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AGRICULTURAL GROWTH AND RURAL PERFORMANCE: A PHILIPPINE PERSPECTIVE

Arsenio M. Balisacan[*]

Usual indicators of intertemporal rural performance are technically flawed mainly because of the "shifting" of the physical area of the rural sector as population grows and/or economic activity expands. This problem is illustrated here using Philippine poverty data. This paper also shows that rural poverty in the Philippines was substantially unaffected by the rapid agricultural growth during the Green Revolution period. Both demand and supply considerations constrained the responses of the rural sector to the stimulus provided by rapid agricultural growth.

I
INTRODUCTION

Jumpstarting rural development has been a primary concern of development policy in less developed countries (LDCs) such as the Philippines. This concern is, of course, not surprising: poverty in these countries is essentially a rural phenomenon (Jazairy et al. 1992, Quibria and Srinivasan 1993). Since majority of the rural poor are dependent on agriculture for livelihood, productivity increases in agriculture are viewed as a critical element of a rural development strategy. Agricultural growth is considered to directly as well as indirectly stimulate new industries through intersectoral linkage

*Associate Professor, School of Economics. University of the Philippines-Diliman. This paper substantially benefited from the author's numerous discussions with Dr. Romeo Bautista. The author is also thankful to the International Food Policy Research Institute (IFPRI) and the Philippine Institute for Development Studies (PIDS) for research support.

effects, thereby facilitating industrialization as well as directly addressing poverty, unemployment and underemployment (Adelman 1984, Mellor 1986, Bautista 1993, Ranis and Stewart 1993).

Postwar rural performance in the Philippines is dismal in relation to those in East Asian countries and other LDCs. This is not due to the absence of rapid agricultural growth in the Philippines. While agricultural growth faltered in recent years, the agricultural sector in the Philippines performed remarkably well *vis-à-vis* other developing Asian countries from the second-half of the 1960s to the early 1980s, the height of the so-called Green Revolution period. However, during this period, the ranks of the unemployed and underemployed continued to swell, real wages persistently fell, and the incidence of rural poverty remained high and seemed unaffected by the rapid agricultural growth then taking place. The size distribution of income also became less egalitarian. The farm-nonfarm rural linkages expected to be induced by agricultural growth were simply weak or nonexistent. What went wrong?

This paper examines the constraints to sustained rural growth and poverty alleviation in the Philippines. It first characterizes rural performance in terms of intertemporally consistent indices of rural poverty. It then describes Philippine agricultural growth and the character of postwar employment generation. Subsequently, it explains why certain supply and demand factors made rural nonfarm areas respond poorly to rapid agricultural growth. Finally, it draws some conclusions and implications for rural development policy.

II
INDICATORS OF INTERTEMPORAL RURAL PERFORMANCE

The usual indicators of intertemporal rural performance, including rural poverty and income distribution, are technically flawed. First, the definition of "urban areas" in the Family Income and Expenditures Survey (FIES), the main source of data for intertemporal rural household indicators in the

Philippines, has changed substantially over the years. In the 1961 FIES, urban areas included Metropolitan Manila (Manila and adjacent cities and municipalities), chartered cities and provincial capitals, and all town centers of municipalities. The 1965 FIES added population density as a criterion, qualifying all town centers of municipalities with a population density of at least 500 persons per square kilometer as well as villages contiguous to these centers and having at least 2,500 inhabitants, as urban areas. Since 1971, any district, regardless of population density, with at least six establishments (commercial, manufacturing, recreational and/or personal services) can also qualify as an urban area.

More importantly, the physical area of the "rural sector" is, almost by definition, shifting over time. As population grows and/or economic activity expands, an initially rural area will be sooner or later classified as urban. While this may not pose a problem in measuring, say, urbanization trends, it tends to create a systematic downward bias on rural performance indicators. Suppose that rapid agricultural growth in some regions leads to a similarly rapid expansion of nonfarm employment and incomes. This induces urbanization, thereby, reducing the physical size of "rural areas." Since household incomes rise faster in urbanizing areas than in non-urbanizing areas, poverty incidence in geographically expanding urban areas tends to fall relative to that in contracting rural areas. This is particularly so if there are constraints to the movement of labor from the slow to the rapidly growing areas, or if there are considerable lags to such movement. Thus, although the growth stimulus is initially rural-based, the gains in poverty reduction are registered as urban-based. The data reported in, say, population censuses, would then seem to suggest that rural development programs, even if they can spur rural income growth and reduce rural poverty, do not matter much.

Table 1 shows rural and urban population counts based on published population censuses (referred here as Census Report). It also presents population estimates for fixed physical rural and urban areas. The estimation involves reclassifying geographical areas in the various population censuses according to their urban-rural classification used in the 1970 census of

Table 1
RURAL AREAS AND URBANIZATION

	1960	1970	1980	1990
1. Total Population (in million)	27.09	36.68	48.10	60.69
% Change per year	-	3.01	2.71	2.33
2. Proportion Which is Rural				
Census report	70.20	68.17	62.49	51.16
Fixed rural areas[a]	68.55	68.17	66.35	64.16
3. Proportion Which Is Urban				
Census report	29.80	31.83	37.51	48.84
Fixed rural areas	31.45	31.83	33.65	35.84
4. Rural Population Growth				
Census report	-	2.74	1.84	0.32
Fixed rural areas	-	2.98	2.44	1.99
5. Tempo of Urbanization[b]				
Census report	-	0.95	2.51	4.64
Fixed rural areas	-	0.80	0.83	0.97

[a]Based on 1970 urban-rural classification of villages.

[b]Urban-rural growth difference.

Source: National Statistics Office. *Integrated Census of the Population,* various years.

population. Figures show that rural areas had a population share of 69 percent in 1960, 68 percent in 1970, 66 percent in 1980, and 64 percent in 1990. In contrast, the Census Report population share of rural areas was 70 percent in 1960, 68 percent in 1970, 63 percent in 1980, and 51 percent in 1990. Clearly, for the country as a whole, it is the reclassification of physical areas, not migration of population from rural to urban areas, that mainly accounts for the growing share of urban areas in the total population.

Poverty Data and Measurement Issues

One set of data for the analysis in this section is the various Family Income and Expenditures Surveys (FIES) undertaken in 1961, 1965, 1971, 1985, 1988, and 1991. Although similar surveys were also conducted in 1975 and 1979, the results were not published due to technical problems in the data gathered, such as those that substantially underrepresented households in certain sectors of the society.[1]

Significant changes in the economy took place from 1972 to the early 1980s. The absence of reliable FIES data during this period, thus, is a cause for concern. For one, agricultural growth in the Philippines during the 1965-1980 period was impressive by international standards. It would be useful to have indicative figures on the responses of rural poverty to this development.

The Labor Force Survey (LFS) provides quarterly income data for the late 1970s and early 1980s.[2] These data are, however, limited only to workers' earnings from employment (wages, salaries, and entrepreneurial incomes from self-employment), thereby, excluding other sources of family

1. For a description of the comparability and limitations of the various FIES, see Balisacan (1994).

2. Quarterly income data were not collected prior to 1977. No LFS data are available for 1987, and only third-quarter income data are available for 1988, 1989, and 1990. Given the significant seasonality of rural incomes, the 1988-1990 data cannot be used for poverty comparison.

income, such as shares from crops, remittances, and gifts. Remittances and income transfers were not important sources of household incomes in the 1970s, but they were in the 1980s (Balisacan 1991). Thus, while poverty indices constructed from the LFS data are systematically biased upward and may not be comparable with those based on the FIES, the bias is not expected to be large.

A potential problem with the LFS tabulated data is that the income of a household in one quarter may not match with the income of the *same* household in another quarter. There is no available distribution of annual income for each household. It may be inappropriate to simply sum up the quarterly household incomes for each bracket to arrive at an annual figure since some households do not stay in the same income brackets from one quarter to the next. In rural areas, especially for low-income families dependent on farming, income seasonality is considerable. For high-income groups, fewer households may "jump" from one income bracket to another because they are typically found in urban areas where seasonality of income is lesser. Fortunately, the income range for each bracket is sufficiently wide and the number of brackets are few, thus, minimizing the "jumping around" problem for possibly most of the low-income groups. Thus, in this paper, the average of the quarterly incomes for each bracket is deemed reasonable for poverty calculations.

Identifying the poor involves the use of a broad indicator of economic resources. In this paper, current income is used as an indicator of household welfare. This indicator represents households' "opportunity to consume" to their welfare (Atkinson 1991).

A related issue in poverty identification is the construction of a poverty line or threshold. For practical purposes, a *poverty threshold* is defined as the critical minimum amount of income below which a person cannot attain a predetermined consumption bundle of goods and services needed to fulfill certain basic consumption needs, most importantly adequate nutrition. In this particular paper, the poverty lines for 1988 estimated by the National Statistical Coordination Board's Technical Working Group on Poverty

Determination (TWG) was adopted.[3] Real poverty lines are held fixed for the period covered by the study. It is, of course, possible that poverty lines are positively related with correlates of development. However, Ravallion *et al.* (1991) have demonstrated that, for a large number of low-income countries, real poverty lines tend to increase with economic growth but do very slowly for poor countries.

The commonly used summary measure of poverty in the Philippines, as elsewhere, is the head count index, expressed as the proportionate number of households whose incomes fall below the poverty line. Unfortunately, this measure is entirely insensitive to changes in incomes below the poverty line: a poor person may become poorer, but measured poverty will remain the same. This index is also insensitive to transfers: an income transfer from a poor person to a less poor one does not change measured poverty. Its advantage, however, is that it is easily understood and communicated.

In addition to the head count index, two other summary measures are employed:

(1) The *poverty gap,* which is measured as the arithmetic mean of the income shortfall (expressed in proportion to the poverty line) over the whole population. This measure is sensitive to both the number of the poor and the degree of poverty. Its advantage is that it gives an indication of the potential savings that can be made from targeting transfers to the poor. A drawback, however, is its insensitivity to the redistribution of income within the poor group owing to the equal weights attached to the various poverty deficits.

(2) *The Foster-Greer-Thorbecke* [FGT (α =2)] *index,* which is measured in the same way as the poverty gap except that the weights are simply

3. The TWG's procedure in establishing the poverty line is an adaptation of the Orshansky method (Orshansky 1965). Daily and monthly food thresholds are obtained by costing low-cost menus by region and by area (rural/urban), which meet 100 percent of the recommended dietary allowance for energy (2,000 calories) and 80 percent for other nutrients. Estimates of nonfood needs are based on the consumption pattern of FIES sample families whose incomes fall within 10 percentage points above and below the food threshold. That is, to obtain the total poverty line (food plus basic nonfood), the food threshold is divided by the average propensity to consume, defined as the proportion of food to total

squared income shortfalls.[4] Measured poverty using FGT (α =2) decreases whenever a transfer of income takes place from a poor household to a poorer one. Its drawback is that it is not as easy to interpret as the head count and poverty gap indices. Nonetheless, the key point to bear is that an order of dates, socioeconomic groups, or policies in terms of the FGT (α =2) index, referred here as the *distribution-sensitive measure*, should reflect well their ranking in terms of the severity of poverty. It is not the precise number *per se* that makes the measure useful but its ability to order distributions better than do the alternative measures.

Rural Poverty Indicators

Table 2 summarizes rural poverty estimates based on the FIES income data. Figures referred to as *FIES estimates* are based on rural population distributions reported in the FIES. On the other hand, those values referred to as *Fixed Physical Areas* (FPA) estimates are based on rural population distributions for fixed physical areas of villages as defined in the 1970 Population Census.[5] Thus, while the FIES estimates do not control for the "shifting physical areas" problem noted above, the FPA estimates do, thereby providing a better indicator of intertemporal rural poverty.

In both FIES and FPA estimates, rural poverty fell from 1961 to 1965. The change was statistically significant for all poverty indices. However, the change from 1965 to 1971 was insignificant, implying that the relatively rapid growth of agricultural incomes did not significantly benefit the rural

4. The FGT index (Foster et al. 1984) is a class of additively decomposable poverty measures. The head count and the poverty gap are special cases of this index, i.e., for $\alpha = 0$ and $\alpha = 1$, respectively. These measures are *additively decomposable* in the following sense: the aggregate (population) poverty level is simply a weighted average of the subgroup poverty levels, the weights being their populations shares. Moreover, FGT ($\alpha = 2$) satisfies the main axioms for a desirable summary measure of poverty. Owing to this property, FGT ($\alpha = 2$) has been popular in recent empirical work (see, e.g., Ravallion and van de Walle 1991, Thorbecke and Berrian 1992).

5. See Balisacan (1994) for details of estimation.

Table 2
RURAL POVERTY, FIES AND FIXED PHYSICAL AREAS, 1961-1991
(In percent, except for t-ratios)[a]

	1961	1965	1971	1985	1988	1991
FIES Rural Areas[b]						
Population share	64.50	68.70	69.60	61.40	62.10	50.40
Head count	64.06	55.23	57.31	59.43	50.19	52.40
		(-6.50)	(1.69)	(2.75)	(-12.46)	(2.48)
Poverty gap	30.42	26.18	27.08	23.52	18.58	19.00
		(-5.08)	(1.20)	(-8.05)	(-13.31)	(1.00)
FGT (a=2)	18.05	16.08	16.35	12.25	9.05	9.03
		(-2.97)	(0.46)	(-12.33)	(-12.53)	(-0.07)
Fixed Physical Areas[c]						
Population share	68.51	68.36	67.99	65.30	64.60	64.20
Head count	60.33	55.54	58.66	55.94	48.27	41.13
		(-3.50)	(2.54)	(-3.51)	(-10.29)	(-8.07)
Poverty gap	28.65	26.33	27.72	22.14	17.87	14.91
		(-2.78)	(1.86)	(-12.64)	(-11.59)	(-7.29)
FGT (a=2)	17.00	16.17	16.74	11.53	8.70	7.09
		(-1.26)	(0.96)	(-15.70)	(-11.25)	(-6.16)

[a]Figures in parentheses are t-ratios for poverty difference between the year indicated and the preceding year. The test is based on Kakwani's (1990) methodology. Critical t-value at 5% significance level is 1.96. At 1% level, t-value is 2.58.

[b]Estimated directly from published *Family Income and Expenditures Survey* (FIES) data.

[c]See text for the calculation.

poor. This is consistent with the finding on rising income inequality during this period (Balisacan 1993). Both pricing and infrastructure policies tended to be biased against the rural sector, particularly small- and medium-scale nonfarm enterprises in rural areas, thereby, weakening the response of the rural nonfarm economy to agricultural growth.

The FIES estimates show a relatively mild increase in rural poverty from 1988 to 1991, with head count poverty rising from 50 to 52 percent. In contrast, the FPA estimates indicate a considerable decrease in poverty, with the head count index falling from 48 percent in 1988 to 41 percent in 1991. The discrepancy comes mainly from the "shifting of physical areas" due to the reclassification of villages.

The sampling frame for the 1985 and 1988 FIES was based on the 1980 population census; that for the 1991 FIES, on the 1990 census. Both censuses applied the same set of criteria in classifying villages into "urban" and "rural" areas. A large number of initially rural areas in 1980 became urban areas in 1990 when they were found to satisfy the criteria for urban areas. This reclassification, in addition to net migration from rural to urban areas, reduced the population share of FIES rural areas from 62 percent in 1988 to 50 percent in 1991. In contrast, the estimated rural population share based on the FPA was virtually the same — 64 percent — during the same period.

Table 3 shows poverty estimates based on the LFS data.[6] These estimates show rural poverty falling from 1977 to 1980. While the FIES and the LFS data are, as noted earlier, not strictly comparable, it is interesting to note that the LFS poverty estimates for 1977 and 1978 had almost the same magnitude as the FIES estimates for 1965 and 1971. In the 1970s, the upward bias of LFS estimates was not large, suggesting that rural poverty did not change significantly during the period although agricultural growth was impressive by international standards. In East Asia and in many other

6. As in FIES prior to 1988, the "shifting physical areas" problem is not an important issue in this data set. The classification of barangays (villages) does not vary markedly for the 1970 and 1980 population censuses, the bases of LFS sampling frames for the years included in Table 3.

Table 3
RURAL POVERTY, LFS DATA, 1977-1983
(In percent, except for t-ratios)

	Head Count	Poverty Gap	FGT (α=2)
1977	56.17	28.08	14.04
1978	55.67	28.39	14.53
	(-0.65)	(0.80)	(2.51)
1980	48.58	24.29	12.14
	(-10.90)	(-12.40)	(-14.23)
1981	49.41	24.70	12.35
	(1.62)	(1.60)	(1.64)
1982	57.08	28.54	14.27
	(15.08)	(15.10)	(15.09)
1983	60.63	30.32	15.16
	(7.06)	(7.08)	(7.08)

Notes:

1. No data available for 1979.

2. Figures in parentheses are t-ratios for poverty differences between the year indicated and the preceding year. The test is based on Kakwani's (1990) methodology. Critical t-value at 5 percent significance level is 1.96.

Source: National Statistics Office. *Integrated Survey of Households Bulletin,* various years.

developing countries where agricultural incomes rose over a sustained period, rural poverty fell considerably (Oshima 1990).

Interestingly, the change in rural poverty based on the head count and poverty gap indices from 1977 to 1978 was statistically insignificant, while that in the index that is sensitive to the severity of poverty was highly significant. This difference suggests a danger in using the head count index only to measure poverty.

As might be expected, rural poverty increased significantly from 1981 to 1983. This period marked the beginning of economic difficulties precipitated by unfavorable domestic and global events. GDP contracted by around 10 percent in 1984 and 1985.

Conclusions concerning intertemporal changes in poverty may be influenced by the choice of poverty line and poverty index. Differences in needs between households of similar income (consumption) levels, though not easily measurable, are real. There may be also errors in the available data on living standards. Thus, one can ask: how robust are the results of poverty comparisons?

Well-known theoretical results on stochastic dominance was used to obtain at least a partial ordering of poverty distributions in terms of any well-behaved measures of rural poverty.[7] The results of the analysis suggest that the conclusion about the absence of rural poverty reduction from 1965 to 1971, the early stage of the Green Revolution, is robust with respect to assumed poverty lines and to poverty measures sensitive to the income shortfalls of the poor. The change in poverty was ambiguous from the late 1970s to the early 1980s. However, if poverty were to be determined using only those measures that take into account the depth of poverty and the distribution of living standards among the poor (i.e., excluding the head count index), then poverty in 1980 and 1981 would be lower than in 1977 and 1978 for all plausible poverty lines. Finally, poverty was unambiguously lower in 1988 than in previous years.

III
POSTWAR AGRICULTURAL GROWTH

The Philippine agricultural sector (comprising crops, livestock and poultry, fishery, and forestry) performed remarkably well during the 1965-1980 period (Table 4). Its growth was substantially higher than the averages for the developing Monsoon Asian countries and the middle-income developing countries, and compared favorably well with those for Thailand and Indonesia. In the 1980s, however, the growth fell way below the averages for these countries.

In recent decades, LDCs with relatively high growth rates of agricultural value added tend to also have comparatively high GDP growth rates (Timmer 1988). This observation is, of course, not surprising since agriculture in a typical LDC comprises a large fraction of the economy. In the Philippine case, the remarkably robust agricultural growth for the period 1965-1980 was accompanied by a GDP growth that approximated the averages for the developing Monsoon Asian countries and the middle-income developing countries.

Growth has not been uniform among the major subsectors of the Philippine agriculture. Agricultural crops registered the highest annual growth rate during the period 1965-1980, averaging 6.5 percent (Table 5). Consequently, the share of crops in agricultural value added rose from 54 percent in the mid-1960s to around 60 percent in the early 1980s. Impressive by historical standards, the growth was particularly rapid in corn, "other crops," and to some extent, sugarcane. Surprisingly, the average growth of rice, the nation's staple crop, was relatively low, although its share in total agricultural value added remained substantial (21% in the 1980s). Thus, the common view that the production gains in Philippine agriculture during the 1965-1980 period was primarily due to the Green Revolution in rice was a myth. Rice value added growth contributed only 16 percent to the observed growth of agricultural value added during this period.

The category "other crops," together with banana, was the fastest growing sector during the period 1965-1980, contributing nearly one-half

Table 4
AGRICULTURAL GROWTH IN DEVELOPING MONSOON ASIA AND MIDDLE-INCOME DEVELOPING COUNTRIES

Country	1990 Per Capita GDP (US$)	Share of Agriculture in GDP (%)		Annual Growth Rate (%)			
				GDP		Agriculture	
		1965	1990	1965-1980	1980-1990	1965-1980	1980-1990
Malaysia	2,369	28	21.1[a]	7.3	5.2	4.5[b]	3.8
Thailand	1,437	32	17.0	7.2	7.6	4.6	4.1
Indonesia	602	51	22.0	8.0	5.5	4.3	3.2
Philippines	713	26	22.0	5.9	0.9	4.6	1.0
Developing Monsoon Asia	1,225	38	27.6	5.4	5.6	2.3	2.9
Middle-Income Developing Countries	2,241	20	12.0	6.1	1.7	3.6	1.8

[a]For 1988.

[b]For 1972-1980.

Sources: Asian Development Bank. *Key Indicators of Developing Asian Pacific Countries,* 1990 and 1991.

World Bank. *World Development Report,* 1990, 1992.

Table 5
AVERAGE ANNUAL GROWTH RATES OF VALUE ADDED IN AGRICULTURE BY SECTOR, 1965-1990[a]

	1965-1980	1980-1990	1965-1990
All Agricultural Crops	6.5	1.6	4.4
	(92.07)	(48.40)	(79.22)
Rice	3.7	2.0	3.3
	(16.27)	(16.14)	(16.55)
Corn	6.2	3.7	4.8
	(8.73)	(11.24)	(8.26)
Coconut	3.6	3.1	2.8
	(5.47)	(8.17)	(4.82)
Sugarcane	4.2	-6.9	-0.4
	(6.93)	(-13.25)	(-0.66)
Banana	13.6	1.9	8.8
	(11.15)	(3.05)	(8.36)
Other crops	11.4	1.9	7.7
	(43.50)	(23.04)	(41.90)
Poultry and Livestock	2.0	5.8	4.2
	(7.93)	(51.60)	(20.78)

[a]Growth rates are based on three-year moving average trends.
Agriculture Sector includes agricultural crops and poultry and livestock.
Figures in parentheses are contributions of the indicated sector to total agricultural growth.
Sources: National Economic and Development Authority. *Philippine Statistical Yearbook*, various issues.
National Statistical Coordination Board.

of the total agricultural growth. Rapid expansion of fruits and vegetables, particularly nontraditional export crops such as pineapple and coffee was mainly responsible for the growth. The share of "other crops" in agricultural value added rose from 16 percent in the mid-1960s to around 30 percent in the second half of the 1980s.

IV
OUTPUT AND EMPLOYMENT TRANSFORMATION

Sustained growth of rural productivity and incomes requires more productive employment opportunities in the economy's nonfarm sectors. Both economic theory and modern economic history show that productivity growth in these sectors tends to outweigh that in the farm sector (Syrquin 1988). Thus, as development proceeds, employment is transformed from one that is largely agricultural to one that is heavily dependent on the industrial and services sectors.

Employment generation in the Philippines is poor compared to the standards of the newly industrializing East Asia economies and other countries at similar income levels. This fact must be noted since the low opportunities for employment in high-paying sectors are at the core of the Philippines' poverty problem. In large part, public policies have created distortions that have been inimical not just to sustainable growth but to the employment content of growth as well.

Table 6 shows the output and employment shares of the major sectors of the economy. The changes in the sectoral composition of aggregate output are in accord with well-known stylized patterns of development: the increase in the share of industrial output and the fall in the share of agriculture as per capita income rises (Chenery and Syrquin 1975). Industry's share rose from only one-fourth of GDP in the mid-1950s to one-third in the early 1990s. This change took place mostly from the mid-1950s to mid-1970s when industry, particularly its manufacturing subsector, grew at a relatively rapid pace in response to economic incentives spawned by an import-substituting development policy. Then, from the mid-1970s to early

Table 6
SECTORAL COMPOSITION OF GROSS DOMESTIC PRODUCT AND EMPLOYMENT, 1955-1990[a]

	1955	1965	1975	1985	1990
Gross Domestic Product					
Agriculture	33.22	30.22	26.92	28.64	26.67
Industry	25.66	28.09	33.79	32.61	33.48
(Manufacturing)[b]	(18.63)	(21.21)	(24.98)	(24.21)	(24.66)
Services	41.12	41.69	39.29	38.75	39.85
Employment					
Agriculture	60.04	57.57	54.28	49.52	45.21
Industry	15.67	14.76	14.74	14.11	16.61
(Manufacturing)[b]	(12.37)	(11.31)	(10.97)	(9.59)	(10.21)
Services	24.29	27.67	30.98	36.37	38.18

[a]Three-year averages, centered around the year shown.

[b]Manufacturing is a subsector of Industry.

Sources: National Economic and Development Authority, *Philippine Statistical Yearbook,* various issues.

National Statistical Coordination Board.

1990s, industry grew sluggishly. It even contracted in the first half of the 1980s, when the economy succumbed to its sharpest downtrend since World War II.

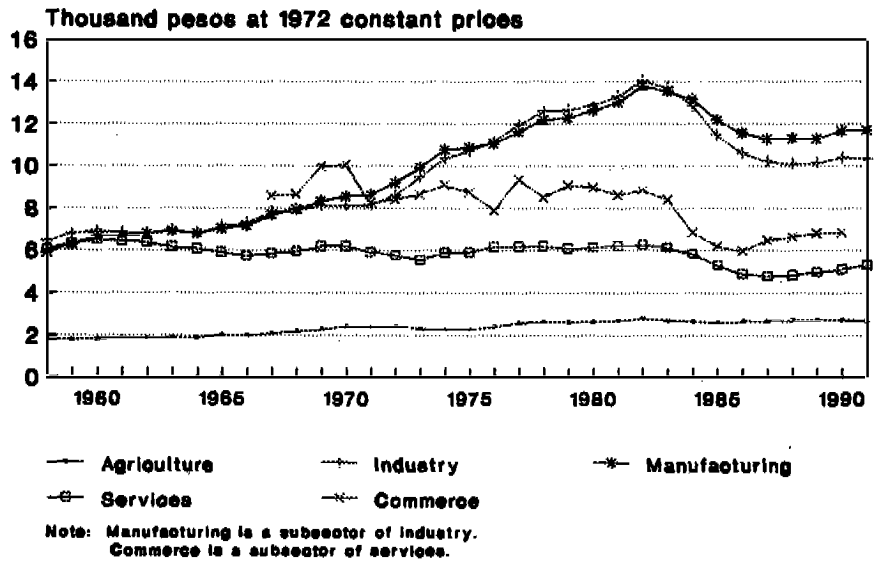
The failure of industry's employment share to grow despite the rapid expansion of its share in GDP meant that services, mainly in the informal sector, and agriculture were the major sources of employment for the rapidly expanding labor force. Unfortunately, labor productivity was relatively low and tended to fall in these sectors, especially in the 1980s. Services accounted for 40 percent of output and around 40 percent of total employment. Although the shares of agriculture in output and employment were comparable to those in other countries of similar income levels, the same cannot be said for services. In these countries, the average share of services in national output was around 45 percent while its share in total employment was around 25 percent, thereby implying a higher relative labor productivity.[8]

As noted earlier, labor productivity in agriculture tends to be low relative to the rest of the economy. The sectoral difference reflects differences in the nature of production function, rate of technological change, and mobility of resources.[9] The productivity gap may even increase from the early to middle stage of development. Thus, the transfer of labor from agriculture to more productive sectors would be interpreted as an improvement in the average employment situation and living standards of the employed population. Once migration and capital accumulation have significantly reduced labor surplus, relative labor productivity and wages in agriculture rise, eventually reducing the productivity gap between the sector and the other sectors.

Figure 1 shows the trends in average labor productivity in the three major sectors of the Philippine economy — agriculture, industry, and

8. Based on figures from the World Bank's *World Development Report* and ILO's *International Labour Statistics*.

Figure 1
REAL VALUE ADDED PER WORKER



services — since the mid-1950s. At least three major observations can be noted. *First,* average labor productivity in agriculture has consistently been lower than that in industry and services. *Second,* labor productivity in the services sector was comparable to that in manufacturing in the latter part of the 1950s, remained virtually stagnant up to the 1970s, and then dropped in the 1980s, especially in the commerce subsector. This occurred in tandem

with the substantial increase in the share of the services sector in the total employment — from 25 percent in the mid-1950s to 39 percent in the late 1980s. *Third,* although labor productivity in industry managed to rise in the 1960s and 1970s, the growth soon petered out and labor productivity fell for the most part of the 1980s. Average labor productivity in industry in 1986-1990 was even lower than during the economic crisis of 1983-1985. Thus, unlike in newly developed economies that have historically shown that their productivity gap narrowed down due to capital accumulation and technological change in agriculture, the reduction in productivity gap (at a low level of development) in the Philippines was achieved not by relatively rapid growth of labor productivity in agriculture but by the prolonged drop in labor productivity in industry.

The relatively rapid expansion of the labor force exacerbated the economy's inability to generate enough productive employment opportunities. By international standards, the growth of the labor force was high, averaging 4.2 percent a year during the second half of the 1970s and early part of the 1980s and 2.5 percent a year during the second half of the 1980s (Table 7). The unusually high growth rate (averaging 3.9% a year) of the working-age population in the second half of the 1970s partly contributed to the high growth of the labor force during this period. Labor force participation rates also rose, particularly among female members, in the 1970s.[10] Working-age population growth slowed down to 3.0 percent a year in the first half of the 1980s and 2.6 percent in the second half, but labor force participation remained relatively high throughout the 1980s.

Interestingly, while employment growth was persistently lower than output growth in the 1970s (i.e., the implicit employment elasticity with respect to output was close to 0.65), such was not the case in the early part

10. The increase in female labor force participation rate can be explained partly by the decline in real wages in the 1970s and 1980s. As wages had been falling, females, especially housewives and the elderly, entered the labor market to maintain family incomes. Oshima et al. (1986: 160) noted that the average number of earners per family rose from 1.83 to 2.0 in the 1970s. This, in turn, might have accentuated the fall in real wages as the rise in the female participation increased labor supply. Also facilitating the female participation in the labor market was the work opportunities opened to them during the 1970s.

Table 7
LABOR FORCE PARTICIPATION RATE AND AVERAGE ANNUAL GROWTH RATE OF GDP, LABOR FORCE AND EMPLOYMENT

	1971-1975	1976-1980	1981-1985	1986-1990	1956-1990
Labor Force Participation Rate[a]	49.94	60.78	62.82	64.86	57.66
Growth Rate					
GDP	6.19	5.64	-1.88	4.4	4.4
Working-Age Population	2.86	3.86	3.01	2.58	2.64
Labor Force	3.43	4.08	4.29	2.49	3.2
Employment	3.86	3.98	3.75	2.58	3.19
Agriculture	5.25	3.02	2.54	0.35	2.33
Industry	2.7	3.26	3.62	5.1	3.19
(Manufacturing)	3.48	1.68	2.27	3.8	2.61
Services	2.18	5.88	5.52	3.59	4.71

[a]Labor force as percent of working-age population.

Note: For the period 1971-1975, the reference period is past week and "working age" refers to 10 years and above; for the period 1976-1990, the reference period is past quarter and "working-age" refers to 15 years and above.

Sources: National Economic and Development Authority. *Philippine Statistical Yearbook*, various issues.
National Statistics Office, *Integrated Survey of Households Bulletin*, various issues.

of the 1980s. Employment expanded at an extraordinarily high rate of 3.7 percent per year in 1981-1985 even though GDP contracted by an annual average of 1.9 percent. However, the number of underemployed workers was high, averaging 28 percent of the employed workers during the period (in contrast to the average of 20.6 % for the period 1976-1980). Moreover, the expansion took place in low productivity areas, mainly the informal services sector. This trend continued to the late 1980s and early 1990s.

Persistent declines in real wages accompanying the rise in per capita income were rather unique to the Philippines. In the postwar experience of Asian countries, particularly Taiwan and South Korea, growth was accompanied by rising real wages in agriculture and industry, despite considerable unemployment (Oshima et al. 1986: 151). This occurred not because these countries had effective laws on minimum wages, but because labor productivity growth and expansion of employment accompanied the growth of GDP per capita. Government policies in the Philippines, on the other hand, tended to undermine both productivity growth and the generation of employment opportunities for its expanding labor force.

V
CONSTRAINTS TO AGRICULTURAL GROWTH-LED RURAL POVERTY ALLEVIATION

The rapid agricultural growth did not, as earlier shown, translate into substantial reduction in rural poverty. Worse, income distribution in rural areas became less egalitarian, with the Gini ratio rising from 0.41 in 1965 to 0.45 in 1971 (Balisacan 1993), and Real wages in rural areas (as well as in urban areas) fell in the 1970s and in the early 1980s (Lal 1986). For the landless workers and for small farmers who also depend on off-farm work for supplementary incomes, the decline in real wages indicates a deteriorating economic well-being (Papanek 1989, Oshima 1990).

Both demand and supply considerations constrained the linkages of agricultural growth. On the demand side, the stimulus provided by agricul-

growth was not broadly based. This arose partly from the highly skewed distribution of landholding and the highly capital-intensive plantation farming and large-scale processing in the export crop sector (e.g., banana and pineapple plantations). Despite continuing legislation on land reform, there has been less actual implementation.[11] Thus, the landholding Gini ratio remained high—about 0.5—from 1960 to 1980 (Balisacan 1991). Worse, subsidies on credit and fertilizer were made more available to the more affluent farmers (David 1986). Because the consumption pattern of large farmers is most likely geared to those goods and services with high import (or urban) content, the linkages of agricultural income growth were weak in inducing employment and income multiplier effects on the rural (as well as urban) economy.

On the supply side, the unfavorable fiscal and macroeconomic environment prevented the rural nonfarm sector from responding vigorously to the agricultural income growth.[12] High effective protection in the import-substituting manufacturing sector induced a strong policy bias against agriculture and the rural sector. Trade restrictions and highly overvalued exchange rate unduly promoted capital-intensive activities and severely penalized labor-intensive activities and backward integration.[13]

Generous fiscal incentives stimulated the development of export-oriented manufacturing establishments through export-processing zones (EPZs). However, the development of these EPZs — which, with the exception of Cebu (exporting garments and electronics), were located far from their sources of labor — "required heavy infrastructural investments and led to capital-intensive, uneconomic, MNC-dominated operations,

11. The coexistence of numerous small peasant farms and large plantations in the Philippines somewhat resembled that of Latin America. For a comprehensive account of Philippine agrarian structure, see Hayami, Quisumbing, and Adriano (1990).

12. See Bautista (1992) for a discussion on how rural supply response could have been adversely affected by the unfavorable macroeconomic environment.

13. Indeed, this is a common theme in writings of serious students of the Philippine economy. See, for example, Power and Sicat (1971), de Dios (1984), Bautista (1989), and Krugman et al. (1992).

which had little impact on rural industry or agriculture" (Ranis and Stewart 1993: 98). Government interventions, especially in the 1970s and early 1980s, also tended to diminish the role of market mechanisms in favor of regulations by parastatals as well as promoted a monopolistic structure in important economic sectors. The use of governmental functions to dispense economic privileges to select groups close to the ruling elite was rampant.

Investments in physical infrastructure were concentrated in Central Luzon (Pampanga and Nueva Ecija) and in other highly urbanized centers. Metro Manila and Central Luzon had almost one-half of the total infrastructural investments in the late 1960s and early 1970s (ILO 1974). Meanwhile, the rapid growth in government expenditures in agriculture averaging 13.2 percent a year — from the late 1960s to the early 1980s, occurred mainly in the favored rice sector. This pattern of government spending promoted regional inequality. More importantly, the neglect of most rural areas considerably weakened the rural sector's supply response to agricultural growth.

Public investment in human capital—mainly health and education—was likewise biased against the rural areas. In the 1970s and early 1980s, high-quality primary education was limited to less than 10 percent of the total elementary population, mostly in private schools in Metro Manila (World Bank 1976). Likewise, access to health services was a sore point for the rural population, as health facilities were concentrated in Metro Manila. Undoubtedly, these biases contributed to the weak entrepreneurial response in rural areas.

VI
CONCLUSION

The little rural poverty reduction in the Philippines from the second half of the 1960s to the early 1980s is surprising considering that (i) agricultural growth was fairly impressive by international standards and (ii) a substantial fall in rural poverty in other developing countries accompanied their rapid agricultural growth. Clearly, while agricultural growth is necessary to

sustained rural poverty reduction, the Philippine experience suggests that it is not enough. Sustained reduction in rural poverty demands interrelated policy reforms and programs that will enhance the intersectoral employment linkages of agricultural income growth, increase labor and total factor productivity, and build the human capital of the poor.

It was pointed out earlier that *initial* conditions, including the size distribution of assets and incomes, are important in considerably influencing the response of rural (and urban) areas to agricultural growth. There is currently little empirical work to bank on for a deeper understanding of this issue. A counterfactual analysis using economywide models that realistically capture the economic structure and rural institutions of a developing economy such as the Philippines is thus needed.

The reclassification of physical areas as population grows and/or economic activity expands tends to create a systematic downward bias on rural performance. Rural poverty indicators tend to become biased upward as urbanization proceeds. This reclassification has likewise important implications on other aspects of sectoral and spatial transformation. High urban population growth in LDCs is, for example, commonly attributed to rapid rural-urban migration (Pernia 1991, Nijkamp 1993). National data on rural-urban migration have been based mainly on published population censuses. If reclassification of physical areas is the one that explains the observed high growth of urban population, such as the case presented here, then the rural-urban migration story in the development literature is somewhat exaggerated.

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