Colombia
Poverty Report
(In Two Volumes) Volume I: Main Report

November 1, 2002

Colombia Country Management Unit
PREM Sector Management Unit
Latin America and the Caribbean Region
### CURRENCY EQUIVALENTS
(as of October 21, 2002)

Currency Unit = Peso (Col$)

<table>
<thead>
<tr>
<th>Col$1</th>
<th>US$ 0.000351</th>
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<tr>
<td>US$1</td>
<td>Col$ 2876.400</td>
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### WEIGHTS AND MEASURES

Metric System

### FISCAL YEAR
January 1 to December 31

### ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tr>
<td>ARS</td>
<td>Administradoras de Régimen Subsidiado</td>
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<tr>
<td>CAIP</td>
<td>Centros de Atención Integral al Preescolar</td>
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<tr>
<td>CASEN</td>
<td>Caracterización Socioeconómica Nacional</td>
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<tr>
<td>CDF</td>
<td>Comprehensive Development Framework</td>
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<tr>
<td>CODHES</td>
<td>Consultoría para los Derechos Humanos y el Desplazamiento</td>
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<tr>
<td>DALYS</td>
<td>Disability-Adjusted Life Years</td>
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<tr>
<td>DHS</td>
<td>Demographic and Health Survey</td>
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<tr>
<td>DNP</td>
<td>Departamento Nacional de Planeación</td>
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<tr>
<td>ECV</td>
<td>Encuesta de Calidad de Vida</td>
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<tr>
<td>ENH</td>
<td>Encuesta Nacional de Hogares</td>
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<tr>
<td>FGT</td>
<td>Foster-Greer-Thorbecke index</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GNP</td>
<td>Gross National Product</td>
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<tr>
<td>HCB</td>
<td>Hogares Comunitarios de Bienestar</td>
</tr>
<tr>
<td>ICBF</td>
<td>Instituto Colombiano de Bienestar Familiar</td>
</tr>
<tr>
<td>ICETEX</td>
<td>Instituto Colombiano de Crédito Educativo y Estudios Técnicos en el Exterior</td>
</tr>
<tr>
<td>ICFES</td>
<td>Instituto Colombiano para el Fomento de la Educación Superior</td>
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<tr>
<td>IDP</td>
<td>Internally Displaced Populations</td>
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<tr>
<td>IDB</td>
<td>Inter-American Development Bank</td>
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<tr>
<td>INURBE</td>
<td>Instituto Nacional de Vivienda de Interés Social y Reforma Urbana</td>
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<tr>
<td>ISS</td>
<td>Instituto de Seguros Sociales</td>
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<tr>
<td>LSMS</td>
<td>Living Standards Measurements Study</td>
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<td>NHS</td>
<td>National Household Surveys</td>
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<tr>
<td>PACES</td>
<td>Programa de Ampliación de la Cobertura de Educación Secundaria</td>
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<tr>
<td>POS</td>
<td>Plan Obligatorio de Salud</td>
</tr>
<tr>
<td>POSS</td>
<td>Plan Obligatorio de Salud Subsidiado</td>
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<tr>
<td>PPP</td>
<td>Purchasing Power Parity</td>
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<td>PSE</td>
<td>Public Social Expenditure</td>
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<td>SCD</td>
<td>SISBEN classification document</td>
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<tr>
<td>SENA</td>
<td>Servicio Nacional de Aprendizaje</td>
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<td>SISBEN</td>
<td>Sistema de Selección de Beneficiarios</td>
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<tr>
<td>UNDCP</td>
<td>United Nations Development Program for Drug Control and Crime Prevention</td>
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<tr>
<td>UNDP</td>
<td>United Nations Development Program</td>
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<tr>
<td>UPAC</td>
<td>Unidad de Poder Adquisitivo Constante</td>
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<tr>
<td>VAT</td>
<td>Value Added Tax</td>
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<td>UVR</td>
<td>Unidad de Valor Real</td>
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Vice President: David de Ferranti
Director: Olivier Lafourcade
Lead Economist: Marcelo Giugale
Sector Manager: Norman Hicks
Task Manager: Carlos Eduardo Vélez
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Key Findings
Colombia Poverty Report, 2002

How have the poor fared in the last two decades and recent recession?

1. Poverty trends show substantial long-term progress but a recent severe setback. Poverty declined during the 1980s and during the first half of the 1990s. However, after a reduction of 20 percentage points on national poverty rates from 1978 to 1995, the trend reversed itself, and, in 1999, poverty returned to the level registered in 1988.

2. Social indicators show persistent long-term improvements. A variety of measures indicate progress, including completion rates for primary and secondary schooling, coverage rates for health insurance and basic infrastructure - water, sewerage, electricity, and telephones - as well as child labor, infant mortality and life expectancy.

3. Crime is a burden for all Colombians: homicide and domestic violence are a greater problem for the poor, property crime centers more on the non-poor. In particular, uneducated women and spouses of uneducated men bear a disproportionate share of domestic violence. By contrast, the non-poor bear a disproportionate share of the burden of property crime, extortion, and kidnapping.

4. Economic and social development gains have been resilient to growing violence and insecurity. Despite two decades of persistent security deterioration, Colombia experienced unambiguous improvement in social and economic indicators since the late 1970s.

5. Vulnerability: characteristics of the poor are persistent but the recession increased their numbers. The faces of the poor are typically children of all ages, households with unemployed heads or young low-to-middle-skilled heads, non-homeowners and recent migrants - presumably displaced populations. These groups are clearly worse off than pensioners, the college educated, the elderly, and non-recent urban migrants.

6. Double benefit of economic growth: is instrumental for poverty reduction and has increased the capacity to finance pro-poor policies. During the 1980s and early 1990s, economic growth explained, almost totally, the 22-percentage point reduction in urban poverty. Moreover, thanks to the economic growth experienced up to 1995, Colombia today has a great deal more resources - a fiscal base - with which to tackle poverty. The reallocation of moderate amounts of public expenditure would have major impact on the welfare of the extremely poor.

7. Rising inequality partly eroded potential welfare gains. The expected difference in income between any two Colombians chosen at random has been increasing over time. The latter is responsible for a welfare loss - for the worse-off individual in that pair - of 18 percent between 1978 and 1995, and an additional 5 percent loss in the late 1990s. Unless special attention is paid to post-secondary education expansion, skill-wage differentials will remain too high and will keep inequality rising.

Government Actions and Priorities for the Poor

8. Social services in the 1990s: huge public expenditure effort benefits the poor, but results across sectors are mixed. During the last decade, Colombia has made a sustained effort to raise public social expenditure (PSE) to 15 percent of GDP. With the exception of excessive, inequitable and fiscally unsustainable pension subsidies, public social expenditure in basic education, basic infrastructure, as well as in health and childcare, is found to be pro-poor.

9. High positive economic growth during the next decade is imperative to reverse the poverty increase brought about by the recent recession. Colombia needs to recover sustained economic growth in the magnitude of 4 percent per year until at least 2010, in order to reduce poverty back to its 1995 level.
10. **Social program priorities for the poor: childcare, health, and sewerage.** Despite an increase in social program coverage during the 1990s, coverage in childcare, sewerage and health *treatment* are too low for the poor, vis-à-vis populations with higher incomes.

11. **One social policy instrument, education, has the single most important role on social welfare** through multiple poverty determinants: human capital endowments, employment rates, dependency ratios and even relative wages by skill level. Not only is the direct impact of education and technical training on income as they raise both wage earnings and the chances of being employed—particularly for women—. Education—especially of women—helps reduce fertility, thus reducing dependency rations and increasing per capita income. Education also protects against domestic violence. Moreover, having a more skilled labor force has helped to raise the relative wages of the less skilled, by reducing their availability in the labor market.

12. **Safety-net programs become more valuable policy instruments in an environment of increasing economic insecurity.** Contrary to its traditional stability, the volatility of the Colombian economy nearly doubled during the 1990s. Under those circumstances the “archipelago” of traditional safety net programs was both insufficient and fragile. A more integrated social protection policy to enhance risk management options should be significantly beneficial.
Colombia Poverty Report

Executive Summary

Up to 1996, Colombia enjoyed high, sustained, and stable growth. Since then, Colombia has undergone its most severe economic crisis since the 1930s. After the relative slowdown of the early 1980s, adjustment policies and the coffee bonanza of 1986 helped restore internal and external balances. In the late 1980s, exports diversified away from coffee, unemployment fell, and growth was robust up until 1996. However, during the early 1990s, total public spending started to grow at an unsustainable pace. By the second half of the 1990s, the macroeconomic performance of Colombia had deteriorated significantly, with growth rates plummeting—the economy officially entered into recession—and unemployment escalating. This situation emerged during a decade in which public policy reforms were abundant and macroshocks were significant. In addition to the constitutional reform of 1991, an activist public policy enforced structural reforms in key areas such as sub-national public finance, health, pensions, labor markets, central bank framework, trade, and capital flows. Simultaneously, risk indicators worsened, mostly because of increasing economic volatility, financial sector fragility, and persistently high levels of crime and violence that stretched the judiciary system beyond its limits. Moreover, de-facto authoritarian regimes enforced by paramilitaries and local guerrilla warlords gained control in some isolated rural areas.

The detrimental effects of the recent economic slowdown on the welfare of the average Colombian can easily be anticipated. However, it is not clear how large the welfare losses are, and, in particular, how much have they affected the poor and other vulnerable groups? What types of vulnerabilities have emerged in the new economic environment? How appropriate was the government’s policy in terms of social investment and social protection? Which are the sectors that need urgent improvement?

This report appraises the impact of economic development, or lack thereof, on the welfare of the Colombian population – the poor in particular – during the last two decades. At the same time, the report identifies priority areas for public policy action vis-à-vis the most vulnerable groups. Welfare assessment covers three key areas: income, access to social services, and personal security. Moreover, the study compares welfare indicators between urban and rural areas and across other regional partitions. In summary, this report addresses two main questions:

How are the poor doing and why?

and

What is the government doing for the poor?
Following are the main findings and policy recommendations of this report:

**How are the poor doing and why?**

*Poverty trends: substantial long-term progress with a recent setback*

First, poverty trends in Colombia show substantial long-term progress, albeit with a recent setback. As measured by the national poverty line, 64 percent of the population lived in poverty in 1999, and 23 percent were in extreme poverty. Poverty declined during the 1980s and during the first half of the 1990s. However, after a total reduction of 20 percentage points from 1978 to 1995, the downward trend reversed itself, and, in 1999, poverty returned to the level registered in 1988. Meanwhile, extreme poverty declined much faster than the poverty rate between 1978 and 1995, falling by more than 50 percent (from 45 to 21 percent). Similarly, the recession did aggravate the extreme poverty rate, but the level it reached was still well below that of 1988. The rural population still faces more adverse economic conditions, particularly in the extreme poverty count, which is nearly three times larger than that of the urban dwellers. However, unlike in urban areas, extreme rural poverty declined much faster up until 1995, and, moreover, the economic recession hit the urban extreme poor more severely. It is important to note that consumption-based measures suggest that income-based poverty indices overestimate urban and rural poverty by large margins — between 15 and 20 percentage points.

*Social indicators: persistent long-term improvements*

Second, during the last two decades, several indicators showed a clear and positive social development trend. Although school enrollment rates progressed somewhat slowly and suffered a reversal during the recent economic downturn, completion rates for primary and secondary schooling improved substantially, reaching 90 and 59 percent, respectively, for teenagers and young adults. In urban areas, the average educational attainment increased by 2.7 years and illiteracy rates were nearly halved. Compared to improvements in urban areas, improvements in rural education are relatively larger when judged by the dynamics of enrollment rates for all school ages—especially those for 18- to 22-year-olds. Moreover, rural enrollment rates seem more resistant to the recession period than do urban rates. At the national level, child labor followed a decreasing trend; its decline was particularly strong during the recession, thus following a pro-cyclical trend, as it has in other Latin American countries. Growth in basic infrastructure coverage, i.e., water, sewerage, electricity, and telephone, results from the catch-up by cities least covered in 1978 as well as from progressive extension to the poorer population. However, sewerage and telephone connections in urban areas still lag behind electricity and water, and the missing percentages mask thousands of individuals, concentrated in regional pockets of poverty, where these basic needs are not yet met. Finally, during the last four decades, life expectancy improved by approximately one year every two calendar years. Despite this, regional differences are considerable, and most of the gains benefited females; rising homicide rates for young males partly offset the impact of health gains on male life expectancy.

*Burden of Crime: homicide and domestic violence for the poor, property crime for the non-poor*

Third, violence and the continual increase in crime since the 1970s have eroded the welfare of all Colombians. Poor households bear the brunt of homicide and domestic violence, and young Colombian males face an extremely high risk — even by Latin American standards—of being murdered. In particular, uneducated women and spouses of uneducated men bear a
disproportionate share of domestic violence. In contrast, the better off bear a disproportionate share of the burden of property crime, extortion, and kidnapping. They are more likely to be victimized, modify their behavior because of fear of crime, feel unsafe, and invest in crime avoidance. After tripling from 1970 to 1991, homicide rates decreased moderately in the 1990s, while extortion, kidnapping, car theft and armed robbery rates kept growing. The violence trend is mostly associated with the illegal drug trade and the presence of illegal armed groups, and Colombia is now the world's largest producer of cocaine and has recently become a significant supplier of opium poppy and heroin. Moreover, the social costs of violence are amplified by the demand of public resources to attend to the victims and prevent further security deterioration. The armed conflict in rural areas has also created an increasing trend in the numbers of internally displaced population—at least 1 million—further increasing the pressure on public resources. Public expenditure on justice and security has more than doubled its share of gross domestic product (GDP) during the last decade, and private expenditure on security seems to be increasing even more rapidly.

In addition to its direct burden, violence disrupts the market economy and imposes a considerable psychological cost on those populations who are not directly victimized. The disproportionate concentration of property crime victimization among the better-off members of the population has serious, undesirable economic consequences such as lower levels of investments and growth, and higher migration rates among the most educated. The concentration of crime victimization among small business owners has a perverse effect on economic efficiency, reducing investment and employment in poor urban communities. For its part, the concentration of homicide and domestic violence among the worse-off, besides its obvious effects on the well-being of the victims, imposes a psychological and economic burden on their relatives and increases their chances of enduring pathological and dysfunctional behaviors, especially among children. This ultimately erodes socioeconomic mobility and contributes to the perpetuation of poverty. Thus, as long as poor, middle-class, and rich Colombians continue feeling defenseless outside their homes, and poor Colombian women also experience similar feelings inside theirs, the possibility of recovering economic prosperity and equity seems more elusive.

Economic and social development gains have been resilient to growing insecurity

Fourth, three main welfare fundamentals: 1. household income, 2. social development, and 3. personal security, do not evolve in complete harmony. Sporadically, they diverge and turn out to be in partial contradiction. Despite two decades of persistent security deterioration, Colombia experienced unambiguous improvement in social and economic indicators. Moreover, social investment in human resources showed some healthy robustness relative to recent market instability. Only recently, probably as a result of the economic recession, school enrollment has been declining.

Vulnerability: with the exception of IDP, characteristics of the poor are persistent. Nevertheless the unemployment of household heads is becoming increasingly important

Fifth, during the last two decades, the populations most vulnerable to poverty have maintained a relatively constant set of characteristics; albeit, those characteristics have become more polarized over time. Poverty, here defined in the monetary sense, is generally associated with at least one of the following states: low skills, lower employment rates, higher dependency ratios (number of children per adult), and lower wages. The first three predominate among poor households in Colombia. During the 1990s, the likelihood of escaping poverty was increasingly dependent upon: having less children, having more working-age members with postsecondary education, and having access to employment for members other than the household head. Contrary to what could be expected, the presence of the elder reduces the risk of poverty. Homeowners and middle- to high-age-headed households are doing better. Poverty may also arrive in less typical
circumstances, that is from low-frequency events that bring devastating welfare effects: for example, when the head of the household loses employment, or a disabled member is present in the household, or the household has recently migrated, the latter presumably because of displaced populations in the late 1990s. Population displaced by the armed conflict constitutes one of the most vulnerable groups. In addition to the burden of displacement, their demographic characteristics exacerbate their vulnerability and deteriorate their living conditions. In contrast to the urban situation, rural poverty remains much more severe and represents a higher share of total poverty. Moreover, the fact that household characteristics alone appear insufficient to explain the higher level of rural poverty relative to urban, underscores the importance of other non-demographic determinants of rural productivity, namely, infrastructure, natural resources, and technology, in order to explain the rural-urban development gap. In summary, the faces of the poor are typically children of all ages, young low-to-middle-skilled household heads, recent migrants, and non-homeowners. These groups are clearly worse off than pensioners, the college educated, the elderly, and non-recent urban migrants.

**Economic growth was instrumental for poverty reduction**

Sixth, income per capita growth is the dominant factor behind the gains and losses in urban poverty from 1978 to 1995. In this period, income per capita for the average Colombian household became 92 percent higher. During the 1980s and early 1990s, economic growth explained almost completely the 22-percentage-point reduction in urban poverty. In the same way, during the recent recession, poverty increased because of the combined effect of negative growth and increasing inequality. In particular, the extreme poverty rate appears more sensitive to growth than the “normal” poverty rate. Nevertheless, the unfortunate declining trend in the elasticity of labor demand to growth is creating more obstacles to transforming future economy-wide growth into income per capita growth through higher household employment ratios. This problematic trend justifies a critical assessment of all the policy instruments—both macro and micro—that might be distorting the labor skill intensity of private investment. Finally, through its detrimental effects on growth, the armed conflict in Colombia is jeopardizing any attempt to reduce poverty.

**More education and lower fertility were crucial for income per capita growth**

The household characteristics that explain most of income per capita growth during the last two decades have been the rise in education levels of the labor force and the reduction in the dependency ratios—through smaller family size—but not many changes in employment ratios or wages. However, among households with low-skilled heads, income per capita gains are also explained by a third factor: higher real wages. Not only is the direct impact of education on income important—in terms of having better skills to sell in the labor market—, indirect effects are crucial as well. Education beyond high school buys substantial improvements in wages. Better education—especially of spouses—improves their chances of a high household employment rate—a key factor in escaping poverty. Education—especially women’s—helps to reduce fertility, thus increasing per capita income. Finally, education also protects against domestic violence. In summary, the evidence shows that, in Colombia, education seems to play the single most important role among all social policy instruments.

**Job losses generate most of the poverty rise during the economic recession**

During the recessive period, most of the observed urban poverty increase of 7.5 percentage points was explained by job losses, and the remainder by lower wages. The asymmetric dynamics of job creation and wage adjustment between wage earners and self-employed sectors explain the outcome. Without any wage-downward flexibility, the market adjusted through job losses for wage earners during the recession—6 percent of urban households were affected! Some of those
households managed to become self-employed, and took a severe drop in labor earnings, and the rest were left without any labor income.

**Rising inequality partly eroded potential welfare gains**

Seventh, the rising trend of inequality reduced the potential welfare gains of Colombians up to 1995 and aggravated the welfare losses during the economic recession in the late 1990s. In Latin America, a region of relatively high income inequality, Colombia ranks near the top; in 1999, the Gini coefficient had reached a value 0.57. That is, the expected difference in income between any two Colombians chosen at random had been increasing over time, and it was responsible for a welfare loss - for the worst-off individual - of 18 percent between 1978 and 1995, and an additional 5 percent loss in the late 1990s. The dynamics of urban and rural inequality tend to diverge: while urban inequality rose continually during the whole period – deteriorating substantially during the 1990s –, rural inequality fluctuated. Despite the importance of between-rural-urban inequality, within-group inequality has an increasingly dominant role in explaining the national trend. Education is the most important variable in understanding income inequality. By income sources, labor income is the driving force behind the observed trend, but pensions is the most unequalizing income component among non-labor income sources.

**Greater skill-wage differentials raised income inequality in the 1990s**

To some extent, the inequality reductions of the 1960s and 1970s have been lost during the last two decades. This result is a combination of counterbalancing effects of equalizing and unequalizing forces that include wage differential by skills, non-labor income – pensions mainly – family size, supply of more educated workers, changes in labor participation, and occupational choice between being self-employed a wage-earner. Decomposition analysis shows that, paradoxically, the persistent equalization of education level of the labor force brought about expected lower income inequality for rural areas. However, the opposite happened in the urban centers, since skill-wage differentials were much higher. Moreover, increasing participation of less skilled women generated asymmetric effects between household income and individual wage distributions: regressive for the latter yet progressive for the former. Furthermore, while households appear to exacerbate static inequality among workers, they also attenuate the changes in individual income inequality produced by each income determinant factor. Sub period analysis reveals that the dynamics of income inequality might be decomposed as a combination of persistent and fluctuating forces. The former closely associated with demographic and the labor supply side, namely, the increase in education endowments, the reduction in family size, and the increase in labor force participation, and the latter with short-run fluctuations of labor markets. The aggregate effect of persistent inequality determinants leads us to expect an increasing deterioration of equality in the long run, unless the trend of increasing skill wage differentials is reversed. For these reason, special attention should be paid to postsecondary education, since the increasing earning differential of urban workers with postsecondary education relative to high school graduates is partly attributed to the sluggish supply of these high-skilled workers.

**Government Actions and Priorities for the Poor?**

Public policy instruments may tackle poverty by attacking its source or by attacking its most detrimental consequences, or both: that is, attacking the lack of income-earning opportunities and/or attacking the lack of access to basic social services. The profile of vulnerability to poverty in Colombia provides a guide for evaluation and choice of policy instruments. Lack of access to basic social services usually brings irreversible losses of human capital to vulnerable cohorts, especially children. Consequently, since those groups have also been found to be the most
vulnerable to poverty in Colombia, subsidizing human capital accumulation helps to break the vicious cycle of poverty by putting assets in the hands of the children of the poor, as improving social mobility reduces inequality and poverty in the long run. At the same time, human capital investment constitutes a strategic component of long-term growth, reinforcing long-term poverty reduction. On the other hand, income opportunities for the poor in the short run are strongly correlated with the business cycle and the unemployment level. Therefore, the welfare of the poor is quite sensitive to macroeconomic management -- fiscal balance, interest rates, exchange rates, and inflation -- through its impact on both the level and the variability of aggregate economic activity. Since volatility has shown an increasing trend during the last decade, safety net instruments, such as direct transfers in cash, kind, or physical assets, are becoming more relevant remedies for transitory insufficient income.

Social services in the 1990s: huge public expenditure effort with mixed results across sectors

Eight, during the last decade, Colombia has made a sustained effort to raise public social expenditure (PSE) to 15 percent of GDP, with considerable benefits for the poor. The 1990s were a period in which total public expenditure and social public expenditure grew rapidly and in similar proportions and, at the same time, major public sector reforms were introduced in subnational public finance, mainly decentralization, pensions, and health insurance. In spite of its growth, Colombian PSE is still 10 percent below the Latin American average. Ninety percent of PSE is devoted to pensions, education, and health. Despite a very limited coverage of the retired population, pensions is the largest category (40 percent), with minimal benefits for the poor, and with a fiscally unsustainable, explosive growth that will eventually shift the composition of PSE away from human capital investment. Comparisons across social services (education, childcare, health, housing subsidies, and public utilities) reveal substantial heterogeneity in the degree of administrative centralization, as well as targeting financial mechanisms.

Between 1992 and 1997, all social programs, with the exception of childcare and health treatment, increased their coverage rates and became more pro-poor. In most sectors, however, public expenditure growth outpaced that of service delivery. Although overall incidence of PSE is broadly neutral, the poor benefit substantially, and its estimated impact on poverty reduction seems substantial. As a result of the universal health insurance reform of the early 1990s, insurance coverage almost doubled and became much more. Moreover, the simultaneous introduction of means-targeted subsidized health insurance for the poor reduced the poor’s out-of-pocket expenses in the event of illness. Simultaneously, satisfaction with services improved across all income groups. Nevertheless, health immunization coverage suffered a severe drop during the last decade, and health treatment rates remained stagnant across income groups, despite the considerable addition of resources infused by the reform.

High positive economic growth during the next decade is imperative to reverse the poverty increase brought about by the recent recession

Ninth, recovering high economic growth is a necessary condition to return to the poverty reduction path that the Colombian economy enjoyed up until the recent recession. Average annual GDP growth would have to be at least 4 percent during this whole decade in order to reduce poverty to the pre-recession level. Poverty-reducing growth will depend crucially upon the recovery of the private sector, the job provider for Colombia’s poor households. Such outcome will require several changes. In order to recover a favorable investment climate, the public sector is to be reformed so as to ensure fiscal sustainability. For this purpose, pension reform would generate substantial public resources in the medium term without hurting the poor. Also, real rates of interest must be set at efficient levels. The elasticity of employment to economic growth must also be recovered, especially for low-skilled workers, via recovery of the construction sector. This recovery will depend upon not only policies to re-establish a vigorous flow of
mortgage credit, but also upon labor market policies that avoid inefficient payroll taxation and an excessive minimum wage.

Social program priorities for the poor: childcare, health, and basic infrastructure

Tenth, despite an increase in individuals covered, there are still substantial shortfalls in the coverage rate of some social programs, concentrated primarily among the lower-income groups. At the end of the 1990s, the highest priorities for social service expansion among the poor, when characterized as those which register the widest coverage gaps vis-à-vis middle- and high-income groups, appeared to be childcare, sewerage, health treatment, and health insurance. For the upper-low and middle-income groups, priorities are similar, with the important addition of tertiary education. However, at the current marginal cost, a substantial increase in the coverage of the latter is prohibitively expensive, and rather the aggressive expansion of college credit should prove to be an efficient solution, since its private returns are very attractive and the private sector has shown a very dynamic response market demand.

Safety-net programs become more valuable policy instruments in an environment of increasing economic insecurity

Eleventh, in Colombia the poor are disproportionately exposed to economic insecurity, or to the risk of facing an unexpected temporary loss of income. After being considered one of the most stable economies in the region, the volatility of the Colombian economy has nearly doubled during the 1990s. Under those circumstances the “archipelago” of traditional safety net programs was both fragile and insufficient. Moving towards a more integrated social protection policy would be significantly beneficial for the poor, who are exposed to increasing economic risk during the current economic slowdown. This policy should rest on three main pillars: a set of social assistance programs -for the chronically poor-, a social insurance system -for those exposed to idiosyncratic risk- and, a counter-cyclical public expenditure component -for covariate risk-.

While raising family health insurance coverage among the poor would improve social insurance, recovering homeownership among the poor could enhance self-protection, and improving street safety in poor neighborhoods would raise protection of life and property. At the same time, Colombia should expand its menu of instruments of social assistance in order to face the challenges of some vulnerable groups that are receiving too little or no help. In order to help the most severely affected—in particular households with unemployed heads-, safety net mechanisms should address the undesirable temporary effects of the recession on current welfare and help prevent irreversible or permanent losses of human capital accumulation.

Other key social programs for specific vulnerable groups. The extension of individual health insurance to family coverage—on both the subsidized and contributory regimes—after Ley 100 (1993) represents a major improvement in protection from economic insecurity. However, health treatment rates for the poor is still much lower relative to those of the non-poor. Homeownership, especially for the poor,- has plummeted during the recent recession period. Thus, a self-protection device through asset ownership is being eroded, increasing the vulnerability of the poor. Housing policy should focus on: allocating more resources to affordable housing – Vivienda de Interés Social- redesigning targeting methods to control leakage and modifying mortgage credit markets regulation to avoid the excessive and inefficient real interest rates in effect since the mid-1990s. Unemployment of low-skilled household heads has increased considerably during the recession, with devastating impact on poor households. Therefore, low-skilled workers should be given priority in current emergency employment and subsidized health insurance programs. Poor households, and uneducated women in particular, are disproportionately exposed to domestic violence; hence, both the judiciary system and the public family welfare organization (ICBF,
Instituto Colombiano de Bienestar Familiar) should coordinate their efforts to improve prevention of these types of episodes and protect the individuals exposed to evident risk.

Children and youngsters of all ages are the demographic groups most exposed to poverty. Public programs should attend to their demand for social services to prevent irreversible losses of human capital investment with perverse effects on social mobility. Increasing the coverage of nutrition, childcare, and preschool education will benefit not only the children at risk but will give many poor families the opportunity to increase the labor force participation of non-head members and improve the odds of escaping poverty. Finally, young high school graduates face a disproportionate share of unemployment. Labor skill development through technical training and special exemptions of payroll taxation could help to improve the employment opportunities and improve their odds of escaping poverty. Moreover, young males’ exposure to enormous homicide risk, with documented post-traumatic effects on survivors and witnesses, justifies specific preventive policies from both the judiciary and the public family welfare institute. On the other hand, decreasing the risk of unwanted pregnancy among young females in poor neighborhoods, with could have negative effects on social mobility, is a good reason to expand reproductive health programs among this demographic group.

* * *

CONCLUSIONS

The robust poverty-reducing trend that Colombia enjoyed up to the mid 1990s, has been interrupted by a severe recession that raised poverty rates back to the levels observed in 1988. Even if the positive growth path is promptly reestablished it will take more than a decade to return to the poverty levels of 1995. Moreover, increasing violence and crime has eroded the welfare of all Colombians, in particular the welfare of poor households who bear most of the burden of homicide and domestic violence, and of young males who face a very high risk of homicide. This represents a serious blow to welfare improvement and a major challenge in terms of policy choices to help the poor recover their levels of welfare and, more importantly, prevent irreversible losses in their human assets acquisition that could increase structural poverty in the long run.

The most typical vulnerable groups are children of all ages, households with younger and less educated heads, displaced population, and non-homeowners. In order to help the poor, government must combine short and long term actions to attack both the source of poverty—lack of income—and its most detrimental consequences. Accordingly, in order to increase household income per capita primary objective in the short run is to attain higher economic growth and lower unemployment. In the long term, priority should be given to efficient acquisition of human capital assets that ensure growth and induce pro-poor behavior—namely, lower fertility and higher female labor participation. In terms of fighting the undesirable long term consequences of poverty, the government should maintain subsidized provision of essential social services to the poor to promote efficient human and nonhuman asset acquisition, and, in the short run, it must consolidate and expand social safety net protection mechanisms. All this requires a coordinated government action in five policy areas: security, economic growth and employment, childcare and education, urban infrastructure, and healthcare. More importantly, those sectoral priorities should be politically feasible, given the fact that, according to Latinobarometro, nearly four out of every five Colombians believe that public policy should focus primarily on violence, unemployment or education.
In summary, political institutions in Colombia face top policy challenges in six main areas:

- **Security**: Address governance issues to provide security of life and property to the common citizen.

- **Growth and employment**: achieve macroeconomic and fiscal stability to recover sustainable growth rates in order to increase job creation and return to the poverty reduction path.

- **Social Protection**: match the increasing economic volatility by developing an integrated social protection policy to enhance risk management instruments.

- **Childcare and education**: improve efficiency and equity in the provision of childcare and education – in preschool and technical training – in addition to expanding educational credit to tertiary education.

- **Infrastructure**: expand coverage of sewerage and recover the trend of increasing homeownership.

- **Health**: Improve efficiency in health treatment and reduce targeting leakages in the subsidized insurance regime.
INTRODUCTION

Until 1996, Colombia enjoyed high, sustained and stable growth. After 1996, however, Colombia is suffering its most severe economic crisis since the 1930s. Its macroeconomic performance has deteriorated significantly. Growth rates have declined sharply, the public sector has increasingly gone into deficit, and the unemployment rate has jumped to about 20 percent. These adverse economic situations emerged in a decade in which public policy reforms were abundant and macroshocks were significant. In addition to the constitutional reform of 1991, active public policy enforced structural reforms in key areas: subnational public finance, health care and insurance, pensions, labor markets, central bank framework, trade, and capital flows.

Simultaneously, risk indicators worsened in key areas. After being considered as one of the most stable economies in the region, recent performance has shown greater volatility. International risk ratings of the Colombian economy were recently downgraded, increasing the cost of external borrowing. Financial sector performance has deteriorated and become more fragile, with significant bailout costs. The judiciary system has been stretched to its limits by increasing levels of crime and violence. Moreover, informal authoritarian regimes enforced by paramilitaries and local guerrilla warlords are in effect in some rural areas.

The effects of those events on the welfare of the average Colombian can easily be anticipated. However, it is not clear how large the welfare losses are. How much have these losses affected the poor and other vulnerable groups? What types of vulnerabilities have emerged in the new economic environment? How appropriate was the government’s response in terms of social investment and social protection? What are the main public policy challenges and opportunities to attack poverty in the next decade?

This report appraises the impact of economic development on the welfare of the Colombian population —the poor in particular— during the last two decades. The report also identifies priority areas for public policy action to help the most vulnerable groups.

Welfare assessment covers three key areas: income, access to social service, and personal security. Welfare assessment also compares those indicators between urban and rural areas and across other regional partitions.¹ In summary, this report addresses two main questions:

How are the poor doing and why?

and

What is the Government doing for the poor?

This volume is divided into five chapters. Chapter I shows how the poor have been faring during the last two decades, including the recent recession. Sections evaluate welfare outcomes in

¹ Issues related to economic insecurity and social protection are presented in another simultaneous Bank report. See Rawlings, L. (2002)
three dimensions: economic welfare, access to social services, and exposure to crime and violence. Chapter 2 identifies the "faces" of the poor, i.e., the demographic and social characteristics of those groups most vulnerable to poverty. The Colombian poverty profile provides a guide for both the diagnostics and the evaluation and choice of policy instruments. Chapter 3 analyzes the effects of labor market forces upon the poor. In particular, the chapter investigates what is driving earning opportunities and how these opportunities modify the dynamics of poverty directly, and indirectly, through income inequality. Special attention is placed on (a) differentiating the impact of increasing unemployment and wage reductions on poverty during the recent recessive period and (b) understanding to what extent income per capita growth is explained by more schooling, lower fertility, higher participation in the labor markets, and higher real wages. Next the sources of increasing trends of income inequality are examined, or the impact of changes in returns to skills relative to changes in the distribution of skills endowments and changes in labor market participation. Chapter 4 examines to what extent public social expenditure benefits the poor, and identifies priority sectors for coverage expansion. One section is devoted to studying the performance of the subsidized health insurance system, an innovative social policy instrument introduced in the 1990s. Special attention is given to its interaction with the new proxy means targeting mechanism, SISBEN. Chapter 5 presents the conclusions and the main policy lessons and recommendations. Volume II contains background papers.

Background: Changes in the economic environment during the last two decades

On the basis of GNP per capita—$2,200 in 1997 (Table 1A)—Colombia is considered a lower-middle income country by international standards. Colombia, with a population of nearly 42 million as of 1999, is the third most populous in Latin America, with an expanding urban sector that accounts for nearly 62 percent of the total population. Similar to other Latin American countries, Colombian exhibits a high level of inequality, and, consequently, poverty incidence is relatively high vis-à-vis its level of development.

Table 1A. Colombia at a glance, 1980 to 1999

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Population (millions)</td>
<td>28.4</td>
<td>33.6</td>
<td>38.6</td>
<td>41.5</td>
</tr>
<tr>
<td>Population growth rate</td>
<td>2.2%</td>
<td>2.0%</td>
<td>2.0%</td>
<td>1.8%</td>
</tr>
<tr>
<td>GDP growth rate</td>
<td>4.1%</td>
<td>4.1%</td>
<td>5.2%</td>
<td>-4.3%</td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>7.71%*</td>
<td>10.3%</td>
<td>8.7%</td>
<td>19.7%</td>
</tr>
<tr>
<td>Rural</td>
<td>1.46%*</td>
<td>4.6%</td>
<td>5.0%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>26.4%</td>
<td>28.1%</td>
<td>19.5%</td>
<td>9.2%</td>
</tr>
<tr>
<td>Government debt (% of GDP)</td>
<td>-0.7%</td>
<td>-1.4%</td>
<td>-2.3%</td>
<td>-5.8%</td>
</tr>
<tr>
<td>Real effective exchange rate</td>
<td>146.68</td>
<td>87.34</td>
<td>100.00</td>
<td>102.68</td>
</tr>
<tr>
<td>Goods &amp; Services (% of GDP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exports</td>
<td>11.0%</td>
<td>12.0%</td>
<td>14.8%</td>
<td>18.2%</td>
</tr>
<tr>
<td>Imports</td>
<td>12.3%</td>
<td>10.2%</td>
<td>21.3%</td>
<td>19.2%</td>
</tr>
</tbody>
</table>

* 1978
The macroeconomic and sectoral environment in the 1980s and early 1990s

Even though Colombia successfully avoided the large macroeconomic imbalances that plagued Latin America at the end of the 1970s, it suffered from a shortage of capital in the early 1980s. The previous prosperity resulted from careful management of the coffee revenues from the earlier decade. Thereafter, the 1980s started with a strong economic slowdown; that is, the growth rate fell from an average of 5.4 percent between 1975 and 1980 to 1 percent in 1982. This was accompanied by a rising deficit in the balance of payments as well as in the public sector, and a financial crisis. Some banks collapsed, and various financial intermediaries were nationalized.

After the slowdown of the early 1980s, adjustment policies and the coffee bonanza of 1986 helped restore internal and external balances. To confront the crisis, the Colombian government reversed some of the liberal policies adopted previously, accelerated the devaluation, increased tariffs by 8 percent (average tariffs reached 34 percent in 1985), restricted public spending, instated a VAT tax, purged the financial sector, and provided support for social housing to stimulate growth. In 1986, the growth rate returned to more than 5 percent, the current account balance was positive, and the public spending deficit remained under control.

In the latter part of the 1980s, the economy diversified away from coffee, unemployment fell, and growth was robust. Exports rose from 15.6 to a high of 22.7 percent of GDP between 1986 and 1991. Nontraditional exports increased from 32.1 to 49.1 percent of total exports during the same period, while oil, gas, and other minerals also rose from 18.6 to 32.6 percent of total exports. Unemployment had peaked at 14.7 percent in 1986, but subsequently oscillated between 9 and 12 percent in the late 1980s (Núñez and Bernal, 1998). The growth rate also remained relatively high in the latter half of the 1980s, averaging at an annual rate of 4.5 percent between 1986 and 1990.

The early 1990s saw an array of liberalization policies in trade and capital flows. Average tariffs fell from 44 percent in early 1990 to only 11.8 percent in March 1992 (Ocampo, et al., 1998). The exchange rate quickly became overvalued, partly because of large inflows of capital—a mix of fresh investment in new oil fields, increased borrowing by firms, and some repatriation of drug money—encouraged by the country’s favorable investment grading. The strong peso and trade liberalization hurt farmers hard and pushed up prices of non-tradables, especially real estate assets. Moreover, the International Coffee Pact collapsed in 1989, leading to a substantial fall in coffee prices.

At the same time, total public spending rose at a pace incompatible with sustainable fiscal policy. Until the early 1990s, prudent management of the Colombian economy allowed for low government debt levels that, together with low inflation rates by Latin American standards, led to steady—although moderate—growth rates. However, public spending in the 1990s pushed its share from 24 to 36 percent of GDP between 1990 and 1998. This corresponds partly to constitutional reform calling for the decentralization of public finances, which led to increasing reassigned social spending to local governments; this reassigned was not followed by corresponding cuts in central government spending. In addition, public expenses in crime fighting and security increased owing to the escalation of crime and violence, while public sector pensions demanded increasing outlays (these public sector pensions were excluded from the social security reform in 1993). The government financed its budget deficit mainly through a combination of tax reforms—including greater reliance on VAT and increased measures to reduce tax evasion—and financing through commercial bank credit. In addition, after 1995, Colombia increased its reliance on external financing through bond issues. Total gross external central government debt increased by 125 percent between 1994 and 1999, while internal debt increased by 260 percent. The fiscal position continued to deteriorate as the economic slowdown adversely affected tax revenues. In 1998, the current account and fiscal deficits both ran at 5
percent of GDP. The country lost its investment-grade rating, which raised its cost of credit even more. Moreover, when the credit bubble burst, property prices plummeted, several banks filed for bankruptcy, and the Government was burdened with even more liabilities as it restructured the financial sector and provided mortgage debt relief. In addition, the January 1999 earthquake that affected Colombia’s main coffee-growing region led to unforeseen government spending. At this rate, the public deficit was heading toward unsustainability.

Adverse macroenvironment in the late 1990s: Recession and risk deterioration

The lack of fiscal discipline pushed Colombia toward a slowdown after 1996, and into recession in 1998–99. The GDP in 1999 contracted by more than 4 percent, and private investment fell to 4 percent of GDP, from 13 percent in 1995. Fiscal imbalances in an environment of passive monetary authority—Banco de la República—created persistent pressure to raise the rate of interest, inducing stock imbalances for households, firms and the Government itself. For households, Echeverry (2002) shows that between 1991 and 1997, mortgage credit exploded from 7 percent of GDP to 13 percent, which in turn raised debt service and interest payments. Once the real state bubble exploded, housing prices fell significantly inducing significant losses in net household wealth. Moreover, between 1991 and 1997, formal resources available for business investment shrank because of the increase in mortgage debt service relative to total private savings. In addition, Colombia had to cope with the hurtful effects of increasing violence and internal armed conflict, and 1999’s devastating earthquake in the Central coffee-growing region.

After being considered one of the most stable economies in the region, recent performance of the Colombian economy has shown greater volatility. The Colombian business cycle has suffered dramatic change; cycle duration is now much shorter, with higher peaks and deeper troughs. Before 1996 the Colombian economy experienced relatively long business cycles of six to eight years in duration. However, the last cycle’s duration was less than five years; not only the duration changed, but the amplitude of the last cycle was 50 percent larger than the amplitude of cycles experienced between the late 1970s and early 1990s. Moreover, according to Partow (2002), the volatility of the Colombian economy during the 1990s increased relative to the two previous decades. Contrary to the Latin American trend, volatility nearly doubled for a number of macroeconomic and fiscal variables, with the exception of the terms of trade (see Table 1B). The increasing volatility shown by the Colombian economic factors led to the recent downgrading of the risk-based ratings given to the Colombian economy, increasing the cost of external borrowing. Financial sector performance has deteriorated and has become more fragile, with significant bailout costs (Partow, 2002; Acosta, 2000).

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2 Government debt servicing costs rose from 2.2 in 1994 to about 4.4 percent of GDP in 2000.
3 The 1991 Constitution determined that the Central Bank of Colombia—Banco de la República—be set as an independent body devoted exclusively to controlling and reducing inflation.
4 Echeverry (2002) estimates that between 1991 and 1997, interest payments relative to private savings rose by 3.3 percentage points.
5 Echeverry (2002)
6 The cost of the internal armed conflict and violence suffered by Colombia in terms of GDP growth has been estimated by Echeverry (2002) at 1.3 percentage points and by Rubio (1996) at 2 percentage points.
7 Rodrik (1999) estimates the probabilities of entering episodes of high volatility for various countries, and shows that Colombia faced a probability very close to zero for the last 30 years.
8 See Echeverry, Santamaría, and Escobar (2002). According to this article the main cause behind the change suffered by the Colombian business cycle is the Central Bank reform of the early 1990s. Countries with monetary policy set by an independent body are should experience greater volatility but lower resulting inflation, which is expected to bring greater economic growth.
9 A number of authors—among them Gavin and others (1996), Herrera, Perry, and Quintero (1999), and IDB (1997)—have pointed out that domestic volatility in many countries of the region declined during the 1990s.
Table 1B. Colombia’s volatility

<table>
<thead>
<tr>
<th></th>
<th>1970s</th>
<th>1980s</th>
<th>1990s</th>
<th>1990s: 1980s*</th>
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<tbody>
<tr>
<td>GDP volatility</td>
<td>1.8</td>
<td>1.5</td>
<td>2.7</td>
<td>81%</td>
</tr>
<tr>
<td>Fiscal volatility</td>
<td>1.3</td>
<td>1.4</td>
<td>2.7</td>
<td>91%</td>
</tr>
<tr>
<td>Exchange rate volatility</td>
<td>1.1</td>
<td>1.5</td>
<td>2.4</td>
<td>57%</td>
</tr>
<tr>
<td>Monetary volatility</td>
<td>6.8</td>
<td>3.5</td>
<td>3.7</td>
<td>56%</td>
</tr>
<tr>
<td>Terms of trade volatility</td>
<td>13.0</td>
<td>10.4</td>
<td>5.8</td>
<td>-44%</td>
</tr>
</tbody>
</table>

*1990s: 1980s indicates the change in volatility in the 1990s relative to the 1980s

Note: Data represent the standard deviation, in percentage terms, of changes in GDP, in the fiscal balance/GDP, in the real exchange rate index, in M1 growth, and in the terms of trade index. Source: Partow (2002)

In remote areas, the rule of law is under severe challenge and, overall, the judiciary system is stretched to its limits. Crime and violence—political, drug related, and normal street crime—remain high.\(^{10}\) The widespread practice of extortion and kidnapping—which pervades all strata of society—is increasingly weakening property rights over physical assets and thereby undermining the market economy. Moreover, de facto authoritarian regimes enforced by local warlords—paramilitaries or guerrillas—effectively rule some rural areas.

Judicial uncertainty is leading to unpredictability of public mandate in key policy areas, thus reinforcing market uncertainty. A number of recent judicial rulings created increasing uncertainty about the “rules of the game” in several key economic markets, such as labor, mortgage credit, and the private provision of education. In addition, constitutional rulings on pensions rights have cast doubts about the contingent liabilities of the public sector.\(^{11}\) As a result, political mechanisms appear to have lost effectiveness in solving the fiscal crisis. For example, it is relatively uncertain that the reforms of the pension system eventually passed by the elected legislative branch—which are urgently needed to alleviate the unsustainable fiscal deficit—will become a public mandate, since the reforms may be overturned by the Constitutional Court.

Supply shocks, structural reform, and employment generation

During the last decade, the Colombian economy experienced supply shocks and several structural reforms that significantly modified the labor market environment. Reforms include the Labor Reform of 1990 and the Pensions and Health Insurance Reform of 1993, as well as a string of trade liberalization measures that dismantled import quotas and reduced average import tariffs from 40 percent in 1990 to 11 percent in 1993. Furthermore, free trade agreements were signed with Mexico and Venezuela, and the capital account was opened in 1993. The economy also enjoyed supply shocks caused by major discoveries of oil reserves, which led to expectations of exchange rate appreciation and a jump in export revenues in the second half of the 1990s.\(^{12}\) In its Poverty in Colombia report (1994), the Bank warned about the danger of missing this opportunity to attain a higher growth path if prudent fiscal policy was not followed and public resources were not invested in high return projects that create human and physical capital.\(^{13}\) Finally, decentralization transferred resources to the municipalities to pay for public education and health, under the presumption that service delivery should improve. The Bank also warned that institutional weakness of the social sector at the local level could further increase community disparities.\(^{14}\)

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\(^{10}\) Homicide rates are roughly 59 per 100,000, among the highest in the world.

\(^{11}\) Below, see Box 1 about mortgage credit.

\(^{12}\) Ex-post oil revenues were below expected levels owing to lower oil prices in this period.

\(^{13}\) World Bank (1995), Chapter 2, p. 28

There was satisfactory growth performance up to 1995, but declining elasticity of employment to GDP. Although the growth performance of the Colombian economy was satisfactory between 1978 and 1995, the elasticity of urban employment to GDP declined as the growth rate picked up in the early 1990s. The country’s GDP per capita grew at an average annual rate of 1.8 percent, with very low instability. Economic growth was higher during the second sub-period: On average, the GDP growth rate went from 3.3 percent in 1978–88 to 4.3 percent in 1988–95. However, labor demand response was less intense, so that employment growth fell from 5.2 to 3.2 percent for the corresponding sub-periods.

Increasing difficulties for low skill job creation in the 1990s. Lower elasticity of job creation relative to growth should be associated with weaker labor demand, although not exclusively. Several macroevents and structural reforms brought (a) an exchange rate appreciation and labor legislation reforms in the early 1990s that increased the relative cost of labor relative to capital and made job creation for less skilled workers more difficult; (b) a tendency of domestic industry to invest in more capital-intensive technology, as exposure to international competition rose owing to tariff reductions and regional trade integration; (c) a gradual recomposition of productive activities toward more capital-intensive activities, as production shifted from agriculture and industry to mining and services; and (d) an increasing corporate tax rate during the early 1990s. Only one factor helped to reinforce the demand for low-skilled labor: the five-fold increase in construction activity in the early 1990s, closely related to exchange rate appreciation, which derived from unprecedented capital inflows that increased the relative price of non-tradables to tradables. However, the construction bubble collapsed during the late 1990s and consequently reduced the dynamism of labor demand for less skilled labor.

Rising costs of wage-earning job creation relative to self-employment. The substantial rise in payroll taxation also made the generation of wage-earning jobs increasingly difficult vis-à-vis self-employment. In fact, during the 1988–95 sub-period the loss of job creation dynamism was mostly concentrated in wage earners and less in self-employment. Between 1978 and 1988, the rate of growth of self-employment was 1.5 times the rate for wage earners; however, from 1988 to 1995, the former rate becomes twice (!) the latter. Although the labor reform of 1990 (Ley 50) somewhat reduced labor costs by diminishing the expected value and the risk of cost of dismissal—"cesantías"—subsequent labor legislation reforms produced the opposite effect. The reform of social security regimes, including health insurance and pensions (Ley 100 de 1993), resulted in an almost doubling of payroll contributions (!) and produced a substantial increase in the labor cost gap between wage earner and self-employed workers.

Major changes in the socio-demographic structure of the working population.

During the last two decades, the socio-demographic characteristics of the working population registered positive changes. There were changes in fertility, educational attainment, and female labor force participation. Fertility rates decreased throughout the entire period. School attainment

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15 A standard deviation of 0.02 percent. Moreover, a cross-country study by Rodrik (1999) shows that the probability of the Colombian economy entering episodes of "high volatility" in the last 30 years was close to zero.

16 Nevertheless, cycles were not completely absent and the economy went through a moderate recessive period during the first half of the 1980s. In the second half of the 1980s, macroeconomic policy kept a competitive exchange rate and a moderate public deficit. Interest rates fell and some trade restrictions were lifted. Nontraditional exports grew at a high pace. After a low level of activity in 1991, the economy recovered once again in 1994 and 1995.

17 In addition to the liberation of the capital account in 1993, the economy suffered supply shocks derived from major discoveries of oil reserves, which resulted in a jump in oil export revenues and expectations of exchange rate appreciation in the second half of the 1990s. See Cardenas and Velez (1997).

18 Payroll contributions increased 13 percentage points (!), up to 13.5 percent for pensions and 12 percent for health insurance; this was on top of preexisting payroll taxes of 9 percent, earmarked for labor training, and social welfare programs. In summary, including remunerated annual leave and prima semestral, the reforms of 1993 lifted total payroll contributions to 59.4 percent for regular workers.
rose and became more egalitarian. The working population gained labor market experience and became more educated. Declining gender earnings differentials, higher educational attainment, and lower fertility rates helped to increase female labor force participation throughout the entire period. Male heads and other household members began to move away from wage-employment toward self-employment, especially during the 1990s.

Concentration of land and rural credit

Land and credit: deconcentration started in the middle 1980s. Ownership of land went through a period of concentration from 1974 to 1984. Since then land concentration decreased as the land-value Gini coefficient decreased from 0.61 in 1984 to 0.59 in 1999. International comparisons show that in 1996 concentration of land in Colombia was less than that in Czechoslovakia, Paraguay, Brazil, Argentina, and Panama. In a period of subsidized interest rates and rationing of credit, credit was particularly concentrated among large-scale producers between 1974 and 1984, but since then competitive interest rates have tended to deconcentrate it (Leibovich and Núñez, 2000).

Displaced population and armed conflict in the rural areas

From 1985 to 1999, between 1.2 and 1.5 million Colombians are estimated to have been forced to leave their homes, owing to the escalating military conflict. Most of those displaced persons remain internally displaced people (hereinafter IDP) and reside in medium and large cities. Forced displacement appears to be concentrated in a few departments. Even though studies of IDP in Colombia are few and their results are not comparable, the main expulsion areas appear to be Antioquia (Central region); Santander and Meta (Oriental region); Córdoba, Magdalena, and Sucre (Atlantic region), and more recently Chocó and Nariño (Pacific region) and Caquetá (Central region) (Erazo, et al., 2000). According to The Economist (2001a and 2001b), these departments are also the ones that receive the greatest amount of petroleum royalties and the ones in which drug traffickers acquired most land during the 1980s.

Illicit crops and rural development

Colombia is now the world's largest producer of cocaine and has recently become a significant supplier of opium poppy and heroin. Production of cocaine grew from 158 metric tons in 1995 to 326 metric tons in 1999, with the area under cultivation increasing from 50,900 to 160,119 hectares in the same period (UNDCP 2000). In addition, Colombia hosts most of the clandestine manufacturing laboratories, which reportedly processes 80 percent of the world's demand for cocaine. In 1994, coca became Colombia's fifth most valuable agricultural activity, behind cattle, poultry, coffee, and sugar (Jaramillo 1998). Production of opium reached 102 metric tons in 1998, placing Colombia as the world's fourth largest producer (3 percent of the world's production). The area of production increased from 5,200 hectares in 1995 to 7,400 in

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21 On January 25, 1999, the Armenia earthquake in Quindío affected this department, as well as Risaralda, Caldas, and Tolima in the Central region, and Valle del Cauca in the Pacific region, leaving 150,000-200,000 homeless and also causing some displacement.
22 "A Survey of Colombia. Drugs, War and Democracy." The Economist. April 21, 2001. It is estimated that drug barons may have acquired more than 1 million hectares in cattle farms and other estates at that time.
23 The figures were 34,000 hectares and 51 tons in 1988.
24 The UNDCP reports seizure of 470 labs in 1996 and 14 tons, 208 in 1997 for 41 tons of coca paste. For heroin, 81 labs were seized in 1997.
The value of the poppy harvest was similar to that of beans, cassava, and sorghum in 1994. Colombia is also a minor producer of cannabis and is the second largest Latin American producer after Mexico.

Coca production tends to concentrate in (or near) the Oriental and the extreme south of the Central region. Typically, the coca leaf production areas are located far away from urban centers and in nontraditional agricultural areas. Most of the cultivated areas are in the departments of Putumayo, Caquetá, Guaviare, and Norte de Santander, and Bolivar, where production is rising. While drug eradication efforts have been successful in departments such as Caquetá and Guaviare, on a national level coca plantation has not diminished. The coca-growing areas overlap with the territories of the guerillas and paramilitaries.

In summary, during the last two decades Colombia has faced increasing difficulties in several key areas, resulting in a more challenging environment for economic and social development. First, worsened risk indicators, mostly owing to increasing economic volatility, financial sector fragility, and persistently high levels of crime and violence have stretched the judiciary and public security systems beyond their limits. Moreover, increasing concentration of illegal drug production—cocaine—in rural areas provided the economic base for de facto authoritarian regimes enforced by paramilitary and local guerrilla warlords. In turn the escalation of the armed conflict is pushing an increasing number of displaced population into urban areas. Second, this situation has emerged during a decade in which public policy reforms were abundant and supply shocks significant. Major discoveries of oil reserves produced a jump in export revenues in the second half of the 1990s and led to expectations of exchange rate appreciation. In addition to the constitutional reform of 1991, an activist public policy enforced structural reforms in key areas, such as sub-national public finance, health, pensions, labor markets, central bank framework, trade, and capital flows. A lower elasticity of job creation relative to growth reveals the increasing difficulties for low skill job creation emerged in the 1990s, especially for wage-earning jobs. Finally, on the bright side, the socio-demographic characteristics of the working population registered positive changes in declining fertility, higher educational attainment, and an increase in female labor force participation.
Chapter I. How Have the Poor Fared During the Last Two Decades and the Recent Recession?

Poverty trends in Colombia show substantial long-term progress with a recent setback. Poverty trends declined during the 1980s and during the first half of the 1990s. However, after a reduction of 20 percentage points from 1978 to 1995, poverty reversed itself and, in 1999, it returned to the level registered in 1988. Economic and social development gains have been resilient to growing insecurity. In other words, the three welfare trends given by household income, social development, and personal security do not match but, rather, diverge and are in partial contradiction. Despite two decades of persistent security deterioration, Colombia showed unambiguous improvements of social and economic indicators. Moreover, social investment in human resources showed some healthy robustness relative to recent market instability. Social development trends were positive in most sectors. In urban education, completion rates for primary and secondary schooling improved substantially. In rural education enrollment rates improved, especially for the 18–22 year olds. Child labor maintained a decreasing trend, despite being pro-cyclical, as in other Latin American countries. Similarly, child malnutrition and infant mortality have had persistent declining trends. Life expectancy improved approximately one year every two calendar years. Access to basic infrastructure had clear progressive gains. Urban coverage of most public utilities improved, but access to sewerage still has room for improvement. Violence and the continuous worsening of crime since the 1970s has eroded the welfare of all Colombians. However, poor households bear most of the burden of homicide and domestic violence, while young Colombian males face an extremely high risk of being murdered. In particular, uneducated women and/or spouses of uneducated men bear a disproportionate share of domestic violence. In contrast, the better off bear a disproportionate share of the burden of property crime, extortion, and kidnapping. The violence trend is mostly associated with the illegal drug trade and the presence of illegal armed groups. The armed conflict in rural areas has also created an increasing trend in the numbers of internally displaced population—at least 1 million—further increasing the vulnerability of these groups. Moreover, the concentration of property crime among business owners—big and small—has a perverse effect on investment, growth, and employment for poor households. Thus, as long as poor, middle-class, and rich Colombians continue feeling defenseless outside their homes and poor Colombian women experience similar feelings inside theirs, the possibility of recovering economic prosperity and equity becomes more distant.
This chapter explains how are the poor have fared during the last two decades by examining the evolution of three core dimensions of welfare: economic welfare, access to social services, and security. The first section deals with economic welfare and poverty. Special attention is devoted to identifying the specific effects of different periods of the business cycle on the welfare of the poor. The main questions to be address are the following: Are the poor better off now than two decades ago? How much did the poor lose during the recent recession? Did all income groups gain equally during growth periods? Who lost more during the recent recession? How do those conclusions vary between urban and rural areas, and across urban centers and rural regions? The second section examines the evolution of access to basic social services and the level of social living conditions, i.e., access to education and public utilities, educational attainment, illiteracy, child labor, and malnutrition and infant mortality. This represents an essential non-monetary angle of welfare, and it shows not only how successful Colombia has been in raising access to basic social services but also how far key final social outcomes have improved. Equity aspects of access to basic social services will be examined in Chapter IV.

The third section studies the burden of violence and crime. Little is known about the distribution of crime and violence in Colombia and about the various ways in which individuals and households have reacted to the escalation of violence. Hence, this chapter explains how violence and crime have differentially affected the various sectors of Colombian society (by income groups, age groups, gender, regions). The distribution of crime and violence across the spectrum has not only fairness implications, but important policy implications as well. In particular, the distribution of crime can affect individual coping mechanisms and the level of public social spending on security. It might also have implications for life expectancy across gender and age groups. In addition, crime can create new vulnerable demographic groups, as is the case for the population displaced from rural areas where illegal armed forces are currently operating.

1. Poverty, Economic Welfare, and Income Distribution

1.1 Poverty trends showed substantial long-term progress with a recent setback

Table 2 presents the evolution of the basic poverty indicators—the poverty headcount, the poverty gap, and the \( P_2 \) index—from 1978 to 1999. The poverty gap describes the average distance of the poor from the poverty line; by expressing it as a percentage of the poverty line, it is in fact approximating the value of the resources necessary to bring the poor to the poverty line. The \( P_2 \) index (FGT) captures the degree of income inequality among the poor. Table 2 also includes measures of average income per capita inequality and rural-urban decomposition of the Theil entropy measure.

Poverty trends in Colombia show substantial long-term progress with a recent setback. According to the estimates presented in this report, about 64 percent of the population is estimated to have been living in poverty in 1999 and 23 percent in extreme poverty. Poverty declined during the 1980s and during the first half of the 1990s. However, it reversed itself in 1999, returning to 1988 levels. Something similar happened to the poverty gap and FGT. Extreme poverty, on the other hand, shows small but important differences. It declined much faster than the poverty rate between 1978 and 1995, falling by more than 50 percent (from 45 to 21 percent). Again, the recession did aggravate the extreme poverty rate, but the level it reached was still well below that of 1988. Average income per capita almost doubled—rising by 92 percent from 1978 to 1995—only to subsequently fall by nearly 3 percent in the recessive period.
Urban poverty: In line with the national trend

After a continuous and significant reduction in urban poverty from 1978 to 1995, the economic recession pushed poverty indicators back to 1988 levels. Urban poverty decreased at rates close to 1.5 percentage points per year between 1978 and 1995. Unfortunately, the 1999 rates are again close to those of 1988, even slightly higher for the poverty gap. The recession not only increased the percentage of poor people in urban areas, but the poor also became poorer, an observation confirmed by the increase of extreme poor people, reported in Table 2.

Economic recession hits the extreme poor more badly and erases the substantial gains of the 1978–95 period. Extreme poverty followed a similar U-turn pattern, although extreme poverty had sharply decreased with income growth (the 1978–95 period showed a 70 percent decrease). Half of those gains were lost in the last four years. Colombia's economic recession seems to have hurt more severely the very poorest segments of the population. The behavior of the $P_2$—intensity of poverty—measure provides one more confirmation: It rose by 22 percent between 1995 and 1999, indicating both deeper poverty and a higher level of income inequality among the poor. All these results are very robust to the poverty line chosen.25 In number terms, the evolution of poverty rates implies that in 1978 almost 5.4 million persons lived in poverty and 2.3 million in extreme poverty in the largest seven cities. In 1995, the poor numbered 5.7 million and the extreme poor 1.15 million. The figures for 1999 are 8.0 million and 2.1 million, respectively.

Rural Poverty: Clear progress up to 1995, but much higher rates in urban areas

After a substantial reduction in the 1980s, the rural poverty headcount ratio has remained relatively stable since 1988 (see Table 2). Similar to urban areas, rural poverty fell sharply (14 percentage points) between 1978 and 1988.26 On the other hand, in contrast with urban areas, where poverty dropped by almost 4 percentage points between 1988 and 1995, rural rates only saw a decline of 1 percentage point. While urban incomes grew at an average annual rate of 2.9 percent in the 1988–95 period, this figure was only 0.7 percent in rural areas. Nonetheless, during the economic downturn, rural areas were not as negatively affected, as mean income per capita continued to grow and poverty increased by only 0.2 percentage points versus a 3 percentage point increase in urban areas.

Extreme rural poverty declined much faster than in urban areas up until 1995. Both the extreme poverty rate and the US$2/day poverty rate declined much faster than the poverty rate during the first 2 sub-periods, a phenomenon not unlike that found in urban areas. Thereafter, these rates remained relatively stable, just like the poverty rate did. While the US$2/day poverty rate fell by a 23 percentage points between 1978 and 1988, extreme poverty rates fell by a similarly substantial 20 percentage points.27 Between 1988 and 1995, when poverty was reduced by only 1 percentage point, extreme poverty and the US$2/day poverty rates declined by 11 and 7 percentage points, respectively. Both of these rates have recently stagnated, with the extreme poverty rate remaining the same and the US $2/day poverty rate slightly decreasing between 1995 and 1999.

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25 Similar trends were found for computations of poverty and extreme poverty rates for the US$1 per day line as well as a wide range of hypothetical poverty lines.
26 The urban poverty rate fell by 15 percentage points during this same period.
27 The extreme poverty rate in urban areas fell 10 percentage points during the same period.
Table 2. Poverty indicators: National, Urban, and Rural Colombia 1978-99

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<tr>
<td><strong>National</strong></td>
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<td>22%</td>
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<tr>
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<tr>
<td>Mean</td>
<td>52</td>
<td>90</td>
<td>95</td>
<td>102</td>
</tr>
</tbody>
</table>

1. Thousand 1999 pesos, based on monthly household income.
2. Foster-Greer-Thorbecke index.
3. Based on Purchasing Power Parity Convertors from WDI database.

Relative stability of rural poverty counts hides recent deterioration of the poverty gap and poverty intensity (P2). The recent relative stability of the poverty count as measured by the three different poverty lines hides a widening of both the poverty gap and the P2 index in the last 4 years. These two indicators had progressed faster than the poverty count until 1988, but since then the poverty gap and P2 index have risen by 3.2 and 3.5 percentage points respectively, as shown in Table 2. Given that most of the population lies below the poverty line, it follows that much of rural Colombia has felt the negative impact of the recession. Most worrisome is the larger rise in the P2 index, implying that the brunt of the recession is being carried by the very poor. This is also indicated by the fact that the US$2/day poverty rate has increased slightly, although the extreme poverty rate has declined.

1.2 Income per capita nearly doubles in two decades but falls in the late 1990s

Urban average household income per capita doubled between 1978 and 1995, but the recession erased at least six years of economic progress. A simple way to assess welfare changes is to consider the evolution of average household per capita income. Average household income per capita almost doubled: It went from C$157,08028 (US$250) in 1978 to C$277,469

28 All monetary figures are in 1999 C$. The PPP adjusted exchange rate is US$1 = C$629.
(US$441) in 1999. This overall increase hides very different patterns among the sub-periods. Average income per capita grew at an average yearly rate of 4.1 percent during 1978–88, 2.9 percent between 1988 and 1995 but fell by 1.2 percent between 1995 and 1999, reflecting the severity of the crisis. The economic downturn has erased at least 6 or 7 years of economic progress for the average urban household.

Rural average household income per capita: strong improvement in the 1980s, slowdown in the early 1990s and some recovery after 1995. Table 2 shows that the rise in mean household income per capita between 1978 and 1988 was 72 percent, rising at an average annual growth rate of 5.6 percent per year, faster than the growth rate in urban areas (4.1 percent); 1988 was an exceptional year across all rural regions, with agriculture playing a major role. The devaluation helped agricultural exports, which was further supported by high tariffs for cereals and higher coffee production and prices. Later, mean income rose at a much slower rate of only 0.7 percent a year between 1988 and 1995 (versus 2.9 percent in urban areas), but continued rising between 1995 and 1999, this time at a faster average annual rate of 1.4 percent (versus minus 1.2 percent in urban areas). This overall evolution hides striking differences between regions and income groups, as will be discussed below.

Mean household income in rural Colombia does not suffer during the recessive period. As opposed to the fall experienced in urban areas, mean (monthly) household income per capita rose during the economic downturn; however, median household income per capita declined. After behaving (rising) much like average mean income, the median income fell at an average annual rate of 0.8 percent during the recessive period. The fall in the median income and the rise in inequality in 1999 indicate that more than half of the population was indeed negatively affected by the recession.

Over the years, the rural-urban gap fluctuates and falls in the late 1990s. It is also notable that throughout the 21-year period studied, rural average income per capita remained at roughly one third of that in urban areas. However, urban-rural disparities in economic growth produced fluctuations in the relative income ratio (Table 2). Despite impressive rural growth between 1978 and 1988 that brought relative income to a qualified maximum of 38 percent, the better performance of the urban sector up to 1995 reduced rural Colombia’s relative income to a minimum of 32 percent. This was then partially reversed by negative urban growth in the late 1990s, bringing rural relative income to 37 percent in 1999.

1.3 Rising inequality eroded welfare gains: The Sen welfare index

Income inequality trends deteriorated mostly in the 1990s. Several authors have identified the mid 1960s as the breaking point in the regressive trend of income distribution during the first half of the twentieth century. By the late 1970s, the Colombian economy had completed two decades of consistent reduction in income inequality and had improved its standing with respect to other Latin American countries. After the persistently raising inequality of the first half of the twentieth century, substantial inequality reductions were observed during 1960s and 1970s as the economy grew. Colombia appeared as exemplary of Kuznets’ inverted U-shaped curve. However, during the late 1970s and the 1980s, inequality levels plateaued, and during the last decade took a clear U-turn erasing the equity gains of the two previous decades.

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29 Urrutia (1984), Reyes (1987), Ocampo (1992), and Londoño (1995). Declining wage differentials of the 1970s fostered significant improvements in inequality (Misión de Empleo 1986). According to Ocampo, et al. (1998) the determinants behind these developments were: (a) the reduction of the rural labor force surplus, owing to fast migration in the 1950s; (b) the robust pace of capital accumulation and modernization in the rural sector; and (c) the larger and well-targeted investment in education and healthcare delivered through the “Frente Nacional.” On the progressivity of public social expenditure, see Selowsky (1976) and Vélez (1996).
Figure 1. Colombia’s income inequality in the international context, 1999

Table 3. Income inequality indicators: National, Urban, and Rural Colombia, 1978-1999

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<td>Gini</td>
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<td>3.31</td>
<td>3.43</td>
<td>3.72</td>
</tr>
<tr>
<td>Share q5/Share q1</td>
<td>17.17</td>
<td>17.58</td>
<td>17.16</td>
<td>20.17</td>
</tr>
<tr>
<td><strong>Inequality Urban-Rural Decomposition (Theil)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within</td>
<td>0.42</td>
<td>0.50</td>
<td>0.59</td>
<td>0.58</td>
</tr>
<tr>
<td>Between</td>
<td>0.12</td>
<td>0.10</td>
<td>0.11</td>
<td>0.09</td>
</tr>
<tr>
<td><strong>Urban</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gini</td>
<td>0.47</td>
<td>0.49</td>
<td>0.52</td>
<td>0.54</td>
</tr>
<tr>
<td>Theil index (Eo)</td>
<td>0.34</td>
<td>0.41</td>
<td>0.48</td>
<td>0.54</td>
</tr>
<tr>
<td>P90/P10</td>
<td>8.00</td>
<td>8.50</td>
<td>8.44</td>
<td>12.00</td>
</tr>
<tr>
<td><strong>Rural</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gini</td>
<td>0.45</td>
<td>0.47</td>
<td>0.45</td>
<td>0.50</td>
</tr>
<tr>
<td>Theil index (Eo)</td>
<td>0.36</td>
<td>0.40</td>
<td>0.36</td>
<td>0.46</td>
</tr>
<tr>
<td>P90/P10</td>
<td>7.36</td>
<td>8.85</td>
<td>7.22</td>
<td>9.67</td>
</tr>
</tbody>
</table>

Colombia’s income inequality is extreme in the international context but relatively moderate in Latin America, a region of relatively high income inequality where it ranks just above the median. Figure 1 shows that the Colombian population faces more income inequality than 99
countries containing 94 percent of the world's population. Nevertheless, in the Latin American context, Colombia's inequality appears relatively moderate. Out of 17 countries listed in the World Bank data for 1999, Colombia ranks seventh after Nicaragua, Brazil, Honduras, Bolivia, Paraguay, and Chile.

**Under almost any possible measure, inequality has been deteriorating during the last two decades.** Inequality changes did not follow the same patterns as average income per capita. Table 3 shows seven possible measures of income inequality, and all seven are worse in 1999 when compared to 1978. While the Gini coefficient steadily increased over the entire period—by 4 percentage points—the share of the top quintile of the distribution relative to the poorest 20 percent—first quintile—increased from 17 to 20 times.\(^{30}\) Five out of seven inequality indicators show acceleration in the latest 1995–99 sub-period. This pattern of inequality dynamics is also shown by the stability of the P90/P10 and P75/P25 ratios until 1995—around 8.4 and 2.9, respectively—before they shot up to 12.0 and 3.5 in 1999. All three entropy measures (\(E_0, E_1, E_2\)) also increased continuously until 1995. Thereafter, \(E_0\) continued to increase (from 0.48 to 0.54), confirming once more the increasing inequality among the poor.

Despite the importance of rural-urban differentials, within-group inequality has an increasingly dominant role in explaining the national trend. Rural-urban decomposition of the Theil index shows that most of the rise in national inequality during the last two decades is associated to greater within inequality. In fact, between inequality explains only one-sixth of total inequality and has been relatively stable with a very weak decreasing trend. For this reason and since the dynamics of urban and rural inequality tend to diverge during the period of analysis, we will present below a separate discussion of the dynamics of urban and rural poverty and inequality.

Urban welfare was hurt by inequality deterioration, mostly in the 1990s

The rising trend of inequality reduced the potential welfare gains up to 1995 and aggravated the welfare losses during the economic recession. Income inequality is of concern since high levels erode potential welfare gains. The welfare of the average Colombian is represented by average income per capita. At the same time, the expected difference in income between any Colombians chosen at random is proportional to inequality and measured by the Gini coefficient. The welfare of the worst-off individual in any pair of Colombians picked at random is equal to the so-called Sen welfare index.\(^{31}\) Figure 2 depicts the evolution of the mean household per capita income along with the Sen welfare index \(S\). Average income increased by 88 percent between 1978 and 1995, and has leveled off if not decreased during the second half of the 1990s. But the Gini coefficient jumped 5 percentage points between 1978 and 1995 and 2 more points in the late 1990s. Had inequality remained constant, the Sen welfare index would have increased proportionally with income. The increase in inequality was responsible for an 18 percent loss in welfare gains between 1978 and 1995, and an additional 5 percent loss in the late 1990s.

---

\(^{30}\) This increase in the Gini coefficient means that the expected difference in income between two Colombians picked at random has increased by 8 percent.

\(^{31}\) The Sen welfare index is defined as \(S = u(1 - G)\), where \(u\) is the sample mean income per capita and \(G\) is the Gini coefficient. Therefore, \(S\) is a fraction \((1 - G)\) of mean income \(u\)—the welfare of the average individual—and has a simple intuitive and relevant interpretation. \(S\) is equal to the expected welfare of the worst-off individual taken from any couple of individuals chosen at random, (Yitzhaki, 1984).
Box 1. Overestimated poverty by using income measures.

Welfare measures based on consumption suggest that current income measures of urban and rural poverty are upwardly biased and urban inequality is underestimated.

Colombia's LSMS type surveys allows us to check any bias in welfare measures based on quarterly household surveys. While the figures calculated using Encuesta Nacional de Hogares –ENH– provide us with a clear picture of the trends of poverty and income inequality during the last two decades, it is worth noting that such figures, when computed using 1997 Encuesta de Calidad de Vida (ECV97), show a significant upward bias in poverty estimates.

The ECV97 registers much lower poverty rates than those found in ENH for both 1995 and 1999. The urban and rural rates are 31 and 63 percent, respectively, while the ENH data in 1995 and 1999 register urban poverty rates of 48 and 55 percent, respectively, and a rural rate of 79 percent in both years. The poverty gaps are also significantly different—the ECV97 urban poverty gap was only 7 percent, while the other surveys register 19 and 26 percent. Urban extreme poverty rates and the P(2) measure are much closer in value, however, only differing by about 3 or 4 percentage points, whereas rural rates still differ by ten or more percentage points.

In terms of mean income per capita and income inequality, differences are staggering only for urban data. Mean income per capita for ECV97 is over C$150,000 higher than that of ENH 1995 or 1999, while the Gini reaches 0.60. Only the P75/P25 measure is similar in the ECV97 and ENH surveys; all other inequality measures depict the ECV97 sample as much more unequal. These vast differences could be partly attributed to top coding in 1995 urban ENH data.

Table B1. Poverty and inequality based on ECV and NHS surveys, Colombia.

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[\text{Urbano}^{2}]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean income per capita</td>
<td>442,502</td>
<td>102,004</td>
<td>294,522</td>
<td>277,469</td>
</tr>
<tr>
<td>Income inequality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gini</td>
<td>0.598</td>
<td>0.451</td>
<td>0.522</td>
<td>0.545</td>
</tr>
<tr>
<td>Entropy Measure E0</td>
<td>0.68</td>
<td>0.37</td>
<td>0.48</td>
<td>0.54</td>
</tr>
<tr>
<td>Entropy Measure E1</td>
<td>0.81</td>
<td>0.40</td>
<td>0.62</td>
<td>0.60</td>
</tr>
<tr>
<td>Entropy Measure E2</td>
<td>2.91</td>
<td>0.77</td>
<td>2.15</td>
<td>1.50</td>
</tr>
<tr>
<td>P90/P10</td>
<td>13.0</td>
<td>7.7</td>
<td>8.4</td>
<td>12.0</td>
</tr>
<tr>
<td>P75/P25</td>
<td>3.6</td>
<td>2.8</td>
<td>2.9</td>
<td>3.5</td>
</tr>
<tr>
<td>Share q5/Share q1</td>
<td>23.0</td>
<td>10.7</td>
<td>13.3</td>
<td>17.2</td>
</tr>
<tr>
<td>Poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty rate</td>
<td>31%</td>
<td>63%</td>
<td>48%</td>
<td>55%</td>
</tr>
<tr>
<td>Poverty Gap</td>
<td>7%</td>
<td>29%</td>
<td>19%</td>
<td>26%</td>
</tr>
<tr>
<td>FGT P(2)^3</td>
<td>12%</td>
<td>17%</td>
<td>10%</td>
<td>15%</td>
</tr>
<tr>
<td>Extreme poverty rate</td>
<td>10%</td>
<td>22%</td>
<td>10%</td>
<td>14%</td>
</tr>
</tbody>
</table>

2. Based on National Household Surveys.
3. Foster-Greer-Thorbecke index.
Rural Sen Welfare Index: Rising inequality eroded welfare gains even farther than in the urban case

Although income has risen substantially since 1978, a concurrent rise in income inequality in the late 1990s has reduced potential Sen welfare gains by nearly 20 percent. After an improvement in the 1988-1995 period, inequality deteriorated in 1999 to reach levels much higher than those registered in 1988 (Table 3). In contrast with urban income inequality, which rose throughout all periods, rural inequality actually increased more from 1978 to 1988, but then decreased between 1988 and 1995, reaching levels close to those of 1978. However, since then, inequality has reached unprecedented levels for any inequality measure: The Gini coefficient jumped almost 6 percentage points, well above the previous highest level, reached in 1988.32 Figure 3 depicts the evolution of rural welfare measured by mean household income per capita and the Sen welfare index. The increase in mean income per capita between 1978 and 1999 was 95 percent, but the

32 Section 7 below and Chapter III, Volume II, presents a more thorough explanation of inequality changes via microsimulation of structural parameters and endowment changes in a model of household income generation, labor force participation, and occupational choice.
simultaneous increase in inequality resulted in a 19 percent loss in Sen welfare. On a positive note, a more favorable distribution of income in 1995 led to welfare gains 4 percent greater than if inequality had remained the same. However, in the recessive period of the late 1990s, the Sen welfare index fell despite simultaneous real average income gains.

1.4 Beyond average income: Assessing welfare gains from 1978 to 1999

While the previous section revealed the substantial changes—overall improvements and recent reductions—of average income, those patterns do not make clear whether all income groups experienced changes in income in the same direction and in similar proportions. That is, the income dynamics for the entire distribution of household income was not established. This section provides an answer to that question in both urban and rural areas. It reveals that urban Colombians are better off now than in 1978, but not better than in 1988. Nonetheless, it shows that in rural areas recession losses were less severe, despite a comparable welfare trend during the 1980's.

*Urban welfare: Unambiguous improvement up to 1995 and unambiguous deterioration during the recession*

Until 1995, urban welfare levels improved substantially and unambiguously. As shown in figure 4, welfare levels in urban Colombia improved continuously and unambiguously for every percentile of the population between 1978 and 1995. This figure depicts the Cumulative Density Function of income —CDF—, the fraction of the population with income per capita below different thresholds —50, 150 or 250 thousand Colombian pesos. The proportion of the population below the 1999 poverty line (at C$175 thousand) decreased from more than 70 percent to approximately 50 percent during that interval (figure 6). During the 1978–88 period, improvements in earnings reached 47 percent for nearly all percentiles, except at both extremes of the distribution, where the improvements were slightly higher. In the next period, 1988–95, earnings kept increasing by 17 percent for nearly the entire population. As a result, between 1978 and 1995, the 5th and 10th lowest percentiles increased their income increase by 75 percent, while the 90th and 95th experienced 75 and 91 percent increases, respectively.

*Figure 4. Cumulative income distribution, Urban Colombia 1978, 1988, and 1995*

![Figure 4. Cumulative income distribution, Urban Colombia 1978, 1988, and 1995](image)

---

33 The 1999 PPP adjusted exchange rate is US$1 = C$629
In 1999 urban welfare deteriorated with respect to 1995, but the comparison is not straightforward. Figure 5 shows the CDF for 1988, 1995, and 1999. The cumulative distribution of income for 1999 lies to the left of the curve for 1995 for all monthly per capita household incomes below C$350 thousand. That is, income fell for all percentiles, except those between the 80th and the 95th (see figure 6). The poor lost more than the rich: the 5th and 10th percentile both lost 25 percent of income, while the median income decreased by 11 percent. By contrast, the 90th income percentile rose by 9 percent, and the 95th gained 1 percent. Since income did not fall for all, immediate conclusions about social welfare deterioration are precluded. However, introducing moderate value judgments to assign relative social weights across income groups

34 That is, "first-order dominance" does not hold
allows to draw clear conclusions about the evolution of social welfare between 1995 and 1999. In fact, if the poor are considered to be equally or more deserving than the rich, the losses of the former become dominant and social welfare unambiguously deteriorates between 1995 and 1999.35

Only pro-poor welfare measures show a deterioration from 1988 to 1999. Comparisons between 1988 and 1999 are relatively more complicated because income fell for all Colombians below the 45th percentile, but increased for the rest (see figure 5). This implies that social welfare measures with substantial weights on the poor - such as the poverty measures - would lead to the conclusion that 1988 is better than 1999. Although the poverty count were similar in both periods (55.0 percent in 1988 and 55.4 percent in 1999), both the poverty gap (at 26 percent) and the poverty intensity index \( P_2 \) (at 15.4 percent) worsen in 1999. On the other hand, social welfare measures with less pro-poor distributional weights tend to favor the 1999 distribution when compared to 1988. For instance, average income per capita remains higher in 1999 at C$277 thousand (versus C$235 thousand in 1988), and even when the Sen welfare index’s correction for inequality is undertaken.36

In summary, urban Colombians are better off now than in 1978, but not better than in 1988. After continuous and significant reduction of poverty from 1978 to 1995, the economic recession pushed poverty indicators back to 1988 levels. The extreme poor suffered the brunt, having had a good share of the substantial gains of the 1978–95 period erased and having underwent a deepening in the intensity of poverty in 1999.37

Rural welfare: less severe recession losses

Rural welfare behaved similarly to that in urban areas, yet recession losses were less severe. Rural welfare is unambiguously better in 1988, 1995, and 1999 than in 1978. As shown by the cumulative distribution functions in figure 7, relative to 1978, the other three years studied, 1988, 1995, and 1999, reveal unambiguously large gains in welfare with first-order stochastic dominance. The percentage of people under the 1999 poverty line (C$125 thousand per month) decreased from 95 percent to 79 percent in the 21-year period studied. Figure 8 shows even larger for those well below the 1999 poverty line: the proportion of people below the 1999 extreme poverty line (C$49 thousand per month) fell from 65 to 37 percent during the last two decades.

Welfare improved for great majority of the rural population—except for the top 7 percent—from 1988 to 1995. The 1995 cumulative distribution of income is always to right of 1988, except for after the 97th percentile, where the two lines cross (figure 8). Interestingly, as it was suspected above, those at the bottom of the distribution benefited the most during this period. Hence, if the poor are at least as deserving as the non-poor, 1995’s welfare is above 1988’s.38

Most of the rural population is worse off in 1999 than in 1995. The cumulative distribution function for 1995 and 1999 (figure 7) reveals that welfare turned for the worse for the bottom 70 percent of the population during the recessive period, while for the top 30 percent, it made a slight gain. The proportion whose household income per capita put them below the 1999 extreme poverty line increased from 34 to 37 percent in 1995 and 1999, respectively. The fact that most of the population experienced a decrease in welfare in the 1995–99 period despite an increase in mean household income is also revealed by a drop in the Sen welfare index, as shown in Figure 3.

---

35 That is, if the marginal utility of income is decreasing "second-order stochastic dominance" does hold. This is shown by comparing the generalized Lorenz curves of those two years (see chapter I, volume II).

36 For a full intertemporal comparison considering alternative welfare weights see Table A.1.& in the Append

37 For a full intertemporal comparison considering alternative welfare measures see Table A.1.2.

Nevertheless, in 1999 rural welfare was above the 1988 level for 95 percent of the population. Relative to 1988, however, welfare did increase for Colombians in rural areas in 1999, with the exception of those at the bottom 5 percent of the income distribution. Therefore, relative to urban Colombia, rural areas sustained a less severe deterioration of welfare during the 1990s.39

In summary, it is unambiguously true, by any welfare measure, that, relative to 1978, rural Colombians were better off in the other three years studied. But whether welfare underwent a relative improvement within the 1988–99 period is dependent upon the social welfare indicator chosen. That is, 1995 is clearly better than 1988 in terms of all poverty measures, income per capita, and the Sen welfare index. However, compared to 1988, 1995 is not better for every

39 We saw above that nearly the 50 percent urban poorest were worse off in 1999 than in 1988.
income group. Nevertheless, 1995 is better if one considers the poor more deserving than the non-poor. In 1999, welfare in terms of income per capita expanded, relative to 1988 and 1995. However, 1988 is favored relative to 1999 in terms of both the poverty gap and intensity measure. Furthermore, 1995 is favored relative to 1999 in terms of all poverty measures and the Sen welfare index. Thus, although mean income per capita may have increased from 1995 to 1999, by most welfare measures, rural Colombians were not better off in 1999 relative to 1995.

1.5 Colombia is more capable of tackling poverty today than it was two decades ago

Does Colombia have the resources necessary to tackle poverty and extreme poverty? How large is the income gap of the poor and extreme poor relative to the size of the economy, and to the resources in the hands of the public sector? The evidence demonstrates that relative to the size of the economy, closing these gaps is not beyond the means of the Colombian economy. Figure 9 shows that in 1999 eliminating extreme poverty would require less than 31 percent of total household income. Moreover, closing the poverty gap—that is, getting 55 percent of Colombians out of poverty—would require 25 percent of total household income.

Unlike two decades ago, today Colombia is a great deal more capable of tackling poverty. The growth of the economy up until 1995 helped to reduce the magnitude of both the poverty and extreme poverty gaps. From 1978 and up to 1995, both the economic growth and the reduction in the poverty gap from 46 percent to 29 percent reduced the share of total household income necessary to close the poverty gap from 58 percent to 20 percent, just a third of its original value. However, the increase in the poverty gap in 1999 to 34 percent increased the required share to 25 percent. The share of household income necessary to close the extreme poverty gap followed a similar trend. From 1978 to 1995 it was reduced from 11 to 2 percent. The recent setback slightly increased the required resources to 2.5 percent. Undoubtedly, Colombia has enough resources to tackle poverty.

**Figure 9. Share of total household income required to close poverty and extreme poverty gaps**

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>To close the Extreme Poverty Gap</td>
<td>10.7%</td>
<td>4.3%</td>
<td>2.1%</td>
<td>2.3%</td>
</tr>
<tr>
<td>To close the Poverty Gap</td>
<td>58%</td>
<td>25%</td>
<td>20%</td>
<td>25%</td>
</tr>
</tbody>
</table>

This same issue was raised by Selowski (1979) in his seminal study about poverty and public expenditure in Colombia.
Today the Colombian public sector has more than enough resources to tackle the poverty problem without abandoning other core mandates. In 1999, public social expenditure was 15 percent of GDP, while total public expenditure was approximately three times larger. In summary, this evidence shows that the reallocation of 10 percent of public expenditure—a moderate amount—would have a major impact on the welfare of the poor.

2. SOCIAL SERVICES AND SOCIAL OUTCOMES: COVERAGE AND EQUITY

2.1 Education: Increasing trend with pro-cyclical fluctuation in urban areas

*Urban Schooling: Increasing trend with pro-cyclical fluctuations*

In the last two decades, average educational attainment increased by 2.7 years and the illiteracy rate was nearly halved. Illiteracy rates were halved between 1978 and 1999 in urban Colombia, from 11 to 6 percent. For individuals over 12 years of age, illiteracy rates fell from 5 to 2 percent during the same period. The average educational attainment of the adult population increased from 6.2 to 8.9 years over the entire period.

*School enrollment: Slow progress partly reversed during economic recession.* School enrollment is an educational indicator closely related to the economic cycle. Table 4 reports enrollments for three different age groups of boys and girls (7-11 years, 12-17, and 18-22) and captures primary, secondary, and higher education enrollments. For all three age categories these rates grew very slowly between 1978 and 1995 but decreased in the latest four years. The recent drop in the university-age population’s enrollment is especially worrisome: In 1978, 31 percent of 18- to 22-year-olds were enrolled in school; this rate peaked at 41 percent in 1995 but then declined to 36 percent in 1999. The 64 percent of young adults not enrolled in school belong mostly to the economically active population and face rates of unemployment twice as high as the rest of the adult population, a fact that reveals their diminishing chances of avoiding poverty in the long run.

*Completion rates improved more rapidly for primary and secondary schooling.* The share of individuals within the intermediate age group—12 to 17—who have completed primary school rose from 67 to 90 percent between 1978 and 1999, while among the older group—18 to 22—the proportion of high school graduates increased from 21 to 59 percent.

*During the 1990s, coverage became more progressive for secondary and tertiary education.* Coverage rates in primary, secondary, and tertiary education improved for all income quintiles between 1992 and 1997. However, the poor benefited much more from additional coverage in the case of secondary education and were only benefited moderately in tertiary. The concentration coefficient was *minus* 0.563 (!) for secondary education and 0.403 for tertiary (still slightly better than the previous 0.445).

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41 Increased by 8, 12, and 6 percent respectively. See Chapter VI, tables 18 and 1.9.
Table 4. Social indicators: Urban Colombia 1978–99

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Average education &gt; 18 years</td>
<td>6.2</td>
<td>7.7</td>
<td>8.4</td>
<td>8.9</td>
</tr>
<tr>
<td>Illiteracy rate</td>
<td>5.3%</td>
<td>3.3%</td>
<td>2.8%</td>
<td>2.6%</td>
</tr>
<tr>
<td>School enrollment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ages 7 to 11</td>
<td>91.8%</td>
<td>94.8%</td>
<td>96.5%</td>
<td>95.3%</td>
</tr>
<tr>
<td>Ages 12 to 17</td>
<td>76.9%</td>
<td>80.5%</td>
<td>84.4%</td>
<td>82.2%</td>
</tr>
<tr>
<td>Ages 18 to 22</td>
<td>31.2%</td>
<td>35.8%</td>
<td>41.0%</td>
<td>36.3%</td>
</tr>
<tr>
<td>Complete primary school (ages 12 to 17)</td>
<td>67.0%</td>
<td>78.7%</td>
<td>77.7%</td>
<td>89.8%</td>
</tr>
<tr>
<td>Complete high school (ages 18 to 22)</td>
<td>21.6%</td>
<td>35.3%</td>
<td>48.7%</td>
<td>59.2%</td>
</tr>
<tr>
<td>Child labor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ages 12 to 16</td>
<td>12.0%</td>
<td>11.5%</td>
<td>9.9%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Ages 12 to 14</td>
<td>5.8%</td>
<td>5.0%</td>
<td>5.2%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Child Malnutrition</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Stunting, low height for age</td>
<td>16.8%</td>
<td>10.1%</td>
<td>8.4%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Wasting, low weight for height</td>
<td>22.4%</td>
<td>16.6%</td>
<td>15.0%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Low weight for age</td>
<td>4.9%</td>
<td>2.9%</td>
<td>1.4%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Crime</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homicides (Per 100,000 pop.)</td>
<td>26</td>
<td>62</td>
<td>65</td>
<td>59*</td>
</tr>
<tr>
<td>Access to public utilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td>63%**</td>
<td>99%</td>
<td>100%</td>
<td>99%</td>
</tr>
<tr>
<td>Water</td>
<td>63%</td>
<td>97%</td>
<td>98%</td>
<td>99%</td>
</tr>
<tr>
<td>Telephone</td>
<td>NA</td>
<td>62%</td>
<td>71%</td>
<td>84%</td>
</tr>
<tr>
<td>Sewerage</td>
<td>51%</td>
<td>95%</td>
<td>96%</td>
<td>97%</td>
</tr>
</tbody>
</table>

1. Urban Colombia represents 67% of Colombia urban area: Barranquilla, Bucaramanga, Bogota, Manizales, Medellin, Cali and Pasto
2. For population 12 years old & older.
3. For population under 5 years old; represents national data for 1977, 1986, 1995, and 2000
* 1998 figure
** 1974 figure. Source: Selowsky (1979)
Source: Authors’ calculations based on Encuesta Nacional de Hogares; Profamilia, and Encuesta Nacional de Demografía y Salud

Rural Schooling

Average school attainment for adults more than doubled, from 2.2 years in 1978 to 4.6 in 1999, but the urban-rural gap remains unchanged (Table 5). Tantamount to improvements in illiteracy rates, most progress in adult average education levels was made between 1978 and 1988, when adults gained an average of 0.16 years of schooling per year. Progress since 1988 has remained stable, with an average increase of 0.08 years of schooling per year. Throughout the period studied, there has been a constant gap of a little more than four years between rural and urban education.
### Table 5. Social indicators, Rural Colombia, 1978–99

<table>
<thead>
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<tbody>
<tr>
<td><strong>Illiteracy rate</strong></td>
<td>29.4%</td>
<td>18.5%</td>
<td>14.5%</td>
<td>14.8%</td>
</tr>
<tr>
<td><strong>Average education &gt; 18 years</strong></td>
<td>2.18</td>
<td>3.74</td>
<td>4.31</td>
<td>4.63</td>
</tr>
</tbody>
</table>

**School enrollment**

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<tbody>
<tr>
<td>Ages 7 to 11</td>
<td>66.2%</td>
<td>85.4%</td>
<td>90.1%</td>
<td>90.5%</td>
</tr>
<tr>
<td>Ages 12 to 17</td>
<td>43.5%</td>
<td>57.2%</td>
<td>63.7%</td>
<td>66.0%</td>
</tr>
<tr>
<td>Ages 18 to 22</td>
<td>9.0%</td>
<td>14.6%</td>
<td>19.2%</td>
<td>20.6%</td>
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**Complete primary school (ages 12 to 17)**

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<tbody>
<tr>
<td>Complete high school (ages 18 to 22)</td>
<td>20.7%</td>
<td>49.3%</td>
<td>62.7%</td>
<td>66.8%</td>
</tr>
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**Complete high school (ages 18 to 22)**

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<tbody>
<tr>
<td>Child labor</td>
<td>1.3%</td>
<td>9.1%</td>
<td>14.2%</td>
<td>21.1%</td>
</tr>
</tbody>
</table>

**Access to public utilities**

<p>| | | | | |</p>
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<tbody>
<tr>
<td>Electricity</td>
<td>NA</td>
<td>NA</td>
<td>87%</td>
<td>84%</td>
</tr>
<tr>
<td>Aqueduct</td>
<td>NA</td>
<td>NA</td>
<td>64%</td>
<td>62%</td>
</tr>
<tr>
<td>Telephone</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>15%</td>
</tr>
<tr>
<td>Sewerage</td>
<td>NA</td>
<td>NA</td>
<td>32%</td>
<td>32%</td>
</tr>
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</table>

* For population 12 years old & older.

**In contrast with urban areas, during the recessive period, rural school enrollment rates remained constant, if not rose, for all age groups.** Despite the general slowdown in improvement rates, considering that urban areas suffered drops in enrollment rates for all age levels from 1995 to 1999, the economic recession does not appear to have affected rural schooling as severely. Nevertheless, all schooling rates continue to lag behind those in urban areas.

**Enrollment rates for children of primary and secondary school age** registered their most significant gains between 1978 and 1988, followed by moderate gains between 1988 and 1995 and only a slight improvement in the 1995–99 period. The 1999 primary school enrollment rate—90 percent—is now only 5 percentage points lower than its urban counterpart, an impressive feat, especially when compared to the 1978 urban-rural gap of 26 percentage points. Children of secondary school age are also increasingly attending school: 66 percent in 1999 versus 44 percent in 1978, and the urban-rural gap was halved from 32 to 16 percentage points in 1978 and 1999, respectively.

**The overall improvement in enrollment rates for the 18- to-22-year-old age group is notable,** as it has doubled in the past 21 years, up from 9 percent in 1978 (versus 31 urban) to 21 percent in 1999 (versus 36.3 urban). This enrollment rate progressed at similar rates between 1978 and 1988 and 1995, but then stagnated during the recessive period. In contrast, the urban rate suffered a decline of almost 5 percentage points between 1995 and 1999.
Increasing frustration and inequity at the entrance of post-secondary education

In the last 25 years, Colombian school-age cohorts have persistently reached higher educational attainment with less inequality. Figure 10 shows that, on average, the number of years of education that the 1975 cohort attained by 1995 was approximately 10 years, 4 years greater than the one achieved by the cohort born 40 years earlier. Furthermore, the inequality of education within each cohort—measured by the coefficient of variation—fell by more than half during the same period. Therefore, the inequality index of the stock of education among income groups tends to fall over the years. According to our calculations, the inequality of the stock of education was 18.1 in 1978, 18.6 in 1988, and 16.4 in 1995.

The substantial improvements in equity and efficiency in basic and secondary education in the 1990s are creating an inequitable bottleneck at the gate of post-secondary education. Nevertheless, progress has not been homogeneous in all stages of the educational system. As Figure 11 shows, despite of the significant improvements in equity and efficiency in completion of primary and secondary school, there is an increasingly binding bottleneck at the entrance to post-secondary education, with mounting frustration for the lower-middle class. Figure 11 shows that in 1988, for the 20 to 25 age cohort, 99 percent entered primary school, and 92 percent finished it. Meanwhile, 81 percent entered secondary school but only 44 percent finished it. Barely 19 out of 100 of those in the 20 to 25 age cohort in 1988 entered post-secondary education. Since then, the educational system as a whole has become more efficient in every stage of the educational ladder (the points for the 1999 the curve represent a shift up). Promotional and completion rates have increased for both primary and secondary school between 1988 and 1999: from 92 to 95 percent in completion of primary and from 44 to 63 percent in completion of high school. The transition rate from primary to secondary schooling slightly improved from 8 to 9 percent in 1988 to from 9 to 10 percent in 1999. On another note, the slope of the “blue” curve shows that access to higher levels of the educational ladder is more unequal; that is, in each for higher levels, the proportion of poor students entering the higher grades is lower than in the previous stage. Nevertheless, the shift to the left from 1988 to 1999—from the blue to the red curve—reveals substantial improvements in equity for all grades up to high school; the only exception is the transition between high school and post-secondary education, college or technological. Figure 11 shows that from 1988 to 1999, both the promotion and equity gaps have widened: the promotion gap from 24 to 35 percent and the equity gap from 16 to 25 percent. In other words, the gap between secondary school and university is becoming increasingly regressive. In summary, in the last decade, Colombia enjoyed clear improvements in educational attainment, both in level and equity. However, there is an increasingly frustrating and inequitable queue at the entrance of post-secondary education.

42 From 0.75 to 0.33
43 As measured by the concentration coefficient, similar to the Gini coefficient.
Figure 10. Average education and inequality by cohort: Colombia, 1925–75

Figure 11. Efficiency and equity of educational attainment: The post-secondary bottleneck, Colombia, 1988 and 1999, 20–25 age cohort
Box 2. Poverty comparisons across Colombian Cities, 1978-95: Partial convergence and improvement in left behind cities, especially Barranquilla- (Mode)

There are two policy angles that justify a close examination of cross regional differences in Colombia. First, after local democracy was established in the 1980s and increasing decentralization advanced during the 1990s, more social public policy decisions are being taken and executed at the local level. Second, regional sources of growth have been identified as key determinants of overall economic dynamics, inducing differential poverty dynamics across regions (Sánchez and Núñez, 2000a).

Over the years, urban areas showed strong convergence in extreme poverty counts. The maximum to minimum difference in poverty rates dropped from almost 30 percentage points in 1978 to only 8 points in 1999. From 1978 to 1995, significant poverty reduction was visible across all cities; however, economic recession in the late 1990s reversed that tendency, except in Barranquilla. Somewhat similar is the evolution of income per capita. Across cities, there is a pattern of convergence in average income per capita, with the exception of Bogotá. Once income is adjusted by differentials in local cost of living, convergence is even stronger and the relative advantage of Bogotá drops from 40 percent to only 14 percent.

Throughout the entire period, income inequality rose sharply in most cities. The worst rise occurred in Barranquilla and Bogotá -- 14 and 10 percentage Gini points, respectively. However, during the 1990s, the dynamics of inequality across urban centers were more diverse. While inequality mostly increased in the four largest cities—particularly in Bogotá, by 8 Gini points—it decreased in the middle-sized cities of Bucaramanga, Pasto, and Manizales.

Figure B2.1 Poverty and growth across urban centers in Colombia, 1988-99

In the last decade, the strong heterogeneity of extreme poverty dynamics is explained by the strong variability in growth and inequality across the main urban centers. While Barranquilla, Manizales, and Pasto saw reductions of 12, 13, and 8 percent, respectively, Bogotá saw a moderate increase and the rest only saw reductions between 2 and 5 percent. Figure B2.1 shows that Bogotá and Cali—the cities where poverty reduction was disappointingly low relative to growth—are those that had a rise in inequality strong enough to counterbalance the effect of growth on poverty dynamics. The contrast of Barranquilla and Bogotá is especially interesting. Despite increasing inequality, income growth brought significant benefits for the extreme poor in Barranquilla -- a 13 percent reduction in their headcount. But the opposite happened in Bogotá, where extreme poverty remained almost unchanged despite having the second highest income growth--23 percent-- clear evidence that economic growth in Barranquilla was more pro-poor than it was in Bogotá.

Cross-city comparisons of social indicators also reveal a pattern of convergence, with strong catch up by the laggard cities since 1978, particularly Barranquilla, on the Caribbean coast. During the last two decades social indicators converged in basic education, electricity, and water but, heterogeneity persisted in post-secondary education, child labor, telephone connections, and sewerage. In spite of the economic prosperity enjoyed during the past decade, Barranquilla is still behind in some basic infrastructure services: 17 percent of the population does not have sewerage and 51 percent does not have a telephone connection.

As to which Colombian city enjoys the highest welfare as of 1999, the answer depends on the choice of social weights: by average income it is Bogotá, by poverty count it is Pasto, and by extreme poverty it is Bucaramanga. In dynamic terms, Barranquilla showed the highest progress—in all development indicators—while Cali faced the most significant losses.
Box 3. Divergence and poverty across rural regions in Colombia, 1978-99:

**Oriental and Atlantic regions win, Pacific and Central regions lose**

Extreme poverty remains quite heterogeneous across rural areas, with the most severe problems concentrated in the Central and Pacific regions. The Oriental and Atlantic regions show substantial gains during the last two decades. Something similar might be said about poverty dynamics in the 1990s. Contrary to in the 1980s when extreme poverty fell across all rural regions, during the 1990s extreme poverty reduction came to a halt in the Central region and it was reversed in the Pacific region—minus 3 percent. Nevertheless the Atlantic and Central regions enjoyed sharp reductions in extreme poverty—24 and 23 percent, respectively.

Figure B3.1 Extreme poverty reduction and growth across rural regions in Colombia, 1988-1999

Growth differentials seem to be the dominant explanatory factor in all four regions (Figure B3.1)—positive and significant for the Atlantic and Oriental regions, where vigorous growth continued during the late 1990s and negative in the other two regions, specially for the Pacific. Nevertheless, increasing income inequality in the Central region—10 percentage points—also contributed negatively to extreme poverty dynamics. In the Atlantic region the deterioration of income inequality was clearly dominated by growth. Similarly to the main urban center in the same region—Barranquilla—the more pro-poor quality of growth in the Atlantic region dominated the adverse effect of increasing inequality. Social indicators also reveal deviating paths of development, and the Atlantic region advances the most.

Primary school enrollments converged during the last two decades, with the largest increase in the Pacific region. During the recent economic downturn, enrollment dropped in both the Pacific and Oriental region but remained steady in the Atlantic and rose 4 percentage points in the Central region. Secondary school enrollment rates also converged, with the exception of the Atlantic region, which always enjoyed considerably higher rates, around 12 percentage points higher than the rural average. The education system in the Atlantic region thus seems somehow better able to retain students after they reach secondary school age. Something similar is happening with child labor, which is lowest in that area: only half the rate found in the other three regions. Nevertheless, during the late 1990s, all regions, except for the Pacific, experienced large drops in child labor, of about 6 percentage points.

* see detailed information in Appendix A.2.

2.2 Child labor: pro-cyclical with a decreasing trend

**Urban child labor tends to fall slowly and seems pro-cyclical.** Concurrent with improvements in school enrollment for adolescents, urban child labor shows a decreasing trend during the last two decades. The proportion of children aged 12–16 years who work decreased from 12 percent in 1978 to 10 percent in 1999, a low 2 percentage points over 21 years. Child labor is sensitive to variations in the level of economic activity. As in other Latin American countries, the proportion of working children in urban Colombia seems to fall during recessive periods of the economic cycle.44 The rationale is that the opportunity cost of sending children to school is higher during economic booms. Although income shortage becomes higher during economic recession,
incentives for sending children to school may increase as opportunity costs decrease. For example, children in school receive a guaranteed meal per day along with daycare, allowing parents to work or take care of home activities. In addition, the benefit of the alternative choice falls with the declining probability of children finding jobs during recessions, a fact confirmed below when unemployment rates by age groups are presented. Defined in stricter terms, as a proportion of children from 12 to 14 years of age participating in the labor market, child labor remained practically unchanged from 1978 to 1995 at around 5 to 6 percent, and fell abruptly with the 1999 recession to 4 percent.

Just as in our urban findings, rural child labor rates peaked during the 1988 boom and have been falling since. However, in contrast with urban areas, the decrease was most substantial between 1988 and 1995, and then slightly less so between 1995 and 1999. The 1988 boom was largely driven by the exceptionally high coffee prices and the good weather, which led to an increase in the demand for agricultural labor. Thereafter, 1995 saw the beginning of the construction crisis. Considering the large rise in adult unemployment that occurred during the economic downturn, it is surprising that child labor participation rates have not declined to a larger extent. Perhaps the fact, as will be seen later, that rural regions have not experienced a decline in mean household income per capita—except for in the Pacific region—may explain why the recent fall has only been in the magnitude of around 3 percentage points.

Despite their decline, rural child labor levels remain very high when compared to levels in urban areas. Regardless of the 30 percent drop in child labor between 1988 and 1999, child labor rates remain well above those in urban areas, at 19 percent for those 10–16 years of age, versus 10 percent in urban areas, and 13 percent of the 10–14 year-old group employed versus 4 percent in urban areas. 45 About 31 percent of children 15–16 participated in the labor force in 1999, a rate just under half that of adults 17 to 65 years old (65 percent).

2.3 Access to basic infrastructure: progressive gains

Urban coverage of public utilities continues to improve. 46 Table 4 reports access of the population to different public utilities (water, electricity, telephone, and sewerage), as an alternative measure of poverty, focusing on indicators of basic needs. Since coverage for electricity and water reaches 99 percent, only small pockets of poverty—approximately 150,000 people—have no access to these basic services. Nevertheless, some alternative evidence suggests that such indicators for water coverage may be highly biased upward, in the sense that water services are actually highly heterogeneous in both continuity and quality. 47 Sewerage was not available to 5.2 percent of the population in 1988, a proportion nearly halved in 1999 to 3 percent. While almost 38 percent of the urban population did not have access to a telephone in their homes in 1988, this figure was reduced to 16 percent in 1999.

The growth in coverage for public utilities was progressive, although income disparities in telephone access are still a cause for concern. Progressive marginal connections to public utilities, between 1988 and 1999, helped the lower-income quintiles to catch up with the middle- and high-income groups. For example, sewerage coverage increased by 7.6 and 3.4 percentage points for the two poorest quintiles of the household income distribution, compared to just 0.3 percentage points for the two richest ones. The improvement in access to telephone was

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45 Child labor participation rates in urban areas are for children 12–14 and 12–16; thus, the urban-rural difference in child labor participation rates may be even larger.
46 A more detailed account of the evolution and incidence of access to public utilities is given in Chapter 5, Volume II, The Distributional Impact of Public Expenditure.
47 In fact, evidence from the DNP suggests that aqueduct service in Colombian urban areas (defined as cabeceras municipales) is highly inadequate: Over 60 percent of the urban population is believed to be exposed to health risks due to substandard drinking water, while the piped water supply is also often highly discontinuous (World Bank, 2000).
particularly spectacular for poorer households, with increases of more than 30 percent for the two lowest quintiles. Access to safe water grew by 5 percentage points for the first quintile, which is reaching full coverage. The ratio of coverage of the richest quintile to the poorest thus fell from 1.07 to 1.01 for safe water, 1.15 to 1.06 for sewerage, and 2.55 to 1.40 for telephone.

**Public utility coverage in rural towns is comparable to that in large urban centers; however, notable disparities remain in sparsely populated areas.** Economies of scale in the provision of basic public utilities in urban concentrations facilitate greater coverage with comparable unit costs (compare Tables 4 and 5). In contrast with urban areas, service coverage decreased slightly from 1995 to 1999. Coverage rates for electricity, aqueduct, and sewerage decreased between the two years for which data are available. However, in cabeceras municipales rurales—rural towns—electricity and aqueduct coverage rates—both at 97 percent—are comparable to those of urban areas, whereas the corresponding figures in sparsely populated areas are only a small fraction, 19 and 49 percent, respectively.

### 2.4 Child malnutrition and infant mortality: continuous improvement

**Malnutrition was more than halved between 1977 and 2000.** Data used come from 1977 and 1986 surveys by the National Institutes of Health as well as the 1995 and 2000 Demography and Health Surveys (DHS) for Colombia. The proportion of children under five years of age who are underweight fell from 17 to 7 percent. This still represents around 120,000 malnourished children, a high number considering that the effects of malnutrition will cause irreversible welfare losses to linger throughout their lives.

The proportion of children displaying stunting (low height for age), an indicator of chronic malnutrition, remained at 14 percent in 2000, three-fifths of the 1977 proportion, a more moderate improvement. The proportion of children facing acute malnutrition (low weight for height) dropped from 5 to 1 percent between 1977 and 2000. These rates remain below the Latin America and Caribbean region average, conditional on income.

#### Table 6. National infant mortality (under 1 year of age, rates per 1000 born)

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<tbody>
<tr>
<td>1993 census</td>
<td>44</td>
<td>41</td>
<td>37</td>
<td>37</td>
<td>34</td>
<td>NA</td>
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<tr>
<td>DHS survey</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>28</td>
<td>21</td>
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Source: Profamilia and Encuesta Nacional de Demografía y Salud

**Infant mortality has been falling steadily over the last 20 years.** As shown in Table 6, rates decreased from 44 per 1,000 in 1981 to 34 in 1990-95 and fell afterward. Data from the 1995 and 2000 DHS surveys confirm the continued decline, with another decrease of 7 per 1,000.

In summary, during the last two decades, Colombia achieved clear social development gains and showed some resilience during the recent recession. In education, completion rates for primary and secondary schooling showed substantial improvement, reaching 90 and 59 percent for teenagers and young adults, respectively. However, school enrollment rates progressed somewhat slowly and suffered a small reversal during the recent economic downturn. Illiteracy rates had a similar evolution. In health, life expectancy increased 20 years during the last four decades, with more than proportional gains for females. Equally important, child malnutrition and infant mortality were significantly reduced. Despite being pro-cyclical—as in other Latin America—gains in economic and social performance were achieved.

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48 Malnourished children are less likely to perform well in school and more likely to become disabled and/or economically dependent and consequently become an economic liability for their families and society as a whole.

49 Estimation from 1993 census (Departamento Nacional de Planeación).
American countries—child labor exhibited a decreasing trend during times of fervent economic growth; nevertheless, it did decline even faster during the recent recession. Finally, basic infrastructure showed progressive gains. Most of the growth in coverage of water, sewerage, electricity, and residential telephone connections results from catch up by cities least covered in 1978 and the progressive extension of coverage to the poorer deciles. Sewerage and telephone connections still lag behind. The missing percentages mask thousands of individuals, concentrated in regional pockets of poverty, where these basic needs are not met yet.

3. THE BURDEN OF VIOLENCE AND CRIME

3.1 Violence: its continuous aggravation since the 1970s is mostly associated with the illegal drug trade

After almost tripling from 1970 to 1991, homicide rates decreased in the 1990s, while extortion, kidnapping, car theft, and armed robbery rates kept growing. Homicide rates almost tripled during the 1970s and 1980s; after peaking in 1991, when almost one in a thousand Colombians was murdered, homicide rates fell by more than 20 percent between 1992 and 2000 (Figure 12). Despite the decline in overall homicide rates, violence spread over the country between 1990 and 1997, in the sense that homicide rates decreased in the most violent areas, yet increased in areas considered to be less dangerous. In contrast with homicide rates, mitigation, extortion, car theft, and armed robbery rates kept growing during the 1990s, leading Colombia to display a remarkable rate of victimization, at more than 35 percent of households in 1997. Nevertheless, Colombia still has one of the highest homicide rates in the world, but ranks twelfth in victimization out of 18 Latin American countries for which the information is available.

According to the best empirical evidence available, drug trade and the simultaneous presence of illegal armed groups seem to be the main explanation behind the staggering homicide rates prevalent in Colombia today. Multiple empirical studies have tried to explain the determinants of homicide and crime in Colombia. Five alternative hypotheses have been tested: (a) the illegal drug trade, (b) impunity, (c) the presence of extra-governmental groups (guerrillas and paramilitaries) that have taken over traditional governmental roles in parts of the country, (d) poverty/income inequality, and (e) the possibility that Colombia's decades of internal strife have created a population that is innately more "violence-prone." Sánchez and Núñez (2000) performed a comprehensive test of the alternative hypothesis, with the most complete data set available for crime across different municipalities in Colombia. Their main findings indicate that socioeconomic variables such as inequality, poverty, political exclusion, and lack of education have an adverse effect on the crime rate. However, jointly they explain only 6–12 percent of the total variability in the homicide rate. The rest—nearly 90 percent—is mainly explained by the intensity of illegal drug trade activities and its interaction with the presence of illegal armed groups; that is, guerrillas and paramilitaries. According to Levitt and Rubio (2000),

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50 See Levitt and Rubio (2000).
52 Levitt and Rubio (2000).
53 As mentioned above, variability of homicide rates across municipalities is very high.
these findings are consistent with international evidence that indicates a positive covariance between homicide rates and periods of intense illegal drug trade.

Figure 12. Colombian homicide rate, 1962–98

![Graph showing Colombian homicide rate, 1962–98.]

Source: Colombian National Police.

Violence generates increasing social costs and demands substantial public resources. Apart from the 30,000 lives lost per year in the war against illicit drugs, Colombia has sacrificed not only police and military officers but also several presidential candidates, politicians, intellectuals, and journalists. Estimates of the human capital loss due to homicide are at least 1 percent of GDP. Moreover, investment and educational and labor market opportunities become severely limited in an atmosphere of violence and insecurity. At the same time, the demand for public resources to fight crime has escalated. Public expenditure in justice and security has more than doubled its share of GDP during the last decade. While current public expenditure in security and justice is around 5 percent, in 1990 it was close to only 2 percent of GDP. Simultaneously, private expenditure in security seems to be increasing even more rapidly: The ratio of policemen to private guards decreased from 2.5 in 1980 to only 1.0 in 1995. Additionally, the World Health Organization estimates that violence’s effects on health care costs in Colombia are in the magnitude of 5 percent of its GDP, an undoubtedly alarming proportion.

54 Approximately 600 lives per year are lost in massacres, half of them in the Department of Antioquia. DNP-UNDP (1999).
55 Capital-cost estimates are based on decreases in disability-adjusted life years (DALYs), Trujillo and Badel (1998) and Londoño (1996) quoted by Levitt and Rubio (2000). Additional costs in terms of medical assistance are provided by Bonadilla et al. (1995).
56 See section II in Levitt and Rubio (2000) for detailed estimates.
3.2 Life expectancy: persistent improvements with gender bias associated with violence

Life expectancy has increased by nearly 21 years during the last four decades, with a strong advantage for women and considerable regional differences. As shown in Figure 13, women have benefited most from these gains: The gender gap was 3.4 years in the 1950s, started widening to 6.6 in the late 1970s, and rose to 8.3 in 1995 before returning to 6.3 at present. During the last decade, the gender gap varied widely between departamentos, with the maximum in Antioquia (14.2 years, 162 percent the national average) and the minimum in Nariño (4.4 years). Regional comparisons across departamentos show that life expectancy is much higher in the Atlantic region.\(^{59}\) Apparently, longer life expectancy seems more prevalent in the least prosperous areas. Finally, the departments with higher life expectancy also reveal lower gender gaps. Most of the gender difference is associated with the extremely high risk of being murdered among the young Colombian males. Colombian men between 15 and 35 years of age are 15 times more likely to be homicide victims than women of the same cohort and twice as likely to be victims than men over 45 years of age (see Figure 14).

![Figure 13. Life expectancy by gender, Colombia, 1950–2000](image1)

![Figure 14. Homicide rates by age and gender, Colombia, 1999](image2)

3.3 Inequality and violence: Who bears the burden of crime?

The poor are more likely to be victims of homicide, and the non-poor are more likely to be victims of property crime and kidnapping.\(^{60}\) Our main results concerning the effect of relative household socioeconomic status on the probability of victimization are as follows. The probability of victimization is very similar for the first three quintiles, slightly higher, though not significantly, for the fourth quintile, and substantially higher for the top quintile. On average, the richest 20 percent of the population has a probability of victimization of at least 6 percentage points higher than the poorest 60 percent. This result holds up after controlling for household attributes and city fixed effects, though the significance drops somewhat in the latter case.\(^{61}\) However, similarities in the probability of being the victim of a violent crime hide important

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\(^{59}\) With the exception of males in the department of la Guajira.

\(^{60}\) This subsection is based on Gaviria and Vélez (2001), Chapter 4, Volume II of the report.

\(^{61}\) Vélez, L.F., et al. (2000) reach a similar conclusion in their in-depth analysis of victimization in the city of Cali. Here, the typical victims of crime are young individuals from the middle and upper social strata.
differences in specific kinds of crimes: the higher incidence of homicides in the lowest quintiles and the higher incidence of kidnappings in the highest. The probabilities of having a household member murdered are 2.4 percent for households in the bottom quintile, 1.2 percent for households in the third quintile, and 0.6 percent for households in the top quintile. For having a household member kidnapped, the corresponding probabilities are 0.0 percent, 0.1 percent, and 2.8 percent. Female-headed households are at least 3 percentage points more likely to have been victims of a violent crime (a difference of more than 100 percent with respect to mean values), which can be explained in part by the fact that one of the main reasons women head these households is that the former (male) head was murdered (i.e., there is reverse causality).

The intensity of crime concentration among business owners reveals a perverse effect on economic efficiency, i.e., reducing investment and employment in crime-infested areas. Households that conduct a business out of their homes are 10 percentage points more likely to be victimized than households that do not. This finding indicates that property crime is especially taxing on small entrepreneurs, implying that the economic effects of property crime, from slower economic growth to stifled job creation, could be substantial. Surprisingly, households in which the head is unemployed are much more likely to be victimized, which may reflect greater exposure to risk caused by job searching or loitering, the main activities of the unemployed. Regardless of the reason, the fact is that a heightened victimization risk appears to be a hitherto unknown cost of being unemployed, at least during the current escalation of joblessness in Colombia.

The non-poor feel unsafe and are more likely to modify their behavior and invest in crime prevention accordingly. Households from the top quintile are much more likely—15 to 18 percent—to report feeling unsafe because of fear of crime than are households in extreme

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62 Whereas more than 3 percent of all female-headed households had a family member murdered in the six months prior to the survey, less than 1 percent of all male-headed households experienced the same ordeal. Kidnapping rates do not differ much between these two types of households and assault rates are slightly higher in households headed by women.
poverty, a result consistent with the higher probability of victimization among the richest households mentioned above (Figure 15). Households from the bottom quintile are at least 10 percentage points less likely to report feeling unsafe, and households from the intermediate quintiles have similar propensities to report the same feeling (with the exception of the second poorest quintile). Migrant households are more likely to feel unsafe in their new city of residence (perhaps because they have to face an unfamiliar and often hostile environment, especially if they are IDP (Internally Displaced People). Female-headed households are also slightly more likely to feel unsafe, though the difference is not significant and is relatively small when compared to the higher propensity of those households to have a member victimized. Households from the top quintile are much more likely to have antitheft devices in their homes, to participate in neighborhood watch programs, and to hire private guards. For this last strategy, the difference between the top and bottom quintiles is almost 50 percentage points, and the difference between the fifth and fourth quintile is more than 20 percentage points. Households from the top quintile are also more likely to avoid road trips than households from any of the other quintiles. The same is true for not going out at night, though the difference in this case is not statistically significant.

Domestic violence mostly affects uneducated women. Poor women are much more likely to be victims of domestic violence than women from more advantageous backgrounds. The probability of being a victim of domestic violence increases as much as 16 percentage points as income level moves from the top to the bottom quintile (see Vol. 2, Chapter 4). But the effect of relative socioeconomic status shrinks substantially and loses its significance completely after controlling for both the years of education of the potential victim as well as those of the household head, suggesting that poor education, rather than lower socioeconomic status, appears to be the main risk factor of being a victim of domestic violence.

Crime and feeling unsafe have perverse effects on economic efficiency. The disproportionate concentration of property crime among the better off could have huge economic consequences, from lower levels of investments and growth to higher migration rates among the educated. The intensity of crime concentration among business owners reveals a perverse effect on economic efficiency; that is, reducing investment and employment in poor urban communities.

Exposures to homicide and domestic violence have perverse psychological and economic effects, yet quality family life can play a protective role. For its part, the concentration of homicide and domestic violence among the worse off, besides its obvious effects on the well-being of the victims, imposes a psychological and economic burden on their relatives and increases their chances of enduring pathological and dysfunctional behaviors, especially among children and youngsters, and ultimately reduces socioeconomic mobility and contributes to the perpetuation of poverty. Brook, et al. (1999, 1998) show that, in the Colombian case, vis-à-vis other developed nations, quality of family interaction plays a particularly efficient role in the reduction of the probability of drug use, crime involvement, and post-traumatic syndrome among Colombian youth living in high-risk neighborhoods.

3.4 Armed conflict in rural areas, displaced population, and vulnerable groups

The displaced include a majority of women and children. As was shown in Section 1, the estimate of Internally Displaced People (IDP) is at least 1 million during the last 15 years. The displaced include a majority of women and children, who fled as the threats to their safety became closer and closer, as well as an overwhelming majority of rural households, whose main income came from agricultural activities.

63 They conclude that "consideration should be given, therefore, to developing prevention programs aimed at family bonding, not only for its intrinsic value, but also for its long-range implications for decreased (... drug addiction ...), delinquency, and ultimately violence" Brook, et al. (1999).
IDP either try to stay close to their land in the departmental cabeceras or they migrate to the safer anonymity of larger urban centers, such as Bogotá—which may receive up to 25 percent of the IDP—Medellín, Barranquilla, and Cartagena. These forced migrants, who are trying to escape the various armed groups, fuel urban growth. A survey of 200 IDP in Bogotá, Medellín, and Cartagena suggests that households that opt to reach departmental urban or periurban centers may be undertaking "preventive displacement" as their environment becomes generally unsafe and they predict an escalation of conflict at the local level. Those who seek larger and more distant cities may be trying to escape direct threats to their lives when fleeing is the sole option to remain alive. The latter are typically leaders in their community and/or depend on agriculture as their main source of income. They must often leave quickly, and the majority is forced to abandon their assets, i.e., land (Erazo, et al., 2000).

The increasing trend in the numbers of IDP and the limited absorption capacity of the urban sector, especially in the context of the recession, are putting an increasing number of vulnerable groups at risk. IDP face a high risk of unemployment; agricultural skills have little value in urban labor markets, thus limiting their income-generation opportunities. In addition, inadequate housing and poor access to public services characterize the urban slums or spontaneous settlements where they arrive. Major economic losses, tremendous psychological hardship, and the added strain on household structure—atomization of families, single headship—put them at risk of resorting to begging, prostitution, and delinquency and falling into a vicious circle of extreme poverty. The well being of children of IDP households, present and future, is of special concern as households' food security is endangered and the opportunities for school enrollment and attendance shrink.

The full economic and social effects of considerable forced migration—on approximately 10 percent of the rural population—are uncertain. One effect may be the concentration of landholdings in the areas of "expulsion" and the increasing weakness of property rights on any kind of real assets. In turn, the latter give rise to perverse efficiency effects on the remaining rural population through its obvious discouragement of private investment. Another may be the creation of a new highly vulnerable group, composed of returnees or re-settled IDP who may not be able to return to their original income-earning strategies owing to the loss of assets or household members. On the other hand, population loss could possibly lead to local labor shortages in rural areas and, thus, rising wages.

In summary, violence and the continual worsening of crime since the 1970s have eroded the welfare of all Colombian households and imposed a considerable burden on Colombian society as a whole. The trend toward persistent deterioration of violence is mostly associated with illegal drug trade and the presence of illegal armed groups. Poor households bear most of the burden of homicide and domestic violence; at the same time young Colombian males face an extremely high risk of being murdered. The latter fact helped to duplicate the gender gap of life expectancy from the 1970s to the 1990s. Uneducated women and spouses of uneducated men bear a disproportionate share of domestic violence. On the other hand, the better off bear a disproportionate share of the burden of property crime, extortion, and kidnapping and are more likely to be victimized, to feel unsafe, and to modify their behavior accordingly, including increasing investment in crime avoidance. Moreover, this situation induces serious indirect efficiency costs on the economy through migration of educated Colombians to other countries and reductions in domestic private investment, detrimental to growth and the generation of employment for the poor. For its part, the concentration of homicide and domestic violence among the worse off, besides its obvious effects on the well-being of the victims, imposes a psychological and economic burden on victims' relatives and increases their chances of enduring pathological and dysfunctional behaviors, especially among children and youngsters, ultimately
eroding socioeconomic mobility and contributing to the perpetuation of poverty. Quality family life has been found to be an efficient protective mechanism; thus, preventive programs aimed at reinforcing family bonding should be developed. Equally important is the regulatory environment to promote stability and the peaceful resolution of conflict within the family. Another important component of the burden of violence is the increasing number of internally displaced people—at least 1 million—associated with the armed conflict in the rural areas. Finally, the social costs of violence are amplified by the demand for public resources—current and future—to attend the victims and restore security. Although public expenditure in justice and security more than doubled during the last decade, the improvements in security and law enforcement have been limited.

*   *   *   *

Finally, progress in economic and social development was mostly resilient to growing insecurity. To assess how poor Colombians had been doing during the last two decades, this chapter examined three axes of welfare development: poverty, social development, and personal security. These three main welfare fundamentals have not evolved in complete harmony. Sporadically they diverge and turn out to be in partial contradiction. Despite two decades of persistent security deterioration, Colombia experienced clear, unambiguous improvement in social and economic indicators. Although most of the economic welfare and social indicators in education, health, and infrastructure show quite positive developments during the last two decades, the simultaneous escalation of violence—with its perverse effects on life expectancy among males and increasing overall social cost—reveals a considerable deterioration of living conditions in urban Colombia. Moreover, social investment in human resources showed some healthy robustness relative to the market instability of the late 1990s. Only recently—probably owing to the economic recession—has school enrollment been declining.

64 See DNP-UNDP (1999), Chapter 1, for estimates of Human Development Index incorporating life expectancy estimates.
During the last two decades the populations most vulnerable to poverty have maintained a relatively constant set of characteristics. However, over time, such characteristics have become more polarized. Insufficient household income per capita—hence poverty—is tautologically associated with at least one of the following conditions: low skills, lower employment rates, higher dependency ratios—children per adult per household—and lower wages. All four are predominant among poor households in Colombia. During the 1990s, the likelihood of a household escaping poverty became increasingly dependent on having fewer children, having more working-age members with post-secondary education, and having access to employment for members other than the head. Contrary to what could be expected, the presence of the elderly within a household reduces the risk of poverty. Homeowners and middle- to high- age-headed households face a lower risk as well. Poverty may also arrive in less typical circumstances; that is, from low-frequency events that bring devastating welfare effects such as the loss of employment for the head, the presence of a disabled member in the household, or being a recent migrant or an IDP—in the late 1990s. In contrast to the urban situation, rural poverty remains much more severe and represents a higher share of total poverty. In summary, the faces of the poor are typically children of all ages, young, low to medium-skilled household heads, recent migrants, and non-homeowners. These groups are clearly worse off than pensioners, the college educated, the elderly, and non-recent migrants.

4. Characteristics of Vulnerable Groups

Chapter I already established the evolution of poverty, social indicators, and security during the last two decades. Logically, the next step is to identify the poor, or characterize their “faces”; that is, establish the demographic and social characteristics of the groups most vulnerable to poverty in Colombia. The main questions to be addressed include: What is the set of characteristics that identify the poor today? Have those characteristics remained stable over time? Or have new clusters of poverty emerged? Which characteristics have been the most detrimental? Which detrimental characteristics are more common or rare? Which characteristics protect against poverty? How does vulnerability to poverty change over the lifecycle? The identification of the poverty profile of different demographic groups has clear policy consequences. In particular, it provides a guide for the selection of appropriate public policy instruments and their target groups.

4.1 Urban Colombia: The faces of the urban poor have not changed, but they are becoming more apparent and polarized

Facts versus common beliefs about vulnerability: The typical faces of the poor are children of all ages, younger household heads, recent migrants, and non-homeowners. They are clearly worse off than pensioners, the elderly, and non-recent migrants. Who are the most vulnerable among various urban population groups? Table 7 reports the incidence of poverty in some population groups traditionally considered more vulnerable to poverty: migrants, women, children, non-homeowners, pensioners, the elderly, and the disabled, along with the overall urban poverty rate for comparison purposes. Popular beliefs are confirmed in relation to children of all ages and...
non-homeowners. Children under 18 consistently present higher poverty rates than the entire population, with an increasing proportion of infants and preschoolers in poverty. Homeownership clearly provides protection against poverty. Migrants used to fare better than or similarly to the overall population until 1995, but recent migrants are more likely to fall into poverty in recession years. This must be partly associated with a shift from voluntary to forced migration—displaced peoples—owing to the armed conflict in rural areas. On the other hand, incidence rates are nearly identical among men and women over the entire period. The disabled have remained consistently poorer than the rest of the urban population since 1988, although incidence rates are decreasing for this group. Pensioners and the elderly do far better than the rest of the population, and their relative standing seems to be improving over time.

Table 7. Poverty count for different population subgroups, Urban Colombia, 1978–99

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Urban Colombia</td>
<td>70%</td>
<td>55%</td>
<td>48%</td>
<td>55%</td>
<td>100%</td>
</tr>
<tr>
<td>Households with unemployed heads</td>
<td>91%</td>
<td>80%</td>
<td>72%</td>
<td>78%</td>
<td>8%</td>
</tr>
<tr>
<td>Children under 2 yrs.</td>
<td>80%</td>
<td>71%</td>
<td>63%</td>
<td>72%</td>
<td>4%</td>
</tr>
<tr>
<td>From 2 to 6 yrs</td>
<td>81%</td>
<td>70%</td>
<td>63%</td>
<td>69%</td>
<td>10%</td>
</tr>
<tr>
<td>From 7 to 13 yrs</td>
<td>80%</td>
<td>70%</td>
<td>62%</td>
<td>69%</td>
<td>13%</td>
</tr>
<tr>
<td>From 14 to 17 yrs</td>
<td>73%</td>
<td>61%</td>
<td>55%</td>
<td>64%</td>
<td>8%</td>
</tr>
<tr>
<td>Migrants/just moved(^1)</td>
<td>NA</td>
<td>50%</td>
<td>50%</td>
<td>64%</td>
<td>1%</td>
</tr>
<tr>
<td>Non-homeowners</td>
<td>77%</td>
<td>64%</td>
<td>57%</td>
<td>63%</td>
<td>51%</td>
</tr>
<tr>
<td>Disabled</td>
<td>69%</td>
<td>68%</td>
<td>60%</td>
<td>60%</td>
<td>1%</td>
</tr>
<tr>
<td>Migrants&lt;5%(^2)</td>
<td>NA</td>
<td>51%</td>
<td>46%</td>
<td>60%</td>
<td>1%</td>
</tr>
<tr>
<td>Women</td>
<td>69%</td>
<td>55%</td>
<td>48%</td>
<td>55%</td>
<td>53%</td>
</tr>
<tr>
<td>Migrants&lt;10%(^3)</td>
<td>NA</td>
<td>49%</td>
<td>43%</td>
<td>54%</td>
<td>2%</td>
</tr>
<tr>
<td>Homeowners</td>
<td>62%</td>
<td>46%</td>
<td>40%</td>
<td>47%</td>
<td>49%</td>
</tr>
<tr>
<td>Migrants&lt;25%(^4)</td>
<td>NA</td>
<td>50%</td>
<td>42%</td>
<td>44%</td>
<td>4%</td>
</tr>
<tr>
<td>Over 65 years old</td>
<td>52%</td>
<td>42%</td>
<td>35%</td>
<td>37%</td>
<td>5%</td>
</tr>
<tr>
<td>Pensioners</td>
<td>37%</td>
<td>32%</td>
<td>20%</td>
<td>24%</td>
<td>2%</td>
</tr>
</tbody>
</table>

1. Migrants/just moved: refers to people who have lived less than 1% of their lives in the current city.
2. Migrants<5%: refers to people who have lived less than 5% of their lives in the current city.
3. Migrants<10%: refers to people who have lived less than 10% of their lives in the current city.
4. Migrants<25%: refers to people who have lived less than 25% of their lives in the current city.

Basic factors of income per capita generation: the poor versus the non-poor. Household total income per capita is equal to the sum of labor and non-labor income divided by the number of its members. Consider a typical household \( h \), with \( N_h \) members and \( A_h \) of them of working age, among whom \( T_h \) individuals with \( S_h \) equivalent skill units are employed in the labor market for an average household wage per skill unit of \( W_h \). The household labor income per capita can be written as the product of four components:\(^65\)

\[^65\] We borrow this identity from Paes de Barros et al., for UNDP (2000).
\[ y_h = W_h S_h \frac{T_h}{A_h} \frac{A_h}{N_h} \]

That is, the wage per skill unit, the household's average skills, the rate of employment of the adult population \((T/A)\), and the proportion of working-age members \((A/N)\). Therefore, if we ignore property income and transfers, income per capita is below the poverty line when one or all of the three occur: low skill endowments, low employment rates, and high children-to-adult ratios.

Table 8. Income sources and needs: the poor versus the non-poor, Urban Colombia, 1978–99

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Average number of people in the household.</td>
<td>5.5</td>
<td>4.3</td>
<td>4.9</td>
<td>3.9</td>
</tr>
<tr>
<td>Average number of children 12 yrs. &amp; under</td>
<td>2.1</td>
<td>0.9</td>
<td>1.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Educational endowment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schooling, head of the household</td>
<td>4.7</td>
<td>8.2</td>
<td>5.6</td>
<td>9.1</td>
</tr>
<tr>
<td>Schooling, individuals older than 18 yrs</td>
<td>5.1</td>
<td>8.1</td>
<td>6.1</td>
<td>9.2</td>
</tr>
<tr>
<td>Households with at least 1 college graduate.</td>
<td>0.9%</td>
<td>17.8%</td>
<td>1.9%</td>
<td>24.5%</td>
</tr>
<tr>
<td>Household employment and child labor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household head</td>
<td>83.7%</td>
<td>80.7%</td>
<td>80.3%</td>
<td>78.3%</td>
</tr>
<tr>
<td>Other adults 17 &amp; over</td>
<td>56.8%</td>
<td>68.0%</td>
<td>55.3%</td>
<td>68.8%</td>
</tr>
<tr>
<td>Children 12-16 in labor force</td>
<td>11.0%</td>
<td>15.2%</td>
<td>11.2%</td>
<td>12.1%</td>
</tr>
<tr>
<td>Social mobility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School enrollment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ages 7 to 11</td>
<td>90.8%</td>
<td>96.4%</td>
<td>93.3%</td>
<td>98.2%</td>
</tr>
<tr>
<td>Ages 12 to 17</td>
<td>76.3%</td>
<td>78.5%</td>
<td>78.7%</td>
<td>83.7%</td>
</tr>
<tr>
<td>Ages 18 to 22</td>
<td>25.9%</td>
<td>40.4%</td>
<td>26.7%</td>
<td>44.2%</td>
</tr>
</tbody>
</table>

The data show that poor households simultaneously suffer from lower skill endowments and higher dependency ratios. Table 8 compares poor and non-poor households. Several worrisome but not completely unexpected trends are highlighted in this table. First, skill endowments are lower in poor households. College graduate earners belong disproportionately to non-poor households: Only 3 percent of poor households had at least one such member in 1999 while more than a third of non-poor households counted at least one. While schooling levels of household heads have increased, the poor gained only 1.8 additional years, while the non-poor gained 2.3 years, widening the gap. Non-poor households had 50 percent more years of schooling than the poor in 1999, and that ratio dropped by only 10 percentage points during the last 21 years. Since unemployment is lower the higher the schooling level, this indicator reflects the role of higher education in protecting access to jobs and, ultimately, to household income. Second, in 1999 household size and dependency ratios remained approximately 1.3 and 2.3 times as high in poor households, changing little during the last two decades.
Poverty profile identifies the marginal effect of key household characteristics. How much does each household characteristic help to escape poverty? The value of some income-generating factors is endogenously determined for each household by the interaction of the household’s exogenous characteristics with the local socioeconomic environment it faces. For instance, the number of adults actually employed $T_a$ depends on national and regional unemployment rates and also on household’s skill endowments and experience—especially for spouses—number and age of children, presence of other adults, and their relative participation in the labor force or within the household productive and reproductive tasks. Thus, estimates of the marginal effect of each key household characteristic on the probability of being poor are obtained, including all variables that proved strong correlates of poverty in the previous descriptive statistics. The profile includes five main types of correlates: (a) skill endowment variables $S_h$ (education and labor experience of the head, and average education of all other household members older than 12 years)$^{67}$; (b) demographic variables $N_h$ (age, gender and marital status of the head, number of members of working age$^{68}$ $A_h$, number of dependents, that is, children and elderly$^{69}$); (c) household labor market characteristics ($W_h, T_h$), activity of the head, employment rate of other household members 12 and older, and a dummy variable indicating household members’ employment as wage earners, self-employed, or both and regional variables—(six dummies for the cities); (d) physical assets as proxied by homeownership; and (e) idiosyncratic shocks such as recent migration—possible displacement-, job loss, disability, divorce, or widowhood.

**Skill endowment**

Human capital is key, but high school education is losing some of its protective power. Table 9 presents the effect of human capital on the probability of being poor. The table highlights various facts. First, while having a high school degree provided a significant advantage to the head of a household in 1988, this effect has been reduced dramatically over time, returning to the 1978 levels. This fact is surely related to the poor performance of the earnings of high school graduates and dropouts since 1988 (see the section on inequality). On the other hand, having a college-educated head of household is a considerable advantage. Second, the human capital endowment of the household—proxied by its average educational attainment of other members in working age—provides alternative protection against poverty. In 1995, a six-year raise in average schooling—equivalent to moving from complete primary to high school graduate—produced a 22 percentage-point drop in the probability of poverty. However, after the recession this effect diminished to 14 percent. Third, while all educational categories are affected by the economic crisis, households with uneducated heads became increasingly vulnerable: After the relative alleviation brought by the construction boom of the first half of the 1990s, their probability of poverty doubled back above 1988 levels.

---

66 Based on a Logit regression (see Volume II chapters 1 and 2 and Table A1.3 in the appendix).
67 Potential labor experience is defined as min[(age-education-7), (age-12)].
68 Ages 12 to 65.
69 The categories are less than 7, 7–12, 12–65, and above 65 years of age.
70 Human capital is proxied by the educational level of the household head, his or her potential experience, and the average educational attainment of other household members older than 12. The dummies are no schooling, primary school (1–5 years)—the base category—high school dropout (6–10 years), high school graduate (11 years), college dropout (12–15 years), and college or more (16 or more years). There is a variable capturing the interaction between education and gender of the head, but we do not report its marginal effect.
Demographics

The presence of children increases the risk of poverty, and the elderly produce the opposite. Table 9 displays the marginal effect of most of the demographic variables listed above. Households with one additional young child than the average faced a 10–13 percent higher poverty risk in 1995 and again in 1999. The presence of people older than 65 years of age slightly decreased the probability of being poor, 2 percent in 1995 and 4 percent in 1999, probably through the effect of wealth accumulation and/or secure pension income. As shown in Table 9, the protective role of fixed income sources may be enhanced in the recessive period.

Older working-age household heads face lower poverty risk, and this lifecycle effect became even stronger in recent years. Since 1988, poverty risk decreased with the age of the head, and became minimal for the 58-67 year-old males. In 1999, these lifecycle effects became much stronger for male heads, reaching 21 percent for the youngest heads. Female heads faced somewhat different risks: Those younger than 47 years already faced an 11–16 percent additional risk in 1978, and this shot up to 31 percent higher than 58- to 67-year-old males in 1995. These risks decreased somewhat in 1999, and older female heads were comparatively less at risk than their younger counterparts, while remaining more vulnerable than males of the same age.

Female-headed households do consistently worse than male-headed ones. Contrary to the descriptive statistics, when controlling for other household characteristics, the multivariate analysis shows that female-headed households are more vulnerable than male-headed ones. In 1988 and 1995, all female-headed households were facing higher risks than their male counterparts, and this risk had been increasing, nearly doubling from 18 to 31 percent for the youngest women. In 1999, the risks decreased, but still remained higher than 1978 risks. This evolution is presumably associated with the gains on gender wage differentials over the 1995-99 interval (see section on inequality). The fact that unconditional risk of poverty is smaller than conditional risk reveals some compensatory effect in terms of income-generating factors (either larger education endowments, lower dependency ratio, and/or larger employment ratio).

Labor Market

When household members other than the head work, the household is much less likely to be poor. Table 9 presents the marginal effects of some labor market indicators. The last row of the table confirms that a higher employment rate within the household—excluding the household head—remains the most effective insurance against poverty, with poverty risks decreasing by 13 percent for each additional household member employed. However, this effect diminished during the recession, probably because as households send more members to the job market, they obtain lower individual earnings.

Unemployment of the household head is catastrophic for poverty risks, especially if the head used to work. -25 percentage points more likely of becoming poor!-. On the other hand, households with an inactive head are better off, especially if the non-labor income comes from rents. Since these earnings are somewhat less responsive to economic cycle swings than labor earnings, they act as a protection device to both economy-wide and idiosyncratic shocks in the labor market.

These findings are consistent with the evolution of the Paglin-Gini Index in Section 3.

The average number of people 12 and older (excluding the household head) per household is 2, while the average employment rate is 40 percent. Thus, an additional person becoming employed raises the employment rate to 90 percent, which in turn decreases poverty risk by 13 percent.

This phenomenon is confirmed by the data analyzed in Fiess, et al. (2000).
Table 9. Marginal effects of selected variables on the probability of being poor, Urban Colombia 1978, 1988, 1995 and 1999

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High school dropout</td>
<td>-5% **</td>
<td>-15% **</td>
<td>-7% **</td>
<td>-6% **</td>
</tr>
<tr>
<td>High school</td>
<td>-15% **</td>
<td>-32% **</td>
<td>-20% **</td>
<td>-18% **</td>
</tr>
<tr>
<td>College dropout</td>
<td>-15% **</td>
<td>-53% **</td>
<td>-39% **</td>
<td>-29% **</td>
</tr>
<tr>
<td>College graduate</td>
<td>-30% **</td>
<td>-78% **</td>
<td>-65% **</td>
<td>-46% **</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Household's average education²</th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-2% **</td>
<td>-5% **</td>
<td>-4% **</td>
<td>-2% **</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of individuals by age category.</th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Younger than 7 yrs.</td>
<td>7% **</td>
<td>23% **</td>
<td>10% **</td>
<td>11% **</td>
</tr>
<tr>
<td>From age 7 to 11</td>
<td>7% **</td>
<td>22% **</td>
<td>13% **</td>
<td>11% **</td>
</tr>
<tr>
<td>From age 12 to 65</td>
<td>1% **</td>
<td>6% **</td>
<td>1% **</td>
<td>3% **</td>
</tr>
<tr>
<td>Older than 65</td>
<td>-4% **</td>
<td>-2% **</td>
<td>-2% **</td>
<td>-4% **</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Head's age and gender³</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Younger than 28 yrs.</td>
<td>10%</td>
<td>10%</td>
<td>6%</td>
<td>21% *</td>
</tr>
<tr>
<td>From 28-35 yrs.</td>
<td>0%</td>
<td>4%</td>
<td>8%</td>
<td>17% **</td>
</tr>
<tr>
<td>From 36-42 yrs.</td>
<td>-4%</td>
<td>2%</td>
<td>9% *</td>
<td>13% **</td>
</tr>
<tr>
<td>From 43-47 yrs.</td>
<td>-4%</td>
<td>1%</td>
<td>6%</td>
<td>11% **</td>
</tr>
<tr>
<td>From 48-57 yrs.</td>
<td>-4%</td>
<td>3%</td>
<td>3%</td>
<td>6% **</td>
</tr>
<tr>
<td>Older than 67</td>
<td>-2%</td>
<td>3%</td>
<td>0%</td>
<td>8% **</td>
</tr>
</tbody>
</table>

| Females                                        |       |       |       |       |
| Younger than 36 yrs.                           | 16% * | 18% **| 31% **| 24% * |
| From 48-57 yrs.                                | 4%    | 14% **| 25% **| 16% **|
| Older than 57                                   | 3%    | 8% ** | 17% **| 13% **|

| Household labor market characteristics          |       |       |       |       |
| Employment rate⁴                                | -18% **| -61% **| -42% **| -27% **|
| Head unemployed first time                      | 20%   | 12%   | 26%   | 4%    |
| Head unemployed but worked before              | 19% **| 55% **| 36% * | 25% **|
| Pensioner                                      | -1.8% | 3.5%  | -3.4% | 0.6%  |

| Home ownership                                 |       |       |       |       |
| Owners but paying mortgage                     | NA    | 25% **| 21% **| 15% **|
| Renters                                        | NA    | 31% **| 19% **| 13% **|

1. Base category is heads with primary education.
2. Average taken over all household members other than the head who are older than 11 yrs.
3. Males 58 to 67 years old is the base category.
4. Employment rate = number of people employed other than the head / number of people 12 years old & older other than the head.

* Significant at 10% level or less
** Significant at 5% level or less

Unemployment peaks for the young with intermediate skills. Given the tight relationship between unemployment and poverty, unemployment rates are reported for various demographic groups. In March 2000, it reached a historically maximum level of 20.2 percent in urban areas. College graduates face the lowest rates of unemployment (9.1 percent), while college dropouts face more than twice this rate. Individuals with intermediate education (high school dropouts and graduates) display the highest unemployment rates, at 23 percent, 6 percentage points above unskilled workers. All groups except college graduates saw their rates worsen by 10 percentage
points between 1988 and 1999. Unemployment rates decrease with age, although the effect seems to taper off after 35 years of age. More than one-third of young adults face unemployment, calling for specific employment policies targeted at them.

**Homeownership**

**Homeownership provides good protection against poverty.** Table 9 presents the marginal effects of different home tenancy status. Ownership of physical assets like housing seems to act as "insurance" against poverty, by providing the household with some flexibility in reacting to the unemployment episodes. De facto occupants and users are the most vulnerable groups. Renters and mortgage payers are 13-15 percent more likely than owners to be poor but this risk has kept on decreasing, despite the crisis. Of concern is the fact that, during the recession period, homeownership plummeted by 10 percent, back to its 1988 levels, which affected mostly the second and third quintiles, the poor or nearly poor households. This drop created a major policy challenge, since homeownership is a major protective factor against poverty (see Box below).

**Idiosyncratic shocks**

**Unemployed and disabled household heads were most affected by the recession.** The effect of some shocks households face, such as separation, widowhood, disability and unemployment, as well as some other labor market characteristics of the household head are significant for poverty risk. Disability of the household head is a major risk factor of poverty, although the effect decreased sharply from 61 percent in 1988 to 18 percent in 1999. When controlling for other factors, households with single heads as a result of divorce, separation, or widowhood do not seem to be more at risk than those with married heads.

**In contrast to those with traditional migrant profiles, internally displaced people fare even worse than the urban poor.** The drug-related economic and military strength of the guerrillas and paramilitaries has led to a dramatic increase in violence, deaths, kidnappings, extortion, and displacement, especially among the rural civilian population. As a result, internally displaced people -IDP-, constitute another critically vulnerable group. This population has been evicted from areas where they were engaged in productive economic activities and have been forced to abandon their main asset—their land—and to relocate to urban slums, facing barriers to access to jobs and social services. Available data suggest that most of the displaced population are women (58 percent) and children (55 percent are under 18), with limited skills and education. On top of having lost their assets, the former demographic characteristics make them more vulnerable to poverty.\(^7\)

**Conclusion**

**During the last two decades, the faces of the poor in urban Colombia are not changing.** They are, however, becoming more polarized. The analysis above has shown that poor households in urban Colombia suffer increasingly from lower skill endowments and higher dependency ratios. That is, the variables with the strongest and most persistent relation to poverty are household size, household employment rate, and skill endowment. When household members other than the head work, the household is much less likely to be poor. The lower overall employment rates faced by the poor are explained in large degree by the labor market

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\(^7\) Ibáñez and Veléz (2002) show that IDP face very limited access to social services, especially education for their children and psychological attention, live in overcrowded houses with deficient coverage of water, sewerage and electricity, suffer from child malnutrition and face living conditions worse than those found among the poorest urban households.
participation of spouses and other household members of working age; employment of their heads does not explain the difference from non-poor households. Over the years, the difference in employment rates between heads and other adult members within non-poor households is narrowing at a faster pace than that within poor households.

**Human capital is key and is playing an increasing role as a poverty determinant.** But some of its protective power seems to be eroding over time. In the 1980s, a high school-educated head was good protection against poverty; however, in the 1990s, a household head had to acquire some college education in order to enjoy such protection. The income benefits of human capital also operate indirectly through labor force participation and occupational choice and family size. As was shown above, having a more active labor force participation of other household members is becoming essential to escape poverty, but that choice is not independent of skill endowment. Labor force participation of spouses and other household members is, in particular, an increasing function of years of schooling and a decreasing function of the presence of young children. In turn, the number of children in the household is inversely related to schooling of the spouse and the head. Hence, it is not surprising to find that human capital endowments are playing an increasing role as poverty determinants in Colombian households.

### 4.2 Rural Colombia: Except for the displaced population, vulnerability is similar to that of urban areas

The analysis of vulnerability and key determinants of rural poverty leads to conclusions similar to the urban case, except for the increasing vulnerability of recent migrants and desplazados or IDP, and the much weaker impact of homeownership as poverty protection device.

**Homeownership provides much weaker protection against poverty than in urban areas.** Contrary to urban areas, poverty rates of non-homeowners have been decreasing both in relative and absolute terms and are now only slightly higher than those of homeowners.

**In summary,** the faces of the poor are typically children of all ages, families with young, low-to medium-skilled household heads, recent migrants, and non-homeowners. These groups are clearly worse off than pensioners, the college-educated, the elderly, and non-recent migrants. Poverty may also arrive in less typical circumstances, namely, the presence of disabled member in the household or the loss of employment for the head. Rural poverty remains much more severe than urban and represents a higher share of total poverty. The fact that household characteristics alone appear insufficient to explain the higher level of rural poverty relative to urban underscores the importance of identifying other non-demographic determinants of rural poverty (namely, infrastructure, natural resources, and technology) in order to explain the rural-urban development gap.
Box 4. The reversal of two decades of progressive homeownership

Homeownership – a poverty prevention and self-insurance factor – in Urban Colombia had been increasing for all income groups since the late 1970s; however, the recent recession plus two other major market distortions and institutional changes reversed those rates back to 1988 levels. After increasing consistently until 1995, housing ownership rates plummeted by nearly 10 percentage points and fell significantly for all income groups, especially among the poor and nearly poor -second and third quintiles-.

Table B4.1. Urban homeownership by quintile.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quintile 1</td>
<td>27%</td>
<td>30%</td>
<td>37%</td>
<td>30%</td>
<td>-6%</td>
</tr>
<tr>
<td>Quintile 2</td>
<td>45%</td>
<td>42%</td>
<td>46%</td>
<td>44%</td>
<td>-2%</td>
</tr>
<tr>
<td>Quintile 3</td>
<td>46%</td>
<td>53%</td>
<td>55%</td>
<td>54%</td>
<td>-1%</td>
</tr>
<tr>
<td>Quintile 4</td>
<td>52%</td>
<td>56%</td>
<td>60%</td>
<td>58%</td>
<td>-2%</td>
</tr>
<tr>
<td>Quintile 5</td>
<td>57%</td>
<td>59%</td>
<td>63%</td>
<td>58%</td>
<td>-5%</td>
</tr>
<tr>
<td>Average</td>
<td>48%</td>
<td>52%</td>
<td>49%</td>
<td></td>
<td>-3%</td>
</tr>
<tr>
<td>With mortgage</td>
<td>9%</td>
<td>7%</td>
<td>9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>45%</td>
<td>57%</td>
<td>60%</td>
<td>58%</td>
<td>-1%</td>
</tr>
</tbody>
</table>

Source: DANE, Encuesta Nacional de Hogares. Authors’ calculations

With the intention of finding a remedy to this problem, the Constitutional Court ruled that the government should pay excessive interest payments to mortgage holders—a transfer of at least 1 percent of GDP, finally funded by a specific tax on the financial sector according to Ley 945 of 1999-. In addition, the Court declared the UPAC mortgage framework law used since the early 70’s invalid and ordered Congress to vote a new legislation following two main guidelines: the financial sector should give the lowest market rate to mortgage credit and financial cost of mortgage credit can not be capitalized. That meant cross subsidies from other forms of credit to housing and the elimination of flexible mortgage payments adjusted to lifecycle earning profiles. As a result of the uncertainty about the rules of the game in terms of mortgage credit and the mandated cross-subsidies, the availability of credit for housing dried up, and the valuable possibility of re-financing mortgage credit in the middle of a recessive period was severely limited.

During the second half of the 1990s, the market for housing suffered three majors set backs. One is simply the economic recession that has reduced demand for housing and the other two have been through the credit market. First, via a temporary distortion of the credit market that pushed the interest rates well above long-run equilibrium and second via the restriction of supply of mortgage credit derived from the Colombian Constitutional Court rulings that ignored the potential adverse market response.

As a sub-product of real exchange rate targeting derived from anti-inflationary policy objectives of the Central Bank, the real interest rate reached excessive levels in 1998 – of 20% (!), well above the long-run level for 1990s. Consequently, under fixed mortgage payments, liabilities of mortgage holders to the financial sectors increased at such a pace that in many cases they became “impagables” and the chances of maintaining homeownership were severely reduced for many homeowners. At some point, real interest rates were even above the reservation level for some homeowners who asked for cancellation of mortgage credits, but were prevented by the mortgage banks willing to hold on to these profitable but inefficient contracts.

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Both the high –above equilibrium- interest rates and the Constitutional Court intervention did not allow the market to operate efficiently and produced undesirable effects for homeownership and wealth transfers from households to mortgage banks. However, available evidence is insufficient to identify which of the two had the greatest impact. Although, interest rates have come down –thanks to policy changes in Central Bank policy- and a new law of mortgage credit is in place (Ley 945 of 1999), they have not produced any significant reactivation of building activity and ownership of housing keeps falling.

- In summary, the poor got hit in two ways: diminished employment for low skilled workers in the construction sector and, lower equity and homeownership rates—a poverty-preventive and self-insurance factor-.
While economic growth was instrumental for poverty reduction, income per capita growth was the dominant factor behind the gains and losses in urban poverty from 1978 to 1995. In this period, income per capita for the average Colombian household nearly doubled, which explains almost completely the reduction of 22 percentage points in urban poverty. In the same way, during the recent recession, poverty increased because of the combined effect of negative growth and increasing inequality. More specifically, during this period, most of the observed urban poverty increase—7.5 percentage points—is explained by job losses for the wage earners and the remainder by lower earnings for the self-employed. Besides, the household characteristics that explain most of the income per capita growth during the last two decades are the rise in schooling of the labor force and the reduction in the dependency ratios (through lower fertility), not changes in employment ratios or wages. However, among households with low-skilled heads, income per capita gains are also explained by higher real wages. Nevertheless, the unfortunate declining trend in the elasticity of labor demand to growth is creating more obstacles to transform future economy-wide growth into income per capita growth, through higher household employment ratios. This problematic trend justifies a critical assessment of all the policy instruments—both macro and micro—that might be distorting the labor skill intensity of private investment.

Colombia’s income inequality is extreme in the international context, but relatively moderate within Latin America. The rising trend of inequality in the 1990s erased the inequality reductions of the 60s and 70s and, partly diluted the potential welfare gains of growth for poor Colombians up to 1995. Moreover, it aggravated their welfare losses during the economic recession in the late 1990s. Despite the importance of inequality between rural and urban areas, within-regional inequality has an increasing and dominant role in explaining the national inequality trend. By income sources, labor income is the driving force behind the observed trend, but pensions is the most repressive component of income throughout. Skill-wage differentials in Colombia are large even in the Latin American context—above those of Brazil and Mexico—and have become one of the key regressive factors behind the deterioration of income inequality in the last decade. Similar effects followed from the dynamics of non-labor income—pensions and property income. In contrast, lower fertility played a clearly equalizing role by allowing for an increase in labor market participation of less skilled women and for a reduction in family size. Sub-period decomposition analysis reveals that the dynamics of income inequality follows a combination of fluctuating and persistent forces. Thus, the aggregate trend of the latter shows that further deterioration of inequality should be expected in the medium term, unless skill-wage differentials are reduced. And this outcome would require a special effort to promote post-secondary education.
This chapter explains why the poor are doing better or worse. The first section explores the links between poverty and the determinants of income-generating opportunities. It investigates the circumstances in which poverty declines from two perspectives: first by asking for the effects of growth and inequality on poverty and, in particular, separating the effects of higher unemployment and lower wages the recession. Second, given the relevance of average income per capita growth for poverty reduction, by asking which income-generating factors yield the predominant contributions to poverty reduction --whether it is changes in school attainment, family size, and dependency ratios, labor market participation, and real wage levels. The second section examines why Colombia's income inequality is so high and what is driving its increasing trend. It tries to determine to what extent specific income-generating factors explain the inequality changes. Did inequality increase because of changes in the distribution of education and skills, or changes in skill wage differentials, or changes in female labor market participation, or changes in fertility and family size? Do those factors change from equalizing to unequalizing over the years? Do relatively stable inequality periods mask strong compensatory forces within the economy? The answers to all these questions have immediate policy implications as far as they identify the most relevant economic parameters that affect the welfare of all Colombians and the poor in particular.

5. Labor Markets and Poverty Dynamics in Booms and Recession

This section presents the dynamics of poverty from two perspectives: first from the perspective of aggregate effects of growth and inequality in urban and rural areas. Second, given the importance of average income per capita growth for poverty reduction, it presents a decomposition of urban aggregate changes in terms of the evolution of skill endowments, family size and dependency ratios, labor market participation, and real wage levels.

5.1 The decomposition of aggregate poverty changes in terms of growth and inequality

The changes in the headcount ratio of the poor over time are decomposable over three factors: (1) economic growth (proxied by mean income per capita growth); (2) changes in inequality (as measured by the share of each household’s income distribution percentile in total income); and (3) changes in real value of the poverty line associated with relative price changes of food items.

Results are displayed in Table 10.

Urban

Income per capita growth was the dominant factor behind the gains and losses in urban poverty from 1978 to 1995. While growth contributed positively and substantially to poverty reduction until 1995 (22 percentage points), higher inequality counterbalanced this effect by nearly 7 percentage points. Economic growth contributed to poverty reduction by 15 percentage points between 1978 and 1988, and 7 points between 1988 and 1995. Inequality, on the other hand, increased poverty by 2.5 percentage points in the first period, and by 4.8 points subsequently. Finally, more expensive food items raised the poverty line and increased poverty by 2.0 percentage points over the 1978-95 period.

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75 Formally, poverty rates in dates 1 and 2 can be expressed as functions of the level of the poverty line or price index of the poor’s basket of goods (p), mean income (u) and the level of inequality in those dates (q), thus:

\[ P_1 = P(p_1, u_1, q_1) \] and \[ P_2 = P(p_2, u_2, q_2) \]

and our decomposition computes these three components:

\[ P_2 - P_1 = \] Prices: \[ P(p_2, u_2, q_2) - P(p_1, u_1, q_1) \]

\[ P_2 - P_1 = \] Growth: \[ P(p_2, u_2, q_2) - P(p_1, u_1, q_1) \]

\[ P_2 - P_1 = \] Inequality: \[ P(p_2, u_2, q_2) - P(p_2, u_1, q_1) \]
During the recession, poverty increased as a result of the combined effects of negative growth, increasing inequality, and higher relative prices of food items. Poverty increased by 7.5 percentage points during the crisis period, wiping out the 1995-gain. This resulted from contributions of all three components in similar proportions: High prices and recession contributed 44 percent, while inequality contributed an additional 29 percent.

The elasticity of poverty to mean household income has increased over time, reaching its highest level, -0.57, during the recession (1995-99). This implies that proportional effects on poverty rates were larger during the economic crisis than during the previous years. Thus, a 1 percent decrease in GDP is now associated with a larger change (increase) in poverty than the change (decrease) in poverty that a 1 percent rise in GDP once produced. A boost in the elasticity of poverty to growth means more poverty alleviation can be achieved through growth, but the consequences can be more severe if economic slowdown is revisited. If the poor are disproportionately vulnerable during times of crisis, as noted above, an economic slowdown also causes further deepening of poverty.

Table 10. Decomposition of poverty changes, Urban Colombia

<table>
<thead>
<tr>
<th>Actual change in poverty</th>
<th>Growth</th>
<th>Inequality</th>
<th>Poverty Line</th>
<th>Residual</th>
<th>Income change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978-1988</td>
<td>-15.2</td>
<td>-17.0</td>
<td>2.5</td>
<td>1.7</td>
<td>-2.3</td>
</tr>
<tr>
<td>Contribution</td>
<td>100%</td>
<td>112%</td>
<td>-16%</td>
<td>-11%</td>
<td>15%</td>
</tr>
<tr>
<td>1988-1995</td>
<td>-7.1</td>
<td>-11.7</td>
<td>4.2</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>Contribution</td>
<td>100%</td>
<td>164%</td>
<td>-59%</td>
<td>-4%</td>
<td>-1%</td>
</tr>
<tr>
<td>1995-1999</td>
<td>7.5</td>
<td>3.3</td>
<td>2.2</td>
<td>3.3</td>
<td>-1.3</td>
</tr>
<tr>
<td>Contribution</td>
<td>100%</td>
<td>44%</td>
<td>29%</td>
<td>44%</td>
<td>-18%</td>
</tr>
</tbody>
</table>

Rural

Contrary to the urban case, economic growth is not a unique dominant factor in rural areas. Decomposition of rural poverty dynamics reveals that growth played the dominant role in the steep poverty reduction between 1978 and 1988, but most of the 10 percent reduction from 1988 to 1995 was the result of a fall in the relative price of food items and, in the subsequent period, increasing income inequality halted the alleviation of extreme poverty.

Armed conflict dampens growth by two percentage points each year and weakens poverty reduction. Assuming an elasticity of poverty to mean income of 50 percent, these two additional points of growth during the last two decades would have translated into a poverty rate 25 percentage points lower in 1999—below 40 percent, equivalent to 5.8 million fewer Colombians living beneath the poverty line.

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5.2 The evolution of income per capita in terms of skill endowments, wages, dependency ratios, and employment (1978-99)

The dynamics of poverty in terms of basic income-generating factors

As was shown above, poverty dynamics follow the evolution of income per capita in relation to the poverty line. For any specific group of households, the poverty count will increase if its income per capita falls, and vice versa.\(^7\) As was shown above, the household labor income per capita is the product of four components: the wage per skill unit, the household’s average skills, the employment rate of the adult population (T/A, and proportion of working-age members (A/N).

\[
y_h = W_s S_h \frac{T_h}{A_h} \frac{A_h}{N_h}
\]

Consequently, the change in real income per capita \((y)\) for the household in a given period of time equals the sum of the percentage changes in average schooling of adults \((\delta)\), average wages per skill unit \((\omega)\), adult to family size ratio \((\alpha)\), and adult employment rate \((\theta)\).

In order to understand the evolution of per capita income, a decomposition in terms of income-generating factors described in equation (2) is applied to all households, to four types of households classified by their labor market attachment, and to four household groups based on the head’s level of schooling (see Table 11). Wage indexes are calculated by comparing predicted wages of the average level of schooling in the household. For that purpose, Mincerean equations were estimated for 1978, 1988, 1995, and 1999 for wage earners and self-employed, and were differentiated by gender. As a result, wage indexes will necessarily be biased as long as they ignore the heterogeneity of skill levels within each group of households.

Table 11. Decomposition of income dynamics in terms of skill endowments, adult-family size ratio, employment rate, and wages, Urban Colombia, 1978-99

<table>
<thead>
<tr>
<th>Changes 1978-1999</th>
<th>Population Share</th>
<th>Mean income</th>
<th>Schooling</th>
<th>Adult to family size</th>
<th>Emp rate</th>
<th>Wages</th>
<th>Poverty count*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1978 1999</td>
<td>Observed</td>
<td>(\delta)</td>
<td>(\alpha)</td>
<td>(\theta)</td>
<td>(\omega)</td>
<td></td>
</tr>
<tr>
<td><strong>All households</strong></td>
<td>100% 100%</td>
<td>76.6% 32.4%</td>
<td>9.2% 8.0%</td>
<td>-1.6% -14.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>By heads’ education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uneducated &amp; primary</td>
<td>60.3% 36.1%</td>
<td>-24.1% 34.3%</td>
<td>24.7% 12.4%</td>
<td>-7.3% 14.2%</td>
<td>-8.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some &amp; complete high school</td>
<td>31.2% 42.8%</td>
<td>11.6% 31.9%</td>
<td>17.1% 2.2%</td>
<td>0.2% 7.3%</td>
<td>2.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some college</td>
<td>3.4% 7.2%</td>
<td>3.9% 58.7%</td>
<td>9.7% 6.0%</td>
<td>0.4% 6.5%</td>
<td>-11.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College or more</td>
<td>5.2% 13.6%</td>
<td>8.4% 40.9%</td>
<td>16.6% -11.9%</td>
<td>3.4% -3.0%</td>
<td>-3.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>By labor market attachment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only wage earners</td>
<td>61.8% 46.4%</td>
<td>-15.4% 16.1%</td>
<td>10.3% 2.9%</td>
<td>2.3% 2.1%</td>
<td>-19.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wage earners &amp; self-employed</td>
<td>17.4% 18.9%</td>
<td>1.5% 13.3%</td>
<td>9.4% 2.2%</td>
<td>2.4% 1.6%</td>
<td>-14.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only self-employed</td>
<td>16.2% 23.3%</td>
<td>7.1% 9.7%</td>
<td>11.5% 3.1%</td>
<td>2.1% -12.1%</td>
<td>-7.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only nonlabor income</td>
<td>4.6% 11.5%</td>
<td>6.9% 12.7%</td>
<td>8.9% 3.0%</td>
<td>na na</td>
<td>2.4%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Level change in percentage points.

Sources: Authors' calculations based on DANE, Encuesta Nacional de Hogares

For the representative urban household, the key sources of income growth between 1978 and 1999 are an increase in schooling endowment and a reduction in the dependency ratio through smaller family size. Observed and predicted incomes grew by 77 and 44 percent, respectively. Three-quarters of the predicted rise in income are explained by growth of school endowments (32

\(^7\) In addition, it is tautologically true that any increase in the real value of the poverty line (the relative price of the basket of goods consumed by the poor) will produce proportional effects, but this time in the opposite direction.
percent) and one-quarter by reductions in the adult-to-family size (9 percent). The other two income-generating factors—the change in the employment ratio and the wage change—are negligible. In summary, nearly 11 percentage points of the total reduction in poverty between 1978 and 1999 (14.2 percent) are associated with the rise in education endowments of households. However, up to 1995, before the recession period, positive changes in employment ratios and wages helped to increase income per capita and made a contribution to poverty reduction as well.

Households headed by those with low skills gained the most benefits from lower adult-to-family size ratios, higher wages, and more education; however, they did not benefit much from higher employment ratios. When households are grouped by heads’ schooling, income gains for households headed by those with low skills are much larger: 51 percent. Their gains are nearly five times those of households with heads who have had some high school education or some college and ten times those of households headed by college graduates. Income gains derived from real wage gains and family size reduction are larger for households with less-educated heads, at 14 and 12 percent, respectively. Surprisingly, households headed by college graduates faced nearly asymmetric effects, with an income loss of 12 percent, because of increased dependency ratios. Wage index growth represented a relative loss for all household groups except those with less-educated heads. Households whose heads had some college or some secondary school education sustained the worst impact: a 6 to 7 percent decline in wages. Only one group that benefited from higher employment rates: households with college-graduate heads, with 3.4 percent increase in wages.

Moreover, the increasing level of educational attainment of household heads showed the importance of gains in education endowments for poverty reduction. Thanks to the reduction of population belonging to households headed by individuals with primary education or less—from 60 to 36 percent from 1978 to 1999—24 percent of urban Colombians escaped from almost certain poverty—72 percent average poverty—household with moderate or low levels of poverty (Table 11). Namely households headed by individuals with complete or incomplete secondary—58 percent of average poverty—or even households headed by individuals with some post-secondary education—23 percent of average poverty. Finally, the proportion of urban Colombians living in households headed by college graduates more than doubled in the same period and reached 14 percent in 1999—with 7 percent of average poverty.

5.3 The dynamics of urban poverty in the late 1990s recession: lower wages or jobs lost?

During the recession, the overall poverty and unemployment increases of 7.5 and 11 percentage points, respectively, hid stark variations among households, depending on their labor market choices (see Table 12). All household types, except the type I “only-wage-earning” group, saw an increase in poverty of 10 or more percentage points. The worst hit were households with only self-employed workers or only non-labor income. Households whose members were all wage-earners saw the smallest variation during the recession: Their poverty rate increased by only 3 percentage points, from 44 to 47 percent, between 1995 and 1999.

Job losses explain more than half of the poverty increase during the recession. The recession was accompanied by a 7.5 percentage point increase in poverty (Tables 12). The population share of households with only wage earners decreased by 3.2 percentage points, while for those with both wage and self-employed earners, it decreased by 2.7 percentage points. This decline also corresponded with a 4.2 percent increase in the number of households with non-labor market

78 Despite the relative success in income growth and poverty reduction of households with less-educated heads, their poverty risk remains the highest among all groups, 72 percent. 25
income and a 1.7 percent increase in households with only self-employment earnings. The latter group faces the highest poverty rates. At least half of the total poverty increase must be explained by this shift, which is associated with the 7 percent increase in households with unemployed heads and 2.1 percent rise in households without employment for neither the head nor other members.

Table 12. Decomposition of income dynamics during the recession, Urban Colombia, 1995-99

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1978</td>
<td>1999</td>
<td>% change</td>
<td>Observed</td>
<td>δ</td>
<td>α</td>
</tr>
<tr>
<td>All households</td>
<td>100%</td>
<td>100%</td>
<td>0.0%</td>
<td>76.6%</td>
<td>32.4%</td>
<td>9.3%</td>
</tr>
<tr>
<td>By heads' education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uneducated &amp; primary</td>
<td>60.3%</td>
<td>36.1%</td>
<td>-24.1%</td>
<td>34.3%</td>
<td>24.7%</td>
<td>12.4%</td>
</tr>
<tr>
<td>Some &amp; complete high school</td>
<td>31.2%</td>
<td>42.8%</td>
<td>11.6%</td>
<td>31.9%</td>
<td>17.1%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Some college</td>
<td>3.4%</td>
<td>7.2%</td>
<td>3.9%</td>
<td>58.7%</td>
<td>9.7%</td>
<td>6.0%</td>
</tr>
<tr>
<td>College or more</td>
<td>5.2%</td>
<td>13.6%</td>
<td>8.4%</td>
<td>40.9%</td>
<td>16.6%</td>
<td>-11.5%</td>
</tr>
<tr>
<td>By labor market attachment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only wage earners</td>
<td>61.8%</td>
<td>46.4%</td>
<td>-15.4%</td>
<td>16.1%</td>
<td>10.3%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Wage earners &amp; self-employed</td>
<td>17.4%</td>
<td>18.9%</td>
<td>1.5%</td>
<td>13.2%</td>
<td>9.4%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Only self-employed</td>
<td>16.2%</td>
<td>23.3%</td>
<td>7.1%</td>
<td>9.7%</td>
<td>11.5%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Only nonlabor income</td>
<td>4.6%</td>
<td>11.5%</td>
<td>6.9%</td>
<td>12.7%</td>
<td>5.9%</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

*Level change in percentage points.
Sources: Authors' calculations based on DANE, Encuesta Nacional de Hogares

Larger income losses and the strongest poverty increase hit low-skilled-headed households: Jointly, wage reduction and job losses explain the outcome. Households whose heads have a secondary education or less (including those who never attended school) faced the most severe income per capita loss: They lost 2.5 to 5.0 percent of income during the economic downturn and saw their poverty levels rise by 11-12 percentage points. Once again, this emphasizes that the crisis has hit those households that were already in a vulnerable position. Income losses follow an inverted-U shape, with the next highest loss being that experienced by households with a college-educated head, at 3.5 percent. Households whose heads had some primary school education or less faced a 1.9 percent reduction in income because of job losses and a 2.2 percent loss because of decreasing wages. In addition, for households whose head completed some high school, the respective losses were of 1.7 percent for job loss and 2.0 percent for wage adjustment. Households headed by college dropouts did lose 1.9 percent in employment rates but very little in wage adjustments.

Asymmetric dynamics of wages and employment by occupational choice and gender

Job losses for wage earners versus salary reduction for the self-employed. Without any downward wage flexibility, wage earners faced large job losses during the recession. Table 13 displays changes in wages and changes in population shares for employment of the respective groups. Households with complete or at least some labor market attachment to wage-earning jobs (type I and type II) lost substantial share in the urban population. Their drop was equivalent to almost 6 percentage points: 3.2 percentage points for wage earners and 2.7 points for mixed labor market attachment. Despite the labor demand reductions, individuals employed in the wage sector actually saw their wages rise by 3.7 percent. Hence, the formal wage sector, facing wage rigidities, responded to the economic recession by cutting jobs on an enormous scale. On the other hand, self-employed individuals maintained or increased their job share but faced larger
reductions in earnings. While wage earners' wages increased by 3.7 percent, self-employed individuals faced a 13.1 percent drop in earnings. The fall severely affected self-employed males, who lost 22 percent. Such workers with only primary schooling lost 30 percent, while college-educated employers saw their salaries decrease by 18 percent. In the wage sector, male employees faced, on average, a 5 percent loss, spread from a 9 percent loss among primary school-educated workers and stable wages for college graduates. It is clear that the wage sector adjusted to the recession with a shrinking of posts while the self-employment sector adjusted through decreased incomes.

Figure 16. Change in female labor force share by occupational choice and skill, Urban Colombia, 1995-99

![Graph showing the change in female labor force share by occupational choice and skill in Urban Colombia, 1995-1999.](image)

Table 13. Changes in wages and employment by skill level, Urban Colombia, 1995-99

<table>
<thead>
<tr>
<th>Skill level</th>
<th>Wages Earners</th>
<th>Self employed</th>
<th>Change in employment share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>None &amp; primary</td>
<td>-9%</td>
<td>25%</td>
<td>-30%</td>
</tr>
<tr>
<td>Some &amp; complete high school</td>
<td>-8%</td>
<td>16%</td>
<td>-21%</td>
</tr>
<tr>
<td>Some college</td>
<td>-4%</td>
<td>11%</td>
<td>-18%</td>
</tr>
<tr>
<td>Complete college</td>
<td>0%</td>
<td>9%</td>
<td>-18%</td>
</tr>
</tbody>
</table>

Despite increasing participation of women, the gender wage gap continued to narrow during the recession, especially among less-skilled wage earners, as a result of an apparent

79 The minimum wage might have contributed to this result. Between 1995 and 1999, the minimum wage in Colombia was revalued at 7 percent above inflation. According to Maloney (2001) and Bell (1997) minimum wages are binding in the Colombian case and their estimates of employment elasticities of the minimum wage vary between -0.3 and -0.6. According to Angel (2002) higher real minimum wages have increased inequality during the 1990s; that is, the enforcement effect—raising the wages of the less skilled—is weaker than the negative employment effect. His estimations show that this is the case when inequality estimators give higher weights to less-skilled workers and, also, when young workers are considered in isolation.
substitution of males by females in the wage-earning sector. While male earnings decreased between 1978 and 1988 and again between 1995 and 1999, female earnings have been increasing steadily since 1978, and the rise continued during the recession, when female wage earners actually saw their wage income increase by 15 percent (Table 13), while self-employed females managed to keep a 2 percent increase (somewhat higher for the low-skilled). Female workers with low schooling are faring better than college-educated ones, with a 16 percentage point percent spread between the two, a case opposite to that of male workers. Simultaneously, female workers are aggressively entering into all skill levels of self-employment jobs, increasing their share of employment by between 4 and 5 percent (Figure 16). In the case of wage-earning jobs, their entry is mostly concentrated at the low- to middle-skill level. This suggests that part of the downward rigidity of the wage-earning sector, especially at the low-skill level, is being confronted by the substitution of male workers by female workers who are being attracted by what are relatively higher wages for women.

**Female labor market entry** occurred mostly in the case of spouses who belonged more than proportionally to poor households. Male household heads and other males who belonged more than proportionally to non-poor households suffered heavy reductions in employment rates (-6.0 percent and -10.0 percent respectively, (concentration coefficients (CC) for net labor market exit are 0.113 and 0.024, respectively.) Other female workers (non-spouses) also reduced their employment rates by 3 percent, while female household heads increased their employment rate by 1 percent and were almost neutral with respect to income distribution. However, female spouses continued to enter the labor market aggressively, increasing their employment rates by 4 percent, and they belonged mostly to poor households (CC for net labor market entries is minus 0.161.).

**Summary**

In summary, economic growth explains most of the gains and losses in urban poverty during the last two decades. During the 1980s and early 1990s, economic growth was the main determinant of the 22-percentage-point reduction in poverty. However, during the recession, poverty increased because of the combined effects of negative growth, increasing inequality, and higher relative prices of the poor's basket of goods. Moreover, the rising elasticity of poverty to growth over time indicates an increasing dependence of the welfare of the poor on macroeconomic performance, whether good or bad.

The decomposition of urban average income per capita in terms of income-generating factors (across households grouped into skill categories) shows that households with mixed labor market attachment (wage-earning plus self-employed) are better off and less exposed to increasing poverty than those linked exclusively to self-employment. Their welfare differences are explained mostly by significant disparities in employment ratios and somewhat by education endowments. Moreover, households seem to follow a sequence of labor market attachment types during their lifecycle, with increasing welfare levels.

In addition, decomposition showed that the key sources of per capita income growth during the last two decades are the rise in education endowments and the reduction in the dependency ratios —through smaller family size—, but not the changes in employment ratios or wages. As a result, the population is shifting toward better-educated headed households with lower poverty risks. However, examination of household income growth factors across skill levels and labor market attachments reveals some heterogeneity. Low-skilled-headed households benefit the most from

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80 Similarly to the Gini coefficient, a higher value of the concentration coefficient implies a larger participation by the non-poor; more than proportional participation by the poor is indicated by negative values.

81 Despite a net increase in female spouse participation among poorer households, overall, such participation is largely concentrated among the middle- and high-income groups.
lower fertility, higher wages, and more education, but not from higher employment ratios. Households with only-self-employed workers are now an increasing share of the population, and are the only group suffering a significant loss in income per capita growth due to wage reductions.

A similar exercise using data from the recessive period (1995-99) shows that most of the observed 7.5 percent poverty increase is explained by job losses, and the remainder by lower wages. The asymmetric dynamics of job creation and wage adjustment between wage earners and the self-employed explains the outcome. Without any wage downward flexibility, the market adjusted itself by means of job losses for wage earners during the recession; 6 percent of urban households were affected. On the other hand, the self-employed market increased its size and absorbed a third of previously wage-earning households through large reductions in earnings. The rest, 4.2 percent of urban households, were left without any labor income source. Nevertheless, some additional adjustment in wages was obtained through a reduction in the gender wage gap (in both labor markets) and higher female participation.

The effects of labor market dynamics differed across household types. Low-skilled-headed households took the largest income losses and saw the strongest poverty increase, by simultaneous wage reductions and job losses. Paradoxically, income losses for households with college graduate heads came almost exclusively from an increase in their household size. Apparently, this is a result of the increasing number of multifamily households. In summary, households in which income is generated only in the wage sector faced increasing unemployment; some of them managed to enter the self-employment market and took a severe drop in labor earnings and the rest where left without any labor income source.

6. EXPLAINING INCREASING INEQUALITY DURING THE 1990S

The 1990s exhibited a reversal of the previous reduction in inequality. By the late 1970s Colombia appeared to exemplify the well-known inverted U-shaped Kuznet's curve, as economic development gave rise to reductions in inequality. However, after the 1980s when the inequality improvements plateaued, a reversal of inequality gains was seen. As was shown in Chapter 1, the magnitude of these changes was considerable: The Gini coefficient increased 4 percentage points during the last two decades, and simultaneously, the income share of the top quintile relative to the share of the poorest 20 percent increased from 17 to 20 times as high. This section examines the main forces behind such trends in the Colombian economy.

6.1 Sources of income inequality increase

Education accounts for a sizeable share of inequality. In order to explore the determinants of inequality changes, decomposition of the entropy measures of dispersion into their "within" and "between" components is presented in Table 14, using the same kind of correlates applied to the poverty profile analysis in the previous section: head's gender, education, experience, city of residence and sector where employed, average education of other household members, dependency ratio, and employment rate. *Education, be it of the household head or the average of other household members above 12 years, is the only variable that consistently accounts for any sizeable share of inequality between homogeneous groups of households over the period of analysis.* The occupation of the head also shows some minor explaining power regarding the between component of inequality. The reader might suspect, however, that since the occupational
Choice and labor force participation (other than of the household head) are so closely linked to educational attainment, they might also just be partly capturing the effect of education. All other variables (head’s gender, potential experience, age, city of residence, and sector of economic activity) explain less than 0.03 points of the between component of inequality, irrespective of the entropy measure.

Table 14. Inequality decomposition by household characteristics, Urban Colombia, 1978-99

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Within</td>
<td>Between</td>
<td>Within</td>
<td>Between</td>
<td>Within</td>
<td>Between</td>
<td>Within</td>
<td>Between</td>
</tr>
<tr>
<td>Theil Index</td>
<td>0.43</td>
<td>0.00</td>
<td>0.47</td>
<td>0.03</td>
<td>0.62</td>
<td>0.00</td>
<td>0.60</td>
<td>0.00</td>
</tr>
<tr>
<td>Head’s gender</td>
<td>0.28</td>
<td>0.15</td>
<td>0.31</td>
<td>0.16</td>
<td>0.45</td>
<td>0.17</td>
<td>0.40</td>
<td>0.20</td>
</tr>
<tr>
<td>Head’s education</td>
<td>0.39</td>
<td>0.04</td>
<td>0.45</td>
<td>0.02</td>
<td>0.60</td>
<td>0.02</td>
<td>0.57</td>
<td>0.03</td>
</tr>
<tr>
<td>Head’s age</td>
<td>0.41</td>
<td>0.02</td>
<td>0.46</td>
<td>0.01</td>
<td>0.60</td>
<td>0.02</td>
<td>0.58</td>
<td>0.02</td>
</tr>
<tr>
<td>City of Residence</td>
<td>0.41</td>
<td>0.02</td>
<td>0.45</td>
<td>0.01</td>
<td>0.60</td>
<td>0.02</td>
<td>0.57</td>
<td>0.02</td>
</tr>
<tr>
<td>Head’s sector</td>
<td>0.40</td>
<td>0.02</td>
<td>0.45</td>
<td>0.02</td>
<td>0.61</td>
<td>0.02</td>
<td>0.54</td>
<td>0.06</td>
</tr>
<tr>
<td>Head’s occupation</td>
<td>0.38</td>
<td>0.05</td>
<td>0.41</td>
<td>0.05</td>
<td>0.57</td>
<td>0.06</td>
<td>0.52</td>
<td>0.08</td>
</tr>
<tr>
<td>Adult to family size ratio</td>
<td>0.10</td>
<td></td>
<td>0.08</td>
<td></td>
<td>0.10</td>
<td></td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Employment rate</td>
<td>0.06</td>
<td></td>
<td>0.07</td>
<td></td>
<td>0.06</td>
<td></td>
<td>0.08</td>
<td></td>
</tr>
<tr>
<td>Average education of the household</td>
<td>0.35</td>
<td>0.08</td>
<td>0.34</td>
<td>0.13</td>
<td>0.43</td>
<td>0.19</td>
<td>0.36</td>
<td>0.23</td>
</tr>
<tr>
<td>Fine ²</td>
<td>0.18</td>
<td>0.24</td>
<td>0.20</td>
<td>0.26</td>
<td>0.36</td>
<td>0.26</td>
<td>0.28</td>
<td>0.32</td>
</tr>
</tbody>
</table>

1. Fine decomposition refers to 1764 groups according to certain characteristics of the head (2 gender*6 education groups*3 experience*7 occupation*7 cities)

The discriminatory power of human capital endowments has been increasing during the last two decades-especially that of family members other than the household head. Not only is education a major component of “between inequality,” its role has also been increasing. For example, the average educational endowment of the household contributed 0.06 points in 1978 (measured by $E_0$), and 0.21 in 1999, while the educational attainment of the head rose from 0.12 in 1978 to 0.19 in 1999. For both, most of the increase took place between 1995 and 1999, with the recession reinforcing the value of higher education.

By income sources, labor income is the driving force behind increases in inequality. After the economic recession, wage income replaced self-employment as the major component of inequality. Table 15 presents measures of the relative contributions of the different types of income to total income and inequality, according to the methodology proposed by Shorrocks (1984). While percentages varied, until 1995 the ranking was self-employment, wages, other income, and imputed rents. Consistent with the findings above, from 1995 to 1999, wages increased their contribution to household income inequality by 24 percentage points, up to 58 percent, while self-employment income contribution fell from 44 to 26 percent. On the other hand, the relative contribution of other earnings to inequality fell from 19 to 12 percent, while its contribution to income fell by 1 percent. Labor earnings (wages and self-employment combined) contributed with 84 percent of total inequality in 1999, a proportion that exceeds 1995’s share by 7 percentage points, and is slightly higher than that of 1978.

82 See models of labor force participation and occupational choice in chapter 3, Volume II. The occupational categories included in the ENHs are: family worker, blue collar, white collar, domestic employee, self-employed and employer. Hence, aside from self-employed, the categories are basically given by the education of the individual.
Table 15. Shorrocks' inequality decomposition by factor components of household income, Urban Colombia 1978-99

<table>
<thead>
<tr>
<th></th>
<th>1978 Share of Inequality</th>
<th>1988 Share of Inequality</th>
<th>1995 Share of Inequality</th>
<th>1999 Share of Inequality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wages</td>
<td>36%</td>
<td>57%</td>
<td>24%</td>
<td>51%</td>
</tr>
<tr>
<td>Self-employment</td>
<td>47%</td>
<td>24%</td>
<td>49%</td>
<td>25%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
<td>9%</td>
<td>21%</td>
<td>14%</td>
</tr>
<tr>
<td>Imputed rents</td>
<td>7%</td>
<td>10%</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Among other incomes, pensions and interest income contributed most to inequality, whereas housing rents were more progressive. Again, all components contributed positively to the overall level of inequality, with the most important contributors being pensions (27 percent), interest income (25 percent), and imputed rents (16 percent). The concentration is highest among pensions and interest income. In contrast to pensions and interest income, imputed rents on housing property are much more progressively distributed and represented 40 percent of non-labor income in 1999. Even though homeownership suffered a severe and regressive reduction after 1995, imputed rents nevertheless seemed relatively neutral in 1999.

The poor do not benefit much from current pension benefits. Figure 17 shows concentration curves and concentration coefficients for total earnings and their pension and non-pension components for 1999 urban Colombia. The poorest 50 percent of the population receive only less than 10 percent of total pension benefits. Moreover, 65 percent of earnings through pensions go to the richest 20 percent of households. The concentration coefficient—a measure of inequality comparable to the Gini coefficient—for pensions is 0.624, much higher than the Gini coefficient for income in 1999, at 0.543. One caveat, however, is that the pension data do not distinguish between private and public sector pensions. Nevertheless, one can suspect that public sector pensions are even more concentrated among the upper percentiles of the population since public employment is very regressively distributed.

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83 For 1999, see Table 1.19A in Chapter 1, Volume II.
84 See Section IV above.
85 Once again, we provide further emphasis by depicting the shares of pension and non-pension income for mean household income percentiles in Figure 8B.
86 Even by Latin American standards this seems to be a very large level of inequality. Comparing with Table 2.6 in Wodon (2000), the Gini elasticity for pensions (ratio of the concentration coefficient to the Gini) is higher in Colombia than in all other countries, except in Brazil.
87 According to Vélez and Millán (2001) the top quintile of the distribution of household income receives 80 percent of the public sector payroll and the concentration coefficient of public sector labor earnings is even more regressive, at 0.736. This figure is the highest in Latin America when compared to the figures reported by IDB in 1999 (IDB (1999) América Latina frente a la desigualdad, Figure 8.32).
6.2 The reversal of inequality trends in urban Colombia: a combination of persistent and fluctuating forces

This subsection highlights those factors of household income generation that contribute more to the dynamics of urban inequality for the periods 1978-88, 1988-95, and 1995-99. Using a microeconomic reduced-form model of individual labor earnings and labor market participation and occupational choice, Chapter 3 in Volume II offers a decomposition of the changes in inequality derived from variations in (a) the returns to human assets (education and experience) and the residual variance; (b) the changes in endowments of human assets (schooling) and in family size; and (c) the structural changes in labor force participation and occupational choice.

Labor markets and the determinants of household income

The main results of the estimation of the earnings and occupational choice models highlight the most prominent changes in underlying individual or market behavior that should bring about changes in the distribution of income from 1978 to 1995; these are those described below.

Rising wage differentials by skill and increasing convexity in the earnings function. Over the years, rates of return to education by level of school attainment have fluctuated, producing abrupt changes in wage differentials among those with the most, least, and average skills, and consequently modifying the convexity of the earnings function. Between 1978 and 1988, the skill premium decreased for all workers except for self-employed women. The relative wage of individuals with incomplete primary education increased by more than 40 percent relative to college graduates. As a result, during the 1980s, the relative earnings of college graduates to workers who had completed primary education fell from 4.9 to 3.7 among male wage earners, from 4.2 to 3.3 among female wage earners, and from 7.2 to 7.1 among self-employed women. In contrast, from 1988 to 1995, the skill wage differentials decreased for the lower tail of the skill distribution (high school dropouts and those with less education) and increased in the upper tail, mainly for college graduates; the only exception was self-employed females, who experienced a reduction in wage differentials for all levels of schooling.
Earning differentials tend to fall by gender and fluctuate by occupational group. Shifts in the constant term of the Mincerian equations, from 1978 and 1988, show falling earning differentials by gender and occupational groups. Relative earning of female workers, the self-employed in particular, improved relative to male wage earners, while self-employed males (with the highest relative average earnings of all four groups) lost 9 percentage points. However, from 1988 to 1995, average real incomes among occupational groups, except for self-employed females, became increasingly differentiated.

The wage-skill premium in Colombia is high compared to that in Brazil, Mexico, and the United States. Figure 18 shows that, on average, individuals with post-secondary education earn 4.3 times the labor earnings of individuals with incomplete primary education. The Colombian differential is nearly twice the differential in the U.S. (2.5), and well above that of Mexico (3.3) and Brazil (3.7). Those differences are even higher when compared to high school graduates. In this case, Colombia leads with 2.4, followed by Brazil (2.0), Mexico (1.9) and the U.S. (1.6).

**Figure 18. Labor earnings by skill level, Urban Colombia, 1999**

![Graph showing labor earnings by skill level](image)


Participation and occupational choice behavior show regular features. According to estimated marginal effects of selected variables, occupational choice and labor market participation display standard features. Higher levels of education increase the probability of being employed, particularly for spouses. Participation decreases with age for household heads and spouses, but increases with the same variable for other workers. Spouses' participation is particularly sensitive to demographics and exogenous income: It falls with the number of children in the household and with the "exogenous" income of the family, measured by the average human capital endowment (education and work experience) of other members.

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88 Based on a multinominal model of labor force participation and occupational choice. Except for household heads - who have homogenous employment above 98 percent.

89 For example, there is a 17 percent point decline in spouse participation in 1978 as average education of other household members in working age increases from complete primary to college graduate.
Changes in participation for married women and other workers. Over time, changes in parameter estimates produce shifts and tilts of the participation schedules. While male household heads have maintained their level of participation, spouses and female heads are becoming relatively more active in the labor market. Among other male workers, participation shifted downward, mostly among the less educated. Among married women, participation tilted the opposite way, favoring the less educated. From 1988 to 1995, there was a significant rise in participation for all women, with increasing benefits for the less skilled among spouses and other female workers (skill neutral among female heads). Simultaneously, the negative impact of infants on female labor force participation shifted over the years and ended up concentrating its power among spouses with very young children. From 1978 to 1988, married women with young children (under two years of age) almost doubled their marginal probability of being out of the labor force.\(^90\) Concurrently, the effect of children 3 to 5 years of age upon labor market participation varied.

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\(^90\) The marginal effect of 2 kids from 0 to 2 years of age jumped from minus 12 percent to minus 22 percent.
participation remained constant (close to –minus 10 percent for two children), while for children 6 to 13, it was half that level in 1978 and dissipated gradually, to become zero in 1995.

**Occupational choice between self-employment and wage-earning jobs** presents the standard characteristics as well. Wage employment opportunities are more likely for younger and more educated individuals, with differentials in education being particularly relevant for employment opportunities among spouses and other workers.91 The education gradient for wage-earning household heads became positive and significant in 1995,92 although it was negligible in 1978. The probability of self-employment increased with experience, especially for household heads and other workers, but not for spouses, in 1995.93 Overall, behavioral changes over the last two decades indicate two things: First, males were moving away from wage-earning jobs, while females during the 1980s were doing the same in smaller proportions, but during the 1990s, spouses and female heads went back into wage-earning jobs in substantial numbers. Second, occupational choice became more sensitive to differentials in age and education.94 In summary, the main features of the evolution of individual earnings, participation, and occupational choice are as described below.

- A reduction in earnings differentials relative to years of education for all workers during the 1980s, followed by an increase for wage earners (especially women) during the 1990s.
- An increase in occupational choice into self-employment jobs (a sector with more within-group inequality) during the 1978-95 period, with the exception of an increase in female participation (spouses and household heads) in wage-earning jobs (a sector with less within-group inequality) during the early 1990s.
- A fall in earnings differentials by gender and between the wage and self-employment sectors during the 1980s, and a rise during the 1990s.
- Participation and occupational choice functions suffered significant tilts relative to education, experience, number of children, exogenous family income, and so forth. Ex ante, their potential impact on income inequality appears ambiguous; therefore simulations help in isolating the effects of those changes.
- A fall in the dispersion of the returns to unobserved skills of male workers in the 1980s followed by a rise in the 1990s for all workers, with the exception of self-employed women.

**Understanding income distribution trends using factor decompositions**

**Equalizing and unequalizing forces, 1978-88.** Table 16 presents the contributions of determinant factors at both the household and individual levels; the model succeeds in explaining and decomposing the reversal of inequality trends in urban Colombia. The fall in inequality among individual workers from 1978 to 1988 (3 Gini coefficient points) was caused by the dominant aggregate effect of four strong equalizing forces: (1) changes in returns to education (2.3), especially among wage earners; (2) lower variability of the error term in the male earnings equation (2.4); (3) changes in returns to experience (0.7); and (4) changes in relative earnings

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91 Sixteen years of schooling represent an increase of 20 percent in probability of being a wage earner, conditional upon the individual being employed.

92 9 percent, which is similar to the effect on other workers.

93 In two decades it falls by 20 percent for household heads and by 27 percent for other males.

94 Presumably, the main rational behind this gender asymmetric behavior in occupational choice is the social security reform (1993) that extended health insurance coverage to the whole family of the worker.
between occupational groups (0.8 in the "constant" term). The three weaker unequalizing factors are (1) the increase in the educational endowments (3.0); (2) the rise in labor force participation produced by the change in the parameters of the occupational choice model (0.8); and (3) lower variability of the error term of individual earnings. Nevertheless, household income inequality remains constant during the period because the aggregate effect of equalizing forces becomes much weaker and --despite adding the equalizing effects of reduction in household size (0.6)-- is neutralized by the regressive impact of changes in educational endowments (2.3), structural parameters of labor force participation (0.7), and the deterioration in the distribution of non-labor income (0.8).

Table 16. Decomposition income distribution changes for households and individual workers: Changes in the Gini coefficient, Urban Colombia 1978-88 and 1988-95

<table>
<thead>
<tr>
<th></th>
<th>Change</th>
<th>Returns</th>
<th>Particip</th>
<th>Error</th>
<th>Endowments</th>
<th>Non-Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gini</td>
<td>Education</td>
<td>Experience</td>
<td>Regions</td>
<td>Constant</td>
<td>Total</td>
</tr>
<tr>
<td>Urban 1978-1988</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Individual Workers</td>
<td>-3.1</td>
<td>-2.3</td>
<td>-0.7</td>
<td>0.0</td>
<td>-0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Households</td>
<td>0.0</td>
<td>-1.9</td>
<td>0.1</td>
<td>0.1</td>
<td>-0.2</td>
<td>0.7</td>
</tr>
<tr>
<td>1988-1995</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Individual Workers</td>
<td>5.5</td>
<td>0.0</td>
<td>-0.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.6</td>
</tr>
<tr>
<td>Households</td>
<td>4.2</td>
<td>-0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.4</td>
<td>-0.4</td>
</tr>
<tr>
<td>Persistent (P) and Fluctuating (F) Factors</td>
<td>F/P</td>
<td>P</td>
<td>F</td>
<td>P/F</td>
<td>F</td>
<td>P</td>
</tr>
</tbody>
</table>

Equalizing and unequalizing forces, 1988-95. A sharp increase in urban income inequality occurred between 1988 and 1995: an increase of 5.5 points in the Gini coefficient of individual labor income and of 4.2 points for household per capita income. Most of the forces that produced inequality changes in the previous period reversed their role or became neutral after 1988. In fact, although some factors persisted in their previous role, some others showed strong fluctuations in their impact on inequality. The big rise in income inequality from 1988 to 1995 has five major regressive forces behind it that dominate the weaker effect of reduction in family size and changes in participation at the household level: (1) the larger variability in the error term; (2) the increasing inequality of non-labor income; (3) the expansion and equalization of working population education endowments; (4) the change in relative earnings (constant between the four occupational groups at the household level); and (5) the changes in participation and occupational choice at the individual level.

Persistent and fluctuating forces. Income distribution dynamics result from a combination of persistent and fluctuating factors (table 16). The more persistent effects come mostly from the demographic and the labor supply side: namely, the increasing trend in education endowments, the increase in labor force participation, and non-labor income, plus the reduction in family size. Their aggregate net effect was always regressive: the first three factors dominated the progressive effect of the latter -family size-. The fluctuating factor set includes returns to human assets (with the exception of experience) and the variability of the error term, and yields shifting effects over
time: progressive between 1978 and 1988 and regressive from 1988 to 1995. Throughout both periods, the magnitude of their aggregated impact was stronger when compared to the effect of the persistent factors, making it a clear determinant of the observed change of income inequality.

The aggregate effect of persistent factors is always regressive and suggests an increasing trend in inequality over the long term. The "erratic" behavior of these major determinants of the dynamics of income inequality unveils the significant difficulties of any attempt to predict its evolution in urban areas. That is, in addition to the net regressive effect of persistent factors, the aggregate effect of fluctuating factors is much larger and unstable. The persistent forces are linked to demographics and labor supply: the evolution of family behavior (smaller family size and increased labor participation of women) and the growth of educational endowments. The unstable or fluctuating factors tend to respond to changes in the labor demand function, namely to its labor skill profile. Although the aggregate effect of persistent factors is moderate in size vis-à-vis fluctuating ones, fluctuation tends to cancel out in the long run, and the joint effect of persistent factors becomes the best available predictor of long-run inequality trends.95

Unexpected asymmetric effects of education endowment equalization on rural and urban inequality. One of our main findings is contrary to our expectations. Intuitively, a greater and more egalitarian education endowment in both urban and rural areas should yield reductions of income inequality. Our decomposition of endowment effects coincide with these claims only in the Colombian rural area: The price (returns) and endowment effects are both egalitarian and reinforce each other. But paradoxically, in the urban area, the endowment effect is always regressive, and the price effect was only progressive and smaller during the 1978-88 period.

Some basic analysis (presented in Chapter 3, Volume II) shows that this discrepancy is explained by the much larger wage differentials relative to education prevalent in urban areas.

The rise in skill premia can be partly attributed to the sluggish supply of high-skilled workers, as noted by Santamaría (2000).96 If shortages in higher education persist, wage differentials will further increase, with perverse effects on labor income inequality, through both returns and educational endowment effects. Nevertheless, the potential gains of income equality lost because of the increasing convexity of the earnings equation in urban areas might be recovered in the future. If changes in the supply and demand for skills produce an equalization of rates of return to education (indicative of a less convex earnings function), the gains in income equality would be substantial and should include the benefits of the equalization of educational endowments during the last two decades. However, the cost of substantial increases in the coverage of public tertiary education is prohibitively high (see Chapter 5, Volume II); thus credit expansion should be considered. Currently, investments in higher education have such high real returns that credit, combined with targeted subsidies, would be appropriate in stimulating the supply of tertiary education.

Households appear to exacerbate individual differences, but help to assimilate some shocks. It is important to remark that households appear to exacerbate static inequality among workers, but at the same time attenuate the income shocks falling upon individuals. Observed inequality in urban and rural areas is systematically lower for individual earnings than for household per capita income. Somehow, household structure in terms of assortative matching of individual human

95 These findings are relatively free of business cycle effects since the three cut-off years correspond to levels of minimum unemployment. However, the increasing demand for more educated workers, induced by skill-based technological change, might be a permanent shift. In that case, the joint effect of persistent forces would be even more unequalizing.

96 According to Santamaría’s (2000) estimates, the elasticity of high skill premium to supply approximately minus 0.5.
capital endowments, choice of family size and labor force participation, and non-labor incomes explains the extra income inequality at the household level.\footnote{On the other hand, in almost every case, dynamic decomposition by determinant factors reveals stronger effects for the distribution of individual labor earnings than for the distribution of income per capita at the household level. This finding suggests that Colombian households could operate as a self-protection mechanism by partially neutralizing the higher distributional instability of individual earnings relative to determinant factors.}

The persistent and stable factors that determine income inequality have strong economic links to underlying fundamentals. What are the driving forces behind the changes in average education level, fertility rates, and female labor force participation that have significantly affected income inequality? Not only has there been a public effort to provide subsidized education for people with liquidity constraints, but the market has also responded dynamically to effective demand through the private provision of education. Second, demand side changes are also relevant and strong forces behind these phenomena. During the last two decades, lower fertility rates and the dramatic increase in educational attainment and labor force participation among women have been largely determined by the increasing opportunity cost of women's time—the value of labor market opportunities associated with larger GNP per capita—that, in turn, has shifted the equilibrium of the Colombian family toward fewer and more educated children. Thus, the link between economic growth and the economic dynamics of the family have not only reinforced the demand for education, but have produced equalizing changes through reductions in family size and greater women's labor force participation. However, there remain large differences in family size across female education levels. Thus, increasing the access of the poorest urban families to inexpensive family planning methods, along with targeting this group through education campaigns, should bring additional equalizing effects.

In summary, education is the most important variable in terms of understanding income inequality. Labor income is the driving force behind the observed trend of rising inequality, but pensions make an important unequalizing contribution as part of non-labor income. Skill-wage differentials in Colombia are large even in the Latin American context—above those of Brazil and Mexico—and have become one of the key regressive factors behind the deterioration of income inequality in the last decade. Decomposition analysis shows that, paradoxically, the persistent equalization of education of the labor force brought about, as expected, lower income inequality for rural areas, but, paradoxically, not for the urban centers, where skill-wage differentials were much higher. Similar effects followed from the dynamics of non-labor income from pensions and property. In contrast, the increasing labor market participation of less-skilled women and the reduction in family size, with attendant lower fertility, played a clear equalizing role. Moreover, sub-period decomposition analysis reveals that the dynamics of income inequality follow a combination of fluctuating and persistent forces. Thus, the aggregate trend of the latter shows that further deterioration of inequality should be expected in the medium term, unless skill-wage differentials are reduced, an outcome which would require a special effort to promote post-secondary education in order to satisfy the excessive demand.
Chapter IV. Public Social Policy and Sector Priorities for the Poor

During the last decade, Colombia has made a sustained effort to raise public social expenditure—PSE—to 15 percent of GDP, with considerable benefits for the poor. This effort was accompanied by major reforms in subnational public finance (mainly decentralization), pensions, and health insurance. In spite of its growth, Colombian PSE is still 10 percent below the Latin American regional average, and its share in public expenditure has changed only moderately. Ninety percent of PSE is devoted to pensions, education, and health. Although coverage of the retired population is very limited, pensions absorb considerable resources—40 percent of PSE—with minimal benefits for the poor. Moreover, this item shows a fiscally unsustainable explosive growth that should shift the composition of PSE away from human capital investment, unless a reform to equalize disproportionate benefits is put in place soon. Although overall incidence of PSE is broadly neutral, the poor benefit substantially, and its estimated impact on poverty reduction seems substantial. With the exception of childcare and health treatment, all social programs increased their coverage rates and became more pro-poor between 1992 and 1997. In most sectors, however, public expenditure growth outpaced that of service delivery, revealing some cost inflation. As a result of the universal health insurance reform of the early 1990s, insurance coverage almost doubled and became much more progressive in the 1990s. Moreover, the simultaneous introduction of means targeted subsidized health insurance for the poor reduced their out-of-pocket expenses in the event of illness, a result that should be reflected in higher growth of treatments among the poor. Simultaneously, satisfaction with health treatment improved across all income groups. Nevertheless, immunization coverage suffered a severe drop during the last decade, and health treatment rates remained stagnant across income groups, despite the considerable addition of resources infused by the reform. Despite the progressive increases in coverage, the lower income groups still face substantial shortfalls of coverage in some social programs. During the next decade, the highest priorities of the extreme poor for social service expansion are childcare, sewerage, and health treatment and insurance. Postsecondary education is an additional priority for the nearly poor and middle-income groups.
The previous chapters have shown that access to basic social services—education, sanitation—not only affects the current living standards, but also determines the earning potential of households and their chances of escaping poverty in the long run. The effort made by the public sector two and three decades ago to expand access to social services partially explains today's poverty numbers. Hence today's efforts will affect Colombia's success against poverty in the long run.

Major changes have taken place in the magnitude, composition, and administration of PSE (defined as expenditure on health, education, housing, public services, and social security) in Colombia during the course of the 1990s. Not only has the level of PSE almost doubled between 1992-97, the 1990s has also been a decade of profound structural reforms in the Colombian social sectors affecting the health, education, and public utilities—an important aspect of which has been the decentralization of power to the departmental and municipal levels of government.

It is timely to ask who has benefited from these reforms, and in particular to what extent the reforms have succeeded in improving the lot of the poor. In theory, an environment of growing expenditure should make it possible to benefit all groups in society simultaneously. In practice, considerations of political economy may result in some groups benefiting disproportionately in relation to others. Since it appears likely that PSE will now stabilize into the early years of the new century, the issue of equity in distribution will become increasingly critical in the future. If PSE cannot be increased, then gains to one group can only come at the expense of another. Hence it becomes critical to identify which are the components of PSE most urgently needed by the poor and which are the less crucial that are absorbing substantial resources.

This chapter has two sections. The first section examines to what extent public social expenditure benefits the poor, and identifies priority sectors for coverage expansion. The second section studies the implications of the radical health sector reform introduced through the passage of Ley 100 of 1993 (Law 100), in particular the performance of the subsidized health insurance system, an innovative social policy instrument that is being applied jointly with a new proxy means targeting mechanism—SISBEN—.

7. **PUBLIC SOCIAL EXPENDITURE: INCIDENCE AND SECTOR PRIORITIES IN THE 1990S**

7.1 **The 1990s were a period of substantial PSE growth**

Public expenditure in Colombia grew substantially during the 1990s. In order to motivate the analysis of the distributional impact of PSE, this section provides a brief overview of long-term trends in Colombian public expenditure (Acosta 2000). Following a period of almost complete stagnation through the 1970s and 1980s, public expenditure in Colombia began to grow dramatically from 1990 onward (Figure 20). Between 1990 and 1997, overall public expenditure rose by 60 percent, increasing its share of GDP from 27 to 43 percent.
The main impetus for this growth came from the 1991 Constitution. There were a number of factors that contributed to the escalation of public expenditure, but undoubtedly the most important of these was the new Constitution promulgated in 1991. The 1991 Constitution mandated substantial increases in social spending, particularly in the areas of human capital. The new Constitution also sought to promote decentralization both by increasing fiscal transfers from central to local government as well as by enhancing alternative sources of financing for local government expenditures.

PSE grew even more rapidly than public expenditure as a whole. As a result of the social commitments arising from the new Constitution, PSE grew even more rapidly than public expenditure as a whole, increasing by 90 percent between 1990 and 1997 and raising its share of GDP from 8 to 15 percent (Figure 20). PSE as a proportion of overall public expenditure rose from 30 to 35 percent.

In spite of this growth, Colombian PSE is still below the regional average. Notwithstanding these substantial increases, a recent international comparative study of PSE found that per capita expenditure in Colombia, which stood at US$884 in 1996, was still somewhat below the Latin American average of US$993, and well below the average for Mercosur countries, which stood at US$1,568 (Thomas, et al., 2000).

Being the largest accounting category—40 percent of PSE—the extreme growth of social security expenditure is expected to limit the availability of public funds to finance education and health services. The growth in social security spending during the 1990s stems from Law 100 (1993). This statute significantly increased the pension liabilities of the state toward public sector employees, both by raising pension contributions to 13.5 percent of salaries and by raising the employer contributions to 75 percent of the total contribution. Furthermore, the state was required to assume the pension liabilities of a number of state-owned enterprises that went into liquidation at around this time. Owing to the generosity of its design, public pensions are severely expensive, and pension payments to public sector workers have been growing at an explosive annual rate of 7 percent during the last decade. According to government estimates, the present value of the operational deficit of pension payments is worth 198 percent of GDP.98

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98 See Acosta (2000)
As a result, social security expenditure is the largest component of PSE, and its rate of growth justifies serious concerns about fiscal sustainability and the future of PSE related to human capital investment. While the overall level of PSE is likely to remain reasonably stable from now onward, significant shifts can be anticipated in its composition. In particular, the need to meet the growth in demographically driven pension liabilities is expected to come at the expense of expenditure on the education sector, with health commitments remaining at a constant level.

Of particular interest are intertemporal comparisons of the late 1990s against those of the beginning of the decade. What follows updates the analysis of distributional incidence originally reported in a previous World Bank report on poverty in Colombia using 1992 data from the Encuesta Nacional de Hogares (ENH). The 1997 Encuesta de Calidad de Vida (ECV)—LSMS type household survey—provides the information necessary to assess the incidence of social expenditure in the late 1990s. Since most of the structural reforms took place in the period 1993–94, a comparison of coverage and distributional incidence across these two surveys provides an indication of the impact of reform.

7.2 Distributional impact: the poor benefit substantially of overall PSE.

The overall incidence of PSE is broadly neutral, but the poor benefit substantially. Excluding pensions, the total value of social programs is equivalent to 5 percent of household income, of which 80 percent is allocated to the state education system. Overall PSE is distributed in similar proportions across income groups, thus its concentration coefficient is close to zero minus 0.06 and mildly pro-poor. Although in absolute terms, subsidies are fairly evenly distributed across quintiles, their relative impact is still far greater on low-income households, for whom the subsidies represent a higher proportion of household income: 32 percent for the first quintile. Rural areas receive a disproportionate amount of PSE, meaning that the redistributive impact is even larger.

The most progressive social programs are HCB public nurseries, primary education, and the subsidized health insurance scheme, each with at least 60 percent of the benefits going to the poorest 40 percent and concentration coefficients of less than negative 0.3. The most regressive social programs are tertiary education and the housing subsidy, with a maximum of 15 percent of the benefits going to the poorest 40 percent and concentration coefficients in excess of 0.3. In general, the programs that embody the highest subsidy per beneficiary are also the most regressive. However, those that account for the highest proportion of the total subsidy are the most progressive.

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100 This analysis complements earlier work by Sánchez and Núñez (1998), which performs a similar comparison using the 1993 CASEN survey as its baseline, as well as a number of sector by sector intertemporal comparisons (Vergara and Simpson 1998; Misión Social 1998; Malinowitz 1998). Some comparisons with the seminal work of Selowsky (1974) for Colombia are provided as well.
101 HCB stands for Hogares Comunitarios de Bienestar of Instituto Colombiano de Bienestar Familiar—ICBF.
102 See Table 5.12 Chapter 5, Volume II.
### Box 5. Targeting mechanisms for main social programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Targeting Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childcare (ICBF)</td>
<td>Open access with self-selection and implicit geographical targeting</td>
</tr>
<tr>
<td>Public Basic Education</td>
<td>Open access with self-selection and implicit geographical targeting</td>
</tr>
<tr>
<td>Training (SENA)</td>
<td>Open access with self-selection and implicit geographical targeting</td>
</tr>
<tr>
<td>Family subsidy</td>
<td>Eligibility is defined in terms of having wages that are less than four times the minimum wage.</td>
</tr>
<tr>
<td>Public health insurance</td>
<td>Eligibility is defined in terms of the score on the SISBEN (Sistema de Selección de Beneficiarios para Programas Sociales) index. To calculate the index, a simple questionnaire (Ficha de Clasificación Socioeconómica) is used to collect information about human capital, housing, employment and income at the household level. These variables are then weighted to provide an overall index defined over the range 0 to 100. The weights are derived according to an Alternating Least Squares and Optimal Scaling algorithm. The cost per interview is estimated to be $2.30.</td>
</tr>
<tr>
<td>Housing subsidy</td>
<td>To be eligible for INURBE subsidies:</td>
</tr>
<tr>
<td></td>
<td>- Household income must be less than four minimum wages</td>
</tr>
<tr>
<td></td>
<td>- The household must have saved 10 percent of the value of the house.</td>
</tr>
<tr>
<td>Utilities</td>
<td>Households are allocated to one of six strata (estratos) based on the physical characteristics of the house and the surrounding neighborhood.</td>
</tr>
<tr>
<td></td>
<td>- Households in the lower strata are eligible for a subsidized bill.</td>
</tr>
<tr>
<td></td>
<td>- Households in higher strata must pay a surcharge over and above the cost of provision, which is used to finance the subsidy.</td>
</tr>
</tbody>
</table>

### 7.3 Coverage dynamics of social programs by income groups

All social programs increased their coverage rates between 1992–97, with the exception of childcare and health treatment, where coverage fell somewhat. By far the largest expansions in service came in the health insurance and in tertiary and secondary education sectors. In all cases, coverage growth disproportionately benefited the poor.

Modest increases in coverage rates sometimes conceal a substantive growth in services. Owing to increases in the underlying target population, the growth in coverage rates generally understates the true expansion of effort. A better indication can be obtained by looking at the growth in the total number of people served. Both tertiary education and health insurance succeeded in doubling the number of beneficiaries during the five-year period. In the utility sectors, the modest growth in coverage entailed a substantial increase of around 35 percent in the number of household connections. Meanwhile, the absolute numbers of people being treated by the health system actually increased in spite of the decline in the coverage rate.
In almost all areas, the public sector increased its market share vis-à-vis the private sector. Consumers generally face a choice between obtaining social services from the public or private sectors. The comparison for the period 1992–97 indicates that the private sector has been losing ground to the public sector in many areas, particularly in secondary education and health insurance. A notable exception is tertiary education, where the private sector increased its market share by 8 percentage points.

Progressive trends: In many cases, the fastest expansion rates are found in the lower income quintiles. Comparing the rates of service expansion across quintiles indicates the extent to which these were targeted toward the poor (Table 19). With the exception of childcare and primary education, all services show much faster rates of expansion among the lower income quintiles. This is particularly striking in the case of health insurance and tertiary education. For example, the rate of growth of health insurance coverage in the first quintile is almost four times as high as that of the overall population.

Education

Completion rates in primary and secondary education have improved significantly. While the overall coverage of primary and secondary education has only improved modestly --by about 10 percentage points-- there have been notable gains in the proportion of students who succeed in completing each level of education entered. For example, in the 6–12 year-old age group, the completion rate for primary school has jumped from 13 of entrants to 27 percent, while in the age group of 13–19 year olds the completion rate has increased from 13 to 25 percent of entrants.

Tertiary education has undergone dramatic expansion, largely attributable to the private sector. There have been modest improvements in net enrollment ratios for primary and secondary education during the 1990s, of around 10 percentage points in each case. However, the major changes have come in the tertiary sector, which doubled its enrollment between 1992–97. The public sector was only responsible for 20 percent of the increased enrollment, and hence this benefit cannot be entirely attributed to increases in PSE. Furthermore, it is questionable why tertiary education, which has such a regressive incidence, should continue to account for about one-third of educational expenditure.

The childcare sector appears to have been largely neglected during the 1990s. Both in the 1992 study and in the present paper, childcare was identified as one of the sectors with the highest levels of unsatisfied demand in terms of the relative access gap criterion. Moreover, the HCB program, administered by ICBF, was shown to be one of the most progressive social programs on offer in 1997, yet the number of places in childcare centers has shrunk by 4 percent and the coverage rate has fallen by 7 percentage points. Both of these findings suggest that greater emphasis should be put on childcare services in the future. Furthermore, the analysis shows quite clearly that the HCB nurseries are much more progressive in incidence than the CAIP nurseries, suggesting a case for reallocating resources across these programs on distributional grounds.103

Healthcare

Health insurance coverage almost doubled between 1992 and 1997. As mentioned above, the Colombian healthcare system underwent major reforms in 1993. The new system provides universal health insurance involving cost sharing between the employee and the employer on the financing side and a pluralistic system of provision involving both private and public providers on the supply side, both insurance and healthcare. The Colombian healthcare system operates on two levels, contributory and subsidized. Those who have the ability to pay are enlisted in the

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103 CAIP stands for Centros de Atención Infantil.
contributory regime (régimen contributivo), while the poor and indigent are covered by the subsidized regime. A dramatic consequence of this was that coverage of health insurance increased from 31 to 58 percent (Figure 21).

**Figure 21. Coverage rates for health insurance and treatment by decile, 1997**


**Table 17. Change in coverage rates and growth in coverage rates, 1992-1997**

<table>
<thead>
<tr>
<th></th>
<th>Education</th>
<th>Childcare</th>
<th>Health</th>
<th>Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
<td>Tertiary</td>
<td>Insurance</td>
</tr>
<tr>
<td>Change in Coverage (% points)</td>
<td>Change in Coverage (% points)</td>
<td>Change in Coverage (% points)</td>
<td>Change in Coverage (% points)</td>
<td>Change in Coverage (% points)</td>
</tr>
<tr>
<td>Quintile 1</td>
<td>9</td>
<td>13</td>
<td>3</td>
<td>-5</td>
</tr>
<tr>
<td>Quintile 2</td>
<td>7</td>
<td>7</td>
<td>2</td>
<td>-7</td>
</tr>
<tr>
<td>Quintile 3</td>
<td>9</td>
<td>14</td>
<td>5</td>
<td>-9</td>
</tr>
<tr>
<td>Quintile 4</td>
<td>5</td>
<td>12</td>
<td>6</td>
<td>-9</td>
</tr>
<tr>
<td>Quintile 5</td>
<td>12</td>
<td>13</td>
<td>17</td>
<td>-17</td>
</tr>
<tr>
<td>Total</td>
<td>-8</td>
<td>12</td>
<td>6</td>
<td>-7</td>
</tr>
</tbody>
</table>

**Growth rate of number of beneficiaries (%)**

<table>
<thead>
<tr>
<th></th>
<th>Quintile 1</th>
<th>Quintile 2</th>
<th>Quintile 3</th>
<th>Quintile 4</th>
<th>Quintile 5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in Coverage (% points)</td>
<td>-10</td>
<td>10</td>
<td>9</td>
<td>11</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>Change in Coverage (% points)</td>
<td>44</td>
<td>18</td>
<td>20</td>
<td>11</td>
<td>-12</td>
<td>15</td>
</tr>
<tr>
<td>Change in Coverage (% points)</td>
<td>168</td>
<td>113</td>
<td>101</td>
<td>93</td>
<td>96</td>
<td>99</td>
</tr>
<tr>
<td>Change in Coverage (% points)</td>
<td>-19</td>
<td>7</td>
<td>-5</td>
<td>2</td>
<td>2</td>
<td>-4</td>
</tr>
<tr>
<td>Change in Coverage (% points)</td>
<td>428</td>
<td>199</td>
<td>128</td>
<td>74</td>
<td>36</td>
<td>116</td>
</tr>
<tr>
<td>Change in Coverage (% points)</td>
<td>24</td>
<td>18</td>
<td>21</td>
<td>21</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Change in Coverage (% points)</td>
<td>41</td>
<td>34</td>
<td>33</td>
<td>34</td>
<td>33</td>
<td>35</td>
</tr>
<tr>
<td>Change in Coverage (% points)</td>
<td>55</td>
<td>34</td>
<td>30</td>
<td>33</td>
<td>33</td>
<td>36</td>
</tr>
<tr>
<td>Change in Coverage (% points)</td>
<td>79</td>
<td>39</td>
<td>30</td>
<td>35</td>
<td>29</td>
<td>38</td>
</tr>
</tbody>
</table>

**Equity of coverage growth**

<table>
<thead>
<tr>
<th></th>
<th>Concentration coefficient</th>
<th>Concentration coefficient</th>
<th>Concentration coefficient</th>
<th>Concentration coefficient</th>
<th>Concentration coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in Coverage (% points)</td>
<td>NA</td>
<td>-0.563</td>
<td>0.403</td>
<td>NA</td>
<td>-0.169</td>
</tr>
</tbody>
</table>

Note: A more negative concentration coefficient implies more than proportional benefits to the poor.
Furthermore, these increases in coverage were concentrated in the lower income deciles (Table 17). For example, insurance coverage in the first decile rose tenfold from 4 percent in 1992 to 41 percent in 1997, whereas in the tenth decile coverage rose more modestly, from 65 to 80 percent. The concentration coefficient of the newly insured population is negative 0.17.

Three quarters of the newly insured entered the contributory regime. Of the 30 percent of the population that became newly insured by 1997, three quarters entered the “contributory” regime and the remaining quarter entered the subsidized regime. The distributional pattern for those entering the contributory regime was moderately regressive following the regressive patterns of formal employment. By contrast, entries to the subsidized regime were more pro-poor and clearly progressive.

Although insurance rates increased and treatment rates improved for the extreme poor, average treatment rates fell marginally from 1992 to 1997. Ironically, although the proportion of the population covered by health insurance doubled between 1992 and 1997, the proportion of those who were sick that reported receiving treatment fell by 3 percentage points. At the same time, the absolute number of people receiving health treatment rose by 18 percent and growth rates were much higher for the poor (see Table 17, lower panel). This suggests that the lower treatment rates may in part be attributable to the larger demands that were being placed on the system. Alternatively, it may simply reflect differences in the design of the surveys across the two years.

Notwithstanding, treatment rates remain higher and more progressive than insurance rates. While the overall coverage of health insurance is still only 58 percent, 74 percent of respondents to the ECV97 reported that they received treatment when they became sick. The gap between coverage rates and treatment rates is larger among lower income groups. For example, in the first decile only 40 percent have insurance coverage; however, 65 percent report having received treatment—public or private—when it was required. Meanwhile, in the tenth decile coverage rates and treatment rates were about equal, at 80 percent of the population. The existence of people who receive treatment without coverage provides indirect evidence about the group known as vinculados, who have access to public hospitals as long as they can cover 30 percent of the charges.

Progress in health insurance coverage has been impressive, but some challenges remain. Perhaps the most dramatic area of change has been in health insurance, where a doubling of coverage was achieved over the period of analysis. Moreover, the expansion in coverage has been shown to be strongly progressive, particularly under the subsidized regime. These results provide a strong endorsement for the structural reforms undertaken in the health sector. Notwithstanding these substantial achievements, certain challenges remain. About 40 percent of the population is still without coverage, while only about a third of those eligible have been enrolled in the subsidized regime. Some doubts can also be raised about the accuracy of the variables used to target eligibility for the subsidized regime. A further concern is the decline in the proportion of the population reporting that they had received treatment for medical problems, in spite of the growth in insurance coverage.

\[104 \text{ With a concentration coefficient equal to 0.12.} \]

\[105 \text{ With a concentration coefficient equal to } -0.38. \]
Public Utilities

Coverage of public utility services has become more progressively distributed over time; use of service subsidies, however, does not appear to be having the desired effect. There has been significant progress in expanding coverage of public utility services, with the number of household connections for electricity, water, and sewerage rising by about a third between 1992 and 1997. The electricity service has the highest level of coverage and the most progressive distribution of connections, while the sewerage sector has the lowest coverage and is least progressively distributed. Coverage has become increasingly egalitarian over time, although there are still a substantial number of poor households that lack access to sewerage. However, regarding use of service subsidies, the evidence suggests that the system of estratos is not well targeted toward lower-income households. The limited evidence on use of service subsidies suggests that, as a result of this problem, a substantial part of the benefits leaks to the non-poor.

7.4 Expansion Priorities in Social Programs: Childcare, health, and basic infrastructure

There are still substantial shortfalls in the coverage of social programs concentrated among the lower income quintiles. It has been shown that the current range of social programs achieves a significant degree of redistribution, reducing the Gini for the initial distribution of income by three points. However, the analysis of service coverage revealed that there are still significant segments of the population that do not receive essential public services (Table 18). Overall, 66 percent of the corresponding age group lacks access to institutional childcare and 15 percent to primary school. Of those who complete primary school, 25 percent do not go on to secondary education, while of those completing secondary school, 57 percent do not go on to university. Furthermore, 41 percent of the population is still not covered by health insurance, and 57 percent lacks connection to the sewerage network. The absolute size of the unserved population varies substantially across programs. Those who are not covered by health insurance represent the largest unserved group, amounting to 16.3 million people. The next largest group is that living in households without a sewerage connection, which accounts for 12.8 million people, while 6.4 million people live in households without access to water. It is no surprise to find that the population that lacks access to public services is disproportionately concentrated among the lower income deciles. For example, in the case of primary education, 19 percent of the unserved population falls in the first decile. An interesting exception is found in tertiary education, where the largest shortfalls in coverage are in the middle classes. Consequently the most negative concentration coefficients correspond to primary education, public utilities, and childcare.

### Table 18. Coverage shortfalls and targeting in selected social programs

<table>
<thead>
<tr>
<th>Users</th>
<th>Education</th>
<th>Childcare</th>
<th>Healthcare</th>
<th>Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
<td>Tertiary</td>
<td>Insurance</td>
</tr>
<tr>
<td>Potential users</td>
<td>6.2</td>
<td>4.9</td>
<td>1.8</td>
<td>4.4</td>
</tr>
<tr>
<td>Covered</td>
<td>5.3</td>
<td>3.7</td>
<td>0.8</td>
<td>1.2</td>
</tr>
<tr>
<td>Not covered</td>
<td>0.9</td>
<td>1.2</td>
<td>1.1</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Concentration Coefficient

<table>
<thead>
<tr>
<th></th>
<th>Potential users</th>
<th>Covered</th>
<th>Not covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential users</td>
<td>-0.19</td>
<td>-0.05</td>
<td>0.28</td>
</tr>
<tr>
<td>Covered</td>
<td>-0.16</td>
<td>-0.04</td>
<td>0.45</td>
</tr>
<tr>
<td>Not covered</td>
<td>-0.34</td>
<td>-0.07</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Note: A more negative concentration coefficient means more than proportional benefits go to the poor.
Middle-income groups are the appropriate reference groups for feasible coverage objectives; universal coverage is not the appropriate goal. The above measures of service shortfall assume that universal service is always the appropriate coverage objective, but even without financial constraint it may not be so. In fact, in the tenth decile, where income is not such a binding constraint, coverage of social services is rarely universal (the only cases of universal coverage in the tenth decile are found in water and electricity). An alternative way of looking at the shortfall is to consider to what extent coverage in the lower deciles falls short of the coverage attained in the highest decile or any other income group selected as a point of reference. This can be expressed as a coverage gap, defined as the difference in coverage across the poor and higher income reference groups, and—alogously to the Poverty Gap concept—provides an indication of the extent of unsatisfied demand for each type of service among the lower-income deciles (Table 19).\textsuperscript{106} For example, if coverage gaps are expressed as the difference between the first and tenth deciles, the largest gaps are found in tertiary education (54 percent), sewerage (43 percent), and health insurance (40 percent). However, if we pick another income group as the coverage objective, the sectors and their ranking of priority may change.

Table 19. Relative access gap ratio for alternative coverage targets and priorities for social expenditure

<table>
<thead>
<tr>
<th></th>
<th>Education</th>
<th>Childcare</th>
<th>Healthcare</th>
<th>Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
<td>Tertiary</td>
<td>Insurance</td>
</tr>
<tr>
<td>Relative access gap</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Target decile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decile 6</td>
<td>6%</td>
<td>2%</td>
<td>-1%</td>
<td>20%</td>
</tr>
<tr>
<td>Decile 8</td>
<td>10%</td>
<td>12%</td>
<td>33%</td>
<td>43%</td>
</tr>
<tr>
<td>Decile 10</td>
<td>12%</td>
<td>5%</td>
<td>98%</td>
<td>82%</td>
</tr>
<tr>
<td>Ranking by access gap</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decile 6</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Decile 8</td>
<td>8</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Decile 10</td>
<td>6</td>
<td>9</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Note. \textsuperscript{106}Relative access gaps as the shortage of the average coverage rate for all the population with income below the target decile relative to the coverage of that decile.

Source: Vélez and Foster (2000).

Since coverage gaps are an indication of unsatisfied needs for each social sector, those gaps provide guidance for prioritizing the expansion of public services.\textsuperscript{107} Table 19 shows the relative access gaps for each social service as the ratio between the coverage rate of the target decile and the average coverage rate for all the potential users belonging to income groups below the objective or reference decile minus one. In that way the relative access gap shows the improvement in consumption for the groups below the reference decile. Each row includes the results for a reference, or target deciles from the fourth to the tenth. For example, in the case of childcare, if one wanted to increase the coverage enjoyed by the first through fifth deciles so that it matches that of the sixth decile, one would have to raise their coverage by 20 percent. In the second panel we find the ranking of sectors according to the decile selected as the objective.

\textsuperscript{106}This is equivalent to using Engel curves in terms of probabilities of access and comparing income elasticities for the poor across social services.

\textsuperscript{107}Following the basic idea of tax reform, the Vélez (1998) model assumes the status quo of current public and private provision as fixed and search for welfare improvement at the margin. As he shows, that the principle stated above—to allocate more resources to the service with the highest access probability gap and implicitly higher income elasticity—produces maximal welfare improvement on marginal expenditure on public social services. It also shows that the sectors of priority and their ranking may vary under different budget constraints. Since the size of the access probability gap varies with the chosen target decile, the highest priority service will not always be the same one.
Independently of the welfare target, the highest priorities are childcare, sewerage, and healthcare and insurance. Under a modest objective of improving welfare up to the level of sixth decile, the first four priority sectors are childcare, sewerage, health insurance, and healthcare. Their relative access gaps are 20, 19, 17, and 0 percent. Under a more ambitious reference income group like the eighth decile, the sector priorities do not change that much; childcare keeps being the first followed by tertiary education, sewerage, and health insurance. Their corresponding relative access gaps are 43, 33, 31, and 30 percent. Some sectors show certain robustness in relation to the welfare objective. Childcare is almost always the highest priority service for expansion. In general, sewerage comes out as the second or third priority for expansion. Finally, health insurance has all the possible rankings between first and fourth. The cost of substantial increases in the coverage of public tertiary education is prohibitively high. The aggressive expansion of college credit should be seriously considered since private returns are attractive and the private sector has shown dynamic response to attend market demand.

During the 1990s, decentralized sectors seem more responsive to social priorities. Vélez (1995) identified childcare secondary education and health as sector priorities as a function of coverage gaps in 1992. Growth in coverage rates by type of service over the period 1992–97 showed that coverage of childcare services had actually fallen. However, the largest coverage gains have been secured in health insurance and secondary education, which increased by 27 and 12 percentage points and with disproportionate benefits for the poor. To this extent, these two decentralized sectors showed responsiveness to social needs while the centralized sector—childcare—did not. However, decentralization—seen as certification process—does not appear to have had any systematic effect on the coverage and progressivity of health and education services. Comparisons of performance between departments with a longer and shorter history of certification indicated that observed differences have more to do with historical performance and the availability of resources than with decentralization itself.

8. **Subsidized Health Insurance and Proxy Means Targeting**

In December 1993, Colombia introduced radical health sector reform through the passage of Ley 100 (Law 100). One of the main tenets of Ley 100 is solidarity: every citizen, regardless of financial means, should have access to basic health services through an income-related contribution, with the low-income population being subsidized by a combination of redistribution of relatively higher incomes' contributions and government subsidies. As mentioned above, those who have the ability to pay are enlisted in the contributory regime (régimen contributivo), while the poor and indigent are covered by the subsidized regime.

This section centers on the patterns and determinants of affiliation in the subsidized healthcare sector and the effect of affiliation on the utilization of healthcare services. The aim is to see how well subsidized health care has functioned as a social protection device for the poor. The impact of proxy means targeting on both is carefully examined. The section also discusses the policy implications of these findings and puts forward recommendations for the public health sector.108

### 8.1 Main characteristics of contributory and subsidized regimes

Affiliation to the contributory scheme is contingent upon the payment of a monthly contribution equal to 12 percent of wage income, of which the employee pays 4 percent and the employer 8 percent. Self-employed individuals pay the total 12 percent of the contribution. In the subsidized

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108 The analysis is based mostly on chapters 5 and 6 of Volume II
sector, contributions to the health system are subsidized from fiscal and solidarity sources. The latter take the form of transfers from the contributory to the subsidized sector.\textsuperscript{109}

Affiliates of the subsidized system have access to a basic benefit package known as Plan Obligatorio de Salud Subsidiado (Mandatory Subsidized Health Plan (POSS)), which covers health promotion and education, primary healthcare, basic hospital services and treatment for a number of high-cost diseases. The POSS offers full coverage for maternity and child care, including some secondary and tertiary care in hospitals. The POSS covers fewer services than the basic benefit package of the contributory regime known as Plan Obligatorio de Salud (Mandatory Heath Plan); however, one of the goals of Ley 100 is the convergence of the two packages by 2001.\textsuperscript{110}

The POSS offers family coverage. A family group includes spouses, or stable partners with a minimum two-year old relationship and the children of either spouse who are economically dependent. These include children under 18, full-time students under 25 years of age, and disabled dependents of any age. Before the 1993 reform, this option was only available to a small proportion of the insured located in certain regions.

Affiliation to the subsidized sector is based on the proxy-means test, Sistema de Selección de Beneficiarios para Programas Sociales (Beneficiary Selection System for Social Programs), hereinafter SISBEN, administered by local governments. SISBEN is a proxy-means test index designed to provide local governments with a tool for targeting social subsidies, including health subsidies, to the poorest and most vulnerable segments of the population (Vélez, et al., 1998). The index is based on a household questionnaire, the Ficha de Caracterización Socioeconómica (Socioeconomic Classification Form). By using customized software, the SISBEN score for each household is calculated. This score determines the household classification into one of six groups, with SISBEN level 1 being the poorest group. Households receive certification of their SISBEN score and/or level.\textsuperscript{111} The application, implementation, and administration of SISBEN\textsuperscript{112} rest on municipalities with the help of the departmental health authorities. The Consejo Nacional de Seguridad Social de Salud (National Council of Social Security in Health) has defined households that belong to SISBEN levels 1 and 2 as those whose members are eligible for the subsidized regime.

In a second stage, members of households at SISBEN levels 1 and 2 have the right to subscribe to one of the insurance entities in the subsidized regime known as Administradoras de Régimen Subsidiado (Administrators of the Subsidized Regime (ARS)). In turn, the ARS signs a contract with the relevant departmental health authority for each of its affiliates. After this contract is signed, the individual is considered an official member of the subsidized regime. However, if either parent in the family is employed under contract, receives a pension, or is self-employed and has a monthly salary higher than twice the monthly statutory minimum wage, the household must join in the contributory regime regardless of its SISBEN level. After complete coverage of the population at SISBEN levels 1 and 2, further beneficiaries

\textsuperscript{109} One percent of the 12 percent wage contribution of the contributory regime is used to contribute to the subsidized regime. The Empresas Promotoras de Salud (Health Promoting Entities), which are responsible for the collection of the monthly contributions, transfer these sources to a central fund called Fondo de Solidaridad y de Garantía (Solidarity Fund) which in turn is responsible for their distribution within the subsidized regime.

\textsuperscript{110} The POS aims to be a comprehensive healthcare package. Coverage excludes a limited number of activities, interventions, and procedures.

\textsuperscript{111} Certification can be in the form of a card, an official document, or a carnet (identity card) that ARSs provide their affiliates after their subscription (see next paragraph for details). A household usually receives a certification when it belongs to the lower SISBEN levels 1, 2, or 3.

\textsuperscript{112} In the case of indigenous communities, the application of SISBEN is not necessary and all community members can become affiliated to the subsidized sector. However, we are not able to analyze the behavior of this group since the ECV/97 survey does not include indigenous people.
come from the SISBEN level 3 population, starting with the households of lower to higher SISBEN scores. Co-payments represent 5 or 10 percent of the value of service, with a cap depending on the household SISBEN level.

**Figure 22. SCD, affiliation and healthcare co-payments in the subsidized regime**

<table>
<thead>
<tr>
<th>Affiliated</th>
<th>Copagos</th>
</tr>
</thead>
<tbody>
<tr>
<td>With an SCD</td>
<td>SISBEN 1 - 5%</td>
</tr>
<tr>
<td>(1)</td>
<td>SISBEN 2 - 10%</td>
</tr>
<tr>
<td></td>
<td>SISBEN 3 - 30%</td>
</tr>
<tr>
<td>Non-affiliated</td>
<td>Cuotas de recuperación</td>
</tr>
<tr>
<td>(2)</td>
<td>SISBEN 1 - 5%</td>
</tr>
<tr>
<td></td>
<td>SISBEN 2 - 10%</td>
</tr>
<tr>
<td>Without an SCD</td>
<td>Non-affiliated</td>
</tr>
<tr>
<td>(3)</td>
<td>Full price</td>
</tr>
</tbody>
</table>


### 8.2 Higher and more progressive coverage in the 1990s

As we saw in the previous section, health insurance coverage almost doubled and became much more progressive, with increasing participation of the private sector. As a result of the reform, health insurance coverage has increased from 31 to 58 percent of the population between 1992 and 1997. Furthermore, these increases in coverage have been concentrated in the lower income deciles where, for example, insurance coverage in the first decile has risen tenfold from 4 percent in 1992 to 41 percent in 1997. In addition, twice as many individuals are insured with private providers than with the public provider ISS.

In addition, one quarter of the newly insured entered the subsidized regime and are mostly poor, and the rest are entered the in contributory regime. Of the 30 percent of the population that became newly insured between 1992 and 1997, three quarters entered the contributory regime and the remaining quarter entered the subsidized regime. The concentration coefficient for those entering the contributory regime was 0.12, and minus 0.38 for the subsidized regime, clearly pro-poor.

Despite the increase in insurance coverage, treatment rates are even higher and more progressive than insurance rates. While the overall coverage of health insurance is still only 58 percent, 74 percent of respondents to the ECV97 reported that they received healthcare when they became sick. The gap between coverage rates and treatment rates is larger among lower income groups. For example, in the first decile only 40 percent have insurance coverage; however, 65 percent report receiving treatment when it was required. Meanwhile, in the tenth decile, coverage rates and treatment rates were about equal, at 80 percent of the population. The existence of people who receive treatment without coverage provides indirect evidence about the group known as vinculado who have access to public hospitals as long as they can cover 30 percent of the charges.

After the reform, income seems to have been weakened as a constraint on access to healthcare for the poor. Before the reform, lack of income was a constraint to access as reported in studies of healthcare utilization in Colombia (see Tono 2000). In Chapter 6, Volume

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113 See Chapter 5, Volume II.
II, on the other hand, income features as a statistically significant variable only in 3 out of 12 healthcare models. This finding shows that the role of income has changed after the reform, possibly owing to the subsidies, and that income lost its positive effect on the utilization of healthcare services. This result provides further support for the continuation of the policy of subsidizing healthcare services for the poor.

The subsidized regime does not stimulate inefficient (excessive) use healthcare services. The evidence shows that expectations of higher (and inefficient) healthcare use with provision of subsidized health insurance are not confirmed, since individuals of the subsidized regime who are holders of an SCD are not more likely to use healthcare services than individuals that are non-holders. Critics of the reform claim that increased insurance coverage would lead to higher utilization of healthcare services, especially from the poor who have not enjoyed free insurance before. The increased expenditure, in return, would create financing problems in the system that could eventually result in its collapse. This is not supported by the ECV/97 data. Furthermore, this suggests that the causes of the financial constraints faced by the Colombian healthcare system after the reform should be searched elsewhere and not within the utilization patterns of the poor. A possible rationalization for the lower than expected use of healthcare is that it takes a while for poor people to increase their demand for healthcare as they come to realize the benefit to which they are entitled with their new insurance status. The subsidized regime first started in 1994, so it could be possible that the beneficiaries of the regime had not fully understood their rights by the time the ECV was administered in the second semester of 1997.

8.3 Benefits and protection for the poor

Affiliation and/or possession of an SISBEN card have eased the financial burden for the poor in the event of illness. In addition to the value of the health services received when sick, poor individuals in households with a SISBEN card document (SCD)- appear to have lower out-of-pocket health expenditure than those in households with no SCD. In case of illness, health expenses are equivalent to a considerable adverse income shock. For the poor the impact of these events is more significant and of a similar magnitude to unemployment of one household member. Our estimates based on the Encuesta de Calidad de Vida (1997) show that for the poorest 20 percent hospitalization expenses are equivalent to one and a half months of per capita income and, that relative to their level of income, they spend 75 times more (!) in hospitalization than individuals in the fourth quintile facing the same event. In medical consultation the situation is analogous because the poorest 20 percent (first quintile) spend 42 percent of their per-capita income, while the rest are below 9 percent. This result provides additional evidence of the positive change that the health reform has brought to the lives of the poor in Colombia and how the subsidized health insurance performs as a social protection device.

Affiliation and healthcare use seem to be large among the most vulnerable within the poor. Chapter 6, Volume II shows that both demand-side and supply-side variables affect the probability of a household holding an SCD. On the demand side, the presence of a household member with a chronic problem and a female-headed household -in rural areas- implies a large increase in probability of acquiring SISBEN card. Moreover, self-reported health status variables are statistically more significant in explaining healthcare utilization and expenditure than other socioeconomic characteristics. Results indicate that household heads reporting better health status face lower probability of use and lower expenditures. Having had a health problem in the last thirty days or chronic conditions are associated with more intensive use of medical consultations and medicines, as well. The elderly tend to use more hospitalization, but tend to spend less in medicine. Surprisingly, however, a vulnerable group like the urban unemployed is less likely to hold SCD, and at the same time, individuals that are out of the labor force tend to have higher healthcare utilization and expenditure.
In addition to the demand side determinants mentioned in the previous paragraph, pre-reform supply-side factors at the regional level (departamento and municipality) also play a role in access to health service and the probability of acquiring the SISBEN card. Previous availability of health service supply and information externalities appear to play a significant role regardless of households' SISBEN level. Similarly, the more popular a mayor is within his or her municipality, the higher the probability for the households of this municipality having an SCD. The presence of a health facility variable in the community significantly lowers expenditures for medical consultations and medicines in urban areas and hospitalization in rural areas, possibly reflecting the fact that individuals tend to spend less when treated closer to their homes.

8.4 Targeting and Efficiency problems

Health treatment has not increased in proportion to the additional resources. Resources for the health sector more than tripled over the period 1992–97 to almost 4 percent of GDP. However, health treatment did not increase its coverage rates. While the proportion of the population covered by health insurance doubled between 1992 and 1997, the proportion of those who were sick and reported receiving treatment fell by 8 percentage points. At the same time, the absolute number of people receiving health treatment rose by 13 percent. This suggests that the lower treatment rates may in part be attributable to the larger demands that were being placed on the system. But it is also a symptom of inefficiency in the system.

Transform SCD holders into insured would improve efficiency. Affiliation and possession of an SCD appear to be synonymous. Although at first glance this does not seem to create problems for the holders of an SCD who are not affiliated, since they face co-payments similar to the affiliated, in the long run it deprives them of the information and the network of providers that those affiliated to an ARS enjoy. Furthermore, it creates problems for the system itself, since these individuals are receiving subsidies through the supply subsidies to the hospitals but are in fact unaccounted for in the healthcare system, which may contribute to the financial constraints mentioned above. This phenomenon suggests that information campaigns with respect to the nature and organization of this rather complicated health system would benefit the Colombian population and especially the poor, whose only insurance option is affiliation. In addition, an increase in the co-payments paid by individuals who hold an SCD but are not affiliated with respect to the co-payments of affiliated individuals will provide the former with a strong incentive to affiliate.

Extending availability of SISBEN cards and subsidized health insurance should reduce undercoverage problems. As it was reported in the previous section, although targeting of the subsidized regime is relatively accurate—three out of every five SCD holders belong to the poorest 40 percent of the population—70 percent of the eligible population do not hold a SCD. In addition, healthcare and health insurance were identified as one of the three sector priorities for expansion in public provision of social services. Therefore extension of the SISBEN coverage should be promoted in order to expand health insurance and care coverage.

Leakages in the system should be prevented. In the majority of the municipalities where households of SISBEN level 3 have an SCD, not all households of SISBEN levels 1 and 2 have one. This result suggests that it is not easy to control the procedure of households acquiring an SCD. In most cases, the mayor of the municipality has full responsibility for applying, implementing, and administrating the SISBEN program. This allows him or her, under specific circumstances, to act unilaterally. More community participation may improve the transparency and legitimacy of the whole process.

Maintenance and improvement of the SISBEN targeting system should be institutionalized. Currently SISBEN is widely used not only for the subsidized public health program, but for other
programs of municipal development and education and nutrition. However, current SISBEN card stratification and scores are based in models and databases that have not been updated during the last three or four years. In order keep the quality and prevent deterioration of the targeting instrument SISBEN re-estimation of the proxy means index and recollection of the household data should be performed in the near future. In addition, this responsibility should be clearly assigned to a specific government agency.

In summary, Colombia made a sustained effort to raise public social expenditure and nearly doubled its share of GDP during the last decade with considerable benefits for the poor. Pensions have a disproportionately large share of PSE, 40 percent, relative to the very limited coverage of the retired population and a minimal participation of benefits for the poor. Despite its very limited coverage of the retired population, pensions are the largest category, 40 percent, with minimal benefits for the poor. Unless a public pension reform is rapidly passed, in order to cut disproportionate benefits pension expenses will grow explosively, thus dangerously increasing the pressure to shift the composition of PSE away from human capital investment; that is, education and health. The other 60 percent of PSE is devoted mostly to education and health.

Targeting is pro-poor. With the exception of tertiary education and public pensions, most social spending concentrate benefits more than proportionally on the poor, with considerable impact on their welfare. Moreover, between 1992 and 1997, all social programs, except for childcare and healthcare, increased their coverage rates and became more pro-poor. As a result of the universal health insurance reform of the early 1990s, insurance coverage almost doubled and became much more progressive in the 1990s. Furthermore, the simultaneous introduction of means targeted subsidized health insurance for the poor reduced the out-of-pocket expenses in the event of illness for program beneficiaries. Simultaneously, satisfaction with health services improved across all income groups.

In most sectors, however, public expenditure growth outpaced that of service delivery, revealing some unit cost inflation --a sad demonstration that without proper incentives for service provision, the mere allocation of additional resources may not produce proportional improvements in access to social services. This was especially clear in the case of healthcare where, despite the considerable addition of resources infused by the reform, treatment rates remained relatively stagnant across income groups, except for the extreme poor.114

Despite the progressive increases in coverage, the lower-income groups still face substantial shortfalls of coverage in basic social services. During the next decade, the highest priorities of the extreme poor for social service expansion are childcare, sewerage, and health treatment and insurance. Post-secondary education is an additional priority for the nearly poor and middle-income groups.

\[^{114}\text{That is, the absolute number of health treatments and the demand for those services rose at a similar pace.}\]
9. POLICY LESSONS AND RECOMMENDATIONS FOR REDUCING POVERTY

In the previous four chapters this report showed what happened to the poor, why it happened, who are the most vulnerable to poverty, and how is public policy tackling this problem in Colombia. The first chapter showed to what extent the situation of the poor has improved during the last two decades, how poverty was persistently reduced during the period 1978–95, how the recession of the late 1990s reversed that trend with substantial losses for the poor, how the burden of homicide and domestic violence falls more than proportionally on the poor’s shoulders, and how their access to social services has shown some fortunate resilience to increasing violence and the economic downturn. The second chapter showed that, typically, the “faces” of the poor are children of all ages, young low-to-middle skilled household heads, recent migrants, and non-homeowners. These groups are clearly worse off than pensioners, the college educated, the elderly, and non-recent migrants related to displaced population. It also showed that certain type of events may throw household into poverty; that is, the presence of a disabled member in the household, the loss of employment for the head, or being among the internally displaced population. The third chapter demonstrated the crucial importance of growth and macroeconomic stability for poverty reduction and the increasing difficulties that rising income inequality creates for poverty reduction via higher growth rates. Moreover, it showed the perverse effect of the armed conflict on poverty through less growth and how inequality is increasing despite the progressive effects of more equally distributed education, persistent reductions in fertility, and the increasing participation of less-educated females. Indeed, increasing income inequality came mostly from wage differential by skills and more unequal non-labor income. According to the fourth chapter, Colombia doubled the amount of resources allocated to public social spending in the 1990s with adequate targeting in most cases. However, the public pension system was found to absorb excessive and valuable public resources with little benefits for the poor. Other sectors such as health have received considerable addition of resources, but their delivery of services has not yet increased above the coverage rates of the early 1990s.

Among all social policy instruments, education seems to play the single most important role in the fight against poverty in Colombia. The evidence is overwhelming. Not only does it have an important direct impact on income—in terms of providing better skills to sell in the labor market, its indirect effects are substantial as well. School attainment beyond high school buys sizeable improvements in wages. Better education—especially of spouses—improves a household’s chances of having a high employment rate, which is regularly enough to escape poverty. Education—especially women’s—helps in reducing fertility and consequently, increasing per capita income, both in the sense that it reduces the number of dependents within a household, and in the sense that it allows for greater female labor market participation. Finally, education also protects against domestic violence.

Public policy instruments may tackle poverty by attacking its source or by addressing its most detrimental consequences, or both. In other words, poverty can be dealt with by attacking the lack of income-earning opportunities for the poor or through attending to their lack of access to basic social services. Public social expenditure deals with the latter. According to the findings of the poverty profile, Colombia’s PSE is targeted toward the most important vulnerable groups.
Childcare subsidies go to households with infants in poor neighborhoods; education subsidies are geographically targeted and benefit poor families with children; health subsidies go to poor families with sick members, some chronically; public utility subsidies go to households with low quality housing, a self selection mechanism; and safety net programs such as workfare subsidies go to the unemployed in poor neighborhoods. However, there are some groups that receive insufficient attention despite their high vulnerability; these are basically children up to six years of age and the internally displaced population arriving in the main urban centers.

Attacking the lack of income-earning opportunities for the poor involves multiple options of policy intervention with large differences in their return periods. Some of them render benefits in the immediate future while others only in the medium and long terms. The most immediate way to raise labor income is by increasing economic growth and lowering unemployment; the latter is especially relevant for recently unemployed household heads. The most roundabout way to raise labor income is to moderate fertility in order to drive down the dependency ratio and thus raise the adult to family size ratio, and to increase female labor force participation, which typically follows from higher educational attainment of females and easier access to family planning methods. A more direct way to increase labor participation of spouses in poor households is the provision of complimentary services such as childcare and preschool education. Another short-run policy is to boost the demand for the assets of the poor; i.e., to boost economic activity in low-skill intensive sectors, such as real estate construction, which should raise not only their chances of being employed but their wages as well. Another way to improve job opportunities and to better the pay of the poor is to improve their endowment of human capital. In the short run, vocational and technical training and continuing education might help individuals that dropped out of school or are beyond school age. Obviously the most important method to raise the labor income of the poor in the long term is the provision of education, which puts human assets in the hands of their children, weakening the links between poverty today and poverty in the one or two decades to come.

According to these considerations, in order to tackle poverty, the primary objective in the short run should be attaining higher economic growth and lower unemployment, which essentially requires consistent macroeconomic policy and restoring security. In the long term, efficient acquisition of human capital assets will ensure growth and induce pro-poor economic behavior, or lower fertility and higher female labor participation. In terms of preventing undesirable long-term consequences of poverty, the government should maintain subsidized provision of essential social services to the poor to promote efficient human and nonhuman asset acquisition. Furthermore, in the short run, the patchwork of social safety net protection mechanisms must be consolidated and expanded. Besides, improving personal security and protecting poverty rights is a necessary step in attaining a peaceful environment to reduce the poor's exposure to risk. All of these tasks require coordinated government action in five policy areas: security, growth and employment, childcare and education, urban infrastructure, and health. More importantly, these sectoral priorities should prove to be politically feasible, given the fact that—according to *Latinobarometro*—nearly four out of every five Colombians believe that public policy should focus primarily on violence, unemployment, or education (see Box 6).

**Policy priorities: Security, growth, education, health, and infrastructure**

*More security for all Colombians*

In relation to security issues, the population needs more government presence in order to improve personal security and protect property rights. Government response in these areas would bring both efficiency gains for the economy and welfare gains for the population, even in the sense of reducing inequities in terms of life expectancy. Chapter 1 showed how (a) the better off endure a
disproportionate share of the burden of property crime and are more likely to be victimized, to modify their behavior because of fear of crime, to feel unsafe, and to invest in crime avoidance and (b) the poor bear most of the burden of homicide and domestic violence. And not surprisingly, the poor voice their need of government protection. According to Moser’s (1999) World Bank study, 29 percent of the specific violence problems faced by the Colombian poor are related to government presence in protection of personal security and the rights of common citizens to life and property, such as insecurity, robbery, intra-family violence, homicide, rape, fights, gangs, loitering (vagancia), threats, and guerrilla and paramilitary presence. Thus, the efficiency of policing and the judiciary must improve to protect the lives and property of all Colombians, including the poor. A decline in property crime among the better off would also yield economic benefits, from higher levels of investment and growth to lower emigration rates among the highly skilled.

The concentration of domestic violence among poor households requires coordinated action from the judiciary and the Colombian institute for the family, the ICBF. Uneducated women and/or spouses of uneducated men bear a disproportionate share of domestic violence. In addition to the exposure to homicide episodes and common violence, domestic violence deteriorates the quality of family life, one of the fundamental assets in reducing the chances of behavioral problems among children and youngsters. Remaining passive in relation to this problem would ultimately compromise socioeconomic mobility and would contribute to the intergenerational perpetuation of poverty.

Recover positive growth of output per capita and protect the unemployed

Recovering high economic growth to reduce unemployment is a necessary condition to return to the poverty reduction path that Colombia followed until the recent recession of the late 1990s. To reduce poverty to the pre-recession level of 1995, the average annual GDP growth would have to be at least 4 percent during the first decade of the twenty-first century. Figure 23 shows how from 1978 to 1995 poverty fell pari passu with positive income per capita growth and reached 48 percent in 1995. It also shows how the recession of the late 1990s brought negative income per capita growth and increased poverty back to 55 percent. If the Colombian economy grows at 2 percent—barely above population growth—income per capita growth will be positive but negligible and, consequently, poverty will fall by less than 1 percent during the next decade.115 However, if the economic growth jumps to 4 percent, income per capita will grow at nearly 2.5 percent and, after 10 years, poverty will fall back to the 1995 level. Besides, the expected impact on the extreme poverty rate will be even larger, considering that in the past it has been more sensitive to growth than the “normal” poverty rate.

Poverty reduction due to growth will depend crucially upon the recovery of the private sector, the job provider for Colombia’s poor households. Such an outcome will require several changes in order to recover a favorable investment environment and reduce unemployment; that is, attaining an efficient level of real interest rates, ensuring fiscal sustainability, and recovering the elasticity of employment to economic growth. Pension reform in Colombia not only would improve horizontal equity but also has immense value in terms of fiscal stability, without hurting the poor. If pension reform were further postponed, then its increasing burden would divert public resources away from human capital investment. In like manner, the elasticity of employment to economic growth must be recovered, specifically through reactivation of the building sector for the low-skilled workers. The recovery of this sector will heavily depend not only on policies to reestablish a vigorous flow of mortgage credit, but also on labor market policies that avoid inefficient payroll taxation and an excessive minimum wage.

115 Under the assumption that inequality remains constant.
The unfortunate declining trend in the elasticity of job creation to growth is creating more obstacles in transforming future economy-wide growth into income per capita growth through higher household employment ratios. This problematic trend justifies a critical assessment of all the policy instruments—both macro and micro—that might have been distorting the labor skill intensity of private investment. Hence, the extreme sensitivity of poverty to growth performance via low skill job creation underscores the importance of monitoring the consistency of specific macroeconomic policy objectives with the goal of poverty reduction. That is, the consistency of low-skill job creation with key economic parameters affected by actions from the Banco de la República—exchange rate, inflation, interest rates—and actions from the executive and legislative branches of government—fiscal sustainability, payroll taxation, minimum wage decisions, labor flexibilization, and regulation of the building sector.

Apart from recovering the pace of job creation, combating unemployment in the short run involves alleviating the welfare loss for the households of the unemployed, in particular preventing irreversible losses of human capital among the most affected. According to the poverty profile—Chapter 2—the households where the head had recently lost his or her job were among the most in need of public assistance. Currently, social protection remedies in Colombia are insufficient, and the Bank’s Report on Social Protection for Colombia establishes the priorities for the most important actions required in this area.

*Three demands for Education: preschool education, childcare, and technical training and expansion of credit for tertiary education*

This report has clearly identified the importance of providing education to the poor and, especially to younger children. According to the analysis of poverty presented above, children and youth of all ages are the most vulnerable group and education endowments are becoming increasingly important as a predictor of household poverty and income inequality. Social sector analysis showed that the targeting of public provision of subsidized basic education directed to children and youth will reach poor households. Besides, the analysis of priorities of public social spending—Chapter 4—indicates that for the average poor household, the first priority is the
expansion of childcare and the extension of public education to the preschool level (as a close substitute). Increasing availability of childcare and preschool education will bring benefits not only to children—who have a higher than average chance of belonging to a poor household—but will also give many poor families the opportunity to increase the labor force participation of non-head members and thus improve the odds of escaping poverty.

Box 6. Political feasibility:

Colombian laymen's policy priorities are consistent with the findings of this report

Available evidence shows that Colombian citizens have broad public policy preferences that are clearly consistent with the main findings of this report. Nearly four out of every five Colombians think that public policy priorities are either violence, unemployment, or education. According to the Latinobarometro surveys for the year 2000, 38 percent of Colombians see violence as the main problem facing the country, 25 percent think it is unemployment, and nearly 15 percent believe it is education. Other priorities include low wages, housing, or health services with fewer than 5 percent of the population for each of them. However, such surveys are too general and do not allow for specific, sectoral policy implications; for this, one can turn to this report’s results, or other specialized studies. Moreover, Moser’s (1999) study on violence and perceptions of the poor shows that they have a ranking of policy priorities similar to that of the average Colombian: violence, unemployment-poverty, and education.

Figure B6.1. Colombia’s main problems survey, Latinobarometro 2000

On the other hand, considering that the disproportionate share of unemployment of young high school graduates is related at least in part to a lack of skills demanded in the labor market, opinion poll demand for education improvements could also be interpreted as a need to improve vocational and technical training. Given the desperate and hopeless situation faced by the young and the unemployed, public resources from SENA—national training institute—should be devoted to an aggressive training campaign with competing private and public providers in order to help this vulnerable population find its way toward productive activities in the labor market. Moreover, the national high school exam (ICFES) that monitors school performance, which is

116 As seen in Section 6 on earning opportunities and poverty
designed for the exclusive purpose of identifying and measuring school achievements in the areas of knowledge that are best predictors of college performance, should be complemented in building predictors of labor market performance of high school graduates. Some proposals of labor flexibilization to reduce payroll taxation for young workers and accommodate minimum wage legislation should be considered to complement this initiative.

Last, many households facing severe reductions in income owing to the recession are reducing their demand for private basic and tertiary education, and are looking for financial options or subsidized public schools and universities, either by increasing their demand for public basic education—already congested—or by obtaining some form of publicly provided education credit. Expanding credit opportunities would smooth consumption for the poor and middle classes and will support efficient investment in human assets, with considerably high returns at the end of high school and postsecondary education. Fortunately, the Colombian government has identified this policy issue and is currently developing a credit operation with the Bank.

Moving toward these three policy initiatives—increasing preschool education, improving technical training and expanding credit to stimulate demand for private education—will require much greater flexibility in the education public finance framework in order to allow for a responsive flow of public resources to match the popular demands for education for each specific modality at the local level. Fortunately, in the past, Colombia has shown capacity to change and has tried several innovative instruments with relative success, but some of them have had limited use or have been inexplicably abandoned. For example, 'Escuela Nueva', introduced in 1975 in the rural areas, performs very efficiently, yet its benefits have been generally underexploited, while the successful PACES scholarship program for secondary school that was introduced in the early 1990s was nevertheless abandoned despite its success. Similarly, the ICETEX public credit for higher education was introduced successfully in the 1960s, but its coverage is insufficient today. Recent initiatives include a Bolsa Scola-type program, Jóvenes en Acción, and the expansion of public credit for higher education using the commercial bank network. The greater flexibility that local governments have under the reform of Ley de Transferencia is a positive step.

The additional flexible flow of resources necessary to attend the most important demands in education is being addressed by the reform of the subnational public finance regime for education, presented to Congress. This reform, which covers both articles of the Constitution and Ley 60, would provide funds for education in proportion to the number of students served and give some flexibility to local governments in intersectoral allocation. These changes should bring expected improvements in both efficiency and equity.

**Infrastructure: Sewerage and Housing**

Increasing the coverage of sewerage and recovering the plummeting levels of housing ownership are two policy priorities in infrastructure. The analysis on social public service priorities—in Chapter 4—showed that, for the poorest 50 percent of Colombians, the second service priority is the expansion of sewerage coverage. In fact their coverage rates are at least 30 percent below the level enjoyed by the fourth and fifth quintile. The successful example of some Colombian cities (for example, Medellín) where sewerage coverage is not only elevated but equitable, show that this kind of expansion targets should be financially feasible in other Colombian municipalities.

Analysis of vulnerability and poverty indicate that, in urban areas, homeownership provides good protection against poverty and economic risk: Non-homeowners tend to be at least 13 percent more likely to be poor. Worst of all, during the recent recessive period, homeownership plummeted back to its 1988 levels, especially for poor or nearly poor households. In addition, examination of subsidies targeting in “public” housing showed substantial leakage and wide room for improvement. This situation therefore seems to require government action in several
dimensions in housing policy, first by allocating resources to “public” or affordable housing—Vivienda de Interés Social—and second, by redesigning means testing to improve targeting results in housing programs and, finally, regulating mortgage credit markets to avoid the inefficient and excessive real interest rates suffered in the mid 1990s.

Health: Transform higher insurance coverage into more treatment

For the 50 percent poorest Colombian households, health insurance and health treatment remain the second and fourth priority in social service expansion. Despite the substantial progress following the health reform of the early 1990s, some significant policy challenges remain in this area. Although insurance coverage nearly doubled and considerable resources were added to the health sector, medical attention and treatment failed to increase proportionally. Health insurance regulation should prevent obstacles in the operation of market competition in order to transform the market power of the insured population toward proportional delivery of services. Besides, the subsidized regime only covers a third of those eligible; this is partially due to substantial targeting leakages, which should undoubtedly be prevented.

Under increasing economic insecurity, safety-net programs become a more valuable policy instruments

The poor are not only affected by lower economic activity, but also by the trend of increasing uncertainty experienced by the Colombian economy in the 1990s. Both the government and households are poorly equipped to manage risk in this new environment. Moving towards a more integrated social protection policy would be significantly beneficial for the poor. This policy should rest on three main pillars: a set of social assistance programs—for the chronically poor-, a social insurance system—for idiosyncratic risk- and, a counter-cyclical public expenditure component—for covariate risk-. While raising family health insurance coverage among the poor would improve social protection, recovering housing ownership among the poor could enhance self-protection, and improving street safety in poor neighborhoods would raise the protection of the poor’s life and property. At the same time, Colombia should expand its menu of policy instruments in order to face the challenges of some vulnerable groups that are receiving too little or no help. Safety net mechanisms should address the undesirable temporary effects of the recession on current welfare and help prevent irreversible and permanent losses of human capital accumulation.

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In summary, political institutions in Colombia face top policy challenges in six main areas:

- Security: Address governance issues to provide personal security and protect poverty rights to the common citizen.
- Growth and employment: recover macroeconomic and fiscal stability to boost growth rates and increase job creation in order to return to the previous poverty reduction path. Check the consistency of micro and macro policy handles with poverty reduction objectives.
- Social Protection: match the increasing economic volatility by developing an integrated social protection policy to enhance risk management instruments.
- Childcare and education are evident priorities for the most vulnerable demographic groups: improve efficiency and equity in the provision of childcare and preschool education for infants. Provide technical training to raise employment opportunities of young adults, in addition to expanding educational credit to tertiary education.

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117 See the World Bank report on social protection, Rawlings (2002).
- Basic infrastructure: expand coverage of sewerage and recover the trend of increasing homeownership.
- Health: Transform the successful increase of insurance coverage into higher rates of health treatment and reduce targeting leakages in the subsidized insurance regime.

**Box 7. Remaining puzzles and topics for further analysis**

The specific scope of this report and its limitations of time and resources have left some remaining puzzles. Certain stylized facts identified by this report should be given an explanation. Besides particular issues are becoming increasingly relevant for public social policy, hence keeping them under close monitoring is prudent. Some of the most important are listed below.

- **What explains the increasing trend of self-employment?** Optional explanations to be tested i) inflexibility of labor markets (including real minimum wage levels), ii) excessive relative price of unskilled labor relative price of capital, associated to excessive payroll taxation and / or temporarily overvalued exchange rate, iii) technological trend of complementarity of capital investment with skilled labor.
- The persistent excess of extreme poverty in rural as compared to urban areas, suggests that issues of *agricultural productivity* should be examined carefully.
- **Why did rural and urban economies show contradictory trends** in the early nineties?
- Why the expanded coverage of insurance has not produced a proportional increase in *health treatment*.
- **How to raise female labor force participation in poor households.** Labor force participation and occupational choice of spouses and other members of the household was identified as one key difference between poor and non-poor households. Further studies should improve the understanding of their behavior in response to both demographics and schooling determinants, specific sector dynamics and especially to policy instruments -such as local availability of childcare, transportation cost, etc.-.
- **Identify social sector priorities at the local level.** Although the present study identifies main priorities at the national level (Chapter 4, Volume I and Chapter 5, Volume II), many public programs are managed at the local level, and their allocation of resources could improve extensively if social program priorities were identified. Even centralized programs such as ICBF or SENA would benefit from such diagnostics in terms of regional planning.
- **Social mobility and safety net presence.** Safety net instruments are becoming increasingly important. Maintaining applied research on household exposure to risk and protection mechanisms should provide valuable orientation to future adjustments in social safety net policy. For example, research on social mobility, especially in relation to downward mobility and its links to the social safety net and other market and self protection mechanisms –severance payment, health insurance, house ownership, etc.
- In view of the divergent regional outcomes found in this study, further research should establish whether the decentralization process –both implicit cross-regional subsidies and incentives – has closed or widened regional gaps.
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APPENDIX A.1: INCOME AND POVERTY LINE METHODOLOGY

A.1.1 Data sources and income adjustments

The data sets used are the urban and rural “Encuesta Nacional de Hogares” (National Household Survey-ENH), carried out by the National Department of Statistics (DANE) in June 1978 and September 1988, 1995, and 1999. Urban data contain information about Colombia’s 13 largest cities, including the complete metropolitan area. To maintain comparability over time, we restricted the urban sample to the seven cities available in all four years of surveys (Barranquilla, Bucaramanga, Bogotá, Manizales, Medellín, Cali, and Pasto), which we loosely call “urban Colombia.” They account for approximately two thirds of the urban population and are very heterogeneous. Rural Colombia is composed of the dispersed zones of all municipalities (nonmunicipal cabeceras or villages) and about 850 remaining small municipalities classified as rural. The rural data are classified into the following four regions: Atlantic, including the departments of Atlántico, Bolivar, Cesar, Córdoba, la Guajira, Magdalena, and Sucre (31 percent cabeceras); Oriental, including the departments of Boyacá, Cundinamarca, Meta, Norte de Santander, and Santander (26 percent cabeceras); Central, including the departments of Antioquia, Caldas, Caquetá, Huila, Quindío, Risaralda, and Tolima (28 percent cabeceras); and Pacific, including the departments of Cauca, Chocó, Nariño, and Valle del Cauca (21 percent cabeceras). 

In order to minimize “noise” to the data, only minimal income adjustments were introduced. Instead of imputing earnings for non-informants, those observations were removed with missing or zero values for household income, as well as households with at least one member employed at the time of the survey but with no income reported. To the extent that misreporting can be considered “quasi-random,” the bias it causes is smaller than the one created by imputing values to the incorrect observations. To account for this reduction in the number of observations, we rescaled the sampling weights up taking into account regions and sampling strata.

Missing income. In order to minimize “noise” to the data, only minimal income adjustments were introduced. Instead of imputing earnings for non-informants, those observations were removed with missing or zero values for household income, as well as households with at least one member employed at the time of the survey but with no income reported. To the extent that misreporting can be considered “quasi-random,” the bias it causes is smaller than the one created by imputing values to the incorrect observations. To account for this reduction in the number of observations, we rescaled the sampling weights up taking into account regions and sampling strata.

Imputed rents. Owing to their quantitative importance and their well-defined conceptual role, imputed rent payments to homeowners, who live in their property, were added to income. These individuals extract a flow of goods and services from their property, which is not taken into account in their monetary income. Thus, incomes were adjusted upward to account for such in-kind earnings and thus correct the downward bias of homeowners’ incomes. Imputed rents are estimated with a hedonic model of rent prices, which satisfies basic regression diagnostics and explains a large proportion of rent variability.

Top coding. Urban income top coding was a minor problem in the 1995 urban data when 0.08 percent of the sample of wage earners and 0.54 percent of self-employed displayed top-coded earnings. Because of these low proportions, top-coded incomes were not considered a problem worthy of consideration. Furthermore, simulations imputing higher incomes to these individuals did not alter results. Owing to extreme outliers, rural data were top-coded, representing a negligible percentage from 0.1 to 0.3 percent of the population. For more detailed information, see Appendix to Chapters 1 and 2 in Volume II.

A.1.2 Poverty lines and price indices by region

The measure of welfare is adjusted household per capita income, which is defined as the sum of incomes earned by each earner in the household, plus the imputed rent for the household, divided
by the household size. For both rural and urban data, domestic employees and their offspring are excluded, as well as live-in-tenants when computing this figure.

The domestic poverty lines and price data were provided by DANE (the Colombian Statistical Agency). DANE computes the extreme poverty line based on the minimum calorie and nutrient requirements of individuals of average age and sex. The moderate poverty line is a multiple of the extreme one, which ranges from 2 to 2.5. Price data were used to convert nominal incomes to real values expressed in 1999 pesos separately for each city, therefore avoiding biases derived from regional price effects. Separate poverty and extreme poverty lines were used for each city and for rural areas as a whole. Purchasing power parity converters from the World Bank's WDI were used to compute the US$2 per day poverty line.

Table A.1.1 Poverty, extreme poverty and US$2 a day lines in nominal Colombian pesos

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>Poverty</td>
<td>Extreme poverty</td>
<td>Poverty</td>
<td>Extreme poverty</td>
</tr>
<tr>
<td>Urban</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barranquilla</td>
<td>1,922</td>
<td>871</td>
<td>16,474</td>
<td>8,087</td>
</tr>
<tr>
<td>Bucaramanga</td>
<td>1,776</td>
<td>803</td>
<td>15,226</td>
<td>7,461</td>
</tr>
<tr>
<td>Bogota</td>
<td>2,190</td>
<td>862</td>
<td>18,775</td>
<td>8,003</td>
</tr>
<tr>
<td>Manizales</td>
<td>1,692</td>
<td>792</td>
<td>14,504</td>
<td>7,357</td>
</tr>
<tr>
<td>Medellín</td>
<td>2,048</td>
<td>852</td>
<td>17,557</td>
<td>7,917</td>
</tr>
<tr>
<td>Cali</td>
<td>2,095</td>
<td>853</td>
<td>17,957</td>
<td>7,927</td>
</tr>
<tr>
<td>Pasto</td>
<td>1,399</td>
<td>706</td>
<td>11,989</td>
<td>6,558</td>
</tr>
<tr>
<td>Rural</td>
<td>1,510</td>
<td>697</td>
<td>12,945</td>
<td>6,473</td>
</tr>
<tr>
<td>US$2 a day</td>
<td>753</td>
<td>6,829</td>
<td>31,431</td>
<td>55,798</td>
</tr>
</tbody>
</table>

Source: DANE, WDI database.

A.1.3 Intertemporal Urban Welfare Comparisons

In summary, it is unambiguous, by any welfare measure, that rural Colombians were better off relative to 1978 in the other three years studied (see Table A.1.2). Whether or not welfare underwent a relative improvement within the 1988-99 period is dependent upon the social welfare indicator examined. 1995 is clearly better than 1988 in terms of all poverty measures, income per capita, and the Sen welfare index. However, it does not exhibit first order dominance over 1988, although it does show generalized Lorenz dominance. In 1999, welfare in terms of income per capita expanded relative to 1988 and 1995. However, 1988 is superior to 1999 in terms of the poverty gap and $P_2$ measure, and 1995 dominates 1999 in terms of all poverty measures and the Sen welfare index. Thus, it is evident that although mean income per capita may have increased during the last four years, by most welfare measures, rural Colombians are not better off in 1999.
# Table A.1.2. Welfare comparisons under alternative social welfare criteria, Urban Colombia, 1978, 1988, 1995 and 1999

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>is greater than in year (row)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>True unambiguously (F.O.D.)</td>
<td>True unambiguously (F.O.D.)</td>
<td>True unambiguously (F.O.D.)</td>
<td></td>
</tr>
<tr>
<td>1988</td>
<td>True unambiguously (F.O.D.)</td>
<td>True conditional, by YPCT, Sen Index</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>True unambiguously (G.I.D.)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: 1. F.O.D., First Order Stochastic dominance. 2. G.I.D. Generalized Lorenz dominance, 3. YPCT. Average income per capita and, 4. poverty count P(0), poverty gap P(1) and poverty intensity P(2).
APPENDIX A.2 CROSS REGIONAL WELFARE COMPARISONS IN RURAL AND URBAN COLOMBIA

This section explores the heterogeneity social and economic development across rural and urban areas during the last two decades. There are two policy angles that justify a close examination of cross regional differences in Colombia: first, with local democracy since the 1980s and increasing decentralization during the 1990s, many social public policy actions are decided and executed at the local level, and, second, regional sources of growth have been identified as key determinants of overall economic dynamics. 18

A.2.1 Cross-urban comparisons: partial convergence and improvement in left behind cities

Social Indicators: convergence in basic education and electricity and water but, heterogeneity persists in postsecondary education, child labor, telephone connections, and sewerage.

Regional disparities in illiteracy tend to diminish. The overall literacy progress, seen in section 3, hides important regional disparities in the rates of improvements. Illiteracy reductions since 1978 were especially sharp in Barranquilla, Bucaramanga, Manizales, and Medellín, even through the rates remain above the national 5.7 percent average in 1999. 119 These four cities started far behind the national average with illiteracy rates of 14 percent or above in 1978, but by 1999 they displayed illiteracy rates no higher than 7.5 percent. The catch up was especially rapid for the city of Bucaramanga, which fared worst in 1978 at 17.8 percent illiteracy. In all cities, except in Bogotá and Manizales, improvements mostly slowed down or stagnated between 1995 and 1999.

The evolution of average educational attainment across cities follows a pattern of strong convergence. In 1978, the only city that displayed above average schooling was Bogotá (7 versus 6.2 years), followed by Cali with 6 years. Medellín, Manizales, and Bucaramanga showed close mean educational attainment, around 5.5 years, while Barranquilla was far behind with 4.6 years. Thus, the ratio between the highest and lowest cities was 1.5. In 1999, when the urban average reached 9.1 years, the cities that fared the worst were Bucaramanga and Medellín, with 8.1 and 8.3 years of average educational attainment, respectively. Bogotá was still the highest, with 9.8 years, with Barranquilla, now the second highest, one year behind. Cali, Manizales and Pasto stayed close with an average educational attainment approaching 8.7 years. Thus, average schooling converged among cities as the ratio between the highest and lowest cities decayed to 1.2, and most importantly, the “behind” city of 1978, Barranquilla, again showed the highest improvement in this indicator.

Across cities, school enrollment for age groups 7–11 and 12–17 shows strong convergence up to 1995, with some heterogeneity in the recessive period. Up to 1995, while Medellin and Cali caught up with the rest of the urban areas, Manizales and Pasto lost some of their significant advantage. In the recessive period, the worst reductions in enrollment occurred in Barranquilla, Manizales, Pasto, and Cali, especially in the latter for the high-school-aged children, with a drop of 8 percentage points between 1995 and 1999.

School enrollment for individuals above 18 years of age shows some persistent heterogeneity across cities. After being far behind, Barranquilla and Bucaramanga caught up to the urban average: the former mostly in the 1980s and the latter in the early 1990s. In contrast, over the years Cali and Medellín remained persistently behind, by more than 5 and 8 percentage points,

18 Sanchez and Nuñez (2000).
119 All along this section refers to Tables A.1 A to A.1.G in Chapter 1, Volume II, Appendix
respectively. Simultaneously, until 1995 Manizales and Pasto lost their relative advantage, and then followed diverging paths: Manizales recovering to 4 percent above the urban average and Pasto falling together with the urban trend.\textsuperscript{120}

**Child labor differs dramatically across cities.** Child labor was consistently higher than average in Bucaramanga, Cali, and Pasto over the whole period. In Cali, sharp increases occurred between 1995 and 1999, leading to rates higher than in 1978. This was accompanied by a large fall (8 percentage points) in high-school-aged children’s enrollment rates. In contrast, one should note that child labor for both age groups remained significantly below average in Barranquilla and Medellin over the period.

Despite convergence, regional disparities in access to public utilities subsist, mainly in telephone and sewerage. Overall, we observe regional convergence in access to basic public utilities between 1988 and 1999, as shown by the decreasing ratios of highest to lowest coverage among cities (for example, 1.89–1.27 for telephones, 1.01–1.00 for electricity). However, lack of coverage is concentrated in regional pockets. Despite economic prosperity during the past decade, in Barranquilla 17 percent of the population does not have sewerage and 51 percent does not have access to a private telephone. Access to aqueduct also lags slightly behind the national average. Except for telephone lines, Pasto displayed higher levels than the national average but very slow improvements. Home telephone lines were still missing for 48 percent of the population in this city in 1999 and approximately three-fourths of the poor did not have them. Access to these four services was better in Bogotá except for electricity, which still is lacking for 0.9 percent of the population, equivalent to 50,000 people, a slightly higher proportion than in 1995.

**Strong convergence in poverty counts despite persistent differences in income.**

With some disparities, from 1978 to 1995, significant poverty reductions were visible across all cities; however, economic recession reversed this tendency, except in Manizales. Despite their low average per capita income, the least poor cities are consistently Bucaramanga and Pasto (Table A.2.1). While Barranquilla remained the poorest city, it is also the one which saw the highest decrease in the poverty headcount, from 90 percent in 1978 to 62 percent in 1999. During the 1978–95 period, Barranquilla and Bucaramanga obtained the largest reduction in poverty counts, 34 and 26 percent, respectively. However, at the same time, Bogotá and Manizales obtained the smallest improvements in poverty. Not all cities were equally affected by the crisis; Bucaramanga and Medellin suffered the most in poverty. The share of the poor rose from 36 percent in 1995 to 52 percent in 1999 in Bucaramanga and from 49 to 62 percent in Medellin. In that period, the only city that managed a continued decrease of the poverty headcounts is Manizales. All others experienced steep increases, between 5 and 16 percent, with rising inequality among the poor.

**Extreme poverty followed a similar U-turn pattern, except in Barranquilla.** Table A.2.1 reports the changes in extreme poverty. The progress was huge between 1978 and 1995, a period in which every city reduced this indicator to at most one-third of its original value. In 1978, the highest share was also found in Barranquilla (49.0 percent), while the lowest could be detected in Bogotá (20.9 percent), closely followed by Bucaramanga (21.8 percent). In 1999, the highest proportion of extremely poor was observed in Pasto (20.9 percent), and the lowest one in Bucaramanga (8.6 percent).\textsuperscript{121} Barranquilla and Medellin obtain the highest reductions in extreme

\textsuperscript{120} In fact, the spectacular decrease of university-age enrollment for Pasto between 1978 and 1995 casts doubt upon the reliability of the data for 1978, when school enrollment among the 18–22 years of age group was twice as large as the national average.

\textsuperscript{121} Somewhat paradoxically, Pasto is the same city with the lowest poverty count in 1999. This suggests an atypical shape of the lower tail of its income distribution.
poverty, 31 and 23 percent, respectively. In the last four years, on the other hand, all cities but Barranquilla saw extreme poverty rising between 3 and 7 percent, with the highest increase in Bogotá and Medellín. Again, this pattern indicates that in Bogotá the crisis hit more powerfully those at the very bottom of the distribution. With a 1999 rate of 15.5 percent, the capital city has lost most of its relative advantage of the late 1970s, and ranks near the bottom together with Barranquilla and Pasto.

Table A.2.1. Income inequality and poverty indicators, seven cities, 1978–99

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Barranquilla</td>
<td>89.9%</td>
<td>68.3%</td>
<td>56.4%</td>
<td>62.2%</td>
</tr>
<tr>
<td>Extreme poverty rate</td>
<td>48.9%</td>
<td>28.5%</td>
<td>18.4%</td>
<td>15.9%</td>
</tr>
<tr>
<td>Mean income per capita</td>
<td>82,225</td>
<td>177,428</td>
<td>223,410</td>
<td>217,833</td>
</tr>
<tr>
<td>Gini coefficient</td>
<td>0.365</td>
<td>0.464</td>
<td>0.481</td>
<td>0.502</td>
</tr>
<tr>
<td>Bucaramanga</td>
<td>62.2%</td>
<td>50.8%</td>
<td>36.0%</td>
<td>51.6%</td>
</tr>
<tr>
<td>Poverty rate</td>
<td>21.8%</td>
<td>13.9%</td>
<td>5.3%</td>
<td>8.6%</td>
</tr>
<tr>
<td>Extreme poverty rate</td>
<td>146,663</td>
<td>226,669</td>
<td>283,487</td>
<td>213,043</td>
</tr>
<tr>
<td>Mean income per capita</td>
<td>0.403</td>
<td>0.455</td>
<td>0.464</td>
<td>0.445</td>
</tr>
<tr>
<td>Gini coefficient</td>
<td>0.468</td>
<td>0.490</td>
<td>0.548</td>
<td>0.569</td>
</tr>
<tr>
<td>Bogota</td>
<td>65.2%</td>
<td>51.4%</td>
<td>45.9%</td>
<td>52.3%</td>
</tr>
<tr>
<td>Extreme poverty rate</td>
<td>20.9%</td>
<td>15.0%</td>
<td>8.4%</td>
<td>15.5%</td>
</tr>
<tr>
<td>Mean income per capita</td>
<td>182,017</td>
<td>281,512</td>
<td>371,922</td>
<td>345,385</td>
</tr>
<tr>
<td>Gini coefficient</td>
<td>0.468</td>
<td>0.490</td>
<td>0.548</td>
<td>0.569</td>
</tr>
<tr>
<td>Manizales</td>
<td>65.2%</td>
<td>58.4%</td>
<td>55.3%</td>
<td>52.6%</td>
</tr>
<tr>
<td>Poverty rate</td>
<td>26.7%</td>
<td>27.3%</td>
<td>11.5%</td>
<td>15.2%</td>
</tr>
<tr>
<td>Extreme poverty rate</td>
<td>157,629</td>
<td>195,705</td>
<td>243,601</td>
<td>219,105</td>
</tr>
<tr>
<td>Mean income per capita</td>
<td>0.479</td>
<td>0.528</td>
<td>0.501</td>
<td>0.490</td>
</tr>
<tr>
<td>Gini coefficient</td>
<td>0.479</td>
<td>0.528</td>
<td>0.501</td>
<td>0.490</td>
</tr>
<tr>
<td>Medellín</td>
<td>74.9%</td>
<td>56.1%</td>
<td>49.4%</td>
<td>61.9%</td>
</tr>
<tr>
<td>Poverty rate</td>
<td>31.5%</td>
<td>16.5%</td>
<td>8.9%</td>
<td>14.0%</td>
</tr>
<tr>
<td>Extreme poverty rate</td>
<td>144,420</td>
<td>225,868</td>
<td>249,148</td>
<td>218,821</td>
</tr>
<tr>
<td>Mean income per capita</td>
<td>0.484</td>
<td>0.455</td>
<td>0.475</td>
<td>0.505</td>
</tr>
<tr>
<td>Gini coefficient</td>
<td>0.484</td>
<td>0.455</td>
<td>0.475</td>
<td>0.505</td>
</tr>
<tr>
<td>Cali</td>
<td>68.5%</td>
<td>54.9%</td>
<td>49.0%</td>
<td>53.7%</td>
</tr>
<tr>
<td>Poverty rate</td>
<td>26.4%</td>
<td>15.1%</td>
<td>8.8%</td>
<td>12.3%</td>
</tr>
<tr>
<td>Extreme poverty rate</td>
<td>160,208</td>
<td>248,345</td>
<td>275,165</td>
<td>246,547</td>
</tr>
<tr>
<td>Mean income per capita</td>
<td>0.459</td>
<td>0.475</td>
<td>0.483</td>
<td>0.513</td>
</tr>
<tr>
<td>Gini coefficient</td>
<td>0.459</td>
<td>0.475</td>
<td>0.483</td>
<td>0.513</td>
</tr>
<tr>
<td>Pasto</td>
<td>63.7%</td>
<td>56.7%</td>
<td>44.4%</td>
<td>51.3%</td>
</tr>
<tr>
<td>Poverty rate</td>
<td>37.4%</td>
<td>28.9%</td>
<td>16.7%</td>
<td>20.8%</td>
</tr>
<tr>
<td>Extreme poverty rate</td>
<td>128,708</td>
<td>161,233</td>
<td>191,404</td>
<td>198,454</td>
</tr>
<tr>
<td>Mean income per capita</td>
<td>0.466</td>
<td>0.510</td>
<td>0.483</td>
<td>0.502</td>
</tr>
<tr>
<td>Gini coefficient</td>
<td>0.466</td>
<td>0.510</td>
<td>0.483</td>
<td>0.502</td>
</tr>
</tbody>
</table>

Income per capita

Across cities, there is a pattern of convergence in average income per capita, with the exception of Bogotá. In Figure A.2.1, each line depicts the evolution of the city's average household per capita income. In all cities, the 1978–88 decade registered important welfare gains, although they were smaller for Manizales and Pasto. Over the next seven years, Bogotá, Bucaramanga, Manizales, and Barranquilla experienced high rates of growth, while in Pasto, Medellín and Cali incomes grew at slower pace. In the interval 1995–99, all cities except Pasto lost average income, and as a result a pattern of convergence became clearly visible for all urban
areas, with the exception of Bogotá. While average per capita income almost doubled, the maximum differences in income per capita, which were nearly C$80,000 in 1978, narrowed to less than C$50,000 in 1999.

**Barranquilla grew most during the whole period, and Manizales lost most.** First, income gains were truly spectacular in Barranquilla, where mean household per capita income was multiplied by 2.65 over the entire period, with the highest growth achieved between 1978–95. Bogotá started at higher welfare levels and saw the second highest gains; income nearly doubled over the period (1.9). Manizales experienced the lowest overall improvement at 1.39, with slow growth between 1978 and 1995 and a 10 percent decrease in the latest period. In Bucaramanga, income was multiplied by 1.45 with a strong 93 percent gain (the third highest) between 1978 and 1995, before sharply decreasing by 25 percent, in the next four years, the worst drop. Medellín and Cali would be the “average” cities, with growth slowing down progressively, for a total multiplication of income of 1.54 and 1.52, respectively. On the other hand, while Pasto also saw a total multiplication of 1.54, the evolution was quite different: it registered only 25 percent growth between 1978 and 1988, and was the only city still growing, albeit very little, between 1995 and 1999.

When income is adjusted by differentials in local cost of living, convergence is even stronger. In order to compare relative welfare among the cities, Figure A.2.2 reports deviations from average urban income adjusting for differential cost of living. The price correction always brings substantial improvements in relative income in Bucaramanga, Manizales, and Pasto, while reducing it in Bogotá and Cali, except in 1999, when this correction improves Cali’s relative standing, indicating some substantial reductions in local cost of living during the latest period. Despite these effects, the net losers from 1978 to 1999 are the cities of Bucaramanga, Pasto, and Manizales, which drop more than 20 percentage points in relation to the urban average. Important losses are also visible in Medellín (12 percent), mostly concentrated in the late recessive period. After these adjustments, the major gains of Barranquilla are of similar size and Manizales still losses the most, but Bogotá’s relative advantage is reduced to 12 percentage points, half of the unadjusted figure. Although cost of living adjustments do not change the urban dispersion of average income in the starting period, they reveal a stronger convergence at the end of the period. Maximum to minimum differences went from 66 percent in 1978 to 31 percent in 1999, while correspondingly unadjusted figures were 63 and 53 percent.

**Inequality**

Throughout the entire period, income inequality rose sharply in all cities, but Manizales. As a result income inequality became higher and more dispersed. The worst increase in the Gini coefficient occurred between in Barranquilla and Bogotá, 14 and 10 percentage points, respectively. However, the dynamics of inequality across urban centers was more diverse during the 1990s. While inequality increased mostly in the four largest cities--particularly in Bogotá--by 8 Gini points-- it decreased in Bucaramanga, Pasto, and Manizales.
Although the dynamics of inequality are heterogeneous across cities, a pattern of convergence at a higher level is apparent over these 21 years. First, Barranquilla lost its most equal city place in 1978 (Gini index of 36.5) to Bucaramanga (Gini 44.5) in 1999. Second, in Manizales, the Gini index has been declining since 1988 (from 52.8 to 49.0), although it remained 1.1 percent higher than in 1978, when it reached 47.9. The remaining cities can be divided among those with two-digit inequality growth, and those with one-digit increases. Among the first group, apart from Barranquilla, we find Bogotá (21 percent growth), Cali (11.7 percent growth), and Bucaramanga (10.6 percent growth). Within the second group of moderate inequality growth, apart from Manizales, fall Medellín (4 percent growth) and Pasto (8 percent growth). Thus, if the most unequal city in 1978 was Medellín, this “distinction” belongs to
Bogotá in 1999. The ratio of the Gini indices of the most to least unequal city fell from 1.32 in 1978 to 1.05 in 1999. Hence, regional convergence indeed took place, but at higher levels of inequality.

Finally, which Colombian city enjoys the highest welfare right now? Cross-city comparisons of social indicators reveal a pattern of convergence, with strong catch up by Barranquilla, the main laggard city since 1978. Something similar happened with economic welfare indicators. After adjusting average income by differentials in local cost of living and inequality, welfare convergence is even stronger. Bogotá loses all its relative advantage and in 1999 bunches together with the three smallest cities of the sample, Pasto, Bucaramanga, and Manizales, which rank far better than the three other grandes ciudades (Barranquilla, Cali, and Medellín). Then which Colombian city can be considered to enjoy the highest welfare right now at the turn of the century? The answer depends on the choice of social weights: by average income it is Bogotá, but by poverty count it is Pasto and by extreme poverty, Bucaramanga. In dynamic terms, Barranquilla showed the highest progress in all development indicators while Cali faced the most significant losses.

**Extreme poverty dynamics, growth, and income inequality**

In the last decade, the strong heterogeneity of extreme poverty dynamics is explained by the strong variability in growth and inequality across the main urban centers. While Barranquilla, Manizales, and Pasto saw reductions of 12, 13, and 8 percent, Bogotá saw a moderate increase and the rest only saw reductions between 2 and 5 percent.

Figure A.2.3 shows that Bogotá and Cali, the cities where poverty reduction was disappointingly low relative to growth, are those that had a rise in inequality strong enough to counterbalance the effect of growth on poverty dynamics. The contrast of Barranquilla and Bogotá is especially interesting. Despite increasing inequality, income growth brought significant benefits for the extreme poor in Barranquilla—a 13 percent reduction. But the opposite happened in Bogotá where extreme poverty remained almost unchanged despite having the second highest income growth—23 percent—clear evidence that economic growth in Barranquilla was more pro-poor than in Bogotá.

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122 See the Bank’s 1999 special poverty report about Cali, Colombia.
A.2.2 Rural Regional comparisons: Central and Atlantic regions win, Pacific and Central lose

Social indicators reveal deviating paths in regional development favors the Atlantic Region.

All four regions depicted similar patterns of reduction in illiteracy rates, with the most advancement made between 1978 and 1988, moderate gains between 1988 and 1995, and relative stagnation (or worsening) in the last period studied. The Central, Oriental, and Pacific regions maintained very similar rates throughout the four years studied, except for the Pacific’s rate in 1978, which was over 10 percentage points above than the rest. It is actually noteworthy that illiteracy rates in the Pacific region fell by well over 50 percent in the first 10 years studied, from 34.2 to 15.6 percent. Atlantic rates always remained significantly higher, but the gap has been narrowing over time.

Illiteracy and school enrollment rates converge by region, except for the Atlantic. The latter, while following roughly the same trends, remains behind the others. Nonetheless, progress made in the Atlantic region is still notable, as illiteracy fell to 20.9 percent in 1999, from 46.1 percent in 1978, although still almost 6 percentage points higher than the rural average. Despite this contrast with the other three regions, school enrollment levels have remained close to the rural average for primary education, and higher than average for secondary and tertiary education in all periods. Therefore, higher than average illiteracy rates may point to a relatively large stock of older, illiterate people in the Atlantic region. In fact, when illiteracy is measured for those aged 7–19, the Atlantic leads the average rate by less than 2 percentage points.

Primary school enrollment rates have converged; the ratio between the highest and the lowest rate fell to 1.05 in 1999 from 1.37 in 1978. The Pacific region made the most progress throughout the whole period. After having had the lowest rate in 1978, its 1999 rate now marginally surpasses the other 3 regions. During the economic downturn, primary school enrollment rates dropped in both the Pacific and Oriental regions. The Atlantic and Central regions were not negatively affected: rates remained steady in the Atlantic region, and rose a full 4 percentage points in the Central region, where secondary and tertiary enrollment rates also increased.

Secondary school enrollment rates have also converged, with the exception of the Atlantic region, which has always enjoyed considerably higher rates, around 12 percentage points higher than the rural average. Interestingly, tertiary school enrollment rates were also always highest in the Atlantic region, yet primary school enrollment rates were the lowest in the four regions in 1988, only surpassed the Central region in 1995, and were close to average in 1999. The education system in the Atlantic region thus seems somehow better able to retain students after they reach secondary school age.

In 1999, enrollment rates for those aged 18–22 still differ across regions, although they have converged relative to 1978; the ratio between the highest and the lowest rate has fallen from 2.64 to 1.43, in 1978 and 1999, respectively. The Central region always lagged behind the other three until 1995. While the other regions experienced increases of 5 percentage points or more between 1988 and 1995, rates only increased by 2.6 percentage points in the Central region. In 1999, the Central region finally began to catch up.

\footnote{All along this section refers to Table A.2.1 in Chapter 2, Volume II, Appendix}
During the last four years, all regions, except for the Pacific, experienced large drops in child labor. The Central and Oriental regions had similar evolutions from 1995 to 1999, down from (about) 28 to (about) 21 percent for the 10–16 age category and down from (about) 20 to (about) 14 percent for the 10–14 age category. The Atlantic region’s decline was relatively small, but the region already had especially low child labor rates in comparison to the rest; rates in 1999 were at only 11.6 and 7.6 percent for children 10 to 16 and 10 to 14, respectively. In contrast to the rest of the rural areas, child labor was counter-cyclical in the Pacific region: it fell during the boom in 1988 and rose during the economic downturn between 1995 and 1999.

Strong heterogeneity in rural poverty: Oriental and Atlantic regions win, Central and Pacific regions lose

The Pacific and Central fare worst, while the Atlantic improves in all indicators. The decrease in poverty rates of the 1978–95 period was concentrated among the extreme poor, especially in the Oriental region, where extreme poverty rates went from 75.4 percent to 31.7 percent (Table A.2.2). Substantial improvements in poverty indicators came to a halt after 1988.
for both the Pacific and Central regions. In fact, the Central region actually registered a 6.3 percentage point rise in the poverty rate between 1988 and 1995.

Table A.2.2. Change in poverty and extreme poverty rates, Rural Colombia, 1978, 1988, 1995, 1999

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Poverty</td>
<td>Extreme</td>
<td>Poverty</td>
<td>Extreme</td>
</tr>
<tr>
<td>Rural Colombia</td>
<td>-14.0%</td>
<td>-20.3%</td>
<td>-1.0%</td>
</tr>
<tr>
<td></td>
<td>-0.2%</td>
<td>-0.5%</td>
<td></td>
</tr>
<tr>
<td>Atlantic Region</td>
<td>-5.1%</td>
<td>-5.5%</td>
<td>-3.0%</td>
</tr>
<tr>
<td></td>
<td>-5.2%</td>
<td>-11.9%</td>
<td></td>
</tr>
<tr>
<td>Oriental Region</td>
<td>-12.5%</td>
<td>-20.4%</td>
<td>-8.5%</td>
</tr>
<tr>
<td></td>
<td>-1.0%</td>
<td>-3.1%</td>
<td></td>
</tr>
<tr>
<td>Central Region</td>
<td>-21.2%</td>
<td>-24.0%</td>
<td>6.3%</td>
</tr>
<tr>
<td></td>
<td>1.7%</td>
<td>4.9%</td>
<td></td>
</tr>
<tr>
<td>Pacific Region</td>
<td>-15.4%</td>
<td>-29.1%</td>
<td>0.8%</td>
</tr>
<tr>
<td></td>
<td>5.0%</td>
<td>6.7%</td>
<td></td>
</tr>
</tbody>
</table>

1. Level change in percentage points
Source: Table A.2.2 in Chapter 2, Volume II

During the 1995–99 period, only the Atlantic region registered a continued sharp decrease of the extreme poverty rate, an 11.1 percentage point drop. The poverty rate fell by 5 percentage points, enough to bring the Atlantic region down to the average rural poverty rate (except for in 1978, poverty rates in the Atlantic region had always been above the national rural average). This region was also the only one to undergo a drop in the poverty count, poverty gap and $P_2$ index, as depicted in Table A.2.2.

Meanwhile, progress slowed down dramatically in the Oriental region. During the latest sub-period, the Oriental region has followed a pattern similar to that of rural Colombia as a whole: while the poverty count slightly decreased, the other two indicators, $P_1$ and $P_2$, have risen, indicative of a deepening of poverty. In the late 1990s, poverty measures of the Central and Pacific regions increase above 1988 levels. The Central and, especially, the Pacific regions fared the worst between 1995 and 1999 and have reached poverty indicators inferior to those of 1988, erasing some of the progress made between 1978 and 1988.

Income per capita: Divergent and crossing paths in rural regional development

Strong discrepancies in regional development trends are re-ranking rural regions. Regional mean income per capita follows separate paths, as different factors—coffee sector dynamics, trade liberalization, and export crop substitution, urban-rural integration, illicit crops, and the armed conflict—play differentially across regions. The clear winners appear to be the Oriental and Atlantic regions, while the losers are the Pacific region, as well as the Central region, which used to have the preeminent position, linked to the cultivation of coffee.

Robust growth in the Oriental region reflects the dynamism of Bogotá as an urban development pole. Mean income per capita in the Oriental region grew 175 percent throughout the last two decades. The Oriental region, the poorest of the four in 1978, almost doubled both its mean and median income per capita between 1978 and 1988. In the next seven years, it also experienced remarkable growth, as mean income per capita rose by 24 percent, a staggering rate when compared to the other three regions during this sub-period. The Oriental region then

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124 Total growth between 1978 and 1999 was 84, 66, and 65 percent in the Atlantic, Pacific, and Central regions, respectively.
125 In contrast, the average rural mean income per capita rose by only 6 percent between 1988 and 1995.
grew by 15 percent between 1995 and 1999, making it the richest region in 1999. The strong economic growth, and the very low unemployment of Bogotá up to 1995, the lowest among the seven cities, then, should have influenced growth in the Altiplano Cundí-boyacense, pulling up rural wages by induced migration of unskilled workers to the unprecedented construction sector boom. In addition, the demand for labor in the drug cultivation sector might have influenced the labor markets in Meta, located in the Oriental region, and Arauca and Guaviare, not included in National Household Surveys. Wages in these departments have traditionally been higher and immigration to this sparsely populated area increased during the 1990s (Jaramillo 2000).

Once the richest of the four rural regions, the stagnation of the Central region between 1988 and 1999 corresponds relatively closely to the dynamics of the coffee sector. The Central region also experienced a large increase (though not as substantial as the Oriental or Pacific regions) in mean and median income per capita in the first 10 years studied. However, mean income per capita in the Central region suffered between 1988 and 1995. Both mean and median income per capita fell by 8 percent in the next 7 years (1988–95). Subsequently, the median continued to fall (by 11 percent) and the mean rose by only 6 percent from 1995 to 1999, and now ranks in third place among the four rural regions. As Ocampo (1989) points out, the coffee cycle is very closely tied to the macroeconomic performance of coffee-growing regions. The disintegration of the International Coffee Pact in 1989 led to plummeting coffee prices (see Table 2.5, Chapter 2, Volume II), and the exchange rate appreciation also contributed to the reduction of coffee growers’ earnings. In addition, several drought years and the broca disease contributed to the agricultural crisis, as well as the January 1999 earthquake in the coffee-

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**Figure A.2.5. Mean household income per capita by region, Rural Colombia, 1978, 1988, 1995, 1999**

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126 Sánchez and Núñez’ (2000) rigorous and comprehensive study on Colombian regional economic development highlights the strong influence of large local urban markets on regional development; it examines Colombian municipalities for the 1973–95 period and measures the regional influence of large urban markets on income per capita growth.

127 The largest coffee harvests in Colombian history occurred in 1990 and 1993. Since then production has dropped and average employment fell from 803,000 to 600,000 persons/year since 1996 (Jaramillo, et al., 2000).
growing departments of Quindío, Caldas, and Risaralda, which damaged some of the local plantations and left thousands homeless.\textsuperscript{128}

The Atlantic region caught up with the rest of the rural sector in the late 1990s. The Atlantic region, on the other hand, grew relatively slowly during the first two periods studied, making it the region with the lowest average income per capita in 1988 and 1995 (in 1978, it ranked second, behind the Central region). Thereafter, the Atlantic region recovered to average rural levels after experiencing an astonishing 38 percent rise in mean income per capita between 1995 and 1999. This was the largest increase experienced by any region during this period. The performance of the rural Atlantic region is somewhat puzzling. Although robust growth in the main urban centers served as a development pole, agricultural activities faced considerable obstacles during this time. As depicted in the urban chapter, while poverty risks were high in Barranquilla, they were decreasing at a fast pace and salaries and unemployment were the lowest in that city during the recession period. This should have had a positive effect on the Atlantic region, as Barranquilla has been shown to act as a strong development pole in this region.\textsuperscript{129} Another influence may be the fact that cotton cultivation is decreasing to the benefit of that of sorghum, corn, and livestock, which all have lower labor requirements and must have left many to migrate upon losing jobs. In Cesar, for example, when cotton disappeared, migration took place to Venezuela, Barranquilla, as well as Guaviare. In addition, this is a region with a high concentration of armed groups and thriving illicit crops, from which displacement to large urban areas such as Barranquilla, Cartagena, and Montería has been quite high.\textsuperscript{130} In turn, some of the labor migrating from rural areas found employment in the region's urban centers. Thus, migration might have played a complementary role in explaining the Atlantic region's recent dramatic rise in mean income.

The Pacific region suffered from both the deterioration of the coffee sector and the effect of trade liberalization on medium-sized family agribusinesses, as well as the concomitant recession in Cali's construction sector. Together with the Oriental region, the Pacific rural area experienced the largest gains in mean and median income per capita between 1978 and 1995. However, it was the only region to experience a drop in mean income per capita in the latest sub-period. Mean income per capita fell by an alarming 26 percent (median income per capita declined by 18 percent). At only C$76,893 in 1999, the Pacific's mean income per capita was 24 percent lower than the rural national average. All other regions had average per capita incomes above C$ 100,000, although still less than half the urban average per capita income. This region also had coffee plantations on the hillsides and suffered when coffee prices and production fell. After the liberalization and the removal of agricultural tariffs, sugar cane, with low labor input demand and under some protection in the Andean group, substituted the former mix of corn, sorghum, cotton, and soybean, linked to medium-sized family agribusiness. This substitution of highly labor-intensive crops, together with the decreasing coffee production after the end of the International Coffee Pact, must have led to reductions in rural labor market demand. Although urban and regional markets are better connected in the Valle del Cauca area, regional urban markets did not help to absorb the available labor. In 1995, Cali underwent a deep recession in the construction sector, with increasing unemployment of unskilled workers.

\textsuperscript{128} The 1999 earthquake also caused considerable damage in the department of Valle, in the Pacific region. Additionally, Huila and Tolima are Central region departments where cotton, rice, sorghum, and corn used to be important crops. Most of them, especially cotton and corn, saw their market collapse after the liberalization, consequently leading to a fall in labor demand.

\textsuperscript{129} See Jaramillo (2000). As mentioned above, the same argument of Sanchez and Nuñez (2000) applies.

\textsuperscript{130} Córdoba, the department where Montería is located and Atlántico, where Cartagena and Barranquilla are located, have the highest percentage of reception of IDP in the region (6.15 and 5 percent of the total number of IDP in 1995, the fourth and sixth rank nationally (from Erazo, et al., 2000 about IDPs, footnote 3).
Inequality

Regional inequality measures diverged up to 1995 and then converged in 1999. The Central region was the only region that did not experience a rise in inequality during the first decade studied. With the exception of the Pacific, inequality fell in all regions in the second sub-period and increased in the latest.

In summary, social indicators reveal deviating paths in regional development. Primary school enrollment rates have converged; and the Pacific region made the most progress throughout the whole period but during the economic downturn, primary school enrollment rates dropped in both the Pacific and Oriental regions. The Atlantic and Central regions were not negatively affected. Secondary school enrollment rates have also converged, with the exception of the Atlantic region, which has always enjoyed considerably higher rates. During the last four years, all regions, except for the Pacific, experienced large drops in child labor. Utility coverage in rural municipal cabeceras is comparable to large urban centers.

Welfare indicators by region show divergent and crossing paths in rural regional development. Robust growth in the Oriental region reflects the dynamism of Bogotá as an urban development pole. Once the richest of the four rural regions, the Central region now ranks third. The stagnation of the Central region between 1988 and 1999 corresponds relatively closely to the sluggish dynamics of the coffee sector in the last decade. While the Atlantic region caught up with the rest of the rural sector in the late 1990s, the Pacific region is losing some of the substantial gains obtained up to 1995. In poverty measures the Pacific and Central fare worst, while the Atlantic region shows continuous sharp decrease of the extreme poverty rate. In the late 1990s, poverty measures of the Central and Pacific regions increase above 1988 levels. Meanwhile, progress slowed down dramatically in the Oriental region.

Extreme poverty dynamics, growth, and income inequality

Growth differentials seem to be the dominant explanatory factor in all four regions (Figure A.2.6): positive and significant for the Atlantic and Oriental regions, where vigorous growth continued during the late 1990s, negative in the other two regions, especially for the Pacific. Nevertheless increasing income inequality in the Central region, 10 percentage points, had also a negative contribution to extreme poverty dynamics. In the Atlantic region the deterioration of income inequality was clearly dominated by growth. Similarly to the main urban center in the same region—Barranquilla—the more pro-poor quality of growth in the Atlantic region dominated the adverse effect of increasing inequality.

Figure A.2.6. Extreme poverty reduction and growth across rural regions in Colombia, 1988–99

Growth (income per capita)