to the metropolitan areas thereby increasing the demand for labor and pushing up wages in the smaller and medium-sized municipalities compared to the past.

Public transfers represent over 80 percent of non-labor income and 29 percent of household income⁴⁶ and include: pensions and other standard contributory social security benefits; *Benefício de Prestação Continuada* (a transfer to the elderly and disabled), and *Bolsa Família*.⁴⁷ The latter is Brazil's signature conditional cash transfers program that distributes cash to poor families on the condition that the children and adolescents must attend school and meet the basic health care requirements. The benefits paid by the program range from R\$20 (twenty Reais) to R\$182 (one hundred and eighty-two Reais). The program reaches 11 million families (more than 46 million people), which is a large proportion of the country's 50 million individuals living in poverty. On average, the post-transfer income of the poor is raised by around 12 percent.⁴⁸

Since 2001, the government increased the average amount of all transfers and broadened the coverage of the well-targeted programs, such as *Bolsa Família*. The average amount transferred rose substantially for social security and BPC (55 and 21 percent, respectively) but less for *Bolsa Família* (13 percent).⁴⁹ (The benefit of *Bolsa Família*, on average, is equal to 5 percent of average social security benefits). While contributory social security has the largest coverage – about 30 percent of the Brazilian population lives in households receiving contributory social security benefits —, the largest expansion took place for *Bolsa Família*, whose coverage increased by close to 10 percentage points between 2001 and 2007, reaching 17 percent of households.

According to the decomposition results, while social security benefits accounted for almost 30 percent of the overall reduction in income inequality, the increasing coverage of non-contributory benefits, like BPC and *Bolsa Família*, were also important. Despite representing just a tiny fraction of total household income (0.5 percent each), changes in the BPC and *Bolsa Família* each explain about 10 percent of the overall decline in income inequality.⁵⁰ As we saw above, in the case of social security transfers, the equalizing effect occurred primarily through an increase in the amount of the average benefit. In the case of *Bolsa Família*, the predominant factor was the increase in coverage and, to a lesser extent the increase in the amount transferred.

⁴⁶ Almost 25 percent of total household income comes from nonlabor sources, of which transfers, especially public transfers, are the most important: public and private transfers together represent 90 percent of all nonlabor income of which 90 percent are public; pensions and retirements represent 95 percent of all public transfers; *Bolsa Família* and *Benefício de Prestação Continuada* benefits each represent less than 0.5 percent of total household income and around 3 percent of all public transfers. Together, BPC and *Bolsa Família* benefits account for only 1 percent of total household income and 5 percent of public transfers. This information is based on the surveys' data. It does not include all government monetary transfers. The ratio is with respect to household income as reported in the survey and it is not necessarily equal to the ratio of all government transfers divided by household disposable income from the National Accounts. As we can see in the chapter on Mexico in this volume the transfers recorded in surveys may represent a small share of government monetary transfers.

⁴⁷ These two programs represent 1 percent of household income and 5 percent of the public transfers concept measured in the survey. Pensions and BPC are adjusted following the minimum wage. Since Lula became president of Brazil, the minimum wage has been raised significantly and therefore so have the contributory and noncontributory pension benefits.

⁴⁸ Fiszbein and Schady et al. (2009).

⁴⁹ The first two are indexed to the minimum wage while *Bolsa Família* is not.

⁵⁰ Note that this decomposition of inequality changes by income source is different from the prior decomposition by proximate factors so results cannot be “added up.”

From 2001 to 2007 the minimum wage increased by 35 percent in real terms. In Brazil, as in many other countries, the minimum wage has a double function because it not only establishes a floor for low-skilled workers at each point in time, but it also determines the rate of change in minimum social security benefits (when the latter are indexed to the minimum wage). In the case of Brazil, how effective is the minimum wage as a redistributive instrument? Barros et al. acknowledge that raising the minimum wage must have contributed to the reduction in inequality both through its impact on wage inequality and on the evolution of social security benefits. However, the authors argue that the minimum wage is not the most effective of the available redistributive instruments. In particular, simulating a counter-factual distribution, they compare the effectiveness of increasing the minimum wage with raising the per capita benefits of *Bolsa Familia* by the same amount. Their analysis suggests that the amount of resources (government and private) needed to raise the minimum wage by 10 percent would allow an increase in benefits from *Bolsa Familia* by three times their current value. Furthermore, while an increase in *Bolsa Familia* benefits reduces inequality unambiguously, a 10 percent increase in the minimum wage reduces the share of the bottom 5 percent by 0.7 percentage points.

In sum, Barros et al. conclude that the recent decline in inequality in Brazil resulted from three main factors: i) decreasing wage differentials by educational level and reductions in the inequality in education; ii) increasing spatial and sectoral integration of labor markets, in particular among metropolitan and non-metropolitan areas; and, iii) increasing generosity of contributory and non-contributory government transfers. In contrast to the episode of falling inequality in the late 1970s, demographic factors and the role of employment was not significant in either direction. That is, changes in the dependency ratio among the poor or changes in employment and unemployment were of little importance. The decline in labor income inequality was primarily due to the reduction in wage inequality; the reduction in wage inequality, in turn, was associated to the reduction in education inequality caused by the large expansion of access to education for the lower end of the distribution.

*Mexico*⁵¹

The “debt crisis” was born in Mexico when the government announced in mid-1982 that it would not be able to meet its debt payments on time. In the next six years Mexico faced runaway inflation and GDP and real wages declined, respectively, at 1.8 percent and 8.6 percent a year between 1983 and 1988. During the 1980s, Mexico liberalized its trade and investment regimes, dismantled most of its industrial policy and privatized many state-owned enterprises. Inequality rose sharply: the Gini coefficient for household per capita monetary income went from 0.49 in 1984 to 0.56 in 1996.⁵² Since the mid-1990s, right after the implementation of NAFTA and the currency crisis in 1995,

⁵¹ Parts of this section are based on Esquivel, Lustig and Scott (2010). The indicators presented here are calculated using the Household Income Expenditure Surveys for various years. The income concept is current monetary income except in the benefits incidence analysis for which current total income was used. Current monetary income excludes imputed value for owner’s occupied housing, auto-consumption and capital gains. The first two are included in current total income.

⁵² Lustig and Szekely (1997).

inequality has been on a downward path. In 2005, the Gini coefficient came back to more or less the same level it had in 1984. Why did inequality rise so sharply during the period of crisis and structural reforms? How much were policy reforms responsible for the increase?

Between 1984 and 1994 there was a significant increase in the skill premium and changes in the structure of employment (towards wage employment) and labor-supply (female participation rose by 8 percentage points). There was also an increase in average educational attainment and an equalization of its distribution: average years of schooling increased from 5.6 to 6.9 years and the Gini coefficient (for the distribution of years of education) fell from 0.42 to 0.37. In 1984, 48 percent of the population had no education or had not completed primary school. That figure was down to 38 percent in 1994. The relative incomes of rural workers deteriorated sharply: while real labor earnings for urban workers increased by at least 20 percent, they fell by 7 and 13 percent, respectively, for rural male wage earners and the self-employed. Rural female self-employed workers fared even worse: their income declined by 20 percent.⁵³

Legovini, Bouillon, and Lustig (2005) analyze the contribution of these changes to the increase in inequality by applying a microsimulation model. Earnings functions show that the returns to high levels of education (postsecondary and university) increased substantially, whereas the returns to low and medium levels fell. The results of the decomposition exercise at the household level reveal that the increase in (relative) returns to higher education accounted for close to 25 percent of the increase in the Gini for household per capita income observed between 1984 and 1994. Growing disparities in returns between rural and urban areas accounted for 19 percent of the change in the Gini coefficient. What was the impact of the increase in average educational attainment and the decline in its inequality? Paradoxically, a more equal distribution of years of schooling was unequalizing: according to the microsimulation exercise it accounted for 15 percent of the increase in the Gini. This effect, found in several other countries, has been called by Bourguignon, Ferreira and Lustig the “paradox of progress.” It is a consequence of the fact that when returns to education are convex, the relationship between inequality of education and income inequality has the shape of an inverted U: as education inequality falls, income inequality rises initially and then starts to fall.⁵⁴ The shape of this curve will depend on the convexity of the returns and how it changes over time, as well as how educational attainment equalizes over time. Finally, the impact of a rise in female labor participation was equalizing at the household level because women with low levels of education who had increased their participation to compensate for the lower earnings of their partners were thereby contributing to increases in the incomes of poor households.

Why did skill premiums rise?⁵⁵ Hanson and Harrison (1995) found that trade liberalization had an unequalizing effect but its contribution was modest: around 23 percent of the increase in the wage gap by skill can be attributed to trade liberalization. Revenga (1997) also found that trade

⁵³ Legovini, Bouillon and Lustig (2005).

⁵⁴ For the mathematical explanation of this property see Bourguignon, Ferreira and Lustig (2005), chapter 10, p. 396.

⁵⁵ Evidence of a rising skills gap has been established for Mexico by several other authors. See, for example, Feenstra and Hanson (1995), Cragg and Epelbaum (1996), Feliciano (2001), and Hanson and Harrison (1999).

liberalization in Mexico was unequalizing for labor earnings. One explanation for this effect is that, unlike Brazil, the sectors that were, prior to trade liberalization, protected the most were intensive in low-skilled workers. (Nicita (2004) found that when you take into account the impact on purchasing power, because of lower prices for consumption goods, all income groups benefit from trade liberalization but the degree of benefit rises with income.) Other authors emphasized the role of an increase in the demand for skilled workers associated with one or more of the following: to the presence of foreign investment (Feenstra and Hanson 1997), to a skill-biased technological change (Cragg and Eppelbaum 1996 and Esquivel and Rodríguez-López 2003), or to a process of quality-upgrading due to an increase in exports (Verhoogen 2008). All these forces are not mutually exclusive but it is difficult to establish which ones were predominant. Just as in the case of Argentina, the increase in skill premiums was driven by an increase in the relative demand for skilled workers and a decline in the relative demand for low skilled workers. The direct effect of trade liberalization was modest, but the indirect effect of openness on skills upgrading (whether because of skilled biased technical change or the other factors mentioned above) appears to have been much more substantial.

As shown above, the divergence in conditions between rural and urban areas and the absolute fall in rural real incomes was another factor which accounted for the increase in household per capita income inequality. Between 1984 and 1994 (that is, before NAFTA), agricultural workers suffered a severe decline in real income—on the order of 45 percent—as a result of terms of trade reversals in their principal crops, including coffee and cocoa, and the elimination of agricultural subsidies and price support schemes. Self-selection in migration also contributed to the fallout for rural economies: the most entrepreneurial workers may have moved to the city, leaving behind those least able to adjust to changing rural conditions.

After the period of rising inequality in the 1980s and early 1990s, Mexico's income inequality has been falling since the mid-1990s. Between 1996 and 2006, Mexico's Gini coefficient fell from 0.564 to 0.506.⁵⁶ Between 1996 and 2006, the incomes of the bottom 20 percent grew more than twice the incomes of the top ten percent. The faster growth of incomes at the bottom of the distribution happened during a period of lackluster aggregate economic growth. After the 1995 peso crisis, when GDP contracted by around 8 percent, the economy quickly recovered. Between 1996 and 2000, Mexico's per capita GDP grew at a rate of 4 percent per year. However, between 2000 and 2006, growth slowed down significantly; per capita GDP grew at only 1 percent per year. Mexico experienced a period of slow-pro-poor growth. The decline in inequality coincided with the implementation of the North American Free Trade Agreement (NAFTA) in 1994. It also coincided with a shift in government spending patterns. Since the early 1990s, public spending on education, health and nutrition has become more progressive. Also, in 1997, the Mexican government launched the conditional cash transfer program *Progresa* (later called *Oportunidades*), a large-scale anti-poverty program that reaches around 5 million poor households. These changes made the post-fiscal income

56. This Gini coefficient reported here was calculated using current monetary household income per capita to make it comparable to the Ginis for Argentina and Brazil.

distribution (after taxes and transfers—including in-kind transfers⁵⁷) less unequal than before, reinforcing the trend followed by income inequality shown above).

Esquivel, Lustig and Scott (2010) analyze the proximate determinants of the decline in income inequality between 1994 and 2006. Using nonparametric decomposition methods and standard benefits incidence analysis, the authors examine the roles played by changes in the distribution of labor income, demographics, and government transfers in accounting for the decline in inequality. The results suggest that the increase in the proportion of adults to that of working adults was equalizing, but the impact was modest compared to the equalizing effects of changes in the distribution of labor and non-labor income.

What has caused the distribution of labor income per working adult to change from being an unequalizing factor in 1994 to an equalizing one thereafter? Hours worked changed very little; in fact, they fell slightly for the bottom quintiles, an inequality-increasing change. Changes in relative hourly wages, in contrast, caused the distribution of labor income per working adult to change from unequalizing to equalizing. Starting in the mid-1990s, the gap between the wages of more educated workers and workers with little education (i.e. the skilled/unskilled wage gap) fell systematically. As discussed above, changes in the returns to education (the returns to years of schooling became more convex) accounted for a significant share of the rise in household per capita income inequality between 1984 and 1994. During the period from 1996-2004, the opposite occurred: the decline in returns to schooling was equalizing. The distribution of the stock of education in the labor force also became more equal. The combined effect of a fall in the returns to education and the decline in inequality in educational attainment⁵⁸ was a reduction in labor income (per worker) inequality.

When using a formal hypothesis-testing model, it is not clear whether the fall in the skilled/unskilled wage gap was the result of demand-side or supply-side factors. Several studies have looked at the demand-side factors emphasizing, among other things, the increasing integration of manufacturing production between the United States and Mexico, and its resulting increase in demand for low-skilled workers in Mexico. However, an examination of both the changes in the composition of the labor force by education and experience, and the corresponding relative wages suggests that supply-side factors must also have been important. Between 1996 and 2006, the reduction in wage inequality was caused by the fact that workers with lower levels of education and/or fewer years of experience had the largest increases in their average wages. These large increases seem to be correlated with a shift in the composition of labor supply by education and experience. The share of workers with less than lower secondary education (and more than 20 years of experience) declined from constituting almost 55 percent of the workforce in 1989 to about one third by 2006. This reduction was offset by an increase in the shares of all the other groups of workers. These results suggest that the relative increase in the wages of low-skilled/low-experience workers must be associated with a reduction in the relative number of low-skilled workers. This result is not

57. In-kind transfers mainly include government spending on education and health delivered to the population in the form of free or quasi-free transfers.

58 The equalization of educational attainment at this point went beyond the turning point that had made it unequalizing in the 1980s; it had reached the downward sloping side of the inverted-U.

incompatible with the hypothesis of an increase in the demand for unskilled workers. Both supply-side and demand-side factors were at play.

The reduction in the relative supply of workers with low levels of skills (measured by school attainment) might be associated with the increase in average years of schooling for the bottom two quintiles, which reduced schooling inequality considerably between 1994 and 2006. In turn, the latter may be due to changes in public spending on education patterns in the 1990s. Changes in public spending on education, combined with the effects of the conditional cash transfer *Progresa/Oportunidades* program – which tied monetary transfers to keeping children of poor households in school and to receiving basic health services – significantly increased access to lower-secondary education by the poor. Public spending on education in the 1970s and 1980s was heavily biased towards higher education. This changed in the 1990s. The relative ratio of spending per student in tertiary vs. primary education in Mexico declined from a historical maximum of 12 in 1983-1988, to less than 6 in 1994-2000 (by comparison, the average ratio for high-income OECD countries is close to 2). More resources on the supply-side and the implementation of demand-side subsidies for education through *Progresa/Oportunidades* changed the incidence of public spending on education from being slightly regressive in 1992 to being progressive in 2006. Hence, the fall in skill premiums can be linked to both market factors, which affected the demand for labor by skill, and state action in education spending.

As for the effects of non-labor income per adult, the results show that a marginal increase in income from personal businesses (profits), income from property (rents), and pensions would have been unequalizing and an increase in remittances, transfers, and labor income (since 2000) would have been equalizing. Moreover, the equalizing contribution of remittances and transfers rose over time. Transfers became more equalizing because their share in total income rose and their own inequality and Gini correlation with total monetary income fell. The share of transfers in total income rose because there was a significant expansion in coverage of public monetary transfers --in particular, of *Procampo* and *Progresa/Oportunidades*. Although *Procampo* had been expanding since its creation in 1994, the lion's share of the expansion in households receiving non-labor income was due to implementation of the *Progresa/Oportunidades* conditional cash transfer program in 1997. *Progresa/Oportunidades* reached 14.8 percent of households in 2006. Of the two public monetary transfers, *Procampo* is not a pro-poor transfer. In contrast, *Progresa/Oportunidades* is an example of “redistributive efficiency.” With as little as 0.36 percent of GDP and 4 percent of total redistributive spending, *Progresa/Oportunidades* accounts for 18 percent of the change in the post-transfers Gini.

iii. Conclusions

Income distribution in Latin American countries has gone through two distinct phases in the last three decades. During the 1980s and 1990s it became more concentrated. In several countries (though not in all) the increase in inequality during this period was associated with macroeconomic crises and market-oriented reforms in a context of weak labor institutions and social safety nets. The 1980s debt crisis was unequalizing, in particular, because the poor were less able to protect themselves from high and runaway inflation and orthodox adjustment programs frequently resulted

in *overkill*⁵⁹, the poor and the middle-ranges were hurt disproportionately while the top ten percent's income share rose. The unequalizing effect of the crisis was compounded because safety nets for the poor and vulnerable were conspicuously absent (or ill-designed and insufficient) in the Washington-led structural adjustment programs of the 1980s.⁶⁰ Market-oriented reforms (trade liberalization, in particular) were associated with rising inequality, although this pattern had a notable exception in the case of Brazil. Since 2000, the decline in inequality appears to be driven by two main factors: a fall in skill premiums associated with educational upgrading and the educational upgrading itself⁶¹ and a more progressive allocation of government spending, in particular, monetary transfers. The latter is the result of the introduction of large cash transfer programs which are better (if not, in the case of Argentina, perfectly) targeted to the poor.⁶² The fall in the earnings gap, in turn, is due to a wide set of factors, including the improved macroeconomic conditions that fostered employment, the petering out of the one-time unequalizing effect in the labor market of some market-oriented reforms in the 1990s, the expansion of coverage in basic education during the last couple of decades, and stronger labor institutions. Probably due to the improved fiscal situation and the increased concern on social issues, most Latin American countries augmented social spending and in particular adopted or expanded conditional cash transfers programs. The evidence suggests that these programs are well targeted to the poor, and thus, are highly progressive.

There is preliminary evidence that inequality continued to fall (or at least did not rise) during the 2008-2009 financial crisis. Although too early to tell, this may have been the result of the existence of more robust safety nets made to cope with the effects of aggregate shocks on the poor.

In spite of this undeniable progress, Latin America still remains a region with very high income inequality, in which governments redistribute relatively little through taxes and transfers. Despite the evident progress in making public policy more pro-poor, a large share of government spending is neutral or regressive, and the collection of personal income and wealth taxes is relatively low. In order to continue on the path towards more equitable societies, it is crucial that public spending is made more progressive and efforts are redoubled to improve access to quality services (education, in particular) for the poor.

However, the recent Latin American experience demonstrates that there are policies that can reduce income inequality even in high and persistently unequal countries. Furthermore –and in contrast with populist experiences of the past – it demonstrates that a pro-poor policy is compatible with fiscal responsibility and macroeconomic stability. The three pillars of a pro-poor agenda must include: an equalization of opportunities to accumulate human capital (education, health and nutrition); a robust safety net to help the poor and vulnerable cope with systemic shocks; and large-scale direct transfers (preferably in cash) to the extreme poor.

⁵⁹ That is, the reduction of fiscal deficits went beyond what was necessary to restore equilibrium in the external accounts and this over-adjustment had counterproductive effects on stabilization itself. See, for example, Taylor (1988).

⁶⁰ See, for example, Lustig (1995).

⁶¹ These effects are known in the literature as the *price* and *quantity effects*, respectively.

⁶² For example, *Jefes y jefas de hogar* in Argentina, *Bolsa Familia* in Brazil, and *Progresar/Oportunidades* in Mexico.

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Introduction

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