

**Economic Openness
and Regional Development
in the Philippines**

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January 2003

ERD Working Paper No. 34

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Asian Development Bank
P.O. Box 789
0980 Manila
Philippines

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January 2003
ISSN 1655-5252

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Abstract

This paper examines how economic openness influences regional development in the Philippines. It first looks at the disparities in economic and social indicators across the country's 14 regions and over time. Metro Manila continues to tower over the national economic landscape, though economic dispersal especially to the adjacent regions appears to be picking up. The paper then analyzes the determinants of regional development, using five-year panel data. Trade openness appears to be beneficial to regional economic growth and—through growth—poverty reduction. However, it cannot by itself be expected to bring about more balanced regional development.

I. INTRODUCTION

External influences on a country's urban and regional development are not new. Records of such influences date back at least to colonial times when cities became the strategic contact points of the colonizer with the colony. The evolution of ports and local transport systems was strongly shaped by the trade and investment decisions of the colonial authorities. Indeed, the geographic location of ports had a decisive impact on the choice of what were to become the primary and secondary urban centers.

The Philippines had a relatively high degree of urbanization early in the 20th century, compared with other countries at similar levels of development, and this can be attributed to historical circumstances (Pernia 1976). For instance, the Spanish colonial tradition of urbanism through *reducción* meant that, for purposes of christianization, the natives were resettled from scattered *barangays* (villages) into compact settlements (Phelan 1959). The strategy of "reduction" was earlier applied to Hispanic America, resulting as well in relatively high urbanization levels (Reed 1967). The evolution of urban primacy or spatial concentration can be ascribed to international forces. This is true of Manila and several megacities elsewhere in the developing world (Pernia 1994, Lo and Yeung 1996).

Recent and ongoing globalization trends exert stronger and probably different types of impacts on national urban and regional development (Lo and Yeung 1996, Lo and Yeung 1998). For one thing, economies are inexorably becoming more open, subjecting them to all kinds of global forces, such as trade, capital, technology, economic policy, information, and knowledge. For another, while external influences during colonial times were almost exclusively one-way—from colonizer to colony, with the economic benefits arguably going mostly to the former—these influences are becoming more two-way, with developing countries benefiting as well.

Urban primacy that characterizes the Philippine space economy appears to have been heightened, not lessened, by recent external influences, specifically investment and trade (Solon 1996). Capital and trade flows, supported by new communications and transportation technologies, operate in the world economy via the national capitals that evolve as megacities. This view is backed by evidence on the tendency of foreign direct investment (FDI) to locate in and around the metropolises of East Asian countries (Fuchs and Pernia 1987).

In the Philippines, more recently, a few regional centers such as Cebu in Central Visayas, Davao-General Santos in Southern Mindanao, and Subic-Clark in Central Luzon appear to be growing faster than Metro Manila, partly owing to increased levels of investment and exports. Can this be an indication that globalization could lead to more dispersed spatial development?

In this paper, we attempt to address the general issue whether or not economic openness is beneficial to regional development and poverty reduction. This issue can be broken down into

more specific questions. What is the effect of external economic forces on regional and urban development in the Philippines? How is their effect on the evolution of regional poverty transmitted? How significant is the impact of these external forces relative to that of domestic factors? Do they contribute to more balanced regional development (i.e., narrower interregional disparities) or reinforce spatial concentration?

Regarding the last question, there are essentially two views. First, based on cross-country regression analysis, Henderson (2002) finds a strong negative correlation between international trade and urban primacy. The conceptual underpinning is the new economic geography models, which posit that economic openness tends to spur growth of the countryside (Krugman and Livas 1996). The idea is that because exports are not linked to the domestic market, producers may locate outside major urban centers as land, labor, and congestion costs escalate in megacities. Such relocation may be further induced if basic infrastructure requirements are provided.

The second view is that in a developing country where economic activity is typically highly concentrated in the capital metropolis and intercity infrastructure is inadequate, FDI and trade could reinforce urban primacy (Fuchs and Pernia 1987). Spatial development patterns are often set by domestic market forces and public policy, and investment and trade tend to follow these set patterns for efficiency reasons.

The paper is organized as follows. In the next section, we briefly describe the data used in the study. We then look at the patterns of regional development, other regional economic and social indicators, and differences in poverty levels across regions. We next analyze the factors affecting regional development and living standards of the poor to see the relative importance of external influences. We conclude with implications for policy and further research.

II. DATA AND APPROACH

We use data on the country's 14 regions over the period 1988-2000, consisting of four 3-year subperiods. Significant liberalization measures were introduced into the economy over this period, thus making it particularly suitable for our purposes. The national economy grew at an annual average rate of under 3 percent in 1988-1991, a period of political instability, dipping further to 2.3 percent in 1991-1994 as a consequence of the Middle East crisis-triggered global economic slowdown. Gross domestic product (GDP) growth picked up sharply to over 5 percent annually in 1994-1997 as market-based reforms kicked in amid a buoyant global economy, but fell back once more to 2.3 percent per annum during 1997-2000 in the wake of the Asian financial crisis. Across the regions there was considerable variation in economic performance during these different growth episodes. Figure 1 is a map of the Philippines showing the 14 regions.

The data on gross regional domestic product (GRDP) are from the national income accounts; various socioeconomic and fiscal data are from records of relevant government agencies; and household data are from the Family Income and Expenditure Survey (FIES) conducted by the National Statistics Office every three years. To represent external economic impacts, we use data

Figure 1. Map of the Philippines



on exports and investments that are the best available at the regional level; specifically, trade openness is defined as the ratio of regional exports to GRDP. We have two indicators for poverty from the FIES: poverty incidence (headcount ratio) or the proportion of the population below the poverty line, and mean consumption expenditure of the bottom quintile. For theoretical and practical reasons, mean consumption expenditure is deemed superior to mean income as a measure of welfare (Deaton 1997). The theoretical basis is the permanent income hypothesis; at the same time, in practice, current income is more difficult and costly to measure in developing countries where the majority of the poor are self-employed and engaged in agricultural activities with fluctuating incomes.

We first examine the data to discern general patterns across regions and over time before applying more rigorous analytical techniques.

III. PATTERNS OF REGIONAL DEVELOPMENT

Earlier studies have shown the highly uneven spatial distribution of economic activity in the Philippines, with Metro Manila towering over all the other regions (Pernia, Paderanga, Hermoso 1983; Lamberte, Manasan, Llanto et al. 1993; Pernia and Israel 1994). While such spatial concentration or urban primacy may be desirable initially to minimize infrastructure expenditures and achieve agglomeration economies, it can become excessive and costly. The costs are all too familiar, such as time lost to traffic congestion, health costs owing to air and water pollution, flooding, and traffic accidents. Thus, dispersed spatial development remains an important goal in the government's agenda, although regional policy has been in the national plans for more than three decades.

A. Economic Indicators

The spatial imbalance appears to be persisting. Metro Manila (also referred to as the National Capital Region or NCR) continues to have by far the highest per capita income (Table 1). Though this is expected, what is striking is the increasing income differential relative to the national average and to those of the other regions. In 2000, NCR's GRDP per capita was close to 2.5 times the national average, about double that of the next highest in the Cordillera Autonomous Region (CAR), and more than 5.5 times that of the poorest region (Bicol). CAR's relative development has picked up in recent years owing to special attention from the government. More importantly, this region includes Baguio, a popular tourist destination and the site of a major export processing zone. By contrast, Bicol has traditionally been the most backward region and continues to have the lowest growth rate, partly because destructive typhoons pass through it several times a year.

The continuing dominance of Metro Manila is also evidenced by its regional share of GDP, which rose further to 36 percent in 2000 from 30 percent in 1988 (Table 1). The second largest

share is less than half and belongs to Southern Tagalog, which is adjacent to NCR. Central Luzon, which borders NCR to the north, has roughly under 8 percent of GDP. Central Visayas, which includes the country's second largest city, Cebu, claims just under 7 percent of national output. CAR was the fastest growing and is among the few regions that have increased their GDP shares. What explains the relative economic buoyancy of these regions?

There is no doubt that the regions bordering Metro Manila benefit from spillover effects. Nonetheless, it can be argued that part of the economic influence comes from international factors, such as investment and trade. Table 2 shows that most of the special economic zones or SEZs (largely export processing zones or EPZs) are located in four regions: NCR, Southern Tagalog, Central Luzon, and Central Visayas. In the 1980s, there were only four EPZs owned and operated by the government located in Bataan and Cavite (Southern Tagalog); Mactan, Cebu (Central Visayas); and Baguio (CAR). Then in 1992, the Bases Conversion and Development Act was signed into law, converting the former American bases, Clark and Subic in Central Luzon, into SEZs. This marked a sharp rise in FDI and greater private sector involvement in the economy.

Table 1. Gross Regional Domestic Product (GRDP) per Capita, Regional Shares, and Growth of GRDP
(constant 1985 prices)

Region	GRDP per Capita (pesos)		Regional Share of GDP (percent)		GRDP Growth Rate (annual percent)	
	1988	2000	1988	2000	1988-1994	1994-2000
A NCR	26,090	29,577	29.95	35.68	2.40	4.55
B CAR	11,066	14,952	1.85	2.30	4.55	5.75
I Ilocos	5,675	6,873	2.92	3.06	2.49	5.26
II Cagayan Valley	5,942	7,150	2.12	2.15	1.64	5.77
III Central Luzon	10,546	10,673	9.39	7.42	3.36	2.99
IV Southern Tagalog	12,784	13,179	14.93	13.92	1.12	5.50
V Bicol	4,789	5,227	3.05	2.72	2.33	1.95
VI Western Visayas	8,586	9,869	7.09	6.53	3.40	2.72
VII Central Visayas	9,696	11,118	6.55	6.81	2.39	4.60
VIII Eastern Visayas	5,334	5,828	2.63	2.47	1.02	3.77
IX Western Mindanao	6,393	7,494	2.97	2.85	3.36	4.02
X Northern Mindanao	10,356	11,659	5.41	4.65	1.84	3.02
XI Southern Mindanao	11,784	11,181	7.39	6.19	1.29	3.23
XII Central Mindanao	8,800	7,786	3.74	3.25	0.56	3.68
Philippines	11,215	12,178	100.00	100.00	2.56	3.73

Source: *Philippine Statistical Yearbook* (National Statistics Office, various issues).

To further spread the benefits of industrialization to areas beyond Metro Manila, the Special Economic Zone Act of 1995 was signed into law to:

... encourage, promote, induce and accelerate a sound and balanced industrial, economic and social development of the country in order to provide jobs to the people especially those in the rural areas, increase their productivity and their individual and family incomes, and thereby improve the level and quality of their living conditions through the establishment, among others, of special economic zones in suitable and strategic locations in the country and through measures that shall effectively attract legitimate and productive foreign investments.

Enterprises located in the ecozones are granted fiscal incentives. According to the SEZ ACT, “each ecozone shall be provided with transportation, telecommunications, and other facilities needed to generate linkage with industries and employment opportunities for its own inhabitants and those of nearby towns and cities.” Thus, from six ecozones in the early 1990s, the number has burgeoned to 150 to date. Of this total, 48 are currently operating, 72 are under development, and 30 additional sites have been officially proclaimed as ecozones. More than two of five of the existing ecozones are located in Southern Tagalog, mostly in the provinces of Laguna and Cavite, which are just outside Metro Manila.

Table 2. Number of Special Economic Zones by Region
 (As of 1 July 2002)

Region	Operating	Percent Share	Proclaimed	Percent Share	Development in Progress	Percent Total	Total Share	Percent Share
A NCR	9	19	2	7	8	11	19	13
B CAR	1	2	2	7	0	0	3	2
I Ilocos	0	0	1	3	3	4	4	3
II Cagayan Valley	0	0	0	0	0	0	0	0
III Central Luzon	5	10	3	10	5	7	13	9
IV Southern Tagalog	25	52	10	33	28	39	63	42
V Bicol	0	0	1	3	6	8	7	5
VI West Visayas	0	0	1	3	6	8	7	5
VII Central Visayas	5	10	2	7	6	8	13	9
VIII East Visayas	1	2	2	7	0	0	3	2
IX West Mindanao	0	0	1	3	0	0	1	1
X North Mindanao	1	2	4	13	1	1	6	4
XI South Mindanao	1	2	1	3	6	8	8	5
XII Central Mindanao	0	0	0	0	3	4	3	2
Philippines	48	100	30	100	72	100	150	100

Source: Philippine Economic Zone Authority (2002).

As expected, the four regions hosting the SEZs are the main recipients of both foreign and domestic investments (Table 3). Noteworthy from Table 3 is that the share of investments going to NCR has been declining while that going to Southern Tagalog has been expanding significantly. By contrast, all four Mindanao regions suffered noticeable drops in investment shares owing to peace and order problems in a few areas, resulting in adverse publicity for the whole of Mindanao.

A look at the regional pattern of exports reveals essentially the same relative dominance of the four regions (Table 4). Similar to the spatial pattern of investments, NCR's prominence in exports appears to be waning, from more than half of total exports in 1988 to just below a quarter in 2000. At the same time, Southern Tagalog's share shot up dramatically from less than 4 percent in 1988 to over half of total exports in 2000. Other remarkable increases in export shares are those of CAR and Central Luzon. By contrast, all four Mindanao regions experienced marked falls in export shares. Overall, exports tend to be more spatially distributed than investments because agricultural regions are also involved in exports, as shown by earlier data (Solon 1996).

Table 3. Approved Investments by Region
(value in million pesos)

Region	1988	1994	2000	Regional Share (percent)		
				1988	1994	2000
A NCR	13,122.91	42,325.91	16,963.04	45.76	28.22	18.81
B CAR	8.59	653.08	1,575.16	0.03	0.44	1.75
I Ilocos	77.69	19,679.93	911.62	0.27	13.12	1.01
II Cagayan Valley	—	321.20	—	0.00	0.21	0.00
III Central Luzon	6,580.11	24,990.74	14,464.03	22.94	16.66	16.04
IV Southern Tagalog	4,577.46	29,390.49	50,415.44	15.96	19.59	55.91
V Bicol	77.99	338.43	1.47	0.27	0.23	0.00
VI West Visayas	640.56	247.68	1,130.92	2.23	0.17	1.25
VII Central Visayas	1,171.31	16,890.83	4,158.81	4.08	11.26	4.61
VIII East Visayas	31.86	5,229.73	19.55	0.11	3.49	0.02
IX West Mindanao	362.20	2,708.65	9.22	1.26	1.81	0.01
X North Mindanao	1,283.29	2,853.78	82.88	4.47	1.90	0.09
XI South Mindanao	745.26	1,006.74	432.96	2.60	0.67	0.48
XII Central Mindanao	—	3,367.50	—	0.00	2.24	0.00
Philippines	28,679.23	150,004.68	90,165.09	100.00	100.00	100.00

Sources: Board of Investments, Philippine Economic Zone Authority, National Statistics Coordination Board data.

Table 4. **Exports by Region**
(FOB in million US dollars)

Region	1988	1994	2000	Regional Share (percent)		
				1988	1994	2000
A NCR	4,038.49	9,178.35	8,998.87	57.09	68.07	23.63
B CAR	—	654.74	2,477.56	0.00	4.86	6.51
I Ilocos	260.83	40.26	34.68	3.69	0.30	0.09
II Cagayan Valley	6.96	0.06	1.01	0.10	0.00	0.00
III Central Luzon	325.76	346.87	2,761.37	4.60	2.57	7.25
IV Southern Tagalog	259.71	337.40	19,904.16	3.67	2.50	52.27
V Bicol	28.65	39.74	39.46	0.40	0.29	0.10
VI West Visayas	89.11	91.77	59.53	1.26	0.68	0.16
VII Central Visayas	475.94	793.58	2,141.01	6.73	5.89	5.62
VIII East Visayas	414.72	769.96	361.90	5.86	5.71	0.95
IX West Mindanao	129.05	155.56	171.52	1.82	1.15	0.45
X North Mindanao	358.05	364.30	297.36	5.06	2.70	0.78
XI South Mindanao	508.23	580.47	724.27	7.18	4.31	1.90
XII Central Mindanao	178.69	129.83	105.55	2.53	0.96	0.28
Philippines	7,074.19	13,482.90	38,078.25	100.00	100.00	100.00

Note: Exports are computed as the sum of domestic exports and re-exports.

Source: *Foreign Trade Statistics of the Philippines* (National Statistics Office, various issues).

B. Social Indicators

Typically, the social development of a country's regions is predictable from their economic performance. However, social disparities across regions may also reflect the relative effectiveness of public spending for the social sectors at the local level.

Metro Manila has the highest functional literacy at over 90 percent, followed by Southern Tagalog and Central Luzon. Central Visayas also has a relatively high literacy at more than 80 percent, but other regions that are not as economically well-off, such as Ilocos and Cagayan Valley, have slightly higher literacy rates. Expectedly, the Mindanao regions generally have the lowest functional literacy rates (70 percent for Western Mindanao, the poorest of the group). A related indicator is the cohort survival rate for secondary education, which shows a similar spatial pattern, though the regional differentials are much narrower (Table 5). The highest rates at around 80 percent are, as expected, in Metro Manila and the more advanced regions, as well as in two lower-income ones (Ilocos and Cagayan Valley), while the lowest at 63 percent is in Western Mindanao.

Health indicators, such as infant mortality rate and life expectancy at birth, are similarly the best for Metro Manila and the more economically advanced regions (Table 6). However, as with the education indicators, the disparities across regions are smaller, ranging from 70 years of life expectancy in NCR to 62 years in Western Mindanao. Life expectancy is a composite indicator of physical safety, nutritional level, and efficacy of health interventions.

Table 5. Cohort Survival Rate for Secondary Education by Region
(percent)

Region	1990	1995	2000	Annual 1990-1995	Percent Change 1995-2000
A NCR	79.78	82.12	75.56	0.58	-1.65
B CAR	74.17	83.44	77.25	2.38	-1.53
I Ilocos	84.46	81.69	78.3	-0.66	-0.84
II Cagayan Valley	75.07	77.44	77.9	0.62	0.12
III Central Luzon	76.65	75.57	76.23	-0.28	0.17
IV Southern Tagalog	79.11	76.17	78.05	-0.75	0.49
V Bicol	70.62	68.09	71.73	-0.73	1.05
VI Western Visayas	87.84	76.63	68.01	-2.69	-2.36
VII Central Visayas	70.76	72.05	74.41	0.36	0.65
VIII Eastern Visayas	67.16	65.26	64.99	-0.57	-0.08
IX Western Mindanao	67.67	48.26	63.23	-6.54	5.55
X Northern Mindanao	70.52	53.93	69.07	-5.22	5.07
XI Southern Mindanao	71.28	59.82	70.43	-3.44	3.32
XII Central Mindanao	76.42	55.38	65.73	-6.24	3.49
Philippines	76.41	72.97	73.05	-0.92	0.02

Notes: For 1995 and 2000, values for regions 9 and 12 are the averages of these regions and the Autonomous Region of Muslim Mindanao (Regions IX to 12).

For 1995 and 2000, values for Regions 10 and 11 are the averages of these regions and CARAGA.

Source: *Philippine Institute for Development Studies website* (<http://dirp.pids.gov.ph/eismain.html>).

C. Poverty Indicators

Based on spatially consistent poverty lines, as suggested by Balisacan (2001), applied to the distribution of per capita consumption expenditures, poverty incidence (headcount ratio) at the national level appeared to be on the downtrend. From 41.5 percent in 1985, the headcount ratio fell to 32 percent in 1994, then to 25 percent in 1997, before rising to 27 percent in 2000 in the aftermath of the Asian economic crisis exacerbated by the El Niño drought.²

² These estimates are different from the higher officially published figures. The official figures are based on current income, rather than consumption expenditure as the welfare indicator, and on poverty lines that vary in real terms across regions and between urban and rural areas. This approach, as Balisacan (2001) shows, fails the consistency test for poverty lines. Accordingly, it is not suitable for poverty monitoring at the national or subnational levels, if the policy objective is to reduce absolute poverty.

Table 6. **Life Expectancy by Region**
(in years)

Region	1990	1995	2000	Annual Percent Change	
				1990-1995	1995-2000
A NCR	59.7	66.6	70.1	1.10	0.51
B CAR	57.8	61.1	66.1	0.56	0.79
I Ilocos	63.9	65.5	69.5	0.25	0.60
II Cagayan Valley	59.6	63.1	67.6	0.57	0.68
III Central Luzon	65.2	67.5	70.7	0.35	0.47
IV Southern Tagalog	63.4	65.6	69.5	0.34	0.57
V Bicol	59.3	64.0	68.3	0.77	0.65
VI West Visayas	61.5	64.3	68.7	0.45	0.66
VII Central Visayas	64.1	66.4	70.1	0.35	0.55
VIII East Visayas	56.8	60.6	65.6	0.65	0.80
IX West Mindanao	54.7	57.0	62.0	0.41	0.85
X North Mindanao	60.7	62.3	67.1	0.26	0.74
XI South Mindanao	60.0	63.7	68.1	0.60	0.67
XII Central Mindanao	53.9	57.1	62.1	0.58	0.85
Philippines	60.6	64.8	68.9	0.67	0.62

Note: The value for Regions IX and XII computed as averages of these regions and Autonomous Region of Muslim Mindanao.
Sources: National Statistics Office (2001).

At the regional level, poverty incidence varies widely, with Metro Manila having the lowest at 5.6 percent, followed by Central Luzon, Southern Tagalog, and CAR at just under 20 percent (Table 7). As expected, Western Mindanao and Bicol have the highest poverty incidence at over 50 percent. What appears surprising is the relatively high poverty rate in Central Visayas (39 percent) despite its relatively high-income level and good social indicators. This probably reflects sharper intraregional inequality, implying that aggregate economic and social benefits may not be trickling down fast enough to the poor (Monsod and Monsod 1999). This suggests the need for a subregional or more micro approach to poverty reduction. It could also reflect below-average performance of the agricultural sector on which the majority of the poor depend, implying the need for appropriate investments in this sector.

Another poverty indicator, mean consumption expenditure per capita of the poorest quintile—reflecting the poor's living standards—tells essentially the same story (Table 7). This indicator is closely associated with GRDP per capita, as shown in Figure 2, though the link is not nearly as tight as suggested by other studies. For example, Dollar and Kraay (2001), employing cross-country regressions, estimate a growth elasticity of poverty of 1.0, suggesting that the average incomes of the poor move one-for-one with overall average incomes. The elasticity estimate from our cross-regional regression is 0.42, implying that a 10 percent increase in regional incomes is associated with a 4.2 percent rise in the well-being of the poor.

Table 7. Poverty Incidence and Expenditure per Capita of Poorest Quintile

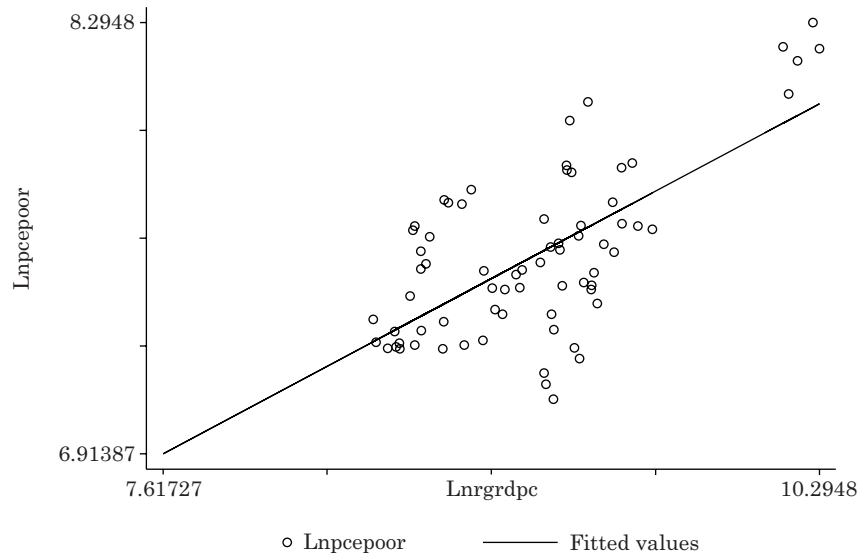
REGION	Poverty Incidence (percent)		Annual Change in Poverty (percent)	Expenditure Per Capita Poorest Quintile (1985=100) (pesos)		Annual Change in Expenditure/ Capita Poorest Quintile (percent)
	1988	2000	1988-2000	1988	2000	1988-2000
A Metro Manila	9.48	5.6	-4.29	3,183	3,680	1.22
B CAR	24.13	19.85	-1.61	2,021	2,063	0.17
I Ilocos	28.4	20.31	-2.76	2,087	2,236	0.58
II Cagayan Valley	43.22	29.57	-3.11	1,849	2,344	2.00
III Central Luzon	24.7	16.13	-3.49	2,535	2,924	1.20
IV Southern Tagalog	38.2	19.56	-5.43	1,917	2,516	2.29
V Bicol	53.84	53.32	-0.08	1,546	1,487	-0.32
VI Western Visayas	37.58	28.15	-2.38	1,785	1,949	0.74
VII Central Visayas	47.57	39.3	-1.58	1,256	1,365	0.70
VIII Eastern Visayas	53.44	46.82	-1.10	1,433	1,493	0.34
IX Western Mindanao	48.03	55.48	1.21	1,536	1,446	-0.50
X Northern Mindanao	30.62	30.24	-0.10	1,722	1,703	-0.09
XI Southern Mindanao	34.84	25.29	-2.63	1,797	2,089	1.26
XII Central Mindanao	30.45	36.16	1.44	1,813	1,709	-0.49
Philippines	34.31	27.27	-1.90	2,002	2,266	1.04

Sources: Family Income and Expenditure Surveys, authors' calculations.

In sum, Metro Manila remains pre-eminent in the country's economic and social landscape, though a few regions are emerging more visibly in recent years.³ Regional disparities are revealed more sharply by the economic indicators than by the social indicators. To some extent, the narrower differentials in terms of social indicators suggest that there is not much regional variation in the effectiveness of social policy and spending at the local level, given that fiscal decentralization is still in its nascent stage. Regional poverty rates vary widely and are more closely associated with the economic indicators than with the social indicators.

³ Based on cross-country regressions, Henderson (2002) finds that urban primacy (population in the largest city) increases as GDP per capita rises from low levels up to \$5,300 (approximate average world GDP per capita in 1990), after which it declines. The Philippines' GNP per capita was \$1,040 as of 2000.

Figure 2. Per Capita Expenditure of Poorest Quintile (lnpcepoor) and GRDP Per Capita (lnrgrdpc)



Source	SS	df	MS	Number of obs = 70		
Model	2.28	1	2.28	F(1, 68) = 54.53		
Residual	2.84	68	0.04	Prob > F = 0.00		
Total	5.12	69	0.07	R-squared = 0.45		
				Root MSE = 0.20		
lnpcepoor	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnrgrdpc	0.42	0.06	7.38	0.00	0.31	0.53
cons	3.73	0.52	7.19	0.00	2.69	4.76

IV. DETERMINANTS OF REGIONAL GROWTH AND POVERTY REDUCTION

The foregoing review of regional development patterns leads to two key hypotheses regarding factors influencing regional development and poverty reduction. First, we expect economic openness to positively affect regional economic growth in a significant way, in addition to the impact of domestic factors. In other words, regions that produce tradable goods can be expected to grow faster than those that do not. Second, given that economic growth at the national or regional levels is good for poverty reduction, as shown by several studies (e.g., Dollar and Kraay 2001; Balisacan and Pernia 2002; Balisacan, Pernia, and Asra 2002), we expect that trade openness contributing

to growth should also help improve the welfare of the poor. Such impact may be expected to be not only indirect (via growth) but also direct on poverty itself. The direct effect can occur because investments and exports typically generate a host of ancillary economic activities that distributively benefit the poor. Moreover, to the extent that many of these activities are in the informal sector, they are not captured in GDP accounts and, therefore, would not be reflected in the growth effect on poverty.

A. Empirical Model

We adopt a simple model based on theoretical expectations but, at the same time, is conditioned by data availability.

$$PCEPOOR_{rt} = PCEPOOR_{rt}(GRDP_{rt}, LOCAL_{rt}, ICOND_r) \quad (1)$$

$$GRDP_{rt} = GRDP_{rt}(LOCAL_{rt}, LOCAL_{rt-1}, OPEN_{rt}) \quad (2)$$

$$OPEN_{rt} = OPEN_{rt}(LOCAL_{rt}, LOCAL_{rt-1}, OPEN_{rt-1}, GRDP_{rt}) \quad (3)$$

where

$PCEPOOR_{rt}$ = per capita expenditure of the poor in region r at time t

$GRDP_{rt}$ = income of region r at time t

$OPEN_{rt}$ = economic openness (exports-GRDP ratio) in region r at time t

$LOCAL_{rt}$ = local factors in region r at time t

$ICOND_r$ = initial conditions of region r

Equation 1 shows how the welfare of the poor is influenced by the region's income, local factors, and initial conditions. Equations 2 and 3 take into account the endogeneity of GRDP and economic openness as both are affected by each other and by local factors.

Equations 1-3 are estimated using the three-stage least squares (3SLS) method. The 3SLS estimation procedure takes into account not only the endogeneity of the three variables (per capita expenditure of the poor, regional income, and exports) but also the interaction between equations through the covariance matrix of the equations' disturbances.

For the estimation, we use panel data on the 14 regions for the years 1988, 1991, 1994, 1997, and 2000, i.e., four 3-year intervals. Our empirical model is constrained by the available data. To test for dynamic effects, current as well as lagged values are used. Appendix Tables 1 and 2 present the detailed description of the variables and their descriptive statistics, respectively.

The three endogenous variables have been described briefly above in Section II. Now, we need to say something about local factors and initial conditions.

Local factors include public expenditures on economic development services and on social services. The former pertain to local government unit (LGU) outlays for agriculture; agrarian reform and natural resources; trade and investment; and tourism (including power and energy, water development and flood control, communication, roads and other transport). The latter is public

spending for education, health, housing and community development, and land distribution. These two variables measure output rather than outcome. According to Solon, Fabella, and Capuno (2000), “Expenditure outlays directly imply the relative priority given to different types of public services ... local officials can readily influence the allocation of public resources, more than they can local welfare.” During the period 1985-2000, LGUs spent roughly P201 per person on economic services and P69 per person on social services.

Other local factors refer to physical infrastructure, such as paved roads, electricity, international port and airport facilities, and telephones. SEZs are not only a major infrastructure but also represent important fiscal incentives extended by the government. Agricultural terms of trade is the ratio of the price of agricultural products to the price of nonagricultural output. Local educational attainment is represented by the mean schooling years of household heads, which measures the capacity of the local population to take advantage of the economic opportunities arising from economic growth. Crime rate is the monthly average of incidents for every 100,000 population in the region.

Initial conditions refer to time-invariant factors. Recent discourse on poverty points out the increasing disparities across states or regions in various countries. In India, for example, Datt and Ravallion (2002) find that states with relatively low levels of initial physical and human capital development are less effective in reducing poverty in response to economic growth. As initial conditions, we use infrastructure (electricity and paved roads) and human capital (education and health).

Further, we introduce into the model a dummy for primacy ($NCR = 1$) to capture the distinct economic and political advantages of Metro Manila over the other regions. As rightly articulated by Hill (2000, 13), *the (national) capitals are where major infrastructure projects are awarded, where business licenses must be obtained, where major foreign and domestic firms are headquartered, and where foreign aid flows first before it enters the domestic economy.*

B. Empirical Results

The estimation results are mostly in accord with expectations. The first column of Table 8 shows that the significant determinants of trade openness are previous export performance, agricultural terms of trade, previous-period local development expenditures, and the number of SEZs. The agricultural terms-of-trade variable suggests that price incentives favor regions with comparative advantage in agriculture. The significance of the primacy dummy implies that NCR remains an important source of exports and re-exports.

The second column of Table 8 shows that regional development is significantly driven by trade openness, as hypothesized. A 10 percent increase in exports-GRDP ratio raises GRDP per capita by 0.44 percent. Regional economic growth also appears to be strongly influenced by lagged public spending for social sectors. Human capital (average schooling years of household heads) has a positive and significant effect. The primacy dummy implies that Metro Manila maintains dominance over all other regions, as mentioned in the previous section.

Finally, Table 8's column 3 supports the well-established view that the well-being of the poor is significantly influenced by economic growth. The growth elasticity of poverty is 0.2, implying that a 10 percent rise in regional incomes per capita raises the incomes of the poorest by 2 percent. This elasticity value is smaller than the OLS estimate of 0.42 from Figure 2 above, and smaller still than the 3SLS estimate of about 0.5 based on provincial data (Balisacan and Pernia 2002).⁴

Table 8. **Determinants of Economic Openness, GRDP per Capita, and Welfare of the Poor**

Variable	Ln Exports/ GRDP (1)	Std. Error	Ln GRDP per Capita (2)	Std. Error	Ln Mean Exp./ Capita of bottom quintile (3)	Std. Error
Endogenous						
Ln GRDP per capita	-0.165	0.410			0.198 **	.079
Ln Exports-GRDP Ratio			0.044 **	.019		
Lagged Ln Exports-GRDP Ratio	0.869 **	.044				
Local Factors						
Lagged Ln Investment-GRDP Ratio	-0.022	.047				
Ln Social Expenditures per Capita					0.031 *	.016
Lagged Ln Social Exp. per Capita			0.142 **	.058		
Lagged Ln Dev't Exp. per Capita	0.184 **	.087	0.016	.050		
Number of Special Economic Zones	0.047 **	.010				
Terms of Trade	2.204 **	0.898				
Average Schooling Years of Household Heads			0.115 **	.039		
Initial Conditions						
Cohort Survival Rate for Secondary Education					0.010 **	.003
Road Density					0.125 **	.027
Percent of Households with Electricity					0.009 **	.001
Primacy (NCR=1; 0 otherwise)	2.411 **	1.081	0.570 **	.185		
Constant	-1.907	3.629	7.870 **	.351	4.336 **	.671
Equation	R ²	chi ²	Equation	R ²	chi ²	
Ln Mean Exp. of Bottom Quintile	.828	366.543	Ln Exports	0.908	636.8473	
Ln GRDP per capita	.682	133.097				

* Significantly different from zero at 10 percent level.

** Significantly different from zero at 5 percent level or lower.

⁴ A region is made up of provinces. As of 2000, there were 81 provinces making up the Philippines's 14 regions.

Besides growth, the welfare of the poor is strongly affected by current public spending for social sectors including agrarian reform, and better initial conditions such as availability of electricity and roads and human capital stock (secondary-education survival rate).

As a further point, our analysis provides no empirical support to the hypothesis of a direct link from exports or investments to the incomes of the poor other than through economic growth. This is consistent with the findings of a recent survey on trade, growth, and poverty by Krueger and Berg (2002). They argue that, while trade openness does not have systematic effects on incomes of the poor, openness is good for growth and such growth is just as pro-poor as other growth; they add that trade reforms positively influence other reforms and lead to a wider constituency for reforms.

V. CONCLUSION AND POLICY IMPLICATIONS

Economic and social development varies markedly across the Philippines's 14 regions, with Metro Manila towering over the national economic landscape. However, the emergence of Southern Tagalog and Central Luzon (both adjacent to Metro Manila), Cordillera Autonomous Region, and Central Visayas is notable. This emergence can be partly attributed to the influence of such external factors as exports and investments.

On the whole, it appears that economic openness, as represented here by exports-GRDP ratio, is beneficial to regional economic growth and—through growth—poverty reduction. Nevertheless, it seems that trade openness by itself cannot be relied upon to bring about more balanced regional development, i.e., narrower disparities in regional incomes and poverty, which is an important policy objective in many developing countries. In the postcolonial era, domestic market forces and public policy set spatial development patterns. Global influences tend to follow these set patterns. For instance, FDI goes to where there is good infrastructure, human capital, favorable policy environment, and where economies of agglomeration can be availed of. As well, nontraditional exports tend to originate in areas with adequate physical and human capital stock, as exemplified by export processing zones.

To foster more balanced regional development, public policy will have to take the lead and encourage the private sector to play an active role in that pursuit. It cannot be overstressed that good physical and social infrastructures are crucial (as epitomized by the EPZs), as is a conducive investment climate. Those in charge of implementing the decentralization policy must take these into account.

In this paper, we have treated economic openness in a rather limited fashion. There are several other cross-national influences, besides trade and capital, such as technology, information, knowledge, and economic policy that could be as powerful. Further analytical work should incorporate these other factors. Moreover, more disaggregated data, say at the provincial level, are likely to lead to better insights. Finally, longer time-series data should allow a distinction between short-term and long-term effects of economic openness.

Appendix Table 1. **Description of the Variables**

Variable	Definitions
Mean Expenditures of Poor	Ln of mean consumption expenditure per capita of bottom 20 percent of population of the region
Regional Income	Ln of real GRDP per capita of the region
Exports	Ln of ratio of exports to GRDP; exports computed as sum of exports and re-exports (1988-2000)
Lagged Exports	Ln of previous period export-GRDP ratio
Lag Investments	Ln of previous period investments-GRDP ratio
Social Expenditures per Capita	Ln of social services expenditures per capita (i.e., education, culture and manpower, health, social services, housing and community development, land distribution, other social services, subsidy to LGUs) of LGUs in the region
Lagged Social Expenditures per Capita	Ln of previous period social services expenditures per capita
Economic Development Expenditures per Capita	Ln of economic development expenditures per capita (i.e., agriculture, agrarian reform and natural resources, trade and investments, tourism, power and energy, water development and flood control, communication, roads and other transport, others) of LGUs in the region
Lagged Economic Development Expenditures per Capita	Ln of previous period economic development expenditures per capita
Terms of Trade	Ratio of price of agriculture to price of nonagriculture
Special Economic Zones	Number of SEZs in the region
Crime Rate	Monthly average incidents of crimes reported per 100,000 population in region (1990 data)
Educational Attainment of Adult Population	Average schooling years of households heads in region computed from the 1988-2000 FIES
Initial Roads	Ratio of total length of concrete and asphalted roads to total land area in region (1989 data)
Initial Cohort Survival Rate	Cohort survival rate for secondary education level in region (1990 data)
Initial Electrical Connections	Percent of households with electricity in region (1988 data, FIES)
Primacy	NCR =1; 0 for all other regions

Appendix Table 2. **Descriptive Statistics**

Variable	Obs	Mean	Std. Dev.	Minimum	Maximum
Ln Mean Expenditures of Poor	70	8.836628	0.221649	8.503642	9.482182
Ln Real GRDP per Capita	70	9.130911	0.434071	8.474077	10.29475
Ln Export-GRDP Ratio	81	-2.552935	1.808278	-10.00574	.6488313
Lagged Ln Export-GRDP Ratio	81	-2.59168	1.746307	-10.00574	-.1614366
Lagged Ln Investment-GRDP Ratio	65	-4.5016	1.729396	-8.67344	-.9270292
Ln Social Expenditures per Capita	70	3.711818	1.089553	1.59738	6.195999
Lagged Ln Social Expenditures per Capita	70	3.461288	1.010642	1.59738	6.195999
Ln Economic Development Expenditure per Capita	70	4.837278	1.090975	2.931549	6.411524
Lagged Ln Economic Development Expenditure per Capita	70	4.340699	1.082649	2.85061	6.327778
Agricultural Terms of Trade	70	0.858429	0.257055	0	1.12
Schooling Years	70	6.569233	1.121679	4.379874	9.655327
Special Economic Zones	70	2.8	7.420301	0	46
Crime Rate	70	12.20371	6.572768	4.32	31.61
Initial Road Density	70	0.369649	1.014576	0.024057	3.997596
Initial Electrical Connections	70	52.06429	14.07611	35.11	84.56
Initial Cohort Survival Rate	70	75.10786	5.932181	67.16	87.84
Primacy	70	0.071429	0.259399	0	1

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