

NATURE AND CAUSES OF INCOME INEQUALITY  
IN THE PHILIPPINES\*

Arsenio M. Balisacan\*\*  
and Sharon Faye A. Piza\*\*\*

**Abstract**

While the norm in East Asia during the past-quarter century was rapid economic growth accompanied by remarkable poverty reduction, this was not so in the Philippines. Not only was high and enduring growth lacking, the response of the income of low-income groups to growth was apparently also weak in the Philippines compared to those in major East Asian countries. This paper reviews the evidence and uses comparable household-level data for 1985-2000 to closely examine the nature, characteristics, sources, and determinants of income inequality in the Philippines.

Contrary to common perceptions, the relatively high income inequality in the country has little to do with differences in incomes *between* locations (regions, provinces, urban or rural areas), economic sectors, or demographic groups. Rather, this inequality has come mainly from differences in possession of human and physical capital *within* locations, sectors, or population groups. Even the changes in inequality in recent years, albeit small, have stemmed mainly from changes within locations and sectors, not from changes in mean incomes between them. Inequality decomposition by income components shows that differences incomes derived from non-agricultural sources account for the bulk of the observed inequality in recent years. Inequality arising from differences in receipts of agricultural incomes across households has little influence on overall inequality. Further, there is rather weak evidence to the common claim that overseas remittances in recent years have accentuated income inequality.

Newly constructed provincial panel data suggest that the income response of the poorest quintiles to growth is far more muted than the one-for-one correspondence reported in studies using cross-country averages. This suggests that policies and institutions have to be reformed to make the poor benefit even more from growth. This paper has highlighted the importance of education, infrastructure, terms of trade, agrarian reform, governance, and certain geographic attributes. Schooling, especially if accompanied by complementary public investments, raises the incomes of the poor and middle-income groups, apart from its indirect effect through economic growth.

---

\* Revised version of the paper presented at the "Conference on Comparative Analyses of East Asian Income Inequalities," Bangkok, 27-28 January 2003. Comments received from the conference participants are gratefully acknowledged.

\*\* Professor of Economics, University of the Philippines-Diliman (e-mail: [arsenio.balisacan@up.edu.ph](mailto:arsenio.balisacan@up.edu.ph)).

\*\*\* Research Associate, Asia-Pacific Policy Center (e-mail: [sfpiza@skyinet.net](mailto:sfpiza@skyinet.net)).

And so do the implementation of agrarian reform, investment in land quality improvement, and removal of price distortions that diminish the profitability of agriculture relative to non-agriculture. Political dynasties do redistribute incomes in favor of the richest groups in society. High transport costs lead to geographic “poverty traps,” as the poor are impeded from taking advantage of economic opportunities elsewhere.

## 1 Introduction

The past-quarter century saw the Philippines lagging behind most of the major East Asian countries in practically all aspects of economic and social development. The country’s average economic growth was only slightly higher than its population growth which was – and continues to be – comparatively high by most Asian standards. Further blunting the impact of whatever growth that occurred on poverty was its persistently high level of economic inequality. Indeed, not a few observers characterize the country’s social structure, especially in reference to land distribution, as a largely Latin American rather than an East Asian feature. The co-existence of huge plantations and industrial enclaves owned by a few families and of several millions of semi-subsistent small farmers and vast colonies of urban poor depicts a highly inequitable Latin American-like society that is quite uncommon elsewhere in East Asia.

There is considerable literature on the profile and proximate causes of poverty in the Philippines, especially during the past two decades.<sup>1</sup> This literature suggests that the absence of high and enduring economic growth was the single most important constraint to the pace of poverty reduction. It also shows, however, that while growth is good for the poor, it is not good enough, suggesting that an effective program for poverty reduction has also to include mechanisms for improving income distribution. Put differently, growth has to be made pro-poor, thereby making growth more broadly based than was the case in recent decades.<sup>2</sup> But what does it take to improve income distribution, while allowing the country to move to a higher growth path? The answer is not quite evident, partly because there is dearth of information about the nature, causes, effects, and political economy of income distribution in the Philippines. To be sure, previous studies on income distribution are many, but these have been limited largely to describing changes in distribution over time or differences across population groups.<sup>3</sup>

From a policy perspective, it is useful as well to systematically identify the determinants of income differences across individuals, population sub-groups, or location. Is the problem with inequality, for example, driven largely by differences in incomes across population sub-groups or sectors of the economy? How and to what extent does improved access to education affect the evolution of income distribution and hence poverty? How important are certain “initial conditions” (say, rural infrastructure, agrarian structure, and geographic and political attributes) and time-

---

<sup>1</sup> See Balisacan (2000, 2003) and the literature cited therein.

<sup>2</sup> For an operational characterization of pro-poor growth, see Kakwani and Pernia (2000).

<sup>3</sup> See, for example, the collection of articles in Intal and Bantilan (1994), as well as Estudillo (1997) and, earlier, Mangahas and Barros (1980).

varying factors in accounting for differences in household incomes? Do the incomes of low-income groups respond differently to changes in macroeconomic aggregates compared to those of high-income groups? What are the key policy-handles to reducing income inequality in the light of limited fiscal resources?

This paper provides some answers to these questions by closely examining the nature, pattern, and causes of income inequality in recent decades. To set the policy context of the exercise, it starts with an overview of Philippine economic performance during the last 40 years. It then uses comparable unit-record (household-level) data for 1985–2000 to examine the nature, characteristics, and sources of inequality. It next employs a unique provincial panel data set to assess the importance of initial provincial conditions and time-varying factors in explaining differences in incomes. It concludes with policy suggestions for reducing inequality and winning the war against poverty in the Philippines.

## 2 The Macroeconomic Record<sup>4</sup>

During the 1960s and the 1970s, the Philippines experienced macroeconomic growth but relatively little structural transformation compared to major East Asian countries, especially Thailand and Indonesia. The aggregate real GNP grew at annual average rate of 5.4%, and the real per capita GNP at 2.3% between 1960 and 1965 (Figure 1 and Table 1). Inflation averaged about 5% during the 1960s. While the growth rate slipped slightly during the latter half of the 1960s to 4.3%, economic growth in the Philippines accelerated during the 1970s. The GNP growth rate averaged 6% throughout the 1970s. The average inflation rate also accelerated in the 1970s, however, averaging between 9% and 10%. During this period, the relative importance of exports in the national economy increased, with the share of exports in GDP increasing from 12% in 1961 to 23% in 1981.

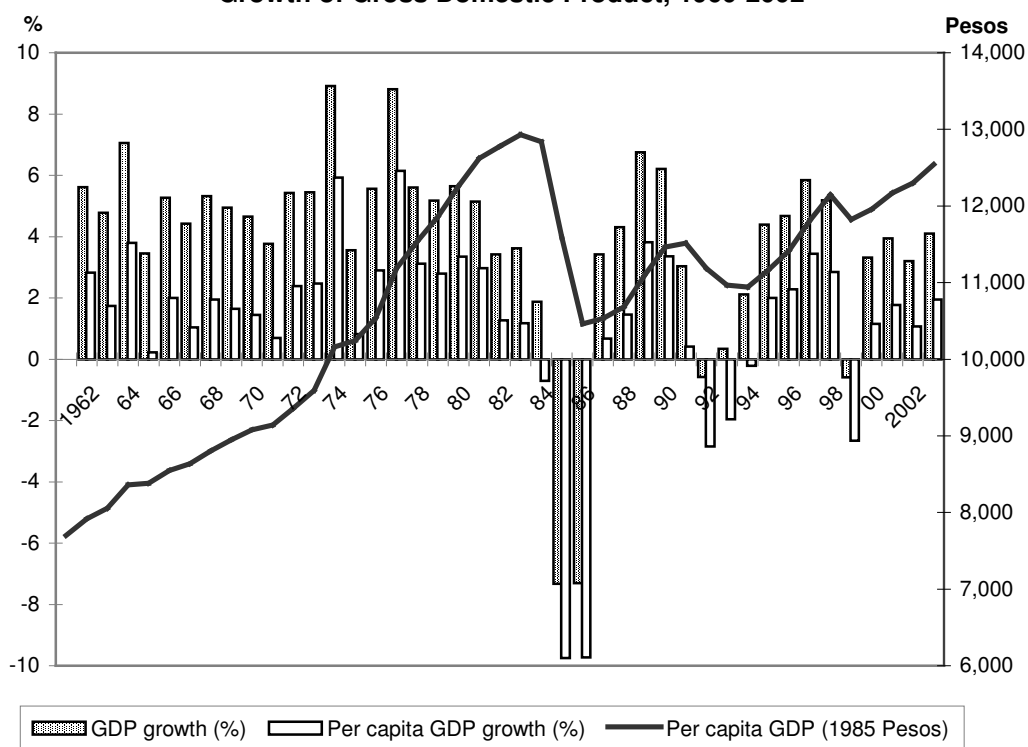
Although the economy's aggregate growth rates during the 1960s and 1970s were relatively high and roughly comparable to those of its Asian neighbors, there was relatively little change in the sectoral composition of output. The share of industry in GDP increased from 27% in the mid-1960s to 33% in the early 1970s. Industrialization proceeded moderately during the 1970s, when the share of industrial GDP grew from 32% to 39%. Similarly, the relative importance of agriculture in the national economy changed relatively little in the Philippines compared to its neighbors. The share of agricultural GDP remained stable at 26% between 1961 and 1966, but it then increased to 30% during the late 1960s and remained at that level through the early 1970s. Subsequently, the share declined to 24% by the early 1980s. The share of the labor force in agriculture, on the other hand, declined steadily from 61% in the early 1960s to 53% in the early 1970s and to 52% by the early 1980s. Changes in the sectoral composition of exports appear to be relatively more pronounced. The share of food exports declined from 54% in the mid-1960s to 34% in the early 1980s, while that of manufacturing exports rose from 6% to 23% during the same period.

The Philippines went through a series of major political and economic crises followed by macroeconomic stabilization measures starting in the early 1980s. The economic

---

<sup>4</sup> This section has drawn substantially from Balisacan et al. (2002).

**Figure 1**  
**Growth of Gross Domestic Product, 1960-2002**



crisis in the early 1980s was precipitated by the foreign debt-driven economic growth of the 1970s under President Marcos, an unsuccessful expansionary and counter-cyclical policy in 1979-82, and the heightened political crisis especially after the assassination of the opposition leader Benigno Aquino. The crisis triggered a series of stabilization measures, including sharp devaluations, a sharp contraction of public investment (due to reduced tax revenues and increased interest payments), massive monetary contraction, and high interest rates (Lim and Montes 2000). As a result, the economy fell into a depression, with the real GNP growth rate turning into negative between 1984 and 1985; the average annual GNP growth rate was negative 1.6% on aggregate and negative 4.1% on per capita basis during the first half of the 1980s.

The relatively brief stabilization episode in 1983-85 was followed by (an equally short-lived) recovery during the latter half of the 1980s. With inflation under control, the balance of payments becoming positive, and the installment of the new Aquino administration, the severe stabilization measures were relaxed and the Philippines underwent economic recovery. In the latter half of the 1980s, GNP growth recovered to 5.2% on aggregate and 3.0% on per capita basis. The recovery was, however, short-lived. The continued debt overhang and government assumption of the liabilities of the private and government corporate sector guaranteed a quick return to a tight fiscal constraint, and the increasing import demand due to the liberalization (see below) and heavy international interest payments also made the external constraints strongly binding again. Inflation soared again, approaching 15% in 1990. Both fiscal and external constraints triggered another episode of macroeconomic stabilization – tight monetary and fiscal policies and devaluation. The economy stagnated once

again in the early 1990s, with negative per capita GNP growth from 1991 to 1993. The relatively high rate of population growth continued at 2.5% during the 1980s and 2.3% between 1990 and 1995.

**Table 1: Economic Performance, 1960-2001<sup>a</sup>**

	1961	1971	1981	1991	2001
GNP per capita (constant 1995 US\$)	723	854	1,167	1,074	1,254
GNP growth (annual, %)	5.8	4.8	3.6	1.9	4.3
Per capita GNP growth (annual, %)	2.9	1.8	1.0	-0.4	2.2
Gross capital formation (% of GDP)	17.3	21.0	26.5	22.1	17.0
Gross domestic savings (% of GDP)	16.1	21.3	23.5	17.3	16.5
Inflation (GDP deflator, %)	4.9	9.6	11.6	12.5	6.7
<i>Value added (% of GDP)</i>					
Agriculture	25.6	29.8	24.5	21.6	14.9
Industry	27.7	32.3	38.9	33.8	31.5
Services	46.7	37.9	36.6	44.7	53.6
<i>Trade</i>					
Exports of goods and services (% of GDP)	12.3	20.6	22.6	28.7	51.7
Food exports (% of merchandised exports)	n.a.	48.3	34.4	18.3	4.4
Manufactured exports (% of merchandised)	n.a.	7.9	22.6	49.7	86.5
<i>Labor force (% of total)</i>					
Agriculture	60.6	52.9	51.8	45.3	35.8
Industry	14.4	15.6	14.6	15.7	15.9
Services	25.0	31.5	33.6	39.0	48.3

<sup>a</sup>Three-year averages with year indicated as middle year.

Sources: World Bank, *World Development Indicators 2001*; *Philippines Statistical Yearbook* (various issues).

It looks as though the industrialization process had virtually ended by the early 1980s in the Philippines — the share of industrial GDP declined through the 1980s and 1990s from 39% in 1981 to 32% in 2001. The share of agricultural GDP, on the other hand, remained stable at about 24% during the early 1980s and then declined slightly during the late 1980s to 22% by the early 1990s. As of 2001, agriculture still accounted for about 15% of GDP. The share of the labor force in agriculture continued to decline slowly throughout the 1980s and 1990s, from 52% in 1981 to 45% in 1991 and 36% in 2001. The structural transformation of exports also continued. The share of food exports fell further from 34% in the early 1980s to only 4% at the turn of the 21st century, while the share of manufacturing exports jumped from 23% to 86% during the same period. Despite this transformation in the composition of exports, low local value-added such as garments and electronics (e. g., semiconductors) characterized manufactured exports. Furthermore, the pattern of agricultural trade in the Philippines hints at a loss of the country's competitive edge, particularly in light of a generally slow growth of the agricultural sector compared to that in other Asian countries, as well as the sluggish pace of industry and

manufacturing in recent decades. The ratio of agricultural imports to agricultural exports increased dramatically from 32% in the mid-1960s to 152% in the late 1990s, illustrating how the farm sector has shifted from being a net foreign exchange earner to a net importer. Noticeable declines in measures of comparative advantage for agriculture as a whole and for all major crops accompanied this trend (David 2003).

A more salient transformation, measured by the change in the share of agriculture in GDP, occurred in other Southeast Asian countries during the past four decades. While the share in the Philippines decreased from 26% to 15%, reductions in other regional countries were more impressive – Malaysia (37% to 13%), Thailand (40% to 11%) and Indonesia (54% to 16%). The slow drop of agriculture's share in total employment, together with the sluggish absorption of labor in the industrial sector, suggests an inability of the latter to create a sufficient number of jobs. Instead, additions to the labor force over the years had mostly been in agriculture and the informal service sector where self-employment is more common and wages more flexible. Thus, the process has merely served to limit the growth of labor productivity and real income in these two areas.

After the stabilization episode of 1990-92, as the balance of payments and the domestic inflation came under control, monetary and fiscal policies were relaxed and the economy started to recover again. The per capita real GNP finally started to grow again in 1994 and the average annual GNP growth rate recovered to 3.4% on aggregate and 1.2% on per capita basis between 1991 and 2000. Nevertheless, the economic crisis during the 1980s and the early 1990s was severe enough so that the country's real per capita GNP in 2000 was still roughly equal to its pre-crisis 1981 level. What is most noticeable is the emerging difference between GDP and GNP per capita beginning in the early 1990s (Balisacan and Hill 2003). This suggests the increasing effect of remittances from overseas Filipino workers. A considerable number of the country's human capital has been (and continues to be) employed abroad. *Brain-drain* is the common term for this phenomenon since most of them are the finest in the labor force and more often than not, do not return.

The devaluation of the Thai baht in July 1997 set off the Asian currency crisis, with the Malaysian ringgit, the Philippine peso, and the Indonesian rupiah also coming under attack. The Thai baht lost one-third of its value, and the rupiah and peso lost about one-fourth of their value within several weeks (Montes 1998). As the effects of the crisis spread through the region, the GDP growth rate in the Philippines fell from 5.2% in 1997 to negative 0.5% in 1998. Compared to its Southeast Asian neighbors, however, the negative effects of the 'crisis' were much smaller in the Philippines. For example, the annual GDP growth rate for Indonesia was 4.9% in 1997 and negative 13.7% in 1998, while figures for Thailand were negative 0.4% in 1997 and negative 8.0% in 1998.<sup>5</sup> The Philippines, with a smaller pre-crisis expansion of its financial system and arguably more prudential financial regulations, suffered relatively fewer macroeconomic setbacks from the Asian crisis than did its neighbors.

---

<sup>5</sup> Note, however, that the contraction in 1988 was as much the result of the El Niño phenomenon that hit the agricultural sector. Extrapolating household survey data for 1998, Datt and Hoogeveen (2000) estimated the combined impact of the two shocks to be in the order of a 5 percent reduction in average living standards and a 9% increase in the incidence of poverty. Their exercise suggests that the El Niño shock accounted for the largest share of the overall impact.

While the ‘crisis’ effects largely subsided at the macroeconomic level after the initial two years, there were important distributional effects from the negative shock during the crisis that could linger for a longer period. The negative effects tended to hit the poorest groups hardest, and that one of the notable responses among poor households was to withdraw their children from school (Balisacan 2001a).

Capital outflows continued to afflict the country in 1999 and 2000 as scandals and political unrest besieged the Estrada administration. In the latter part of 2000, the impeachment case against the President caused a stir in the economy, further contributing to the decline in the peso’s value. Eventually, Estrada was removed from office in January 2001 and was succeeded by the then Vice President Macapagal-Arroyo whose impressive credentials – including considerable bureaucratic and policy experience, advanced training in economics, and a sense of presidential history – towered above those of her disgraced predecessor. However, the euphoria in the business community that initially greeted her ascension to power soon petered out as similarly high-profile corruption scandals, political squabbling, seemingly unabated criminality, and mounting fiscal problem besieged her administration. Thus, by the last quarter of 2002, the Philippine economy was again tailing its Asian neighbors in the growth race, despite the fact that, among the major economies in the region, it was less adversely affected by the Asian financial crisis.

As evident in the above discussion, an almost regular pattern of boom and bust has characterized the Philippine economy over the last three decades. Bust and stagnation soon followed each episode of boom, fueled largely by massive foreign borrowing and capital-intensive import-substituting industrialization. The period also saw heavy government regulation of the market economy, as well as political instability, natural disasters, and major shocks in global trade and finance. For these reasons, for most of the 1980s and early 1990s, the country had the unenviable reputation of being Asia’s “sick man.” However, the growth episodes in the second half of the 1980s and in the 1990s, notwithstanding the interruption in 1998 owing to the combined impact of the Asian financial crisis and the El Niño phenomenon, appear to have a fundamentally different character from previous ones. The growth took place in an environment of political stability, economic deregulation, and institutional reform. While policy coordination problems (for example, in public investment) persisted, it could not be denied that the country at the end of the millennium was closer to a market economy than it had ever been in the past. One could ask: how have the various income groups, most especially the poorest group, benefited from the growth process?

Unfortunately, data are sparse. As noted below, strictly comparable household data for inequality and poverty comparison are available only for (some years of) the 1980s and the 1990s. Using household consumption expenditure as an indicator of economic welfare and adjusting this indicator for spatial cost-of-living differences, Balisacan (2003) found out that that there was significant reduction of poverty – whether in terms of its incidence, depth, or severity – during periods of relatively rapid growth of mean expenditure (1985–88 and 1994–97). The highest three-year poverty reduction was achieved during the “economic boom” of 1994–97, when real per capita expenditure rose by 21%. But poverty also fell when the growth of mean expenditure was negative (1991–94). Surprisingly, too, poverty depth and severity increased even when the growth of mean expenditure was positive (1988–91), though at a comparatively low rate. It thus appears that the observed poverty changes are

related to the growth (and stagnation) of real mean consumption, while obviously also influenced by other factors. Indeed, as shown below, another “proximate” cause for poverty changes may well be the evolution of income distribution.

### 3 Aggregate Income Inequality: Data, Measurement, and Trends

Partly reflecting what we know – rightly or wrongly – about inequality profiles in the Philippines are long-held measurement practices and data considerations. We first describe the data employed in this paper for inequality comparison.

#### *Household Survey Data*

Data sources for inequality comparisons are mainly the various Family Income and Expenditure Survey (FIES) rounds from 1985 to 2000. Conducted every three years, these surveys are undertaken by the government’s primary statistical agency, the National Statistics Office (NSO). While earlier surveys covering the 1960s and 1970s are available, we have excluded them because they are either beset by serious technical problems (1975 and 1979 surveys) or available only in published form (1961, 1965, and 1971), whereas unit record data are available for the 1985–2000 surveys.<sup>6</sup> As will be made evident in the next section, our approach to understanding sources of inequality requires use of unit record data.

As its name suggests, the FIES provides data on the two popular broad indicators of household welfare: current income and current consumption expenditure. The use of the latter is quite common in poverty comparison owing to conceptual and theoretical considerations. For one, it is consumption of goods and services (both privately and publicly provided), not income per se, that generates household welfare. However, if properly measured, household’s income is the single most important factor that determines the household’s level of consumption expenditures (and hence welfare).<sup>7</sup> For our purposes, we use income since our interest is partly to understand the determinants of income generation and partly to examine the contribution of various income components to the observed differences in household income inequality.

The FIES classifies household income into three major classes: wages and salaries, entrepreneurial incomes, and income from other sources. Wages and salaries include all forms of compensation, including in-kind incomes received by family members who are either regular or occasional workers in agricultural and nonagricultural industries. Entrepreneurial incomes include earnings derived from farming, trading, manufacturing, and other entrepreneurial activities engaged in by any member of the family as operator or as self-employed. Finally, “other incomes” refer to cash receipts including cash received from family members working abroad as contract workers, plus non-work related incomes including the family’s net shares of crops produced

---

<sup>6</sup> See Balisacan (1994, 2001a) for a discussion of the comparability of the FIES data. Of special note here is the problem posed by the periodic regrouping (and sometimes splitting) of provinces into regions, which makes the published tables unsuitable for spatial comparison of inequality over time. In this paper, the unit record data of the FIES were used to reconstruct *spatially comparable* inequality profiles; that is, the geographical boundaries of the regions and provinces were kept constant throughout the period of interest.

<sup>7</sup> For the 2000 FIES, the rank-order correlation between per capita income and per capita expenditure is 0.95, while their simple correlation is 0.87.

(and livestock and poultry raised by other households), transfers including workmen's compensation and social security benefits received from foreign governments and enterprises, profits from asset transactions, rental value of owner-occupied dwelling units, and gifts.

Current income has to be adjusted for spatial cost-of-living differences, because prices vary significantly across provinces and regions of the country. We employ the 1997 provincial cost-of-living indices reported in Balisacan (2001b). The reference province is Metro Manila (that is, the cost of living index for this province is 100), although any other province could serve the same purpose. Since we wish to make inequality and welfare comparisons over time, we have updated these indices to reflect nominal price movements during the 1985–2000 period.<sup>8</sup> The updating made use of regional consumer price indices (CPI) reported by the National Statistical Coordination Board.<sup>9</sup>

Official inequality estimates – mainly Gini ratios – are available but are not used in this paper. These estimates have not taken into account spatial differences in cost of living. Moreover, it is not known whether these estimates were consistently estimated from either unit record data or grouped data for the period of interest.

### *Measurement*

Various inequality measures popularly used in the literature do not necessarily tell the same story about distributional rankings, even for the same data set. This is so since each of these implies certain welfare function and associated weighing scheme. As such, they vary in their sensitiveness to changes in the various parts of the distribution. The commonly employed Gini index, for example, is sensitive to changes in inequality around the median but not to simultaneous changes within the extreme ranges of the distribution.<sup>10</sup> On the other hand, the coefficient of variation (CV) is responsive to changes in the upper end of the distribution, while the mean logarithmic deviation (MLD), is responsive to the lower end. Hence, an increase in inequality arising from greater increases in the incomes of the very rich relative to the “middle class” does not raise the value of the MLD index as much as that arising from greater decreases in the living standards of the poor relative to this middle class. In this case, the measures may not rank, say, two distributions the same way, thereby making distributional comparison possibly inconclusive. The ambiguity may be solved by imposing stronger assumptions about the welfare functions (Sen 1997), or by applying certain dominance conditions for welfare comparison, as those suggested by Jenkins

---

<sup>8</sup> The cost-of-living index may also vary across households in the income distribution if consumer prices do not move in the same proportion. For instance, if staple food prices rise relative to other food and non-food items, the cost of living for the low-income groups rises relative to the high-income groups since staple food constitutes a higher proportion of the consumption bundle of the former than that of the latter. Unfortunately, income-dependent consumer price data are not available. For an illustration on how prices may affect the measurement of inequality, see Pendakur (2002).

<sup>9</sup> Provincial CPIs are not available. Note that the published regional CPIs have a common base year (i.e., 1985=100).

<sup>10</sup> A given decrease in inequality within the bottom part (say, poorest 20%) of the distribution, combined with an equivalent increase in inequality within the top (richest) part, will leave the value of the Gini index unchanged. In terms of the familiar Lorenz curve, this redistribution does not change the area above the Lorenz curve and below the 45-degree (perfect equality) line, which is the numerator of the Gini index (the denominator is the area below the 45-degree line).

and Lambert (1993). For practical purposes, however, it may suffice to simply employ a variety of inequality measures to check for the robustness of distributional comparisons. Even if the level and percentage changes differ for these measures, if all the indices are increasing or decreasing, one can draw conclusions about changes in inequality between two periods, states, or population groups.

In this section and the next, we employ the Generalized Entropy class of inequality measures ( $I_\alpha$ ) given by

$$I_\alpha = \frac{1}{\alpha(\alpha-1)} \left[ \frac{1}{n} \sum_i \left( \frac{y_i}{\bar{y}} \right)^\alpha - 1 \right]$$

where  $n$  is the total number of individuals,  $y_i$  is the income of individual  $i$ ,  $\bar{y}$  is mean income, and  $\alpha$  is a parameter. The more positive (negative)  $\alpha$  is, the more sensitive  $I_\alpha$  is to income differences at the top (bottom) of the distribution.

The class of  $I_\alpha$  measures encompasses three common inequality indices that differ in their sensitivity to income differences in different parts of the distribution. For  $\alpha=0$ , the  $I_0$  measure simply corresponds to the mean logarithmic deviation; this measure gives more weight to income differences at the *bottom* of the distribution, hence is sensitive to changes in that part of the distribution. For  $\alpha=2$ , the  $I_2$  measure is half the square of the coefficient of variation; this measure applies more weight to income differences at the *top* of the distribution, hence is sensitive to that part of the distribution. For  $\alpha=1$ , the  $I_1$  measure becomes the Theil index, which gives equal weights to the various parts of the distribution; it is thus equally sensitive to changes in all parts of the distribution.<sup>11</sup> All these indices, as well as all other members of the GE class of measures, possess the very useful feature of additive decomposability by population sub-groups (Shorrocks 1984), which we will exploit in this paper.<sup>12</sup>

### *Aggregate Trends*

Four distinct phases characterize the growth process during the period of interest. The first is a brief period of economic growth (1986–89) following a sharp contraction in 1984 and 1985 when per capita GDP shrank by an average of 10% per year (see Figure 1). Based on household data from the FIES, average per capita income (hereof simply referred to as mean income) in 1988 was 17% higher than in 1985 (Table 2), although still much lower than the level prevailing at the turn of the decade.<sup>13</sup>

<sup>11</sup> For a comparative discussion on the features of each of the inequality measures commonly employed in the literature, see Cowell (1995).

<sup>12</sup> The Gini coefficient is not a member of the GE class. This measure does not have nice sub-group decomposability properties. That is, it is possible for a sub-group Gini coefficient to rise, yet the aggregate Gini coefficient falls.

<sup>13</sup> Data from the National Incomes Accounts (NIA) and from the FIES do not necessarily agree in their measurements of the level or growth rate of income, largely because of differences in definition, method, and coverage. Fortunately, in the Philippine case, while NIA data give higher estimates of family income (adjusted for family size) than FIES data, they do agree at least in so far as trends in the 1980s and 1990s are concerned (see Balisacan 2003).

Political instability, natural disasters, and macroeconomic mismanagement caused overall economic growth to falter in the succeeding four years (1990–93). Not unexpectedly, mean income in 1991 was only 5% higher than that in 1988. Per capita GDP growth, albeit very modest, resumed in 1994, but the combined impact of the contraction in the previous two years caused average per capita income in 1994 to remain at just the level prevailing in 1991. Following the restoration of political stability and deepening of policy and institutional reforms, GDP growth accelerated in the following three years (1995–97). Mean income was approximately 23% higher in 1997 than in 1994, the highest three-year growth achieved since the mid-1980s. However, owing to the combined impact of the Asian financial crisis, El Niño phenomenon in 1998, and political uncertainty, average income in 2000 was 3% lower than in 1997. Overall, per capita GDP (and possibly mean income) at the turn of the millennium was no higher than in 1980.

**Table 2: Mean Income, Decile Shares, and Aggregate Inequality**

	1985	1988	1991	1994	1997	2000
Mean income (in 1997 prices)	15,731	18,489	19,450	19,625	24,073	23,057
<i>Income share by decile</i>						
First (Poorest)	2.1	2.1	2.0	2.0	1.8	1.8
Second	3.2	3.2	3.0	3.1	2.7	2.6
Third	4.0	4.0	3.7	3.9	3.4	3.4
Fourth	4.9	4.8	4.6	4.8	4.3	4.3
Fifth	5.9	5.8	5.6	5.9	5.3	5.3
Sixth	7.1	7.1	6.8	7.2	6.7	6.7
Seventh	8.7	8.9	8.7	9.0	8.6	8.6
Eight	11.1	11.4	11.3	11.6	11.3	11.4
Ninth	15.5	15.8	15.9	16.3	16.0	16.2
Tenth (Richest)	37.6	36.8	38.6	36.1	39.9	39.7
<i>Inequality index</i>						
Mean log deviation ( $I_0$ )	0.37	0.36	0.40	0.37	0.44	0.44
Theil index ( $I_1$ )	0.47	0.44	0.52	0.43	0.55	0.52
Half the square of CV ( $I_2$ )	1.55	1.15	2.41	1.13	1.89	1.34
Gini	0.47	0.46	0.49	0.46	0.51	0.51

Note: All calculations are based on per capita income adjusted for provincial differences in cost of living.

Source: Authors' estimates based on unit record data from the *Family Income and Expenditure Survey* (various years) of the National Statistics Office.

Table 2 provides estimates of the  $I_\alpha$  class of poverty measures for  $\alpha=0$  (mean logarithmic deviation),  $\alpha=1$  (Theil index), and  $\alpha=2$  (half the square of the coefficient of variation) from 1985 to 2000. For comparison, it also shows the commonly employed Gini index, together with the income shares of the bottom 20% and richest

10% of the population. Measured levels of income inequality are quite sensitive to fluctuations in aggregate economic performance, although the changes are neither uniform across inequality measures nor consistent between two similar episodes in the economic cycle. The upturn of economic activity, albeit modest, in 1985-88 was not accompanied by an increase in income inequality, while a similar expansion in 1994-97 was – and quite substantial. The response of inequality to these two growth episodes is especially apparent for inequality measures that are relatively sensitive to the extreme parts of the distribution. The  $I_0$  measure, for example, increased quite substantially between 1994 and 1997, while it roughly remained the same between 1985 and 1988. The  $I_2$  measure declined between 1985 and 1988, seemingly suggesting progressive redistribution in the upper parts of the distribution.

Note, too, that during recent episodes of stagnation (1991-94) and contraction (1997-2000), progressive income changes appeared to have taken place in the middle and top parts of the distribution, as indicated by the quite substantial decline in  $I_1$  and  $I_2$ , especially in 1991-94, and the virtual constancy of  $I_0$ , especially in 1997-2000. Indeed, the share of the richest 10% of the population in total income declined from approximately 39% in 1991 to 36% in 1994, while the share of the bottom 20% increased only modestly, from 4.9% to 5.1%.

In an earlier paper, Balisacan (2003) showed that there were quite significant poverty reductions – whether measured in terms of incidence, depth, or severity – during periods of relatively rapid growth of mean income (1985–88 and 1994–97). The highest three-year poverty reduction was achieved during the “economic boom” of 1994–97, when real per capita income rose by 23%. Poverty reduction during this period would have been significantly higher if income inequality did not increase, as shown above. In contrast, in 1985-88, poverty reduction was actually higher than what would have been the case if inequality also increased, as in 1994-97, rather than decreased, as observed. It thus appears that the observed poverty changes are related to the growth (and stagnation) of real mean income, while obviously also influenced by other factors.

The changes in inequality and poverty from 1985 to 2000 may well be related also to movements in price levels. Inflation averaged 25% in 1983–85. The rate dropped from 18% in 1985 to 9% in 1988, possibly benefiting the majority of the poor, who tended to be fixed income earners or self-employed workers in rural areas. Inflation surged once more to an average of 15% per year at the end of the decade. Note that this period was accompanied by an increase in inequality. Inflation decelerated to only 7.9% per year during 1992–94, 7.7% during 1995–97, and 6.9% during 1998–2000. As shown in Balisacan (1995), high inflation during a period of low growth increases aggregate poverty. Particularly vulnerable to commodity (particularly food) price increases are the numerically large small-scale agricultural producers and landless workers who are net buyers of food.

#### **4. Accounting for Sources of Income Inequality: Spatial, Sectoral, and Household Attributes**

A widely held view on the Philippines is that development policy has favored Luzon, especially Metro Manila and adjoining provinces, and discriminated against Visayas and (especially) Mindanao. Moreover, the poor performance of the Philippine economy over the last three decades has been attributed partly to the relatively large variation in access to infrastructure and social services between the major urban centers and rural areas (see for example, Ranis and Stewart 1993; Balisacan 1996; Bautista 1997). Spatial variation in certain summary measures of human development is also evident (UNDP 2002; Herrin and Pernia 2003; Collas-Monsod and Monsod 1999).

Average income indeed varies substantially across regions as well as between urban and rural areas (Table 3). Mean income in urban areas is at least twice that in rural areas during the 1980s and 1990s. Metro Manila, which accounts for about 14% of the population, has the highest mean income. In 2000, its mean income was more than twice the national average or about three to four times the mean income for Bicol and Eastern Visayas. Except for Bicol and Cagayan, mean income for the Luzon regions is higher than for most of the regions in Visayas and Mindanao.

Not a few likewise contend that income disparity between economic sectors is at the core of the poverty problem. In the 1990s, average income in agriculture, where the large majority of the poor are located and where about 40% of the labor force are dependent on for employment, is much less than one-half of those in virtually all other sectors (except construction). It is thus claimed that the key to winning the war against poverty is to focus development priorities to agriculture so as to raise incomes in that sector vis-à-vis those in other sectors of the economy.

If indeed spatial and sectoral income disparities are at the core of the poverty problem in the Philippines, then policy reforms aimed at reducing these disparities have to be central elements of the country's poverty reduction program. This may also promote efficiency goals: important dynamic externalities can arise from targeting by area or according to sector-specific characteristics (Bardhan 1996; Ravallion and Jalan 1996). Investment in physical infrastructure (such as roads, communications, and irrigation) in backward areas, or in the rural sector in general, may improve the productivity of private investment, influence fertility through its effect on labor allocation and educational investment decisions, promote the development of intangible "social capital" (in the form of social networks, peer group effects, role models, and so on), and mitigate erosion in the quality of life in urban areas through its effect on rural-urban migration decisions.

However, if disparity in incomes and human achievement within each of the regions or areas of the country were itself the major problem, a different approach to poverty reduction would have to be found. It is possible, for example, that systematic differences in levels of human capital between low and high-income groups within a geographic area translate into considerable differences in earning opportunities between these groups. In this case, the policy prescription to reduce overall income inequality and poverty would have to involve expanding the access of low-income

groups to basic social services, technology, and infrastructure, regardless of their location.

### *Sub-group Decomposition*

To quantify the importance of spatial, sectoral, and household attributes in “accounting” for the observed income inequality, we exploit the additive decomposability property of the  $I_\alpha$  measures described above, although here we focus only on the two most interesting and frequently employed measures,  $I_0$  and  $I_2$ . Here, additive decomposability means that the total inequality for the whole population can be partitioned into exactly two components. The first component has to do with inequality of incomes *between* sub-groups, i.e., the inequality that exists were each person’s income is equal to his sub-group’s mean income. The other component has to do with inequality of incomes *within* sub-groups, i.e., the inequality that exists were mean sub-group incomes are equal while preserving aggregate mean income. Expressed as a ratio of the aggregate inequality, the between-group and within-group components can be interpreted as proportionate contributions to aggregate inequality. As shown below, this property has useful implication for policy design aimed at addressing poverty and economic inequality.

(see Table 3), the contribution of the between-group component to overall inequality is rather small, especially for the inequality measure that is sensitive to income differences in the top segments of the distribution, i.e.,  $I_2$ . This implies that removing between-group inequality by equalizing all regional mean incomes (but keeping within-group inequality constant by equiproportionately changing the incomes of all members of that region) will reduce overall inequality by anywhere from 10% (if  $I_2$  is used) to 25% (if  $I_0$  is used). Conversely, removing within-region inequality by making everyone’s income within a region equal to the mean for that region would reduce overall inequality anywhere from 75% (for  $I_0$ ) to 90% (for  $I_2$ ). These contributions have remained fairly stable in the 1980s and 1990s.

**Table 3: Mean Income by Locality, Region, and Sector**

	Population share		Mean per capita income <sup>§</sup>					
	1985	2000	1985	1988	1991	1994	1997	2000
<i>Philippines</i>	100	100	65.3	76.8	80.8	81.5	100.0	95.8
<i>Locality</i>	<i>Urban 1997=100</i>							
Urban	38.7	49.0	68.3	80.7	76.7	76.6	100.0	94.4
Rural	61.3	51.0	30.6	36.2	34.9	36.2	41.1	39.1
<i>Region</i>	<i>Metro Manila 1997=100</i>							
Metro Manila	14.0	14.2	60.8	73.3	81.0	78.1	100.0	92.7
Ilocos	7.2	6.5	28.6	30.2	32.8	30.7	39.0	39.1
Cagayan	4.6	4.0	26.2	28.7	29.2	31.7	33.9	33.9
Central Luzon	9.9	9.9	34.6	39.1	41.5	40.1	48.5	46.0
Southern Luzon	12.6	14.6	29.5	32.6	38.4	40.8	50.1	49.8
Bicol	6.8	7.5	19.9	23.0	22.1	24.5	27.7	25.7
Western Visayas	8.9	8.0	21.9	25.7	24.9	27.5	33.0	33.7
Central Visayas	7.6	7.1	20.9	26.8	26.7	27.0	32.5	29.3
Eastern Visayas	5.4	4.7	17.7	22.5	23.0	23.7	26.1	28.7
Western Mindanao	5.1	5.2	20.8	26.8	23.6	22.4	30.7	24.5
Northern Mindanao	6.1	5.7	22.1	28.6	24.5	25.2	32.8	29.3
Southern Mindanao	7.3	7.4	23.4	27.5	28.3	30.5	34.1	34.5
Central Mindanao	4.5	5.3	21.3	27.8	24.4	25.6	27.0	25.1
<i>Sector</i>	<i>Agriculture 1997=100</i>							
Agriculture	47.3	36.8	77.0	87.7	87.6	89.5	100.0	94.5
Mining	0.8	1.1	117.5	121.1	152.9	148.9	145.1	117.7
Manufacturing	7.0	7.2	156.7	182.4	195.8	217.2	254.9	219.6
Utilities	0.5	0.5	181.6	255.4	222.5	255.8	291.7	300.0
Construction	4.9	7.1	115.4	131.9	141.9	132.4	174.5	145.1
Trade	8.0	10.4	175.0	216.2	225.1	227.3	262.6	232.6
Transportation	6.1	9.2	149.6	158.5	199.3	176.1	202.5	190.7
Finance	1.8	2.1	280.9	361.7	381.0	348.7	545.6	474.5
Services	12.1	11.1	173.6	218.4	226.0	223.4	289.0	287.0
Unemployed	11.5	14.4	190.2	205.6	215.2	217.4	258.6	258.0

<sup>§</sup>Adjusted for provincial differences in cost of living. Mean figures for the Philippines are expressed in proportion to the mean in 1997. Mean per capita income in 1997 for the Philippines, urban areas, Metro Manila, and agriculture is 24,073, 34,824, 52,702, and 12,488, respectively.

Source: Authors' estimate based on the *Family Income and Expenditure Survey* (various years) of the National Statistics Office.

Tables 4 and 5 summarize the results of the decomposition for  $I_0$  and  $I_2$ , respectively, by location, household attributes, and economic sector. There are a number of interesting results. First, while regional differences in mean incomes are substantial. Second, inequality arising from large differences in mean income between urban and rural areas also accounts for a rather small share – at most 7% for  $I_2$  and 21% for  $I_0$  of the aggregate inequality. Again, this contradicts the widely accepted view that urban–rural income disparity accounts for a very large part of the existing inequality in the Philippines. What Tables 4 and 5 suggest is that potentially larger gains in terms of a reduction in overall inequality will be achieved if efforts are focused on reducing inequality within both urban and rural areas.

Decomposition by either sector of employment or class of worker of the household head gives similar results: it is inequality within sectors, not between sectors or classes, that accounts for the bulk of the observed aggregate inequality. The results do not vary much across years.<sup>14</sup>

Demographic differences in terms of either the gender or the marital status of the household head do not likewise constitute a major source of income inequality. However, decomposition by differences in human capital endowment (represented by the educational attainment of all household members) reveals that between-group inequality accounts for a sizeable share (roughly 40%, based on  $I_0$ ) of the aggregate inequality in 2000. Moreover, the contribution of between-group inequality has consistently risen in the 1990s, regardless of the inequality measure employed. This may well be a consequence of the growth in the importance of incomes from overseas employment in recent years. Such employment is accessible only for skilled workers who are likely to have achieved high school or college education. We return to this in section 5.

It thus appears that disparity in incomes and human achievement within region, area, or economic sector is the major problem, not disparity between regions, between urban and rural areas, or between agriculture and industry. Within-region inequality arises from differences in possession of (or access to) both physical and human assets, including public goods. How robust are these results?

---

<sup>14</sup> Balisacan's (2003) decomposition of the changes, albeit small, in total *expenditure* inequality – as measured by the Theil index – shows that these changes are also accounted for largely by changes in relative expenditure within geographic boundaries, not from changes in relative mean expenditures among regions or areas of the country. This observation thus seems to suggest a crucial point: it is how the economic and institutional environment affects rewards to owners of factors of production – which are distributed highly unevenly within a region or location – that largely determines the country's performance in inequality reduction.

**Table 4:  $I_0$  Inequality within and between Population Sub-groups**

Sub-group	1985	1988	1991	1994	1997	2000
<b>A. Location</b>						
<i>Urbanity</i>						
Within-group	78.6	78.4	81.3	81.2	78.2	78.5
Between-group	21.4	21.6	18.7	18.8	21.8	21.5
<i>Region</i>						
Within-group	79.4	79.6	76.1	77.3	77.9	78.4
Between-group	20.6	20.4	23.9	22.7	22.1	21.6
<b>B. Household attributes</b>						
<i>Educational attainment of household head</i>						
Within-group	70.4	68.8	69.2	69.4	64.5	63.2
Between-group	29.6	31.2	30.8	30.6	35.5	36.8
<i>Sex of household head</i>						
Within-group	97.8	98.0	98.0	97.8	98.3	98.0
Between-group	2.2	2.0	2.0	2.2	1.7	2.0
<i>Marital status of household head</i>						
Within-group	98.5	98.7	98.7	98.8	98.8	98.9
Between-group	1.5	1.3	1.3	1.2	1.2	1.1
<i>Type of household</i>						
Within-group	96.9	98.3	97.0	97.6	97.7	98.5
Between-group	3.1	1.7	3.0	2.4	2.3	1.5
<b>C. Economic sector</b>						
<i>Sector of employment</i>						
Within-group	77.6	75.4	75.7	74.5	74.7	75.2
Between-group	22.4	24.6	24.3	25.5	25.3	24.8
<i>Class of worker</i>						
Within-group	75.7	76.1	74.7	75.7	76.3	77.4
Between-group	24.3	23.9	25.3	24.3	23.7	22.6

Source: Authors' estimates based on unit record data from the *Family Income and Expenditure Survey* (various issues) of the National Statistics Office.

**Table 5:  $I_2$  Inequality within and between Population Sub-groups**

Sub-group	1985	1988	1991	1994	1997	2000
<b>A. Location</b>						
<i>Urbanity</i>						
Within-group	94.7	92.8	97.1	94.3	95.2	93.5
Between-group	5.3	7.2	2.9	5.7	4.8	6.5
<i>Region</i>						
Within-group	93.6	91.0	94.6	90.3	93.1	90.9
Between-group	6.4	9.0	5.4	9.7	6.9	9.1
<b>B. Household attributes</b>						
<i>Educational attainment of household head</i>						
Within-group	89.1	85.9	92.1	85.8	87.1	81.8
Between-group	10.8	14.1	7.9	14.2	12.9	18.2
<i>Sex of household head</i>						
Within-group	99.3	99.2	99.6	99.2	99.5	99.2
Between-group	0.6	0.8	0.4	0.8	0.5	0.8
<i>Marital status of household head</i>						
Within-group	99.5	99.4	99.7	99.5	99.6	99.5
Between-group	0.5	0.6	0.3	0.5	0.4	0.5
<i>Type of household</i>						
Within-group	99.2	99.3	99.4	99.1	99.4	99.4
Between-group	0.8	0.7	0.6	0.9	0.6	0.6
<b>C. Economic sector</b>						
<i>Sector of employment</i>						
Within-group	94.6	92.1	96.1	92.2	94.1	92.0
Between-group	5.4	7.9	3.9	7.8	5.9	8.0
<i>Class of worker</i>						
Within-group	95.0	93.9	96.7	93.9	96.1	94.7
Between-group	5.0	6.1	3.3	6.1	3.9	5.3

Source: Authors' estimates based on unit record data from the *Family Income and Expenditure Survey* (various issues) of the National Statistics Office.

### *Regression Approach*

The above decomposition approach provides at best an indication of the contribution of a set of factors – location, sector, and household-specific attributes – to aggregate inequality. The approach is, however, rather cumbersome in cases where many of these factors have to be treated jointly rather than individually. More importantly, the relative contribution of each of the factors in explaining the level of inequality is quite sensitive to the inequality measure employed (Shorrocks 1984; Jenkins 1995). The decomposition results shown above indicate that this is indeed the case also for the Philippine data. Also, if several factors are introduced in the decomposition, the relative contributions of these factors depend critically on the order in which they are introduced into the analysis (Fields 2002).

An alternative approach is to use a parametric procedure to explore systematically the contribution of each of these factors to the observed variation in household income. Specifically, one could estimate a standard set of income-generating functions and use the parameter estimates to calculate the relative contribution of each factor to differences in household income. Fields (2002) demonstrates that, under a quite acceptable set of assumptions, this approach produces decomposition results that are independent of which inequality measure is chosen. Additionally, it readily appeals to economists since the regression framework expresses inequality levels as functions of the very same determinants that they are accustomed to using.

Table 6 summarizes the results of such an exercise for the six survey data covering the 1985-2000 period, giving the proportions accounted for by location and household-specific attributes in the total variance of (log) income.<sup>15</sup> Together all variables included in the regression explain 55-58% of the variance of log-incomes for the six survey years (see Annex Table 1).

Household composition and the household head's attributes, most especially educational attainment, account for one-third of the total variance of (the log of) income. Educational attainment contributes about a fifth of the observed variation in income. After controlling for the effects of other factors, location (region and urbanity) contributes only about 15% of the observed variation in income. Economic attributes (sector of employment and class of worker) represent only a small amount – roughly 10% -- of the total variance. This suggests that it is differences in income levels within a sector or location, rather than differences in mean income levels between sectors or locations, that accounts for a significant proportion of the variation

---

<sup>15</sup> As in the standard formulation of earnings function in the human capital literature (see Mincer 1974; Atkinson 1983), the income-generating functions estimated here take the semi-log form:

$\ln Y_{it} = \alpha_t + \beta_t X_{it} + \varepsilon_{it}$ , where the subscript  $i$  refers to the household,  $t$  refers to year,  $Y$  is per capita income (adjusted for provincial differences in cost of living), and  $X$  is a vector of explanatory variables. Following Fields (2002), the relative contribution of each factor  $j$  to the variance of (log) income in year  $t$  can then be estimated as:  $s_j = \text{cov}[a_j Z_j, \ln Y] / \sigma^2(\ln Y) = a_j * \sigma(Z_j) * \text{cor}[Z_j, \ln Y] / \sigma(\ln Y)$ , where  $a$  is the vector of coefficients ( $\alpha, \beta$ ),  $Z$  is the vector of explanatory variables plus a constant (1,  $X_i$ ), and  $\sigma^2$  is variance. The sum of  $s_j$ 's is  $R^2(\ln Y)$ .

in household income nationally. Note that this conclusion holds for each of the survey years.<sup>16</sup>

**Table 6: Relative Contribution of Factor in Total Variance of (Log) Income**

	1985	1988	1991	1994	1997	2000
<i>Household attributes</i>	34.4	33.6	33.1	33.4	34.8	33.6
Family size	10.2	9.5	9.5	9.5	8.9	8.3
Household type	1.5	1.1	1.3	1.2	1.3	1.5
Child dependency ratio	1.3	1.5	1.5	1.8	1.6	1.4
Employment ratio	-0.3	0.0	0.0	0.2	0.2	0.0
Spouse employed	0.2	0.4	0.5	0.5	0.8	0.6
Experience	0.5	0.7	0.6	0.3	0.5	0.4
Gender	0.0	0.1	0.1	0.1	0.1	0.1
Marital status	0.6	0.8	0.7	0.5	0.6	0.7
Education	20.4	19.5	18.9	19.3	20.8	20.6
<i>Economic sector</i>	5.4	7.6	8.7	9.6	9.9	10.1
Class of worker	4.1	4.5	5.4	5.5	6.2	5.4
Sector of employment	1.3	3.1	3.3	4.1	3.7	4.7
<i>Location</i>	15.8	14.1	15.8	15.5	13.1	14.3
Urbanity	3.1	3.6	2.7	2.8	3.9	4.4
Region	12.7	10.5	13.1	12.7	9.2	9.9
<i>Residual</i>	44.4	44.7	42.4	41.5	42.2	42.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' estimates of income-generating functions based on unit record data from the *Family Income and Expenditures Survey* (various years) of the National Statistics office. See Annex Table 1.

In sum, income inequality at any point in time has come mainly from differences *within* geographic boundaries, sectors, or demographic characteristics, not from differences in mean incomes *between* boundaries, sectors, or demographic characteristics. Similarly, the changes in inequality in recent years, albeit small, have

<sup>16</sup> The small inter-year differences in estimates for a given attribute do not warrant further exploring the factors that could have contributed to these differences. In a somewhat related exercise, Balisacan (2003) decomposes the *change* in observed aggregate *poverty* into three components: (a) intraregional (intrasectoral) effects, (b) population shifts, and (c) interaction effects. The intraregional (intrasectoral) effects are simply the contribution of the gains of the poor within each region to the change in aggregate poverty, controlling for the population share of the poor during the base period. The population shifts are the contribution of changes in the distribution of the population across regions (sectors) during the period. The residuals, or the interaction effects, arise from the possible correlation between population shifts and intraregional (intrasectoral) changes in poverty. The results of his exercise show that the observed changes in poverty for the entire period are attributable mainly to intraregional (intrasectoral) changes in consumption.

come mainly from changes within geographic boundaries and sectors, not from changes in mean-group incomes.

### **5. Accounting for Sources of Income Inequality: Factor Incomes**

The economic theory of dynamic comparative advantage predicts that, in the absence of domestic market distortions and assuming competitive conditions, an efficient path of growth for a small, relatively open economy with initially abundant labor is specialization in labor-intensive goods. Expansion of labor-intensive exports would raise the share of wages in national income over a period of time. Further, to the extent that the vast majority of the poor are small owner-cultivators (that is, net suppliers of labor), landless agricultural workers, and unskilled workers in industry and services (see Balisacan 1993), this would improve the distribution of income. Thus, the initial effect of economic growth is a decline in income inequality for the labor-abundant economy. In the Philippines, as in most other countries, market distortions are ubiquitous, and the actual path of growth and income distribution can be different from the one depicted by theory.

As noted in section 2 above, the 1980s and (especially the) 1990s saw a gradual shift of Philippine economic policy from a highly protectionist regime to a market-oriented one. The protectionist regime favored capital-intensive production (especially in industry), inhibited the growth of small-scale industries and agriculture, and fostered rampant rent-seeking activities. Extensive quantitative restrictions and high tariffs on imports competing with local production spawned a highly overvalued domestic currency, heavily penalizing the tradable sectors, especially labor-intensive agriculture and manufactured exports, relative to the non-tradable sectors of the economy. This could have depressed factor incomes in agriculture and labor-intensive manufactured exports, thereby hurting the poor who were mostly dependent on these sectors for incomes and livelihood. The policy shift was thus expected to be especially beneficial to the poor.

Another important development that could have shaped the evolution of factor incomes, especially wages, has to do with the rapid expansion of Filipino labor employment in overseas markets, especially during the 1990s. The number of these workers almost quadrupled from about 215,600 in 1980 to 841,600 in 2000. In 1997, the remittances that passed through the banking system amounted to roughly \$5.7 billion, representing 20% and 70% of the country's export earnings and services incomes, respectively (Bautista and Tecson 2003). How these remittances affected income distribution is not well understood. However, casual evidence indicates that migrant workers come primarily from wealthier, better-educated, urban households, suggesting that remittances could have increased income inequality (Rodriguez 1998).

Table 7 summarizes the changes in the shares of income components in total household incomes during the 1980s and 1990s. The share of total agricultural incomes (wages, entrepreneurial incomes, and other incomes) steadily fell from about 22% in 1985 to 11% in 2000, partly reflecting the structural transformation vis-à-vis the decline in the relative importance of agriculture in national income and employment, as noted in section two above. In contrast, the share of wages derived from non-agriculture rose quite sharply from 33% to 43% during this period. Note, too, the perceptible rise in incomes from "other sources" in the 1990s. Incomes from

these sources, which included income transfers and remittances, fell from a high of 27% in 1985 (when the economy had its worst postwar economic contraction) to 23% in 1988, but then inched up to about 25% in the 1990s and to 28% in 2000.

**Table 7: Income Share by Factor Component (in %)**

Component	1985	1988	1991	1994	1997	2000
<i>Income from entrepreneurial activities</i>						
Agriculture	12.4	11.3	10.1	9.7	7.4	6.4
Non-agriculture	18.0	18.2	20.3	18.0	18.8	18.0
<i>Income from wages</i>						
Agriculture	4.5	4.8	3.9	4.0	3.2	2.8
Non-agriculture	32.8	38.7	37.8	40.0	42.4	42.7
<i>Income from other sources</i>						
Agriculture	4.7	3.8	3.1	3.1	2.4	2.1
Non-agriculture	27.5	23.3	24.7	25.2	25.8	28.1
<i>All incomes</i>						
Agriculture	21.6	19.8	17.2	16.8	13.0	11.2
Non-agriculture	78.4	80.2	82.8	83.2	87.0	88.8

Source: Author's estimates based on unit record data from the *Family Income and Expenditure Survey* (various years) of the National Statistics Office.

Note: Share estimates are based on household incomes adjusted for provincial differences in cost of living.

To see the relative importance of these income components in the observed overall income inequality, we again appeal to the additively decomposable feature of the  $I_\alpha$  class of inequality measures.<sup>17</sup> However, for our purposes, we limit the decomposition exercise to  $I_2$  index of inequality (i.e., half the squared coefficient of variation). The advantage of  $I_2$  over other  $I_\alpha$  measures is that it can handle the regular incidence of zero income components, which is not uncommon in the data on hand.

Table 8 summarizes the results of the exercise. Notice the overwhelming contribution of non-agricultural incomes in total income inequality. Differences in agricultural incomes, whether in the form of wages or entrepreneurial incomes, hardly contribute to the aggregate level of income inequality. This is quite contrary to the common claim in policy discussions that at the heart of the poverty problem in the Philippines is the highly inequitable distribution of assets and incomes in rural areas.<sup>18</sup>

Notice, too, that the contribution of inequalities in non-agricultural income components varies quite enormously in the 1980s and 1990s. For instance, inequality

<sup>17</sup> The approach employed followed that of Shorrocks (1982) and Jenkins (1995).

<sup>18</sup> It is, of course, possible that extending the analysis to likewise cover, say, the 1960s and 1970s will reveal a different profile of inequality. Indeed, the postwar period witnessed diversification of the landed elite's economic interests from largely agriculture-based to major concerns in industry and services (see de Dios and Hutchcroft 2003).

in non-agricultural wages contribute about 40% of overall inequality in 1985, but this contribution sharply fell to 20% in 1991, then rose to 43% in 1994 and bounced to 29% in 1997. It is possible that the figures in 1991 were an aberration owing to the severe power shortages and natural disasters (Mount Pinatubo eruption and earthquake) in the early 1990s, as well as political instability toward the end of the 1980s, which affected production activities in industry and services much more adversely than they did in agriculture.

Also worth noting is the rather high contribution of non-agricultural “other sources of incomes”. This contribution averaged roughly one-third of the total variance of (log) income during 1985-2000 and appeared to have risen in recent years. Given the importance of incomes from these sources in total household incomes and in overall income inequality, it is useful to look deeper into their specific components. Have remittances from overseas employment, for example, exacerbated income inequality?

**Table 8: Contributions of Income Components in Total Income Inequality**

Factor	(%)					
	1985	1988	1991	1994	1997	2000
<i>Income from entrepreneurial activities</i>						
Agriculture	-0.2	0.8	-0.2	0.4	0.0	4.6
Non-agriculture	26.4	31.0	63.8	25.0	25.2	23.8
<i>Income from wages</i>						
Agriculture	0.0	-0.2	0.0	-0.3	0.0	-0.4
Non-agriculture	40.4	40.5	20.2	42.7	29.0	35.7
<i>Income from other sources</i>						
Agriculture	-0.3	-0.4	-0.2	-0.1	-0.1	0.0
Non-agriculture	33.8	28.3	16.4	32.2	46.0	36.3
<i>ll sources</i>						
Agriculture	-0.5	0.2	-0.4	0	-0.1	4.2
Non-agriculture	100.6	99.8	100.4	99.9	100.2	95.8

Source: Authors' estimates based on unit record data from the *Family income and Expenditure Survey* (various years) of the National Statistics Office.

Table 9 shows the importance of income components from sources other than wage employment and entrepreneurial activities, in total household income and in overall income inequality. Of these sources, rent value of owner-occupied dwelling units, whose share in total income rose from roughly 8% in 1985-91 to about 11% in 2000, was the single most important contributor to overall inequality, although its contribution fluctuated from about 6% in 1991 to 21% in 1997. Cash receipts from abroad, which represented 8% of total income, contributed roughly about 7% of total inequality. Note that there is no discernible trend either in the share of these receipts in total income or in their contribution to total inequality. This suggests that, contrary to common claims, foreign remittances did not exacerbate income inequality.

**Table 9: Contribution of “Incomes from Sources Other Than Wage Employment and Entrepreneurial Activities” to Total Income Inequality**

	(%)					
	1985	1988	1991	1994	1997	2000
<i>A. Share in total income</i>						
Net share of crops	2.08	1.50	1.46	1.12	0.90	0.78
Cash receipts from abroad	8.43	7.53	8.39	8.00	6.79	8.53
Cash receipts from domestic sources	2.79	2.27	2.16	2.37	2.17	2.49
Rent from non-agricultural property	1.12	0.89	1.05	1.03	1.77	1.38
Interest income	0.42	0.30	0.29	0.20	0.34	0.27
Pension and retirement	1.52	1.26	1.48	1.74	1.84	2.45
Dividends and investments	0.18	0.12	0.01	0.14	0.14	0.06
Rent value of owner-occupied dwellings	8.61	7.88	8.40	9.38	10.33	10.62
Income from family sustenance activities	3.30	2.15	1.92	1.78	1.26	1.12
Gifts	3.28	2.95	2.68	2.55	2.56	2.34
Others	0.19	0.05	0.02	0.03	0.07	0.11
Total share of “other sources”	31.92	26.9	27.86	28.34	28.17	30.15
<i>B. Contribution to total inequality</i>						
Net share of crops	1.35	0.58	1.25	0.55	0.25	0.50
Cash receipts from abroad	8.28	7.82	5.15	6.57	5.06	8.39
Cash receipts from domestic sources	1.28	0.42	0.30	0.65	0.43	1.17
Rent from non-agricultural real property	4.21	2.69	1.87	4.30	14.35	5.46
Interest income	1.35	0.85	0.61	1.04	1.27	1.01
Pension and retirement	2.31	1.13	0.60	1.33	1.65	3.90
Dividends and investments	2.10	1.15	0.05	2.77	1.16	0.31
Rent value of owner-occupied dwellings	11.33	11.86	5.63	13.55	20.66	14.56
Income from family sustenance activities	-0.23	-0.24	-0.11	-0.24	-0.13	-0.14
Gifts	1.41	1.71	0.83	1.59	1.11	1.07
Others	0.05	0.01	0.03	0.01	0.02	0.10
Total contribution of “other sources”	33.44	27.98	16.21	32.12	45.83	36.33

Source: Authors’ estimates based on unit record data from the *Family Income and Expenditures Survey* (various issues) of the National Statistics Office.

In sum, incomes derived from non-agricultural sources, were the overwhelming sources of income inequality in recent years. Inequality arising from differences in receipts of agricultural incomes across households has little influence on overall inequality. Further, there is weak evidence to the common claim that overseas remittances in recent years have accentuated income inequality.

## 5 Toward Explaining Differences in Income Change across Income Quintiles: What Do Provincial Panel Data Show?

As noted above, while increases in overall mean income during the 1980s and 1990s were modest by East Asian standards, there were significant differences in the performance of various regions and provinces of the country. These differences extend as well to the income response of households located in certain parts of the income distribution to changes in overall mean income. Put differently, a number of responses are associated with a given level of overall mean income. Figure 2 shows these responses for the extreme ranges (top and bottom quintiles) of the income distribution. The data pertain to 74 provinces and five survey years during the 1980s and 1990s, or a total of 370 observations.<sup>19</sup> Both panels of the figure exhibit a positive correlation between overall average incomes and average quintile incomes, especially for the top quintile. Since both means are expressed in logarithms, the slope of the fitted line (obtained by OLS regression) can be interpreted as the elasticity of the quintile income with respect to the overall average income (henceforth referred to as the *growth elasticity* of quintile income. This growth elasticity is about 0.73 for the bottom quintile and 1.11 for the top quintile, indicating that a 10 percent increase in the overall mean income raises the mean income of the bottom and top quintile by 7% and 11%, respectively.

Unfortunately, the growth-quintile income relationship is not as straightforward as Figure 2 might suggest. Simply regressing the mean quintile incomes on overall average incomes through ordinary least squares (OLS) estimation is likely to result in inconsistent estimates of the growth elasticity, for a number of reasons. One is the omission of variables that have direct impacts on quintile incomes and are correlated with overall average incomes or with any of the other explanatory variables. For example, infrastructure, local institutions (e.g., “social capital”), and agrarian structure vary considerably across provinces and correlate strongly with provincial mean incomes (Balisacan et al. 2002).

Further, there is the possibility that quintile mean incomes and overall average incomes are jointly determined. For instance, recent theory and evidence shows a link running from inequality (hence, the incomes of people at the lower parts of the distribution) to subsequent overall income growth. One strand of the literature suggests that income (or asset) inequality inhibits subsequent overall income growth (Alesina 1998; Deininger and Squire 1998), while another strand says the reverse (Forbes 2000; Li and Zou 1998).

One could exploit the longitudinal nature of the provincial data and employ standard panel estimation techniques – such as fixed-effects and random-effects models – to control for differences in time-invariant, unobservable province-specific characteristics, thereby removing any bias resulting from the correlation of these characteristics with overall average income (or any other explanatory variables). Alternatively, one could directly estimate the parameters of interest from differences in variable values over time. Dollar and Kraay (2001) suggest that combining the

---

<sup>19</sup> For a similar exercise but using consumption expenditure as welfare indicator, see Balisacan and Pernia (2002). The results obtained in that exercise are generally consistent with those in the present paper.

information on both levels and differences of the data helps resolve the dilemma of having to choose an estimating model from either a levels form or a differences form. We follow this mode of analysis – estimating a system involving both levels and differences, but imposing the restriction that the coefficients in the levels and differences equations are equal.

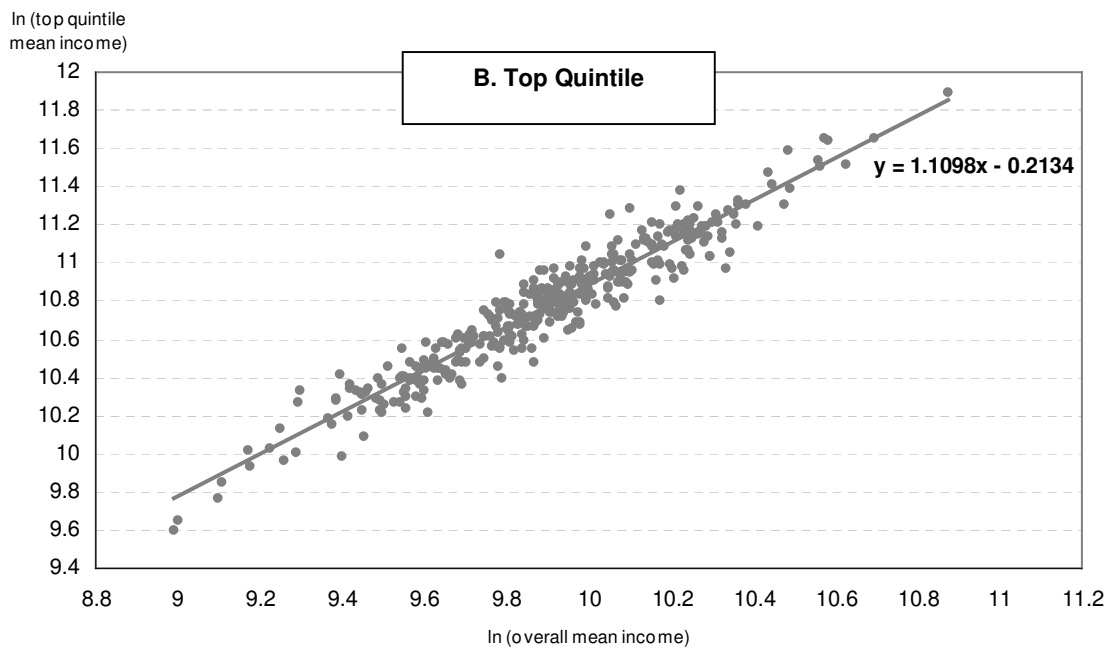
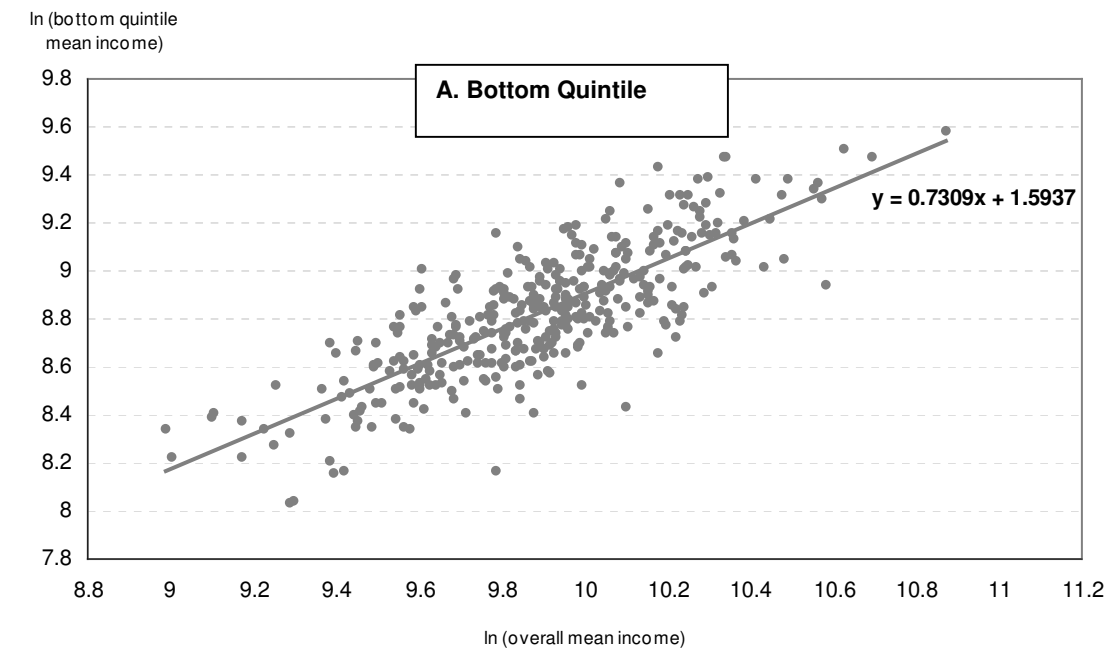
The variable to be explained refers to the wide differences in provincial per capita income for each quintile during the 1980s and 1990s. The direct impact of local income growth is to be distinguished from the impact of certain economic and institutional factors on average quintile income. Guiding the specifications are parsimony, data availability, and expectations from development theory.

The explanatory variables are categorized into two groups, namely, initial-condition variables and time-varying variables. Included in the first group are province-specific human capital endowment, farm and land characteristics, social capital, geographic attributes, and political-economy characteristics. The time-varying variables, on the other hand, include relative price incentives, road access and electricity, agrarian reform, and overall average per-capita income.

The proxy for the initial human capital endowment is the (three-year lagged) average years of schooling of household heads. This variable is expected to be positively correlated with mean quintile income.

Geographic attributes are an indication of spatial isolation or high transport cost (given by a dummy variable indicating whether a province is landlocked or not) and the average frequency of typhoons hitting the province. These variables are intended to capture geographic “poverty traps”. A number of observers, for example, note that areas that are most frequented by typhoons have been among the poorest areas in the country (see, e.g., Balisacan 1999). Using cross-country regressions, Gallup and Sachs (1998) also find that the geographic location of a country tends to influence the speed of its economic growth, noting in particular that landlocked countries tend to grow slower than those with direct access to sea transport.

**Figure 2**  
**Quintile Mean Income vs Overall Mean Income**



The initial political-economy variables reflect the quality of local governance and access to fiscal resources. One such variable is local political dynasty, defined as the proportion of local officials -- related to each other by blood or affinity -- out of the total number of elective positions. This variable captures the extent of collusion or competition in local politics. We expect that political dynasty inhibits mean income growth, especially in the lower parts of the income distribution, through its negative effect on the efficient operation of markets (i.e., restricting competition in local markets and creating rents for the political clan) and on the access of the low-income groups to public goods.<sup>20</sup> The other variable pertains to the political party affiliation of the provincial chief executive. This is represented by a dummy variable indicating whether the provincial governor belongs to the national President's political party. The expectation is that resources for infrastructure, employment generation and poverty reduction tend to flow more favorably to local governments that have direct ties to the ruling political leadership.

Mean income is given by provincial mean income. As noted earlier, this variable is endogenous.

The time-varying price incentives variable is given by the local terms-of-trade, defined as the ratio of the price of agricultural to non-agricultural products. Since poverty is concentrated in agriculture in developing countries (Pernia and Quibria 1999), including the Philippines (Balisacan and Pernia 2002), this variable is expected to be positively related to the average income of the population in the lowest (poorest) quintiles.

The time-varying infrastructure variables pertain to road access and electricity.<sup>21</sup> Roads represent access to markets, off-farm employment, and social services. The variable is defined as quality-adjusted road length per square kilometer of land area. Electricity, on the other hand, is a proxy for access to technology, or simply the ability to use modern equipment. It is defined simply as the proportion of households with access to electricity.

A time-varying policy variable relating to the government's redistribution (and empowerment) program is the Comprehensive Agrarian Reform Program (CARP). The agrarian reform variable, defined as the proportion of cumulative agrarian reform accomplishments in total potential land reform area, serves to proxy for households' ability to smooth consumption during shocks, given imperfections in credit markets. The variable is expected to be positively related to the mean income of low-income groups, especially the bottom quintile.

Certain variables may have strong complemetarities, i.e., the impact of one variable on the living standards of the poor may be conditioned by the values of the other

---

<sup>20</sup> Put differently, local governance by political dynasty may make feasible the concentration of economic power and control in a few hands, thereby leading to (perpetuating) high income inequality. High income inequality, in turn, may inhibit subsequent growth in the local economy, as suggested by recent development literature. Moreover, such governance structure may make public services that directly benefit low-income groups less accessible to them.

<sup>21</sup> The preferable variables would be government expenditures on infrastructure, rather than levels of physical infrastructure. The former variables relate a policy handle -- spending on infrastructure -- directly to average living standards.

variables. Endogenous growth theory, for example, asserts that the rates of return to investment in technology are conditioned by the level of human capital stock. To allow for this possibility, we have introduced interaction terms on certain variables, as appropriate.

Detailed descriptions of the above variables are given in Annex Table 2. Each quintile regression model is estimated as a system, i.e., both the levels equations (initial-condition and time-varying variables) and differences equations (time-varying variables) are estimated jointly, taking into account the endogeneity of overall mean income and its difference. It also takes into the possibility that agrarian reform is endogenous, as suggested by Otsuka's (1991) earlier assessment of Philippine land reform implementation. The results for each quintile are summarized in Table 10.

The response of the average mean income of the poorest quintile to overall average income growth is far lower than that suggested by cross-country studies (e.g., Dollar and Kraay 2001). The growth elasticity is only roughly 0.6, suggesting that a 10 percent increase in overall per capita income raises average per capita income in the lowest quintile by just about 6 percent. This result suggests that the quality or type – not just speed – of growth also matters for poverty reduction. It further implies that the same growth brings about disproportionately higher income gains for some of the other quintiles of the population. Indeed the growth elasticity tends to increase monotonically with income quintile.

The coefficient of the agrarian reform variable is significant and positive in all quintiles, except the top one. This suggests that, other things being equal, agrarian reform raises the average income of low-income groups, especially those in the bottom of the income distribution. Note that those in the top 20 percent of the income distribution do not normally depend on agriculture for employment and income.

By itself (apart from its direct impact on overall mean income), overall schooling exerts a significant and positive effect on mean incomes in all quintiles, except the top one. The rate of return to schooling is highest, at about 22%, in the bottom quintile. More significantly, when schooling is interacted with the roads variable, which is a proxy for access to markets and social services, the coefficient is positive and significant in all but the top quintile. This suggests that complementarities are important, and that returns to schooling, especially for the poorest groups in society, are dependent on the availability of complementary factors.

The coefficient for roads is significant but, surprisingly, has a negative sign for the first four quintiles, implying that, by itself, access to markets and information may not necessarily improve the plight of low-income groups. It appears that roads do not typically reach the areas where most of the poor live and, where they do, they may exert an adverse impact on the poor through factor market, political economy, and other processes. Nevertheless, as pointed out above, road access can improve the income of low-income groups provided they have sufficient human capital to take advantage of it. Indeed, the results indicate that the incremental impact of roads on the welfare of the poor rises with schooling level. Surprisingly, too, the road variable, as well as its interaction with schooling, is insignificant for the top quintile. One might

expect that access to markets is particularly beneficial for the richest group in society.<sup>22</sup>

Electricity, which serves as a proxy for access to technology and information, is significant in all quintiles. The sign for the top quintile though is negative, which is quite puzzling, considering the importance often attributed to access to technology in the growth of incomes across population groups.

As expected, the terms-of-trade variable is positive and significant in all quintiles, except in the top one where the sign is negative. This indicates that changes in the price of agriculture relative to the price prevailing in other sectors of the local economy have a profound favorable impact on low- and middle-income groups.<sup>23</sup> This result reflects the favorable effects on these groups of the trade and exchange rate reforms in the 1990s. These reforms have effectively reduced the degree of overvaluation of the local currency, thereby improving the price incentives for tradables relative to non-tradables. Since agriculture is more tradable than either industry or services, the policy shift could have improved the relative profitability of agriculture. Further, since agriculture is more labor-intensive than industry, the reforms would have benefited labor, especially of the poor.<sup>24</sup>

---

<sup>22</sup> In an earlier paper employing the same methodology but using average consumption expenditure in each quintile as the variable to be explained (Balisacan and Pernia 2002), the road variable is significant and has positive sign for the top quintile.

<sup>23</sup> As noted earlier, income poverty in the Philippines is a largely rural phenomenon, regardless of the poverty norm employed. Of the rural poor, nearly two-thirds are dependent on agriculture for employment and income. As such, improvement in the terms of trade in provinces where agriculture is a dominant component of the local economy tends to raise the welfare levels of the poor.

<sup>24</sup> The severe overvaluation of the peso in the 1970s and 1980s disproportionately penalized agriculture and the export-oriented manufacturing sector (see Bautista and Tecson 2003)

**Table 10: Determinants of Per Capita Income by Income Quintile**

Explanatory Variable	1 <sup>st</sup> Quintile (Poorest)	2 <sup>nd</sup> Quintile	3 <sup>rd</sup> Quintile	4 <sup>th</sup> Quintile	5 <sup>th</sup> Quintile (Richest)
<i>“Initial” Conditions</i>					
Schooling	0.217 **	0.227 ***	0.222 ***	0.161 **	0.018
Local dynasty	-0.067	-0.046	-0.040	-0.042 *	0.052 *
Political party	-0.013	-0.017	-0.030 **	-0.029 **	-0.009
Landlocked	-0.033	-0.011	-0.014	0.005	0.066 ***
Typhoon	-0.054 **	-0.052 ***	-0.043 ***	-0.045 ***	0.054 ***
<i>Time-Varying Variables</i>					
Per capita income (Y)	0.564 ***	0.622 ***	0.737 ***	0.859 ***	1.230 ***
Terms of trade	0.105 *	0.109 ***	0.085 **	0.068 **	-0.165 ***
Roads	-0.393 ***	-0.369 ***	-0.374 ***	-0.254 ***	0.114
Electricity	0.215 **	0.253 ***	0.250 ***	0.138 **	-0.175 *
Agrarian reform	5.108 **	3.675 **	3.120 **	4.115 ***	-1.475
<i>Interactions</i>					
Schooling*Roads	0.205 ***	0.189 ***	0.187 ***	0.124 ***	-0.050
Schooling*Electricity	-0.054	-0.025	-0.014	0.006	-0.018
Y*year91	0.006 **	0.005 **	0.005 **	0.004 **	-0.001
Y*year94	0.004	0.003 *	0.003 **	0.003 *	-0.001
Intercept	2.858 ***	2.659 ***	1.848 ***	1.185 ***	-1.096 **
R-squared	0.598 0.295	0.758 0.469	0.850 0.582	0.895 0.668	0.842 0.673

*Note:* Estimation is by three-stage least squares. Instruments are actual values of schooling, roads, electricity, political-economy and geographic variables, terms of trade, and lagged values of the other variables, including land Gini, tenancy and twice-lagged value of average income growth. Data are for provincial panel covering five years of three-year intervals in the 1980s and 1990s. The *R*-squared values apply to the level and the difference form of the estimated log (per capita income) function. “\*\*\*”, “\*\*” and “\*” denote significance at the 1%, 5% and 10% level, respectively.

The local political economy appears to influence differently the income of various population groups. Lack of political competition (political dynasty) hurts the fourth quintile while it benefits, as expected, the top quintile. For the bottom three quintiles, local political dynasty has a negative sign but is not significant.<sup>25</sup>

The frequency of typhoons tends to depress the average income of low- and middle-income groups, as indicated by the consistently negative and highly significant coefficient of the typhoon variable. Another geographic “poverty trap” is high transport costs, as evidenced by the estimated negative relationship between the average income of the bottom quintile (as well as the next three other quintiles) and the variable “landlocked”.

In sum, provincial panel data suggest that household income response for the bottom quintile to overall average income growth is far more subdued than is suggested by cross-country analyses. It seems clear that changes in the welfare of the poor over time depend not only on the *rate* but also on the *type* of economic growth. Put differently, the poor benefit from growth, but they benefit even more from it if institutions and policies are reformed to favor them, or are at least made more neutral. Schooling, especially if accompanied by complementary public investments, raises the incomes of low- and middle-income groups, apart from its indirect effect through economic growth. And so do the implementation of agrarian reform and the removal of price distortions that diminish the profitability of agriculture relative to non-agriculture. High transport costs lead to geographic “poverty traps,” as the population faced with these costs, especially low-income groups, are impeded from taking advantage of economic opportunities elsewhere.

## 7. Concluding Remarks

Contrary to common perceptions, the relatively high aggregate income inequality in the Philippines has come mainly from differences *within* geographic boundaries (regions, provinces, urban or rural areas), economic sectors, or demographic subgroups not from differences in mean incomes *between* boundaries, sectors, or demographic characteristics. Similarly, the changes in inequality in recent years, albeit small, have come mainly from changes within geographic boundaries and sectors, not from changes in mean-group incomes.

Differences in possession of human capital appear to explain a lot of the aggregate income inequality. These differences, together with differences in certain household-specific attributes (e.g., household size and composition), account for nearly a third of the observed variation in household income.

In policy discussions, it is often asserted that the high income inequality in the Philippines has its roots in the organization of agriculture – the co-existence of huge plantations and small-scale, semi-subsistence farming. The evidence shown in this paper indicates that incomes derived from non-agricultural sources have been the overwhelming sources of income inequality in recent years. Inequality arising from differences in receipts of agricultural incomes across households has little influence

---

<sup>25</sup> In Balisacan and Pernia (2002) where the focus is on explaining differences in per capita expenditure rather than income, the local political dynasty variable is positive and highly significant for the bottom two quintiles.

on overall inequality. Further, there is a weak evidence to the common claim that overseas remittances in recent years have accentuated income inequality.

Thus, it appears that the poverty problem in the Philippines is nothing more than a problem of low economic growth, particularly the rather slow expansion of productive employment opportunities outside of agriculture. This is not the whole story, however. While growth in recent years has benefited both the poor and the non-poor, the income response of the poorest quintiles to growth has not been good enough, at least in comparison with similar responses observed for major East Asian countries. Moreover, the response varies quite remarkably across geographic areas (regions, provinces) and population groups.

Newly constructed provincial panel data spanning the 1980s and 1990s reveal substantial differences in the evolution of income across provinces. These data suggest that the response of the poorest quintiles to growth is far from the one-for-one correspondence reported in studies using cross-country averages. It seems clear that changes in the welfare of the poorest quintiles over time depend not only on the rate but also on the type of economic growth. Put differently, the poor will benefit even more from growth if institutions and policies are reformed to favor them, or are at least made more neutral.

Apart from economic growth, other factors exert a direct impact on the welfare of the poorest quintiles. This paper has highlighted the importance of education, infrastructure, terms of trade, agrarian reform, governance, and certain geographic attributes. Schooling, especially if accompanied by complementary public investments, raises the incomes of the poor and middle-income groups, apart from its indirect effect through economic growth. And so do the implementation of agrarian reform, investment in land quality improvement, and removal of price distortions that diminish the profitability of agriculture relative to non-agriculture. Political dynasties do redistribute incomes in favor of the richest groups in society. High transport costs lead to geographic “poverty traps,” as the poor are impeded from taking advantage of economic opportunities elsewhere.

## References

- Alesina, Alberto (1997), "The Political Economy of High and Low Growth," in B. Pleskovic and J. Stiglitz (eds), *Annual World Bank Conference on Development Economics*, Washington, DC: World Bank. Pp. 217-237.
- Balisacan, Arsenio M. (1993), "Agricultural Growth, Landlessness, Off-farm Employment, and Rural Poverty in the Philippines," *Economic Development and Cultural Change*, 41(April): 533–62.
- Balisacan, Arsenio M. (1994), *Poverty, Urbanization and Development Policy: A Philippine Perspective*, Quezon City: University of the Philippines Press.
- Balisacan, Arsenio M. (1995), "Anatomy of Poverty during Adjustment: The Case of the Philippines," *Economic Development and Cultural Change*, 44: 33–62.
- Balisacan, Arsenio M. (1996), "Philippines," in M.G. Quibria (ed.), *Rural Poverty in Developing Asia*, Vol. 2, Manila: Asian Development Bank. Pp. 407-585.
- Balisacan, Arsenio M. (1999), "What Do We Really Know—Or Don't Know—about Economic Inequality and Poverty in the Philippines," in *Causes of Poverty: Myths, Facts, and Policies*, edited by A.M. Balisacan and S. Fujisaki (Quezon City, University of the Philippines Press).
- Balisacan, Arsenio M. (2001a), "Poverty in the Philippines: An Update and Reexamination," *Philippine Review of Economics*, 38: 16–51.
- Balisacan, Arsenio M. (2001b), "Rural Development in the 21st Century: Monitoring and Assessing Performance in Rural Poverty Reduction," in D.B. Canlas and S. Fujisaki (eds), *The Philippine Economy: Alternatives for the 21st Century*, Quezon City: University of the Philippines Press. Pp. 162-201.
- Balisacan, Arsenio M. (2003), "Poverty and Inequality," in *The Philippine Economy: Development, Policies, and Challenges*, edited by A.M. Balisacan and H. Hill (New York, Oxford University Press; Quezon City, Ateneo de Manila University Press).
- Balisacan, Arsenio M., and Ernesto M. Pernia (2002), Probing beneath Cross-national Averages: Poverty, Inequality, and Growth in the Philippines. ERD Working Paper Series No. 7, Economics and Research Department, Asian Development Bank.
- Balisacan, Arsenio M., Nobuhiko Fuwa, and Margarita H. Debuque (2002), The Political Economy of Philippine Rural Development since the 1960s, World Bank: Washington, D.C., processed.
- Bardhan, Pranab (1996), "Efficiency, Equity and Poverty Alleviation: Policy Issues in Less Developed Countries," *Economic Journal*, 106(September): 1,344–56.
- Bautista, Romeo M., and Gwendolyn Tecson (2003), "International Dimensions," in *The Philippine Economy: Development, Policies, and Challenges*, edited by A.M. Balisacan and H. Hill (New York, Oxford University Press; Quezon City, Ateneo de Manila University Press).

- Cowell, F.A. (1995), *Measuring Inequality*, 2<sup>nd</sup> edition (Hemel Hempstead: Prentice-Hall/Harvester-Wheatsheaf).
- Collas-Monsod, Solita, and Toby C. Monsod (1999), "International and Intranational Comparisons of Philippine Poverty," in A.M. Balisacan and S. Fujisaki (eds), *Causes of Poverty: Myths, Facts, and Policies*, Quezon City: University of the Philippine Press. Pp. 51-95.
- David, Cristina C. (2003), "Agriculture," in *The Philippine Economy: Development, Policies, and Challenges*, edited by A.M. Balisacan and H. Hill (New York, Oxford University Press; Quezon City, Ateneo de Manila University Press).
- Datt, Gaurav, and Hans Hoogeveen (2000), *El Niño or El Peso? Crisis, Poverty, and Income Distribution in the Philippines*, World Bank, Washington, DC, processed.
- De Dios, Emmanuel and Paul Hutchcroft (2003), "Political Economy," in *The Philippine Economy: Development, Policies, and Challenges*, edited by A.M. Balisacan and H. Hill (New York, Oxford University Press; Quezon City, Ateneo de Manila University Press).
- Deininger, Klaus, and Lyn Squire (1998), "New Ways of Looking at Old Issues: Inequality and Growth," *Journal of Development Economics*, 57: 259–87.
- Dollar, David, and Aart Kraay (2001), "Growth Is Good for the Poor," *World Bank Policy Research Paper No. 2587*, World Bank: Washington, DC.
- Estudillo, Jonna P. (1997), "Income Distribution in the Philippines, 1961-91," *Developing Economies*, 135 (March): 68-95.
- Forbes, Kristin J. (2000), "A Reassessment of the Relationship between Inequality and Growth," *American Economic Review*, 90: 869–87.
- Gallup, John Luke, and Jeffrey D. Sachs, with Andrew D. Mellinger (1998), "Geography and Economic Development," in Boris Pleskovic and Joseph E. Stiglitz (eds), *Annual World Bank Conference on Development Economics*, Washington, DC: World Bank. Pp. 127-170.
- Herrin, Alejandro N., and Ernesto M. Pernia (2003), "Population, Human Resources, and Employment," in *The Philippine Economy: Development, Policies, and Challenges*, edited by A.M. Balisacan and H. Hill (New York, Oxford University Press; Quezon City, Ateneo de Manila University Press).
- Intal, Ponciano S., and Maria Cynthia S. Bantilan, eds. (1994). *Understanding Poverty and Inequality in the Philippines: A Compendium of Policy and Methodological Researches* (Pasig: NEDA and UNDP).
- Jenkins, Stephen P. (1995), "Accounting for Inequality Trends: Decomposition Analyses for the UK, 1971-86," *Economica* 62: 29-63.
- Jenkins, Stephen P., and Peter J. Lambert (1993). "Ranking Income Distributions When Needs Differ." *Review of Income and Wealth*, Series 39 (December): 337-356.

- Kakwani, Nanak, and Ernesto M. Pernia (2000), "What Is Pro-Poor Growth?" *Asian Development Review*, 18(1): 1-16.
- Li, Hongyi, and Heng-fu Zou (1998), "Income Inequality Is Not Harmful for Growth: Theory and Evidence," *Review of Development Economics*, 2(3): 318–34.
- Lim, Joseph, and Manuel Montes (2000), "The Structure of Employment and Structural Adjustment in the Philippines," *Journal of Development Studies*, 36(4): 149-181.
- Mangahas, Mahar, and Bruno Barros (1980), "The Distribution of Income and Wealth: A Survey of Philippine Research," in *Survey of Philippine Development Research I*. Makati: Philippine Institute for Development Studies.
- Mincer, Jacob (1974), *Schooling, Experience and Earnings* (New York: National Bureau of Economic Research).
- Pendakur, Krishna (2002), "Taking Prices Seriously in the Measurement of Poverty," *Journal of Public Economics*, 86 (October): 47-69.
- Pernia, Ernesto M., and M. G. Quibria (1999), "Poverty in Developing Countries," in E. S. Mills and P. Cheshire, eds., *Handbook of Regional and Urban Economics*, Vol. 3, North-Holland.
- Ranis, Gustav, and Frances Stewart (1993), "Rural Nonagricultural Activities in Development: Theory and Experience," *Journal of Development Economics*, 40: 75–101.
- Ravallion, Martin, and Jyotsna Jalan (1996), "Growth Divergence due to Spatial Externalities," *Economics Letters*, 53: 227–32.
- Rodriguez, E. (1998), "International Migration and Income Distribution in the Philippines," *Economic Development and Cultural Change*, 46(2): 329-350.
- Shorrocks, A.F. (1982), "Inequality Decomposition by Factor Components," *Econometrica*, 50 (February): 193-211.
- Shorrocks, A.F. (1984), "Inequality Decomposition by Population Subgroups," *Econometrica*, 52: 1369-88.
- Sen, Amartya (1997), *On Economic Inequality* (Oxford: Clarendon Press).
- Warr, Peter (2002), "Measuring and Explaining Poverty," paper presented at the Workshop on "Income Distribution and Sustainable Agricultural Development: The East Asian Experience," Bangkok, 24 June.

## Annex

Annex Table 1: Parameter Estimates of Income-Generating Functions

Explanatory variable	1985	1988	1991	1994	1997	2000	
<i>Household attributes</i>							
Family size	0.242*	0.259*	0.276*	0.290*	0.280*	0.277*	
Family size squared	-0.010*	-0.011*	-0.012*	-0.013*	-0.013*	-0.013*	
Type of household	-0.124*	-0.122*	-0.116*	-0.111*	-0.128*	-0.146*	
Child dependency ratio	-0.548*	-0.564*	-0.603*	-0.626*	-0.581*	-0.607*	
Employment ratio	0.221*	0.270*	0.259*	0.297*	0.322*	0.264*	
Spouse employed	0.032*	0.056*	0.069*	0.061*	0.090*	0.078*	
<i>Household head attributes</i>							
Experience	0.007*	0.011*	0.009*	0.006*	0.008*	0.007*	
Experience squared	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	
Gender	-0.114*	-0.107*	-0.128*	-0.099*	-0.103*	-0.105*	
Civil status							
Single	-0.064**	-0.034	0.004	-0.036	-0.044*	-0.038**	
Married	0.159*	0.189*	0.184*	0.136*	0.162*	0.170*	
Education							
Some elementary	0.137*	0.077*	0.147*	0.096*	0.061*	0.155*	
Elementary graduate	0.265*	0.203*	0.264*	0.222*	0.197*	0.393*	
Some high school	0.345*	0.278*	0.337*	0.309*	0.289*	0.664*	
High school graduate	0.501*	0.431*	0.460*	0.450*	0.434*	0.476*	
Some college	0.755*	0.660*	0.721*	0.680*	0.687*	0.824*	
College graduate	1.257*	1.136*	1.181*	1.137*	1.155*	1.153*	
<i>Economic sector</i>							
Class of work							
Agricultural wage earner	-0.074*	-0.123*	-0.182*	-0.195*	-0.228*	-0.234*	
Agriculture entrepreneur	-0.067*	-0.152*	-0.173*	-0.175*	-0.206*	-0.188*	
Non-agriculture entrepreneur	0.163*	0.096*	0.075*	0.050*	0.033*	0.061*	
Others employed in agricultural	-0.125**	-0.237*	-0.224*	-0.234*	-0.053	-0.285*	
Others employed in non-agricultural	0.272*	0.139*	0.182*	0.170*	0.318*	0.167*	
Sector of Employment							
Agriculture	-0.096*	-0.146*	-0.165*	-0.199*	-0.167*	-0.180*	
Mining	0.028	0.043	0.095*	0.000	-0.054	0.049*	
Utility	0.144*	0.138*	0.131*	0.194*	0.228*	0.252*	
Construction	-0.059*	-0.148*	-0.135*	-0.155*	-0.144*	-0.137*	
Trade	-0.017	0.019	0.014	-0.018	0.021	-0.001	
Transportation	0.021	-0.026	-0.022	-0.029**	-0.021	-0.035*	
Finance	0.135*	0.167*	0.112*	0.106*	0.084*	0.135*	
Services	-0.082*	-0.055*	-0.045*	-0.061*	0.026**	0.077*	
Unemployed	-0.142**	-0.089*	-0.136*	-0.144*	-0.248*	-0.079*	
<i>Location</i>							
Locality	0.129*	0.147*	0.126*	0.128*	0.171*	0.189*	
Region							
Ilocos	-0.402*	-0.457*	-0.491*	-0.562*	-0.392*	-0.348*	
Cagayan	-0.324*	-0.439*	-0.456*	-0.397*	-0.381*	-0.368*	
Central Luzon	-0.222*	-0.260*	-0.282*	-0.291*	-0.218*	-0.224*	
Southern Luzon	-0.351*	-0.386*	-0.346*	-0.316*	-0.260*	-0.274*	
Bicol	-0.627*	-0.609*	-0.696*	-0.657*	-0.618*	-0.618*	
Western Visayas	-0.653*	-0.587*	-0.641*	-0.578*	-0.526*	-0.475*	
Central Visayas	-0.774*	-0.653*	-0.736*	-0.679*	-0.640*	-0.712*	
Eastern Visayas	-0.701*	-0.640*	-0.687*	-0.649*	-0.657*	-0.639*	
Western Mindanao	-0.514*	-0.432*	-0.539*	-0.607*	-0.411*	-0.588*	
Northern Mindanao	-0.680*	-0.559*	-0.705*	-0.688*	-0.657*	-0.674*	
Southern Mindanao	-0.494*	-0.513*	-0.565*	-0.488*	-0.530*	-0.491*	
Central Mindanao	-0.458*	-0.310*	-0.461*	-0.487*	-0.532*	-0.597*	
Intercept	10.092*	10.200*	10.210*	10.293*	10.275*	10.292*	
	<i>R-squared</i>	0.557	0.553	0.576	0.584	0.579	0.582
	<i>F-statistic</i>	437	466	733	721	1,260	1,297
	<i>N</i>	16971	18922	24789	24796	39520	39615

Note: Estimation takes into account sampling design effects. \* and \*\* denote significance at 5% and 10% levels,

**Annex Table 2: Provincial Panel Regression: Variable Definitions and Data Sources**

Variable Name	Definition	Source of Basic Data
Mean quintile income	Log(Ave. per capita income for quintile, adjusted for provincial cost-of-living differences)	FIES – NSO, 1985-97
Mean expenditure	Log (Ave. per capita expenditure, adjusted for provincial cost-of-living differences)	FIES – NSO, 1985-97
Mean income	Log (Ave per capita income, adjusted for provincial cost-of-living differences)	FIES - NSO, 1985-97
Roads	Log (Concrete-equivalent roads per square kilometer)	DPWH and NSO, 1989 & 1997
Electricity	Proportion of households with access to electricity.	FIES, 1985-97
Agrarian reform	Proportion of cumulative CARP accomplishments to 1990 potential land reform area.	DENR and DAR CARP Accomplishment Reports, 1988-97
Tenancy	Proportion of tenanted farm area to total farm area.	1991 Census of Agriculture, NSO
Land Gini	Log(Gini ratio of agricultural landholding)	1991 Census of Agriculture, NSO
Education	Log (Mean years of schooling of household heads)	FIES – NSO, 1985-97
Terms of trade	Log(Ratio of implicit price deflator for agriculture to implicit price deflator for non-agriculture)	NSCB regional accounts, 1988-97
Local dynasty	Proportion of provincial officials & district representatives related to each other either by blood or affinity.	COMELEC records and Congressional interviews
Political party	Dummy variable (equal to 1 if the governor's party is the same as that of the President, 0 otherwise).	COMELEC Election Reports
Landlocked	Dummy variable (equal to 1 if province is landlocked, 0 otherwise)	Philippine map
Typhoon	Average annual number of typhoons for 1948-1998.	PAGASA