

7

Mexico: A Decade of Falling Inequality: Market Forces or State Action?

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Mexico is among the most unequal countries in the world.¹ However, it is making progress in becoming less unequal: from 1996 to 2006, Mexico's Gini coefficient fell from 0.543 to 0.498 (or by 0.8 percent a year),² and from 2000 to 2006 it fell by 1 percent a year.³ The decline in inequality coincided with

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2. The Gini reported in this paragraph is calculated by using total income (which includes monetary income and nonmonetary income, such as the imputed value of owner-occupied housing and auto-consumption, but does not include capital gains). The decomposition of income inequality by source presented in this chapter uses current monetary income (which excludes capital gains and nonmonetary income). The income concept in both cases is assumed to be after monetary transfers, direct taxes, and social security contributions (that is, it is disposable income). For the incidence analysis, the income concept used to rank households is total current income (including nonmonetary income but excluding capital gains) per capita before transfers and indirect taxes but net of direct taxes, as reported in ENIGH, the National Survey of Household Income and Expenditures (see INEGI, various years). The same concept is used for market income when comparing the distribution of total transfers and taxes with market income (to estimate incidence and change in inequality), except that market income in this case is net of all taxes, not just direct taxes.

3. The change in the Gini coefficient between 1996 and 2006, 1996 and 2000, and 2000 and 2006 was found to be statistically significant at the 95 percent level. The confidence intervals were constructed

important changes in Mexico's economic and social policy. In 1994, the North American Free Trade Agreement (NAFTA) with the United States and Canada went into effect, thereby establishing the largest free trade area in the world—and the most asymmetrical in terms of the countries' relative GDP.⁴ Mexico also implemented two important government transfer programs: Procampo in 1994 and Progresa (later called Oportunidades) in 1997. Procampo is an income support program for farmers designed to help them face the transition costs resulting from the opening of agricultural trade under NAFTA. Progresa/Oportunidades is a targeted conditional cash transfer program; it is considered Mexico's most important antipoverty program.

The period of declining inequality, which coincided with the period in which NAFTA went into effect, saw significant variation in annual growth rates. The peso crisis that began in December 1994 led to a sharp decline in economic activity during 1995, when per capita GDP fell to the tune of 8 percent.⁵ The economy recovered quickly, and between 1996 and 2000 Mexico's per capita GDP grew at a rate of 4 percent a year. However, between 2000 and 2006, per capita GDP growth slowed to 1 percent a year. That low-growth period is precisely when income inequality started to decline more rapidly.

This chapter uses nonparametric decomposition methods to analyze the proximate determinants of the reduction in income inequality between the mid-1990s and 2006. In particular, it looks at the roles played by the reduction in both labor income inequality and nonlabor income inequality. It also analyzes the impact of changes in demographics, such as the numbers of adults and of working adults per household. The chapter examines the extent to which the reduction in labor income inequality was due to a decline in the wage skill premium and explores the influence of changes in labor force composition, in terms of education and experience, on the decline in the wage skill premium; it also examines the relationship between labor force composition and changes in public spending on education.⁶ It then analyzes the contribution of changes in government transfers, with particular emphasis on Progresa/Oportunidades, to the reduction in nonlabor income inequality. The chapter concludes with a look at the distributive impact of government redistributive spending and taxes using standard incidence analysis.

by applying the bootstrap method with 150 replications. There is Lorenz dominance for the comparisons of 2006 and 1996, 2006 and 2000, and 2000 and 1996.

4. See Tornell and Esquivel (1997) for more details on these issues.

5. For an analysis of the peso crisis, see Lustig (1998).

6. For a theoretical discussion of the relationship between educational expansion, the supply of skills, and labor earnings inequality see, for example, chapter 2, by Jaime Kahhat, in this volume.

Income Inequality after NAFTA: 1994–2006

In this chapter we use the Gini coefficient as our preferred measure of inequality.⁷ It has all the desirable properties of an inequality indicator,⁸ and it is decomposable by proximate determinants as well as income sources.⁹ Our analysis uses both total income per capita and total monetary income per capita.¹⁰ All of our estimates use information from the National Survey of Household Income and Expenditures (ENIGH).¹¹ Comparable surveys are available for the years 1994, 1996, 1998, 2000, 2002, 2004, 2005, and 2006.¹² The surveys capture income net of taxes and contributions to social security and include transfers from Procampo and Progres/Oportunidades.

Figure 7-1 shows the evolution of the Gini coefficient for 1984–2006, using alternative definitions of income. The figure clearly indicates an inverted-U pattern with its peak in the mid-1990s. After rising by several percentage points between the mid-1980s and mid-1990s, the Gini coefficient for total household per capita income declined from 0.543 to 0.498 (and the Gini for monetary household per capita income declined from 0.539 to 0.506) between 1996 and 2006. The pace of decline accelerated between 2000 and 2006, when the Gini fell at 1 percent a year. Other measures of inequality follow the same general trend as the Gini coefficient, although some differences arise from the fact that the Gini is more sensitive to what happens to the middle of the distribution while the other measures are more heavily influenced by changes at the top and the bottom.¹³ For example, although the other measures tend to peak around 1998, the Gini peaks in 1994.¹⁴

7. Other measures of inequality such as the Theil index show trends similar to those described in the text. They are available from the authors on request.

8. These principles are: adherence to the Pigou-Dalton transfer principle; symmetry; independence of scale; homogeneity; and decomposability.

9. Although it is not additively decomposable, as is the Theil index.

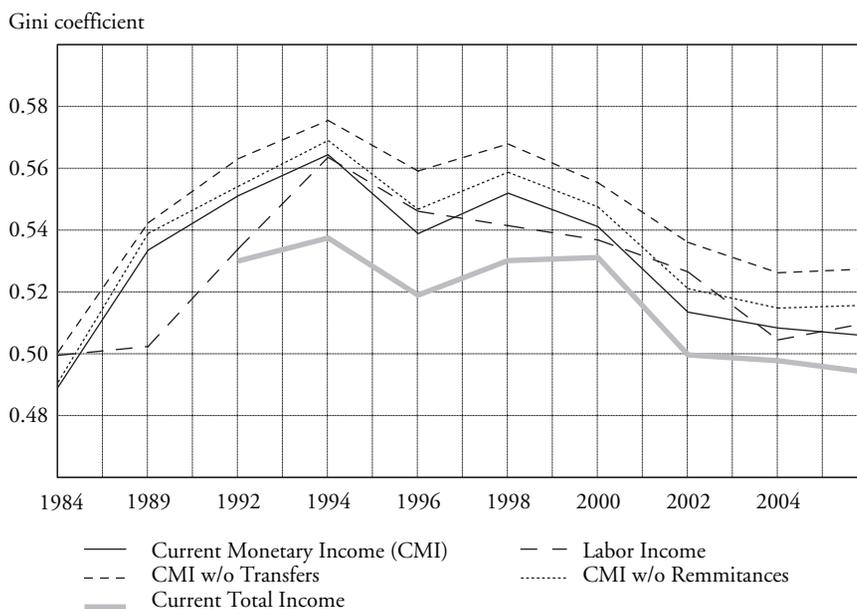
10. *Income* includes *labor income* and *nonlabor income*. The former includes all the income that is reported as labor income in ENIGH, including labor income of the self-employed. Nonlabor income includes income from own businesses; income from assets (including capital gains), pensions (public and private), public transfers (Oportunidades and Procampo), and private transfers (for example, remittances); and *nonmonetary income* (imputed rent on owner-occupied housing and consumption of own production, common in poor rural areas). Official poverty measures in Mexico use *net current income*—that is, capital gains, gifts, and in-kind transfers to other households subtracted from current total income. *Current monetary income*, the concept used in the decomposition of inequality by source presented below, does not include nonmonetary income and consumption of own production and excludes capital gains.

11. In Spanish, Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH).

12. Surveys for 1984 and 1989 are not as comparable, but they are still used for lack of a better alternative.

13. Sen and Foster (1973).

14. See Esquivel (2008).

Figure 7-1. *Gini Coefficients for Alternative Income Definitions, 1984–2006^a*

Source: Esquivel (2008).

a. Current income excludes capital gains and income from the sale of durable goods.

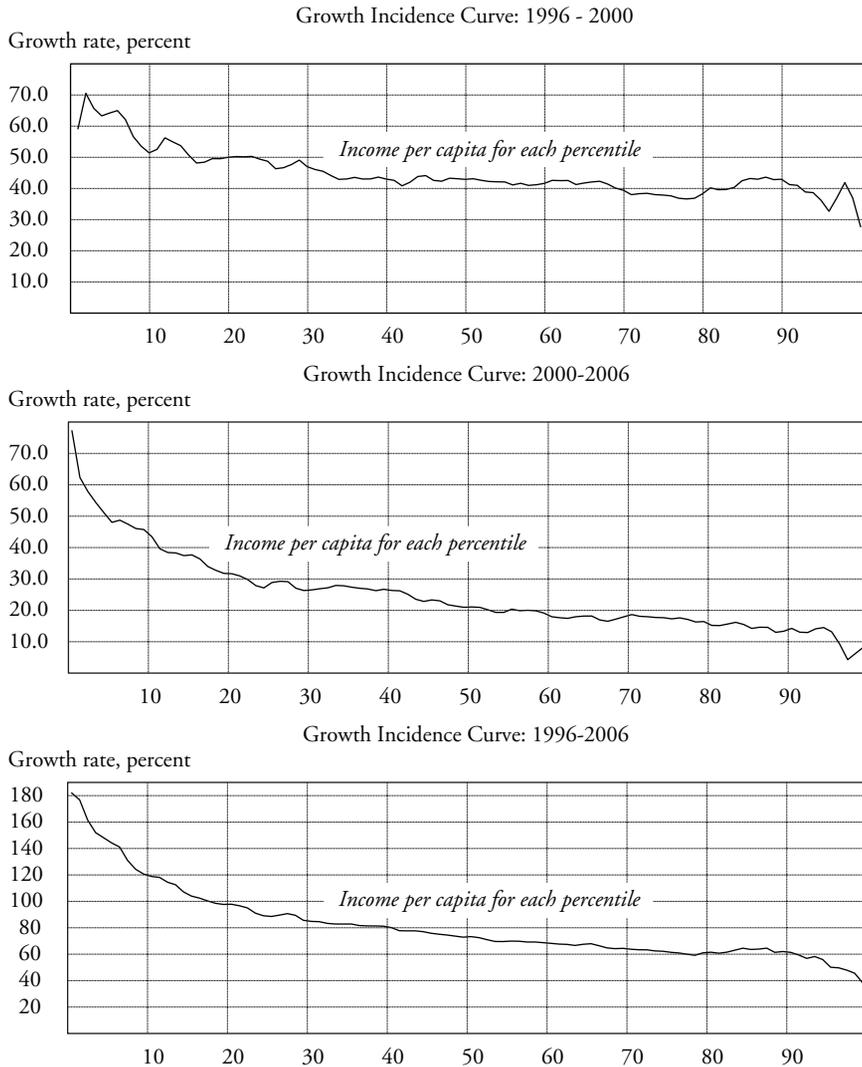
The evolution of Mexico's income distribution can also be analyzed by using the growth incidence curves (GICs) suggested by Ravallion and Chen.¹⁵ These curves show the percent change in per capita income along the entire income distribution between two points in time. Figure 7-2 shows the GIC for 1996–2006, 1996–2000, and 2000–06, constructed using total per capita income. The negative slope in the first graph shows that the income of the lower deciles grew faster than the income of the upper deciles from 1996 to 2006. For example, income growth for the bottom percentile was more than 4 times that of the top percentile.

Esquivel (2008) provides more detail on trends in inequality by presenting GICs for urban and rural areas for 1994–2006.¹⁶ In urban areas, income growth was pretty flat across the entire distribution except for the top three deciles, which experienced smaller and in some cases even negative income growth rates. In rural areas, the GIC had a negative slope, indicating that the bottom half of the income distribution had higher income growth rates than the top segment of the distribution. Average income growth was greater in rural areas than in urban areas—a pattern that, given the relatively large rural-urban gap, is inequality-reducing.

15. Ravallion and Chen (2003).

16. Esquivel (2008). Rural areas are defined as townships with fewer than 15,000 inhabitants.

Figure 7-2. National, Urban, and Rural Growth Incidence Curves, 1996–2006^a



Source: Authors' elaboration based on ENIGH 1996, 2000, and 2006 (INEGI, various years).
 a. Growth incidence curves are based on total household per capita income; "rural" refers to households living in townships having a population of less than 15,000.

Breaking out GICs for 1996–2000 and for 2000–06 also provides important details on the overall decline in inequality: in 2000–06 inequality fell at a faster rate, a result of a larger increase in bottom incomes. In both periods, the poorest two deciles of the income distribution experienced an above-average increase in monetary income and the income of the top decile grew at below-average rates; however, the changes at the bottom were more pronounced in the second period.

The increase for the two lowest deciles seems to be associated with income growth in the rural sector. The lackluster growth of income in the top deciles is associated with the dynamics of the urban sector: GICs for urban areas in 1996–2000 and 2000–06 are very flat through most of the income distribution, with the income of the top two deciles growing at the lowest rates.¹⁷ These results suggest that during 2000–06 there must have been some factors that benefited the bottom part of the rural income distribution as well as other factors that hurt—in relative terms—the upper part of the urban income distribution.

Proximate Determinants of the Decline in Income Inequality: Labor and Nonlabor Income and Demographic Factors

Here we seek to identify the proximate determinants of Mexico's decline in inequality between 1996 and 2006 and quantify each proximate determinant's contribution to the total decline. The proximate determinants considered in our analysis are the ratio of adults to the total number of members in the household; the ratio of working adults to the total number of adults in the household; labor earnings per working adult; and nonlabor income (including government transfers and remittances) per adult.¹⁸

The contribution of each proximate determinant to the total decline in inequality was quantified by applying the method proposed by Barros and others, which consists of decomposing the change in an inequality measure into the contributions from changes in the distribution of the proximate determinants, taken one at a time, plus the contributions from changes in the interaction (correlation) of proximate determinants with each other.¹⁹ The contributions are estimated through a series of sequential counterfactual simulations that assume that the distribution of the proximate determinant of interest remains the same as in the base year.²⁰ The method is based on the following sequence of identities:

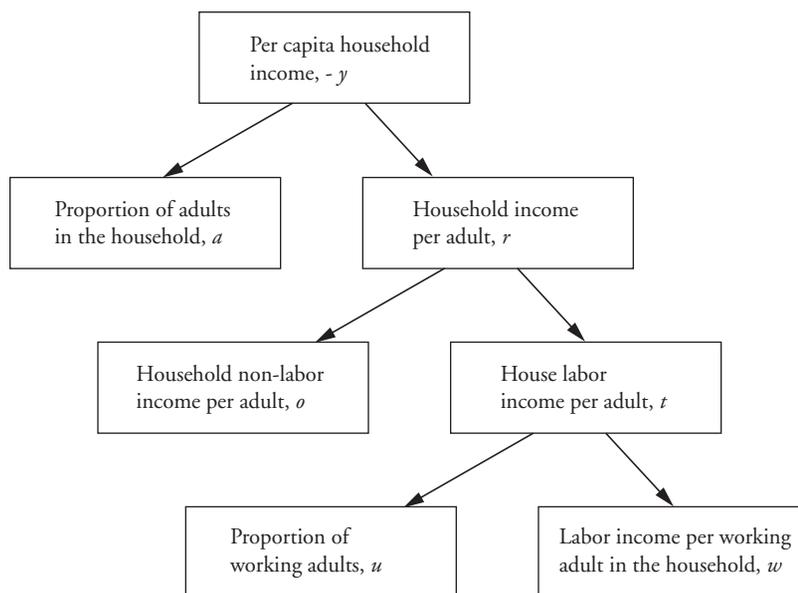
$$\begin{aligned} (1) \quad & y = a.r \\ (2) \quad & r = o + t \\ \text{and} \\ (3) \quad & t = u.w \end{aligned}$$

17. Esquivel (2008).

18. Each proximate determinant is the result of behavioral and external processes that are not modeled here. For example, the first proximate determinant captures the impact of changes in fertility and life expectancy. The second is influenced by decisions to participate in the labor force and the demand for labor. The third and fourth are determined by numerous factors, including market forces and state action affecting the demand for different types of labor; individual decisions (to invest in education and other forms of capital, to participate in the labor market, to migrate, and so on); and government transfers.

19. For a detailed description of the methodology, see Barros and others (2006).

20. Note that although you can apply this method using any inequality indicator, the results will vary depending on the indicator. Also, the results will be sensitive to which year is chosen as the base year and the sequence selected to construct the counterfactual simulations.

Figure 7-3. *Household Per Capita Income and Its Determinants*

Source: Barros and others (2009).

Hence,

$$(4) \quad y = a.(o + u.w)$$

Identity 1 expresses household per capita income, y , as a product of the proportion of adults in the household, a , and household income per adult, r . Identity 2 expresses household income per adult, r , as the sum of household nonlabor income per adult, o , and household labor income per adult, t . Identity 3, household labor income per adult, t , is expressed as the product of the proportion of working adults, u , and the labor income per working adult in the household, w . Identity 4 relates per capita household income, y , to its four proximate determinants: the proportion of adults in the household, a ; household nonlabor income per adult, o ; proportion of working adults, u ; and labor income per working adult in the household, w . These identities are presented in figure 7-3.

Using this method, Alejo and others estimated the contribution of changes in the four proximate determinants mentioned above to the 1.40 percentage point decline in the Gini coefficient from 1996 to 2000 and the 3.07 percentage point decline in the Gini coefficient from 2000 to 2006.²¹ Their results are summarized

21. Alejo and others (2009). This decomposition was based on inequality measures calculated using total (monetary plus nonmonetary) income while the next decomposition exercise was based on inequality measures estimated using monetary income only. The results, however, should not be very sensitive to the use of different concepts because both monetary and nonmonetary income followed the same pattern of change.

Table 7-1. *Contribution of the Proximate Determinants to Changes in Income Inequality, 1996–2000 and 2000–06^a*

<i>Marginal contribution of the proximate factor</i>	<i>Contribution to the change*</i>	<i>Percent</i>	
<i>Years 1996–2000</i>			
Proportion of adults	–0.19	7.7	
Nonlabor income	–0.01	0.4	
Proportion of working adults	–0.12	4.9	
Labor income per working adult	–2.18	87.1	
Subtotal	–2.50	100.0	178.7
All interactions	1.10		–78.7
Total change in Gini coefficient	–1.40		100.0
<i>Years 2000–2006</i>			
Proportion of adults	–0.50	10.3	
Nonlabor income	–0.73	15.1	
Proportion of working adults	–0.44	9.1	
Labor income per working adult	–3.19	65.5	
Subtotal	–4.87	100.0	158.3
All interactions	1.79		–58.3
Total change in Gini coefficient	–3.07		100.0

Source: Authors' calculations based on Alejo and others (2009).

a. The change in Gini coefficient is in percentage points. The asterisk refers to the contribution of the factor to the change in the Gini coefficient, measured in percentage points. The change in the Gini coefficient between 1996 and 2000 and 2000 and 2006 was found to be statistically significant at the 95 percent level. The confidence intervals were constructed applying the bootstrap method with 150 replications. A negative (positive) sign means that a marginal increase in the source is equalizing (unequalizing).

in table 7-1.²² The reduction in labor income inequality (leaving out the interaction terms) accounted for 87.1 percent of the decline in inequality in 1996–2000 and for 65.5 percent of the decline in 2000–06. Given its relative importance, below we will analyze the factors that explain the reduction in inequality in the distribution of labor income per worker.²³ This discussion will focus on the gap between skilled and unskilled wages and the latter's relationship to trade liberalization and the educational upgrading of the labor force.

The most dramatic change among the four proximate determinants was observed in the impact of changes in the distribution of nonlabor income. In 1996–2000 changes in nonlabor income contributed a meager 0.4 percent to the reduction in inequality. In contrast, in 2000–06 they accounted for 15.1 percent

22. The changes in all of the four proximate determinants reduced inequality, and the changes in all the interactions between the proximate determinants combined increased inequality in both 1996–2000 and 2000–06. The individual interaction terms between pairs of variables all increased inequality too. See Alejo and others (2009).

23. Labor income includes all income that individuals reported as labor income in the ENIGHs, including all wages and salaries as well as income reported by self-employed individuals.

of the total decline in inequality, making nonlabor income the second-most-important contributor to the decline in inequality in this period. Nonlabor income is a very heterogeneous concept. It includes income from the ownership of capital (such as profits, interests, and rents), which tends to be concentrated at the top of the income distribution, but it also includes private transfers (such as remittances), which tend to be more concentrated in the middle and lower-middle ranges of the distribution. Finally, nonlabor income includes government transfers (such as pensions), which are concentrated in the middle and upper-middle ranges of the income distribution, as well as targeted government transfers (such as the conditional cash transfer program *Progresa/Oportunidades*), which are concentrated in the bottom of the distribution.

The two other proximate determinants were far less significant. Changes in the proportion of adults in the household (which measures the dependency ratio) accounted for 7.7 percent of the decline in inequality in 1996–2000 and 10.3 percent of the decline in 2000–06. Changes in the proportion of working adults in total adults (which reflects both supply-side and demand-side conditions in the labor market) accounted for 4.9 percent of the decline in inequality in 1996–2000 and 9.1 percent of the decline in 2000–06.²⁴

In order to get a more detailed picture of how different forms of income have contributed to the evolution of inequality in monetary income in Mexico, we decompose the Gini coefficient in selected years using the method set forth by Lerman and Yitzhaki,²⁵ who showed that the Gini coefficient for total income inequality (G) with K income sources can be expressed as

$$G = \sum_{k=1}^K S_k G_k R_k$$

where S_k is the share of source k in total income, G_k is the Gini coefficient of the income source k , and R_k is the Gini correlation between the income source k and total income.²⁶ This decomposition of the Gini coefficient shows that the

24. See Esquivel (2008). Average household size fell from 5.68 members in 1996 to 5.16 in 2000 and 4.97 in 2006; the proportion of working adults in the household rose from 58 percent in 1996 to 59 percent in 2000 and 62 percent in 2006. These trends reflect two important changes in demographic patterns: the reduction in fertility rates overall, with more pronounced declines among the poorer sectors of the population, and the increase in female participation in the labor force, particularly among the poorer sectors. Between 1996 and 2006, the average number of children under 12 years of age per household fell from 2.3 to 1.7 in the lowest income quintile; in the top quintile, it fell from 1.5 to 1.3. See SEDLAC (Socio-Economic Database for Latin America and the Caribbean) (www.depeco.econo.unlp.edu.ar/sedlac/). The participation of adult (25- to 64-year-old) women in the labor force during this period rose from 45.3 to 57 percent. SEDLAC (www.depeco.econo.unlp.edu.ar/sedlac/)

25. Lerman and Yitzhaki (1985).

26. Lerman and Yitzhaki's method allows you to see only by how much inequality would change if the share of a particular income source increases but its distribution remains unchanged. It is, therefore, a static decomposition and applies to very small changes. In contrast, the previous method is "dynamic"—that is, it is designed to analyze the impact of a change in the distribution of a particular income source.

contribution of income source k to inequality depends on the interaction of three elements: the relative importance of the particular income source in total income (S_k); the level of inequality of that income source (G_k); and the correlation between the distribution of that income source and that of total income (R_k). Therefore, an income source (k) that represents a relatively large share of total income (high S_k) could have a large effect on inequality as long as it is unequally distributed (that is, if it has a relatively high G_k). However, if G_k is low, it will cancel this effect. On the other hand, if an income source is very unequally distributed (high G_k) but is not highly correlated with total income (meaning that it has a low R_k , as in the case of well-targeted transfer programs), then it may actually reduce inequality.

Stark, Taylor, and Yitzhaki (1986) showed that with this type of decomposition one can estimate the effect of a small percentage change (π) in a given income source on total inequality (holding all other income sources constant) through the following expression:

$$\frac{\partial G}{\partial \pi} = S_k(G_k R_k - G)$$

or, alternatively,

$$\frac{\partial G / \partial \pi}{G} = \frac{S_k G_k R_k}{G} - S_k$$

This expression means that the percentage change in inequality resulting from a marginal percentage change in income source k is equal to the relative contribution of component k to overall inequality minus the initial share in total income of income source k .

We decompose the Gini coefficients for monetary income following the approach just described for the years 1994, 2000, and 2006.²⁷ The results are summarized in figure 7-4.²⁸

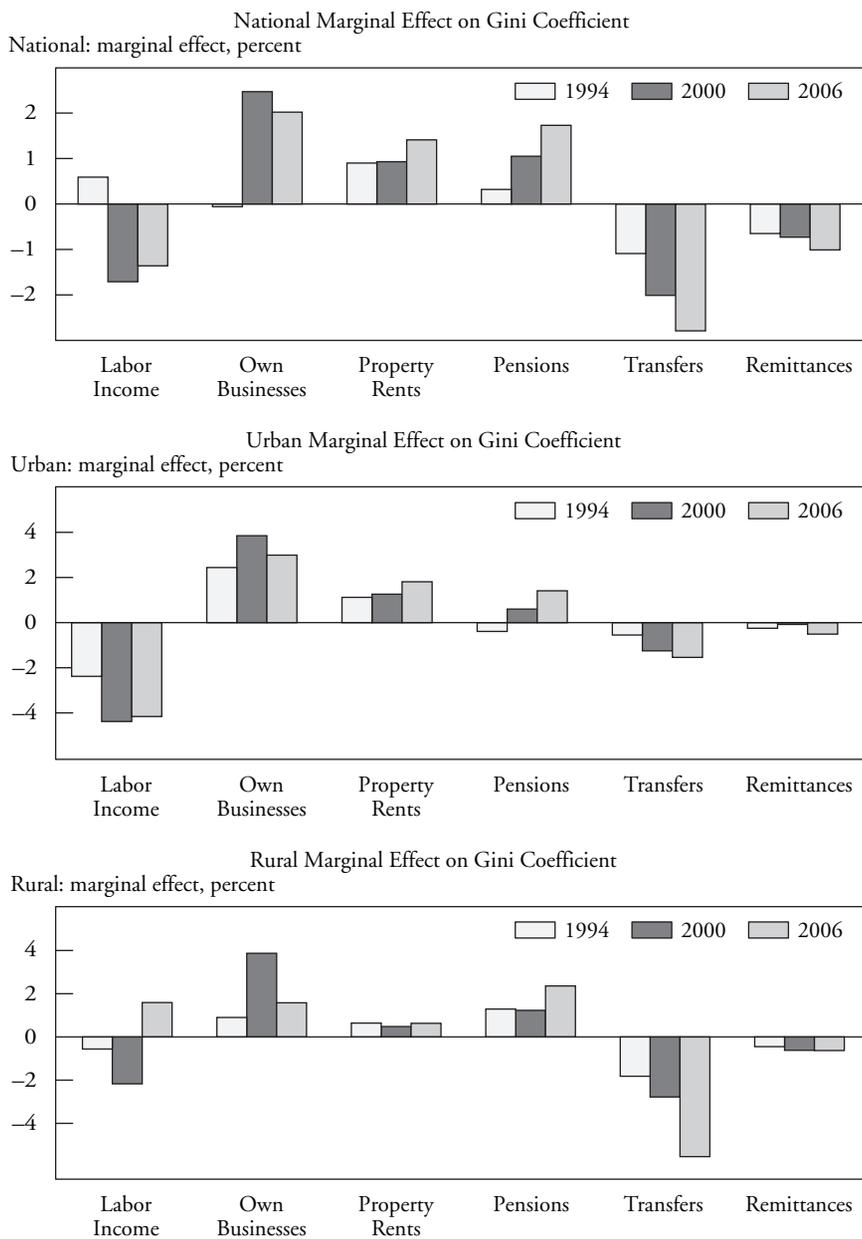
At the national level there are three sources of income that increase inequality and three that reduce inequality. The inequality-increasing sources of income are income from “own” businesses (profits), income from property (rents), and pensions.²⁹ The impact of each income source on inequality increased between 1994 and 2006. In the case of pensions, the trend was due to an increase in the share

27. In the decomposition exercise Esquivel (2008) made use of the descogini Stata program in López-Feldman (2006). The “base” year used in this decomposition is 1994 and the income concept is current monetary income; in the previous decomposition the base year used is 1996 and the income concept is total income. The difference in the income concept used in the two decompositions does not affect the main conclusions from the results.

28. For more details (for example, actual numbers) see Esquivel (2008).

29. Pensions include both private and public pensions and pensions that are part of government welfare transfers. Pensions are gross—that is, contributions to social security are not subtracted.

Figure 7-4. *Decomposition of the Gini Coefficient by Income Source for the Nation, Urban Areas, and Rural Areas*



Source: Esquivel (2008).

of pensions in total income and, above all, in the Gini correlation of pensions with total income. The (positive) Gini correlation of pensions rose from 0.64 in 1994 to 0.66 in 2000 to 0.70 in 2006; the cause is not clear.

The inequality-reducing sources of income at the national level are labor income (since 2000), remittances, and transfers.³⁰ However, their impact differs somewhat between urban and rural areas. For example, labor income is a very important inequality-reducing force in urban areas but not in rural areas. In fact, in 2006 labor income in rural areas is inequality-increasing.

Remittances had a significant impact on inequality at the national level in all three years, even though they did not seem to have a large marginal effect in either sector in 1994. This apparently paradoxical result is explained by the fact that while the Gini correlation between remittances and rural monetary income is close to 50 percent, the Gini correlation between remittances and monetary income at the national level is much lower. Thus, remittances had an effect at the national level because they were heavily concentrated in the bottom half of the *national* income distribution.³¹ They reduced income inequality by reducing the rural-urban income gap, not by reducing inequality within each sector. That changed in 2000 and more decisively in 2006.

Transfers reduced inequality both at the national level and in urban and rural areas in all three years.³² That effect grew over time. By 2006 transfers became the income source with the largest inequality-reducing effect of all the sources considered in this exercise: that is, a marginal increase in transfers would reduce inequality by more than a marginal increase in labor income or remittances. Transfers became more inequality-reducing over time for three reasons: their share in total income rose; the inequality in the distribution of transfers fell; and their Gini correlation with total monetary income fell. Those changes were especially pronounced in rural areas, where the share of transfers in total income rose from 7 percent in 1994 to 10 percent in 2000 and 2006; the Gini coefficient of transfers fell from 0.93 in 1994 to 0.89 in 2000 and 0.78 in 2006; and the Gini correlation between transfers and total monetary income fell from 0.42 in 1994 and 2000 to 0.31 in 2006.³³

The share of transfers in total income rose because there was a significant expansion in coverage of public transfers. In 1994, 23.8 percent of all households reported receiving part of their monetary income through a private or public transfer; in 1996, the figure was 29 percent; in 2000, 34 percent; and in 2006,

30. Transfers include public and private transfers (including gifts and donations) except for remittances and the pensions that are part of government welfare transfers (the latter are included under pensions).

31. See, for example, Esquivel and Huerta-Pineda (2007).

32. Transfers here include government transfers and private transfers excluding pensions and remittances. Private transfers (excluding remittances) are relatively small on average.

33. The Gini coefficient for transfers is very high because it is calculated for the entire population, including those who do not receive any transfers.

45.5 percent.³⁴ The lion's share of the increase was due to implementation of the conditional cash transfer program *Progresa/Oportunidades* in 1997. By 2006, *Progresa/Oportunidades* reached 14.8 percent of households in Mexico.³⁵

Alejo and others estimates the combined marginal effect of the changes in coverage, average benefit, and distribution for *all* public transfers (pensions, *Progresa/Oportunidades*, *Procampo*, and so forth). Those results are not strictly comparable with the previous decomposition;³⁶ nevertheless, some of the findings are insightful. While the combined marginal effect of what the authors call public transfers increased inequality for 1996–2000, it reduced inequality for 2000–06. In the latter period, the inequality-reducing effect of the increase in coverage (percentage of households that receive public transfers) and the increase in the magnitude of the average benefit more than compensated for the inequality-increasing effect of a rise in the inequality in the distribution of public transfers.³⁷ Also, during 2000–06, the inequality-reducing marginal contribution of the changes in public transfers was large enough to compensate for the increase in inequality stemming from changes in the interaction term that measures the correlation between public transfers and total income. In contrast, during 1996–2000 the inequality-increasing effect of the interaction term dominated.

In sum, starting in the late 1990s, monetary government transfers became more generous, transfers became more equally distributed among recipients, and recipients of transfers increasingly belonged to the relatively poorer segments of the population. That undoubtedly reflects the implementation of *Progresa/Oportunidades*, analyzed below. However, government transfers are not as progressive as one would like them to be. The Gini correlation between transfers and total monetary income remains positive, although it fell quite significantly between 1994 and 2006.

Labor Income Inequality and the Skilled-Unskilled Wage Gap

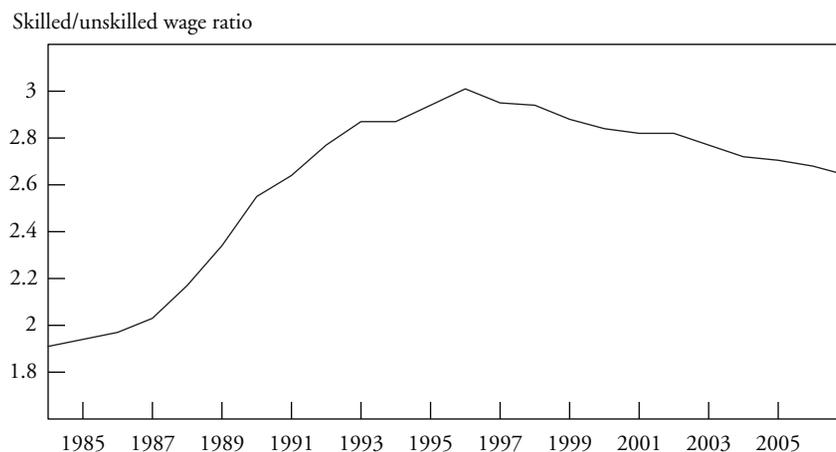
The results of the decomposition exercises suggest that one of the most important inequality-reducing forces between 1996 and 2006 was the evolution of labor income inequality. Note that labor income is basically the result of multiplying hours worked by hourly wages (here defined as including remuneration to the self-employed). If we assume that hours worked did not change much from 1996

34. Esquivel (2008).

35. For more details about *Progresa/Oportunidades* see, for example, Levy (2006).

36. In this decomposition, pensions were treated as if the full amount corresponds to a public transfer. Strictly speaking, that is not the case, because pensions include private pensions and also because part of public pensions is personal savings (contributions by employees) and not transfers from the government. The public transfer of pensions tends to be regressive (see later discussion), so the inequality-reducing effect of government transfers in 2002–06 was probably quite strong given that the total (including pensions) was inequality-reducing too.

37. Alejo and others (2009), table 16.

Figure 7-5. *Skilled and Unskilled Industrial Wages, 1984–2007*

Source: Esquivel (2008).

to 2006,³⁸ the change in labor income inequality must have been caused by changes in hourly wage inequality.

Here we focus on one key dimension of wage inequality: the gap between skilled and unskilled wages. Figure 7-5 shows the evolution of the ratio of nonproduction workers' wages to production workers' wages from 1984 to 2007.³⁹ This ratio is frequently used as a rough proxy for the skilled-unskilled wage ratio. (It is, of course, an oversimplification, since there are production workers who are highly skilled and nonproduction workers who are relatively unskilled.) The pattern of wage inequality is remarkably similar to the pattern of inequality in the various definitions of income shown in figure 7-1: figure 7-5 shows an increase in wage inequality between 1984 and the mid-1990s, followed by a steady decline since then.

As shown in Legovini, Bouillón and Lustig (2005), changes in the returns to skills (in particular, an increase in the premium for tertiary education) accounted for a significant share of the rise in household per capita income inequality between 1984 and 1994. During the 1994–2004 period, the opposite appears to have occurred.

38. Actually, between 1996 and 2006, weekly hours in all jobs fell very slightly, from 45.6 to 45.1, and the decline was concentrated in low education (poorer) workers, which would be an inequality-increasing change. That means that the inequality-reducing changes in the distribution of hourly earnings must have been large enough to compensate for the inequality-increasing effect of the changes in the distribution of hours worked. Data on weekly hours and hourly wages can be found at SEDLAC (www.depeco.econo.unlp.edu.ar/sedlac/).

39. The data for this graph came from the Industrial Survey in Mexico, which has monthly and annual data on total wages paid and total hours worked in the industry by both production and nonproduction workers. This figure is an updated version of similar figures published in Esquivel and Rodríguez-López (2003) and Chiquiar (2008).

The rapid increase in wage inequality that occurred in Mexico between 1984 and the mid-1990s has been the subject of a fairly large body of research.⁴⁰ The increase in the skilled-unskilled gap coincided with the unilateral trade liberalization of the Mexican economy that started in the mid-1980s. In that sense, the evolution of Mexico's wage inequality was unexpected; Mexico has an abundance of relatively unskilled labor (at least from the perspective of its main trade partner, the United States), and standard theories of trade would have predicted exactly the opposite pattern (that is, a reduction in the skilled-unskilled wage ratio).⁴¹

The explanations that have been proposed for this apparent paradox can be roughly divided into two groups: the first emphasizes factors affecting the bottom part of the income distribution (less-skilled and less-experienced workers); the second emphasizes factors affecting the upper part of the distribution. In the first group, there are theories emphasizing the reduction in real minimum wages (Fairris, Popli, and Zepeda 2008) as well as theories suggesting that the mid-1980s reduction in tariffs disproportionately affected low-skilled-labor-intensive industries (Hanson and Harrison 1999). In the second group, some theories have emphasized the increase in the demand for skilled workers associated with one or more of the following factors: exogenous skill-biased technological change (Cragg and Eppelbaum 1996 and Esquivel and Rodríguez-López 2003); foreign direct investment (Feenstra and Hanson 1997); and quality upgrading by exporting firms (Verhoogen 2008). Other explanations have suggested that education inequality also could have played a role (López-Acevedo 2006) or that these trends could be indicating only short-run effects (Cañonero and Werner 2002). Many of the proposed explanations are not mutually exclusive.

The post-1996 reduction in wage inequality in Mexico has been much less studied. Robertson (2007) suggests that Mexico's manufacturing workers are now complements to, rather than substitutes for, U.S. workers. He also posits that there has been a significant expansion of assembly-line plants in Mexico (*maquiladoras*), which has increased demand for less-skilled workers.⁴² Campos (2008) emphasizes the supply-side explanations based on changes in the composition of the labor force.

40. See, for example, Esquivel and Rodríguez López (2003); Airola and Juhn (2005); Robertson (2007); Acosta and Montes-Rojas (2008); Chiquiar (2008); Verhoogen (2008), and the references cited therein.

41. For a review of the literature for Mexico and Latin America more broadly, see de Hoyos and Lustig (2009).

42. Robertson (2007) noticed that the pattern of wage inequality in Mexico is puzzling because no single theory could explain the evolution of wage inequality before and after NAFTA. There are, however, some tentative theoretical explanations for the pattern. For example, Atolia (2007) suggested that, under certain circumstances, even if the standard prediction from a Heckscher-Ohlin-Samuelson model works as predicted in the long run, there may be some short-run (or transitory) effects of trade liberalization that may lead to an outcome that differs from the long-run outcome. The difference between short-run and long-run effects on inequality results from two factors: first, an asymmetry in the contraction and expansion of some sectors; second, capital-skill complementarity in production.

Esquivel (2008) investigates the role of both demand- and supply-side factors by looking at male workers' mean-log wages in Mexico for selected years and for different combinations of education and years of experience.⁴³ Between 1989 and 1994, most of the changes in the wage distribution occurred in the upper tail of the distribution (workers with high wages and high levels of education and experience). The increase in wage inequality in those years was not caused by a (relative) decline in the wages of the low-skilled or less-experienced workers; it was the result of a rise in the wages of the high-skilled or more-experienced workers.⁴⁴ Average wages of workers with lower levels of education and/or fewer years of experience showed the largest increases, even though average real and legislated minimum wages over the period were practically flat. That suggests that any convincing story of the post-NAFTA reduction in wage inequality has to explain the relative increase in the wages of the low-skilled, less-experienced workers as opposed to the reduction of the wages of the high-skilled, more-experienced workers).⁴⁵

This pattern suggests that at least two leading forces are at play. During 1984–94, the only explanations that seem to be compatible with the observed trend in inequality are those suggesting the introduction of skill-biased technological change, either exogenously or endogenously through multinational and/or quality-upgrading exporting firms.⁴⁶ For the post-NAFTA period, there are at least three possible explanations. Two, as previously mentioned, are an increase in the relative supply of skilled workers and an increase in the demand for unskilled labor resulting from the expansion of *maquiladoras* in Mexico's manufacturing sector.⁴⁷ The third explanation is based on the standard Heckscher-Ohlin model with a lag.⁴⁸ The predicted pattern of a lower skill premium may have manifested itself with a lag either because the impact of trade liberalization on wages took a few years or because it was previously masked by a stronger force, such as skill-biased technological change.⁴⁹

Testing the alternative hypotheses is beyond the scope of this chapter. However, on the basis of the patterns of wage inequality reviewed here, we may be able

43. Esquivel (2008). The data were collected and organized by Campos (2008). Workers are classified according to the level of education achieved (less than lower-secondary, lower-secondary, upper-secondary, and college education) and the number of years of work experience (less or more than 20 years of experience).

44. This makes explanations based on changes in the lower tail of the wage distribution—such as those based on a falling real minimum wage or on a bias against unskilled-labor-intensive industries caused by trade liberalization—unconvincing. In contrast, between 1996 and 2006 the reduction in wage inequality was caused by changes in the lower tail of the income distribution.

45. It should be noted that this occurred within a context in which average real and legislated minimum wages had been practically flat since the mid-1990s.

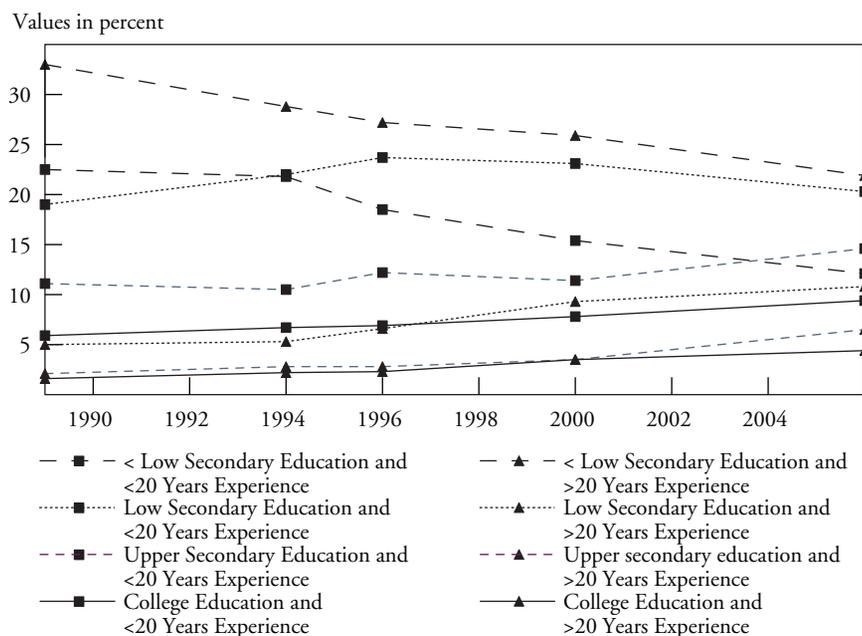
46. Cragg and Eppelbaum (1996); Esquivel and Rodríguez-López (2003); Feenstra and Hanson (1997); Verhoogen (2008).

47. Campos (2008); Robertson (2007).

48. Chiquiar (2008).

49. Cañonero and Werner (2002); Esquivel and Rodríguez-López (2003).

Figure 7-6. *Workforce Composition by Level of Education and Experience, 1989–2006*



Source: Esquivel (2008).

to identify which hypothesis is more plausible. Figure 7-6 shows the composition of Mexico’s workforce between 1989 and 2006 by level of education and experience. The observed pattern reflects the interaction of both supply and demand factors. In general, the figure shows that from 1989 to 2006 there was both a reduction in the share of the least-skilled workers (those with less than lower-secondary education) and less-experienced workers (those with less than 20 years of experience) and an increase in the share of the most-skilled workers (those with college education) and more-experienced workers (those with more than 20 years of experience). The most dramatic changes, however, took place in the share of workers with less than lower-secondary education. That group, which accounted for almost 55 percent of workforce in 1989, represented only about one-third of the workforce by 2006. That reduction was compensated by an increase in the shares of all other groups of workers. These trends, which had already been present between 1989 and 1994, accelerated in the post-NAFTA period.

These results suggest that most of the relative increase in the wages of low-skilled/less-experienced workers is associated with changes in the composition of the workforce in Mexico. In particular, the increase is associated with a reduction in the relative number of unskilled workers. That result is not incompatible with the hypothesis suggested in Robertson (2007) of an increase in the demand for

unskilled workers. But Robertson's hypothesis by itself cannot explain the simultaneous increase in the relative wages of those workers and the reduction in their share in Mexico's labor force. That conclusion is reinforced by the fact that the relative wages of workers whose share in the supply of labor has diminished are those that have had the largest increase. The increases in the wages of these workers are close to 20 percent—and in some cases even close to 30 percent—for the ten-year period. In contrast, the categories of workers that have become relatively more abundant (more-educated/more-experienced workers) have had either stagnant or decreasing wages since 1996.⁵⁰

The reduction in the relative supply of workers with low levels of skills (education) reflects a significant increase in average years of schooling for the bottom two quintiles, which reduced educational attainment inequality considerably between 1994 and 2006. Over that period, average schooling for the bottom quintile rose from 2.8 to 4.8 years, a 73 percent increase. Over the same period, average schooling in the top quintile rose only 22 percent, from 9.9 to 12.1 years. That pattern can be attributed to the substantial changes in public spending on education that took place in the 1990s and, more marginally, to the effects of the conditional cash transfer program *Progresa/Oportunidades* on individuals of beneficiary households who reached 15 years of age or more by 2006 (recall that one of the conditions of the program is that children must stay in school).

Rising Progressivity in Government Spending on Education

Public spending on education in the 1970s and 1980s was heavily biased toward higher education. In the 1970s, the share of educational spending allocated to upper-secondary and tertiary education grew from 20 percent to 42 percent while the share of spending on basic (primary and lower-secondary) education declined by an equivalent amount, despite the expansion in enrollment in public basic education from 9.7 to 16.5 million students. The impact on spending per student in basic education was aggravated in the 1983–88 adjustment period, when basic education absorbed a disproportionate share of budgetary cuts. That bias was reversed after 1988, with an increasing reallocation of educational spending toward basic education.⁵¹ Between 1992 and 2002 spending per student on tertiary education expanded in real terms by only 7.5 percent. In contrast, spending per student on primary education increased by 63 percent. The relative ratio of spending per student on tertiary education to spending per student on primary education thus declined from a historical maximum of 12 in 1983–88 to less than 6 in 1994–2000.⁵² One of the consequences

50. See Esquivel (2008) and chapter 1 in this volume.

51. Aspe and Beristáin (1984, p. 323) found that public spending in education was quite inequitable before the changes that began in 1988.

52. By comparison, the average ratio for high-income OECD countries is close to 2. See OECD (2008).

was an expansion of schools in areas where they did not exist before, addressing supply-side constraints.

At the same time, policymakers sought to address the demand-side constraints that limited use of post-primary public education services by the poor. For example, the high opportunity cost of sending children in poor rural households to school often led parents to withdraw them during the last years of primary education or after its completion. Through the conditional cash transfer program Progres/Oportunidades, launched in 1997, the government tied monetary transfers for poor households to school attendance and participation in basic health services.⁵³ Altogether, changes in the supply of and demand for education resulted in a significant increase in average years of schooling and a reduction in school attainment inequality. Average years of schooling rose from 6.1 in 1994 to 8.3 in 2006, and the concentration coefficient for attainment declined from 0.345 in 1994 to 0.276 in 2006.⁵⁴

The effect of the reforms are shown in figure 7-7, which presents the distribution of benefits from different levels of public education received by population deciles, ranked by per capita household income.⁵⁵ Figure 7-7 also shows the distribution of total education spending for 1992 and 2006. Over this period, the distribution of total public spending on education changed from mildly regressive to progressive in absolute terms,⁵⁶ with the poorest decile obtaining a share of educational spending (12 percent) that was twice as large as the richest decile's share (6 percent).⁵⁷ Spending on all levels has become more progressive (or, in some cases, less regressive), but the most important change is observed in the case of lower-secondary education. This change is explained by at least three factors: most important, the dynamics of educational expansion (as coverage of primary education expanded, larger numbers of poor students became at least formally

53. For a description of Progres/Oportunidades see, for example, Levy (2006).

54. Scott (2009b).

55. For details on methodology and sources of information, see Scott (2009a).

56. Progressivity in *absolute* terms means that the poor receive a disproportional share of transfers—that is, the x percent poorest population receives more than x percent of transfers—while progressivity in *relative* terms means that the transfers received by the poor are higher as a share of their pretransfer income than those received by the rich. We follow the common, if somewhat confusing, practice below in using the term “progressive/regressive” without qualification to mean progressive in absolute terms in the case of spending and in relative terms in the case of taxes.

57. In order to estimate the effect of transfers in kind, such as public spending on education, Scott (2009b) applies a benefit incidence analysis based on the use of public services reported in ENIGH, valued at cost of provision. This imputed distribution of transfers received, valued in monetary terms, is then used to obtain an estimate of the monetary and in-kind post-transfer Gini coefficient, and thus—by comparing it to the pre-transfer Gini—of the total distributional impact of all transfers. These imputations augment the concept of nonmonetary income reported in ENIGH and differ from the nonmonetary concepts already included in the latter (notably imputed owner-occupied housing rent) because of the method of valuation used to obtain the relevant monetary values: cost of provision (in-kind public services) versus self-reported valuation (imputed rent). The present analysis reports the estimated effect of the transfers on the Gini coefficient in purely accounting terms, following common practice in benefit incidence analysis.

qualified to access the next level); the conditional transfers of *Progresa/Oportunidades*, which provide increased payments for secondary education; and, less encouraging, the tendency among higher-income groups to opt out of public primary and secondary schools because they are of lower quality than private schools. In other words, public spending on basic education is progressive in part because richer households opt out of public schools and because of that government spending on basic education goes primarily to poorer households. An immediate corollary is that efforts to improve the quality of public education would, if successful, necessarily be so at the cost of equity.

Access to tertiary education, on the other hand, is still highly regressive, having improved only slightly since 1992. The participation of the poorest quintile is insignificant and among the lowest in Latin America.⁵⁸ As in the case of secondary education, participation is slowly improving and should increase in the future simply as a consequence of advancing coverage in the earlier educational levels. But two important hurdles remain. First, the high opportunity cost of tertiary education will require a reform in university financing, such as by offering public subsidies to the poor through scholarships or student loans rather than simply offering free tuition to middle- and upper-income groups. Second, if poor students are to compete effectively with private high school graduates for scarce university spots, the government must upgrade the quality of public secondary education.

It is also important to note that health might have also contributed to a change in the relative returns to skills. Between the mid-1990s and the mid-2000s health spending and spending on food subsidies and nutrition became considerably progressive.⁵⁹ Government policy focused on both expansion of the supply of health services and demand for health services by the poor, the latter through *Progresa/Oportunidades*. More equitable access to health services might have contributed to improving the productivity of low-skilled workers; for example, improved access to health services may have translated into fewer days of work missed due to illness. Better access to health services might also have improved the cognitive development of children in poor households, thereby improving their educational achievement and productivity.⁶⁰

Pro-Poor Government Spending: The Distributional Impact of *Progresa/Oportunidades*

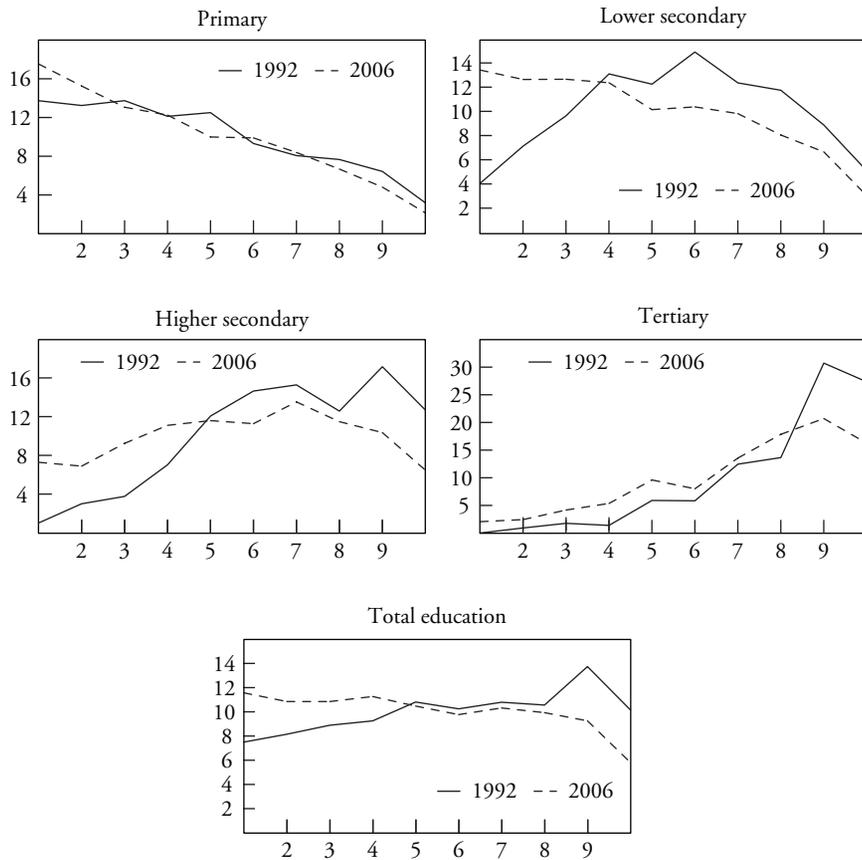
In addition to changes in the distribution of labor income, monetary transfers—in particular, government transfers—became an important inequality-reducing force from 2000 to 2006. Monetary transfers' equalizing contribution has been increasing over time, at the national level as well as in urban and rural

58. Scott (2002).

59. Scott (2009b).

60. See, for example, Lustig (2006, 2007).

Figure 7-7. *Distribution of Benefits of Public Spending on Education by Income Decile, 1992 and 2006*^a



Source: Scott (2009b).

a. Population deciles are ordered by pre-transfer household income per capita.

areas.⁶¹ According to the decomposition results presented in figure 7-4, government transfers became the income source with the largest equalizing effect of all the sources considered in this exercise: that is, a marginal increase in transfers would reduce inequality by more than a marginal increase in labor income or remittances. That development stemmed from a significant policy shift in 1997, when the government launched the conditional cash transfer program Progresa (renamed Oportunidades in 2000).⁶²

61. Transfers here include government transfers and private transfers excluding pensions and remittances. Thus, it is not equivalent to government transfers only.

62. For a detailed analysis of Programa de Educación, Salud, y Alimentación (Progresa) see, for example, Levy (2006).

Progresa/Oportunidades is an innovative federal government program that targets rural and urban households in Mexico that fall within the extreme-poverty category.⁶³ It complements traditional supply-side spending on social services with demand-side subsidies. The program has three components: education, nutrition, and health. The education component grants cash transfers based on school attendance, high school completion, and the need for school supplies. The nutrition and health components offer cash and in-kind transfers (nutritional supplements, vaccinations, preventative treatments, and so forth), based on regular visits to a health clinic. The average monthly transfer is about US\$35,⁶⁴ and estimated total transfers are equivalent to, on average, 25 percent of eligible rural households' average monthly income. The program's size is significant in terms of beneficiaries yet inexpensive in terms of cost. By the end of 2005, Progresa/Oportunidades granted benefits to 5 million families (about 24 percent of the Mexican population). Its budget in 2005 equaled 0.36 percent of GDP (compared with 0.02 percent in 1997), and it commanded 2.29 percent of the programmable public expenditure budget.⁶⁵

Numerous studies have found that the program has had significant impacts on education and health.⁶⁶ Comparing post-primary enrollment before the program (1996–97) and after the program (2002–03), one study reported an average increase of 24 percent in rural areas.⁶⁷ Of note was enrollment in secondary education in rural areas, which rose by 11 percent for girls and 7.5 percent for boys two years after the program was launched.⁶⁸ Another study found that demand for health services among Progresa/Oportunidades beneficiaries was 67 percent higher than demand in communities not participating in the program,⁶⁹ and infant mortality was found to fall at a rate 11 percent higher among beneficiaries than among nonbeneficiaries.⁷⁰ Another study estimated that maternal mortality was 11 percent lower and infant mortality was 2 percent lower in rural communities that participated in the program than in those that did not.⁷¹ Like improved access to education, these health gains may help explain recent changes in the relative returns to skills. Better access to health services may have improved the productivity of low-skilled workers; for example, improved access to health services may have trans-

63. This section is based on Lustig (2007).

64. This figure can increase in families with school-age children. In 2005, Progresa/Oportunidades granted monetary benefits and benefits in kind equal to direct monetary monthly assistance of US\$44.30 per family (Levy 2006).

65. Although the Social Development Secretariat is in charge of the program, most of the health budget of Progresa/Oportunidades is not included in its own line item in the budget; it is part of public spending on health.

66. See, for example, Parker (2005) and Schultz (2000).

67. Parker (2005).

68. Schultz (2000).

69. Bautista and others (2004).

70. Barham (2005).

71. Hernández and others (2003).

lated into fewer days of work missed due to illness. Better access to health services may have also improved the cognitive development of children in poor households, thereby improving their educational achievement and productivity.⁷²

Similar gains may be associated with the change in the distribution of food subsidies brought about by Progres/Oportunidades. The program transformed the broadly neutral distribution of government spending on food subsidies into a highly progressive one: the share benefiting the poorest decile increased from 8 to 33 percent between 1994 and 2000. Several factors may explain that shift. First, the “discovery” of a redistribution technology: in 1997 the Progres pilot program showed that distributing food subsidies (and cash transfers) to poor families in remote rural localities was operationally feasible. Second, the empowerment of rural voters as a consequence of Mexico’s democratization process gave them potentially more voice in the allocation of government resources. Third, unlike health and education, food subsidies are not under the purview of Mexico’s powerful public sector unions, which have successfully blocked pending reforms in the case of education and health services. Finally, in contrast to education and health service provision, the reallocation of food subsidies is not constrained by labor shortages (lack of qualified doctors and teachers in poor rural areas) or physical infrastructure.⁷³

Beyond its effects on education, health, and nutrition, Progres/Oportunidades has had a positive impact on poor households’ consumption, saving, and investment, thereby helping to reduce poverty and inequality in Mexico. In 2004, poverty incidence among program participants (the percentage of the population associated with the program that is below the poverty line) fell by 9.7 percent in rural areas and 2.6 percent in urban areas. The corresponding declines in urban areas were 4.9 and 1.7 percent.⁷⁴ In terms of its impact on the distribution of income, the direct effect of Progres/Oportunidades transfers reduced the Gini coefficient from 0.502 to 0.494, which is the equivalent of close to one-fifth of the decline in the Gini coefficient between 1996 and 2006.⁷⁵

Politically, Progres/Oportunidades has set new standards for social policy in Mexico.⁷⁶ It is the first social program in Mexico to apply transparent targeting mechanisms, effectively identifying the poorest rural localities and households and using, at the household level, proxy-means tests to select beneficiaries based on a full census of socioeconomic characteristics and economic assets within these

72. See, for example, Lustig (2006, 2007).

73. For a discussion of the political economy of the reform, see Scott (2009a).

74. Cortes, Solís, and Banegas (2006).

75. Scott (2009b). The impact on the Gini coefficient takes account of only the direct effect. The effects on inequality of changes in behavior or of higher human capital among the poor are not contemplated in this calculation.

76. This section is based on Scott (2006).

77. See, for example, International Food Policy Research Institute (www.ifpri.org) for the principal evaluation results. See also Parker (2005) and Schultz (2000).

localities. Progres/Oportunidades is also the first social program in Mexico to be subject to rigorous impact evaluations.⁷⁷ The program is notable in having survived not only a change of administration (no other major antipoverty initiative over the past two decades has done so) but also in having survived the first change in 70 years of the political party in power. In fact, rather than discard the program, the new party's administration changed its name from Progres/Oportunidades, and beginning in 2001 the new government increased coverage from 2.3 to 4.2 million households (mainly in rural areas) and added semi-urban and urban localities to the already established rural areas.

The political economy of Progres/Oportunidades' survival through various administrations is the result of a "perfect combination" of factors that merit note here. In contrast to the intensive government media campaigns accompanying most flagship antipoverty programs in Mexico, the government refrained from such a campaign in the case of Progres/Oportunidades, facilitating its political survival beyond the administration and the PRI regime.⁷⁸ Second, the rapid expansion of the program (with 2.5 million direct beneficiary households by the end of the 2000) ensured its support by a large constituency. Third, just as important, the decision to make the program transparent and to invest in ambitious and highly credible external impact evaluations contributed significantly to the program's political survival. However, Progres/Oportunidades was not completely immune to damaging political economy issues. In 2001, when it was rebranded as Oportunidades, the program was expanded to cover urban areas and upper-secondary education, inevitably reducing its targeting efficiency: while the poorest quintile benefited from 71 percent of program resources in 2000, that figure dropped to 55 percent in 2006.

In sum, Progres/Oportunidades is an example of "redistributive efficiency." With as little as 0.36 percent of GDP and 4 percent of redistributive spending, the program accounts for 18 percent of the change in the post-transfer Gini and 81 percent of the change in the Gini after inclusion of programs targeting the poor.⁷⁹ If one compares the redistributive impact of this program only with the redistributive impact of all monetary transfers and subsidies combined (including Oportunidades), the impacts are equal.⁸⁰ That implies that the progressive incidence of the remaining transfers that target the poor and other spending categories is wiped out by the regressive effect of all other untargeted monetary transfers and subsidies.

Unfortunately the redistributive efficiency of Progres/Oportunidades is an isolated case among redistributive instruments currently operating in Mexico. Even though government spending became undeniably more pro-poor during the

78. The PRI (Partido Revolucionario Institucional [Institutional Revolutionary Party]) regime refers to the almost one-party regime that characterized Mexico for 70 years.

79. Scott (2009b).

80. Scott (2009b).

last decade, a lot still needs to be changed to make redistributive spending a powerful instrument for reducing inequality in Mexico.

The Distributional Impact of State Action: Government Spending and Taxes

Since the early to mid-1990s, social spending, and particularly spending on programs targeting the poor, has expanded considerably (see figures 7-8 and 7-9). As discussed above, spending on education, health, and nutrition became more progressive. In addition, with the introduction of Progres/Oportunidades, the Mexican government found ways to redistribute income through transfers in an efficient and cost-effective way. Despite the progress, 58 percent of government redistributive spending in 2006 was regressive (and of that 58 percent, 11 percent increased income inequality). In advanced countries, government transfers are able to reduce primary (that is, market) income inequality by 30 to 50 percent. In contrast, in Mexico the post-transfer Gini coefficient in 2006 was only 9.3 percent—and a meager 1.7 percent if transfers in kind are excluded—lower than the primary income pre-transfer Gini.

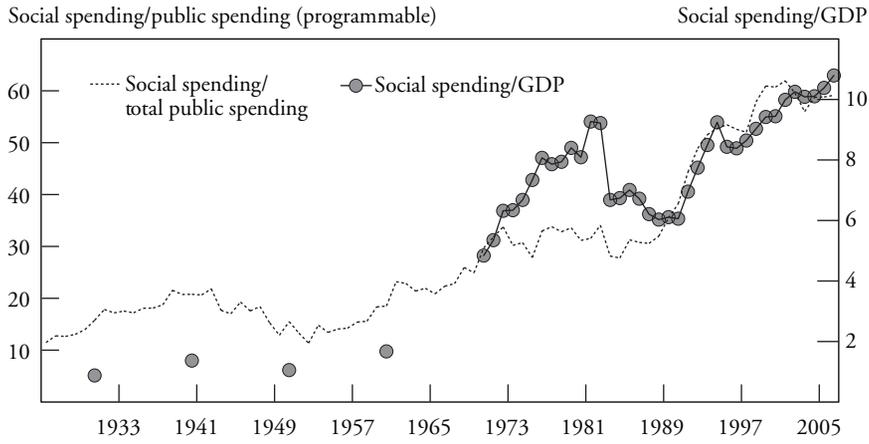
Estimating the redistributive impact of government spending entails considerable methodological challenges. Most income and expenditure surveys report government monetary transfers as a component of household income. The contribution of those transfers to overall income inequality can then be estimated by applying standard decomposition techniques on inequality measures by income source. That is the path followed above. However, while in mature welfare states monetary transfers represent between a third and a half of total social spending and account for reductions in inequality on the order of 20 to 50 percent,⁸¹ in developing countries monetary transfers are a small part of total government transfers and in the case of Latin America account for reductions in inequality of around 2 percent. The largest share of redistributive spending in Latin America occurs through government transfers in kind, which in general are not included in the income concept measured in household surveys.

In Mexico, the two cash transfer programs reported in the ENIGH survey (Oportunidades and Procampo) represent a mere 5 percent of the portion of public spending devoted to “redistributive” objectives (see table 7-2).⁸² The remaining 95 percent of government transfers is not covered by the Gini decomposition analysis presented above. That means that standard analysis of inequality dynamics excludes a significant portion of a “true” measure of income, which, if measured correctly, would have to include all government transfers. To illustrate, in

81. These reductions are measured in purely accounting terms—that is, as the difference between the pre-transfer Gini and post-transfer Gini, without taking into account any behavioral responses. Ervik (1998); Smeeding and Phillips (1999).

82. We put *redistributive* in quotations because not all these transfers are progressive.

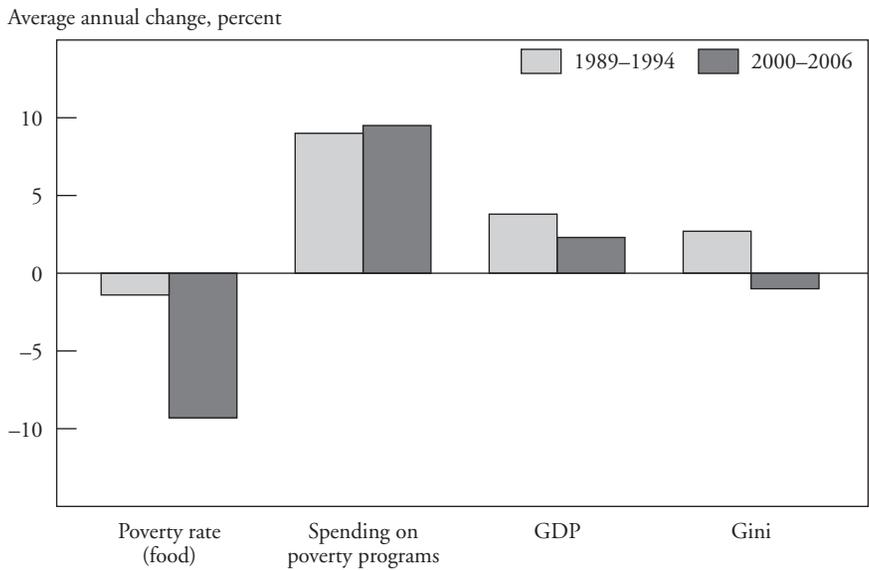
Figure 7-8. *Evolution of Social Spending, 1925–2006*^a



Source: Scott (2009b).

a. Programmable spending excludes debt servicing.

Figure 7-9. *Evolution of Extreme Poverty, Anti-Poverty Spending, GDP, and Gini Coefficient*^a



Source: Scott (2009b).

a. Poverty is measured using the official extreme poverty line (pobreza alimentaria, or “food poverty”). Poverty programs for 2000–06 are those listed under Programs Targeting the Poor in table 7-2. For 1989–94, the list was different; among other differences, it included Pronasol and excluded Progres/Oportunidades (launched in 1997).

Table 7-2. *Government Redistributive Spending by Category and Program, 2006*

<i>Concept</i>	<i>Current Mexican pesos (millions)</i>	<i>Total transfers (percent)</i>	<i>Household income before taxes and transfers (percent)</i>
Household income before taxes and transfers	7,521,608		100
Taxes (including social security contributions)	1,038,283		13.8
Social spending (official classification)	988,369		13.1
Total transfers analyzed	964,567	100	12.8
Transfers in kind (lines A+B)	654,675	68	8.7
Other transfers ^a (lines C+D)	309,892	32	4.1
Memo item: Total not targeting the poor	916,696	95	12.1
Total targeting the poor	47,871	5	0.6
<i>A. Education</i>	402,385	42	5.3
Preschool	44,583	5	
Primary	135,352	14	
Lower secondary	86,817	9	
Upper secondary	52,932	5	
Tertiary	82,701	9	
<i>B. Health</i>	252,290	26	3.4
Services for the insured	159,986	16	
Services for uninsured (SSA)	92,304	10	
Seguro Popular	11,700	1	
IMSS-Oportunidades	5,716	1	

(continued)

2006 average household income, which increased by 4.1 percent when all monetary transfers and subsidies were included, increased by 12.8 percent when in-kind transfers (education and health) were added to the latter.

Table 7-2 presents the 2006 totals of government transfers in cash and in kind as well as in the form of subsidies, including value-added tax (VAT) exemptions or fiscal spending, for the main redistributive categories and programs.⁸³ The programs are described in table 7-3. The categories and programs covered here include all public education and health spending (at the federal and state levels) as well as all federal public spending on pensions (the subsidized component),

83. In-kind transfers, which include mainly education and health services, may be highly valued by some (though not all) beneficiaries. They are nontradable, highly labor-intensive services that depend on locally available infrastructure for access and are therefore highly variable in quality. One relevant implication for the present analysis is that the gap between the public cost of the transfer and the monetary benefit to recipients is likely to be larger for in-kind transfers than for monetary transfers or direct subsidies. Another is that the low quality of services may act as an implicit, but effective, targeting mechanism because the nonpoor will opt out on their own.

Table 7-2. *Government Redistributive Spending by Category and Program, 2006 (Continued)*

<i>Concept</i>	<i>Current Mexican pesos (millions)</i>	<i>Total transfers (percent)</i>	<i>Household income before taxes and transfers (percent)</i>
<i>C. Subsidies^a</i>	262,021	27	3.5
Pensions ^b	85,230	9	1.1
IMSS	50,004	5	
ISSSTE	35,226	4	
Consumption subsidies	107,153	11	1.4
Residential areas electricity subsidy	64,935	7	
Gasoline and other fuel subsidies	42,218	4	
Memo item: Consumption subsidies ^c	270,102		3.6
VAT exemptions on food and prescription drugs	162,949		
Agricultural subsidies	69,638	7	0.9
Procampo	15,025	2	
<i>D. Programs targeting the poor</i>	47,871	5	0.6
Targeted monetary (mainly)	45,179	4	
Oportunidades	33,526	3	
Vivienda (Tu Casa)	4,234	0.4	
DIF/feeding programs	2,806	0.3	
Liconsa	1,300	0.1	
Programa de Empleo Temporal (PET)	1,090	0.1	
Opciones Productivas	401	0	
Other scholarships (excluding Oportunidades)	1,571	0.2	
Piso Firme	251	0	
Hábitat	1,992	0.2	
Microrregiones	700	0.1	

Sources: Scott (2009a). See description of programs in table 7-3.

a. Excludes VAT (value-added tax) exemptions (also known as fiscal spending) and includes subsidies and monetary transfers to agriculture such as Procampo and Ingreso Objetivo.

b. Government subsidy—that is, pensions net of contributions from workers and employers.

c. Includes VAT exemptions (also known as fiscal spending).

energy and agricultural subsidies, and the main programs targeting the poor. Altogether, those items comprise a total of twenty-five programs or specific spending categories, which, in 2006, amounted to close to US\$100 billion (10 percent of Mexico's GDP), 12.8 percent of primary household income (income before taxes and transfers, also called pre-fiscal income), 60 percent of total public spending,⁸⁴

84. The remainder includes spending on administration, defense, and so forth.

Table 7-3. *Description of Main Categories and Programs*

<i>Program</i>	<i>Description</i>
<i>Health and pensions (social security)</i>	
IMSS	The principal social security institution providing health services and other benefits to private sector workers, created in 1943. Its pension system was reformed in 1997 to a “fully funded,” defined contribution scheme administered by private entities.
ISSSTE	The principal social security system covering federal and state government bureaucracy and workers.
Health Services SSA	Health services for the uninsured provided by the state and federal government ministries of health.
Seguro Popular	Health program created in 2004 to provide basic health insurance to the formally uninsured, with a projected coverage of 12 million households by 2010.
IMSS-Oportunidades	System of rural health clinics for the uninsured targeting poorer localities, administered by IMSS but funded by the Health Ministry; created in 1970s as IMSS-Coplamar.
<i>Consumption subsidies</i>	
Gasoline and other fuels subsidy	Special tax on gasoline (IEPS) that has become a negative tax, or a subsidy, since 2006, as price adjustments lagged the increase.
VAT exemptions on food and prescription drugs	Fiscal spending associated with VAT exemptions on food and prescription drugs, principally.
<i>Agricultural subsidies</i>	
Procampo	Agricultural subsidy created in 1994 to compensate producers of basic crops for the opening up of agricultural markets under the North American Free Trade Agreement; provides a direct transfer per hectare instead of per output as before. Agricultural Ministry.
Ingreso Objetivo	Agricultural subsidy based on a target price. Agricultural Ministry.

(continued)

and 97 percent of total social spending. Using ENIGH 2006, we analyze their distributive impact using standard benefit incidence analysis.⁸⁵

It is important to note that social spending as defined in official government budgetary classifications and the concept of redistributive spending used this incidence analysis are not the same. The fact that in 2006 they are so close in actual

85. Public spending data on all programs reported in table 7-2 are obtained from the Public Accounts of the Federation for the relevant years. For health spending at the state level, we use the National and State Health Accounts published by the Health Ministry. Education spending at the state level is estimated from federal per-student spending rates and the total number of students in schools financed by states as reported by the Education Ministry. Spending on education and health at the state level includes spending on education and health financed through earmarked federal transfers, revenues from federal revenue-sharing programs, and fiscal revenues collected by the states themselves.

Table 7-3. *Description of Main Categories and Programs (Continued)*

<i>Program</i>	<i>Description</i>
<i>Programs targeting the poor</i>	
Oportunidades	CCT program created in 1997, currently covering 5 million households, providing direct monetary transfers conditional on school attendance and health visits. Originally targeting at poor rural communities and basic education, in 2001 it was gradually extended to urban localities and higher education services. Social Development Ministry.
Vivienda (Tu Casa)	Housing credit program targeting the uninsured. Social Development Ministry.
DIF feeding programs	School breakfast and kitchen program.
Liconsa	Target milk subsidy program, providing rations of milk at half price in urban localities. Social Development Ministry.
Programa de Empleo Temporal (PET)	Workfare program created in 1995, providing a maximum of 88 days of work for a low wage (originally 90 percent of the minimum wage, at present 99 percent).
Opciones Productivas	Support for productive projects including technical assistance and credit. Social Development Ministry.
Rural old age pension	Universal rural noncontributory basic pension for the population 70 years or older created in 2007, offering \$500 pesos (US\$37) per month.
Other scholarships (excluding Oportunidades)	Scholarship income reported by households in the ENIGH income and expenditure survey, excluding Oportunidades scholarships.
Piso Firme	Provides financing to purchase material inputs to built cement floors for houses with dirt floors in poor rural localities.
Hábitat	Urban development, infrastructure, and participation program. Social Development Ministry.
Microrregiones	Rural development program providing infrastructure and productive inputs to jump-start local economic development. Social Development Ministry.

Source: Scott (2009b).

amounts is a coincidence. In addition to spending on education, health, and programs targeting the poor, redistributive spending includes spending on agricultural and consumption subsidies, which are excluded from social spending. In the case of pensions for social security beneficiaries, redistributive spending includes just the subsidy component (that is, it excludes the contributions made by workers and employers) whereas social spending includes all spending on social security pensions regardless of how they are financed. Finally, redistributive spending excludes some of the spending items included in social spending because they cannot be “mapped” to specific households. That includes social spending on public goods such as rural roads, for example.

If we disaggregate the total redistributive spending presented in table 7-2 by category, in-kind transfers of education and health represent 42 and 26 percent of the total respectively and together they represent 68 percent of the total. The distribution of the remaining 32 percent⁸⁶ is as follows: 11 percent is general subsidies for electricity for residential areas and for gasoline and other fuels; 9 percent is pensions (the subsidized component),⁸⁷ 7 percent is agricultural subsidies, and 5 percent is monetary transfers to the poor.⁸⁸

In order to estimate the incidence of redistributive spending, first we record the distribution of total spending on each program or category by population deciles ordered by total current income per capita before taxes and transfers (primary or pre-fiscal income); then we measure the degree of progressivity using concentration coefficients (CC).^{89,90} The CCs are a Gini coefficient of the distribution of

86. The benefit incidence analysis does not include VAT exemptions on the spending side. They are included in the analysis of tax incidence.

87. Although pensions are reported in the ENIGH survey, the totals cannot be treated as government transfers because the ENIGH data do not allow one to disaggregate public from private pensions or the subsidy from the saving component in public pensions. Pension income must therefore be decomposed as a separate income component, and, as shown in the decomposition of inequality by income source above, it is inequality-increasing. The incidence analysis presented below includes only the tax-financed subsidies to the public pension systems and uses information on social security affiliation reported in the ENIGH (for active workers only) to impute them.

88. Line D in table 7-2. Although some of the transfers (Vivienda, DIF desayunos, Liconsa, Programa de Empleo Temporal, Opciones Productivas, Piso Firme, Hábitat, Microrregiones) are not reported in the ENIGH's published database, they were included in a special module of social programs commissioned with the ENIGH (2002, 2004, 2006) by Sedesol. Thus we were able to include them in the incidence analysis presented below.

89. For details, see Scott (2009b, 2005). The main data source for the analysis is the 2006 ENIGH household income and expenditure survey. In addition to being the most detailed source available for household income, the ENIGH survey reports the main public monetary transfers (Progres/Oportunidades and Procampo); the use of public education and health services by household members; whether household members contribute to the social security systems; and spending on electricity, gasoline, and other fuels and on consumption goods that are subject to or exempted from VAT. As is common in household surveys, total household income in ENIGH tends to be underreported by a large margin when compared with the closest equivalent concept of total household income in Mexico's National Accounts (the ratio of total household income in National Accounts to total household income in the survey was equal to 1.87 in 2006). To estimate the incidence and redistributive effect of public transfers it is necessary to ensure comparability between public transfers obtained from the National Accounts and private income reported in ENIGH. To do that, the data in the National Accounts is adjusted proportionately by the ratio described above to ensure consistency with household income estimated from ENIGH surveys and the totals in the National Accounts.

90. With the exception of Oportunidades, which is reported in the ENIGH survey, the information for the targeted programs included in the analysis was obtained from a special module on social programs commissioned by the Social Development Ministry as part of the 2006 ENIGH. The distribution of agricultural public expenditures, in particular Procampo and Ingreso Objetivo, is obtained from the administrative beneficiary database and reported as producer deciles ordered by the size of land holdings. The inclusion of the latter results with the ENIGH-based estimates is justified by the assumption that the size of land holdings is positively correlated with income. The only agricultural subsidy reported in ENIGH is

transfers (or taxes, depending on the case) with the population ranked according to total pre-transfer current income per capita.⁹¹ A negative CC means that the category or program is progressive in absolute terms—that is, the poor receive more than the rich in per capita terms. A positive CC, which is lower than the Gini of primary (pre-fiscal) income, means that the category or program is regressive in absolute terms—that is, the poor receive more than the rich in *proportion* to their respective incomes but less in per capita terms (this is sometimes called progressive in relative terms). A positive CC that is higher than the Gini of primary (pre-fiscal) income means that the category or program is regressive in relative (and thus, absolute) terms—that is, the post-program distribution is more unequal than the distribution of primary income. By definition, if a program is regressive in relative terms, it must be regressive in absolute terms, but the converse is not true.

The concentration coefficients of redistributive spending by program or spending category are shown in figure 7-10. The CCs range from the most progressive program (in absolute terms), Oportunidades (-0.53), to the most regressive program (in relative terms), Ingreso Objetivo (0.81).⁹² Most of the programs targeting the poor (line D in table 7-2), the pro-poor health “insurance” program Seguro Popular,⁹³ health services provided by the Ministry of Health for the uninsured, and basic education (pre-school, primary, and lower-secondary) are progressive (pro-poor) in absolute terms. The programs that make the post-transfer distribution worse than the pre-fiscal distribution are primarily the cash transfer programs to agricultural producers (for example, Ingreso Objetivo) and subsidized pensions to employees of some state-owned companies. In between is a large number of programs and categories that are regressive in absolute terms but progressive in relative terms: for example, energy subsidies (for gasoline, LP gas, and residential electricity) and other generalized consumption subsidies (including VAT exemptions), social security benefits, and tertiary education.

Concentration coefficients, by definition, do not capture nuances in the actual distribution of benefits. A more complete picture can be obtained by looking at the benefit incidence by deciles or quintiles. Scott (2009b) finds that sixteen programs transfer an amount at least equal to their population share to the bottom quintile—that is, they are progressive in absolute terms (figure 7-10). On the

Procampo, but the survey is not designed to report the distribution of this program accurately. A large fraction of Procampo’s benefits are concentrated on a small group of producers at the top end of the land and income distribution. As are other household surveys in Latin America, the ENIGH survey is especially limited in capturing income at the top end of the distribution, for well-known reasons of small sample size and underreporting (see discussion in chapter 1). Therefore, it significantly underestimates the concentration of Procampo transfers.

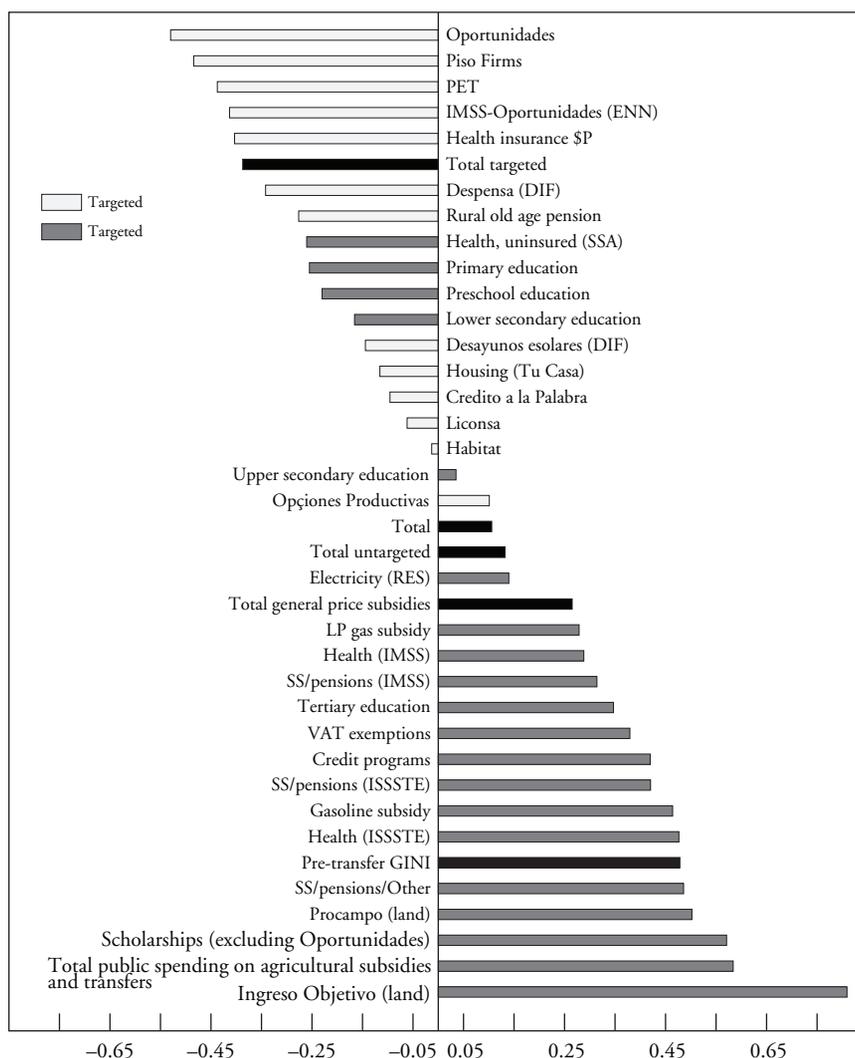
91. Concentration coefficients are also sometimes called “quasi-Ginis.” They were calculated on the basis of transfers received by population decile. Concentration coefficients are also calculated for taxes.

92. Concentration coefficients can range from -1 to 1. The closer they are to -1 (1) means that the fiscal resources are allocated in a pro-poor (pro-rich) way.

93. Xxxxxx

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Figure 7-10. *Concentration Coefficients for Redistributive Public Expenditures, 2006^a*



Source: Scott (2009b).

a. Estimates based on the Module on Social Programs (ENIGH 2006), except in the case of Procampo and other agricultural transfers and subsidies. For a definition of concentration coefficient (CC) see text. The CCs for Procampo and other agricultural subsidies are based on administrative data and producer deciles ordered by size of land holdings; the latter is taken as a proxy for income. These CCs overestimate how regressive these programs are. In spite of the fact that Procampo's CC is below the pre-transfer Gini, it is safe to assume that Procampo is actually not more regressive than the pre-fiscal distribution. That assumption is further supported by the fact that the design of the program does not link benefits to output. It is also supported by the fact that the ENIGH-based CC for Procampo is actually only mildly regressive, although ENIGH underestimates the regressivity of the program. Finally, it is supported by orderings using the (estimated) value (instead of size) of land, which reveal Procampo to be less regressive than simple orderings based on land size. For more details see Scott (2009c). The share in government redistributive spending of items in this figure can be found in table 7-2. For a description of the programs, see table 7-3.

other end, twelve programs are regressive in absolute terms and five are regressive in relative terms—that is, they make the post-program income distribution more unequal.⁹⁴ Programs that are regressive in relative terms do not reach the poor and in effect worsen income inequality.

In 2006 only 42 percent of all the redistributive spending categories (monetary transfers, subsidies,⁹⁵ and in-kind transfers) were progressive in absolute terms (that is, the poor received more than the rich in per capita terms). Of the remaining 58 percent of redistributive spending, 47 percent was regressive in absolute terms and 11 percent was allocated to programs that were regressive in relative terms—that is, the distribution of income worsened as a result of those programs.

The overall impact of total redistributive spending can be seen in table 7-4. Given that regressive programs use a larger share of fiscal resources, they effectively cancel the pro-poor impact of the progressive ones, producing a slightly regressive (in absolute terms) global distribution of public spending. In-kind transfers are generally neutral (in absolute terms), monetary transfers that target the poor are progressive in absolute terms, and the rest of the transfers are either regressive in absolute or relative terms.⁹⁶ However, because the bulk of government redistributive spending (89 percent) is allocated to programs that are either progressive in absolute terms (42 percent) or to programs that—even though they are regressive in absolute terms—make the post-transfer distribution less unequal than the pre-transfer one (47 percent), government redistributive spending reduced the pre-fiscal Gini coefficient by 9.3 percent in 2006.⁹⁷ If we exclude the impact of transfers in kind, the reduction in the Gini coefficient becomes much smaller, a mere 1.7 percent.

Let us now turn to the redistributive impact of taxes, including social security contributions. Table 7-4 presents the estimates of tax incidence for 2006 calculated by the Finance Ministry (SHCP 2008).⁹⁸ The incidence of taxes is progressive but only mildly so: taxes paid by the poorest decile are equal to 6.7 percent of their pre-fiscal income while the figure for the top decile is 13.9 percent. Taxes reduce the pre-fiscal Gini by 2.8 percent. The combined effect of all government redistributive spending and taxes reduces the Gini from 0.5024 to 0.4387, or

94. Although Procampo, strictly speaking, is probably not regressive in relative terms, as discussed later. That would bring the total number of programs that are regressive in relative terms to three instead of four.

95. This category includes general subsidies to gasoline and other fuels, subsidies and monetary transfers to agricultural producers, and the subsidized part of social security pensions.

95. Scott (2009b).

97. Since this estimate includes the valuation of social services based on government spending (transfers in kind in education and health), the redistributive impact must be viewed as an upper bound that would have to be adjusted downward to the extent that the value of services received is less than the budgetary cost of provision.

98. The tax incidence analysis uses the same database (ENIGH 2006) and applies the same methodology as the spending incidence analysis reported here, so the tax and transfer incidence estimates are comparable.

Table 7-4. *Incidence and Redistributive Impact of Transfers and Taxes, 2006^a*
Percent

Decile	Distribution (as a proportion of category's total)										
	Household income					Incidence (as a proportion of pre-fiscal household income)					
	Transfers (1)	Taxes (2)	Pre-transfers and taxes (3)	Post-monetary transfers, subsidies and transfers in kind (4)	Post-monetary transfers, subsidies and transfers (5)	Post-tax (6)	Post-monetary transfers and subsidies (7)	Post all transfers (column 5) and taxes (8)	Transfers (9)	Tax (10)	Net (after taxes and transfers) (11)
<i>Adjusted</i>											
1	8.2	0.9	1.5	1.6	2.3	1.5	1.7	2.4	74.7	-6.7	68
2	8.4	1.3	2.5	2.7	3.2	2.7	2.8	3.4	43.7	-5.9	37.8
3	8.4	2.1	3.4	3.5	4	3.6	3.7	4.2	32.5	-6.9	25.6
4	8.7	3	4.3	4.4	4.9	4.5	4.6	5.1	26.6	-7.6	19
5	8.7	3.5	5.3	5.4	5.7	5.5	5.6	5.9	21.9	-7.5	14.4
6	9.3	5.2	6.7	6.7	7	6.8	6.9	7.2	18.5	-8.7	9.8
7	10.1	6.2	8.2	8.2	8.4	8.4	8.5	8.7	16.4	-8.5	7.9
8	11.1	9.9	10.8	10.8	10.8	10.9	10.9	11	13.6	-10.2	3.4
9	11.9	16.4	15.8	15.8	15.4	15.8	15.7	15.3	10	-11.5	-1.6
10	15.1	51.6	41.4	40.8	38.3	40.1	39.5	36.9	4.8	-13.9	-9
Total	100	100	100	100	100	100	100	100	13.3	-11.1	
CC/G*	0.1047	0.6132	0.5024	0.4937	0.4558	0.4885	0.4794	0.4387			
Percent change in G				-1.7	-9.3	-2.8	-4.6	-12.6			

Source: Based on Scott (2009b).

a. Transfers include all the categories described in table 7-2; in the case of pensions, they include the subsidized component only. Taxes include all taxes and contributions to social security. Transfers in kind correspond to Education and Health categories in table 7-2. Monetary transfers and subsidies correspond to Subsidies and Programs Targeting the Poor categories in table 7-2. Asterisk = not in percent. CC = concentration coefficient; G = Gini coefficient.

12.6 percent. If we exclude the impact of in-kind transfers and consider the effect of monetary transfers and subsidies only plus the effect of taxes, the Gini falls from 0.5024 to 0.4794, or 4.6 percent.

In sum, although government redistributive spending has become more progressive over the last decade and although both spending and taxes reduce pre-fiscal inequality, there still is a lot of room for improvement in making state action more progressive on the fiscal front.

Summary and Conclusions

After more than a decade of rising income inequality between the early 1980s and early 1990s, Mexico's inequality finally began to decline in the post-NAFTA years. Between 1996 and 2006, the Gini coefficient for total income fell from 0.543 to 0.498, or 0.8 percent a year; the decline was higher, 1 percent a year, in the more recent period between 2000 and 2006. A more detailed analysis of income patterns reveals that during the past decade the bottom quintile experienced an above-average increase in its income while the top decile grew at below-average rates. The results of the decomposition exercises discussed in this chapter suggest that the improvement in incomes at the bottom of the distribution is linked to the higher relative wages of low-skilled workers, a rise in the share of remittances in rural areas, and the expansion of government monetary transfers to the poor.⁹⁹

The reduction in the skill premium appears to explain the loss in the relative position of the upper deciles, particularly in urban areas. The reduction in the premium occurred because wages (or labor earnings, more precisely) increased more for low-wage workers than for the rest. A preliminary exploration of the causes indicates that this flattening of the wage distribution coincided with a significant change in the composition of the labor force in terms of education. Between 1989 and 2006, the share of workers with less than lower-secondary education fell from 55 percent to around 33 percent.

That educational upgrading of the labor force is associated with important changes in government spending on education.¹⁰⁰ In addition to the budgetary

99. The decomposition of inequality by income source clearly shows that, at the national level, there were three inequality-increasing income sources (pensions, income from own businesses, and income from property) and three inequality-reducing income sources (labor income since 2000, remittances, and transfers). Labor income became a very important inequality-reducing force in urban areas, as summarized earlier, but not in the rural sector, where in 2006 it was even inequality-increasing. In contrast, transfers became a very important inequality-reducing income source in rural areas and to a lesser extent in urban areas. The inequality-reducing contribution of transfers increased over time, both at the national level and for urban and, especially, rural households. By 2006 transfers became the income source with the largest inequality-reducing effect of all the income sources considered here; notably, a marginal increase in transfers would reduce inequality by more than a marginal increase in labor income or remittances.

100. To what extent can the relative decline in the supply of workers with low skills be attributed to outmigration? There is no study that directly addresses this question for the period covered in this chapter.

allocation between educational levels, progressivity in educational spending was improved by addressing two important constraints to access through implementation of the conditional cash transfer program Progresa in 1997: the limited availability of secondary schools in rural areas and constraints on demand for education, such as the high opportunity cost of attending school for children of lower-secondary and secondary school age in poor rural households.

The persuasiveness of the labor-supply side of the story is strengthened by the fact that for workers whose share in the labor force declined (rose), wages tended to increase (decline) or increase more rapidly (slowly). Of course, an increase in demand for low-skilled workers could have reinforced the supply-side changes in labor force composition. As mentioned, there are indications that the greater integration of Mexican and U.S. production turned Mexico's manufacturing workers into complements rather than substitutes for U.S. workers. That integration also contributed to expanding assembly-line production in Mexico, which increased the demand for low-skilled workers. In addition, it is possible that remittances and government transfers also increased demand for low-skilled workers, as recipients used the resources for home improvements or demanded more goods and services in local communities—something that could have had a local multiplier effect.¹⁰¹

The sharp rise in the role and inequality-reducing impact of public transfers was a consequence of a significant policy shift in the mid-1990s, in particular when the government launched Progresa. During 1996–2006 the size of public transfers increased and became more equally distributed among recipients; in addition, the recipients of transfers increasingly belonged to relatively poorer segments of the population. Moreover, government spending on education, health, and nutrition became more progressive. With the introduction of Progresa/Oportunidades, the Mexican government found ways to redistribute income in an efficient and cost-effective way through transfers.

However, despite this undeniable progress, when all government redistributive spending is considered,¹⁰² benefits incidence analysis shows that 58 percent was

However, available evidence suggests that people with moderate to high levels of education are more likely to migrate than those with low levels of education (Hanson, 2006) so that, if anything, the relative scarcity of low-skilled workers should be affected less by outmigration than the relative scarcity of skilled workers.

101. The actual picture may not be as positive. Income inequality in Mexico has been falling during a period of low growth. If low growth is a consequence of the fact that not many jobs are being generated in the high-productivity sectors and that in turn is a consequence of the high costs faced by firms in the formal sector, then both low growth and the fall in wage inequality might be a result of the same undesirable process. Levy (2008) argues that that is in fact what has happened in Mexico and that the main culprit is, in some aspects, Mexico's social policy, which has created disincentives for employment generation in the formal sector. Pages, Pierr, and Scarpetta (2009) finds evidence that job creation in Mexico—and other Latin American countries—occurred disproportionately in low-productivity and low-wage sectors. They call this “growthless jobs.”

102. And not just the portion of redistributive transfers captured by the income concept in household surveys, which is, as mentioned earlier, a mere 5 percent of total redistributive government spending.

still regressive in absolute terms (of which 11 percent increased income inequality). In advanced countries, government transfers are able to reduce primary or market income inequality between 30 and 50 percent. In Mexico, in contrast, the post-transfer Gini coefficient in 2006 was only 9.3 percent—and a meager 1.7 percent if we exclude transfers in kind—smaller than the pre-transfer Gini.

Unfortunately, the redistributive efficiency of Progresá/Oportunidades is an isolated case among the redistributive instruments currently in use in Mexico. The most regressive programs—those that worsen the distribution of income—are primarily those associated with agricultural subsidies and monetary transfers as well as the subsidized component of pensions for employees of state-owned enterprises. Other programs and spending categories are regressive, but only in absolute terms. One of them is government spending on tertiary education, which, although it has been improving, is regressive because tertiary school enrollment among the poorest quintile is insignificant (and among the lowest in Latin America). In order to change that in a fundamental way, the government must compensate the poor for their high opportunity cost of pursuing tertiary education. Perhaps, in partnership with the private sector, the government should implement large-scale scholarship or student loan programs that target the poor. In addition, the availability of tertiary-level facilities must be expanded, given that at present not all students who wish to pursue a tertiary education are admitted because of supply-side constraints. A more important issue, and perhaps the most difficult to tackle, is the quality of public education, which will have to be improved at all levels and at the upper-secondary level in particular.

Today Mexico's poor are not able to attend public universities because of the low quality of their pre-university education. Poor children who graduate from low-quality public high schools lose out when they compete for scarce university places with students who graduate from high-quality private high schools. However, even if the competition to attend public universities were to be eliminated, students who attended poor-quality public schools would either fail or become second- or third-rate professionals. Substantially improving the quality of public education is essential to making state action more progressive. To a large extent, public spending on basic public education is progressive in absolute terms because higher-income groups opt out of public schools because of their lower quality. An immediate corollary is that efforts to improve the quality of public education, if successful, would necessarily come at the cost of equity in the use of public resources. However, in this case, that would be a welcome "cost."

What are the chances that such reforms might occur? Between the mid-1990s and mid-2000s, the state became more redistributionist, although not by strengthening the power of labor and peasant organizations. Large chunks of the traditional corporatist labor unions and agrarian organizations lost power—and access to economic resources—during the period of structural reforms and as part of the democratization process. That meant that such corporate organizations

were unable to capture part of the economic rents as they did before the reforms; however, other institutions representing the interests of the poor and disenfranchised did not replace them.

Thus, state-led redistribution took place mainly through straightforward fiscal policy. In particular, in the areas of education and health and through targeted programs such as Progresas/Oportunidades, fiscal policy expanded and directed resources away from the top and the middle ranges of the distribution toward the poor. State-led redistribution was a top-down process led by enlightened technocrats that was made possible by the weakening of the power of corporatist organizations; it had less to do with the empowerment of the poor and disenfranchised.¹⁰³ However, not all corporatist organizations were weakened. One of the remaining diehards is the powerful teachers' union, which has succeeded in blocking most attempts to improve the quality and accountability of the public school system. In addition, the democratization process itself has weakened the ability of the state to implement top-down reforms because the ruling party does not have a congressional majority; therefore, in order to create viable coalitions, the chief executive has to make concessions that inevitably block reforms designed to eliminate the entitlements of some politically powerful groups, such as agricultural producers, workers in state-owned oil and electricity companies, and the teachers' unions.

Although the political economy outlook is not encouraging, it does not mean that the government should not try to push for reforms. However, one aspect of reform is usually overlooked in the discussion of equity and state action. Policy recommendations often emphasize the elimination or reduction of spending categories or programs that are regressive in absolute terms (that is, the poor receive less than the rich in per capita terms). The problem with that is twofold. First, even though regressive in absolute terms, the incidence of those spending categories is progressive in relative terms, and, in the absence of compensatory mechanisms, eliminating them would make the poor worse off. That is the case, for example, of the VAT exemptions on food and prescription drugs. Second, the portion of distribution that receives higher per capita benefits includes large chunks of the middle and lower-middle classes, which may be right in resisting a reform that could affect their or their children's social mobility or welfare. In addition, progressive leadership may want to financially support a burgeoning middle class because of the role it plays in fostering stable and democratic institutions.

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103. For a discussion of the political economy of redistribution, see chapter 3 in this volume.

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