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Growth with Equity for the Development of Mexico: Poverty, Inequality, and Economic Growth (1992–2008)

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Summary. — This paper constitutes an attempt to determine the relative contribution of changes in economic growth and in the distribution of income to changes in poverty in Mexico. Our findings clearly indicate that growth with redistribution (lower income inequality) was the key to reducing poverty continuously and in an important manner during 2000–2006. However, after 2006, decreasing per-capita income, coupled with the persistently high inequality (Gini of 52%), caused the reversal of the favorable trend observed since 1996, raising poverty to pre-2002 levels. Consequently, it is argued that, for Mexico, a middle-income country exhibiting quite low growth rates and high inequality levels, the further improvement in its distribution of income and assets is essential if the economy is to succeed in making a real dent in poverty. For that purpose, the implementation of an active pro-poor growth policy should be strongly encouraged. © 2014 Elsevier Ltd. All rights reserved.

Key words — poverty, inequality, redistribution, pro-poor growth, Mexico, Latin America

1. INTRODUCTION

Poverty reduction is considered one of the most important development goals for developing and developed countries alike (United Nations, 2000). Progress on the realization of this goal is what many policy makers, especially in developing countries, have sought to attain in the past decades, by promoting economic growth, by implementing redistribution policies, or by a combination of the two. However, the poverty outcomes have varied widely across countries depending on the particular success of their development strategies.

By focusing on the specific impact of inequality and growth upon poverty, several studies have shown that the distribution of income indeed matters for the poor (Bourguignon, 2004; Datt and Ravallion, 1992; Deininger & Squire, 1998; Lopez, 2006; Ravallion, 1997, 2001, 2005; Ravallion & Chen, 2003 among others) and that higher initial inequality tends to reduce the positive, decreasing impact of growth upon absolute poverty (Lopez, 2006; Lopez & Serven, 2006; Ravallion, 1997, 2005). In addition, it is widely agreed that economic growth alone is not a sufficient condition for successfully achieving the goal of poverty reduction (Addison & Cornia, 2001; Oxfam, 2000; Ravallion & Datt, 2002).¹

Regarding the relationship between inequality and poverty, there are two arguments as to why the level of inequality matters for poverty reduction (Ravallion, 1997). First, the induced-growth argument formalizes the long-standing view that inequality inhibits growth (Alesina & Rodrik, 1994; Banerjee & Newman, 1993; Benabou, 1996; Berg & Ostry, 2011; Deininger & Squire, 1998; Easterly, 2007; Galor & Zeira, 1993; Ravallion, 2005; Ravallion & Datt, 2002; Stiglitz, 2012 among others)² and, therefore, impedes progress in reducing absolute poverty. Second, the growth-elasticity argument states that, even if the distribution of income is irrelevant to the rate of growth, inequality per se, or its decline, is indeed important in order to guarantee that the distributional gains from growth are more proportionally shared by the poor and do not benefit mostly the rich (Ravallion, 2005, 2007; Stiglitz, 2012). Thus, redistribution also contributes directly to the reduction of poverty by allowing the poor to have a bigger

share of the benefits, in the form of a better payment for their work (higher salaries), for instance, or by transferring income and/or assets from the upper to the lower and middle parts of the distribution through the tax and transfer system.³

This study supports mainly the second of the arguments, presenting clear evidence of the strong, poverty-reducing impact of more equality in the distribution of income. As discussed in Bourguignon (2004), Dagdeviren *et al.* (2004), and Lopez (2006) among others, poverty is determined invariably by income growth and its distribution. Consequently, it is possible to predict with great accuracy and even predetermine the poverty changes induced within a specific period given the growth and distributional shifts that occur through the development process. Hence, on the one hand, economic growth reduces poverty,⁴ and an economic downturn or recession increases it generally. On the other hand, an improvement along the distribution of income (inequality decline) reduces poverty, while an inequality rise increases the poverty level correspondingly.⁵ Eventually, the combination of these economic forces brings about a reduction, increase, or maintenance in/of the level of poverty.

The previous statement means that, to improve the well-being of the poor on a constant basis and thus attain the goal of poverty elimination, a country has to focus on two possible, non-mutually exclusive types of policies: those that spur growth and those that reduce the level of inequality. Ideally, win-win types of policies, leading to faster growth and lower inequality, should be pursued when the overarching policy objective is the reduction of poverty. In this respect, it should be noted that, in the past, there existed the belief of a supposed, endless trade-off between equity and efficiency that im-

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peded the realization of actions, on the part of the government, towards reducing inequality more freely to improve the condition of the poor. However, that assumption has been proven wrong with time and there are more and more people and studies supporting the well-established view that inequality can be destructive for growth (Aghion *et al.*, 1999; Stiglitz, 2012), due to its adverse effects on the economy,⁶ and because the price paid for a high level of inequality may even exceed the overall benefits (Berg & Ostry, 2011; Stiglitz, 2012). Accordingly, if less inequality is good for both growth and the reduction of poverty, then equity considerations should be promoted to encourage the sustainable growth and development of an economy.

In the case of Mexico, there are a few studies analyzing the relationship between the above-mentioned variables, particularly that of the relative roles of growth and inequality for poverty reduction. Szekely (1995), in a seminal paper, showed that the increase in poverty in the years 1984–1989 was primarily the consequence of the sharp inequality rise in Mexico during that period, and ran simulations which indicated that improvements in the distribution of income were at least as important as growth for the increase in the welfare of the poor. Cortes, Hernandez, Hernandez-Laos, Szekely, and Vera (2002) analyzed poverty in 1992–2000 by using the methodology proposed by Datt and Ravallion (1992). The authors concluded, first, that the increase in average income affected positively the poverty level and, second, that distributional changes were unimportant at the national level but played an important role in the rural sector (reducing poverty in 1992–1996 and increasing it in 1996–2000).

The present study extends the poverty analysis for Mexico along the previous lines, providing further insights regarding the relationship between income inequality and poverty. As these important issues have been insufficiently addressed in the international literature, with only Szekely's paper analyzing it for the 1980s, we intend to update earlier conclusions by using the most recent and comparable data for Mexico, covering the last two decades (1992–2008), and by applying standard decomposition techniques and other methodologies that have been developed to analyze the, sometimes, overlooked and underestimated impact of inequality on poverty.

Our main results confirm the importance of income inequality (redistribution) for achieving poverty reduction in Mexico. We can, therefore, conclude that the high and persistent levels of income inequality during the 1990s counteracted the positive impact of growth and prevented the further decline of poverty, especially in 1996–2000. Moreover, we find that the improvement in the distribution of income after 2000, contributed in an important manner to the reduction of poverty in 2000–2006 but was unable to offset the strong, poverty-augmenting effect of decreasing per-capita income in 2006–2008, which eventually led to the reversal of the favorable trend observed since the mid-1990s, raising poverty to pre-2002 levels by the end of the decade (CONEVAL, 2011).

Thus, we argue that the further decline in income inequality in Mexico through redistribution, along with the urgent economic development of the rural sector indicated in McKinley and Alarcon (1995), should be regarded as a top priority for policy makers aiming at eliminating extreme and moderate poverty. Clearly, this points towards the adoption of an inclusive development strategy that focuses on pro-poor growth as the main engine of Mexico's development and considers all sectors of the population, particularly the agricultural one, as being equally important.

This paper is organized as follows. The next section briefly discusses the data and the poverty lines and measures that were

used, provides a poverty profile of Mexico, and gives an account of the trends in poverty, inequality and economic growth over the past decades. We then explain briefly the applied methodologies, followed by a discussion of the results. Finally, we offer some conclusions and policy recommendations.

2. POVERTY, INEQUALITY, AND ECONOMIC GROWTH IN MEXICO

(a) Data

The information that will be used corresponds to the Household Income and Expenditure Survey (ENIGH) for the years 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006 and 2008. ENIGH is a nationally representative sample, covering both the rural and urban populations in the 32 Mexican states, conducted by the National Institute of Statistics, Geography and Informatics (INEGI). All the surveys were carried out during the same months of the year, using similar questionnaires and identical sampling techniques. Thus they are fully comparable between them. Additionally, the data are set in constant prices of August 2011, using the national consumer price index, in order to get comparable figures across time.

It should be noted that poverty is calculated by using the official methodology proposed by the Technical Committee for the Measurement of Poverty in Mexico (CTMP, 2002). However, the welfare indicator that is used throughout this study corresponds to current total per-capita income, which differs from the one used in official poverty calculations ("net current per-capita income") in that gifts and in-kind transfers given to and received from other households are not subtracted.

(b) Poverty measures and lines

The poverty measures and lines considered in this study are the following:

(i) Poverty measures

- Headcount (H) index: Measures the proportion of households (people) that are considered poor in a society. It is a measure of the incidence of poverty that does not indicate how poor the poor are.
- Poverty-gap (PG) index: Measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line. It is an indicator of the depth of poverty that does not reflect changes in inequality among the poor.
- Squared Poverty-Gap (SPG) index: Also known as the poverty severity index, which averages the squares of the poverty gaps relative to the poverty line, assigning then higher weights the poorer a household is. This measure corresponds to the index proposed by Foster, Greer, and Thorbecke (1984).

(ii) Poverty lines⁷

- Food Poverty: Official poverty lines in Mexico that consider the minimum, monthly household per-capita income (\$796.23 & 1,069.67 Mexican pesos, or equivalently USD \$2.14 & 2.87 daily American dollars) to satisfy food necessities in the rural and urban sectors respectively in 2008.
- Capacities (Extreme) Poverty: Official poverty lines in Mexico that consider the minimum, monthly household per-capita income (\$941.38 & 1,311.95 Mexican pesos, or

equivalently USD \$2.53 & 3.52 daily American dollars) to satisfy food, education and health necessities in the rural and urban sectors respectively in 2008.

- **Basic-Needs Poverty:** Official poverty lines in Mexico that consider the minimum, monthly household per-capita income (\$1,444.83 & 2,146.18 Mexican pesos, or equivalently USD \$3.88 & 5.76 daily American dollars) to satisfy food, education, health, clothing, housing and transportation necessities in the rural and urban sectors respectively in 2008.

- **Overall Poverty:** Poverty lines proposed by the Technical Committee for the Measurement of Poverty (CTMP, 2002) in Mexico, equivalent to \$1,801.39 & 2,674.17 Mexican pesos (USD \$4.84 & 7.18 daily American dollars respectively), which consider additional basic necessities, to those included in the basic-needs poverty lines that are essential to live in the modern Mexican society in 2008, like culture, recreation and retirement savings.

- **Moderate Poverty:** Poverty condition that is suffered by those households (people) beyond extreme poverty in Mexico. It is obtained by subtracting extreme from overall poverty.

(c) Mexico's poverty profile

This section provides a general overview of Mexico's poverty profile in order to appreciate the trends in poverty, as well as the changes and/or improvements in the condition of the poor during the last two decades.

(i) Poverty trends in Mexico

As shown in Figure 1 and Table 1, extreme and overall poverty in Mexico increased sharply after 1994, reaching its

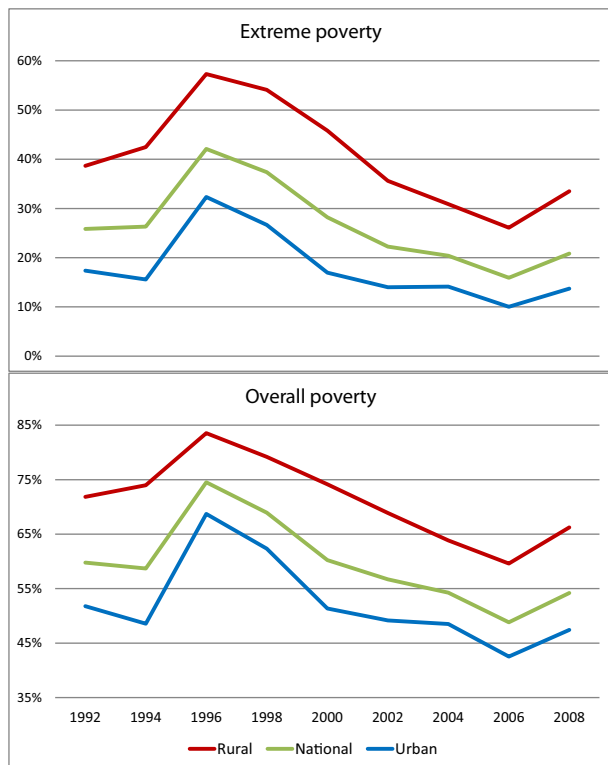


Figure 1. Extreme and overall poverty in Mexico, 1992–2008 (Headcount index). Source: Author's calculations based on the Household Income and Expenditure Surveys of Mexico's National Institute of Statistics, Geography and Informatics (INEGI).

highest level in 1996. Thereafter, there was a remarkable change that caused poverty to decline continuously until attaining a record low in 2006. However, the favorable (decreasing) trend observed for a decade, since the mid-1990s, was finally reversed in 2007–2008, locating the poverty levels around those found in 2002–2004. According to our calculations, 54% of the population, equivalent to 58 million people, could not satisfy basic needs of some kind or another in 2008, and from those 58 million, 22 million or 21% of the population lived in extreme poverty (see Table 1). It is worth noting that both the number and the proportion of the poor in Mexico rose to pre-2002 levels by 2010 (CONEVAL, 2011), due to the continuous fall in per-capita incomes, as well as the constant increase in food prices that have brought down the standard of living of the have-nots in particular (CONEVAL, 2012).

In addition, it is evident that the poverty levels in the rural sector are considerably higher than those prevailing in the urban centers. For instance, in 2008, while the percentage of the urban poor represented about 14% of the population, the incidence of extreme poverty in the rural areas was more prevalent by 20 percentage points (33.5%; see Figure 1 and Table 1). A similar difference is observed in the same year with respect to overall poverty, with as many as 66.3 and 47.4% of the people living in poverty in the rural and urban sectors respectively. It should be noted that the rural–urban poverty gap has remained approximately constant during the whole analyzed period, confirming the well-known fact that the majority of the poor is located in the rural areas (Ravallion, 2002, 2005).

Moreover, it is possible to corroborate in Figure 2 that, while overall poverty seems poorly correlated with moderate poverty, which remained approximately constant over the whole period, changes in total poverty were mostly determined by changes in extreme poverty in the short and long terms,⁸ and that extreme poverty was less widespread in relative terms in the mid to late 2000s than in the 1990s. Similar trends were also obtained for the rural and urban sectors (see Table 1), implying that Mexico's poverty-reduction strategy has mainly focused on the most vulnerable groups of the population or those who cannot satisfy their most basic necessities of food, health and education (CTMP (2002), CONEVAL (2011)).⁹

(ii) Education

Education, or human capital in general, is one of the factors determining the poverty level in a country, which is closely related to the condition of the poor. A strong relationship has been actually found between the educational-attainment level and poverty, which is usually accentuated in developing countries, where the lower the education level, the higher the probability of being poor. Mexico is a common example of this situation. According to our calculations, up to 64, 58 and 48% of households, whose head had no education or completed primary or junior-high school respectively, were poor in 1992 or 2008. Additionally, this was also true, regardless of the poverty line used, but the probability of being poor (contribution to poverty) with a basic educational level (primary and middle school) increased in the latter year, especially for lower-secondary school graduates, while it decreased by 18 percentage points for people with no education.¹⁰ On the other hand, it is possible to corroborate as well that the probability of being poor while attaining an educational level equal to or higher than secondary education was small (less than 10%) but increased considerably in 2008 (from 4.7 to 9.6% for overall poverty), and this situation is exacerbated the higher the value of the poverty line. Overall, we could not find

Table 1. *Poverty and inequality in Mexico, 1992–2008. Summary of main indicators*

	Headcount index									Number of poor in Mexico			Inequality
	Rural sector			Urban sector			National			(Millions of persons)			(National)
	Extreme (%)	Moderate (%)	Overall (%)	Extreme (%)	Moderate (%)	Overall (%)	Extreme (%)	Moderate (%)	Overall (%)	Extreme	Moderate	Overall	Gini index (%)
1992	38.7	33.2	71.8	17.4	34.4	51.8	25.8	33.9	59.8	22.5	29.5	51.9	53.8
1994	42.5	31.5	74.0	15.6	33.0	48.6	26.3	32.4	58.7	23.6	29.1	52.7	54.6
1996	57.3	26.2	83.5	32.3	36.4	68.7	42.1	32.4	74.5	39.0	30.0	69.1	52.7
1998	54.1	25.1	79.2	26.7	35.7	62.3	37.4	31.5	68.9	35.6	30.0	65.7	54.8
2000	45.8	28.3	74.2	17.0	34.4	51.3	28.2	32.0	60.2	27.7	31.5	59.2	54.6
2002	35.6	33.3	68.9	14.0	35.2	49.1	22.2	34.4	56.7	22.4	34.7	57.2	51.5
2004	30.9	33.0	63.8	14.1	34.4	48.5	20.4	33.8	54.2	21.0	34.9	55.9	52.3
2006	26.1	33.5	59.6	10.0	32.5	42.5	15.9	32.9	48.8	16.7	34.5	51.2	51.5
2008	33.5	32.7	66.3	13.7	33.7	47.4	20.9	33.3	54.2	22.3	35.6	57.8	52.2

Source: Author's calculations based on the Household Income and Expenditure Surveys of Mexico's National Institute of Statistics, Geography and Informatics (INEGI).

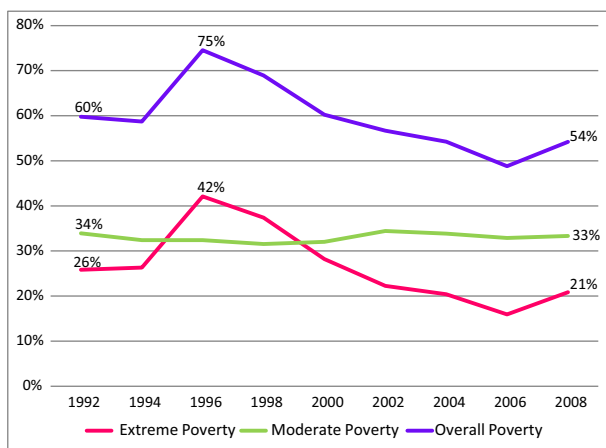


Figure 2. *Extreme, moderate and overall poverty in Mexico, 1992–2008 (Headcount index)*. Source: Author's calculations based on the Household Income and Expenditure Surveys of the INEGI.

great differences between the two analyzed years given the fact that it is mostly the unskilled population the one forced to stay poor due to its limited access to education during the whole period.¹¹ Therefore, it is possible to corroborate that the strong correlation, identified in McKinley and Alarcon (1995), between lack of low levels of education and poverty is still present in Mexico.

(iii) Occupation

The occupations with the highest proportion of overall poor households were, without doubt, agricultural workers with 72%, followed by skilled- and unskilled-industrial workers, other workers and the unemployed with 52, 68, 53 and 61%, respectively, in 2008. Contrastingly, there was only one classification, standing out among all other occupations, whose population was mostly non-poor in either year by 96%, and this has to do with the “Public Servants and Firm Managers” group.

Moreover, according to our calculations of the contribution to poverty by occupation in 1992 & 2008, the situation in 2008 was not that different from that in 1992, as the poor families were mainly those whose head of household worked as agricultural workers, particularly those at or below the extreme poverty line. For instance, 41 and 33% of the families considered as extremely poor were households whose head was employed as a laborer in the agricultural sector in 1992 and 2008 respectively. Additionally, it is also possible to corroborate that other

households highly associated to the condition of being poor in both years were those whose head worked as industrial and self-employed workers, sellers or that were inactive.

It is possible to conclude, therefore, that the condition of being poor in Mexico is highly related to agricultural jobs and occupations that are associated to the unskilled (people with an educational level lower than secondary school), which corroborates again the strong relationship between education and poverty in Mexico identified in the previous subsection.

(d) The evolution of inequality, economic growth, & average per-capita income in Mexico

(i) Inequality

The inequality considered in this study is that of total household per-capita income as represented by the Gini coefficient. Figure 3 shows the inequality trend followed in Mexico at the national, rural and urban levels. According to that figure and Table 1, national, income inequality, which mirrors the distribution of income in the urban sector, remained high during the 1990s (fluctuating around 0.53 to 0.55), and, declining during 2000–2002, the Gini coefficient dropping by 0.03 to 0.515, remained approximately constant thereafter (Iniguez-Montiel, 2011b).

It is clear in the figure that there were two main falls in inequality at the national level; the first occurred in 1996 as

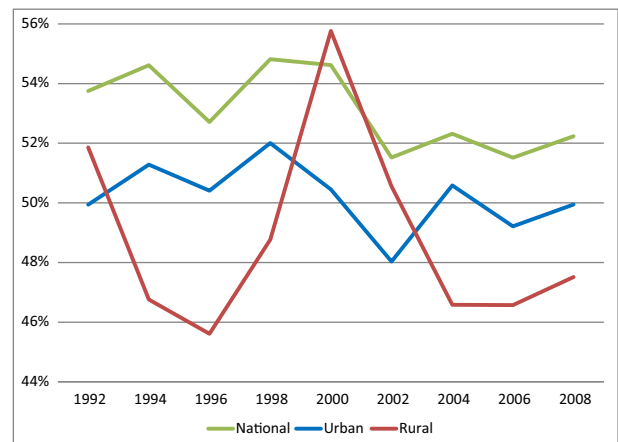


Figure 3. *Income inequality in Mexico, 1992–2008 (Gini coefficient)*. Source: Author's calculations based on the Household Income and Expenditure Surveys of the INEGI.

a consequence of the 1994–1995 financial crisis (Cortes, 2003). The second and, actually, most important decline during the whole analyzed period took place right after 2000 but, this time, it occurred through a combination of market forces and state action (Iniguez-Montiel, 2011b),¹² allowing a sizable improvement in the distribution of income in the rural and urban sectors alike (see Figure 3). It will be shown later in the analysis that these income-distributional changes, particularly the post-2000 ones, had important poverty-reducing effects in Mexico.¹³

Furthermore, income inequality in the urban sector was relatively stable during the whole period, with inequality levels fluctuating between 0.50 and 0.52. The only exceptions are observed in 2002 and 2006, when the Gini coefficient dropped to 0.48 and 0.49 respectively, returning to previous levels immediately afterwards. It should be noted that inequality declined continuously from 1998 to 2002 by four percentage points. According to Esquivel (2010), the improvement in the distribution of income during the 1990s and 2000s in the urban sector is primarily explained by the inequality-reducing effects of labor income and transfers, where the latter is represented mostly by the Oportunidades governmental program.

As for the inequality in the distribution of rural income, it is possible to see that it fluctuated constantly during the 1990s and early 2000s, displaying a clear “U” and inverted-“V” shapes with Gini coefficients of 0.519, 0.456, 0.558 and 0.466 in 1992, 1996, 2000 and 2004 respectively (see Figure 3). The reason of the sharp increase in inequality after 1996 is explained by the important inequality-augmenting impact of income from own businesses, which counteracted the inequality-decreasing effects of labor income, transfers and remittances (Esquivel, 2010). On the other hand, the pronounced decline of inequality after 2000 can be attributed primarily to the considerable redistribution that took place in the rural areas through the Oportunidades program and, since 2003, the Popular Health Insurance program. Likewise, remittances had an inequality-reducing impact in the 2000s as well, but their marginal effect was not large in the rural sector, although it was relevant at the national level (Esquivel, 2010). From 2004 onwards, income inequality in the rural sector seems to stabilize, reaching a level of 0.475 in 2008.

(ii) Economic growth & average per-capita income¹⁴

According to Figure 4, economic fluctuations are quite common in Mexico’s recent history.¹⁵ It is, therefore, possible to see in the figure that, after recovering from an economic

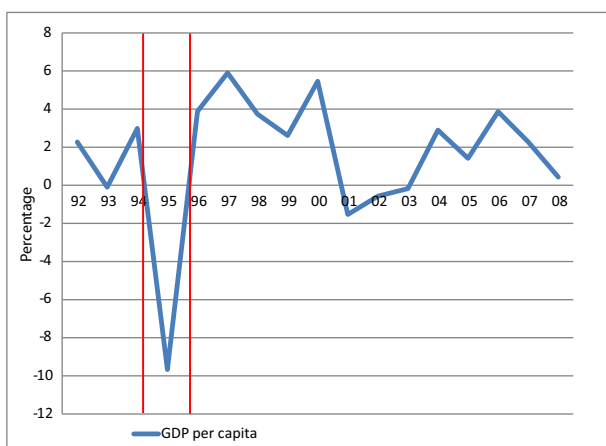


Figure 4. Economic growth in Mexico, 1992–2008. | 1994–1995 financial crisis. Source: Author’s original graph based on Heston et al. (2011).

slowdown in 1993–1994, the Mexican economy entered into a severe recession in 1995, which was mainly caused by the 1994–1995 financial crisis. However, the economy recovered quite quickly in 1996, maintaining relatively high growth rates during the rest of the decade. After 2000, there was another recession that lasted until 2003, and then, from 2004 to 2006, positive growth rates followed. Finally, in 2007–2008, an economic slowdown can be observed in the graph, which, according to INEGI’s official figures,¹⁶ continued and worsened during the year 2009 (with negative GDP growth rates averaging 6.6%), ending in 2010 with positive growth rates.

As expected, the average per-capita income of households (see Figure 5), which is captured in the ENIGHs, followed closely the economic cycle presented above. Two interesting facts about the Mexican economy are worth pointing out from Figure 5. First, it should be noted that, as a result of the 1994–1995 financial crisis, the purchasing power that households commanded in the early 1990s was not recovered until 2004 for the nation as a whole, to suffer a considerable decline once again by the end of the decade.¹⁷ Second, the income disparities between the rural and the urban sectors have been persistent and seem to be widening. According to the data, while the rural–urban income gap was fairly constant during the 1990s, except in 1994 and 1996, and until the mid-2000s at about \$2,700 pesos, the disparity increased to over \$3,000 pesos in 2006 and 2008, representing more than 123% of the rural per-capita income in both years. This phenomenon could be explained by the almost stagnant growth of the rural economy during the last decades as corroborated in the figure.

3. METHODOLOGY

The methodologies applied in this paper correspond to the Growth Incidence Curves (GICs) of Ravallion and Chen (2003), the decomposition of the poverty changes into growth and inequality factors of Datt and Ravallion (1992) and the sectoral decomposition of changes in poverty of Ravallion and Huppi (1991). The first two techniques just mentioned were developed to determine the quantity and the quality of growth in the economy and, by doing so, to what extent growth is pro-poor or not. On the other hand, the Ravallion and Huppi’s (1991) decomposition allows identifying the particular contribution of the rural and urban sectors, as well as of the changes in the distribution of the population, to the

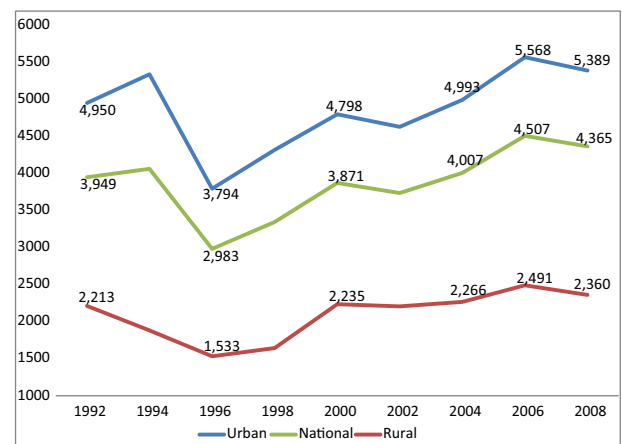


Figure 5. Monthly average per capita income in Mexico, 1992–2008 (At constant pesos of August 2011). Source: Author’s calculations based on the Household Income and Expenditure Surveys of the INEGI.

changes in national poverty. As these methodologies are well known in the development-economics field, we only mention them and refer the reader to the original papers, where detailed explanations about them can be found.

4. RESULTS

(a) *Measuring pro-poor growth*¹⁸

In this subsection, it is shown graphically and by means of calculation whether pro-poor growth was attained or not during 1992–2008 and two consecutive periods in between the former, namely, 1992–2000 and 2000–2008. The reason to subdivide the overall period in those two is that the relationship between growth, inequality and poverty seems to have changed in the 1990s and the 2000s. This is indeed corroborated in here, and we find that while inequality and the level of income per-capita clearly increased and decreased respectively during the first of the decades, the opposite holds true for the 2000–2008 period.

(i) *National level*

The Growth Incidence Curve (GIC) for the long-run period (Figure 6) shows that it was the poor-income households (those below the 40th percentile of the income distribution) the ones whose income grew at higher rates during the whole

period at the national level. According to our calculations (see Table 2), the annual rate of pro-poor growth for poor-income households was 1.1%, compared to the 0.7% growth rate in average income that was observed. Moreover, it is also possible to see in the same figure that, while the income of the richer families grew at below-average rates, except for the income of the highest percentile, above-average income-growth rates were attained by middle-income households, or those between the 40th and 80th percentile of the distribution. We can, therefore, conclude that growth in 1992–2008 was absolutely pro-poor, meaning by this that the dynamic process adopted in Mexico was able to reduce poverty and inequality at the same time. Let us analyze the GICs for the periods in between the long run in detail in order to obtain more information on this issue.

Figure 6 also portrays the national GICs for the periods 1992–2000 and 2000–2008. As it is possible to confirm in that figure, the period 1992–2000 was characterized by pro-rich growth and negative growth rates for households below the 96th percentile of the income distribution. Contrastingly, in 2000–2008, growth was definitely pro-poor (3.2%, see Table 2), with positive growth rates for all households below the 96th percentile and negative ones for those at the top 5th percentile, excepting the richest families at the top of the distribution.

This means that, while there was an income distributional worsening in 1992–2000 where most of the gains from growth, if not all, were captured by the highest-income groups, an

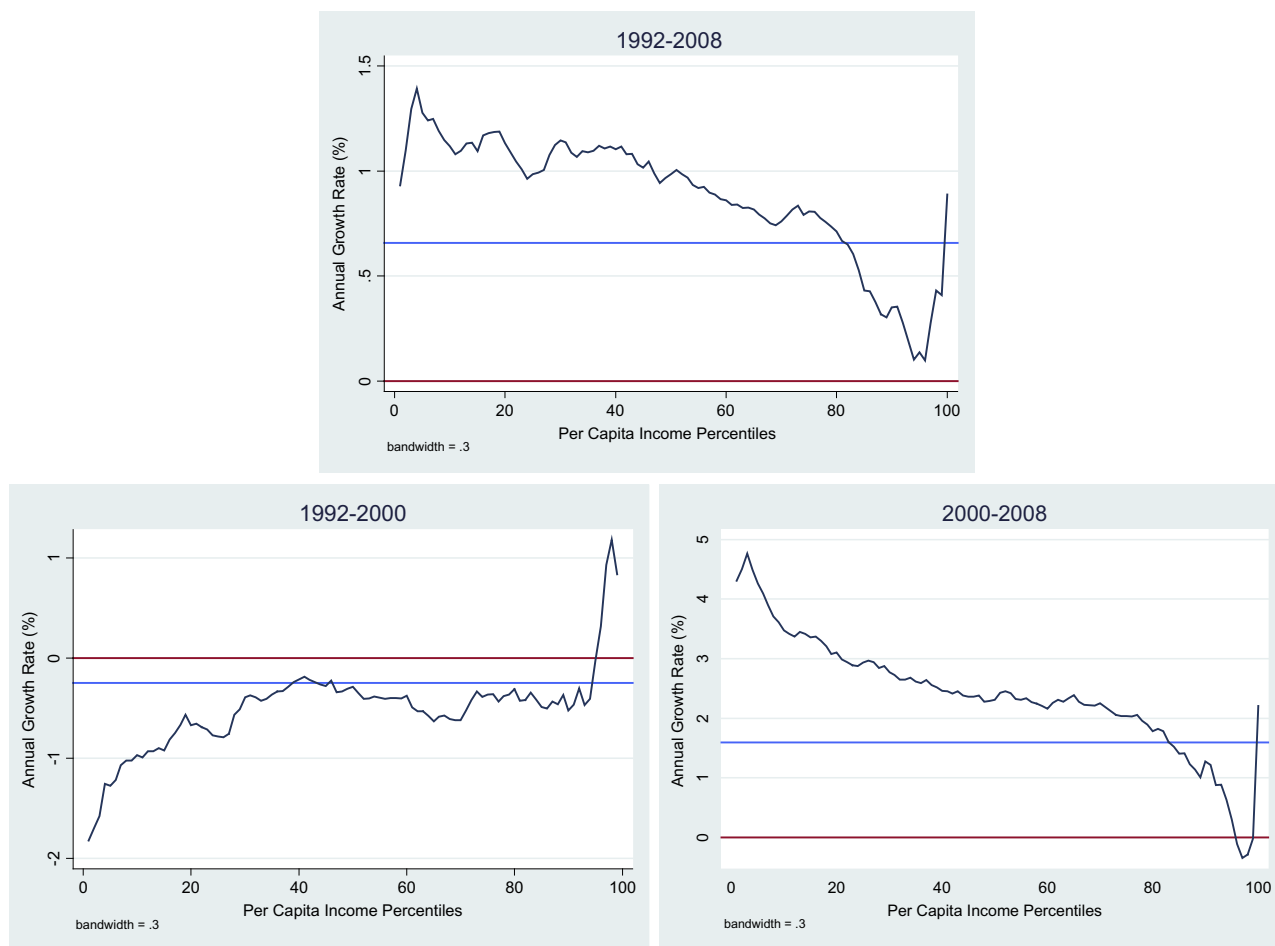


Figure 6. Growth incidence curves, 1992–2008, 1992–2000, & 2000–2008 (National). ——— Growth rate in the mean income; ——— Zero growth rate. Source: Author's calculations based on the Household Income and Expenditure Surveys of the INEGI.

Table 2. *National, rural and urban growth rates*

	National			Rural			Urban		
	1992–2008	1992–2000	2000–2008	1992–2008	1992–2000	2000–2008	1992–2008	1992–2000	2000–2008
	<i>Growth rate in the mean income (% per annum)</i>								
	0.7	–0.2	1.6	0.4	0.1	0.7	0.6	–0.4	1.5
	<i>Pro-poor growth rate for the poorest percentile (p) (% per annum)</i>								
<i>p</i>									
10	1.2	–1.3	4.1	1.2	–1.6	4.5	0.8	0.4	1.3
20	1.2	–1.1	3.7	1.1	–1.6	4.4	0.8	0.10	1.6
30	1.1	–0.9	3.4	1.0	–1.6	4.2	0.9	0.05	1.6
40	1.1	–0.8	3.2	1.0	–1.6	4.2	0.8	–0.02	1.7

Source: Author's calculations based on the Household Income and Expenditure Surveys of the INEGI.

important decline in income inequality took place in 2000–2008, affecting positively middle- and, especially, lower-income families, which caused the decline in national poverty that was observed in the latter period. Therefore, growth with redistribution, or pro-poor growth, was the key to achieve the considerable decline in the poverty level after 2000 in Mexico.

(ii) *Rural and urban sectors*

By analyzing the 1992–2000 and 2000–2008 GICs for the rural and urban sectors separately, it is possible to observe a similar pattern than the one obtained at the national level. Most representatively, the GICs in the rural sector (not shown in here to save space) displayed an upward and a downward sloping curve in 1992–2000 and 2000–2008 respectively. In the former period, while the average growth rate was 0.1%, the rate of pro-poor growth was actually negative (–1.6%) for households at and below the 40th percentile (see Table 2) and the average per-capita income of the richest families grew at about 3.7%. On the other hand, there was a drastic change that occurred in the rural sector in 2000–2008, which shifted the gains from growth to above-average levels for lower- and middle-income households (with a 4.2% pro-poor growth rate for families below the 41st percentile) while the income of the richest households (those at the top three percentiles) grew negatively, as opposed to the former period, causing an improvement in the distribution of income that was responsible for the decline of poverty within that sector.

We have thus corroborated that economic growth and the considerable income-distributional improvement that occurred after 2000 both determined the poverty decline in Mexico within the rural and urban sectors, as well as at the national level, in 2000–2008 bringing an overall development process that was sustained until 2006.

(b) *Sectoral decomposition of the change in poverty*¹⁹

The Ravallion and Huppi's decomposition (1991) that is applied identifies the contribution of the changes in poverty in the rural and urban sectors, as well as of the movements of people between those sectors (rural–urban migration), to the changes in poverty at the national level during 1992–2008, 1992–2000 and 2000–2008.

(i) *Long-run period: 1992–2008*

Table 3 shows the results of the sectoral decomposition. It is possible to see that the results are quite different depending on the poverty measure and line that are used. This is not surprising due to the fact that each poverty measure (H, PG and SPG) has its own meaning (see Section 2(b)) and is constructed to account for the incidence, the depth and the severity of poverty respectively. Therefore, it should be clear that these measures are not fully interchangeable between each other despite the fact that they are constructed with the same formula (Foster *et al.*, 1984). But, as it is common practice in this field, we present the results obtained with the three indicators to evaluate their sensitivity to the choice in the poverty measure as well as in the poverty line.

Having this in mind, the results show two clearly identifiable patterns. First, the contribution of the rural sector to the reduction of poverty is stronger, the more sensitive the poverty measure is to inequality among the poor and the lower the poverty line. Second, the contribution of the urban sector to the reduction in poverty turns out to be stronger, the higher the poverty line and when the poverty indicator corresponds to the H. This is something interesting because it means that, as long as the main concern is not the inequality or the income shortfall of the poor, the contribution of the urban sector to

Table 3. *Sectoral decomposition of the change in poverty in Mexico, 1992–2008*

Effect	Poverty measures (% point change)											
	Food poverty line			Extreme poverty line			Basic-needs poverty line			Overall poverty line		
	H	PG	SPG	H	PG	SPG	H	PG	SPG	H	PG	SPG
Within-rural (contribution)	–1.48	–0.84	–0.46	–1.86	–0.95	–0.58	–2.33	–1.34	–0.94	–2.02	–1.50	–1.11
	37%	52%	59%	37%	46%	53%	35%	38%	43%	36%	38%	40%
Within-urban (contribution)	–1.74	–0.47	–0.17	–2.33	–0.75	–0.32	–3.45	–1.71	–0.94	–2.79	–1.94	–1.26
	44%	29%	21%	47%	36%	29%	52%	48%	43%	50%	49%	46%
Population-shift (contribution)	–0.73	–0.30	–0.16	–0.81	–0.36	–0.20	–0.80	–0.48	–0.32	–0.76	–0.54	–0.39
	19%	19%	20%	16%	18%	18%	12%	14%	15%	14%	14%	14%
Total change	–3.9	–1.6	–0.8	–5.0	–2.1	–1.1	–6.6	–3.5	–2.2	–5.6	–4.0	–2.8

Note: The decomposition methodology was proposed by Ravallion and Huppi (1991) in the World Bank Economic Review. H, PG and SPG stand for the headcount, the poverty gap and the squared poverty-gap indexes respectively.

Table 4. Sectoral decomposition of the change in poverty in Mexico (% point change in the SPG index)

Effect	1992–2008				1992–2000				2000–2008			
	Food poverty	Extreme poverty	Basic-needs poverty	Overall poverty	Food poverty	Extreme poverty	Basic-needs poverty	Overall poverty	Food poverty	Extreme poverty	Basic-needs poverty	Overall poverty
Within-rural (contribution)	-0.46 59%	-0.58 53%	-0.94 43%	-1.11 40%	0.72 123%	0.92 128%	1.36 140%	1.48 150%	-1.12 82%	-1.43 79%	-2.19 69%	-2.48 66%
Within-urban (contribution)	-0.17 21%	-0.32 29%	-0.94 43%	-1.26 46%	-0.10 -16%	-0.15 -21%	-0.31 -32%	-0.40 -40%	-0.07 5%	-0.16 9%	-0.61 19%	-0.85 23%
Population-shift (contribution)	-0.16 20%	-0.20 18%	-0.32 15%	-0.39 14%	-0.04 -6%	-0.05 -7%	-0.08 -8%	-0.09 -9%	-0.18 13%	-0.23 13%	-0.36 11%	-0.43 11%
Total change	-0.8	-1.1	-2.2	-2.8	0.6	0.7	1.0	1.0	-1.4	-1.8	-3.2	-3.8

Note: The applied decomposition methodology was proposed by Ravallion and Huppi (1991) in *The World Bank Economic Review*. The SPG index corresponds to the squared poverty-gap measure proposed by Foster et al. (1984).

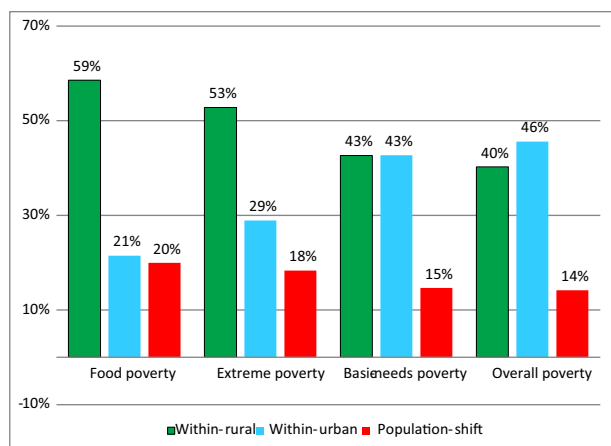


Figure 7. Contribution of rural, urban and population-shift effects to the reduction of poverty in Mexico, 1992–2008. Source: Author's calculations based on the Household Income and Expenditure Surveys of the INEGI.

the reduction in the number of the poor in the country is the highest, and therefore that policies that tackle poverty in the urban areas should be preferred to those targeted at the rural sector. This conclusion would be actually incorrect because poverty is more prevalent and severe in the rural areas as corroborated in this study (see Section 2) and others as well (Ravallion & Datt, 2002). For that reason, our analysis will mainly focus on the SPG index, which is an indicator concerned with the severity of poverty and inequality among the poor.

According to the decomposition results in Table 4, the reduction in the level of extreme poverty in Mexico was mainly determined by the poverty changes within the rural sector, contributing to about 53% to the poverty decline. The second most important contributor to the reduction of extreme poverty was the urban sector with 29%, followed by the changes in the distribution of the population (population-shift effect) contributed less to the decline of overall poverty once again by about 14%.

Likewise, when higher poverty lines are evaluated, it is possible to observe an almost even contribution of the rural and urban sectors to the reduction of poverty in Mexico of about 40 and 46% respectively, while the changes in the distribution of the population (population-shift effect) contributed less to the decline of overall poverty once again by about 14%.

Our analysis indicates, therefore, that both sectors play an important role in improving the standard of living of the overall poor, but the reduction of extreme poverty in Mexico is mainly associated with the condition of the rural economy, which is invariably related to the substantial improvement in

the distribution of income that took place in that sector after 2000 (see Figure 3).

(ii) Decomposition: 1992–2000

In this former period, it is evident that the increases in poverty in the rural sector were completely responsible for the rise in national poverty, regardless of the poverty line that is used (see Table 4). On the other hand, the reduction of poverty within the urban sector, along with the population-shift effect, partially counteracted the strong, negative impact associated with the poverty rise in rural areas.

(iii) Decomposition: 2000–2008

A completely different picture emerges from the sectoral decomposition in 2000–2008 (see Table 4), especially with respect to the changes in poverty within the rural sector. In this latter period, the estimated reduction in national poverty was mainly associated with the decline of poverty within the rural sector, in stark contrast with the decomposition results obtained for the former period.

As for the changes in poverty in the urban sector, they also contributed positively to decreasing national poverty although to a much lower degree. Moreover, the population-shift effect was positive, as usual, along the whole decomposition exercise, contributing to about 11% to the decline of national poverty and being the second most important determinant of the level of extreme poverty, after the rural-sector effect, in 2000–2008.

(c) Decomposition of poverty changes into growth and distribution components

The proposed methodology in Datt and Ravallion (1992) was applied to the long-run period (1992–2008) and four consecutive and different periods in between the former.²⁰ This could give us the possibility of identifying the relative contribution of the changes in the income inequality and in economic growth to the changes in the level of poverty in Mexico in the short, medium and long terms.

(i) Long-run period: 1992–2008

Table 5 shows the results of the decomposition exercise for the long-run period. As it is possible to corroborate in the table, there was a relatively even contribution of inequality and economic growth to the reduction of poverty up to the extreme poverty line. However, the redistribution effect had a much stronger impact on poverty than growth when the SPG measure is analyzed, accounting for about 58 and 62% to the declining trend in extreme and food poverty respectively. On the other hand, for higher poverty lines, there was a slight dominance of the economic-growth effect, which augments

Table 5. *Decomposition of changes in national poverty in Mexico into its growth and distribution components, 1992–2008*

Effect	Poverty measures (% point change)											
	Food poverty line			Extreme poverty line			Basic-needs poverty line			Overall poverty line		
	H	PG	SPG	H	PG	SPG	H	PG	SPG	H	PG	SPG
Growth	-2.55	-0.76	-0.30	-2.89	-1.10	-0.50	-3.44	-1.89	-1.14	-3.37	-2.20	-1.47
(contribution)	53%	50%	47%	54%	52%	49%	56%	54%	53%	56%	55%	54%
Distribution	-2.33	-0.85	-0.40	-2.51	-1.12	-0.58	-2.66	-1.66	-1.10	-2.56	-1.84	-1.34
(contribution)	49%	57%	62%	47%	53%	58%	43%	48%	51%	43%	46%	49%
Residual	0.09	0.11	0.06	0.07	0.10	0.07	-0.03	0.06	0.08	-0.10	0.04	0.07
(contribution)	-2%	-7%	-9%	-1%	-5%	-7%	1%	-4%	-4%	2%	-1%	-2%
Total change	-4.79	-1.50	-0.65	-5.33	-2.11	-1.01	-6.14	-3.49	-2.17	-6.02	-4.01	-2.74

Note: This decomposition was proposed by *Datt and Ravallion (1992)* in the *Journal of Development Economics*.
H, PG and SPG stand for the headcount, the poverty gap and the squared poverty-gap indexes respectively.

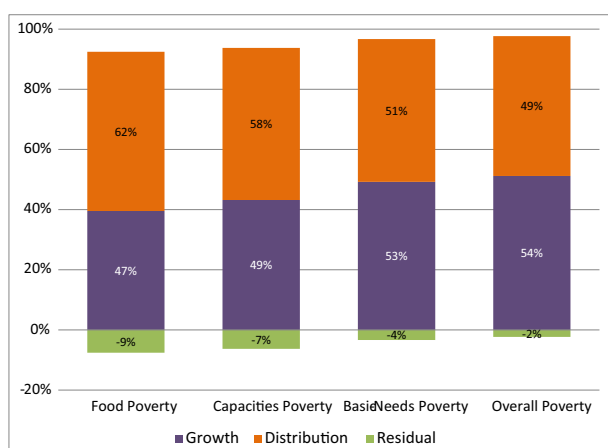


Figure 8. *Contribution of growth and redistribution to the reduction of poverty in Mexico, 1992–2008*. Source: Author's calculations based on the *Household Income and Expenditure Surveys of the INEGI*.

the lower the sensitivity of the poverty indicator to inequality among the poor. Therefore, if the H index is analyzed, for instance, economic growth contributed up to 56% to the reduction of basic-needs and overall poverty, while the impact of redistribution on poverty accounted for a non-negligible 43%. Contrastingly, when the SPG indicator is evaluated, the gap between the two effects (growth and distribution) becomes smaller, contributing to about 53 and 50%, respectively, to the reduction of poverty in 1992–2008 (see [Table 5](#) and [Figure 8](#)).²¹

It is possible to say, therefore, that both changes in economic growth and in the distribution of income in Mexico were both important determinants of the reduction in poverty at all levels as suggested in the literature. This is particularly an important finding that confirms the positive and sizable impact of redistribution on poverty in Mexico, even though the reduction of income inequality after 2000 was less than three percentage points. Let us continue analyzing the decomposition results for the periods in between 1992–2008 to obtain more detailed information in this respect.

(ii) *Decomposition: 1992–1996*

The results in [Table 6](#), regarding the period 1992–1996, give a rather different picture of the contribution of growth and inequality to poverty in Mexico. As shown in the table, changes in economic growth were completely responsible for the increase in the poverty level during the period, whereas,

changes in the distribution of income acted as a cushion that prevented the level of poverty to rise even further.

We may recall that, during this period, there was a strong economic contraction led by the 1994–1995 financial crisis (see [Figures 4 and 5](#)), the worst crisis since the 1930s according to the [Bank of Mexico \(1996\)](#). Additionally, the data show that, as a result of the same crisis, income inequality at the national level declined from a Gini coefficient of 54.6 to 52.7% in 1994 and 1996 respectively.²²

Consequently, it is possible to affirm that changes in the distribution of income in the country had a positive and considerable impact on the level of poverty that partially counteracted the strong, poverty-augmenting effects of the economic recession and the sharp decline in per-capita income experienced as a result. On the other hand, the negative growth rates that followed the 1994–1995 crisis contributed to the formation of the highest poverty levels ever recorded in Mexico since 1950 ([Szekely, 2005](#)).

(iii) *Decomposition: 1996–2000*

It is possible to corroborate in the same table that the opposite effects from those found for the period 1992–1996 occurred in this latter period. Therefore, while economic growth contributed positively to the reduction of poverty in Mexico, changes in the distribution of income (inequality rise) had a poverty-increasing effect, which, as explained in [Section 1](#), is consistent with economic theory and reasoning again, at each of the poverty lines considered. Thus the decline of the poverty level during 1996–2000 was due to the strong and positive contribution of the growth effect, which was substantially diminished by the higher concentration of income that happened to prevail in the period (see [Figure 3](#)).²³ Consequently, it may be possible to say that an income-distribution deterioration in Mexico drastically reduces, and may even offset, the positive impact of growth on poverty (or the growth elasticity of poverty) by lowering the gains from growth of the low-income families, while increasing those of the rich.

(iv) *Decomposition: 2000–2004*

The results for the period 2000–2004 show a quite different picture from the one obtained for the previous analyzed periods. Therefore, it is possible to see in [Table 6](#) that the redistribution effect dominates completely the growth effect at every poverty line considered, going from a poverty-reducing impact of 92 to 79%. This means that the improvement along the distribution of income was the main factor behind the poverty decline during the early 2000s, and that economic growth, although contributed positively as well, had a rather small impact on poverty.

Table 6. Decomposition of changes in national poverty in Mexico into its growth and distribution components (% point change in the SPG index)

Effect	1992–1996				1996–2000				2000–2004				2004–2008			
	Food poverty	Extreme poverty	Basic-needs poverty	Overall poverty	Food poverty	Extreme poverty	Basic-needs poverty	Overall poverty	Food poverty	Extreme poverty	Basic-needs poverty	Overall poverty	Food poverty	Extreme poverty	Basic-needs poverty	Overall poverty
	Growth (contribution)	2.12	3.00	5.53	6.72	-2.13	-2.96	-5.32	-6.44	-0.09	-0.17	-0.42	-0.55	-0.22	-0.40	-1.17
Distribution	167%	151%	129%	123%	196%	173%	149%	145%	16%	19%	22%	22%	82%	99%	124%	143%
(contribution)	-0.51	-0.69	-1.05	-1.15	0.72	0.96	1.58	1.88	-0.51	-0.76	-1.57	-1.97	-0.09	-0.06	0.17	0.48
Residual (contribution)	-40%	-35%	-25%	-21%	-67%	-56%	-44%	-42%	92%	87%	80%	79%	33%	14%	-18%	-38%
(contribution)	-0.35	-0.33	-0.18	-0.12	0.32	0.29	0.17	0.12	0.05	0.05	0.04	0.02	0.04	0.05	0.06	0.07
Total change	-2.7%	-1.7%	-4%	-2%	-29%	-17%	-5%	-4.44	-8%	-6%	-2%	-1%	-15%	-13%	-6%	-5%
	1.27	1.98	4.30	5.46	-1.09	-1.71	-3.57	-4.44	-0.56	-0.88	-1.95	-2.50	-0.27	-0.40	-0.94	-1.26

Note: The applied decomposition methodology was proposed by Datt and Ravallion (1992) in the Journal of Development Economics. The SPG index corresponds to the squared poverty-gap measure proposed by Foster et al. (1984).

It should be noted that the abovementioned effects on poverty were achieved through a combination of positive economic growth, coupled with a statistically significant decline of inequality in Mexico during the period, which is a different cause of the poverty reduction observed in 1996–2000. This type of virtuous combination, achieved through win-win types of policies, has been termed “pro-poor (inclusive) growth”, and is explained and empirically tested for Mexico in the first subsection (Section 4(a)).

(v) Decomposition: 2004–2008

As shown in Section 2(c), this latter period marks the end of a continuous decline in the level of poverty since 1996. According to the data, the poverty reduction ended in 2006 and was followed by a considerable increase in the proportion and the number of poor people in 2008 (see Figure 1 and Table 1), similar to the levels observed in the early 2000s. This dramatic reversal of the poverty level, which actually worsened in 2009 and 2010 according to the National Council for the Evaluation of Social Development Policy in Mexico (CONEVAL, 2011), provides evidence of the vulnerability of the Mexican economy to external shocks (or financial crises) and of the inherent weaknesses in the country’s development strategy (Iniguez-Montiel, 2011a).

However, when the SPG index is analyzed, the severity of poverty in Mexico shows a slight improvement in 2004–2008. According to Table 6, the reduction in the level of extreme poverty was primarily caused by the income-growth effect, implying that the mean-income (per-capita) level was higher in 2008 than in 2004 (see Figure 5). Moreover, the distribution effect also contributed to the decline in extreme poverty but only by 14%. This means that income inequality among the poorest households in Mexico decreased, affecting positively the extremely poor. Contrastingly, if we analyze the basic-needs and overall poverty, then the distributive effect had a poverty-augmenting impact, which slightly counteracted the stronger, positive effect of increasing per-capita income during the period.

5. CONCLUDING REMARKS

This study estimates the contribution of changes in economic growth and in income distribution to poverty reduction in Mexico during 1992–2008, by trying to harness a variety of quantitative techniques developed to analyze the, sometimes, overlooked and underestimated impact of inequality on poverty. To our knowledge, two of these techniques (Measuring pro-poor growth (Ravallion & Chen, 2003) and the Sectoral decomposition (Ravallion & Huppi, 1991)) had not been applied for examining poverty and its proximate determinants in Mexico. However, both of them allowed us to obtain interesting results and corroborate the conclusions derived from all the applied methodologies. We believe this type of techniques should be used together, on a constant basis, for the evaluation of poverty outcomes as well as the analysis of pro-poor growth in developing countries. By doing so, it could be effectively determined whether a development strategy is being successful in achieving inclusive growth, and the pattern of growth that is being followed.

Our results confirm the important role of redistribution in reducing poverty in Mexico in the short, medium and long terms as suggested in the literature (Dagdeviren et al., 2004; Lopez, 2006; Oxfam, 2000; Ravallion, 2005). Thus, in addition to the poverty-reducing effect of growth that has been identified, our results show that the observed decline of income inequality contributed quite evenly to the reduction of poverty

at all levels during the last two decades and, therefore, that the quantity as well as the quality of growth (who benefits from that growth) are both important factors that should be considered if poverty reduction is to be attained in Mexico.

Over the short to medium term, the improvement in the distribution of national income, representing a decline of three percentage points in the Gini coefficient after 2000, was able to explain primarily the over three-million-people reduction in poverty in 2000–2004. However, a small, income-distribution deterioration among the poor after 2004 partially counteracted the poverty-reducing effects of increasing per-capita income in 2004–2008.

Moreover, we could also identify that the poverty reduction in Mexico after 2000 was greatly attributed to the poverty decline in the rural sector and its growth-inequality pattern, associated with a 4.2% pro-poor growth rate for households at and below the 40th percentile of the income distribution in 2000–2008. That pro-poor (inclusive) growth rate was primarily achieved through a dramatic improvement in the distribution of rural income, equivalent to a nine-percentage-point decline in the Gini coefficient in 2000–2004 (see [Figure 3](#)). Likewise, growth was also pro-poor in the urban sector during the same period but it was only a third (1.7%) of that observed in the rural areas.

Therefore, we could conclude that growth with redistribution was indeed the key to reducing poverty continuously and in an important manner, corroborating what is suggested in the literature about the beneficial effect of lower inequality on poverty, particularly in highly-unequal developing countries ([Addison & Cornia, 2001](#); [Bourguignon, 2004](#); [Lopez, 2006](#); [Oxfam, 2000](#); [Ravallion, 1997, 2005, 2007](#)). Additionally, our results indicate that the high levels of inequality that persisted during the 1990s diminished considerably the poverty-reducing impact of growth in 1996–2000.

Furthermore, an additional factor, which invariably had a considerable and positive impact on poverty in Mexico during the whole analyzed period (1992–2008), was the “Kuznets process” of migration ([Ravallion & Chen, 2007](#)). Overall, this important factor contributed to about 20 and 15% of the reduction in extreme and total poverty respectively, meaning that the decline of poverty in Mexico is partly caused by the population transfer from the traditional to the modern sector of the economy. Nevertheless, this effect seems to be more illusory than real due to the scarcity of good jobs in the economy and the huge and increasing portion of the labor force that is employed in the informal sector (59% in 2010 ([Murayama & Samaniego, 2011](#))).

Even though it was possible to confirm that extreme poverty is less prevalent in relative terms (see [Section 2\(c\)](#)), as suggested in the literature ([Levy & Walton, 2009](#)), the same statement does not apply to moderate poverty or the absolute number of the poor in the country regardless of the poverty line that is used (see [Table 1](#)). Therefore, it is possible to say that the government’s effort to combat poverty has been rather insufficient given the fact that six more million Mexicans were

unable to meet basic needs in 2008 as compared to the number of moderately and overall poor people in 1992, while the number of the extremely poor remained unchanged at 22 million.

Mexico’s lack of success in this front, with 54% of the population (58 million people) living in poverty in 2008, is the result of a combination of growth and inequality factors affecting the poor in their own particular manner. Thus, while the majority of the population in Mexico remains poor due to the failure of the economy to grow at potentially higher rates, which could relocate the country out of its divergent, development path ([OECD, 2009](#)), the rather high levels of poverty that continue to prevail in the country are definitely the reflection of the great concentration of income and assets (wealth) that lies in quite a few hands, constraining the vast majority of people from benefiting from the gains of growth and realizing its full potential, in most of the cases because of the low human-capital accumulation trap that is present in the economy ([Mayer-Foulkes, 2008](#)).

Given that our main finding may be the one that confirms that the further improvement in the distribution of income in Mexico (lower inequality) is essential to succeed in eradicating poverty at all levels, and that a wider and growing consensus in the literature has emerged indicating that countries with an initial condition of a relatively egalitarian distribution of income and assets tend to grow faster than countries with a high initial inequality ([Aghion *et al.*, 1999](#); [Dagdeviren *et al.*, 2004](#); [Stiglitz, 2012](#)), it can be concluded that it is on Mexico’s best interests that public policies, in particular those related to the tax and transfer system, are applied properly and decisively in order to effectively reduce the high inequalities in the distribution of income, assets, and opportunity that have characterized the country for centuries ([Levy and Walton \(2009\)](#), [World Bank \(2007\)](#)), so that poverty is constantly and permanently reduced and considerably higher (potential) growth rates can be achieved as well.

Consequently, recognizing the importance of growth with equity is crucial for overcoming poverty in Mexico in the foreseeable future, as it is most probably the case of middle-income, high-inequality countries too. According to our results, if the actual level of inequality (Gini of 52% in 2008) were to be maintained, poverty in Mexico could only be reduced through economic growth, at particularly high growth rates for the rural sector. Therefore, in addition to promoting the economic development of the rural areas long-ago indicated in [McKinley and Alarcon \(1995\)](#), it seems that any successful strategy, aiming at achieving a significant and permanent reduction in the poverty level, must focus on improving the distribution of income and assets further, so as to reduce the high wealth disparities that persist in the country across individuals and regions ([Iniguez-Montiel, 2011b](#); [Levy & Walton, 2009](#); [World Bank, 2007](#)) and between the rural and urban sectors as well. No doubt, this could only be achieved by pursuing an active, pro-poor growth policy that takes into consideration the combined effects of growth and inequality on poverty, as well as the sectoral composition of growth in Mexico.

NOTES

1. Economic growth is self-evidently good for poverty reduction, since without growth, the average incomes of the poor cannot rise over time, with attendant implications for poverty. But growth is not the only requirement. At any given level of average income, the incidence of poverty is determined by income distribution. The larger the share of any increment to growth captured by the poor, the faster the rate of poverty reduction ([Oxfam, 2000](#)).

2. The traditional view stating that inequality is growth-enhancing and a normal part of the development process ([Kuznets, 1955](#)) was put into question and challenged by a number of empirical studies, which found a negative correlation between the average rate of growth and a number of inequality measures. For a review of the literature, the reader is referred to [Aghion, Caroli, and Garcia-Penalosa \(1999\)](#) and [Thorbecke and Charumilind \(2002\)](#).

3. According to [Dagdeviren, van der Hoeven, and Weeks \(2004\)](#), redistribution is far more effective in reducing poverty than increases in economic growth that are distribution neutral. The authors concluded that redistribution of current income and assets, or redistribution of an economy's growth increment are the most effective forms of poverty reduction for most countries but, especially so, for middle-income ones ([Dagdeviren et al., 2004](#)).
4. Even when a country experiences economic growth, poverty could remain stable or increase if the incomes of the poor remain unchanged or actually decrease respectively, while the income of the rest of households rises on average. Poverty will be reduced if and only if the income of some poor households increases above the predetermined poverty line within a particular period.
5. Likewise, given the improvement in / worsening of the distribution of income, poverty will decline/increase respectively, if and only if the income of some poor households grows relatively faster/slower than the income of the non-poor and the income of those poor households rises/falls above the predetermined poverty line.
6. According to [Stiglitz \(2012\)](#), among the negative effects of a high level of inequality in the economy, it is possible to mention the following: less productivity, less efficiency, less growth, and more instability. For instance, capital market imperfections or lack of equal opportunities for all cause an unequal distribution of income and assets, which leads to lower income levels for wide segments of the population and, consequently, lower growth rates for the entire economy. Refer to [Aghion et al. \(1999\)](#), [Stiglitz \(2012\)](#) and [Thorbecke and Charumilind \(2002\)](#) for a detailed explanation of the channels through which growth is affected negatively by high inequality levels.
7. It should be noted that all poverty lines, except the overall-poverty one, were obtained directly from the National Council for the Evaluation of Social Development Policy (CONEVAL) in Mexico. Updated poverty lines and all related information can be downloaded at <http://www.coneval.gob.mx/Medicion/Paginas/Evolucion-de-las-dimensiones-de-la-pobreza-1990-2010-.aspx> [accessed February 18, 2014]. The rural and urban overall-poverty lines were calculated by using the inverse of the Engel coefficients of 2.2624 and 2.5, respectively, which are suggested in [CTMP \(2002\)](#).
8. A similar conclusion can be drawn when analyzing the number of poor people in Mexico (see [Table 1](#)). However, in that case, it is possible to identify clearly that moderate poverty increased by 6 million people, from 29.5 to 35.6 million, in 1992–2008, which definitely had a negative impact on overall poverty.
9. Actually, the Mexican government has been criticized for reducing Mexico's social model to a system that is almost exclusively concerned with protection for those living in extreme poverty ([Bayon, 2009](#)).
10. This occurred due to the educational-inequality decline observed in the country, attributed mainly to the sharp decreases in the proportion of adults with an educational level equal or less than some elementary school ([Iniguez-Montiel, 2011b](#)).
11. According to [Mayer-Foulkes \(2008\)](#), there is a low human-capital development trap in Mexico; the poverty trap exists if a high enough proportion of the population suffers strong enough barriers to its access to human capital (education, health, and nutrition among others).
12. According to [Iniguez-Montiel \(2011a, 2011b\)](#), income inequality in Mexico remained high in the 1990s mainly due to the unequalizing effect of the rates of return to assets (real and financial), demographics, and education. On the other hand, the post-2000 income-distributional improvement was greatly associated with three factors: education (returns and distribution), financial assets (returns and distribution), and the betterment in the rates of returns to the rural areas and, in particular, the south of the country ([Iniguez-Montiel, 2011a, 2011b](#)).
13. It is important to mention that the 1996 and 2002 falls in the Gini index were both statistically significant at the 5% level. We corroborated this by calculating their bootstrap standard errors.
14. Given that the micro data (ENIGH) used in this paper comes from a biannually conducted survey, we decided to show, in this subsection only, the information of the *Penn World Table 7* ([Heston, Summers, & Aten, 2011](#)) (corresponding to the period 1992–2008), regarding the growth rates of real GDP per capita (grgdpc), in order to have a clearer view of the performance of the Mexican economy during the analyzed period. However, the data on the average per-capita income correspond to that of the ENIGHs.
15. It should be noted that, according to the *Penn World Table 7.0* ([Heston et al., 2011](#)), economic instability (volatility with negative growth rates) has been part of the Mexican economy since the early 1980s.
16. Economic Information Database, based on the Mexican National Accounts and available through INEGI's web page at <http://www.inegi.org.mx/sistemas/bie/> [accessed February 18, 2014].
17. According to [CONEVAL \(2012\)](#), the real per-capita income in Mexico has almost stagnated during the past two decades, because of the 1995 financial crisis, the economic slowdown at the beginning of the XXI century, the increase in food prices since 2007, and the 2009 world-financial crisis.
18. Growth is considered pro-poor (or inclusive) if, in addition to reducing poverty, it also decreases inequality ([Nissanke & Thorbecke, 2006](#)).
19. The decomposition exercises in this subsection were performed with respect to people and not to households in poverty, as is done in the next subsection, so that the population-shift effect is more meaningful. Consequently, the total changes in poverty shown in both types of decompositions, particularly the ones corresponding to the long-run period, are not identical.
20. The four analyzed periods in between 1992–2008 correspond to 1992–1996, 1996–2000, 2000–2004, and 2004–2008. Our reason to divide the long-run period in this manner is that, as shown in Section 2, there were clearly two periods where income inequality declined (1992–1996 & 2000–2004) and some other periods where economic growth was evidently achieved (1996–2000 & 2004–2008). We believe this will facilitate our analysis and clarify in a better way the relationship between poverty, inequality, and economic growth in Mexico.
21. To facilitate the analysis and for ease of understanding, only the results regarding the SPG index are shown. However, it must be noted that the complete analysis was carried out for the H and PG indexes as well, obtaining qualitatively similar results to those for the SPG measure. Moreover, as our main concern is about the impact of inequality on poverty, the SPG index constitutes the most appropriate measure to be considered without doubt, given the fact that, as opposed to the other two indexes, inequality among the poor is fully accounted within this indicator ([Foster et al., 1984](#)).

22. See Table 1 and Figure 3. It should be noted that while inequality in the rural sector also declined in 1994–1996, the most important improvement in the distribution of rural incomes occurred before 1994, when the Gini index dropped by five percentage points, from 51.9 to 46.8%, during the early 1990s.

23. The Gini coefficient increased by two percentage points at the national level, from 52.7 to 54.6% in 1996–2000. However, in the rural sector, inequality increased by more than ten percentage points, from 45.6 to 55.8%, during the same period (see Figure 3).

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