

# PRO-POOR GROWTH IN ASIA AND ITS IMPLICATION FOR AFRICA: WHICH SECTOR INCREASES MORE THE EMPLOYMENT OF THE POOR?<sup>1</sup>

Mitsuyo Kurihara\*  
Tatsufumi Yamagata\*\*

## Summary

This paper explores the strategies to achieve the pro-poor growth in LDCs through industrial policy. In particular, we investigate which industry played a major role to provide the poor employment opportunities in the process of economic development in Asia and Africa. It turns out that while the share of agriculture in employment of the poor was greater, manufacturing industry played a leading role to increase employment opportunities for the poor in Thailand and Taiwan, which are typical fast growing economies in East Asia for the 1970s-1990s. The same tendency is found for Mauritius, which is another example of successful export-oriented countries in Africa. In other African and South Asian countries where the momentum of globalization had not fully incorporated the national economies in the world economy, such as Malawi, South Africa, Bangladesh and India, manufacturing industry did not absorb the poor for employment as much. It is concluded that

manufacturing industry may increase employment of the poor more than agriculture if its comparative advantage is materialized through globalization, even though the share of agriculture in employment of the poor is greater than that of manufacturing in typical LDCs. Even in the context of the pro-poor growth the role of manufacturing should not be overlooked.

## Introduction

There is a broad agreement that economic growth should be pro-poor in order to continuously alleviate poverty in the Least Developed Countries (LDCs).<sup>2</sup> The Millennium Development Goals (MDGs), which were declared at the Millennium Summit in September 2000, call for reducing the proportion of people living on less than \$1 a day to half the 1990 level by 2015 as the first target.<sup>3</sup> That implies even if this target is achieved, 14.5 percent of all people in low and middle-income economies still remain poor. Thus, poverty

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- 1 This study is conducted as a research project of the Japan Bank for International Cooperation (JBIC), commissioned for the "Growth and Equity" Task Team of the Strategic Partnership with Africa (SPA). However, the views expressed in the paper are those of the authors and not represented official position of the JBIC. We appreciate Shigeru Ishikawa, Somchai Jitsuchon, Medhi Krongkaew, Priyanut Piboolsravut, Uma Rani, Yasuyuki Sawada, Ching-Lung Tsay, Wichai Turongpun, and Toru Yanagihara for insightful comments. We are also benefited by discussion at the Japan International Cooperation Agency (JICA) and Japan Society for International Development. Any remaining errors attribute to the authors.
  - 2 There are several definitions of the "pro-poor growth". They feature the following aspects: (1) labor absorbing; (2) emphasizing social aspects (women, minority, health, education, participation, etc.); and (3) orientation for direct pro-poor policies, e.g. public spending for basic education, health and family planning services; improved access to credit and the promotion of small and medium enterprises. See Kakwani and Pernia [2000].
  - 3 For details of the MDGs see web sites of the United Nations (<http://www.un.org/millenniumgoals/>), the United Nations Development Programme (<http://www.undp.org/mdg/>), and the World Bank (<http://www.developmentgoals.org/>).

\* Economist, Development Studies, JBIC Institute.

\*\* Research Fellow, Development Studies Department, Institute of Developing Economies-JETRO.

reduction is a daunting task and it will take long time for complete poverty eradication even beyond 2015. In order to continue this task for a long time it is necessary for the LDCs to grow steadily, and help the poor raise their own income in cooperation with developed countries and international organizations.

While no one denies that the pro-poor growth is necessary, strategies to achieve it have not been fully investigated yet.<sup>4</sup> So far, much attention has been paid to whether economic growth attained by LDCs had been pro-poor or not, e.g. Kakwani and Pernia [2000]. However, knowing that economic growth is not pro-poor, need not help the economy to change its development path towards pro-poor growth. We need explicit strategies to attain it.

The reason why strategies for the pro-poor growth have not been explored yet seems that too much emphasis has been placed on direct and targeted public expenditure for the poor in order to reduce poverty. If direct public expenditure was sufficient for the poor to raise their standard of living continually, a strategy for pro-poor growth could “grow first, and be redistributed second.” In this case the strategy for pro-poor growth would be reduced to that seeking plain economic growth, and no specific pro-poor growth strategy would be necessary. However, historically speaking, income generation by the poor themselves has played a leading role in poverty reduction, and public expenditure has only helped them for a certain time period to make a living. We had better pursue strategies where economic growth autonomously accompanies poverty reduction even without great public expenditure for the poor.<sup>5</sup>

Fortunately, there are examples of economic development that went hand in hand with poverty reduction. One of them took place in economies located in East Asia<sup>6</sup> after World War II. It is now well known that typical East Asian economies attained both rapid economic growth and equal income

distribution (World Bank [1993]). Therefore, we investigate what happened in East Asia to attain the pro-poor growth in East Asia, and compare it with economic development in other LDCs, in particular those in Africa.

For the comparison we look at employment of the poor. The reasons to emphasize employment are two fold. First, labor is a factor of production, which the poor is most likely to possess. Of course, retired or handicapped people may not possess it. However, it is still a major factor of production whose reward is critical for the poor to survive in any LDCs. Second, changes in utilization of any factors of production by sector reflect comparative advantage and, accordingly competitiveness of each sector, which are important determinants of economic growth at least in the short run. From these two points of views, we claim that employment is a key to look into strategies for the pro-poor growth.

There is no doubt that agriculture is the sector that has absorbed the poor for employment most. Therefore, some studies suggested that a pro-poor growth strategy should accentuate the role of agriculture (Klasen [2001], Lipton and Ravallion [1995], and Ravallion and Datt [1996]).<sup>7</sup> We do not take this for granted. For the experience of the East Asian pro-poor growth provides examples that manufacturing industry played a leading role to materialize pro-poor growth (World Bank [1993]). And, it is known that industrialization occurring in East Asia in the 1970s-80s was led by export-oriented manufacturing industries, where unskilled labor-intensive technology was utilized (Hirata and Nohara [1989], and Yamazawa and Watanabe [1988]). As we explain later, we claim that this feature of industrialization helped the poor in East Asia raise income by themselves without relying on assistances by the governments.

In this paper, we first investigate whether this

4 Klasen [2001], Lipton and Ravallion [1995], and Ravallion and Datt [1996, 1999] are major exceptions. We will discuss them shortly.

5 Klasen [2001] calls autonomous poverty reduction along with economic growth “the direct way” and poverty reduction via public redistribution policies “the indirect way.”

6 In our terminology, East Asia consists of economies located east of the Indian Subcontinent in Asia.

7 Klasen [2001] adds a reservation on the emphasis on agriculture in the sense that labor-intensive manufacturing also can increase the income of the poor in the medium term while migration from agricultural areas to industrial areas takes place.

view is true. Namely, we explore which industry was a driving force in increasing employment of the poor in the East Asian economies during a couple of decades. We use the educational level as a proxy for poverty, and collect time series data of employment of workers with a low level of education in some East Asian economies from their population censuses and/or labor force surveys. The results show that for not only total workers but also the poor employment structure by industry shifted from agriculture towards manufacturing in those economies. Namely, manufacturing was likely to increase employment of the poor more than agriculture in East Asia, even though the share of agriculture in employment of the poor was likely to dominate those of other industries.

Second, we repeat the same exercise with the data of some African and South Asian countries where poverty reduction has not proceeded as smoothly as in East Asia. Only Mauritius and Seychelles, where export-oriented industrialization with labor intensive industries, share the same feature of shift in industrial structure in employment of the poor with the East Asian economies. Among the other countries whose data of employment by educational level and by industry are available, i.e. Malawi, South Africa, Bangladesh and India, no systematic pattern of change in employment structure was found.

Our conclusion derived from the findings is that export-oriented industrialization led by labor-intensive manufacturing industries may bring about pro-poor growth, on the one hand through improvement in efficiency due to exploitation of comparative advantage and on the other hand through enhancing the wage level of the poor.<sup>8</sup> This mechanism of economic growth hand in hand with poverty alleviation seems to work in labor abundant countries relatively to land more likely than otherwise.

The remaining parts of our paper are organized as follows: The next section briefly recaps the pattern of East Asian economic development. Two of the important features of it in order to explain pro-poor characteristic of economic growth in typical East

Asian economies, viz. (1) export-orientation, and (2) expansion of labor-intensive industries in the initial phase of industrial development, are reviewed. In section 2, the analytical framework to look into the industrial structure of employment of the poor is given. A simple and diagrammatic method to address the question is displayed. In section 3, trends of changes in industrial structure of employment of all workers and the poor in Thailand, Taiwan, and Indonesia are shown. In section 4, the same analytical framework is applied for selected African and South Asian countries. It is shown that the pattern of changes in employment of the poor by industry is different from that of East Asian countries. Then, factors that are considered to accrue the differences are discussed. The final section is the conclusion.

## 1. Salient Features of East Asian Economic Development

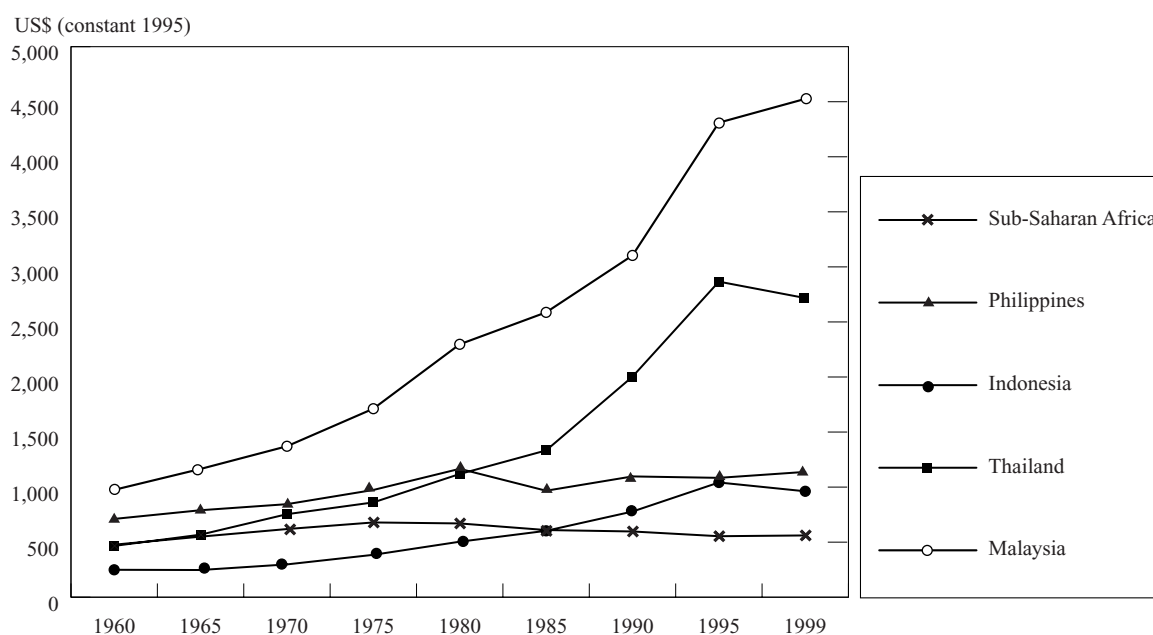
Two notable features have been drawn from experiences of East Asian economic development; *rapid* and *shared*. Economic development in East Asia was not only rapid but also its fruits of growth were shared within the nations.

### 1.1 Rapid and Shared Growth

Some of the East Asian economies attained a high pace of economic growth from the late 1960s to the 1980s (World Bank [1993]). However, going back to the 1960s, the development level of economies in Asia and Africa was almost the same (Fig. 1-1), although the initial conditions and/or factor endowments of production varied among countries in each region. These East Asian economies could attain more than 5 % of annual growth of GDP per capita during the period, which was one of the highest in the world. This rapid economic growth was first taken place in the Newly Industrialized Economies (NIEs), then spreaded to the Association of Southeast Asian Nations 4 (ASEAN4)<sup>9</sup>.

<sup>8</sup> In this paper we refer economic growth to that in the short-run, namely economic growth in transition. We need to incorporate our findings in an economic growth theory eventually.

<sup>9</sup> The NIEs include Singapore, Hong Kong(China), South Korea and Taiwan(China). ASEAN4 means Malaysia, Thailand, Indonesia and the Philippines in this paper.

**Figure 1-1 Change in GDP per Capita in East Asia and Sub-Saharan Africa****Table 1-1 Income Poverty in East Asia and Sub-Saharan Africa**

| People living on less than \$1 a day (unit : million) |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|
| Region  | 1987  | 1990  | 1993  | 1996  | 1998  |
| East Asia and Pacific                                 | 417.5 | 452.4 | 431.9 | 265.1 | 278.3 |
| Excluding China                                       | 114.1 | 92.0  | 83.5  | 55.1  | 65.1  |
| Sub-Saharan Africa                                    | 217.2 | 242.3 | 273.3 | 289.0 | 290.9 |
| Share of population living on less than \$1 a day (%) |       |       |       |       |       |
| Region  | 1987  | 1990  | 1993  | 1996  | 1998  |
| East Asia and Pacific                                 | 26.6  | 27.6  | 25.2  | 14.9  | 15.3  |
| Excluding China                                       | 23.9  | 18.5  | 15.9  | 10.0  | 11.3  |
| Sub-Saharan Africa                                    | 46.6  | 47.7  | 49.7  | 48.5  | 46.3  |

Source : World Bank [2000].

In addition to rapidness of development, economic development in the region resulted in a significant impact on reducing poverty. Table 1-1 shows recent change of income poverty in East Asia and Sub-Saharan Africa. East Asia, including the Pacific, decreases income poverty measured by \$1 a day both in terms of number and share. On the other hand, in Sub-Saharan Africa, the number of the poor is increasing and the share still remains around 50 %.

Economic development also improves aspects of non-income poverty in the region. Table 1-2 shows changes in health and education, representative indicators of non-income poverty. Life expectancy at birth in the NIEs attained almost the same level as

developed countries, on the other hand, that in Sub-Saharan Africa is still below 50. By statistics of the primary school enrollment rate, East Asia economies have attained universal primary education. Some of the East Asian countries face difficulty in the dropping rate now. Sub-Saharan Africa still needs to promote primary education and to reduce illiteracy rates.

Furthermore, these economies improved income distribution by as much or more than in other economies. These economies could attain high growth and declining inequality (World Bank [1993]). Table 1-3 shows the comparison of change of Gini coefficients between East Asia and Sub-Saharan Africa. Inequality in terms of Gini coefficients was

**Table 1-2 Non-Income Poverty in East Asia and Sub-Saharan Africa**

| Life expectancy at birth, total (years)                      |        |        |        |        |        |
|--|--------|--------|--------|--------|--------|
|  | 1960   | 1970   | 1980   | 1990   | 1999   |
| the NIEs   | 61.29  | 65.87  | 70.79  | 74.07  | 76.72  |
| ASEAN4   | 50.39  | 56.27  | 61.59  | 66.53  | 68.89  |
| East Asia & Pacific*   | 39.23  | 59.25  | 64.53  | 67.38  | 68.95  |
| Sub-Saharan Africa*  | 40.24  | 44.20  | 47.64  | 49.93  | 46.80  |
| School enrollment, primary (% gross)                         |        |        |        |        |        |
|  | 1960   | 1970   | 1980   | 1990   | 1995   |
| the NIEs   | 97.33  | 108.50 | 108.03 | 103.67 | 94.83  |
| ASEAN4   | 86.25  | 89.60  | 102.65 | 104.82 | 104.35 |
| East Asia & Pacific*   | 101.18 | 89.76  | 110.58 | 120.16 | 114.95 |
| Sub-Saharan Africa*  | 38.99  | 51.24  | 80.69  | 75.74  | ...    |
| Illiteracy rate, adult total (% of people ages 15 and above) |        |        |        |        |        |
|  | 1970   | 1980   | 1990   | 1995   | 1999   |
| the NIEs   | 20.53  | 12.93  | 8.40   | 6.80   | 5.67   |
| ASEAN4   | 30.38  | 20.68  | 13.62  | 10.92  | 9.07   |
| East Asia & Pacific*   | 44.16  | 31.16  | 20.93  | 17.40  | 14.90  |
| Sub-Saharan Africa*  | 71.76  | 61.68  | 50.09  | 44.10  | 39.39  |

\* the World Bank definition.

Source : World Bank [2001].

**Table 1-3 Inequality in East Asia and Sub-Saharan Africa (average Gini Coefficient)**

|                           | (unit : %) |       |
|---------------------------|------------|-------|
|                           | 1980s      | 1990s |
| East Asia and the Pacific | 38.70      | 38.09 |
| Sub-Saharan Africa        | 43.46      | 46.95 |

Note : Calculated based on the data of Deininger and Squire[1996]. The proportion of income Gini coefficients varies across regions, hampering comparability. Regional average are unweighted. For more details, see the source p.26.

Source : Ahyuja et al. [1997].

at a relatively low level and that improved in East Asia and the Pacific from the 1980s to the 1990s. On the other hand, that in Sub-Saharan Africa was at a high level and getting worse in the same period.

With the above facts, economic development in East Asia has been called as the “Shared Growth” (World Bank [1993]). This shared growth is a good example of pro-poor growth, of which the mechanism will be analyzed shortly in this paper. Economic

growth and improvement of income inequality are keys for alleviating poverty. When measuring the improvement of income inequality, relative poverty within a country is focused. But in the situation where a country has a mass poverty, increasing income of the poor could be achieved only by economic growth of the country as a whole. In a sense that economic development in East Asia resulted in reducing absolute poverty significantly, development experiences of East Asia can be a good lesson for pro-poor growth.

### 1.2 Reasons of Economic Development in East Asia

The most salient reason that contributed to achieving pro-poor growth in East Asia was export-led orientation with labor-intensive manufacturing industries. In addition, there are other explanatory factors of East Asia’s rapid growth, such as prevalence of primary education, agricultural development, macroeconomic stability, the role of public policies, the existence of regional dynamism, and so on<sup>10</sup>. It is obvious that rapid economic growth and poverty

10 There are many insightful analyses about economic development of East Asia other than the World Bank [1993], although all of them are not referred here.

reduction in East Asia have been achieved by the positive interrelation among those factors. Any of these factors alone could not achieve the rapid development in the region. Keeping these facts in mind, we focus on export-led orientation with labor-intensive manufacturing industries because expansion of labor-intensive industries led to alleviating poverty in the way of autonomously generating income by the poor.

### 1.2.1 Openness of Economies by Export-led Orientation

Many East Asian economies turned to export-led orientation policies from import-led orientation policies at the beginning of their development period, in the late 1960s in Singapore, South Korea, Taiwan, in the 1970s in Thailand, and 1980s in Indonesia and the Philippines. The export-led orientation in these economies was realized by removing trade barriers and by eliminating the anti-export bias of import protection measures to ensure the neutrality of incentives between exports and domestic production (Quibria [2002]).<sup>11</sup>

Export-led orientation was reflected in lowering of tariff rates and export taxes, removal of quantitative restrictions on trade and reduced barriers to international investment inflows (Quibria [2002]). Table 1-4 shows the average import tariff rate of

selected Asian countries. Export taxes have been 0 since the 1970s in the NIEs. By opening economies gradually, these economies could succeed to ride the wave of globalization.

### 1.2.2 Export-led Orientation with Labor Intensive Industries

Export-led orientation in the region was succeeded by labor-intensive industries at the beginning of significant development. Although the initial conditions varied within the region, most of the East Asian economies were suffered relatively from scarcity of land and natural resource, and a growing population. East Asian economies tended to develop their economies by industrialization rather than agricultural development (Ohno and Sakurai [1997]).

In response to openness of economies with export-led orientation, East Asian economies started to export manufactured products of light industries such as textiles and plastic products in Hong Kong in the 1950s-60s, apparel and wearing products in South Korea in the 1960s, and so on. By exporting, products were exposed to international competition, which led to increasing productivity of labor-intensive manufactured products.

At the same time, openness to foreign direct investment (FDI) brought new production technique into the region. Local labor was absorbed as unskilled

**Table 1-4 Average Import Tariff Rates**

(unit : %)

| Country       | 1975  | 1980  | 1985  | 1990  | 1995  | 2000         |
|---------------|-------|-------|-------|-------|-------|--------------|
| Singapore     | 1.34  | 0.91  | 0.72  | 0.35  | 0.23  | 0.28         |
| Korea, Rep.   | ..    | 7.64  | 8.41  | 7.88  | 4.65  | 4.30 (1997)  |
| Malaysia      | 9.41  | 9.00  | 8.68  | 4.81  | 3.12  | 3.40 (1997)  |
| Thailand      | 14.35 | 11.09 | 13.43 | 11.67 | 8.02  | 3.77         |
| Indonesia     | ..    | ..    | 4.30  | 6.29  | 3.29  | 1.74 (1997)  |
| Philippines   | ..    | 13.43 | 14.31 | 14.52 | 14.38 | 7.08         |
| India         | 25.74 | 25.66 | 44.15 | 42.18 | 24.82 | 20.05        |
| Bangladesh    | 8.64  | 16.43 | 14.04 | ..    | ..    | 11.68 (1997) |
| United States | 4.37  | 2.97  | 3.60  | 3.37  | 2.59  | 1.63         |
| Japan         | ..    | 2.29  | 2.30  | 2.65  | ..    | ..           |

Source : World Bank [2002].

11 Other policies, such as competitive exchange rate policies, creation of export processing zones, low interest export credit, are known for promotion of export-led orientation policies in the region. (Hirata and Nohara [1989])

labor at first. In the process of expansion of production by trade and FDI, employment opportunities were increased. The poor participated in these economic activities at first as unskilled labor, then skill formation took place. Export-led orientation and FDI increased the pressure for learning and retaining competitiveness to move toward more sophisticated, knowledge and capital-intensive industries (Quibria [2002], Ohno and Sakurai [1997]).

However, export-led orientation does not necessarily lead to rapid economic growth under all conditions. The share of trade to GDP in Sub-Saharan Africa is not relatively low, although their relatively low GDPs are taken into account<sup>12</sup>. The process of materializing comparative advantages must be the key.

In addition, the impact of economic growth on reducing poverty is usually observed through employment and change of wages of workers. East Asian economies maintained greater flexibility in their labor markets. Most East Asian economies imposed fewer regulations on employment. Excessive regulation such as setting a minimum wage may cause labor market distortion rather than improve workers' welfare. With labor market flexibility, East Asian economies were able to achieve rapid growth in real wages for their workers without recourse to protective labor legislation (Quibria [2002]).

## 2. Analytical Framework

### 2.1. A Scenario of Pro-Poor Growth in East Asia

As mentioned in the previous section, economic growth in East Asia in the 1970s-80s necessitated absorbing unskilled workers in labor-intensive manufacturing, and their wage has increased as the economy grew. In the beginning the wage level of unskilled workers was low, and that is the reason why FDI came into the economy and why labor-intensive

industries had a comparative advantage. However, as the economy grew, capital was rapidly accumulated utilizing both domestic and foreign financial resources. Then, the wage level increased very rapidly even compared with the increase in the average educational level in the region.<sup>13</sup> In this process of poverty alleviation direct public expenditure for the poor did not play as substantial role as expansion of employment opportunity and wage increases. The main role of public expenditure targeted to the poor was to mitigate shocks emanating from natural disasters, sudden economic downturns, etc. Direct public expenditure was not a driving force for the poor to raise their income in the region.

We argue that a probable scenario of the pro-poor growth in East Asia consists of the following three arguments:

- (1) Typical East Asian economies are labor-abundant;<sup>14</sup>
- (2) Labor-rich economies in East Asia had a comparative advantage in production of labor-intensively produced commodities (the Heckscher-Ohlin theorem);
- (3) Trade liberalization has only gradually proceeded in the typical East Asian economies. Therefore, labor-intensively produced commodities were cheaper in those economies than in international markets. Then, both export quantity and price have increased as trade liberalization went on. The rise in price of labor-intensively manufactured goods made wage level of workers increase (the Stolper-Samuelson theorem).

In sum, labor abundance; the Heckscher-Ohlin theorem; and the Stolper-Samuelson theorem, are combined to explain short-term economic growth and wage increase in the East Asian economies where

12 Trade to GDP in Sub-Saharan Africa is not low compared with other regions. East Asia & the Pacific 69.81%, Sub-Saharan Africa 59.59%, South Asia 30.33%, and Latin America and the Caribbean 34.16%. (World Bank [2001])

13 The most interesting case is Thailand. Even in the middle of rapid economic growth between the late 1980s and early 1990s the gross enrollment rate in secondary schools in Thailand was around 40% and the lowest among the five original ASEAN member countries. During 1970-90 the same rate increased from 17.4% to 30.1% (World Bank [2001]). However, during the same time manufacturing wages increased twenty times (World Bank [1995], p. 149).

14 Of course, there are variations in terms of factor abundance in East and Southeast Asia. For details, see Leamer [1984, 1987], Lal and Myint [1996].

these three arguments were applicable. Let's see whether these three arguments were satisfied.

First, Leamer [1984] confirmed labor abundance in the initial phase of East Asian economic development. He constructed data of factors of production of some developing and developed countries for around 1958 and 1975. Indonesia, Hong Kong, Japan, Malaysia, Myanmar, the Philippines, Singapore, South Korea and Thailand were picked out of East Asia for his samples. It was judged that during the period (1) illiterate workers and (2) literate nonprofessional workers were abundant relatively to the world average in the all the above East Asian economies but Japan in 1958 and 1975 and Singapore in 1975.

There is a caveat for interpretation of this fact. Among the above East Asian economies, Indonesia, Malaysia, Myanmar, the Philippines and Thailand had abundant "land in the tropical rainy climate zone," too. Lal and Myint [1996] reviewed Leamer's data, and concluded that Labor was relatively scarce to land in Malaysia and Thailand in 1958 (Leamer [1984], pp. 100-133). Thailand is a borderline case in the sense that she crossed the threshold of international factor endowment ratio in 1978, and turned into a labor abundant country to land in 1978.

Second, both the Heckscher-Ohlin theorem and the Stolper-Samuelson theorem do not receive complete empirical support (Deardorff [1984], and Leamer and Levinsohn [1995]). The dispute dates back to the Leontief paradox in the 1950s. Since then voluminous studies have been conducted in order to prove or disprove the theorems. A conclusion made by Leamer and Levinsohn [1995] is that general tendencies of the studies are supportive of the theorems if trade imbalance, technological differences, home bias, and multiple cones of diversification are taken into account. To scrutinize

the validity of the above two theorems in the East Asian economies is beyond the scope of this study.

Furthermore, we admit that the Heckscher-Ohlin and Stolper-Samuelson theorems are both static frameworks, and not suitable to be related to long-run growth. However, now that annual economic growth is considered to correspond to economic growth in transition toward a steady state rather than the steady state economic growth (Jones [1995]), static frameworks may have persuasive explanatory power on actual economic growth.<sup>15</sup>

In the remaining parts of this paper we explore which sectors increase more the employment of the poor. As the above scenario predicts, did labor-intensive industries increase employment of unskilled and poor workers more than other industries in East Asia? Is the same pattern of changes in industrial structure of employment of the poor observed in other developing areas, for example Africa and South Asia?

## 2.2. Poverty, Education and Employment

In order to study trends of employment of the poor, we use educational level as a proxy of poverty. In other words, we assume that less educated people are highly likely to be poor, and *vice versa*. This proxy has strengths and weaknesses.

The first strength of the educational level for a proxy for poverty is the high correlation between them. There are empirical supports on the positive correlation between educational level and income (Schultz [1988]). It does not matter whether higher education helps workers earn more or the causality is the other way round,<sup>16</sup> in order for low educational level to be a good proxy for poverty. The second strength of the educational level is broad availability across countries in Asia and Africa. Even though poverty is now considered to be multi-faceted (World Bank [2000]), there is no doubt that income level is

15 Economic growth models with open economies tend to conclude that the effect of trade liberalization on economic growth is ambiguous (Grossman and Helpman [1991, 1995], and Rivera-Batiz and Romer [1991a, b]). If a comparative advantage lies in an innovative sector which leads economic growth, the economy is benefited by trade liberalization. On the other hand, a country whose comparative advantage does not lie in the innovative sector, is not benefited. This dynamic effect should be taken into account in addition to the Stolper-Samuelson effect when one think of the effect of trade liberalization on factor prices.

16 In fact, there is a study looking into causality between education and growth. Bils and Klenow [2000] argued that causality from schooling to growth was weak by calibrating and simulating an economic growth model.



still one of the most appropriate proxies for poverty. However, data on employment by income level are rarely available in developing countries.<sup>17</sup> In order to see employment of the poor by industry, we definitely need an employment series for the poor by industry. For this purpose educational level is convenient because it is more widely available than income level.

We further assume that employment is a key to reduce poverty in any country. Since high educational level enhances productivity of workers, education helps workers bargain their wages with prospective employers and leads to an increase in workers' earnings. Labor is likely to be the only factor of production possessed by the poor. This notion is the tradition of regarding the poor as workers in the name of the proletariat since Karl Marx and Friedrich Engels. Of course, labor is irrelevant to raise income for the retired, handicapped or anyone who cannot work, so that their situation must be taken into account whenever nation-wide poverty reduction is planned. However, in most of the cases they require direct public expenditure to make their living, and income generation by themselves for pro-poor growth is out of their reach.

### 2.3. Analytical Framework

We use simple applications of factor decomposition to analyze trends of employment of the poor for several countries in Asia and Africa where necessary data are available. We divide employment of the poor by sector and see changes in it. Those changes must be affected by both the market mechanism and government policies. The latter sometimes gives guidance for private agents to predict the future. In particular, economic plans, which are often formulated in developing countries by five years, play that role of guidance for the expectation of private agents to

converge.<sup>18</sup> Whether financial measures are accompanied or not, industrial policies, including formulating national economic plans, may contribute to shifts in industrial structure by affecting people's expectation on the path of development of the economy.

There is a strong argument that the pro-poor growth should be led by rural agricultural industry because that's the industry where the poor is employed most. Lipton and Ravallion [1995] argue that:

*“(M)any LDCs could grow faster, as well as more equitably, by shifting investments towards rural, labor-intensive or ‘backward’ activities.” (Lipton and Ravallion [1995], pp. 2607-2608)*

Klasen [2001] totally agrees with this argument. Ravallion and Datt [1996] provide an empirical ground for it. They regress changes in poverty indicators derived from household data on growth of net domestic products by sector in India for 1951-91, and conclude that output growth in the primary and tertiary sectors reduced poverty while secondary sector growth did not. These three studies give a negative connotation on the role of the manufacturing sector on pro-poor growth.

We challenge this connotation in this section. Ravallion and Datt [1996] do not specify any logic to explain the role of growth of primary and tertiary sectors on poverty reduction. We look into the logic from the viewpoint of employment of the poor.

Suppose there are three industries in a country. Industry 1's share of employment is the largest even though the growth rate of employment in the industry may be lower. Let's call this industry "agriculture". Industry 2's characters are the other way round. The employment share of the industry is small, while the

17 Thailand is an exception among developing countries. Time series of employment by income level and industry are available in the National Statistical Office, *Report of the Labor Force Survey, Whole Kingdom*, various issues. However, these series are not suitable because (1) the income is monthly income and imputation of goods and service that are produced and consumed at home is not conducted; (2) subdivision of income level for the poor is too coarse; and (3) they are in nominal term.

18 This role of government is extremely important in the case that the economy lies in a poverty trap, which is an inferior among multiple equilibria due to the coordination problem. In such a situation, a guidance of the government may help the economy to shift to a superior equilibrium by utilizing "self-fulfilling prophecies." See Ciccone and Matsuyama [1996], Farmer [1993] and Matsuyama [1997], for details.

growth rate is high. Let's call this industry "manufacturing". The rest of industries are integrated into Industry 3 and this industry group is called "service" industry.<sup>19</sup> The employment is summed up to total employment of the poor at time  $t$ ,  $L_t$ .

$$L_{1t} + L_{2t} + L_{3t} = L_t. \tag{1}$$

Total employment is divided into the poor and the non-poor as well. Let's denote employment of the poor  $L_t^P$  and that of the non-poor  $L_t^{NP}$ . Then,

$$L_t^P + L_t^{NP} = L_t. \tag{2}$$

The employment of the poor is further divided by industry as well:

$$L_{1t}^P + L_{2t}^P + L_{3t}^P = L_t^P. \tag{3}$$

Now which industry does contribute to the growth of employment of the poor most? The following factor decomposition helps address this question:

$$\frac{\Delta L_t^P}{L_t^P} = \frac{L_{1t}^P}{L_t^P} \cdot \frac{\Delta L_{1t}^P}{L_{1t}^P} + \frac{L_{2t}^P}{L_t^P} \cdot \frac{\Delta L_{2t}^P}{L_{2t}^P} + \frac{L_{3t}^P}{L_t^P} \cdot \frac{\Delta L_{3t}^P}{L_{3t}^P}. \tag{4}$$

It is obvious from the equation above that an industry can contribute to the growth of employment of the poor in two ways, namely by a great share and high growth rate. In our example agriculture, *i.e.* industry 1, may contribute greatly because of a great share of employment ( $L_{1t}^P / L_t^P$ ), even though the growth rate ( $\Delta L_{1t}^P / L_{1t}^P$ ) is small. By contrast, manufacturing, *i.e.* industry 2, can also contribute by high growth rate ( $\Delta L_{2t}^P / L_{2t}^P$ ), even though its share ( $L_{2t}^P / L_t^P$ ) is small. It is well-known that industrial structure in terms of total employment is likely to shift its weight from primary industry to secondary and tertiary industries (Clark [1957], Chenery and Taylor [1968]). Our question is whether the same law is applicable to employment of the poor or not.

As mentioned above, we use educational level as a proxy for poverty. Once the educational level is used as the proxy, it turns out that the signs of eq. (4) is negative in general because the number of workers without education decreases almost unanimously in

the world. Therefore, in order to see contribution of each sector to the increase in employment of the poor, let us subtract ( $\Delta L_t^P / L_t^P$ ) from both sides of eq. (4):

$$0 = \frac{L_{1t}^P}{L_t^P} \cdot \left( \frac{\Delta L_{1t}^P}{L_{1t}^P} - \frac{\Delta L_t^P}{L_t^P} \right) + \frac{L_{2t}^P}{L_t^P} \cdot \left( \frac{\Delta L_{2t}^P}{L_{2t}^P} - \frac{\Delta L_t^P}{L_t^P} \right) + \frac{L_{3t}^P}{L_t^P} \cdot \left( \frac{\Delta L_{3t}^P}{L_{3t}^P} - \frac{\Delta L_t^P}{L_t^P} \right) \tag{5}$$

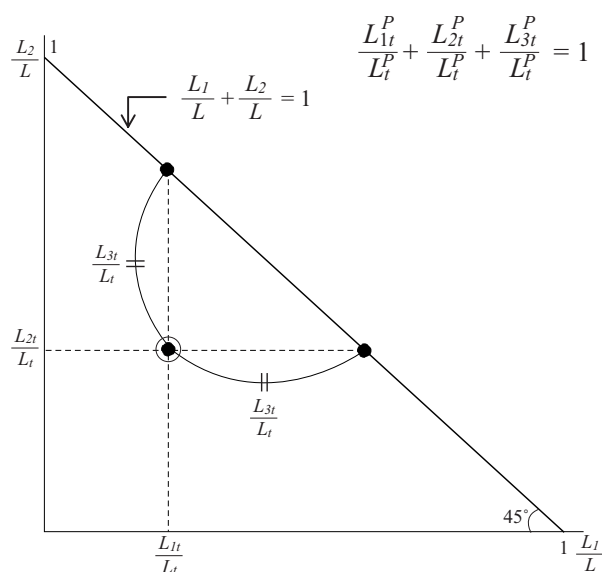
The sign of a term of the equation above which corresponds to an industry whose rate of change is greater than the average rate of change is positive, while that corresponds to an industry whose rate of change is smaller than the average growth rate is negative. The industry whose corresponding term is positive and great in scale contributes to expansion of employment of the poor a lot.

The same contribution of each industrial sector can be seen diagrammatically in a different representation of eq. (3). By dividing both sides of eq. (3) with  $L_t^P$  the following equation is attained:

$$\frac{L_{1t}^P}{L_t^P} + \frac{L_{2t}^P}{L_t^P} + \frac{L_{3t}^P}{L_t^P} = 1. \tag{6}$$

This equation represents the relationship among the share of the three sectors, and changes in the share of each sector incorporates the sign and scale of each term of eq. (5). In the next section we will focus on eq. (6) and see changes in the share of employment of the poor by industry in various countries. Figure 2-1 shows a diagrammatic representation of eq. (6). The shares of agriculture and manufacturing are taken on horizontal and vertical axes, respectively, while the share of service is expressed as the distance between the coordinate and the 45-degree line depicted in Figure 2-1 by equation (6). Thus, if the coordinate shifts rightward in the diagram, the share of agriculture increases. In the same manner, if it shifts upward, the share of manufacturing rises. Finally, if it shifts in the direction of the origin, the share of service increases.

19 Precisely speaking, this category includes mining, public utilities, and any industries, which are not categorized under agriculture, and manufacturing, in addition to conventionally defined service industry. In most countries that we take up in this paper, forestry and fishery are included in agriculture.

**Figure 2-1 Interpretation of Coordinates****3. Pro-Poor Growth in East Asia**

Since the 1960s, rapid economic growth in East Asia has been achieved and it has led to reducing poverty greatly in the way of pro-poor growth as seen in sections 1 and 2. In East Asia, Thailand, Taiwan and Indonesia are taken for our analysis. These economies had common features in the process of their development. First, in these three countries, it is known that their economies have taken off by export-led orientation with labor-intensive industries although the period of adopting them were varied. Second, before their industrialization, the economies of Thailand and Taiwan were dominated by agriculture (Table 3-1). In Indonesia, the share of agriculture to GDP is also high although Indonesia is known as a natural resource rich country. By analyzing structural change of employment and its impact on the poor of these three countries, some features will be seen in the region.

**Table 3-1 Economic Structure in East Asia**

|               |                        | (unit : % of GDP) |              |              |              |              |              |              |
|---------------|------------------------|-------------------|--------------|--------------|--------------|--------------|--------------|--------------|
|               |                        | 1960              | 1970         | 1980*        | 1985         | 1990         | 1995         | 2000         |
| Thailand      | <b>Agriculture</b>     | <b>36.44</b>      | <b>25.92</b> | <b>23.24</b> | <b>15.81</b> | <b>12.50</b> | <b>11.18</b> | <b>10.46</b> |
|               | Industry               | 18.52             | 25.31        | 28.68        | 31.84        | 37.22        | 39.16        | 40.05        |
|               | <b>(Manufacturing)</b> | <b>12.54</b>      | <b>15.94</b> | <b>21.51</b> | <b>21.92</b> | <b>27.20</b> | <b>28.36</b> | <b>31.85</b> |
|               | Services, etc.         | <b>45.04</b>      | <b>48.78</b> | <b>48.08</b> | <b>52.35</b> | <b>50.28</b> | <b>49.65</b> | <b>49.48</b> |
| Taipei, China | <b>Agriculture</b>     | –                 | –            | <b>7.34</b>  | <b>6.60</b>  | <b>4.66</b>  | <b>3.40</b>  | <b>2.39</b>  |
|               | Industry               | –                 | –            | 42.34        | 42.72        | 39.02        | 36.64        | 34.64        |
|               | <b>(Manufacturing)</b> | –                 | –            | <b>33.77</b> | <b>34.55</b> | <b>31.25</b> | <b>28.28</b> | <b>28.30</b> |
|               | Services, etc.         | –                 | –            | <b>37.04</b> | <b>37.03</b> | <b>41.70</b> | <b>43.42</b> | <b>45.49</b> |
| Indonesia     | <b>Agriculture</b>     | <b>51.46</b>      | <b>44.94</b> | <b>23.97</b> | <b>22.87</b> | <b>20.42</b> | <b>17.14</b> | <b>16.92</b> |
|               | Industry               | 15.05             | 18.69        | 41.72        | 35.34        | 37.64        | 41.80        | 47.25        |
|               | <b>(Manufacturing)</b> | <b>9.22</b>       | <b>10.29</b> | <b>12.99</b> | <b>15.75</b> | <b>18.31</b> | <b>24.13</b> | <b>26.04</b> |
|               | Services, etc.         | <b>33.50</b>      | <b>36.37</b> | <b>34.31</b> | <b>41.79</b> | <b>41.94</b> | <b>41.06</b> | <b>35.83</b> |

\* Data for Taipei, China are those of 1983.

Source: Thailand and Indonesia : World Bank [2001]. Taipei, China: calculated by the author based on ADB[2001].

## Thailand

Thailand is a good example to start our study in the sense that its economy was rooted in agriculture. However, even though the economy was dominated by agriculture, its significant economic growth has been led by the export of manufacturing products.

In the 1960s before an industrialization policy was implemented, Thailand was overwhelmingly an agricultural country. And in that, Thai agriculture was specialized in rice due to historical and political reasons. Thailand was very much a "Rice Economy" characterized by small-scale peasant farming (Krongkaew [1995], Ohno and Sakurai [1997]). It can be observed in the employment structure in Figure 3-1. About 80% of the total employed persons were engaged in agriculture around 1970 as seen in Panel A of Figure 3-1.

In the 1960s, industrialization policies were inaugurated at first through import substitution in accordance with Thailand's First National Development Plan (1961-66). By the late 1960s, the economic tendency had shifted towards export-led growth and the Third Plan (1972-76) emphasized the promotion of export industrialization. It was due partially because domestic markets became saturated, and because hard currency was needed due to deteriorated balance of payment. The export-led growth was pursued increasingly in the 1970s and dominated the Thai industrialization throughout the 1980s (Krongkaew [1995]).

Apart from agricultural products, textiles were a major export product of manufacturing until 1980. In the middle of the 1980s, garments, integrated circuits and processed foods became the leading export products. After the Plaza agreement in 1985, a huge amount of FDI from Japan, the U.S. and the NIEs came in. This made the composition of Thailand's exports diversified and sophisticated.

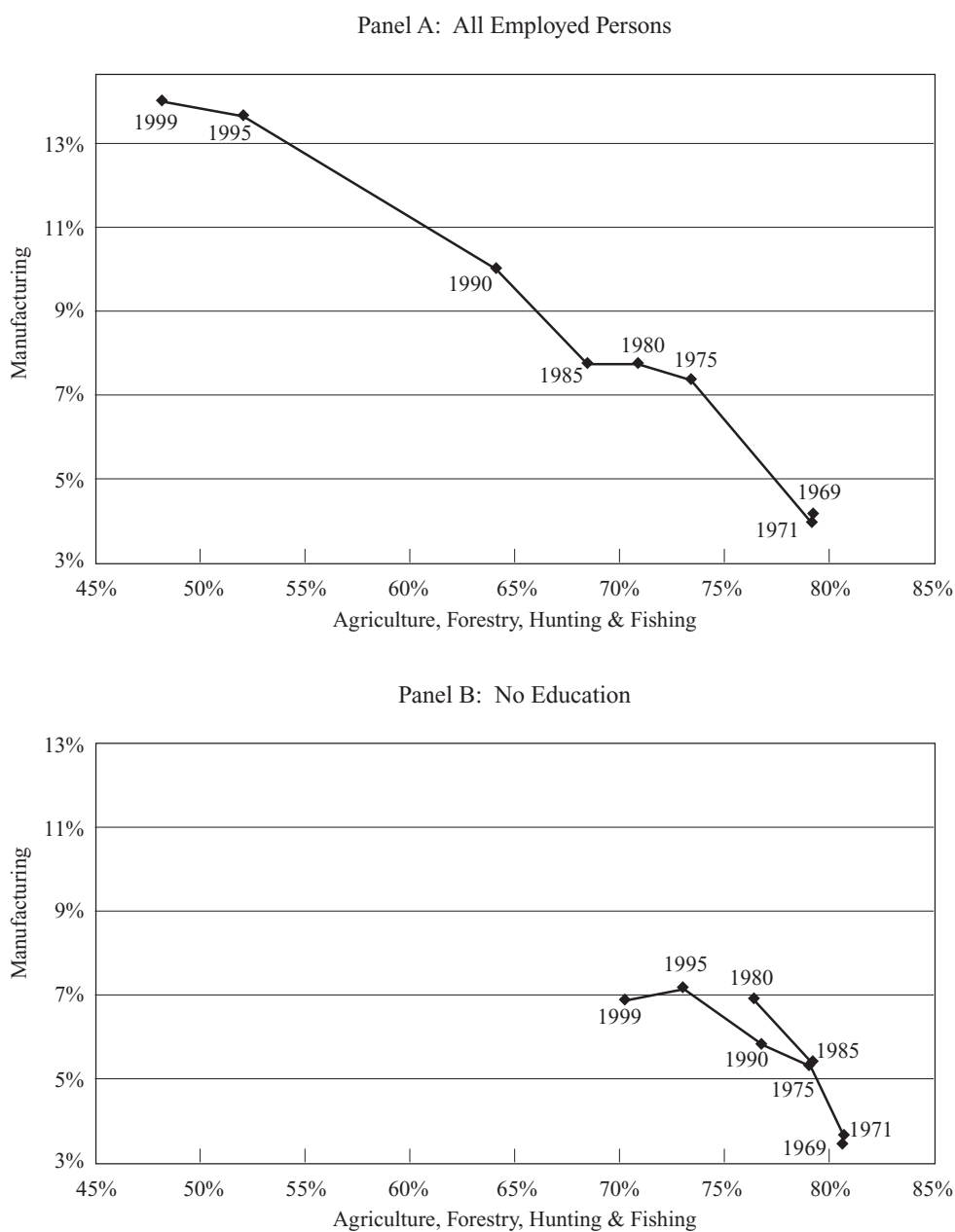
Since the late 1980s, computers and parts have become leading export products of manufacturing (Falkus [1995]).

In accordance with promoting export-led orientation, the structure of employment gradually shifted towards manufacturing. In 1969, only 4% of the total workers were employed in the manufacturing sector. The share of manufacturing increased and reached over 13%, and that in the agriculture sector decreased to less than 50% in 1999 (Panel A in Figure 3-1).

When we focus on which sector employed the poor as workers without education, the share of workers without education to all employed persons was decreased from about 20% in 1969 to 4% in 1999 (Table 3-2). Of these non-educated workers, Panel B of Figure 3-1 shows that the share of workers in agriculture was decreased from over 80% in 1969 to 70% in 1999, and that in manufacturing was increased from 3% in 1969 to 7% in 1999, although it went back once to the agriculture sector in 1985. This structural change was the same tendency as all employed persons, but the degree of movement was smaller and slower than that of all employed persons as seen in Panel A.

The service sector also takes an important role in the Thai economy. This is depicted in Figure 3-1. In Panel A for all employed persons, the decrease in agriculture from 80% (1969) to 50% (1999) is partially absorbed by manufacturing (the increase from 4% to 13%). The rest is absorbed in the tertiary, service sector. For workers without education, difference of the change in the two sectors (in agriculture 80% to 70%, in manufacturing 3% to 7%) is also absorbed in service sector. In service sector, tourism is taking a dominant portion. Tourism has become the most important source of foreign-exchange earnings (Ratanakomut [1995]).

**Figure 3-1 Industrial Structure in Employment: Thailand**



Sources: See Appendix.

**Table 3-2 Share of Workers Without Education to All Employed Persons : Thailand**

| 1969   | 1971   | 1975   | 1980  | 1985  | 1990  | 1995  | 1999  |
|--------|--------|--------|-------|-------|-------|-------|-------|
| 18.48% | 14.42% | 11.02% | 8.95% | 7.37% | 5.42% | 4.19% | 4.01% |

Note : Data for 1869-1985, all employed persons whose age are 11 years and above are counted.  
For those of 1990-1995, 13 years and above are counted.

Sources: See Appendix.

## Taiwan

Taiwan is another example of development experience with export-led orientation with labor intensive industries although agriculture was prevalent before it turned to industrialization.

In the 1950s, Taiwan adopted an import substitution strategy, but the small and protected domestic market became quickly inadequate. An export-promotion strategy was adopted at the end of the 1950s. To promote exports, removing and neutralizing distortions resulting from the import substitution phase were attempted. In addition, in order to give new incentives for export, an export processing zone (EPZ) was established in 1965 as the first such attempt in the world. (Tsai and Tsay [2002]) In the 1960s, the textile industry was a leading in exports. It diversified to simple parts of electronics and plastic products in the late 1960s. In the 1970s, it began producing electronics items such as calculators and telephones, and then expanded into personal computer production (Hattori and Sato [1997])

In 1966, just after the establishment of the EPZ, about 13% of all employed persons was engaged in manufacturing and about 40% were absorbed in agriculture, hunting, forestry and fishing. The establishment of the EPZ contributed to reducing poverty by offering employment opportunities, especially for the employment of a low-skilled labor force. The EPZ tended to hire female and young workers as new entrants into the labor market (Tsai and Tsay [2002]). In accordance with industrialized development, workers were shifted toward the manufacturing sector until 1985 (Panel A of Figure 3-2). With the peak at 1985, the share of employed persons in both agriculture and manufacturing decreased. Employed persons began to be absorbed in service sector.

For data of the poor, only statistics on illiteracy by industry were available so that attention should be paid to comparisons with other countries. Panel B of Figure 3-2 shows the employment change of illiterate people. About 65% of the illiterate people among total workers were employed in agriculture and 5% were employed in manufacturing in 1966. Unlike all employed persons, illiterate people continued to shift from agriculture to manufacturing even after 1985.

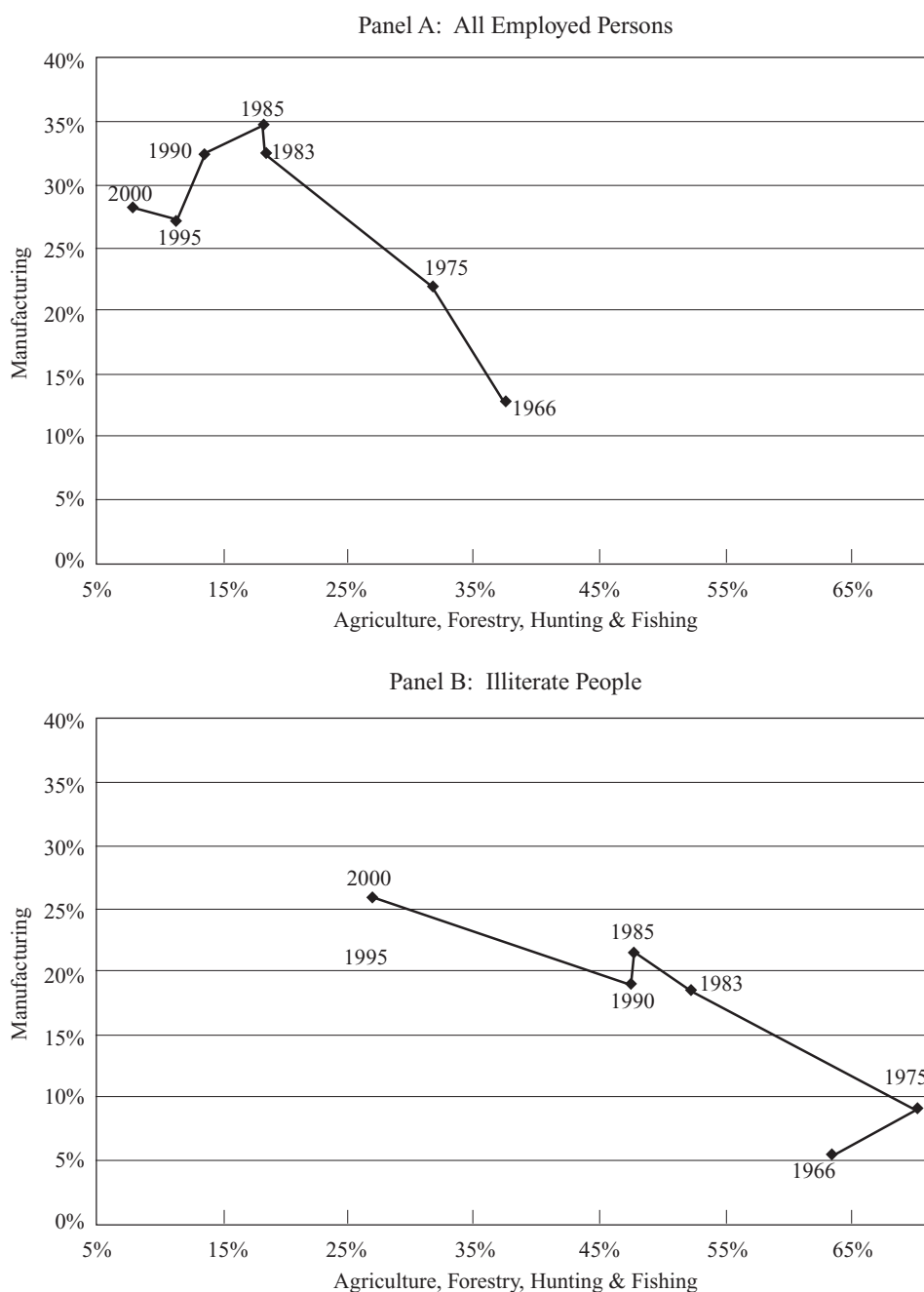
## Indonesia

The last example of East Asian economies is Indonesia because its share of agricultural products to GDP was also high. At the same time, unlike Thailand and Taiwan, Indonesia is endowed with natural resources such as crude oil, natural gas, rubber and coffee. In addition, Indonesia has a large market scale in terms of its large population. With these comparative advantages in primary products and labor, Indonesia has specialized in resource and labor intensive industries. However, exporting primary goods caused overvaluation of the Indonesian Rupiah. This overvalued exchange rate impeded growth of exports of non-oil products such as manufactured products.

Industrialization in Indonesia was undertaken at first with an import substitution strategy in the 1960s. Indonesia's market was relatively big so that the import-substitution strategy could continue to satisfy its economic activities, and it did not need to expand markets internationally. In the early 1980s, the world recession and the sluggish price of crude oil damaged the Indonesian economy, which had heavily depended its export on crude oil. At last in the middle of the 1980s, Indonesia began to strengthen exports with non-oil industries. In the late 1980s, FDI from Japan and the NIEs brought in labor-intensive industries such as textiles, footwear and electronics processing industries. (Ohno and Sakuari [1997])

Concerning employment of workers in Indonesia, over 60% of the total employed persons were engaged in agriculture and persons who engaged in manufacturing were less than 10% in 1976 (Fig 3-3, Panel A). Since the government began to promote exports in the non-oil sector in the 1980s, workers became absorbed in manufacturing. The share of manufacturing by the total employed persons increased after 1986 from 8% to 13% in 2000 and that of agriculture was decreased to 45%. Regarding the poor in terms of non-educated workers, the share in agriculture was about 70% and that in manufacturing was still less than 10% throughout the period. The situation in 2000 went back to that in 1976, the starting point of our analysis, although the share of non-educated people to all employed persons decreased from over 30% in 1976 to less than 8% in 2000 (Fig 3-3, Panel B). This situation may have

**Figure 3-2 Industrial Structure in Employment: Taiwan**



Sources: See Appendix.

**Table 3-3 Share of Illiterate Workers to All Employed Persons : Taiwan**

| 1966   | 1975   | 1983  | 1985  | 1990  | 1995*  | 2000*  |
|--------|--------|-------|-------|-------|--------|--------|
| 16.99% | 10.08% | 6.64% | 5.84% | 3.78% | 26.54% | 18.37% |

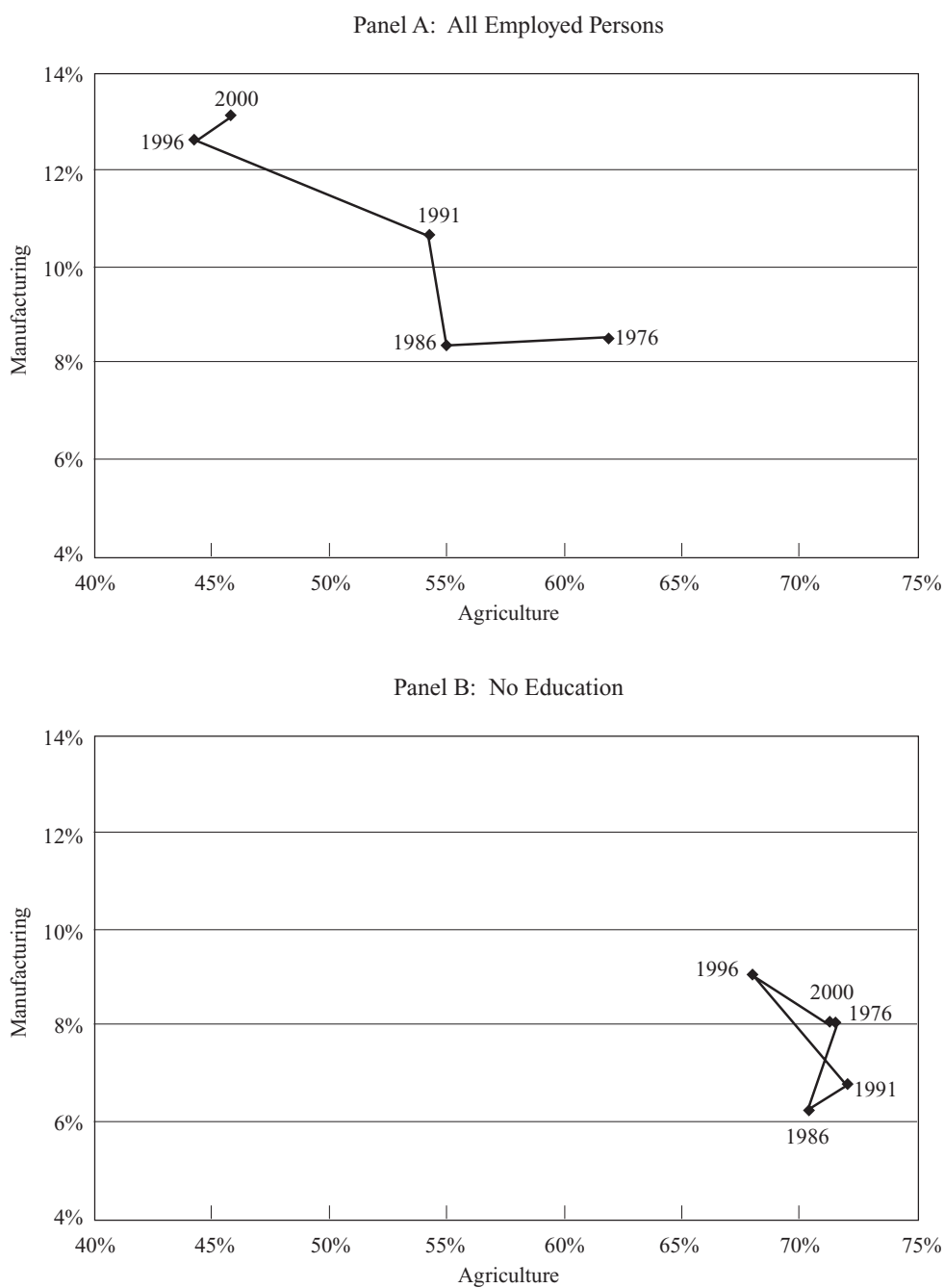
Notes : Data for 1996, all employed persons whose age are 12 years and above are counted.

Data after 1975, 15 years and above are counted.

Share of primary school & below to all employed persons. In after 1996, there was no more category of “illiteracy” in the table of education by industries. It seemed to have been merged in a category “primary school & below”. This implies the number of illiterate people decreased low enough to become negligible.

Sources: See Appendix.

**Figure 3-3 Industrial Structure in Employment: Indonesia**



Sources: See Appendix.

**Table 3-4 Share of Workers without Education to All Employed Persons : Indonesia**

| 1976   | 1986   | 1991   | 1996  | 2000  |
|--------|--------|--------|-------|-------|
| 31.50% | 18.90% | 13.40% | 9.96% | 7.90% |

Sources: See Appendix.



resulted partially from the late policy change to promote exports by manufacturing industries and from the Asian Financial crisis in 1997. The tendency of absorbing the poor by the manufacturing industries since the 1990s seemed to be temporally taken away by the Asian Financial Crisis. Further observation is to be kept on.

In summing up the above three cases of East Asian economies, employment absorption was shifted from agriculture to manufacturing as a whole both in the total employed persons and non-educated persons in accordance with development with an export-led orientation, although the magnitude of the change was small and slow for non-educated persons. We could also observe that whenever countries turned to export-led orientation policies, labor-intensive manufacturing industries offered employment opportunities even for non-educated workers.

These three countries were agricultural countries before industrialization. Although the employment structure has been shifted to the manufacturing sectors, agriculture has still its role. At the early stage of industrialization, an initial investment was required in the form of capital, such as equipment and plant even in light industries. Revenue by exports of agricultural products made possible such initial investments (Ohno and Sakuari [1995]).

In addition, agriculture may have helped to avoid vulnerability of economies in a way that it offered employment opportunities in neighborhood, and that it provided food security for daily life. At the time of the financial crisis in 1997, agriculture definitely helped daily life of the poor. The financial crisis was caused by the coexistence of the weakness of financial sectors and the success of the manufacturing sector (Ito [2001]). Robust agricultural development greatly contributes to the success of the manufacturing sector.

#### **4. Comparison with Africa and South Asia**

Poverty has not been reduced as much in Africa and South Asia as in East Asia. In this section we will apply the same methodology that we used in the previous section to some African and South Asian

countries and see how industrial structure in employment of the poor has evolved in those countries. As we will see below, most of the African and South Asian countries have not experienced as dramatic a structural change in employment as in East Asia over the last three decades.

##### **4.1. Variation in Structural Changes in Employment of the Poor by Industry**

There is wide variation in the performance of poverty reduction and economic growth in Sub-Saharan Africa (Court and Yanagihara [1998], Wood and Mayer [2001]). In terms of economic growth, Botswana records the highest growth rate for the last 30 years in the world. It is noticeable that the growth rate of Botswana was higher than even many economies in East Asia during that time (Acemoglu, Johnson and Robinson [2003]). Recently, Equatorial Guinea and Gabon attained rapid economic growth due to sales of petroleum. In the meantime, there are several countries where civil wars continue and economic activities have seriously shrunk.

We will apply the methodology utilized in the previous section for East Asian economies to African and South Asian countries where necessary data are available from either population censuses or labor force surveys. So far we have succeeded in collecting the data of Malawi, Mauritius, Seychelles and South Africa in Sub-Saharan Africa, and Bangladesh and India in South Asia. Let's see which sector led employment of the poor in the respective countries in Africa and South Asia one by one.

##### **Mauritius**

We would like to start this investigation with Mauritius because this country shares features of economic growth with typical East Asian economies the most (Lamuse [1995], Wellisz and Saw [1993]). Mauritius is an island country which is located east of Madagascar. Mauritius initiated export-oriented industrialization by producing labor-intensively manufactured goods, *e.g.* wearing apparel, in the Export Processing Zone (EPZ). Wearing apparel was a major item of exports from Hong Kong, Korea and Taiwan during the 1960s-70s, and from Indonesia, Malaysia, the Philippines and Thailand during the

1970s-80s (Hirata and Nohara [1989], Suehiro [1982], Yamagata [1998], Yamazawa and Watanabe [1988]). Now China is a leading country in exporting wearing apparel from East Asia. It is noticeable that East Asian economies, *e.g.* Taiwan and the Philippines, were very keen to construct EPZs in their initial phase of industrial development (Scott [1979], Tecson and Nohara [1987]).

Sugarcane plantations were a dominant sector for employment outside of family farming in Mauritius up to the middle of the 1970s. In addition, tourism industry also earned foreign exchange. Labor-intensive manufacturing industries led by wearing apparel started absorbing labor remarkably in the 1970s. It is seen in Panel A of Figure 4-1 that the share of total employment in agriculture, forestry, hunting and fishing started declining at the same time, and the share declined by 20 percentage points till 2000 on the Island of Mauritius.<sup>20</sup> The manufacturing industry increased the share as much as 20 percentage points, instead. Panel B of the same figure reveals that the same patterns are shared with employment of uneducated workers. Even though the scale of changes in the share in employment is smaller, it is apparent that the primary industry gradually lost ground and the manufacturing industry gained the share in terms of employment of uneducated workers. Of course, the share of the primary industry for the uneducated is considerably greater than the same ratio of total employment, which implies that primary industry is still very important to provide employment opportunities for the uneducated. At the same time, the ratio of workers without education to total employment decreased from 1972 till 2000, as shown

in Table 4-1.

### **Seychelles**

The Seychelles is another unique island country in Sub-Saharan Africa, which is surrounded by the Indian Ocean. Her population is as small as eighty thousand while her per capita income is one of the highest in Sub-Saharan Africa. The main industry is tourism. The growth rate of per capita GDP was moderately high, which was more than 2%, among Sub-Saharan Africa for the 1980s-90s.

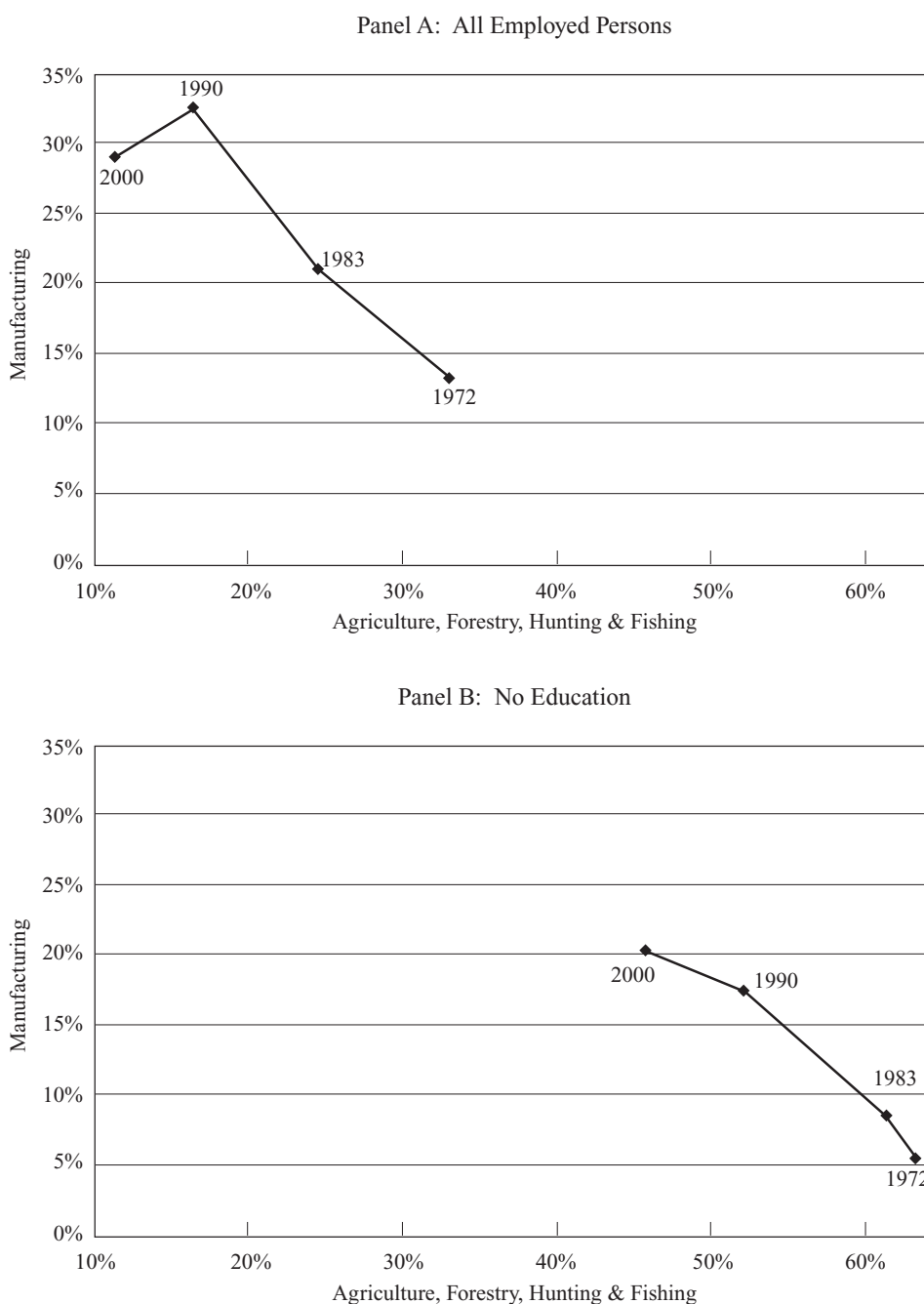
The direction of changes in industrial structure in terms of employment in the Seychelles is the same as that of the Island of Mauritius (Figure 4-2). Primary industry lost its share in total employment and Manufacturing gained, instead. However, the magnitude of the changes is not as much as in the case of Mauritius. The primary industry lost around 10% and manufacturing gained only 2% for 1977-1994, while the remaining 8% points was absorbed by the service sector.

The structural changes are more outstanding in employment of the uneducated, though. Primary industry decreased its share by around 30% during the same period. However, most of the uneducated leaving primary industry seemed to go to the service sector, since the share of manufacturing increased by only 4%.

It is notable that the ratio of workers who have not been to school to total employment has substantially declined in 1977-94 (Table 4-2). Poverty reduction proceeded with the shift of workers from primary to tertiary and secondary sectors and extension of primary education.

20 Mauritius consists of a main island, which is called Mauritius, and several islands. The second biggest island is Rodrigues whose population is a few percent of the whole population of the country of Mauritius. Since the data of employment in 1972 is available only for the Island of Mauritius, only data of the island are used in Table 4-1 and Figure 4-1.

**Figure 4-1 Industrial Structure in Employment: Island of Mauritius**



Sources: See Appendix.

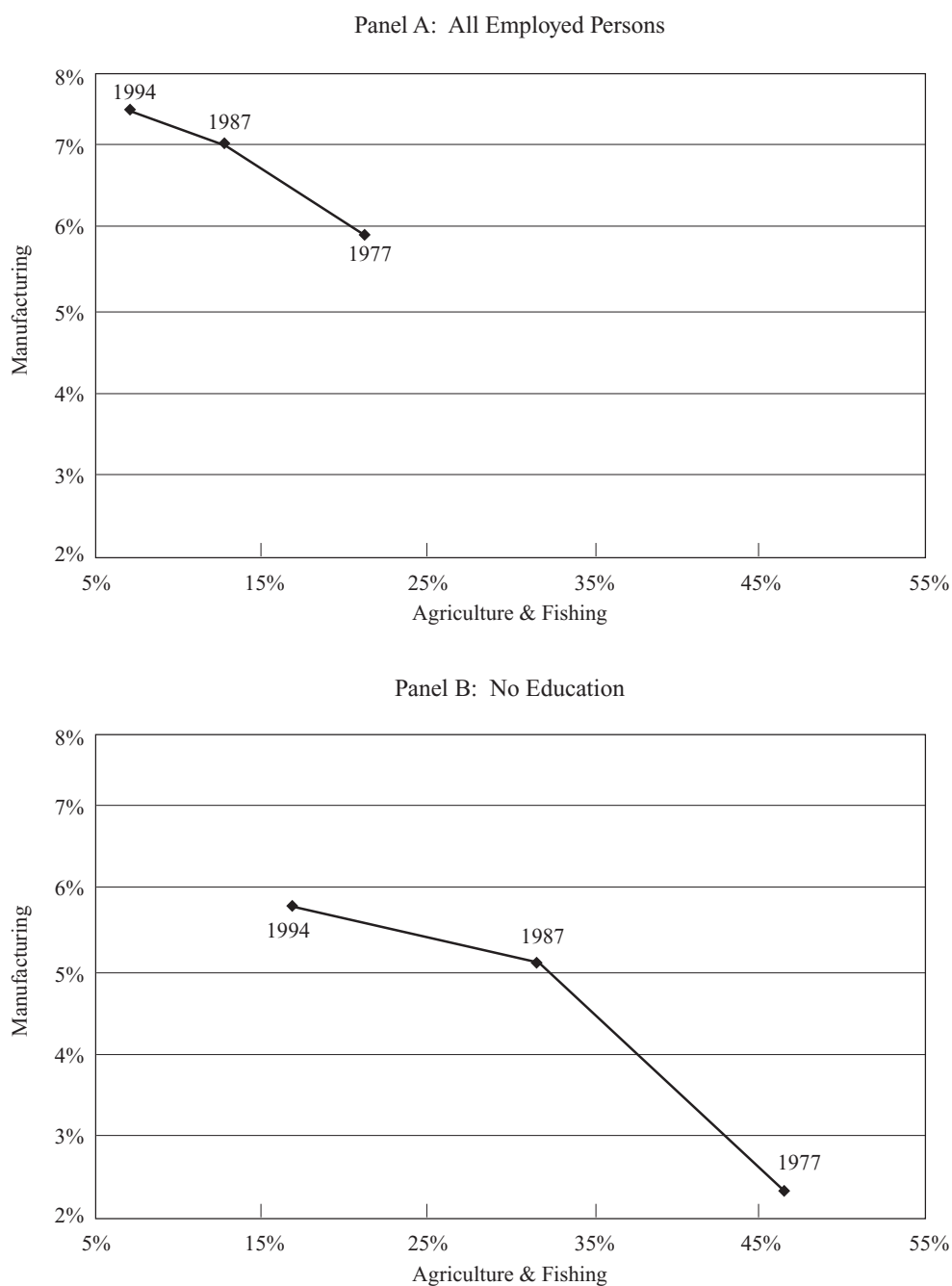
**Table 4-1 Share of Workers Without Education to All Employed Persons: Island of Mauritius**

| 1972  | 1983  | 1990 | 2000 |
|-------|-------|------|------|
| 21.7% | 13.2% | 8.3% | 4.6% |

Notes: As for 1990 and 2000 all employed persons whose age is 12 years or more are counted. As for 1972 and 1983, only a part of the employed persons in age-group 12 to 14 is included in the data.

Sources: See Appendix.

**Figure 4-2 Industrial Structure in Employment: Seychelles**



Sources: See Appendix.

**Table 4-2 Share of Workers Without Education to All Employed Persons: Seychelles**

| 1977  | 1987 | 1994 |
|-------|------|------|
| 12.3% | 5.6% | 3.9% |

Sources: See Appendix.

### **South Africa**

South Africa is a representative country of Sub-Saharan Africa, though this does not imply it is a typical country among Sub-Saharan African countries (Hirano [2002]). South Africa is as great as about 40% in Sub-Saharan Africa in terms of GDP, which is due to both high per capita income and large population. The share of manufacturing in GDP in South Africa is one of the highest as well as Mauritius.

By contrast with Mauritius, absorption of employment into the manufacturing industry has not been dramatic in South Africa. Panel A of Figure 4-3 shows that primary industry lost in share of total employment for the 1970s-80s by 20%. However, manufacturing absorbed only a few percentage points of them. Accordingly, the service sector, the mining sector, etc. increased the share of total employment. Panel B of Figure 4-3 is a mirror image of Panel A of the same figure. The share of the primary industry in employment of the uneducated even increased from 1960 to 1970 by 5% points. Then, the industry considerably lost in its share in 1970-1991. Meanwhile, manufacturing gained only marginally. The difference between Mauritius and South Africa lies in the industrial structure in the manufacturing industry. While labor-intensive wearing apparel dominates Mauritian manufacturing, industrial structure of the South African manufacturing is richer in the sense that various manufacturing industries, e.g. food processing, paper and paper products, chemicals, iron and steel, fabricated metal, and machinery, have

substantial shares in terms of value added. Thus, it is considered that industrial development in Mauritius has been relatively more labor-absorbing than that of South Africa.

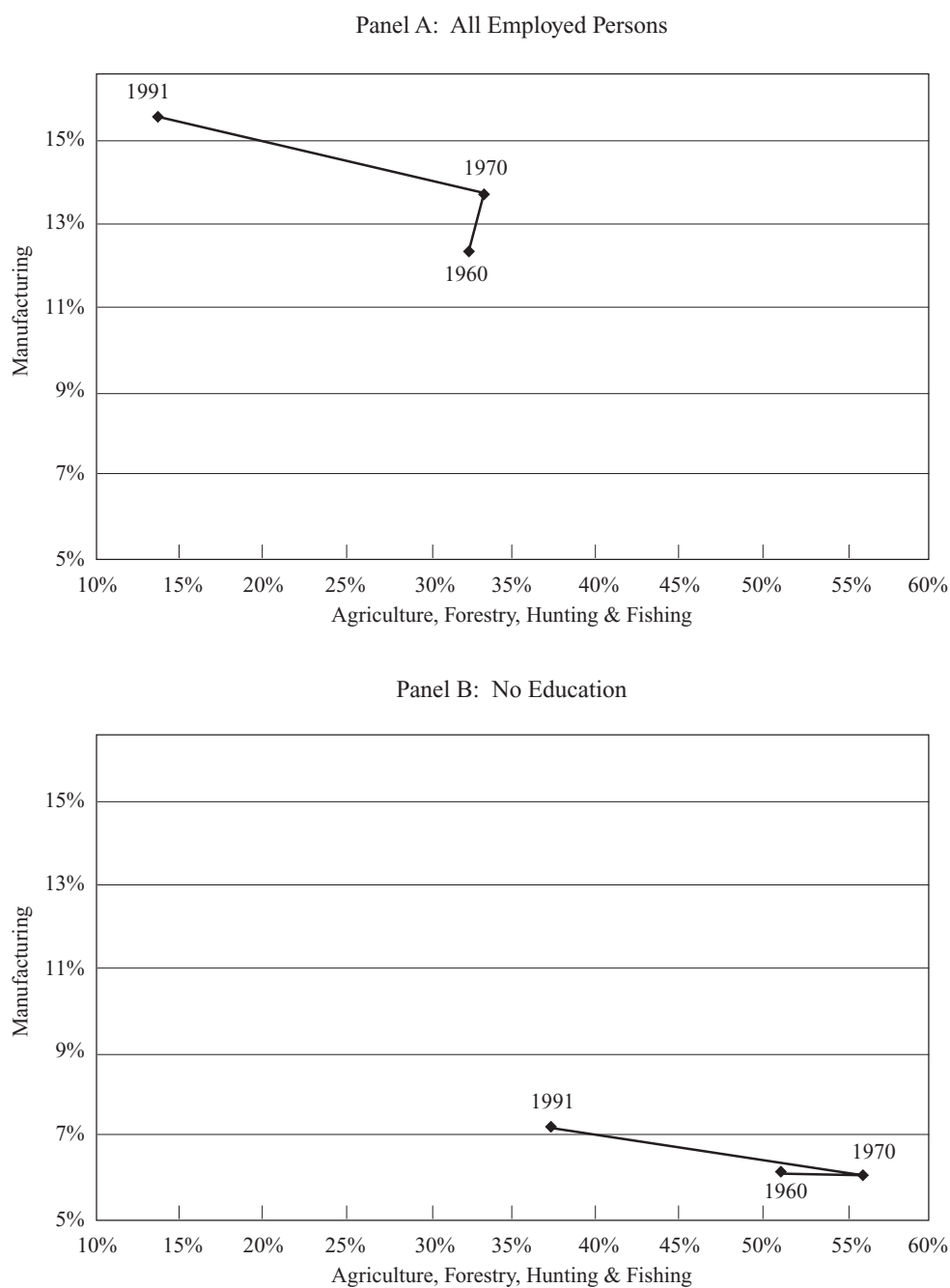
In the meantime, as Table 4-3 shows, primary education has been continuously extended in South Africa in 1960-91. It turns out this is not a general feature in Sub-Saharan Africa.

### **Malawi**

Table 4-4 shows that the share of uneducated workers increased in Malawi between 1977 and 1987. Malawi is the only country in our sample which experienced a decline in the share. The pattern of changes in industrial structure in employment is exactly opposite (Figure 4-4, Panel A). For 1977-87 the share of the primary industry in total employment had increased while the share of the manufacturing industry had decreased. The shares of the primary and manufacturing industries in terms of employment of uneducated workers changed in a similar way to those in total employment (Figure 4-4, Panel B).

Malawi experienced rapid economic growth during the period 1964-79 with the average annual growth rate of 5.9% in real GDP. Due to the world recession led by the second oil price hike, Malawi's growth has tapered off since 1980 and the growth rate in real GDP turned negative for 1980-98 (Pryor [1990], Lal and Myint [1996], pp. 180-184). Since 1980 poverty reduction in terms of both income and education has appeared stagnant.

**Figure 4-3 Industrial Structure in Employment: South Africa**



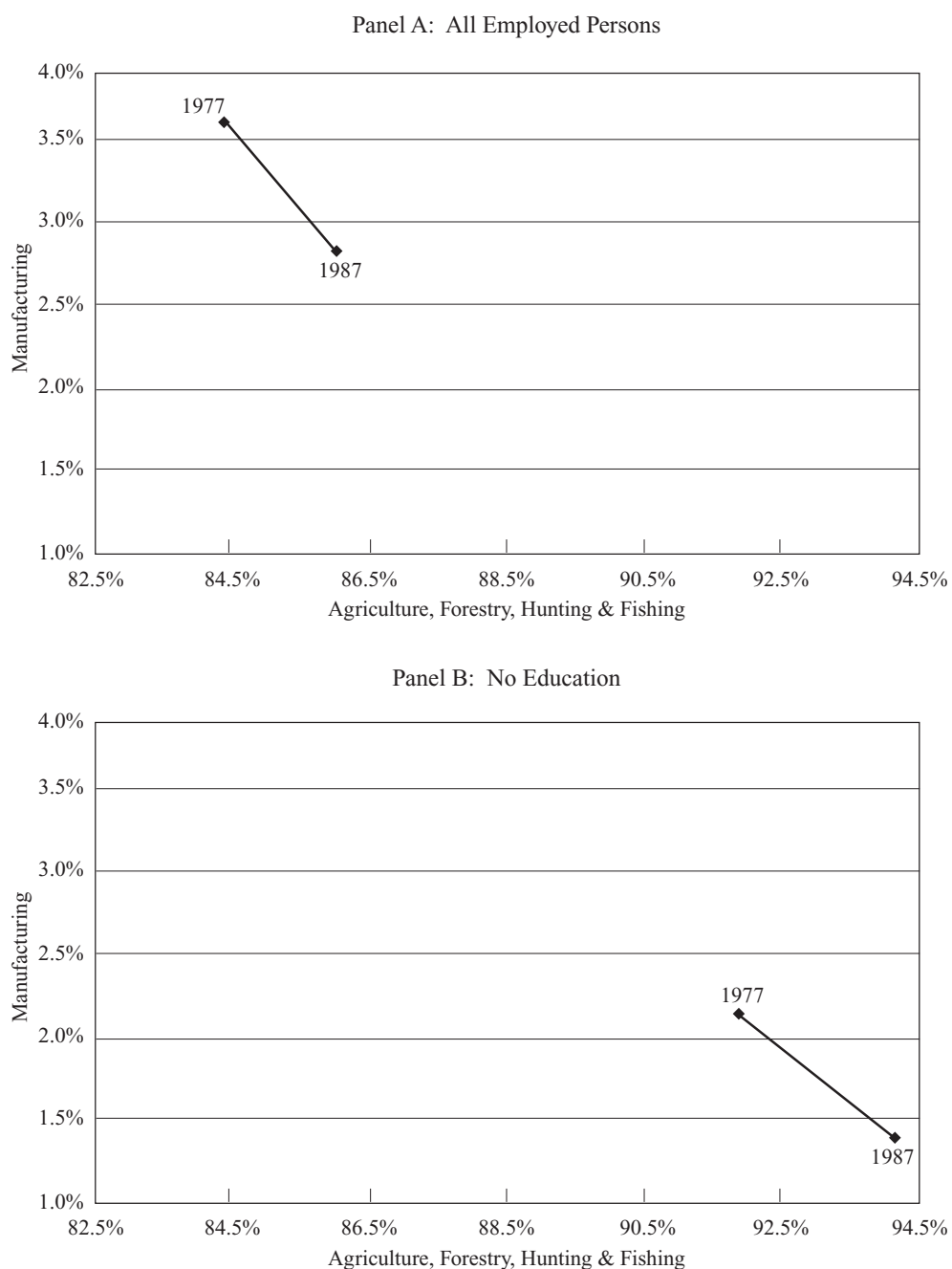
Sources: See Appendix.

**Table 4-3 Share of Workers Without Education to All Employed Persons: South Africa**

| 1960  | 1970  | 1991  |
|-------|-------|-------|
| 46.1% | 37.6% | 15.6% |

Sources: See Appendix.

**Figure 4-4 Industrial Structure in Employment: Malawi**



Sources: See Appendix.

**Table 4-4 Share of Workers Without Education to All Employed Persons: Malawi**

| 1977  | 1987  |
|-------|-------|
| 52.8% | 54.3% |

Sources: See Appendix.

## India

South Asia is another continent yet it made good progress in poverty reduction in general. We look now into the cases of India and Bangladesh where necessary data for this analysis are available.

In India a comprehensive population census is conducted every decade. The latest census data available to us is the one published in 1991. Since the data of employment by educational level and industry showed up for the first time in 1961, four sample points, *i.e.* 1961, 1971, 1981, and 1991, are available to us.

Panel A of Figure 4-5 shows that only a marginal decline in the share of the primary sector in terms of total employment took place in India for three decades, the 1960s-80s. Since 1961 only 5% of the share decreased till 1991. During the same period, the share of manufacturing did not increase steadily. Panel B of the same figure shows a more striking trend in the shares in employment of uneducated workers by industry. According to the figure, the share of the primary sector increased by 8% and that of the manufacturing industry decreased by around 4%. It looks like for uneducated workers employment opportunities in the primary sector expanded more (or shrink less) than in the manufacturing sector.

Table 4-5 shows that the ratio of the uneducated to total employment went down from the high level of 90.0% to 60.8% during the three decades. However, note that 60.8% of the ratio in 1991 in India is very high in comparison with 15.6% and 5.4% of the same ratio in South Africa in 1991 and in Thailand in 1990, respectively.

There are two factors to help understand the trends in employment in India. First, India had a long tradition of industrialization for self-sufficiency.

Because of the large domestic market, India was more likely to focus on the domestic market than international markets. Only in the beginning of the 1990s, she started full-fledged trade liberalization, which may help Indian comparative advantages be realized adequately. However, the latest data are the ones in 1991 that could not reflect the effects of trade liberalization fully.

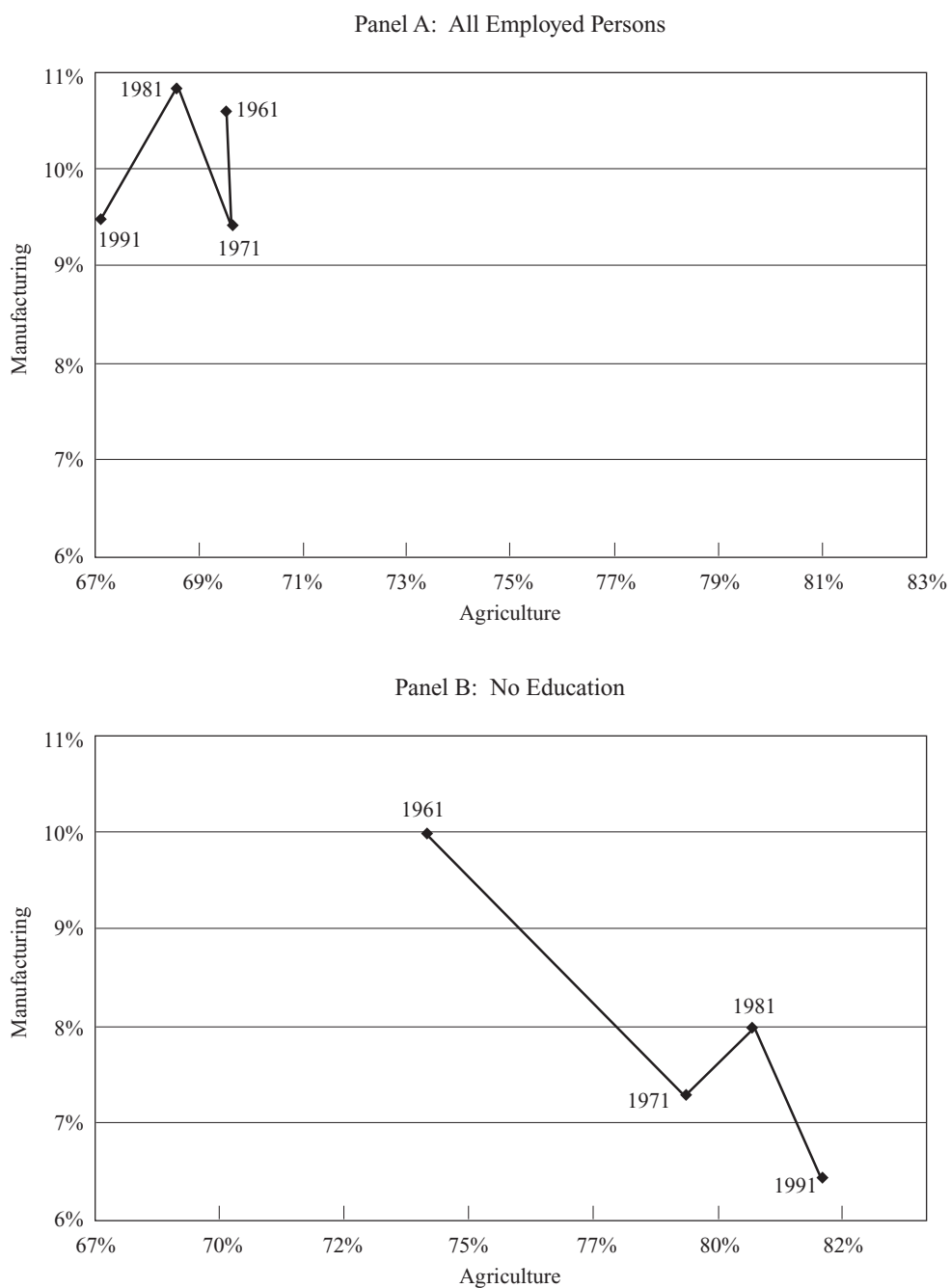
Second, the definition of “Worker” in population census of India is not exactly the same as that used internationally, and has been modified since 1961 (*Census of India* 1991 [1997], pp. 1-2). According to the “General Note on the Economic Tables” of the *Census of India* 1991, the unemployed were not included in “Workers” in any issues of the *Census of India*. Moreover, the definition of the employed became more limited in 1971, compared with that in 1961, in the sense that the reference period for employment was shortened from 15 days in 1961 to a week in 1971. People were categorized under “Workers” if they were employed during the reference period even once. In 1981 and 1991, the definition “Workers” were expanded, and expanded “Workers” were divided into two further categories, *i.e.* “Main Workers” and “Marginal Workers” by the criterion of the number of working days. People who worked for 183 days or more were included in “Main Workers,” and those who worked for less than 183 days were called “Marginal Workers.”

In Table 4-5 and Figure 4-5, we use this expanded definition of “Workers”. Since the definitions of “Workers” are not exactly the same for the four sample periods, the changes in the share may contain those due to changes in definition. In this sense, this result is very preliminary, and a more detailed study should be undertaken.<sup>21</sup>

21 We appreciate Uma Rani’s suggestion that the Labor Force Survey should be used instead of population census due to its consistency even though the Labor Force Survey is a sample survey. We regret that we have not reflected her suggestions in our paper, even though she has already provided various data sets of the Labor Force Survey. Moreover, handling of “Household Manufacturing,” and “Marginal Workers” will also be issues to investigate more thoroughly.



**Figure 4-5 Industrial Structure in Employment: India**



Sources: See Appendix.

**Table 4-5 Share of Workers Without Education to All Employed Persons: India**

| 1961  | 1971  | 1981* | 1991* |
|-------|-------|-------|-------|
| 90.0% | 72.8% | 72.3% | 60.8% |

Notes: \* total workers include marginal workers.

Sources: See Appendix.

## Bangladesh

Even though, in general, Bangladesh is still considered to be a stagnant and poor country, in reality she is now following the pattern of industrial development of East Asia. More than three quarters of the total exports from Bangladesh are manufactured goods now (Mayer and Wood [2001], Table 5). The dominant item in the manufactured exports is wearing apparel (Bhattacharya [2001], Islam [2001]). A modern and export-oriented garment industry was initiated by Korean investment in the late 1970s in Bangladesh. However, domestic investors responded to the good export performance of foreign firms quickly and domestic capital dominates the industry now. Initially the U.S. did not impose import restriction, i.e. quotas, to any items imported from Bangladesh. Firms located in Bangladesh utilized this favorable environment to increase exports of wearing apparel. Even after the U.S. started imposing the quotas in 1985 Bangladesh expanded her exports of apparel to the US and European countries that have not imposed any quotas on imports of apparel from Bangladesh. Bangladesh was the 9th greatest garment exporter to the U.S. in 1999 in terms of quantity, while she was the 4th greatest to the EU market in 1997 in terms of quantity. The garment industry has contributed to poverty reduction through increasing employment opportunities mainly for female and uneducated workers.

Such contribution of the garment industry to poverty reduction in Bangladesh is not reflected in Figure 4-6, however. Only two samples, *i.e.* figures for 1989 and 1995/96, are available for Bangladesh. For 1989-95/96 the share of the primary industry in total employment declined by 15%. For the same period the manufacturing industry lost its share by 4%, too (Figure 4-6, Panel A). The figure for uneducated workers (Panel B) shows the same tendency of changes in the industrial structure in employment. Even though there is consensus among observers of the Bangladeshi economy that development of the garment industry has contributed to poverty reduction in Bangladesh for a couple of decades, our figures missed capturing this aspect.

Meanwhile improvement in the educational level in Bangladesh for past couple of decades are reflected

in Table 4-6. The ratio of uneducated workers to total employment decreased from 64.5% to 47.8% between 1989 and 1995/96.

## 4.2. What Explains the Differences between East Asia and Others

So far we have seen that shifts from primary industry to manufacturing of weight in absorption of the poor for employment was likely to take place in export-oriented East Asian economies. In the meantime such a shift was unlikely to occur in countries in Sub-Saharan Africa and South Asia. What kind of factors can explain the difference between East Asia, and Sub-Saharan Africa and South Asia?

### 4.2.1. Progress in Poverty Reduction

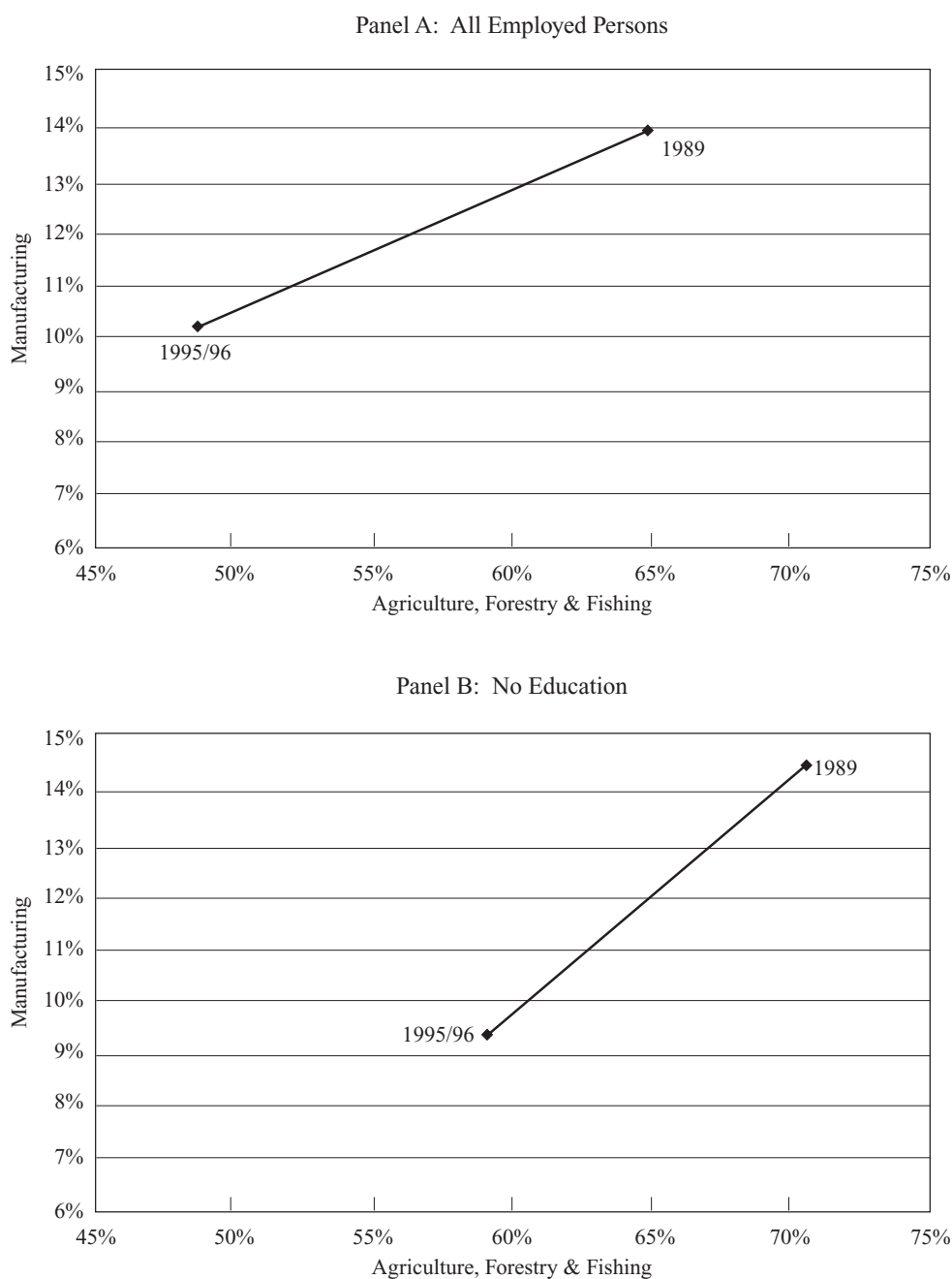
The first factor, which may explain the difference is the progress in poverty reduction, in other words economic development. A country that has not initiated steady economic development need not experience any structural changes. The scale of change in industrial structure is likely to be greater in East Asia than in Sub-Saharan Africa and South Asia as seen in Figures 4-1 to 6.

### 4.2.2. Factor Endowment

The scenario, which explains the East Asian Miracle need not be applicable to current LDCs in other regions. Such caution is often advised even by the World Bank [1993] as well as others (Rodrik [1994], Wood [2002]). A main argument, which was recently brought forth by Wood [2002] and Wood and Mayer [2001], is that since the composition of endowed factors of production is different between typical East Asian and Sub-Saharan African countries industries leading economic development should be different. This possibility is displayed by Leamer [1987] first.

This aspect is well worth deep investigation. Leamer [1984] estimate the composition of endowed 11 factors in 58 developing and developed economies. Mayer and Wood [2001], Wood [1994, 2002], and Wood and Mayer [2001] simplify and renew Leamer's estimation, and exhibit current figures of the composition of endowed factors of countries in the world. They argue that typical African countries are

**Figure 4-6 Industrial Structure in Employment: Bangladesh**



Sources: See Appendix.

**Table 4-6 Share of Workers Without Education to All Employed Persons: Bangladesh**

| 1989  | 1995/96 |
|-------|---------|
| 64.5% | 47.8%   |

Notes: The coverage of labor force in terms of age is different between 1989 and 1995/96. In 1989 the minimum age for economically active population was set at 10, while that was 15 in 1995/96.

Sources: See Appendix.

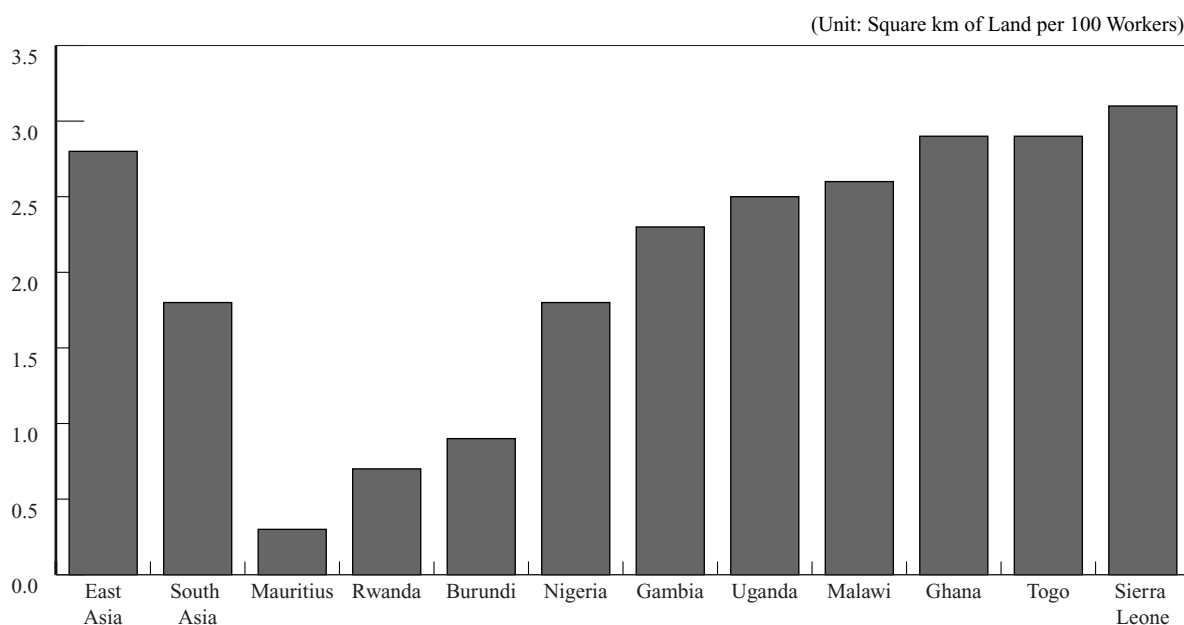
relatively land-abundant to labor. The regional simple average of square km of land per 100 workers is 17.5 for Sub-Saharan Africa (Wood and Mayer [2001], while those for East Asia and South Asia are 2.8 and 1.8, respectively (Mayer and Wood [2001]).<sup>22</sup> While physical and human capital can be accumulated, labor and land are both rarely accumulated. Therefore, in the process of economic development with physical and human capital accumulation, the relation of land-labor abundance is likely to be maintained. If Sub-Saharan African countries succeed in economic development and poverty reduction, they will not follow the East Asian way because the compositions of endowed factors are different. Instead, Sub-Saharan Africa should follow North and South American way of economic development (Wood [2002], Wood and Mayer [2001]).

Our hypothesis presented in the section 2 is that labor-abundant East Asian economies utilized their comparative advantage to obtain competitiveness in producing labor-intensive manufactured goods (Heckscher-Ohlin theorem), and gradual globalization

raises the price of the labor-intensive goods as well as wages (Stolper-Samuelson theorem) to increase income of the poor whose only source to generate income is labor. If the same arguments were applied to a land abundant country, globalization could harm wage earners through the Stolper-Samuelson effect. By contrast, promotion of labor intensive industry is called for in order to favor unskilled workers no matter what the composition of factor endowment is.

It is notable that while the average land per worker is high in Sub-Saharan Africa, the variance in it is also high. Thus, there are some labor abundant countries in Sub-Saharan Africa, too. Sub-Saharan African countries where square km of land per worker were the lowest in 1990 are shown in Figure 4-7. The land-worker ratio is the lowest in Mauritius in Sub-Saharan Africa. Two small countries, i.e. Rwanda and Burundi, follow. Most of the remaining low land per worker countries are located in Western Africa. Exceptions are Uganda and Malawi. The East Asian Pro-Poor Growth strategy could work in these low land per worker countries in Africa. Moreover, it could

**Figure 4-7 Land per Worker in Asia and Selected African Countries in 1990**



Notes: The figures for East Asia and South Asia are simple averages of land per worker of the regions, respectively. Selected African countries are in descending order of land per worker.

Sources: Mayer and Wood [2001] and Wood and Mayer [2001].

22 The case of East Asia Papua New Guinea (20.1) raises the average, while Afghanistan (6.8) does the same for South Asia (Mayer and Wood [2001], Table 4).

work in South Asia, too. There is another aspect to be taken into account to explore the applicability of the East Asian strategy.

#### 4.2.3. Openness

As above-mentioned, Bangladesh has already followed the East Asian strategy of poverty reduction. After policy changes toward trade liberalization in 1991, India also has increased exports of garments (Uchikawa [1999]). Figure 4-5 shows that structural change was very limited for three decades up to 1991 in India. However, after opening its economy, India looks more dynamic due to not only the IT sector but also labor-intensive manufacturing.

Thus, openness is another key to realize the East Asian Pro-Poor Growth strategy. If an economy is closed, its comparative advantage is not materialized so that benefit is not raised through trade. Since Malawi's land-labor ratio is as low as the average of East Asia (Figure 4-7), if FDI was promoted well into labor-intensive sector, the sector could be internationally competitive.

Incidentally, at present the U.S. does not impose any quotas and tariff on wearing apparel exported from Sub-Saharan Africa and Caribbean countries according to the U.S. Trade Development Act 2000 with certain conditions. From this point of view, Sub-Saharan Africa has an advantage over competing Asian countries like Bangladesh, China, and India.

### Concluding Remarks

Pro-poor growth in East Asia was an autonomous process of capital accumulation, improvement in efficiency and resultant increase in earnings of workers including the poor. Governmental and institutional income redistribution played a secondary role in poverty reduction, even though no one denies its importance. Important driving forces for the autonomous pro-poor growth lay in export-oriented and labor-intensive manufacturing industries. We have shown that the manufacturing industry increased employment of uneducated workers more than the agricultural industry in Taiwan and Thailand since the late 1960s. This pattern of structural change has not

taken place in some African and South Asian countries, where necessary data are available, with the exception of two island African countries, *i.e.* Mauritius and Seychelles.

There is no doubt agriculture plays a key role in economic development and poverty reduction in general. Agriculture provides employment opportunities in the neighborhood that enable local people to live with their family. Moreover, agricultural sector supplies cheap and nutritious food to the poor. This is why current literature, e.g. Klasen [2001], Lipton and Ravallion [1995], Ravallion and Datt [1996], and Warr [2002], emphasized its importance in the context of poverty alleviation.

We are afraid that emphasis on agriculture and/or rural sectors may conceal the role of manufacturing, in particular labor-intensive ones, in creating employment opportunities of the poor, sometimes more dramatically than of agriculture. It seems that the role of manufacturing in employment of the poor is likely to be overlooked because employment itself is overlooked in current discussion of poverty reduction among donors behind gender, education, health and environment. The Millennium Development Goals testify to this tendency. It is notable that there is no explicit goal directly related to employment in MDGs.

Needless to say, employment is a sole source to generate income for most of the poor by themselves. However, as long as the government is not rich enough to employ them directly, most employment opportunities must be created by the private sector. It is understandable that employment has maintained a low profile because ODA is not allocated to the private sector, in principle. There is little room for public expenditure to be spent to increase employment opportunities. However, the role of governments is not limited to spending money. The government can provide visions for the private sector to allocate resources, by formulating feasible and effective economic plans, and by helping the private sector to have confidence to develop along the plan. In that case, emphasis on export-oriented and labor-intensive manufacturing industries is surely a prospective option for the path of economic development not only in East Asia but also in some countries of Sub-Saharan Africa.

In addition, it is the role of the government to build physical and institutional infrastructure, upon which the private sector can expand production and employment, and which the private sector does not dare to build.

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