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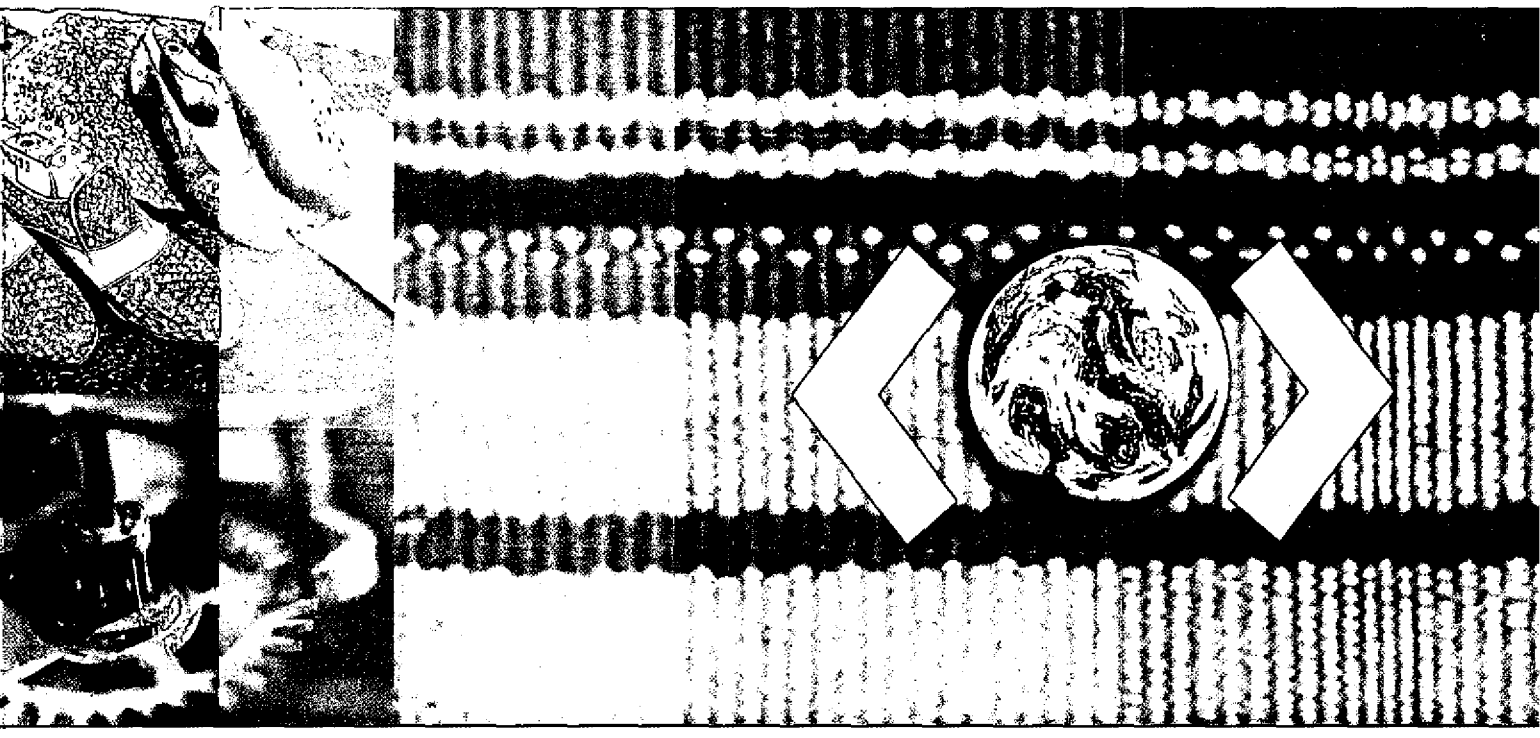
COMBATING MARGINALIZATION AND POVERTY THROUGH INDUSTRIAL DEVELOPMENT ‹COMPID›



Industrialization and poverty alleviation: pro-poor industrialization strategies revisited

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⟪COMPID⟫

COMBATING MARGINALIZATION AND POVERTY
THROUGH INDUSTRIAL DEVELOPMENT

Industrialization and poverty alleviation: pro-poor industrialization strategies revisited

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The following terms and symbols have been used throughout the report:

References to dollars ($) are to United States dollars, unless otherwise stated;

References to taka (Tk) are to Bangladeshi taka, and references to shillings (K Sh) are to Kenyan shillings;

The term "billion" signifies a thousand million;

Countries are referred to by the names that were in official use at the time the relevant data were collected.

In accordance with the World Bank definition of low-income economies (economies with a per capita gross national income of $767 or less (2003), the following 61 countries are listed as low-income countries: Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cameroon, Central African Republic, Chad, Comoros, Côte d'Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Eritrea, Ethiopia, Ghana, Guinea, Guinea-Bissau, Haiti, India, Kenya, Republic of Korea, Kyrgyzstan, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mongolia, Mozambique, Myanmar, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Papua New Guinea, Republic of the Congo, Republic of Moldova, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Solomon Islands, Somalia, Sudan, Tajikistan, The Gambia, United Republic of Tanzania. The number of countries included in this list is subject to revision up or down depending on the changing economic status of the countries.

The term "newly industrializing country" is used to describe developing economies, be they countries, provinces or areas, where there has been particularly rapid industrial growth. It does not imply any political division within the ranks of developing countries and is not officially endorsed by UNIDO.

The following abbreviations and acronyms appear in the report:

BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BKMEA	Bangladesh Knitwear Manufacturers and Exporters Association
IDE	Institute of Developing Economies
ILO	International Labour Organization
MDGs	Millennium Development Goals
SMEs	small and medium enterprises
SPX	subcontracting partnership exchanges
UNIDO	United Nations Industrial Development Organization

OVERVIEW

Economic historians claim that the world, as a whole, was considerably poor until the mid-1700s. The current developed, or rich countries, were just as poor as the current low-income countries, in terms of income, life expectancy and nutrition. With the breakthrough of the Industrial Revolution, which took place first in north-western Europe, dramatic changes took place in technology, economy and even in society, making it possible for the region to get out of the vicious circle of poverty and embark on a growth path. The wave of the Industrial Revolution spread later to the Western Hemisphere, but took place in Japan only at the beginning of the twentieth century. Thus, industrialization proved critical, to the extent that it resulted in a continuous improvement in the standard of living in the current developed countries.[1]

The present low-income countries, however, have not yet fully attained what the developed countries were able to reap from industrialization. As shown later, many people in low-income countries live below the poverty line. It is difficult for low-income countries to exploit the opportunities due to differences in environments encompassing the countries when compared with those that promoted industrialization in developed countries in the past. First, it is important to note that at that time, there was no country ahead of the present developed countries in north-western Europe, whereas current low-income countries have to deal with developed countries that have already achieved a remarkable level of industrialization. Thus developed countries pose both risks and opportunities to low-income countries, to the extent that developed countries are in a position to compete with low-income countries and can simultaneously provide them with advanced technology and sophisticated equipment.[2]

Secondly, there are institutional frameworks that affect international economic activities considerably. These frameworks influence the industrialization process of low-income countries. For example, the World Trade Organization prohibits its member States from adopting discriminatory measures favouring local producers. In addition, proliferating Free Trade Agreements complicate international trading systems as trading rules become as entangled as a bowl of spaghetti (Bhagwati, Greenaway and Panagariya [27]). Thus, the present low-income countries are placed in circumstances which differ from those that confronted the current developed countries in the past, making it difficult for low-income countries to follow the path pursued by high-income countries. A challenge that must be addressed is one of designing appropriate industrialization strategies for the present low-income countries that would effectively lead to poverty reduction.

At the start of the new millennium, the international community was determined to devote intense efforts to global poverty reduction. This resulted in the Millennium Development Goals (MDGs)

[1]This view is shared by Maddison [137] and Sachs [188], among others.

[2]For more information on the advantage of backwardness, see Gershenkron [76].

that were declared at the Millennium Assembly of the United Nations in September 2000. Since then, both developing countries and donors of development assistance have been making earnest efforts to achieve the goals by the year 2015. A mid-term review of the progress for MDGs was conducted in September 2005, and a few evaluations of the progress with proposals for further pursuit of MDGs were recently released (United Nations Millennium Project [216], World Bank and IMF [233]). However, there appears to be a weak link between the MDGs and industrialization. Added to this, the way in which industrialization should contribute to achieving the MDGs has not been clearly spelled out. The United Nations Millennium Project [215] pointed out, for the first time, that industrial development is crucial for achieving the MDGs, including four other policy clusters, namely, human development, assistance to small farmers, human rights and social equity and environmental sustainability. The next step must include the elaboration of possible mechanisms that could initiate industrialization in low-income countries and optimize its impact on poverty reduction. Feasible and effective strategies that allow the above mechanisms to become operational are urgently needed.

The present report is part of the broader research programme, Combating Marginalization and Poverty through Industrial Development (COMPID), of the United Nations Industrial Development Organization (UNIDO). The aim of the report is to develop pro-poor industrialization strategies and evaluate them from the viewpoint of effectiveness and sustainability of poverty reduction. For this purpose, development thinking on poverty reduction and industrialization is reviewed, and the impact from different ways of furthering industrial development is examined through the literature review and field studies. Since poverty is mainly a rural problem, with the poor predominantly engaged in agriculture or agriculture-related industries, research on the impacts of industrialization on poverty tends to be sidelined, behind both agriculture and the urban informal sector. However, development of the industrial sector can make a potentially substantial contribution to poverty reduction in low-income countries, in particular, in the long term, in the same way as the Industrial Revolution did for the present developed countries. The question here is how the potential can be tapped amid the current socio-economic environment. This is a challenge that the present report endeavours to address.

The pro-poor industrialization strategies explored in this report are based on the poor themselves, as they facilitate the process of income generation. There is a tendency that the direct provision of necessities is more closely implicated in policies for poverty reduction rather than measures that should be taken to promote the poor and raise their income levels (Lipton and Ravallion [129]). In fact, a popular set of steps to solve poverty problems includes identifying the poor, measuring the incidence of poverty, targeting the poor accurately and supplying their basic needs. The report sheds more light on the process of income generation by the poor themselves, because it is believed that in this lies the long-term solution for continuous and ultimate poverty reduction. The process could take some time, and it is very likely to become autonomous once the process is initiated. Thus, it is important to define the right kind of policies that would provide the much-needed initial momentum to trigger the autonomous process. Accordingly, some issues that are considered important for the direct provision approach, such as targeting, and regional and intrahousehold income distribution, will not be treated as thoroughly in the report as is normally the case for typical poverty research. Instead, the report will focus more on how industrialization can effectively generate income for the poor.

To determine what type of industrialization is most effective under what kind of international and institutional environments and initial conditions, the report focuses on the supply side of an economy—one that stimulates labour demand and creates opportunities for employment and other types of income generation. In most cases, the surveys applicable to the direct provision approach do not provide the kind of information needed to adopt the income generation approach.[3] It was, therefore, necessary to design and conduct a tailor-made survey. The areas highlighted in the survey are employment of the poor by sex, wage levels and change, entry barriers for new workers, and scope for promotion, profitability and productivity of a targeted industry. Such information is extremely important for designing pro-poor industrialization strategies, instead of the standard household surveys that are often used for the direct provision approach.

The present report comprises three chapters. Chapter I provides an overview of the facts and focuses on discussions related to poverty reduction and industrialization. Economic growth and income distribution are two important issues, as they critically affect the relationship between industrialization and poverty reduction. Subsequently, the two most promising industrialization strategies for poverty reduction, namely, agro-based industrialization and labour-intensive industrialization, are described and justified. Finally, some actual programmes, in line with agro-based industrialization strategy, are introduced and the effectiveness of the strategy is elaborated, based on an analysis of global value chains.

Chapter II, for its part, focuses on labour-intensive industrialization strategy because of its emerging importance and, more importantly, because it has not been sufficiently treated in the research on poverty so far undertaken. First, the mechanisms of this type of industrialization, which facilitates poverty reduction, are described in detail. Secondly, based on field surveys conducted in Bangladesh and Kenya, a case study of a typical labour-intensive industry is presented, namely, the garment industry. The case study provides concrete examples of the mechanisms of poverty reduction through employment in a labour-intensive industry. Thirdly, prospects for further poverty reduction through the development of labour-intensive industries are evaluated. Other labour-intensive industries, apart from the garment industry, are introduced, and challenges confronting those industries are discussed.

Finally, policy recommendations are presented in chapter III. First, general policy implications are derived from studies developed in chapters I and II. Following that, UNIDO's current activities for poverty reduction are reviewed, and suggestions to UNIDO are elaborated and summarized in the concluding remarks.

[3]In chapter I, the direct provision approach and the income generation approach are called the direct route and the indirect route, respectively, following the classification made by Bhagwati [26].

I. POVERTY REDUCTION THROUGH INDUSTRIALIZATION

A. POVERTY IN THE WORLD

Poverty is currently the greatest challenge confronting the international community. The MDGs that were declared at the Millennium Assembly of the United Nations in 2000 embody the urgency and international consensus to address these goals. Due to the multidimensional character of poverty, it cannot be viewed as a simple problem. Not only economic but also political and social dimensions have an immense influence on the lives of the poor in low-income countries.[4] The international community, therefore, needs to deal with a broad range of poverty issues in their entirety. Masses of detailed quantitative data currently available reveal the actual economic dimensions of poverty. Data on income and expenditure at the household level are collected by many low-income countries, and measures of poverty have been theoretically elaborated (Atkinson [14], Deaton [47] and Sen [191], among others). The head-count ratio, that is, the ratio of population living below the poverty line to total population, is the simplest and the most widely used measure of poverty, and is incorporated in Goal 1 of the MDGs.[5]

Table 1 shows the number of people living below the poverty line and the head-count ratio, whereby the poverty line is defined as one dollar per day per person. It emphasizes the severity of the poverty problem worldwide. The number of poor, based on the above definition, was as many as 1.1 billion in 2000 worldwide, almost equal to the 1987 figure. Due to world population growth, the head-count ratio decreased from 28.3 per cent in 1987 to 21.6 per cent in 2000. However, it is worth noting that this decline can be attributed mainly to poverty reduction in East Asia and the Pacific, in particular, China. Recent data show that remarkable poverty reduction was achieved by this region, although it had the highest number of poor in 2000. Sub-Saharan Africa, for its part, suffers from poverty both in scale and head-count ratio. The absolute number of poor increased by 1.5 per cent between 1987 and 2000, and the head-count ratio in 2000 reached almost 50 per cent.

Table 1 reveals a regional divergence in poverty reduction and also shows that the situation in sub-Saharan Africa deteriorated amid the favourable trend in poverty reduction as a whole. For this reason, Africa is regarded as the main target of international cooperation for poverty reduction. In fact, a series of meetings, focusing on the development of Africa, was held during the course of 2005. In January 2005, at the annual meeting of the World Economic Forum held at Davos, Switzerland, discussions centred around how to save Africa. The G7 meeting of finance ministers in Johannesburg followed in February 2005, at which various financial measures to help Africa

[4]The World Bank [227] analyses poverty from three points of view, namely, opportunity, empowerment and security.

[5]For the pros and cons of various poverty measures see Atkinson [14], Deaton [47], Lipton and Ravallion [129] and Sen [191].

TABLE 1.
TRENDS IN POVERTY REDUCTION, SELECTED YEARS

	People living on less than $1 per day (unit: million persons)					
	1987	*1990*	*1993*	*1996*	*1998*	*2000*
East Asia and Pacific	418	452	432	265	278	261
excluding China	114	92	84.5	55	65	57
Europe and Central Asia	1	7	18	24	24	20
Latin America and the Caribbean	64	74	71	76	78	56
Middle East and North America	9	6	5	5	6	8
South Asia	474	496	506	532	522	432
Sub-Saharan Africa	217	242	273	289	291	323
Total	1 183	1 276	1 304	1 191	1 199	1 100
	Share of population living on less than $1 per day (unit: percentage)					
	1987	*1990*	*1993*	*1996*	*1998*	*2000*
East Asia and Pacific	27.6	27.6	25.2	14.9	15.3	14.5
excluding China	23.9	18.5	15.9	10.0	11.3	10.6
Europe and Central Asia	0.2	1.6	4.0	5.1	5.1	4.2
Latin America and the Caribbean	15.3	16.8	15.3	15.6	15.6	10.8
Middle East and North America	4.3	2.4	1.9	1.8	1.9	2.8
South Asia	44.9	44.0	42.4	42.3	40.0	31.9
Sub-Saharan Africa	46.6	47.7	49.7	48.5	46.3	49.0
Total	28.3	29.0	28.1	24.5	24.0	21.6

Note: The figures for 2000 are estimates.
Source: World Bank [227, 229].

were presented (*Economist* [59, 60]). Later, at the G8 Summit, hosted by the United Kingdom, one of the two main issues was African development, which was further discussed at the Summit in July (*Economist*, [61]). Accordingly, many studies have been conducted featuring poverty reduction in Africa, in recognition of the acute need for development, as described by Christiaensen, Demery and Paternostro [43] and UNIDO [212], among others.

From a developing country perspective, East Asia, in particular China, has made tremendous strides towards poverty reduction in the world. South Asia, where only recently full-fledged participation in the global economy was initiated, has already revealed a substantial level of poverty reduction, making sub-Saharan Africa the only region where very little progress has been made. This calls for urgent concerted international efforts to ensure poverty reduction in Africa as a whole. The development experiences of other countries, including those of South Asia, could be a useful basis for devising strategies for poverty reduction in sub-Saharan Africa.

B. GROWTH, INCOME DISTRIBUTION AND POVERTY

As already mentioned, steady poverty reduction has been achieved by some regions of the world, but not by others. To facilitate poverty reduction in the latter regions, it is necessary to explore determinants of progress in poverty reduction, find out what policy interventions could affect these determinants and what the factors are that hinder progress in poverty reduction.

1. Pro-poor growth

Generally speaking, poverty reduction can be achieved either through economic growth or an improvement in income distribution, or both. The definitional relationship between poverty reduction, economic growth and changes in income distribution are firmly established by Datt and Ravallion [45], Kakwani [105] and Bourguignon [33-35], among others. Neither economic growth nor changes in income distribution can solely determine the direction and scale of poverty reduction. Instead, a combination of the two factors determines the incidence of poverty. It might be too optimistic to regard economic growth as a panacea for poverty reduction. If economic growth has a substantial negative impact on income distribution, then the total effect of growth could be poverty augmenting. Thus, who benefits from economic growth, or from a development project that is conducive to economic growth, is crucial for poverty reduction. This is why it is important that measures be taken to filter out the non-poor from beneficiary groups of a development project and to target the poor exclusively, as stressed in the application of pro-poor policies (Besley and Kanbur [24, 25], Bigman and Fofack [31], Kanbur [108] and Ravallion and Chao [175]).

In the medium and long term, the economic growth of a country tends to involve almost the same rate of increase in the income of the poor, according to a cross-country comparative study using data on households (Dollar and Kraay [53]). Deininger and Squire [48] endorse this observation by showing that there is no systematic link between economic growth and changes in aggregate inequality. In this context, structural changes, caused by economic growth, necessitate adjustment in the allocation of resources, including labour. Friction of this kind could adversely affect the poor in the short term.[6] Policy makers must, therefore, make serious efforts to avoid causing any undue hardship to the poor as much as possible.

According to Lipton and Ravallion [129], pioneers in development economics, such as W. Arthur Lewis, Ragnar Nurkse and Paul N. Rosenstein-Rodan, were keen to address the question of national development,[7] and were less interested in the consequence of national development for the poor. Lipton and Ravallion argue that these theorists shared the classical optimism about "trickle-down", which implies a sufficient and timely distribution of the benefits of economic growth to the poor. However, development, which was more often undertaken in urban than rural areas, did not automatically benefit the poor. As a result, many development economists were disappointed with the trickle-down mechanism.[8] Some of them considered that radical redistribution of income and productive assets, such as land, was necessary in addition to economic growth. This view was referred to as "redistribution with growth" (Chenery and others [40]). The emphasis on redistribution was further developed through the basic human needs approach (ILO [96], Streeten [196] and Streeten and others [197]). This approach stressed the importance of fulfilling the basic needs of people, such as food, shelter, clothing and basic public services. As Sen [192] pointed out, wealth does not automatically guarantee the consumption of basic human needs. If there is a non-economic constraint that hinders meeting basic human needs, great wealth in abundance is useless. The extent to which people's basic needs are met is, therefore, more important.

[6] See Lopez [133] for empirical support on this topic.

[7] Their most renowned works are Lewis [128], Nurkse [150] and Rosenstein-Rodan [185], respectively.

[8] For a discussion on the trickle-down hypothesis, see Adelman and Robinson [4].

A further important viewpoint for poverty reduction is labour-intensity in growth and industrialization. The *World Development Report 1990* featuring poverty proposed a strategy effectively using a principal asset of the poor, namely, labour (World Bank [224]). The report recommends policies for human capital accumulation of the poor and labour-intensive growth. Adelman and Robinson [4] also pointed out that the unskilled labour-intensive nature of growing sectors can be a strong driving force leading to poverty reduction and equal income distribution.[9] The experience of economic development in East Asia up to the 1980s can be viewed as an example of how labour-intensive industrialization contributes to economic growth with relatively equal income distribution. The export-oriented industrialization experienced by the Asian newly industrializing countries during the 1960s and 1970s and other high-performing Asian economies during the 1970s and 1980s was led by labour-intensive manufacturing (Hirata and Nohara [88], Naya [148] and Yamazawa and Watanabe [236]). The equal income distribution experienced by the high-performing Asian economies was also included in the *East Asian Miracle* (World Bank [226]).[10]

The current debate on strategies for poverty reduction is based on the discussions mentioned previously. A main point of the debate is the combination of policies for increasing the income of an economy and those for distributing the increase in income to the poor. A focal issue, in this context, is how to achieve economic growth that promotes poverty reduction—referred to as "pro-poor growth". Finding the ideal path that leads to pro-poor growth is crucial for devising strategies for sustainable poverty reduction in low-income countries. An effort is made here to explain what pro-poor growth is and how it can be achieved. Broadly speaking, there are two definitions of pro-poor growth: one is relative, the other is absolute.[11]

The relative definition of pro-poor growth is concerned with differences in rates of change in income of all nationals and that of the poor in a country. Economic growth, which allows the income of the poor to grow faster than the average income, is called pro-poor growth by this relative definition. This definition was adopted by Kakwani [106], Kakwani and Pernia [107], Klasen [115] and Zepeda [239]. The "relative" definition of pro-poor growth, however, seems restrictive in light of recent growth experiences. That is, economic growth, which results in the achievement of a high rate of growth in the income of the poor cannot be categorized as pro-poor growth, if the growth rate of the whole economy is higher than that of the poor. Ravallion and Chen [177] refer to the case of China, where the head-count ratio, according to the recently estimated poverty line, declined from 53 per cent to 8 per cent between 1981 and 2000. However, income distribution deteriorated during this period, and the rate of change in income of the poor increased less rapidly than that of the whole economy.

The relative definition of pro-poor growth does not make sense in this case because it is evident that there was a substantial impact of economic growth on poverty reduction in China. Kraay [120], Ravallion [174] and Ravallion and Chen [177] proposed an alternative definition of pro-poor growth, which emphasizes the absolute scale of poverty reduction, in order to reflect the pro-poor

[9]Gunnar Myrdal also supported the labour-absorbing industrialization in the 1960s (Myrdal [145], chapter 24).

[10]See Fei, Kuo and Ranis [68] and Little [130] for the case of Taiwan Province of China, where equal distribution of income was the most pronounced in East Asia.

[11]This dichotomy is adopted in the home page on pro-poor growth of the World Bank (http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTPGI/0,,contentMDK:20292383~menuPK:524081~pagePK:148956~piPK:216618~theSitePK:342771,00.html). See Lopez [134], Ravallion [173, 174] and Ravallion and Chen [176].

nature of economic growth in China. According to this definition, economic growth is pro-poor as long as the poverty measure of interest is in line with growth.

In addition to discussions on the definitions, how to achieve pro-poor growth continues to occupy the minds of many development economists. Above all, the selection of the sectors that promote poverty reduction is a focal issue. The dominant answer to the question is the agricultural sector (Eastwood and Lipton [55], Klasen [115], Lipton and Ravallion [129], Osmani [152], Ravallion and Datt [178] and Warr [218]). As such, priority should be given to the rural instead of the urban sector. The reasons why the agricultural and rural sectors are favoured are because most of the poor live in rural areas and are predominantly engaged in agriculture-related economic activities. The main concern of the report is to find out which sectors should be promoted for poverty reduction. This is intensively and comprehensively elaborated in the next subsection.

2. Mechanisms of poverty reduction

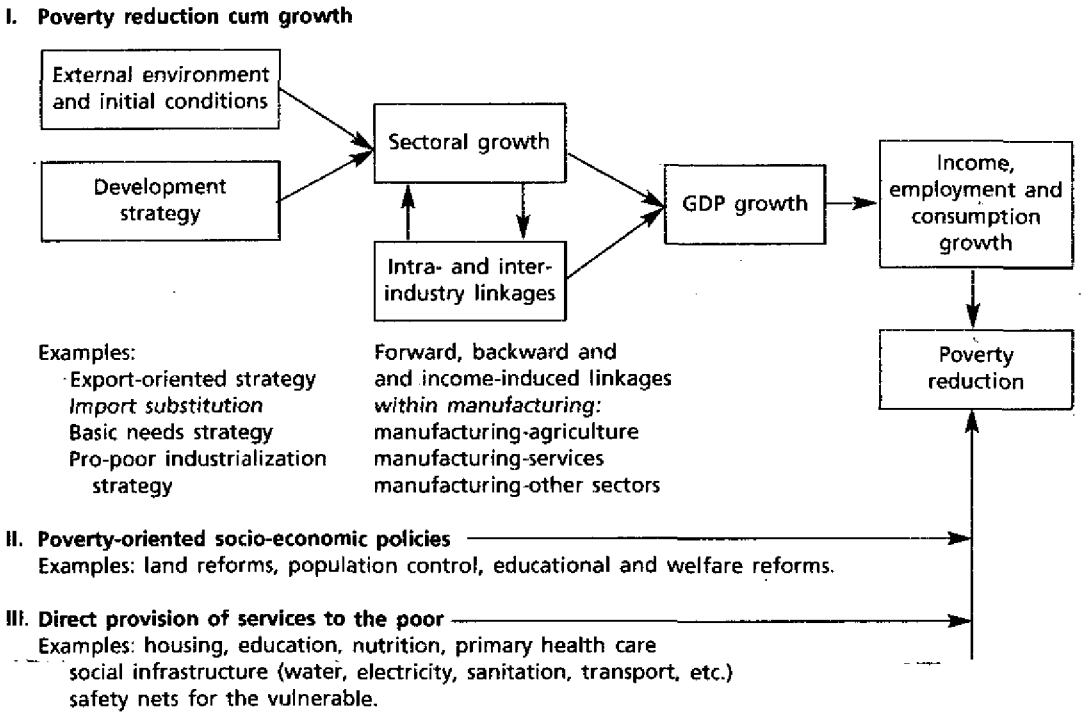
In general, how can global poverty reduction be achieved? How can government policies and international development activities facilitate the process of poverty reduction? In this subsection, a general overview on the mechanisms of poverty reduction and influences of policies on poverty reduction is presented. Broadly speaking, two approaches for poverty alleviation are widely recognized by the international community: direct policy intervention, which provides essential necessities, social services and physical infrastructure to the poor, such as education, housing, primary care and sanitation, water, electricity and gas, nutritional supplements, as well as a social safety net for the most vulnerable group. Bhagwati [26] calls this approach "the direct route" while Warr [219] and Ishikawa [98] refer to it as "the expenditure approach". The other is the poverty-alleviation-cum-growth approach, which is directed at accelerating economic growth to create income-earning opportunities for the poor. This approach is referred to as "the indirect route" by Bhagwati [26], or as "broadly-based economic growth" by the World Bank [224].

It must be recognized at the outset that many of the well-known policy interventions that probably have a direct impact on poverty reduction in low-income countries could fall outside the purview of industrialization issues. These include: *(a)* policy interventions, such as agricultural reforms, in particular, land redistribution and social and educational reforms in favour of the poor; and *(b)* the direct provision of social and physical infrastructure services for the poor and a safety net for the vulnerable, as described above. But well conceived industrial development could contribute significantly to the successful implementation of pro-poor policy interventions in many different ways by providing a wide range of essential manufacturing commodities. A major part of necessities, such as food, shelter and clothing, is provided by the industrial sector. Among them are essential drugs for treating rampant infectious diseases in low-income countries directly, which also contribute to achieving the Millennium Development Goal on the prevention of the three major infectious diseases.

It is evident that the conceptual link between industrialization and poverty alleviation in the medium and long term must be established within an indirect framework of poverty reduction through rapid growth and the generation of income-earning opportunities for the poor. Specifically, the significance of poverty reduction in industrialization must be stressed in the con-

text of: *(a)* employment generation and consequent income creation which industrialization can achieve by stimulating rapid economic growth; and *(b)* development of extensive industrial linkages within the industrial sector and other sectors of the economy in the course of industrialization, in particular with agriculture and services. Figure I provides a schematic representation of mechanisms leading to poverty reduction. The upper part of figure I (item I) describes routes by which economic growth would contribute to poverty reduction, while the lower part (items II and III) pertains to a wide range of direct policy instruments for poverty reduction. The primary distinction between the growth (that is, indirect) approach and the direct policy intervention approach is that the former focuses on income creation and hence employment generation, while the latter is concerned with the direct provision of consumption and services for the poor, which necessarily entails a redistribution between different groups, unless financed from external resources.

Figure I. Mechanisms of poverty reduction



Note: This figure is based on figure 1 by Se-Hark Park [158].

Starting from the upper left-hand corner of figure I, changes in the external economic and political environment, for example, globalization of trade and investment, liberalization of capital and financial markets, emergence of regional trading blocs and technological changes and the initial conditions of a given country, such as resource endowments, stages of development, socio-economic-political systems and an adopted development strategy would affect the disaggregated level of economic activities of an economy.

At this juncture, it must be noted that industrial growth would have an ultimate impact on poverty alleviation via the two different routes, as depicted in figure I. The first route is through rapid

sectoral growth leading directly to accelerated economic growth. This would have an impact on incomes, consumption and employment and, hence, the living standards of the poor, that is, growth-induced effects. The second route is through the expansion of intra- and intersectoral linkages; both backward and forward linkage types of the manufacturing sector, in particular with agriculture and services, which will consequently increase linkage-induced income and employment generation as industrial growth accelerates. It is worth noting that in UNIDO's *Industrial Development Report 2004* on industrialization, environment and the Millennium Development Goals in sub-Saharan Africa, economic growth is recognized as a key variable for poverty alleviation. Various factors affecting economic growth are also identified. These factors are divided into three broad groups: exogenous factors; policy-induced factors; and slow-changing endogenous factors. The exogenous factors include geography, colonial legacy and ethnic diversity. Educational capital, life expectancy and other health indicators, infrastructure, civil conflicts and war, good governance and macroeconomic stability are cited as major policy-induced factors affecting economic growth. Lastly, inequality in income and wealth are identified as slow-changing endogenous factors.

C. INDUSTRIALIZATION AND POVERTY REDUCTION

The indirect approach to poverty reduction described by Bhagwati [26] is elaborated in this section. What type of industrialization benefits the poor most? Which sector is most promising for poverty reduction? Is the sector viable in low-income countries? These viewpoints are critical for designing the most appropriate pro-poor industrialization strategy for low-income countries. It is evident that the ideal sector identified for poverty reduction must satisfy the following conditions. First, it must involve the poor widely and the growth of the sector must effectively create opportunities for income generation by the poor. Secondly, development of the sector must be sustainable, meaning that the sector must be competitive, at least in the long term. Any intervention by the government and donors should not be accepted as permanent. The sector must also be in a position to move from infant industry status and become independent and competitive. If not, the effect on poverty reduction would be short-lived.

The first criterion depends on how intensively the poor participate in the production of the sector. How many are involved and the extent of their productivity will determine the impact of expansion of the industry on poverty reduction in the country. As a matter of fact, resources for income generation, owned by the poor, are limited to labour and local properties, such as land, natural materials and indigenous knowledge. Sectors employing such factors intensively contribute the most to income generation of the poor. The second criterion is competitiveness, which demands the viability of sectors that are strategically selected. In general, the level of unit costs determines the price competitiveness of a product of the same quality. Factor prices and factor intensities are determinants of unit costs.[12] In other words, the level of unit costs is lower if production involves lower

[12]Without loss of generality, all inputs of production are classified into the following five categories: materials (M), labour (L), capital (K), land (A) and all the other inputs (R). Total costs of production are explained as follows:

$C_i = p_m M_i + wL_i = p_k K_i + p_a A_i + p_r R_i$,

where , p_m, w, p_k, p_a and p_r are prices corresponding to each input. The subscript i represents the i-th firm. Divided by a quantity of outputs (Q), unit costs are written as follows:

$$c_i \equiv \frac{C_i}{Q_i} = p_m \frac{M_i}{Q_i} + w \frac{L_i}{Q_i} + p_k \frac{K_i}{Q_i} + p_a \frac{A_i}{Q_i} + p_r \frac{R_i}{Q_i} = p_m m_i + wl_i + p_k k_i + p_a a_i + p_r r_i .$$

The variables in lower case letters denote ratios of corresponding quantity of input to that of outputs, which is the factor intensity.

factor prices attached to high factor intensities. For example, in a low wage economy, a labour-intensive technology product involves low unit costs and is, therefore, highly competitive.

What types of inputs are cheaper in low-income countries than in the rest of the world? As already mentioned, labour is a cheap factor of production in low-income countries (Leamer [126] and Leamer and Lavinsohn [127]).[13] Since the average skill level of workers tends to be lower in low-income countries, the difference in wage rates in efficiency unit is smaller than that in person. However, the difference in skill levels does not seem to erase the wage gap, which can be as much as 40 times, between low- and high-income countries (Parente and Prescott [157]). The other type of cheap inputs in low-income countries are the natural resources available locally. UNIDO [212] suggests that such a development strategy for poverty reduction, which is applicable only to natural resource-rich countries in sub-Saharan Africa, should be different from the rest of the countries in the region. The former countries can afford to utilize the resources and rents emanating from revenue derived from their sale, making it easier for them to raise funds for poverty reduction. Only if countries are cautious about movements in prices of resources and manage the extraction of resources prudently, will revenue from resources increase the budget for pro-poor public expenditure (Auty [15] and UNCTAD [207], annex to chapter 7).

It must be noted that not only minerals but also agricultural goods are among the resources that are cheaply available in most low-income countries. Moreover, the latter are often grown in wide areas of rural economies and are easily accessible to the poor. Wood, cereals, fruits, rubber, cotton, silk, wool and natural fibres are examples of such types of products. Meat, fish, hides and skins, etc., are also available cheaply in rural areas as inputs for the industrial sector. Furthermore, land prices, which complement primary products, are often low in low-income countries, so that total costs of harvesting and collecting the above-mentioned natural consumer products are likely to be low in such low-income countries. Other factors of production are unlikely to be cheap in low-income countries. First, costs of capital services are high in low-income countries due to the scarcity of capital and limited capital market, which is disconnected from the international financial market.[14] Macroeconomic variables tend to be more volatile,[15] resulting in high-risk premiums in low-income countries, and most capital goods are produced abroad and imported. Hence, the price of capital goods is higher in low-income countries.[16] Secondly, public utilities and administrative services are important inputs for the production of any commodity and such costs are likely to be high in low-income countries. Both these inputs, together with others, are among the important determinants of an "investment climate" which serve as signals for potential investors (Batra, Kaufmann and Stone [22, 231]). The level of public utilities is often below average in low-income countries. The rates for public utility services are generally higher in low-income countries (UNIDO [208], table 8.9). The same applies to administrative services, which are less efficient and more expensive. Added to this, corruption in the public sector further deteriorates the general investment climate in low-income countries (Kaufmann, Kraay and Zoido-Lobatón [111-113]).

[13]This view is shared by theorists of economic growth (see Jones [103]; Lucas [136] and Romer [184]). The evidence is based on the high number of migrants from low-income to high-income countries, irrespective of the skill level. Romer [184] and Jones [103] count it as a new stylized fact of economic growth.

[14]*Consequently, interest rates are usually quite high in low-income countries, in particular, sub-Saharan Africa* (see UNIDO [212], p. 13).

[15]See Agénor, McDermott and Prasad [7], and Rand and Tarp [171].

[16]Jones [102] illustrated that rich countries were likely to enjoy relatively cheaper prices of machinery in 1980.

In sum, natural resources, such as agricultural products available in rural areas, together with labour, are inputs of production, which the poor are more likely to own, and both tend to be cheaper in low-income countries than in high-income countries.[17] Therefore, sectors that employ either of the two inputs intensively are poverty reducing as well as potentially competitive. It can thus be concluded that industrialization strategies for sustainable poverty reduction should focus on promoting those industries that use these two inputs intensively. Promoting manufacturing industries that entail the former inputs is called "agro-based industrialization strategy", while that of the latter inputs is "labour-intensive industrialization strategy", both of which are discussed in detail below.[18]

D. PRO-POOR INDUSTRIALIZATION STRATEGY 1: AGRO-BASED INDUSTRIALIZATION

1. Rationale

Resources that are available locally are often cheap and are also the main source of competitiveness in low-income countries. If a precious mineral is produced in a country, the government will be able to raise funds for pro-poor expenditure. However, to reduce poverty, funds must be spent productively.[19] However, many low-income countries do not have a large stock of lucrative natural resources necessary to allow the country to become rich. By contrast, agricultural products are primary inputs which most low-income countries have in rural areas. With the exception of small city-states, agriculture is generally one of the main sectors, in terms of value added, employment and, in many cases, exports, in many low-income countries. Accordingly, the manufacturing industry processing agricultural products, referred to as the agro-based industry, is also one of the main industries in rural areas of most low-income countries. Agro-based manufacturing, which is an essential non-farm rural sector, is regarded by some scholars in development economics as a key sector for poverty reduction (Lanjouw and Lanjouw [123], Ranis and Stewart [172], Reardon, Berdegué and Escobar [180] and Start [194]).

As discussed earlier, the agro-based industry, in most cases, satisfies the following two criteria that serve as driving forces of poverty reduction: *(a)* extensive involvement of the poor in the production process; and *(b)* potential competitiveness by utilization of low-cost inputs and upgrading the quality of products and technology utilized for production. Rural workers are widely employed in the industry and poor farmers are also involved indirectly as they supply the industry with the crops produced. Thus, the agro-based industry is expected to contribute to poverty reduction significantly and is potentially competitive.

[17] It was observed that some natural resources, including a few agricultural products, are cheaper in some developed countries which have typically vast land. Here, it is enough to assume that in some low-income countries, there are some natural resources that are available at cheap prices for the poor.

[18] Adelman and Robinson also raised these two strategies ([4], p. 993). They refer to agro-based industrialization strategy as "agricultural-development-led industrialization".

[19] Botswana is one example of such a country (see Acemoglu, Johnson and Robinson [1]).

Box 1. Agro-based industrialization in Thailand

Thailand succeeded in promoting agro-based industries effectively, featuring them as the centre of Thailand's economic development strategy in the initial phase of its industrialization. Important lessons can be drawn from Thailand's experience of agro-based industrialization.

Ever since Thailand opened up its economy following the Bowring Treaty with Britain in 1855, rice had become the primary export commodity by the middle of the twentieth century (Ingram [93] and Seekins [189]). However, Thailand succeeded in diversifying export items gradually, so that exports of non-rice primary products grew just as rapidly as rice. For instance, tin became a major export commodity before World War II, while exports of rubber drastically expanded immediately after the War (Ingram [93], chapter 5). Moreover, after the War, exports of maize and tapioca grew, making these two agricultural products the major export commodities in the 1970s, followed by a surge in exports of sugar (Krongkaew [121] and Myint [144]). This series of crop diversification facilitated structural changes in the country as a whole, to the extent that it encouraged people, even in rural areas, to accept the new technology, such as new seeds, and lifestyle. Diversification of export items expanded further and led to the development of the manufacturing industry. For example, the food-processing industry grew by utilizing the vast amounts of agricultural and fishery products (Poapongsakorn [163]). Frozen shrimp is one of the main export commodities and has grown remarkably in recent decades.

When Thailand was about to reach the status of a newly industrializing country in the mid-1980s, it pursued a unique economy, namely an agro-based, newly industrializing country [82]. Up to the mid-1980s, agro-industrial products, such as canned seafood and fruits and processed broiler chickens, became important export items. Some conglomerates, engaged in the agri-business, started emerging during this period (Chiasakul [41], Krongkaew [121], Poapongsakorn [163] and Suehiro [201], chapter 7). As the economy of Thailand grew and joined the ranks of the Asian newly industrializing countries, labour-intensive and high-tech manufactured goods superseded exports of agro-based goods. Agro-based industries, nevertheless, definitely played a key role in the initial phase of industrialization in Thailand.

2. Agro-based industrialization from the viewpoint of global value chains

The main factor deterring low-income countries from pursuing agro-based industrialization is the inability to increase the competitiveness of their industries. The competitiveness of the agro-based industry can be strengthened through two mechanisms: inter-industry linkage and industrial upgrading. Both are extensively discussed in literature on value chains.[20] Research on value chains is being undertaken by many scholars who are trying to find out how to incorporate the right momentum of globalization into the growth of firms and industries, in order to increase the employment of unskilled workers. Such research is often conducted to explore the consequences of globalization on industrial development (Gereffi and Memedovic [75], Humphrey and Memedovic [91], Kaplinsky and others [110] and UNIDO [209 and 214]). However, such research is equally important in the context of poverty reduction because the manner in which the international division of labour is undertaken can crucially affect those who benefit from a particular type of globalization (Jenkins [100] and Nadvi [146]).[21] A value chain is defined as "the sequence of productive (value-added) activities leading to and supporting end use" (Sturgeon

[20] For more information on value chains, see Gereffi and others [74], Kaplinsky and Morris [109], McCormick and Schmitz [139] and the home page of Global Value Chain Initiative (http://www.ids.ac.uk/globalvaluechains/).

[21] In the field of international economics, one of the relevant theories for this issue is the Stolper-Samuelson theorem.

[198], table 1). The same concept is variously referred to as a supply chain, commodity chain, production chain, activities chain and product pipeline. Some important concepts and notions have been created by the research so far. Intersectoral linkage, value-chain governance and industrial upgrading are among the main issues featured in research on value chains (Gereffi and others [74] and Kaplinsky and Morris [109]).

First, inter-industry linkage, caused by the processing of goods, is a core issue of the research. This argument about inter-industry linkage was first presented by Hirschman [89]. He stressed the diffusion mechanism resulting from the impact of the development of a sector on adjacent sectors, both upstream and downstream. The input-output relationship amplifies the initial impact of the development of a sector and diffuses it to other sectors of the economy, unless some of the derivative impact spills over in the form of imports and exports.[22] A sector with strong effects of backward and forward linkages on the rest of the economy is a promising leading sector. The development of a sector with strong linkage effects also facilitates the development of other sectors to a great extent. Promoting such a sector is, therefore, advisable and should definitely be an integral part of development strategy.

Agro-based industries have a strong link to agriculture, which is often the main activity engaged in by the poor. Close ties with local agricultural activities lowers transaction costs for the use of agricultural inputs. Moreover, if the local network for marketing agro-products works effectively, these unit costs become even cheaper. Furthermore, if agricultural products are part of the global value chain, they have better chances of upgrading the quality of both products and production technology through interaction with "lead firms" that govern the chain. Thus, strong backward and forward linkage is crucial for promoting competitiveness within agro-based industries, subsequently lowering unit costs for final users (Dolan and Tewari [52], Fitter and Kaplinsky [69], Gibbon [77] and Stevens [195]). This focus of linkage between agriculture and industry and the resultant technology upgrading is shared with another influential notion of development strategy, namely, agricultural development-led industrialization strategy (Adelman [2]). Jensen and Tarp [101] studied the Republic of Korea and Mozambique, using computable general equilibrium models and conducted some simulation experiments. Both studies concluded that agricultural development-led industrialization strategy dominates other possible development strategies that were feasible in these countries. In addition, Adelman, Bourniaux and Waelbroeck [3] also support agricultural development-led industrialization strategy by examining a world economy model with some regional breakdown, referred to as the Rural-Urban North-South model.[23]

Secondly, governance of value chains is a critical factor influencing globalization and poverty in low-income countries. Governance is defined as "non-market coordination of economic activity" (Gereffi and others [74], p. 4) in the context of a value chain.[24] A value chain can range from raw materials to certain final goods, and lead firms, which are multinational and likely to have their

[22]Hla Myint presented this warning ([143], pp. 187-188). On the other hand, there are many anecdotes on the multiplier effect, see Rai [170] for an example.

[23]It is worth noting that how to develop the agricultural sector is another important issue in order to pursue ADLI strategy. One cannot simply assume that a demand for agricultural products is automatically created by globalization.

[24]Note that the same word is used differently in the context of international development as a concept of control of national and local governments as desired by their nationals (World Bank [225]).

head offices in high-income countries, could assume the responsibility for the "non-market coordination" among firms participating in the production process of a value chain. The influence of lead firms on small-scale producers and workers is complex and could sometimes be negative. For example, Gibbon [78] highlighted the increasing presence of supermarkets that sell fresh consumer products imported from low-income countries, and stated that supermarkets tend to demand more services and to lower prices from small producers. In this way, lead firms exercise control over the whole length of a value chain, and their influence could be critical for the survival of small enterprises. Finally, industrial upgrading is required to further poverty reduction through the development of agro-based industries. In order to increase production and employment, the range of economic activities should be widened, and productivity of the industry should be enhanced (Gereffi and others [74] and Kaplinsky and Morris [109]).

As is commonly known, value added increases as the range of economic activities increases along a value chain. More concretely, if an economy, which was engaged only in the assembly process of a value chain in the past and depended on imports of intermediate inputs and capital goods, starts producing commodities that were formerly imported, the value-added in the economy increases. Incidentally, this extension process undertaken within a firm is called vertical integration from a downstream sector to one-step upstream in a value chain. Undertaking designing oneself is another example of upstream vertical integration, while an advancement to wholesale and retail is an example of downstream vertical integration. These kinds of extension of coverage of activities in a value chain are called "intra-chain upgrading", and are achieved by conscious and determined learning and unintentional learning-by-doing (Dahlman, Ross-Larson and Westphal [44] and UNIDO [209], chapters 5 and 6).

Productivity enhancement is achieved through "product upgrading", and "process upgrading". Participation in a global production network provides opportunities to acquire new information and technology from abroad (Westphal [221]). They also provide opportunities for firms already engaged in a process of a value chain to take part in a different value chain. This is termed "inter-chain upgrading" (Gereffi and others [74]). These two types of industrial upgrading function in various forms. The governments of low-income countries and donors can be effectively involved in the upgrading process (UNIDO [209], chapter 7). This approach for promotion of technology upgrading can be applied to agro-based industries, too.

An interesting experiment of industrial upgrading is that of the wood furniture industry in South Africa, conducted in cooperation with universities (Kaplinsky and others [110], and Morris [142]). The School of Development Studies, University of Natal, and the Institute of Development Studies, University of Sussex, cooperated with manufacturers of furniture made of saligna wood, a kind of eucalyptus hardwood grown in South Africa. The two universities took the initiative of bringing together manufacturers of furniture, relevant government departments, timber traders, sawmills, timber growers and industrial specialists, and together the Saligna Value-Chain Group was formed. Participants exchanged views and information, and as trust among them was built up gradually, they addressed common obstacles collectively. This is an example of how external intermediaries can facilitate collective activities among actors that have potentially conflicting interests. Thus, agro-based industries widely involve the poor as workers and suppliers of agricultural inputs, increasing their potential to make a great contribution to poverty reduction. Moreover, agro-based

industries can become competitive by using locally available inputs and services. Agro-based industries could have strong inter-industry linkage effects, and the linkage could, in turn, promote industrial upgrading. Industrial upgrading is a key tool for industries to continue becoming competitive, and the experiment of the Saligna Value-Chain Group is a good example of cooperation by plant growers, manufacturers, traders, academics and central and local governments in their attempt to enhance the competitiveness of locally-produced commodities.

E. PRO-POOR INDUSTRIALIZATION STRATEGY 2: LABOUR-INTENSIVE INDUSTRIALIZATION

As discussed in section I.3, labour-intensive industries fulfil the two criteria for pro-poor industrialization strategies, namely, greater involvement of the poor and full utilization of cheap inputs, in this case, labour. The sources of both features are the same, namely, high intensity of low-wage workers in the production process. If low wages are high enough for poverty reduction and low enough for competing with rivals, labour-intensive industries could become internationally competitive and simultaneously reduce poverty. This is actually what occurred in the case of the garment industry in Bangladesh and Kenya, discussed in depth in chapter II.[25] The argument on the roles of labour-intensive industrialization on poverty reduction is not at all new. Sen [190] emphasized the impacts of choice of techniques dictating factor intensity on labour utilization. Myrdal [145] expected manufacturing to play a key role in labour utilization based on his observations in South and South-East Asian economies. The World Bank [224] also emphasized the importance of the utilization of labour and human capital accumulation of the poor for poverty reduction.

As described briefly in subsection I.2.1, growth and industrialization during the 1960s and 1970s in East Asia were characterized by export orientation and the labour-intensive nature of main export manufactures from resource-poor economies (Hirata and Nohara [88], Kuo [122], Naya [148], Pang [156] and Yamazawa and Watanabe [236]). The main labour-intensive manufactures exported from East Asia were textiles, garments and electric and electronic machinery. Those commodities were produced mainly for export because of the small domestic markets and their incorporation into international division of labour, alias, global value chains of the past. Head offices of multinationals, which were located in developed countries or in Hong Kong Special Administrative Region of China (SAR), were involved in the export-oriented production of labour-intensive manufactures from East Asia. Thus, labour-intensive industrialization in East Asia necessitated export-orientation supported by the governments of countries in East Asia (Amsden [12], Inoue, Kohama and Urata [94], Komiya, Okuno and Suzumura [119], Pack and Westphal [155] and Wade [217]). The World Bank report on *The East Asian Miracle* also endorsed the positive role of the active involvement of governments in each country in the export-oriented industrialization of East Asia (World Bank [226]). It is, therefore, evident that export orientation, labour-intensive industrialization and government intervention were the three characteristics of industrialization in East Asia.

However, East Asia cannot be viewed as a role model for contemporary low-income countries any longer, as export pessimism appears to prevail in low-income countries. The reasons are threefold.

[25] See also Kabeer and Mahmud [104].

First, East Asian economies, which are regarded as victors in economic development, such as the newly industrializing countries in East Asia (including Hong Kong SAR, the Republic of Korea, Singapore and Taiwan Province of China) and the original member countries of the Association of South East Asian Nations (Indonesia, Malaysia, the Philippines, Singapore and Thailand), were far ahead of the contemporary low-income countries, in terms of per capita income and industrialization. Secondly, there are arguments that the East Asian victors had unique features from the beginning of their industrialization, which again is not the case with contemporary low-income countries. Rodrik [183] and the World Bank [226] pointed out that governance and institutions in East Asia were generally favourable towards economic growth, features that were not shared by other developing countries. Wood [222] argued that even the initial level of education was higher in East Asia, which was critical for the smooth development of labour-intensive manufacturing.[26] Furthermore, Wood [223] stated that the feature of abundance of labour prevalent in East Asia is not evident in some low-income countries, especially in sub-Saharan Africa. Hence, labour-intensive industrialization, based on labour-abundance and low wages, does not apply to the latter category of low-income countries. He also stressed that, generally speaking, the countries of sub-Saharan Africa should follow the development path followed by the Western Hemisphere, where land is relatively abundant, instead of that followed by East Asia, where labour is relatively abundant.

The third reason for export pessimism is the comprehensive coverage of the regime of the World Trade Organization. Most low-income countries are members of the World Trade Organization where non-discrimination is the main principle. Member countries may not adopt all the policy instruments advantageous for export promotion, such as export subsidies, which were extensively used in East Asia during the initial phase of industrialization, because those export promotion measures would currently go against the non-discrimination principle of the World Trade Organization. In short, most low-income countries do not view the labour-intensive industrialization that took place in East Asia in the past as a feasible and promising path for their own pro-poor industrialization. In reality, however, there are some low-income countries that have succeeded in the labour-intensive industrialization (box 2). Typical examples are Bangladesh and Cambodia where the export share of garments exceeds 75 per cent of total exports.[27] As detailed in chapter II, the garment industry has been known as a typical labour-intensive sector in manufacturing, together with leather and leather products and lumber and wood products (Larry [125] and Little, Scitovsky and Scott [132], table 3.3).

Table 2 shows that Bangladesh and Cambodia are among the biggest garment exporters among low-income countries. Bangladesh ranks tenth and third in the share of exports of garments to the United States and the European Union, respectively, while Cambodia ranks twentieth for both markets. Moreover, as can be seen, both countries have expanded their export share considerably even after the abolition of quantity control of textiles and garments trade which took effect on 1 January 2005, under the regime of the World Trade Organization.

[26]This issue is discussed again in chapter II of the report.

[27]See box 2 for more information on Cambodia. The case of Bangladesh is detailed in chapter II.

TABLE 2.

GARMENT EXPORTS FROM MAJOR EXPORTERS TO THE UNITED STATES AND THE EUROPEAN UNION

	To the United States			*To the European Union 15*		
	Rank	*2004 (million dollars)*	*Jan.-Mar. 2004/ Jan.-Mar. 2005 (percentage change)*	*Rank*	*2004 (million dollars)*	*Jan. 2004/ Jan. 2005 (percentage change)*
China	1	10 721	67.8	1	13 693	19.2
Mexico	2	6 845	-8.2	57	52	37.1
Hong Kong Special Administrative Region	3	3 879	-19.2	8	2 397	-7.2
Honduras	4	2 743	7.0	62	31	-72.7
Viet Nam	5	2 506	12.7	17	755	-10.2
Indonesia	6	2 402	14.2	9	1 636	-6.3
India	7	2 277	34.5	6	3 013	16.3
Dominican Republic	8	2 036	2.2	74	10	-55.5
Guatemala	9	1 947	10.7	78	6	-76.2
Bangladesh	10	1 872	22.8	3	4 569	11.7
Turkey	21	1 169	-4.7	2	9 351	11.2
Romania	53	91	-0.6	4	4 561	5.0
Tunisia	64	44	73.5	5	3 214	-6.7
Morocco	58	75	-23.5	7	2 998	-10.8
Poland	66	43	-2.8	10	1 387	-17.7
Cambodia	20	1 418	14.1	20	643	24.5
Kenya	36	277	16.5	90	3	108.6

Note: Data sources are United States Department of Commerce, Bureau of Census and Eurostat, retrieved from the World Trade Atlas. Garments are defined as commodities classified under the HS codes 61 and 62.

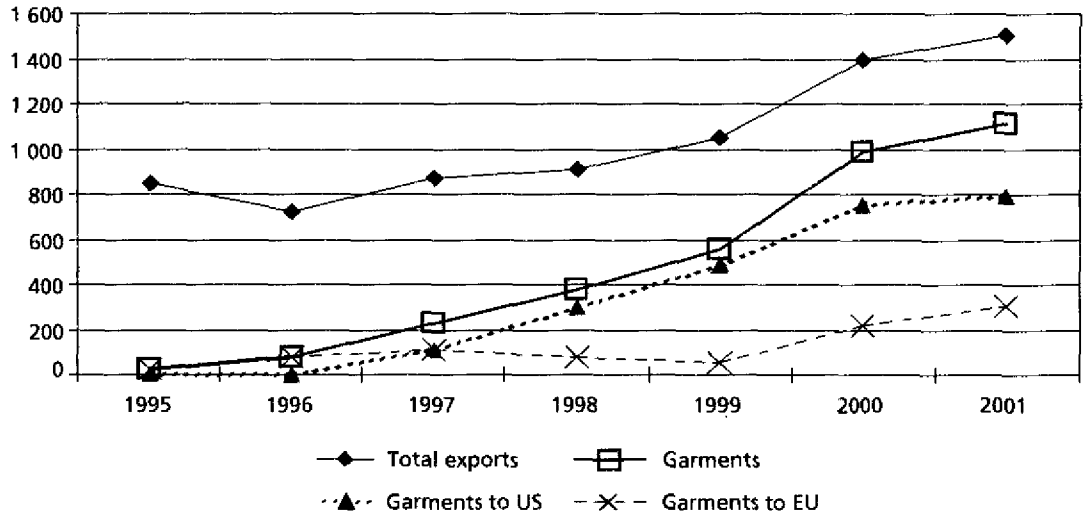
Box 2. Garment industry in Cambodia

Cambodia is a least developed country where the annual per capita income in 2002 was less than $400. The garment industry is the most dynamic sector—registering the highest exports to the United States and Europe (see figure II). More than half the number of workers are employed by the manufacturing industry, and it produces some 70 per cent of value added of the manufacturing industry in Cambodia.

Cambodia started increasing its exports of garments in the latter half of the 1990s. After the Asian financial crisis in 1997, there was a surge in inflows of foreign direct investment into the industry (Thoraxy [204]). Observing a rapid increase in garment imports from Cambodia, the United States started imposing import quotas on Cambodian garments in 1999, based on a bilateral agreement between the two countries. The agreement was necessary because Cambodia was not a member of the World Trade Organization at that time. The European Union did not impose such quotas because it allows quota-free access to all least developed countries.

An important observation about the development of the labour-intensive industry in Cambodia is that the investment climate on taxes and regulations, financing, policy instability, corruption, crime and infrastructure, are generally unfavourable (Batra, Kaufmann and Stone [22] and World Bank [231]). Moreover, the Government of Cambodia did not adopt a strong industrial promotion policy for the garment industry before its spontaneous growth was fuelled by foreign direct investment from Asian newly industrializing countries (Thoraxy [204]). It is, therefore, remarkable that the country succeeded in increasing its exports of garments despite the absence of strong industrial promotion policies, good governance or a favourable investment climate.

Figure II. Garment exports from Cambodia
(Millions of United States dollars)



Source: Hach and Acharya [84].

To sum up, labour-intensive industrialization, which entails export orientation as a necessary condition, was effectively pursued by the East Asian economies, despite the limited options that were available for industrial promotion policies under the regime of the World Trade Organization. However, the successful attempts of some low-income countries, such as Bangladesh and Cambodia, to expand the exports of labour-intensive manufactures encouraged the pursuit of labour-intensive industrialization. Specifically, the cost advantages, based on low wages, could offset the disadvantages emanating from weak policies, bad governance and poor infrastructure. Labour-intensive industrialization, therefore, deserves a thorough review as a pro-poor industrialization strategy.

F. CONCLUDING REMARKS

Poverty reduction in low-income countries is still a formidable task for both these low-income countries and the international community. While it has been achieved in certain parts of the globe, there are no signs of improvement elsewhere. For centuries, industrialization has contributed to poverty reduction in various ways. Although there is a broad perspective of further contribution ahead, much depends on whether a new pattern of industrialization tailored to the contemporary international environment can be found. Agro-based and labour-intensive industrialization are raised as two promising patterns of pro-poor industrialization. Both patterns of industrialization involve the poor intensively: small farmers, in the case of the former, and workers, in the case of the latter. These two groups of people supply their endowments, for example, agricultural produce and labour, at lower prices, including efficiency. In addition, commodities produced from the crops and labour have price competitiveness. Moreover, if income can be raised by supplying crops, and labour exceeds alternative economic opportunities, the patterns of industrialization are poverty-reducing. Thus, economic activities involving the poor might be both poverty reducing and competitive. In addition, if there is scope for industrial upgrading to

improve quality, diversify products, enlarge inter-industry and inter-firm linkage and enhance efficiency in production, competitiveness is strengthened even more.

The agro-based industrialization strategy is more closely linked with UNIDO's current view on pro-poor industrialization reflected in its corporate strategy published in 2003 (UNIDO [210, 213]). A predominant role of agro-based industries in the development prospects of the least developed countries is stressed in the strategy (UNIDO [210], pp. 20–21). In addition, the weak cooperation link between economic agents, markets and institutions continues to be another problem confronting low-income countries, also included in the strategy. As pointed out earlier, agro-based industries are expected to strengthen the inter-industry linkage in rural areas of low-income countries because the high intensity of local contents is a feature of the agro-based industries. In fact, service module 5 of UNIDO, namely, "agro-industries" currently provides the following services: *(a)* product design and development; *(b)* technology centres; *(c)* demonstration operations; and *(d)* techno-economic assessments (UNIDO [213]). Moreover, there are some activities which belong to other service modules, such as the rural and women entrepreneurship development of service module 4 on private sector development, which is predominantly linked to agro-industries (UNIDO [211]).

Agro-based industrialization is more harmonious with UNIDO's current corporate strategy, and activities directed to that pattern of pro-poor industrialization have already been undertaken by UNIDO. Thus agro-based industrialization is increasingly being regarded as the central strategy of UNIDO for poverty reduction in low-income countries. Many scholars also view agro-based industrialization for poverty reduction in low-income countries as highly promising. Adelman, Bourniaux and Waelbroeck [3], Jensen and Tarp [101] and Ravallion and Datt [178, 179] scrutinized the linkage effects derived from agricultural development on poverty reduction in some low-income countries. Their empirical results are sufficient to demonstrate the effectiveness of the agro-based industrialization for poverty reduction. On the other hand, another potentially effective pattern of pro-poor industrialization, for example, labour-intensive industrialization, has not been intensively covered in the contemporary literature on poverty reduction.

Owing to the fair prospects of, and a vacuum in, research, the validity of labour-intensive industrialization for poverty reduction is discussed intensively in chapter II. If the validity is verified, both logically and empirically, the labour-intensive industrialization strategy should be included as an option of the pro-poor strategy of UNIDO. The new strategy would contribute to enriching UNIDO's portfolio of pro-poor strategies, which should include various types of low-income countries.

II. AN EMERGING TREND IN INDUSTRY-LED POVERTY REDUCTION: LABOUR-INTENSIVE INDUSTRIALIZATION IN LOW-INCOME COUNTRIES

A. POVERTY REDUCTION THROUGH LABOUR-INTENSIVE INDUSTRIALIZATION

As stated in chapter I, labour-intensive industrialization has the potential to reduce poverty substantially by expanding production for exports. In this section, the logic of poverty reduction through labour-intensive industrialization is presented. First, a typical picture of the poor living in low-income countries is presented. A critical question here is whether countries can get out of poverty through employment in a labour-intensive industry. To address this concern, the following issues are focused on: migration to urban areas; a substantial increase in income through employment in a formal industrial sector; opportunities for employment of women; level of education required to be employed by the sector; wage increase through promotion to certain levels; and opportunities to seek employment in other factories. Secondly, how other family members benefit from the earnings of workers is presented: remittance from workers; purchase of land for residence or cultivation; education of younger siblings and children; investment in building social ties; and savings for the worker's own life in the future. Next, typical labour-intensive industries that are potentially promising in low-income countries are treated. Labour-intensive industrialization, which took place in the past, is reviewed and similarities in past experiences through labour-intensive industrialization with those of current low-income countries are examined. As a whole, this section provides a conceptual framework of the labour-intensive industrialization strategy for poverty reduction in low-income countries.

1. Approaches to poverty reduction

A majority of the population in low-income countries lives predominantly in rural areas. Since the average per capita income is generally lower in rural areas, the incidence of poverty is naturally higher. In other words, expected income in rural areas is lower. Poor households use their own strategies to stabilize their per capita consumption (Besley [23], Deaton [47] and World Bank [227]). They attempt to diversify sources of income so that an unexpected shock affecting one source of income does not greatly affect household income, as a whole. Sending a household member to another place in an attempt to increase the family income, but where income changes are not positively correlated with rural income, is a typical response of rural households to smoothen consumption over time (Stark [193]). People in rural areas often migrate to urban areas,[28] and it is not uncommon for some emigrants to pass through the capital city and later seek job opportunities

[28] In the case of garment workers in Bangladesh, more migrants are employed than non-migrants (Afsar [6] and Zohir and Pratima [241], table 3.6).

abroad. First-level transport and communication has improved even in low-income countries, thus lowering barriers to migration. In the past, the poorest stratum of people was not inclined to emigrate (Amjad [11], pp. 20-21 and Gunatilleke [83], p. 9) because of the high costs of migration (Gallaway [73]). Recently even the poor have become more mobile.

Empirical studies reveal that migration generally responds to economic incentives (Yap [237]). In other words, economic incentives are likely to be satisfied through migration. This is particularly true if migrants are employed by the formal sector. The poor in rural areas are better off migrating to urban areas and seeking jobs in the formal sector, neither of which is currently extremely difficult or rare. This argument of relatively easy access for the poor to the labour-intensive industries of the formal sector is treated in detail in the report. First, the main tasks that are expected to be undertaken by the poor are far from technologically complicated. For example, operating a sewing machine in the garment industry or assembling parts of an electrical machine are jobs that are classified under the formal sector in most low-income countries, and can be handled by workers after several months of experience. Rural and young women, without a high level of education, are equally able to undertake such tasks, once they become accustomed to the management and procedures of factories. Even without a full understanding of the mechanisms of operation of machines, they are able to assemble the fabricated parts and accomplish their tasks (Koike and Inoki [118]).[29]

In addition to the technical requirements, institutional barriers for the poor to obtain employment in the labour-intensive industries are low.[30] A high level of education is not required upon recruitment. Moreover, due to the high number of female workers employed, women are not isolated in a factory and are able to acquire friends of the same sex and age easily. In fact, female workers are likely to dominate, becoming the main workforce of labour-intensive industries (Bhattacharya and Rahman [28], Chiu and Levin [42], Deyo [49], Pang [156] and Zohir and Pratima [241]). Even in Muslim-dominated societies, such as Bangladesh and Indonesia, this feature is observed. Since multinationals are the core investors in export-oriented and labour-intensive industries, at least in the initial phase of development of the industries, they introduce new ways for managing business, which includes the employment of a high number of young, female workers who are considered by managers to be more tenable and less costly, in terms of average wages, than male workers. Female workers generally earn more when they are employed in labour-intensive industries than from alternative income-generation opportunities available in rural areas, sometimes even at the cost of their health.[31] Moreover, they could face social problems at, and while commuting to and from, the workplace. On the other hand, the status and earnings of female workers could increase their empowerment within the family and the society they belong to.[32]

In theory, wages of workers increase in three ways: *(a)* through accumulation of experience without promotion; *(b)* through promotion to higher designations; and *(c)* by moving to another factory

[29]Sachs [188] supports this view for female garment workers in Bangladesh, while Wood [222] has an alternative view based on experiences of middle-income countries in the past. See Sachs ([188], pp. 10-14), and Wood ([222], p. 6).

[30]This observation does not imply that the rich and the poor are treated equally when they are employed. Moreover, even if the poor are employed it does not necessarily mean that they can enjoy full job security.

[31]See Hewett and Amin [86], Hoque, Murayama and Rahman [90], Pratima [165] and Zohir and Pratima [241] for the case of garment workers in Bangladesh.

[32]See Zohir and Pratima ([241], chapter 7) and Hoque, Murayama and Rahman ([90], pp. 119-126) for the case of female garment workers in Bangladesh.

with higher and more advantageous wage and labour conditions. Generally speaking, the first way to achieve wage increases is not especially remarkable. The second way, namely, promotion to a certain level of designation, the possibility is high because ample opportunities exist. In the case of the garment industry in Bangladesh, wages increase by around 40 per cent through promotion from the entry-level designation, namely, that of a helper, to the next level, that of an operator.[33] By contrast, it is difficult for an operator to be promoted to the next level, namely, supervisor, which results in a further wage increase. The third way of increasing wages is possible in an economy where labour-intensive industries are growing and the demand for unskilled workers is high. Again, in the case of garment workers in Bangladesh, because of the rapid export growth in garments, the demand for workers is high. Workers are, therefore, constantly in search of jobs that offer higher wages, and the rate of job-hopping is high (Zohir and Pratima [241], pp. 74–77). In the same vein, the number of workers quitting voluntarily is greater than that of layoff.

Family members who live in rural areas benefit from remittances sent by workers in urban areas, resulting in capital accumulation. The amount of remittances from workers in urban areas to families in rural areas is substantial. It is often observed that household income derived from remittances from family members working in garment factories is greater than any other source of household income in rural areas.[34] The ratio of remittances to total wage earnings of workers is also high, on average.[35] Remittances contribute to poverty reduction in rural areas in two ways: *(a)* easing constraints on consumption; and *(b)* supplying resources for capital accumulation. First, as mentioned above, adverse shocks can sometimes be fatal to the poor living below the poverty line. Extending the consumption possibility is equal to extricating the poor from the poverty line and reduces the likelihood of the poor becoming destitute.

Secondly, additional income derived from remittances from urban areas can be used to increase future income through investment in physical, human and social capital of poor households. One of the most typical investments in physical capital taking place in rural areas is the purchase of land, either for residence or cultivation (Bardhan [21], among others). Another typical investment is livestock, such as cattle (Rosenzweig and Wolpin [186]). Financial assets are also productive as long as they are transferred to productive activities through financial intermediaries. Even if savings are maintained in kind or cash, they help households to cope with consumption over a period of time. Income raised through employment in urban areas can be used for human capital accumulation of households as well. Typically, children, young siblings and relatives of workers in urban areas may receive higher-level education made possible by remittances from workers. The family bond is strengthened through the financial contributions of workers within the family, and the likelihood of reciprocal returns from some family members to workers in the future increases. Thus, investments in human capital of other family members through remittances from workers have dual functions: *(a)* they raise labour productivity of family members; and *(b)* they accumulate social capital[36] for workers contributing to household income.

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[33]See next section for details.

[34]See Zohir and Pratima ([241], table 7.6) for garment workers in Bangladesh and Amakawa [9] and Kobayashi [117] for those in Cambodia.

[35]See Afsar [6] for the case of garment workers in Bangladesh.

[36]For detailed information on social capital, see Putnam [166] and Knorringa and van Staveren [116], among others.

Another form of social capital formation is the contribution to migration costs of family members seeking employment (Amjad [11], among others). Working abroad is a daunting venture for rural households, and is costly as well. However, if all goes well, a substantial amount of income flows back to the household. Therefore, monetary income, which initially increases through the migration of family members to urban areas of a country, could be used to finance the migration of other members. This mutual understanding strengthens family bonds and mitigates fluctuations in personal income over time.

In sum, poverty reduction through labour-intensive industrialization is achieved through rural-to-urban migration of the poor; employment of the poor with wage rates higher than that of alternative rural employment opportunities, but low enough to maintain the competitiveness of the industry; low entry barriers for less-educated female workers and relatively easy promotion to a certain level of designation; and diffusion of benefits from employment to family members in the form of direct increase in consumption and physical, human and social capital accumulation for future income generation.

2. Labour-intensive industries in low-income countries

The factor intensity of an industry is determined by technologies available to the industry, the amount of factor endowment and relative factor prices (Dixit and Norman [51], among others).[37] Where factors of production move freely within a country, factor prices are equalized, and factor intensity almost solely hinges on available technologies for the industry. There may be multiple technologies which are equally economical for an industry. Sen [190] exemplified the case of the cotton-weaving industry in India in the 1960s. He stated that there were five sets of technologies that could be used to weave cotton fabrics, those using a simple handloom and others using an automatic power loom (Sen [190], annex C). He also attempted to figure out which of the five was the best technology for the development of India.[38]

Currently, however, factor intensities of commercially viable technologies for a product are likely to be similar. Besides, there appear to be industries and/or products which should be promoted in the labour-intensive way in order to minimize unit costs. The garment industry is one of the most labour-intensive industries.[39] The sewing process, which involves an operator and a sewing machine, is the core of production, and the role of an operator cannot be completely automated easily.[40] In addition, leather and leather products, wood and wood products, and furniture and fixtures are also typical labour-intensive sectors in the manufacturing industry. Traditional spinning and weaving were done mainly by manual workers who used a spindle and loom, making those production processes equally labour-intensive. Currently, however, automated spinning and weaving machines are gradually replacing the traditional technologies, so that the upstream

[37]Specifically speaking, there may be the scale effect, too, unless the production isoquant is homothetic.

[38]Another example is the coexistence of large- and small-scale producers of agricultural products in South-East Asia, such as rubber, sisal and copra, though the difference in factor intensity, according to scale of production, is not evident (see Thoburn [203], pp. 11–15).

[39]See Larry ([127], pp. 24-29) and Little, Scitovsky and Scott [132], table 3.3) for the United States in the late 1960s, Tecson and Nohara ([202], p. 58) for the Philippines in 1980 and Ariff ([13], table 14) for Malaysia in the 1980s.

[40]It is true that automation of the process for sewing pockets, button holes and button stitching is advanced. But manual operators are still the main workforce of the industry.

processes of textile industry are not regarded as labour-intensive industries any longer. In sum, most of the light industries use labour-intensive ways of production.

While light industry connotes low-tech industry, there are labour-intensive industries that are regarded as high-tech industries. UNIDO [209] has a system of classification of commodities, and categorizes, among others, apparel, footwear, leather and leather products and textiles as low-tech products. It classifies computers, television sets and some electrical machinery as high-tech products, even though the assembling processes of the above products do not necessarily require highly skilled workers to be in charge of the process. In fact, some developing countries concentrate on the labour-intensive process of high-tech products, as in the case of China (box 3).[41] It is worth noting that engaging in labour-intensive processes of high-tech products could facilitate technological upgrading and lead to familiarization with high-tech products.

Box 3. Electric and electronic machinery industry in China

China is currently a leading exporter not only of the light industries, such as textiles and apparel, but also of more sophisticated durables and intermediate inputs of high-tech industries, such as electric and electronic machinery. China is catching up with advanced economies very quickly in terms of industrialization. In fact, China is following the path of East and South-East Asian economies, which developed in the late twentieth century, in the sense that those economies also started their industrialization efforts by processing primary products. They focused on labour-intensive industries, shifting to more labour-intensive production processes of high-tech manufacturing before achieving high levels of capital accumulation.

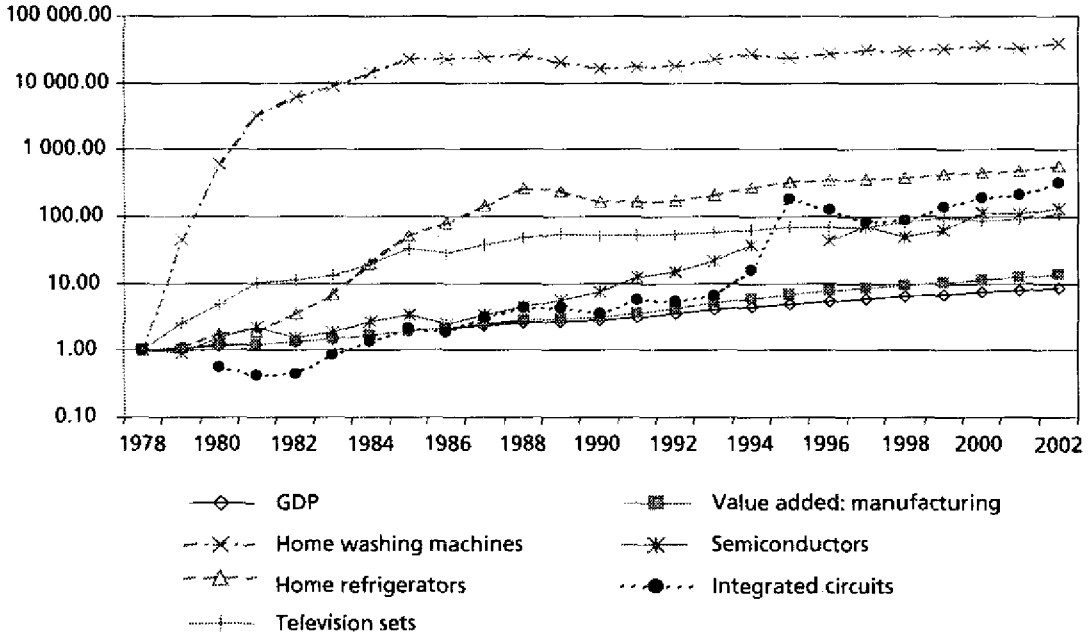
From figure III, which shows production of electric and electronic machinery in China, it is evident that production of this category of commodities outperformed the rest of the economy represented by gross domestic product since the policy of trade liberalization was formalized in 1978.

Data on the electric and electronic machinery industry in China show the labour-intensive nature and female dominance of the industry. Tables 3 and 4 present two indicators of labour-intensiveness of industries: capital-labour ratio and labour share in total value added in each industry.* The former indicator is based on the industrial census, while the latter is derived from the input-output table of China. It is evident that wearing apparel is labour-intensive, in terms of both capital-labour ratio and labour share. While the capital-labour ratios of the industry are far smaller than the industry average in both 1985 and 1995 (table 3), the labour share in total value-added of the garment industry is substantially higher than that of the industry average, irrespective of the years (table 4).

*The rationale of capital-labour ratio, as an indicator of factor intensity, is obvious. The labour share in total value added reflects labour-intensiveness because when the labour share is higher, the capital share is lower. Therefore, examining labour-share suffices for judgement of labour-intensity, as long as the same factor prices are applied to all production sectors in a country.

[41] Electric and electronic products were some of the most labour-intensive manufactured goods in Malaysia in the 1980s (see Ariff [13]).

Figure III. Growth in production of electric and electronic machinery in China



Note: The base year for all production indices is 1978. The vertical axis is in logarithm.
Source: National Bureau of Statistics [147].

TABLE 3.
CAPITAL-LABOUR RATIO OF SELECTED MANUFACTURING INDUSTRIES IN CHINA
(Unit: 10,000 yuan per person)

Year	*Industry*	*Wearing apparel*	*Electric machinery and instruments*	*Electronic and communication equipment*
1985	0.72	0.14	0.40	0.66
1995	3.80	1.39	2.87	4.01

Note: Capital labour ration is defined as the ratio of net fixed capital stock to the number of staff and workers.
Source: People's Republic of China [159].

TABLE 4.
LABOUR SHARE OF SELECTED MANUFACTURING INDUSTRIES IN CHINA
(Percentage)

Year	*Industry*	*Wearing apparel, leather and products of leather and fur*	*Electric machinery and instruments*	*Electronic and communication equipment*
1992	60.4	77.6	70.6	63.2
1995	66.3	72.7	72.0	61.6
1997	72.5	84.5	75.3	74.5

Note: Labour share is defined as the ratio of "compensation of labours" to ("total value-added" minus "net taxes on production" and "operating surplus").
Source: China ([160-162]).

Another main feature of labour-intensive industries is the dominance of female over male workers. This feature is applicable not only to wearing apparel but also for electric and electronic machinery. Table 5 reveals that the ratio of female staff and workers in the wearing apparel industry is remarkably high. The same ratio of electric machinery and instruments and electronic and communication equipment also is significantly higher than the industry average, namely, the labour-intensive industries are female-labour-intensive as well.

TABLE 5.
RATIO OF FEMALE STAFF AND WORKERS OF SELECTED MANUFACTURING INDUSTRIES IN CHINA, 1985 AND 2001
(Percentage)

	1985	*2001*
Industry	40.2	44.4*
Wearing apparel	77.6	72.6
Electric machinery and instruments	47.3	46.6
Electronic and communication equipment	51.3	57.3

Note: * Denotes the ratio of manufacturing only.
Source: China [159] and Census Center [39].

There is an impression that labour-intensive industries are almost a synonym of low-tech industries, decreasing the scope for industrial development and technology upgrading once a low-income country specializes in that type of industry. In fact, there is a theoretical concern that low-income countries might lose the opportunity to facilitate dynamic industries, in terms of productivity enhancement, and be locked-in only with low-tech industries, since equilibrium allocation is based on static comparative advantage (Learner and Levinsohn [127]). However, this view is not always true. First, as already seen, there are some labour-intensive industries that are closely related to advanced technology, such as the electric and electronic machinery industry. Secondly, there are many countries, mainly in East and South-East Asia, where industrialization was ignited through labour-intensive and low-tech industries and, as a result of capital accumulation and technology transfer, they gradually proceeded to capital-intensive and high-tech industries. Thus, labour-intensive industries should be considered as a first step toward industrialization, rather than a dead end.

B. BANGLADESH AND KENYA: TWO COUNTRIES EXPANDING EXPORTS OF LABOUR-INTENSIVE PRODUCTS

Here, the mechanism of pro-poor industrialization through the development of labour-intensive industries is illustrated based on the case study on the development of the garment industry in Bangladesh and Kenya. Examples of the two countries present concrete images of the poverty reduction process through industrialization. Later, the garment industry in the two countries is characterized in the context of pro-poor industrialization. Bangladesh and Kenya are chosen because they currently exhibit remarkable growth in the production and exports of garments, and

they do not enjoy any special advantage for promoting the industry. Thus, it is possible for other low-income countries to pursue pro-poor industrialization in the near future even in the absence of very favourable initial conditions. The results of field surveys conducted in these two countries, under the auspices of UNIDO, are summarized and analysed to show that the pro-poor industrialization mechanism, developed in the previous section, is actually underway. In particular, the two criteria for pro-poor industrialization, namely, wide involvement of the poor and viability of the industry, are focal points of exploration. The extent to which the garment industry is poverty reducing in the two countries and whether they have been or will become competitive, are investigated using the survey data.

1. Features of the selected industry and countries

There are several reasons for selecting the garment industry and conducting an intensive study in the context of pro-poor industrialization. First, the garment (alias wearing apparel) industry is a typical labour-intensive industry (see footnote 39). Secondly, the industry once led part of East and South-East Asia's industrialization. It was a core industry for export-oriented industrialization in these economies. Moreover, there are currently some low-income countries which hold a high position in garment export. This shows that the garment industry in low-income countries has played an important role in the world garment trade. Thirdly, in most of the economies which succeeded in developing the garment industry, garments were once the main export commodity. This feature is not applicable to other labour-intensive manufactures, such as leather and leather products, wood and wood products and furniture and fixtures, because demand in international markets for these commodities is not as sizeable as that for garments.

Bangladesh and Kenya were chosen for this case study because of two significant features of these countries. First, they are low-income countries with per capita income of around $400, in South Asia and sub-Saharan Africa. As will be observed, many people live below the poverty line in both countries. When comparing the investment climate in these countries with other low-income countries, neither of these countries has a favourable investment climate. Nevertheless, the garment industry is viable. The second feature is that both countries have a growing export-oriented garment industry, although Bangladesh is ahead of Kenya in terms of development of the industry. The scale of industry is greater and the history of development of the industry is longer in Bangladesh. On the other hand, Kenya is an emerging garment exporter of sub-Saharan Africa. Despite the absence of a secure base for the export-oriented garment industry, Kenya continues to expand its exports of garments even after the Multi-Fibre Arrangement has been phased out. Kenya is sometimes regarded as a benchmark in sub-Saharan Africa because of its relatively large population, location in East Africa and political and economic presence in the history of Africa. Even though Mauritius and Lesotho are known as big garment exporters in sub-Saharan Africa, it is difficult for other sub-Sahara African countries to replicate their experiences or use them as a benchmark. By contrast, some consider Kenya to be representative of sub-Saharan Africa.

Although the uninterrupted economic growth of 4-5 per cent during the 1990s has contributed significantly to reducing poverty in Bangladesh, it was not sufficient to raise the living standard of more than one half of the Bangladeshi population above the poverty line of Bangladesh in 2000 (table 6). Progress is particularly slow in rural areas.

TABLE 6.
INCIDENCE OF POVERTY IN BANGLADESH
(Percentage)

	1991-1992	*1995-1996*	*2000*
National	58.8	51.0	49.8
Rural	61.2	55.2	53.0
Urban	44.9	29.4	36.6

Note: The figures are head-count ratios based on the overall poverty line.
Source: World Bank and Asian Development Bank ([232], table 1.1).

TABLE 7.
INCIDENCE OF POVERTY BY HOUSEHOLD CHARACTERISTICS IN BANGLADESH IN 2000
(Percentage)

	Total	*Rural*	*Urban*
All household	49.8	53.0	36.6
Gender of head			
Male	49.9	53.1	36.6
Female	48.0	51.6	37.0
Marital status			
Married	50.1	53.3	36.9
Unmarried	31.0	33.8	19.7
Widowed/divorced	51.5	55.7	37.8
Religion			
Muslim	50.2	53.4	37.4
Non-Muslim	45.9	49.6	27.8
Household size			
1-2	29.5	33.1	13.4
3-4	43.0	46.9	28.8
5-6	52.8	57.0	36.9
7-8	55.0	57.2	45.7
9-10	54.7	56.1	48.9
11+	39.2	41.6	27.6
Education of household head			
No education	63.8	63.8	63.9
Completed class 1-4	42.5	42.8	41.4
Completed class 5-9	37.1	40.2	27.2
Completed class SSC+	15.3	21.4	6.0

Note: SSC stands for Secondary School Certificate, which can be achieved upon completion of class 10.
Source: Bangladesh Bureau of Statistics [18].

The households that suffer most severely from poverty are predominantly Muslim, uneducated and headed by a widowed or divorced female with many family members (table 7). Poverty issues are as serious in Kenya as they are in Bangladesh. According to the latest data for the year 1997, about half of the Kenyan population lives below the poverty line (table 8). It is worth noting that the incidence of poverty increased during the 1990s. Such an upward trend in the incidence of poverty calls for the urgent formulation of an effective strategy for poverty reduction and its immediate implementation in low-income countries.

TABLE 8.
INCIDENCE OF POVERTY IN KENYA, 1992, 1994 AND 1997
(Percentage)

	1992	*1994*	*1997*
National	44.8	40.3	52.3
Rural	47.9	46.8	52.9
Urban	29.3	29.0	49.2

Source: Government of Kenya ([80], p. 40).

The characteristics of vulnerable groups in Kenya are largely common to those of Bangladesh (table 9). Households headed by uneducated and unmarried females, separated, divorced or widowed, with a large household size, are most disadvantaged.

TABLE 9.
INCIDENCE OF POVERTY BY HOUSEHOLD CHARACTERISTICS IN KENYA IN 1997
(Percentage)

	Rural	*Urban*
Gender of household head		
Male	52.5	45.9
Female	54.1	63.0
Household head		
Male-married	52.7	46.2
Male-other	48.4	42.4
Female-married	52.3	56.0
Female-other	56.1	64.9
Household size		
1–3 persons	35.5	37.8
4–6 persons	49.6	53.7
Above 7 persons	61.7	56.7
Education of household head		
None	64.0	66.0
Primary	53.6	63.9
Secondary	33.4	38.8
Higher (form 5—university)	6.8	14.3
Other (technical/informal)	38.9	42.4

Note: The figures are head-count ratios based on the overall poverty line.
Source: Government of Kenya ([80], p. 42).

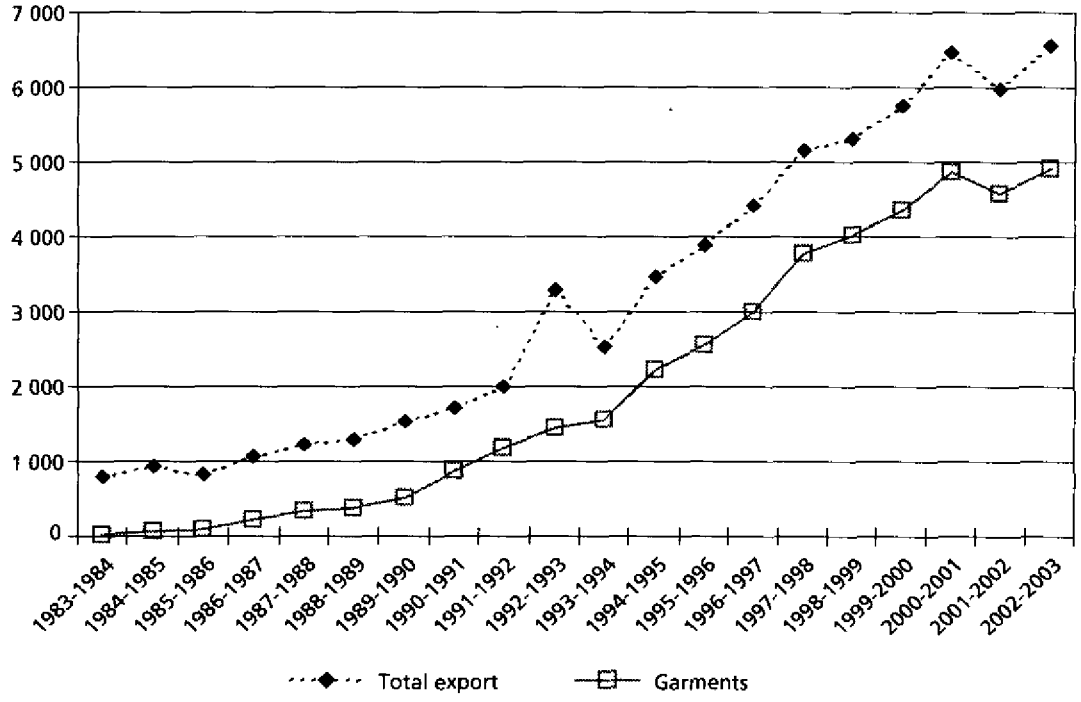
Even where poverty is the norm, Bangladesh maintains an assured status in the scale of garment exports to international markets.[42] Again, even though the country continuously faces a number of disadvantages, such as frequent floods and cyclones, red tape in public administration,[43] poor physical and human infrastructure, it has done remarkably well as an exporter of garments (figure IV).

[42]It must be noted that Bangladesh is listed by UNIDO as one of the high performing economies, together with China, India, the Republic of Korea, Malaysia and Thailand in (UNIDO [212]).

[43]Poor governance in Bangladesh is well known. Bangladesh ranks last in the Corruption Perceptions Index constructed by Transparency International, since the country appeared in the ratings for the first time in 2001. See the Transparency International's home page (http://www.transparency.org/cpi/2004/cpi2004.en.html#cpi2004). For information, Cambodia is not rated in the Index due to lack of information.

Moreover, the Government did not adopt a strong industrial promotion policy for the garment industry before its spontaneous growth was fuelled by foreign direct investment from Asian newly industrialized economies (Rhee [181]). Yet, the country is the third largest exporter of garments to the 15 member States of the European Union and the tenth to the United States in 2004. Even after totally liberalizing trade in textiles and garments on 1 January 2005, its current garment exports have reached double digits (table 2).

Figure IV. Garment exports from Bangladesh
(Millions of United States dollars)

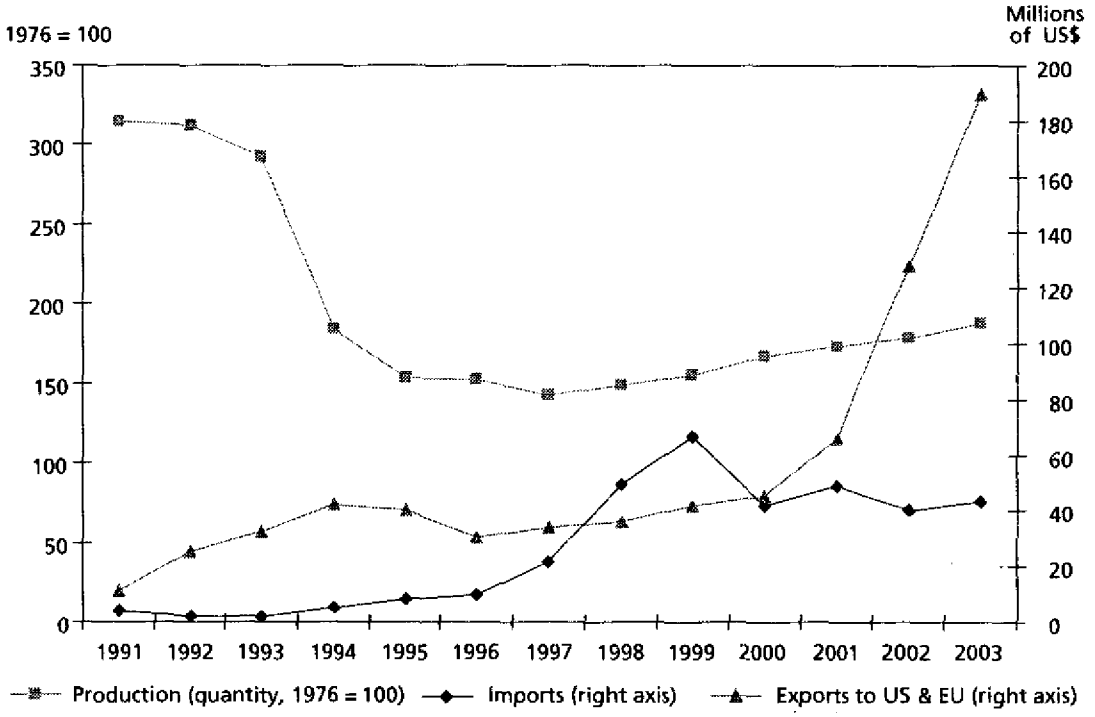


Sources: Quddus and Rashid ([168], table 1, p. 51) and Bangladesh Garment Manufacturers and Exporters Association data [20].

The garment industry in Kenya is as dynamic as in Bangladesh, as far as their recent performance is concerned (figure V). Kenya has recently started penetrating international markets, utilizing preferential treatments based on the African Growth and Opportunity Act of the United States.[44] Owing to the Act, the value of garment exports from Kenya grew fourfold between 2000 and 2003 (table 10). Furthermore, amid difficulties with free competition, Kenya's performance was encouraging (table 2). Although Bangladesh and Kenya are among the poorest countries in the world, they nevertheless exhibit signs of developing a labour-intensive industry led by exports. This could trigger substantial poverty reduction through expansion in employment by the industry. In the next subsection, the impact of development of the garment industry on poverty reduction in these countries is comprehensively evaluated.

[44]The African Growth and Opportunity Act passed in 2000 to promote trade between the United States and the world's poorest continent, allows some 7,000 goods tariff-free and quota-free access to the United States, if African countries meet governance and economic criteria. The Act has been instrumental in promoting the growth of the garments sub-sector. More than 95 per cent of the exports of garments to the United States were covered under the Act (United States International Trade Commission, Interactive Tariff and Trade Data Web (http://dataweb.usitc.gov/)).

Figure V. Garment production, exports and imports in Kenya



Note: Imports include second-hand clothing after 1997 when data became available.

Sources: (Production, imports) Central Bureau of Statistics, Economic Survey, and Statistical Abstract, various issues; (exports to the United States) United States Department of Commerce, OTEXA, United States International Trade Commission; (exports to the European Union) Gibbon [79].

TABLE 10.
GARMENT EXPORT FROM SUB-SAHARAN AFRICA
(Million dollars)

Country	*To*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*Percentage growth 1997–2003*
Kenya	US	31.4	33.7	39.4	43.9	64.5	126.0	187.8	498.8
	EU	2.6	2.3	2.5	1.7	1.7	1.1	n/a	n/a
Lesotho	US	86.5	100.2	110.7	140.1	216.8	321.0	392.4	353.4
	EU	4.5	0.8	0.2	1.6	3.2	2.1	n/a	n/a
Madagascar	US	16.0	22.6	46.0	109.9	178.7	90.0	196.3	1 129.8
	EU	177.1	218.0	213.9	244.7	238.3	145.6	n/a	n/a
Malawi	US	0.2	0.2	1.2	7.3	12.4	11.4	23.2	9 555.4
Mauritius	US	184.6	233.4	231.6	244.7	238.3	254.5	n/a	36.1
	EU	658.0	693.2	625.2	638.5	591.2	642.3	n/a	n/a
Namibia	US	n/a	n/a	n/a	0.2	0.1	6.7	42.0	n/a
South Africa	US	72.6	79.8	97.8	142.5	176.8	182.7	234.2	222.5
	EU	62.3	69.4	68.3	78.6	69.0	68.7	n/a	n/a
Swaziland	US	15.1	16.3	23.2	31.9	48.1	89.1	140.5	829.5
SSA Total	US	423.2	515.6	568.4	731.1	943.2	1 093.1	1 508.9	256.6

Source: (Exports to the United States) United States Department of Commerce, OTEXA, United States International Trade Commission; (Exports to the European Union) Gibbon [79].

n/a: not available.

2. Labour-intensive industrialization and poverty reduction in Bangladesh and Kenya

Here, the impact of development of the labour-intensive industrialization on poverty reduction is exemplified by introducing the results of field surveys of garment factories conducted between August and November 2003 in Bangladesh and Kenya. Sampling methods for the surveys are described in annex I, and the questionnaire is presented in annex II. For a more detailed analysis on which the descriptions in this subsection are based, see Fukunishi and others [72]. Supplementary surveys of garment workers were conducted simultaneously in both countries. This subsection is structured to answer the questions related to two criteria for examining pro-poor industrialization strategies, namely, wide and deep involvement of the poor and viability. The first four questions are directed to the first criterion, while the final question is directed to the second.

- Do unskilled workers employed by the garment sector earn enough to get out of poverty?

  The point here is whether the employment of unskilled workers in garment production has an impact on poverty reduction or not. The level of their earnings is compared with national and international poverty lines and with earnings of alternative opportunities for income generation. It shows that the earnings of garment workers without prior experience in the industry are not only above the national poverty line but also much higher than the earnings of alternative income-generation opportunities offered by the rural farm sector in Bangladesh, which are lower than the international poverty line. In the case of the garment industry in Kenya, the earnings of entry-level workers are far higher than both national and international poverty lines.

- How easy is it for the poor to secure employment in the garment industry? In other words, is there a high entry barrier to employment by the industry?

  High wages would make no sense if such an attractive employment opportunity were hardly possible. It is revealed that a high level of education is not necessary to be employed by the industry in either country, and barriers against the employment of female workers are not really high.[45]

- To what extent and how easily do the earnings of unskilled workers increase if experience in a garment factory is accumulated?

  If the level of earnings at the entry level, or "helper", did not change despite accumulated experience, then the impact of an increase in employment opportunities of unskilled workers in the garment industry would be limited. In reality, however, there is ample scope for a helper to become an operator, whose wages are substantially higher than that of a helper. However, it was observed that further promotion becomes extremely difficult, in particular for female operators in Bangladesh.

- How does employment in the garment industry affect the livelihood of a worker's family members?

  Answers to this question are derived from the supplementary interviews with garment workers that were conducted together with the firm survey in Bangladesh and Kenya. The interviews reveal that a part of the remittance from garment workers is often invested in the physical, human and social capital of the family.

[45] In this empirical study, only educational requirement is examined as an entry barrier for a worker into the industry, because it is often used as a requirement for job placement and promotion in any industry.

- Based on data collected from the firm survey, what is the level of profitability and productivity of garment-producing firms?

  These are important indicators for assessing the current viability and future prospects of the garment industry in Bangladesh and Kenya. Data show that for export-oriented factories, the garment business is profitable in both countries. This provides strong reasons for both countries to battle against global competition, which intensified the phasing-out of import restrictions imposed by some developed countries under the Multi-Fibre Arrangement regime, which ended on 1 January 2005.

Level of earnings

The textile and garment industry is known as a typical industry full of sweatshops. For example, the silk and cotton textile industry in Japan in the late nineteenth century customarily introduced long working hours and strict disciplinary measures (Ito [99], pp. 31-33 and Yokoyama [238]). Ever since, low wages and low labour standards in the textile and garment industry have been broadcast and publicized all over the world. The garment industry in low-income countries, such as Bangladesh, has likewise been accused of offering low wages and maintaining low labour standards (Elliott and Freeman [65], Esbenshade [67] and Ross [187], among others). Low labour standards are unacceptable and must be corrected, whether the country is a least developed country or not. Some existing schemes have been used to monitor the operation of garment factories and to punish them, if necessary.[46] Fully aware of the labour conditions, workers continue to seek employment in garment factories. The question is whether the wages earned are considered high enough to compensate for the unfavourable working conditions.

The field study reveals that the average wage of a worker at the entry level is higher than the national poverty line in Bangladesh and Kenya, and also higher than alternative income-generation opportunities in the rural farm sector, in the case of Bangladesh. Table 11 displays the average earnings of workers in the garment industry in Bangladesh according to designation, experience and gender. The figures are based on answers provided by managers of firms on how much each firm pays to each category of worker. Some firms pay workers according to how much they produce with a fixed rate per piece. Even in cases such as these, respondents were asked to provide her/his estimate of average earnings of workers.

When unskilled workers, or helpers, join the garment factory they do not operate machines on their own but start by assisting operators. Operators and helpers form the main workforce of a garment factory. In the sample firms in Bangladesh, as a whole, the number of operators and helpers make up 85 per cent of the total number of persons employed, while in Kenya the figure is 88.3 per cent. The average earnings of helpers during the first year amounted to $21 in the sample, irrespective of gender (table 11). This amount is equivalent to the level of monthly earnings of a new worker, which is also equivalent to the minimum earnings for all categories of workers (table 11). Even though the minimum wage of a helper during the first year of employment in the garment industry is only $21, it is still above the overall poverty line, which is $18. In other words, it is sufficient for her/him to make a living.

[46] For the garment industry in Cambodia, see ILO [97], and see the home page of the Bangladesh Garment Manufacturers and Exporters Association for Bangladesh (http://www.bgmea.com/social.htm).

TABLE 11.
AVERAGE MONTHLY WAGE IN THE GARMENT INDUSTRY IN BANGLADESH (DOLLARS)

		Shorter than 1 year		*1–5 years*		*Longer than 6 years*	
Section	*Designation*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Administration	Managerial/executive	310	n/a	395	287	420	353
	Other officer	124	109	177	161	218	180
Sewing	Engineer/technician	62	n/a	109	n/a	165	n/a
	Supervisor	73	69	94	97	115	83
	Quality controller	60	56	87	74	132	66
	Operator	35	34	39	39	41	42
	Helper	21	21	25	24	26	26

Note: The figures are the unweighted average of monthly earnings data collected for the firm survey. The original data are in terms of Bangladeshi taka, which are converted to dollars with the exchange rate of 58.15 taka per dollar. The food and overall poverty lines in Dhaka, Bangladesh for 2000 were Tk 649 and Tk 893, which were equivalent to $13 and $18 by conversion with the exchange rate of Tk 50.3 per dollar in 2000, respectively, while the international poverty line is $30 per month.
n/a: not available.

Is the average level of earnings of a helper during the first year greater than other alternative job opportunities? The earnings of alternative income-generation opportunities are observed from the results of the Household Income and Expenditure Survey conducted in 2000 in Bangladesh. It turns out that for people categorized under "extreme poor", "moderate poor" and "moderate non-poor" in farm sectors, the average earnings are lower than that of a helper during the first year of employment in the garment industry (tables 11 and 12). In other words, for the three categories of people in the rural farm sector in Bangladesh, a job in a garment factory is attractive; it helps to reduce income poverty and increases the monthly earnings of households.[47] With regard to Kenya, employment in the garment sector is even more attractive. The earnings of a female helper are around $60 for the first five years, which is way above the national (overall and food) and international poverty lines, which are $46.1, $21.3 and $30, respectively (table 13). Moreover, a monthly income of $60 is quite high for a country where the average annual per capita income is about $400, demonstrating that even at the level of a helper, income poverty is substantially alleviated.

In Kenya, depending on which markets the goods are produced for, the earnings of workers employed by garment-producing firms vary. Table 14 shows that export-oriented firms located in an export-processing zone tend to pay less than those producing mainly for local markets. As shown later, firms in export processing zones are likely to produce on a large scale, employ more workers and develop a division of labour within the firm. For example, each operator specializes in a certain process of sewing in a production line and is not responsible for other production processes. By contrast, other firms producing mainly for local markets are likely to operate on a small scale allowing capable craftsmen to undertake multiple processes of sewing garments. It is highly probable that the high wages for such craftsmen push up the average level of earnings of operators in local market-oriented firms.

[47] Kabeer and Mahmud [104] also show that the average monthly income of garment workers is way above that of other workers. Jeffrey Sachs also praises the vigour of female garment workers in Bangladesh (Sachs [188], pp. 10–14).

TABLE 12.

AVERAGE EARNINGS FOR WORK BY MODE AND SECTOR OF EMPLOYMENT AND POVERTY STATUS IN RURAL AREAS OF BANGLADESH IN 1999-2000

(Dollars)

	Farm		*Non-farm*		
Status	*Self-employment*	*Casual wage labour*	*Self-employment*	*Casual wage labour*	*Salaried wage labour*
Extreme poor	8	15	19	20	28
Moderate poor	13	18	33	25	35
Moderate non-poor	18	18	43	28	43
Rich non-poor	24	19	119	36	62
All poor	11	17	28	23	32
All non-poor	20	18	78	30	53
All households	16	17	58	26	48

Note: The original source is the Household Income and Expenditure Survey 2000. The figures in the source are in terms of daily wages, so that 25 is multiplied by the daily wage rates in order to derive the monthly earnings. The exchange rate of 50.3 Tk/$ is used for conversion.

Source: Osmani and others ([153], table IV.2, p. 40).

TABLE 13.

AVERAGE MONTHLY WAGE IN THE GARMENT INDUSTRY IN KENYA

(Dollars)

		Shorter than 1 year		*1–5 years*		*Longer than 6 years*	
Section	*Designation*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Garment	Supervisor	135	156	150	135	160	142
	Operator	80	74	87	81	111	104
	Helper	71	62	71	57	93	97

Note: The estimated overall poverty line in Nairobi in 2003 is K Sh 3,421.3 which is equivalent to $45.1, while the corresponding estimate of the food poverty line is K Sh 1,620.0, that is, $21.3. See Government of Kenya [80] for the poverty line in K Sh.

TABLE 14.

AVERAGE WAGE BY REGISTERED TYPE OF FIRM: KENYA

(Dollars)

	Operator		*Helper*	
Type	*Shorter than 1 year*	*1–5 years*	*Shorter than 1 year*	*1–5 years*
Firms in export processing zones	68	77	58	64
Other firms (non-EPZ, non-MuB)	82	95	70	63

Note: Firms belonging to Manufacturing under Bond (MuB) category are excluded from the classification above because of the small sample size. The category is for firms, which maintain the status of tariff exemption over importation of materials as long as the products incorporating the imported materials are eventually exported.

Entry barriers

The next question is how easy is it to secure a job, even as a helper, in a garment factory? Is there a high barrier for the poor to be employed by a garment factory? Concerning educational requirements, the entry barrier does not seem very high in either Bangladesh or Kenya. Since the educational level is an essential criterion applied for screening job applicants, this is the only barrier examined below (tables 15 and 16).

TABLE 15.
DISTRIBUTION OF FIRMS BY EDUCATIONAL LEVEL REQUIRED AND ATTAINED: KENYA
(Percentage)

Requirement				*Attainment*			
Educational level	*Supervisor*	*Operator*	*Helper*	*Educational level*	*Supervisor*	*Operator*	*Helper*
No requirement	15.9	28.9	44.8	Primary incomplete	1.7	6.8	20.6
Primary	3.2	32.9	35.8	Primary	13.8	49.3	57.1
Secondary	49.2	34.2	16.4	Secondary	70.7	41.1	20.6
Post-secondary or higher	28.6	1.3	0.0	Post-secondary or higher	13.8	2.7	1.6
Other	3.2	2.6	3.0				

TABLE 16.
DISTRIBUTION OF FIRMS BY AVERAGE EDUCATIONAL LEVEL OF WORKERS: BANGLADESH
(Percentage)

Designation	*Class 1-5*	*Class 6-8*	*SSC (Class 9-10)*	*HSC (Class 11-12)*	*Bachelor or higher*
Supervisor	0.5	62.3	35.2	1.9	0.0
Operator	44.3	55.2	0.0	0.0	0.0
Helper	96.2	3.8	0.0	0.0	0.0

Note: SSC refers to the secondary school certificate, and HSC refers to the higher secondary certificate.

In Kenya, around 45 per cent of the sample firms set no educational requirements for new helpers (the left columns of table 15), but in 35.8 per cent of the sample firms the completion of primary school education is essential, which does not pose any problem, as the enrolment ratio for primary school is over 90 per cent. The tendency of requirements in education level by designation is reflected in the figures of attainment of education. Nearly 80 per cent of the firms responded that the average level of educational attainment of helpers is primary school or less. The average education attainment of more than half of the sample firms is also primary school or less.

As for Bangladesh, educational requirements are only applicable at the supervisory level.[48] The average educational attainment for helpers in 96.2 per cent of sample firms is primary school education, that is, class 1-5. Again, with the enrolment ratio for primary school in Bangladesh gradually reaching 100 per cent, the figures in table 16 testify that anyone can be employed by the

[48]The answers on educational requirements were unfortunately not correctly collected.

garment industry. As table 6 shows, about half the population is assumed to live below the national poverty line. It is, therefore, highly probable that the poor are widely employed by the garment industry. Sufficient supporting evidence from other surveys confirm that education is not considered a prerequisite for employment by the industry on a large scale (Hoque, Murayama and Rahman [90] and Zohir and Pratima [241]).

Scope for an increase in earnings

As can be seen, earnings of helpers in the garment industry in Bangladesh are slightly higher than the national poverty line, while in Kenya, they exceed both national and international poverty lines. Is there any scope for a wage increase if one works continuously in the same firm and accumulates experience? Generally speaking, there are two possibilities for workers to increase their earnings: through promotion, or by increasing their productivity level. Accumulated experience could enhance the productivity level, while maintaining the same designation and without being promoted. An examination of both possibilities is necessary.

As mentioned earlier, a helper does not operate a sewing machine. When a helper is promoted to the level of an operator, he/she is assigned a sewing machine in a production line, and the wage rate increases. If a worker acquires more skills in, and knowledge of, garment production, in general, the scope for further promotion is higher. Tables 17 and 18 show the differences in average earnings between helpers and higher designations among sample firms in the two countries.

TABLE 17.
DIFFERENCE IN MONTHLY WAGES BY DESIGNATION: BANGLADESH
(Helper = 1)

		Shorter than 1 year		*1–5 years*		*Longer than 6 years*	
Section	*Designation*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Administration	Managerial/executive	14.61	n/a	16.10	11.87	16.26	13.67
	Other officer	5.85	5.15	7.21	6.66	8.46	6.98
Sewing	Engineer/technician	2.95	n/a	4.45	n/a	6.41	n/a
	Supervisor	3.43	3.24	3.82	4.02	4.47	3.20
	Quality controller	2.85	2.66	3.54	3.04	5.10	2.54
	Operator	1.63	1.62	1.61	1.62	1.58	1.62
	Helper	1.00	1.00	1.00	1.00	1.00	1.00

TABLE 18.
DIFFERENCE IN MONTHLY WAGES BY DESIGNATION: KENYA
(Helper = 1)

		Shorter than 1 year		*1–5 years*		*Longer than 6 years*	
Section	*Designation*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Sewing	Supervisor	1.90	2.52	2.11	2.37	1.72	1.46
	Operator	1.13	1.19	1.23	1.42	1.19	1.07
	Helper	1.00	1.00	1.00	1.00	1.00	1.00

In Bangladesh, the level of earnings of an operator is about 60 per cent higher than that of a helper, irrespective of gender and tenure (table 17). According to table 11, the earnings of an operator are twice as much as the overall poverty line of the country, and considerably above the international poverty line, which is around $30. These observations imply that if a helper is promoted to an operator, it is possible to live above the poverty level altogether. Moreover, if a helper is promoted twice and becomes a quality controller or supervisor, the wage increase ranges between 250 and 450 per cent. Incidentally, administrative officers earn even more. The question is whether it is possible for a helper to be promoted to such high-level posts. This issue will be examined shortly.

The differences in earnings between a helper and an operator are not as great in Kenya as in Bangladesh. This is probably because the level of earnings of a helper in Kenya is relatively high (table 18). On the other hand, the differences in earnings between a helper and higher designations are, in general, smaller in Kenya than in Bangladesh. In short, a person employed as a helper in the garment industry in Kenya means that the worker can get out of poverty, unless she/he has too many dependents.

TABLE 19.
RATIO OF FEMALES TO TOTAL EMPLOYED PERSONS: BANGLADESH

Section	*Designation*	*Shorter than 1 year*	*1–5 years*	*Longer than 6 years*	*All workers*
Administration	Managerial/executive	0.00	0.05	0.01	0.03
	Other officers	0.16	0.09	0.05	0.08
Sewing	Engineer/technician	0.00	0.00	0.01	0.00
	Supervisor	0.01	0.04	0.06	0.04
	Quality controller	0.07	0.04	0.07	0.05
	Operator	0.53	0.56	0.60	0.55
	Helper	0.54	0.60	0.76	0.58

TABLE 20.
RATIO OF FEMALES TO TOTAL EMPLOYED PERSONS: KENYA

Section	*Designation*	*Shorter than 1 year*	*1–5 years*	*Longer than 6 years*	*Total*
Administration	Managerial	0.35	0.24	0.16	0.22
	Officer	0.42	0.37	0.31	0.37
Sewing	Engineer	0.00	0.00	0.00	0.00
	Designer	0.52	0.17	0.20	0.30
	Supervisor	0.71	0.39	0.28	0.51
	Operator	0.84	0.72	0.57	0.75
	Helper	0.79	0.67	0.73	0.75

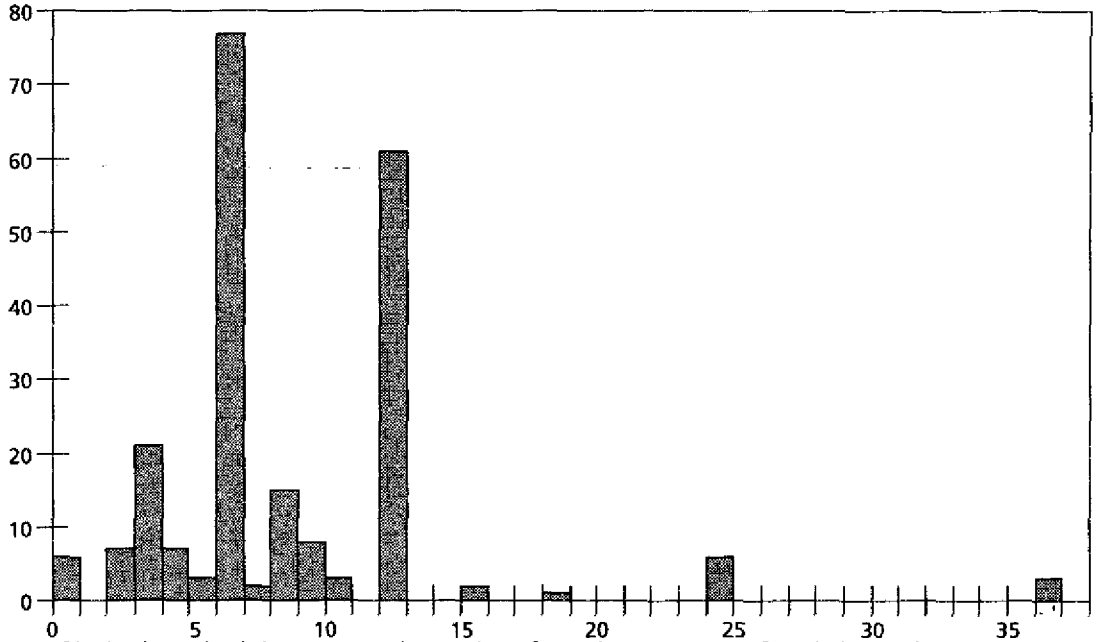
The next question is whether it is easy for a helper in a garment factory in Bangladesh to be promoted to an operator and enjoy a 60 per cent rise in income, as shown in table 17. Before addressing that question directly, it must be noted that many labour-intensive industries employ more female workers. This feature was evident in the silk and cotton textile industries in Japan in the late nineteenth century, as well as in the textile and garment industries and the electrical and electronic

machinery industry in East and South-East Asian countries in the latter half of the twentieth century (Pang [156]). In the garment industry in Bangladesh and Kenya, female dominance is observed. Export-oriented garment production is regarded as a business where more women than men are employed in both countries. Tables 19 and 20 reveal the female dominance in the industry's main workforce, namely, operators and helpers. Three quarters of the operators and helpers are female among sample firms in Kenya, while more than half the number of operators and helpers are women in Bangladesh. In fact, the ratios of female operators and helpers in Bangladesh, displayed in table 19, appear very small because other surveys of garment workers indicated higher female ratios. The data contained in Zohir and Pratima [241] show that 63.5 per cent of all workers engaged in garment production are females. According to Hoque, Murayama and Rahman [90] the figures are even higher: 89.4 per cent for operators and 94.7 per cent for helpers in the sewing section. In any event, it is observed that the majority of operators and helpers are women in Bangladesh and Kenya.

Another noticeable feature of the employment structure of the garment industry in Bangladesh is that the female ratios for higher designations in the sewing section are extremely small in comparison with those for operators and helpers. In particular, female supervisors are rare. Even in the administration section, the number of women is very modest. This feature endorses that the scope for promotion to higher designations are limited for ordinary female workers. By nature, the number of supervisors is smaller than that of operators and helpers, and male workers are more likely to be appointed to those positions in Bangladesh. By contrast, such male dominance for higher designations is not as conspicuous in Kenya as in Bangladesh (table 20). With the exception of engineers, women are appointed at all levels in the garment industry in Kenya.

Figure VI. Distribution of firms in average number of months for a helper to become an operator: Bangladesh

(Number of firms)



Note: The horizontal axis incorporates the number of months, on average, for a helper to become an operator, while the vertical axis takes the number of firms corresponding to figures on the horizontal axis.

It was observed that while the earnings of garment workers are far higher than the poverty line in Kenya, those in Bangladesh start their career in the garment industry as helpers, with earnings only slightly higher than the national poverty line. Thus only promotion to operator level enables them to get out of poverty completely. This gives rise to the next question: "Can a helper easily be promoted to an operator in Bangladesh?" In the survey of garment-producing firms in Bangladesh, managers were asked how long it takes, on average, for a helper to be promoted to an operator in their factories. Figure VI provides the histogram of sample firms, in terms of average months for a helper to be promoted to an operator. Tall spikes stand at six and twelve months, and imply that most managers perceive that a helper may be promoted to an operator within a year on average. There might be a variation in the speed of promotion on a person-by-person basis. However, promotion to operator level within a year does not seem to be too long, and suggests that barriers against obtaining such promotion are not high.

Finally, the scope of increasing earnings without promotion is examined. As school education is considered an investment, according to the human capital theory, work experience can likewise be considered an investment through which labour productivity increases. The rate of return on human capital investment is comparable to the conventional rate of return from physical capital investment. Jacob Mincer [140] was the pioneer of estimating the rate of return on education and work experience by simple regression of logarithm of wage earnings of workers on time trend. The regression equation is called the Mincer equation. Applying the Mincer equation to the samples, estimates are made of the rate of return from work experience gained from employment in the garment industry in Bangladesh and Kenya, as shown in tables 21 and 22.

TABLE 21.
AVERAGE ANNUAL RATE OF RETURN FROM EXPERIENCE: BANGLADESH
(Percentage)

		Male		*Female*	
Section	*Designation*	r_1	r_2	r_1	r_2
Administration	Managerial/executive	26.05	5.60	n/a	n/a
	Other officers	13.29	4.72	9.93	3.01
Sewing	Engineer/technician	15.87	10.00	n/a	n/a
	Supervisor	8.85	4.76	n/a	n/a
	Quality controller	13.55	9.33	6.19	0.24
	Operator	4.69	3.26	4.70	2.79
	Helper	5.50	54.25	5.12	3.55

Note: The top figures in each cell are the means of the annual rate of return of experiences (r) among firms, which are derived as follows: $r = (\ln w_t - \ln w_s)/(t - s)$. r_1 is that for between workers with experience of less than one year and those with 1 to 5 years, while r_2 is that for the difference between 1 to 5 years' experience and those for greater than 5 years. For r_1 it is assumed that $t = 3$ and $s = 0.5$, because those values are in the middle of corresponding periods of experiences. Similarly, it is assumed that $t = 8$ and $t = 3$ to derive r_2. Basic results are not altered even if 6 is substituted for 8 as t to derive r_2.

TABLE 22.
AVERAGE ANNUAL RATE OF RETURN FROM EXPERIENCE: KENYA
(Percentage)

Designation	r_1	r_2
Supervisor	10.5	0.5
Operator	2.2	1.8
Helper	2.0	4.1

Note: For the method to obtain the rate, refer to table 21.

In Bangladesh, the average annual rate of return from work experience as a helper in the garment industry is between 3.5 and 5.5 per cent (table 21). While that of an operator also falls in a similar range of values, the rate of return is likely to be greater for higher designations. In any event, the rate of return from work experience for the main workforce of the industry, that is, operators and helpers, is modest. An implication derived from the observation is that the increase in earnings due to promotion from a helper to an operator (table 17) is far greater than the increase in earnings of a helper with accumulated experience without promotion to an operator. In other words, without promotion there is little scope for a helper to expect a sharp increase in wages. The rate of return from work experience among the sample firms in Kenya is far smaller, irrespective of designation (table 22). In particular, the rates for helpers and operators are as low as 2–4 per cent per annum. As a result, the wage increase after securing a job in a factory is modest both through promotion and accumulation of work experience. However, since entry-level workers are offered considerably high wages, the need for further wage increases is not great for workers anyway.

To sum up, in Bangladesh there is a high probability of being promoted from a helper to an operator, which results in an increase in earnings of around 60 per cent within a year or so. In the absence of promotion, the scope for wage increase is limited and the level of earnings is barely above the national poverty line. In Kenya, garment workers tend to receive sufficiently high earnings at the entry level. Even the earnings of helpers are far above the national and international poverty lines. The bottom line is that employment opportunities in the export-oriented garment industry offer an attractive and realistic chance for the poor to get out of poverty, first through the initial high earnings offered to entry-level workers, and second through easily attainable promotion, albeit applicable only to Bangladesh.

Employment

In 1999-2000, the garment industry employed the highest number of workers among three-digit-level manufacturing industries in Bangladesh (Bangladesh Bureau of Statistics [19]). About one million persons were engaged in the industry, followed by 0.6 million in the textile industry. In other words, the textile and garment industries are the biggest formal sectors in Bangladesh. In Kenya, the profile of the industry is still modest, in terms of scale of employment. According to the Export Processing Zone Authority of the Government of Kenya, the number of workers employed in garment factories located in export processing zones stood at 25,288 in 2002 [81]. While no official statistics are available on the number of garment workers in Kenya, data on the garment factories in Kenya show a sharp contrast between those exporting to the United States and those

producing for the domestic market, in terms of growth in employment (table 23). Firms, whose main market is the United States, expanded employment by as much as 306.2 per cent between 2000 and 2003, while the others reduced or maintained the level of employment. As described in subsection II.2.1, the policy of the United States to bestow sub-Saharan African countries with preferences detailed in the African Growth and Opportunity Act spearheaded this outstanding performance of garment exporters to the United States.

TABLE 23.
GROWTH IN EMPLOYMENT OF FIRM BY MAIN MARKET: KENYA
(Percentage)

All samples	88.6
By export	
Non-exports	−6.4
Exports to the rest of Africa only	3.4
Exports to the United States	306.2
Exports to other OECD countries	−22.5

The scale of garment factories, in terms of employment, is likely to be higher than other manufacturing factories because of its labour-intensiveness. This tendency is even more outstanding for export-oriented factories because of their inclination to apply an extensive division of labour, so that each position in a production line requires a certain number of workers irrespective of whether they are adequately skilled for the assignment.

The survey for Bangladesh covers only export-oriented firms. The industrial association for garment production and exports featured in the survey, namely, the Bangladesh Garment Manufacturers and Exporters Association, publishes data on the size of employment by its member firms. The distribution of member firms of the Bangladesh Garment Manufacturers and Exporters Association in employment and the sample counterpart appear in table 24. An average-sized firm employs around 400 persons for the former and 520 persons for the latter. It is evident that the share of small firms is low for both member firms of the Bangladesh Garment Manufacturers and Exporters Association and the samples. More than 80 per cent of the firms employ more than 200 persons. This is due to the technological nature of the industry. It must be noted that only two out of the 222 firms in the sample receive capital from abroad; one is totally owned by Koreans, and the other, by Canadians.[49] There are no official data on the source of capital covering all member firms belonging to the Bangladesh Garment Manufacturers and Exporters Association.

In the samples for Kenya, both local-market and export-oriented firms are included. Out of 77 sample firms, 25 are export-oriented, of which 17 firms are located in export processing zones. The Export Processing Zone Authority of the Government of Kenya published data of garment-producing firms in export processing zones, which indicate that the average size was 842.9 persons in 2002 [81], while the same figure in the sample is 871.1. The average number of workers for the full sample is 266.1, and the figure for local market-oriented firms is 50.1. Table 24 shows the dominance of firms in the sample of Kenya.

[49]Large and foreign-owned firms appeared to be more cautious when filling out the questionnaire. A 2/222 is not considered a good estimate of the share of foreign firms engaged in garment production in Bangladesh.

TABLE 24.
SIZE DISTRIBUTION OF FIRMS IN THE GARMENT INDUSTRY IN BANGLADESH AND KENYA
(Percentage)

	Bangladesh		Kenya
No. of employees	*All BGMEA members**	*Sample*	*Sample*
(1-50)	0.4	0.0	50.0
(50-200)	16.5	2.3	18.4
(200-500)	61.2	54.0	14.5
(500-1,000)	18.3	37.4	13.2
(1,000-2,000)	2.6	6.3	2.6
(2,000-8,000)	1.1	0.0	1.3

Note: * Data obtained from 3,115 Bangladesh Garment Manufacturers and Exporters Association (BGMEA) member factories.

Source: BGMEA (2003) and the survey.

Another important aspect of employment in the garment industry, in the context of poverty reduction, is female dominance in the main workforce of the industry (tables 19 and 20). This aspect is very important from the viewpoint of empowerment of women, which is especially meaningful for Bangladesh where activities for women have been remarkably repressed by social norms, such as the purdah.[50] According to norms prevalent in the traditional Bengali society, women are not encouraged to leave the home without it.

The export-oriented garment industry, which was the first formal sector initiated through investments from the Republic of Korea, can be considered a breakthrough as it introduced female employment into the community. A virtual "women only" environment was created on the sewing floor in factories, and mitigated the degree of violation against the purdah. As the majority of workers are migrants from rural areas, employment in garment factories often entails living away from the family (Afsar [6] and Zohir and Pratima [241]). Thus, female garment workers have become more independent and earning an income has increased their freedom—at least financially. Thus, financial independence, high contribution to family income through remittance and knowledge attained from living in urban areas significantly enhances their social status (Hoque, Murayama and Rahman [90], Kabeer and Mahmud [104], Zohir [240] and Zohir and Pratima [241]).[51] In these ways, socially oppressed Bengali women have gradually become empowered partly because of employment by the garment industry.[52] This aspect of development in Bangladesh can be regarded as an admirable achievement by the international community.[53]

[50]See Engels [66] among others.

[51]On the other hand, one cannot overlook the fact that female garment workers in Bangladesh face serious problems, such as health, harassment and abuse in factories and fear while commuting (Hewett and Amin [86], Pratima [164, 165], Zohir [240] and Zohir and Pratima [241]).

[52]Other features of the development of Bangladesh, which substantially contribute to the empowerment of women, are implementation of microfinance and the active participation of non-governmental organizations in development, emphasizing women's involvement (Khandker [114], Lovell [135] and Rahman [169]).

[53]Sachs [188] applauds the active and positive participation of female workers in garment production in Bangladesh. Todaro and Smith also positively evaluated the performance of Bangladesh in comprehensive poverty reduction in comparison with Nigeria ([205], pp. 503-507).

Impact on the livelihood of a garment worker's family

Having observed the benefits of employment in the garment sector, what is the impact of garment work on the worker's household? As the firm survey does not provide sufficient information to answer the question, supplementary interviews with garment workers were conducted in Bangladesh and Kenya on the basis of a questionnaire. The following observations were made after conducting interviews with 40 workers in Bangladesh and 17 workers in Kenya.[54] First, the significant financial contribution of garment workers to households has helped to improve the standard of living of a large segment of the population through job creation. Of the 40 interviewed, 33 mentioned economic improvement as the most important gain from garment employment in Bangladesh. In Kenya, some members of families working in garment factories earn and consume more than those families where the head of the family is unemployed or employed elsewhere.

Another interesting observation is the high propensity to invest in household assets, which was more evident in Bangladesh. Household assets are not only limited to physical and financial assets, but also to human and social capital. Part of the income remitted to families is saved. Among those interviewed in Bangladesh, there are examples of families that purchased land either for residence or cultivation. Human capital investment within households is spent on the education of children, siblings and relatives of garment workers (Fukunishi and others [72]). In Kenya, interviews were held with various persons, including an ex-garment worker who was forced to stop paying for the education of a family member after quitting his job in the garment factory. In Bangladesh, one of those interviewed financed the migration costs of a sibling enabling him to work abroad. This type of spending is considered an investment in social capital, in other words, funds spent on extended members of the family, strengthens ties between garment workers and prospective migrants abroad. Besides, the income of the garment worker is assured as he naturally expects reciprocal action, should anything unexpected occur in the future. It can, therefore, be concluded that employment in the garment industry has a significant impact on the livelihood of families in both countries. It definitely mitigates hardships of families, and households often make investments in various forms to ensure future income.

Prospects for further growth

Thus far an examination has been made to find out whether employment in the garment industry helps to reduce poverty in Bangladesh and Kenya. The general conclusion is that income derived from employment in the industry is higher than the national poverty line and exceeds the level of alternative income-generating opportunities. Moreover, because of the female-dominance feature of the industry, female workers enjoy empowerment, not only in terms of financial freedom but also confidence, which enhances their social status. Besides, since the earnings of a garment worker are often shared with the family to a certain extent, the standard of living of the family increases as a whole.

In chapter I, two criteria were set for an ideal pro-poor industrialization strategy: *(a)* a promoted industry that involves the poor comprehensively; and *(b)* viability of the industry, at least in the long-term. The above summary of observations about the garment industry in Bangladesh and Kenya is in line with the first criterion. It is, therefore, necessary to examine whether the garment industry

[54]The 17 workers in Kenya include ex-garment workers who were not employed by the garment industry when the interviews were conducted.

in both countries satisfies the second criterion. The main issue for investigation is the profitability of each firm and its average level for the industry. In both Bangladesh and Kenya, the capital markets are far from perfect, making it reasonable to assume that most garment-producing firms face credit constraints. In this respect, self-financing with profits is the major source of investment together with the expansion of the firm. Profitability is thus a key for further expansion of the industry.

Unfortunately, it is hard to measure profits accurately because, in many cases, it is often the owner of a firm, the manager of a firm, a landowner on whose land the factory is built, a money lender of a firm, or some combinations of them, who are one and the same person. It is, therefore, almost impossible to distinguish the exact level of income accrued from each contribution raised above. In theory, only income attributed to the owner of a firm should be counted as profits. This difficulty in measuring pure profits is applicable to firms not only in developing countries but also in developed countries. However, this problem is more acute in low-income countries, such as Bangladesh and Kenya. In order to reinforce the argument, a proxy for profitability is invoked, which is total factor productivity.[55] High productivity implies a high level of production with a smaller amount of inputs. Assuming the same quality and same price of products and inputs, high productivity implies high profits. Total factor productivity is therefore used for analysing the viability of firms together with profitability.[56]

Profits are defined as residuals of value added after factor incomes are subtracted, while value added is defined as sales minus the value of materials and current expenditure, such as costs for energy, transportation, insurance and miscellaneous goods. Pure profits tend to be mixed up with interest rates for loans, rents for land and wages for owner-manager, if the owner of the firm supplies one of the three factors. Without applying the imputation method, which is commonly used to construct national accounts, estimating pure profits is impossible using the available data set. Keeping this limitation in mind, the above definition of profits is applied.[57] Accordingly, in the report, a "profit share" is derived as the ratio of the above-defined profits to total value added.[58] A caveat is that capital expenditure is not subtracted from this definition of profits. Those "profits" can be considered for the short term, rather than for the long term. Moreover, it must be noted that profits are totals before tax deductions. Questions about tax were intentionally dropped to avoid the possibility of respondents refusing to participate in the survey, especially since tax payments are delicate issues for firms in both Bangladesh and Kenya.

Figure VII displays the distribution of firms in profit share in Bangladesh. It is clear that the distribution is highly skewed, and that the majority of firms exhibit a very high profit share. The mean profit share is 76.6 per cent, while the median is 83.8 per cent. Since, theoretically, it is often considered that if free entry is allowed, pure profits must be reduced to zero, such figures are very

[55]Total factor productivity, in the context of the analysis, is defined later.

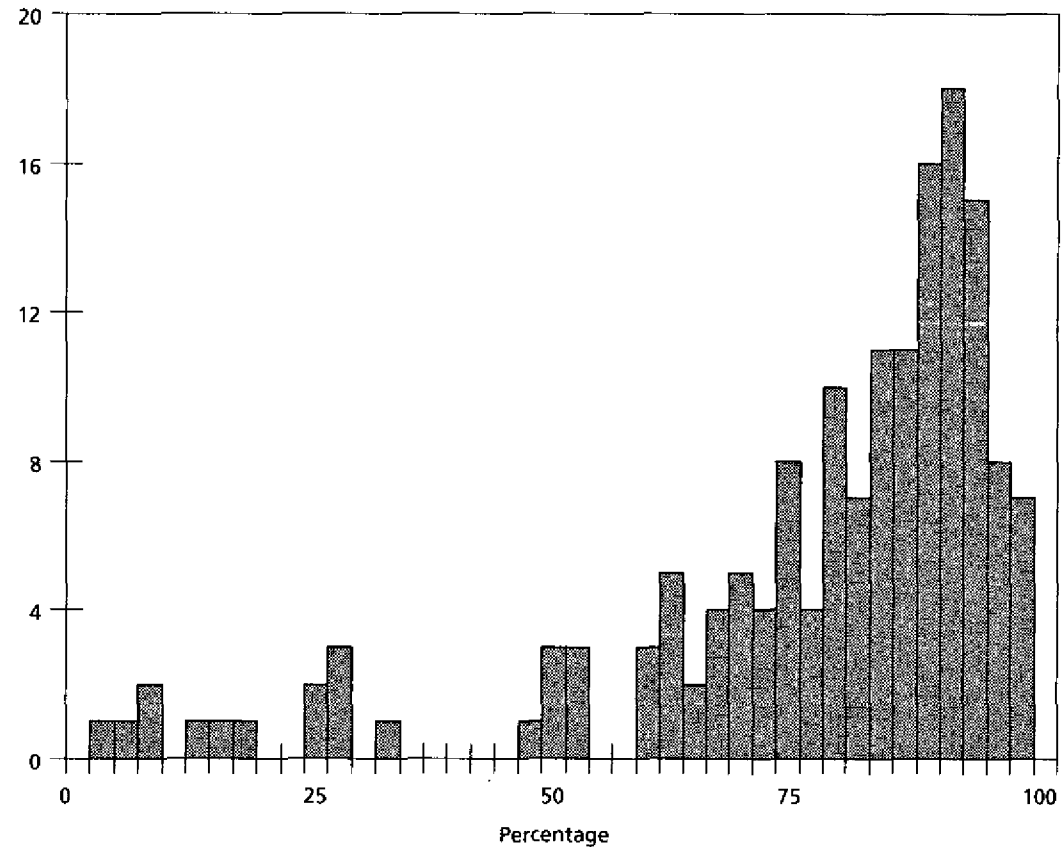
[56]*Profitability and productivity are the main concerns in other research on the evolution of firms in developing countries* (Roberts and Tybout [182] and Tybout [206]).

[57]An extended concept of profits termed as "capital share" was also experimented with. Capital share is the ratio of non-labour income to total value added. The non-labour income comprises not only profits but also interest and rents. In other words, non-labour income is income accrued under the broad definition of "capitalists" which is similar to that in Marxian terminology. This is the reason why the ratio is termed "capital share". All the analyses hereafter were repeated with the capital share instead of profit share, and it is confirmed that all main results are maintained even if the capital share is used.

[58]Another concern is whether the main results are maintained even if the rate of return, which is the ratio of profits to value of capital, is used as a proxy for profitability. Bakht and others [17] applied the indicator for the knitwear industry in Bangladesh and attained similar results. That implies the results are not sensitive to profitability indicators.

high by any standards. Even though this definition of profits includes hidden rents, interest, wages and capital costs, the figures are still considerably high. This observation implies that export-oriented garment production in Bangladesh is extremely profitable.

Figure VII. Distribution of firms in profit share: Bangladesh



Note: The horizontal axis denotes profit share of each sample firm, while the vertical axis denotes the number of firms.

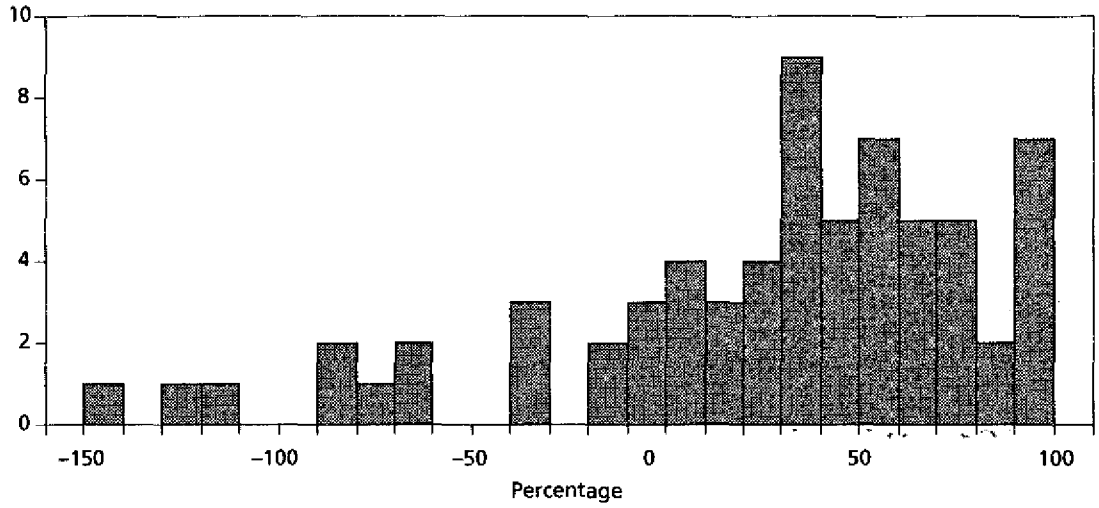
When comparing figure VII with figure VIII, the distribution of the profit share of firms appears similar, with one exception: the left-hand side of figure VIII extends into the negative range and the average profit share of Kenya's garment industry is 25.2 per cent, which is less than that of Bangladesh. This lower profit share is partly due to the structure of the data set for Kenya. As can be seen in table 25, there is a substantial gap in the profit share between firms located inside export processing zones and elsewhere.

TABLE 25.
AVERAGE PROFIT SHARE BY LOCATION: KENYA

	Profit share	*Sample size*
All samples	25.2	67
Non-export processing zones	18.7	54
Export processing zones	52.1	13

Note: The sample size is reduced due to incomplete answers necessary for constructing the profit share.

Figure VIII. Distribution of firms in profit share: Kenya



Note: The horizontal axis denotes profit share of each sample firm, while the vertical axis denotes the number of firms.

In Kenya, the average profit share of firms located in export processing zones is as high as 52.1 per cent, while that of firms in non-export processing zones is only 18.7 per cent. As already seen, export-oriented firms are generally bigger and grow more rapidly than local market-oriented firms and are thus totally different in character. Firms exporting to the United States have a greater tendency to grow faster (table 23). Export-oriented firms in Kenya resemble more closely those in Bangladesh, in terms of scale, growth rate and profit share. This interpretation appears acceptable as export-oriented firms are more likely to be influenced by multinationals as buyers, investors, etc. It is not surprising that export-oriented firms wish to resemble firms outside the country, and share the same features with other internationally-active firms.

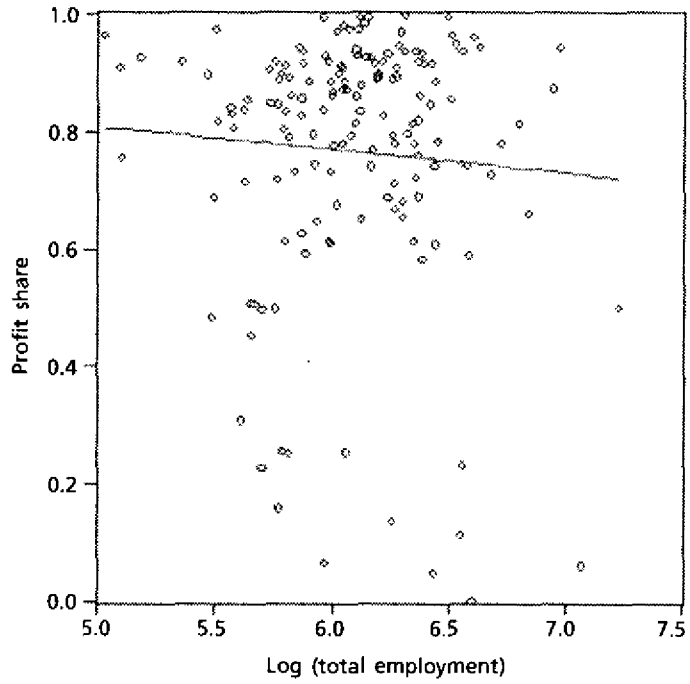
The next key issue is the relationship between scale and profitability. Support for small firms is often justified from the viewpoint of equality and equity, even at the cost of sacrificing efficiency. However, the productivity of small firms does not necessarily have to be inferior. This presumption needed to be tested by examining real data. Accordingly, the data for Bangladesh were more suitable than those for Kenya, as the latter is broadly divided into two groups, namely, local market-oriented small firms and export-oriented large firms. It is hard to distinguish size effects from market effects using the data for Kenya. On the other hand, the data for Bangladesh contain information only on export-oriented firms and the sample size is greater than that of Kenya. Therefore, the size effects are examined using the data for Bangladesh. Figure IX displays the relationship between the profit share and the scale of firms, in terms of the number of employed persons among sample firms of Bangladesh. Figure X is the analogue of figure IX with total factor productivity[60] instead of profit share. Figure IX shows that there is no strong relationship between the profit share and the scale of a firm. The correlation coefficient between the profit share and the logarithm of the number of employed persons is –0.11.

[60]The productivity index for cross-section data used in the report, which is cited in Caves, Christensen and Diewert [38] and is also used in Baily, Hulten and Campbell [16], is called "relative total factor productivity":

$$\ln TFP_i = \left(\ln X_i - \frac{1}{n}\sum_{j=1}^{n}\ln X_j\right) - \frac{1}{2}\left[s_{Li} + \frac{1}{n}\sum_{j=1}^{n}s_{Lj}\right]\left(\ln L_i - \frac{1}{n}\sum_{j=1}^{n}\ln L_j\right) - \frac{1}{2}\left[s_{Ki} + \frac{1}{n}\sum_{j=1}^{n}s_{Kj}\right]\left(\ln K_i - \frac{1}{n}\sum_{j=1}^{n}\ln K_j\right)$$

S_{Li} and S_{Ki} are labour and capital shares of the i-th firm. X_i is the value-added emanated from garment production. L_i is the total number of employed persons, while K_i is the stock of sewing machines. An alternative measure of capital, i.e. real stock of sewing machines constructed by the perpetual inventory method, is also experimented, and the robustness of the main results shown hereafter was ensured.

Figure IX. Correlation between profit share and employment: Bangladesh



Note: The OLS regression line is drawn in the figure.

Similarly, the association between relative total factor productivity and the scale of firms is also weak (figure X). The correlation coefficient between them is as low as 0.03. There is thus neither a systematic relationship between profitability and scale of firm, nor between productivity and scale. This shows that smaller firms are as profitable and productive as larger firms in the garment industry in Bangladesh.

Figure X. Correlation between total factor productivity and employment: Bangladesh

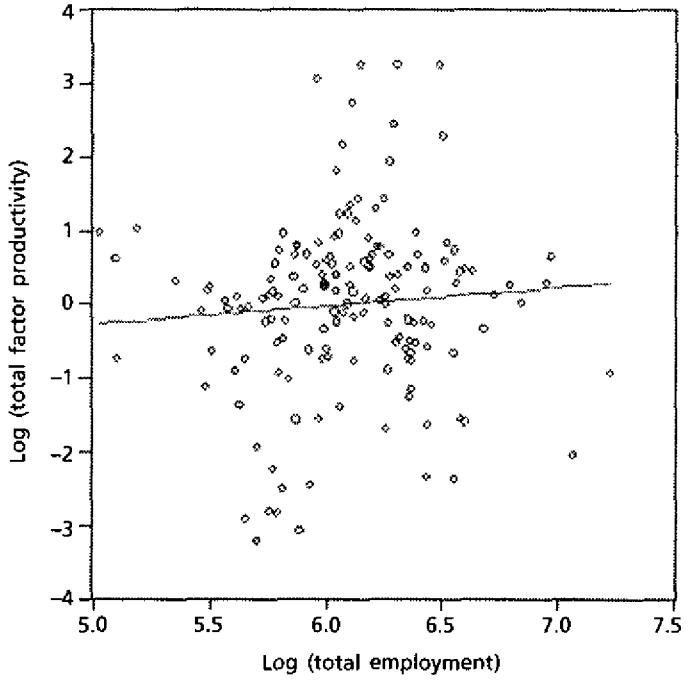
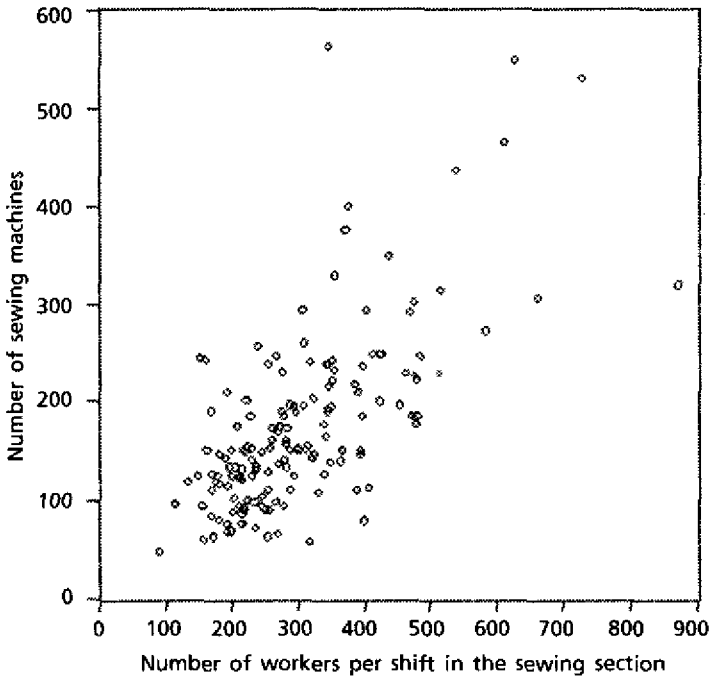


Figure XI. Association of capital and labour: Bangladesh



Note: Even if the real value of the stock of sewing machines constructed by the perpetual investment method is used instead of the number of sewing machines as the vertical axis, the consistency of capital-labour ratio is not affected significantly.

An explanation for the irrelevance of scale for profitability and productivity is that big and small firms used the same technology. A supporting observation for the explanation is stable capital-labour ratio among sample firms in Bangladesh. Figure XI graphically shows the consistency of capital-labour ratio in the garment industry in Bangladesh. This observation is consistent with the hypothesis that a large firm is a proportional expansion of a small firm, which uses the same technology. If this hypothesis is true, it is natural that profitability and productivity do not change according to scale.

TABLE 26.
CAPITAL-LABOUR RATIO BY TYPE AND SIZE OF FIRM: KENYA

	Mean	*Sample size*
All samples	1.195	65
By registered type		
Non-export processing zones	1.339	49
Export processing zones	0.756	16
By firm size		
(0-50)	1.449	35
(50-200)	1.223	10
(200-500)	0.726	9
(500-1,000)	0.816	9
(1,000-2,000)	0.440	2

Note: The capital-labour ratio is defined as the number of sewing machines per worker in the sewing section.

As regards the garment industry in Kenya, a dichotomy was found which is applicable to local market-oriented small firms and export-oriented large firms (table 26). This dichotomy is also valid for the capital-labour ratio. This ratio is higher for small firms than for large firms, on average. It must be noted that as the scale of a firm grows, the value of this ratio approaches the ratio for Bangladesh, which is 0.590.[60] This observation is, again, consistent with the hypothesis that export-oriented firms adopt a similar method of production wherever their production sites are located.

C. General remarks: investment climate

In the present report, it is argued that labour-intensive industries lend a solid foothold for autonomous and continuous poverty reduction in some low-income countries. So far an examination has been made of industrial development and poverty reduction in a low-income country, namely, Bangladesh, that has already attained a prominent position in world garment export, and another low-income country, namely, Kenya, which appears to have made a good start in garment exports. It is observed that a number of uneducated women are employed by the industry and their income levels are higher than the poverty line. This shows that labour-intensive industry contributes to poverty reduction in both countries to a certain extent. There are, however, other low-income countries, such as Cambodia, Haiti, India, Lesotho, Madagascar, Pakistan and Viet Nam, where the export-oriented garment industry is growing and could continue to expand and reduce poverty through pro-poor industrialization.

It is obvious that export-oriented industrialization is facilitated by efficiently managed infrastructure, smooth public administration, an ample and educated labour force, the development of pertinent industries in the same value chain, clean environment, security against natural disasters and man-made crises and proximity to major markets. If they exist, they would be very advantageous for the country to promote export-oriented industrialization. However, these conditions are neither necessary nor sufficient to achieve labour-intensive industrialization. As a matter of fact, neither Bangladesh nor Kenya fulfils many of the above conditions. For example, as pointed out in chapter 1, Bangladesh, which appeared in the ratings published by Transparency International for the first time in 2001, has been rated the worst country in terms of corruption. Besides, the country is regularly plagued by floods and cyclones. Poor infrastructure as well as the poor management of such natural disasters are chronic problems confronting the country. Furthermore, Bangladesh is geographically located far from Europe and the United States. Although the investment climate in Kenya is not much better than that of Bangladesh, both countries succeeded in maintaining rapid growth in garment exports for certain time periods: two decades in the case of Bangladesh, and several years in the case of Kenya. Thus, while a poor investment climate is a serious obstacle for labour-intensive industrialization driven by export growth, it need not be fatal as long as the offsetting cost advantage is great enough. So far the export-oriented garment industry in Bangladesh and Kenya appears to have overcome the disadvantage.

[60] The capital-labour ratio in the report is a ratio of the number of sewing machines to the number of workers in the sewing section. Obviously, a sewing machine is operated by an operator during a shift. In addition, helpers assist operators in various tasks, such as transferring materials and running errands. The ratio of 0.590 means that 1 per 0.590 persons are attached to a sewing machine, on average. However, firms in Bangladesh tend to attach a helper to an operator and a sewing machine, which could result in a ratio of 0.5.

D. Prospects and challenges

In section II.2, the garment industry in Bangladesh and Kenya was used as typical examples of labour-intensive industrialization. In this section, prospects of and challenges to labour-intensive industrialization in low-income countries are examined. Obviously, those in the garment industry are critical because of the substantial presence of the industry in some low-income countries. Accordingly, the prospects for and challenges faced by the garment industry are elaborated below. Following that, those on other important labour-intensive industries are discussed.

1. Garment industry

Fairly recently, on 1 January 2005, international trade in textiles and garments was liberalized, However, some low-income countries continue to receive preferential treatment on exports of textiles and garments from certain groups of developed countries. While it is difficult to assess the prospects of the industry, an attempt is nevertheless made to explore the prospects and challenges below.

Phasing out of the Multi-Fibre Arrangement

International trade in textiles and garments has been long controlled by major importing countries, such as the United States, Canada and member countries of the European Union. Control over international trade in textiles and garments began with Japan's voluntary restraint on cotton textile exports to the United States in 1957 (Yamazawa [235]). Later, the European countries joined the United States, and the group of exporting countries grew to include other emerging East Asian economies. The import restrictions by the United States, Canada and European countries were first incorporated into the short-term arrangement regarding international trade in textiles in 1961. This was followed by a similar long-term arrangement regarding international trade in cotton textiles between 1962 and 1974. Finally, a restricted trade regime was perpetuated through the Multi-Fibre Arrangement on international trade in textiles, which covered not only cotton textiles but also goods made from wool and synthetic fibres, which came into effect in 1974. When the World Trade Organization was established in 1995, it was assumed that the Multi-Fibre Arrangement would replace the World Trade Organization Agreement on Textiles and Clothing and that quantity restrictions would be phased out by 1 January 2005, because such a controlled trade regime is against the raison d'être of the World Trade Organization (Gereffi and Memedovic [75]).

Prior to 2005, when a low-income country started exporting textiles and garments to North America and the European Union, import restrictions were not imposed initially. But as soon as exports from the country reached a significant level, export ceilings were imposed by importing countries in keeping with the Multi-Fibre Arrangement. The Multi-Fibre Arrangement regime was thus beneficial to newcomers in the garment trade. For instance, Bangladesh entertained the late-comer advantage at the beginning of the 1980s. Investors from the Republic of Korea, who escaped the import restrictions imposed on Korean garments, came to Bangladesh and helped to establish the first batch of export-oriented garment factories (Rhee [181] and Easterly [54]). Garment exports from Bangladesh have grown ever since, but in 1985, import restrictions were imposed by the United States. Despite this, garment exports from Bangladesh grew rapidly, making the country one of the major exporting countries to the United States and the European Union (table 2).

The Multi-Fibre Arrangement regime was completely eliminated on 1 January 2005, permitting free trade in textiles and apparel henceforth. The resulting impact of it has been long discussed by various parties. In mid-2004, an influential prediction was made in a discussion paper published by the World Trade Organization (Nordås [149]), which argued that China would increase its share and India would follow, and that most of the other countries would become vulnerable. Some other commentators shared that view (Adiga [5], Buerk [37] and de Jonquires [46]). There were three main factors supporting the prediction: *(a)* scale of production and exports of China in textiles and garments up to the year 2004; *(b)* ample human capital, in terms of both quantity and quality, in China; and *(c)* dominance of China in exports of items, which had been removed from quotas in the United States before 2005 ([10], p. 4). However, the prospects for the survival of low-income garment exporters were slightly brighter by the end of 2004 (Bradsher [36] and *Economist*, [58]). Even after 1 January 2005, many low-income exporters, such as Bangladesh, Cambodia, Haiti and India succeeded in increasing their garment exports (table 2).[61]

Revision of the African Growth and Opportunity Act

Another important issue concerning garment exports from countries of sub-Saharan Africa to the United States is the revision of the African Growth and Opportunity Act. A rapid increase in exports of garments to the United States from some countries of sub-Saharan Africa, such as Kenya, Lesotho, Madagascar, Malawi, Mauritius, Namibia, South Africa and Swaziland, is due to the preferential treatment afforded by the African Growth and Opportunity Act (table 10). Such quick and positive responses by countries of sub-Saharan Africa to this preferential treatment are, indeed, a great achievement, as most of these countries never viewed themselves as exporters of manufactured goods to developed countries. The European Union has offered another type of preferential treatment based on the Cotonou Agreement, which exempts African and Caribbean and Pacific countries from tariffs and quotas. The African Growth and Opportunity Act is distinct from the Cotonou Agreement, to the extent that time limits are specified for certain aspects of preferential treatment. The *Economist* [57] argues that the United States uses the extension of time limits as leverage with countries of sub-Saharan Africa to respond favourably when negotiating on issues important to the United States in occasions of negotiation, such as those with the World Trade Organization. The African Growth and Opportunity Act was revised as the African Growth and Opportunity Act Acceleration Act of 2004, alias African Growth and Opportunity Act III, in July 2004. The amended points are described in the following paragraph.

First and foremost, the final year of the entire programme of the African Growth and Opportunity Act has been extended from 2008 to 2015. Secondly, the third-country fabric provision clause continues to be effective until September 2007. In other words, low-income African countries can entertain the non-tariff and non-quota status by producing garments using imported fabrics outside Africa and the United States until September 2007. Since East Asian countries are the major sources of the fabrics used in the countries of sub-Saharan Africa, the extension of the third-country fabric provision clause is extremely beneficial to the garment-exporting African countries. However, since the African Growth and Opportunity Act is purely a national law of the United States, the current version of the Act can be amended at any time. Therefore this preference, solely based on the foreign policy of the United States, entails uncertainty. Needless to say, the extension

[61] Other South Asian countries, such as Pakistan and Sri Lanka, are performing well, unlike Nepal (*Economist* [62]).

of the African Growth and Opportunity Act does not guarantee continued demand in growth for garment exports of developing countries. It is necessary for developing countries in sub-Saharan Africa to enhance competitiveness through technology upgrading to be able to fully utilize the preferential treatments and compete successfully among other garment exporting countries.

Impact of China

As was anticipated before 2005, China is increasing its garment exports very rapidly to both the United States and the European Union since the phasing-out of the Multi-Fibre Arrangement. The local textile and garment industry in the United States and the European Union are generally losing out (*Economist* [63]), with both countries appealing strongly to curb Chinese imports. Despite China's strong attempts to voluntarily reduce exports in March, they did not reach the level desired by the United States, as a decision was taken in May 2005 to invoke the safeguards against seven garment items and to impose import quotas (*Economist* [64]). China has also made efforts to mitigate the tension with the United States and the European Union by dramatically raising the export tariff on garments, which was imposed immediately following the phasing-out of the Multi-Fibre Arrangement in January 2005. However, that policy did not appeal to the two importers either. Thus China cancelled the export tariffs on 30 May 2005, and on 10 June 2005, China and the European Union agreed on a three-year transitional arrangement for the import of Chinese garments to the European Union, which would limit imports up to 10 per cent on textiles and garments in total. It is hoped that these moves will decrease the level of Chinese exports of garments, and expand the scope for low-income countries to export garments to the two biggest markets even further.

The reason why China and India were seen to survive the competition after the phasing-out of the Multi-Fibre Arrangement is that the two countries own a large capacity in the production of synthetic fibres, yarns and fabrics, as well as cotton. Some scholars argue that countries producing upstream materials for the textile and garment industry have an advantage in engaging in downstream processes of a value chain. In general, this statement is true because of savings in transportation costs where intermediate inputs are available locally. Furthermore, China is now technologically capable of producing textiles and garments of high quality. Therefore, there was concern that China would monopolize the global textile and garment industry—upstream to downstream—followed by India. However, in the past there were many cases where countries maintained international competitiveness by specializing in a narrow range of processes of a product by importing intermediate inputs and exporting the processed product. In fact, processing deals and/or processing trade were widely observed in East Asia in the 1970s and 1980s. During this period, Japan played the role of supplier of capital and intermediate goods to other East Asian countries (Ichimura [92], pp. 26–28). Thus, sustained international competitiveness by specializing in a certain process is not uncommon in the modern history of economic development.

The point is how long will China be willing to produce labour-intensive products, such as garments, for which the source of competitiveness is low wages, when the country is drastically enhancing its competitiveness to produce more capital- and technology-intensive commodities. There are some signs of action being taken to raise wage rates and improve the working conditions in China. The *Economist* [61] revealed that some firms, located along the coast in the Guangdong and Fujian provinces of China, were suffering from a shortage of labour. Another factor that

cannot be ignored is that the number of labour disputes increased twofold between 2000 and 2003, resulting in an increase in rural income. Qian [167] emphasized that not only the coastal provinces but also deep, inland provinces in the western region of China recorded high economic growth rates. The growth rate of Qinghai province, where growth was slowest in the western region, reached 6.8 per cent between 1978 and 1995, while that of Xingjian province, which recorded the fastest growth, reached 11.1 per cent (Qian [167], table 11.1). Thus, there is obviously a limited level of surplus labour even in China, where the scale of the labour force appeared unlimitedly large. Some local governments in China are making efforts to discourage investments in labour-intensive industries, too. According to Harney [85] of the *Financial Times*, the local government of Dongguan, which is a manufacturing hub in southern China, encouraged a limited number of foreign investors in an effort to attract more high-tech industries and discourage low-tech industries.

In sum, China's exports of garments are growing rapidly. But this is not the only industry where China has an advantage. Income levels are also rising, and internal migration from inland to coastal areas contributes to mitigating the rural-urban income gap. Furthermore, the yuan is expected to appreciate in the near future. Even if China maintains an advantage in global textiles and garment products, the country will not continue its focus on that segment of light industries, as the core of manufacturing industries will definitely shift to high-tech industries in the near future.

2. Other labour-intensive industries

As discussed in subsection 1, many light industries are labour-intensive. As Sen [190] indicated, development of the labour-intensive industries could reduce poverty further if the poor are admitted into the workforce. However, all labour-intensive industries cannot be promising unless demand for the products is guaranteed. Exports of garments from low-income countries are boosted by the enormous demand in developed countries. Another labour-intensive industry in developing countries, which has met the growing demand of developed countries during the post-World War II period, was electric and electronic machinery. In particular, East Asian countries became more involved in the assembling labour-intensive processes of production of this industry, which will continue to be dynamic in the world economy in the coming decades as well. Most East Asian countries (or regions) that are currently middle-income countries (or regions), such as Indonesia, Malaysia, the Philippines, the Republic of Korea, Singapore, Taiwan Province of China and Thailand, the garment industry was, in the past, the main foreign exchange earner and was later replaced by the electric and electronic machinery industry (Naya [148], Suehiro [200], Yamagata [234] and Yamazawa and Watanabe [236]).

Looking at Thailand, which has a rich stock of natural resources and was very keen to promote agro-based industries, as mentioned in subsection I.4.2, some labour-intensive industries, such as garments, integrated circuits and computers and their parts, emerged in the 1980s and 1990s (table 27). First, the share of exports started growing right up to the beginning of the 1990s. This was followed by computers and associated parts, which led Thailand to become one of the leading exporters of those items during the 1990s. In addition, integrated circuits maintained a certain share of exports during the 1980s and 1990s. Towards the second half of the 1990s, there was a moderate decline in agro-processing and garments as the focus shifted from garments to electronic machinery in the second half of the 1990s.

TABLE 27.
COMPOSITION OF EXPORTS FROM THAILAND, SELECTED YEARS
(Percentage)

	1985	*1990*	*1995*	*1996*
Agricultural products	40.7	22.2	16.0	15.8
Manufactures	47.0	72.8	74.9	74.0
Agro-processing	12.6	12.0	8.8	9.3
Garments	7.6	11.2	7.3	5.7
Computers and parts	0.0	6.6	9.3	11.9
Integrated circuits	4.6	3.7	4.1	4.1
Other manufactures	22.2	39.3	45.4	43.0
Others	12.3	5.0	9.1	10.2
Total	100.0	100.0	100.0	100.0

Source: Higashi [87].
Original data source: Ministry of Commerce, Thailand.

The electric and electronic industry has two different types of production processes: the very labour-intensive assembling process, and the high-tech process, necessary for producing essential parts, where one of the most sophisticated technologies is incorporated. Engaging in the former process allows a firm to become familiar with the technologies incorporated into the machinery and their parts. This provides the necessary foothold to proceed to the latter process. In other words, the labour-intensive part of the production processes of the electric and electronic machinery is an entry point for low-income countries to pursue industrialization and, in the case of the above-mentioned East Asian countries, development of the industry followed that of the export-oriented garment industry. Specializing in a labour-intensive industry for a certain period of time does not necessarily bind a country to the industry forever. On the contrary, the experiences of East Asia reveal that labour-intensive industries might be a window for diversifying manufacturing industries and technology upgrading, an important aspect which current low-income countries should aim at.

III. POLICY IMPLICATIONS AND RECOMMENDATIONS

In chapter I, pro-poor industrialization strategies were extensively reviewed. A series of views on poverty reduction, economic development and industrialization was reassessed in the contemporary context of poverty reduction. Based on the rationale and examples provided, it can be concluded that agro-based industrialization and labour-intensive industrialization are the two most promising pro-poor industrialization strategies. Chapter II, for its part, was devoted exclusively to an examination of labour-intensive industrialization strategy which has not been given due consideration in discussions on poverty reduction to date because of the new export pessimism. A typical process of poverty reduction induced by labour-intensive industrialization was described at the beginning of chapter II. Later, evidence supporting the strategy was provided through a case study of the garment industry in Bangladesh and Kenya, which is a good example of a labour-intensive industry. It reveals Bangladesh to be an established exporter and Kenya an emerging newcomer in export-oriented garment production. Chapter III presents a summary on the general policy implications followed by recommendations to UNIDO in support of pro-poor industrialization.

A. GENERAL POLICY IMPLICATIONS DERIVED FROM THE STUDY

Research on poverty and its solutions date back to *An Inquiry into the Nature and Causes of the Wealth of Nations* by Adam Smith. Poverty has always been one of the most serious problems of any society, even before the era of Adam Smith. Industrialization has since also been of particular importance for economic development. There is no doubt that industrialization was imperative for economic development and poverty reduction in the current developed countries, starting with the Industrial Revolution. Many historians and social scientists have studied both the causes and the impacts of industrialization up to the present. Since an exhaustive review of the studies is almost impossible, the report extracts some of the most important issues relating to poverty reduction and industrialization applicable to current international development and cooperation, referring to relevant surveys, such as Lipton and Ravallion [129] and Mokyr [141]. Besides, the case study conducted for the report is referred to, in particular, for deriving policy implications in line with labour-intensive industrialization.

1. A rich variety of routes of industrialization towards poverty reduction

The first lesson derived from the analyses in chapter I is the multifaceted ways in which industrialization has contributed to poverty reduction in low-income countries. The symbolic terms, suggested by Bhagwati [26], are direct and indirect routes towards poverty reduction. The direct route is a mechanism for poverty reduction through which the industrial sector supplies basic necessities to the poor, while the indirect route promotes poverty reduction through income generation of the

poor triggered by industrialization and/or economic growth. The report mainly investigates what is the best indirect route for poverty reduction, as this route, which leads to poverty reduction, could be autonomously established even after international cooperation, which drives the mechanism to an end. The process of poverty reduction could continue as the economy passes through the same route consistently. As already indicated in chapter I, agro-based and labour-intensive industrialization are among the most promising "indirect routes" leading to poverty reduction.

There are, however, some indispensable and crucial manufactured products, such as drugs, vaccines, etc., that could contribute to achieving the Millennium Development Goal Number 6, namely, combating HIV/AIDS, malaria and other diseases, through the direct route. For instance, some essential drugs for fatal diseases, such as anti-retroviral drugs for treating HIV-infected people, is enormously valuable and absolutely irreplaceable. Without it, many people living with HIV/AIDS would be further endangered. Another recently developed product is the insecticide-treated mosquito net, the use of which is rapidly growing and is currently one of the most efficient means for preventing the spread of malaria. Vaccines and antibiotics against tuberculosis, as well as other medication in general, are also produced by the pharmaceutical industry. Thus, the manufacturing industry as a whole contributes enormously towards achieving this Millennium Development Goal.

Another example of manufactured goods directly contributing to the achievement of Millennium Development Goals is a filter to extract arsenic from water obtained from tube wells in many parts of West Bengal, in India, and all over Bangladesh. Without filters, people in these areas are unable to access safe water, which results in failure to achieve Target 10 of Millennium Development Goal 7. There are also other basic necessities for the poor that can only be supplied by the manufacturing sector. For instance, certain types of agricultural machinery cannot substitute manual labour or livestock. In some situations, chemical fertilizers, insecticides and herbicides could effectively enhance agricultural productivity, in so far as they are environmentally sound. Thus, the first policy implication from the study is that industrialization contributes in numerous ways to poverty reduction through both direct and indirect routes.

2. Low-income countries can also compete

The second lesson learned from the study is that even low-income countries can have competitive manufacturing industries, if cheap inputs are intensively used and if other essential inputs, such as infrastructure, are not too poorly managed. Except for the mineral resources available in a limited number of low-income countries, typical cheap inputs locally available in those countries are agricultural goods, including seafood, and labour. There are some low-income countries that have succeeded in exporting manufactured goods. Examples incorporating the former inputs are processed seafood and horticultural goods, such as processed fruits, vegetables and nuts. Sectors that incorporate cheap labour are textiles and garments, leather and leather products, and wood and wood products, as mentioned in chapter II.

For the poverty reduction process to be autonomous, the industrial sector, targeted to promote poverty reduction, must become independent of support from Governments and donors in the near future. In other words, infant industries would have to grow up and become autonomous

eventually. To view least developed countries as countries where it is not possible for manufacturing industry to be competitive would be too pessimistic, especially since some low-income countries have succeeded in exporting, and others in manufacturing products. For example, Thailand in the 1980s exported processed seafood, and currently some South Asian low-income countries export garments. In the past, some scholars considered that the success of the South Asian countries in exports of garments was purely due to the Multi-Fibre Arrangement regime, which protected exports from rival countries, such as China. They argued that if the textile and garment trade was completely liberalized, the garment industry in low-income countries would be forced to participate in a race to the bottom, as they would have to cut costs to an unbearable level for workers.

However, some low-income countries, such as most South Asian countries, exhibited a rapid growth in garment exports even after the phasing-out of the Multi-Fibre Arrangement, while some middle-income countries showed a clear decline in exports. This observation testifies to the viability of the garment industry in those countries. Moreover, the case study reveals that export-oriented garment production is quite profitable in Bangladesh and Kenya, and the survival of the low-income countries will not be threatened if China shifts away even slightly from labour-intensive industries. This would ease trade friction on exports of textiles and garments to the United States and the European Union and would allow China to cope with increasing labour costs due to the appreciation of yuan and curb the frequency of labour disputes.

3. Intersector linkage for amplifying impacts on poverty reduction

As pointed out in chapter I, intersector linkage could be a source of competitiveness. Geographical proximity among firms that exercise backward and forward linkages is mutually cost reducing, making it worthwhile to strategically locate industries that have a strong industrial linkage close to one another. If an agro-based industry is established in a place where agricultural inputs are available, this static efficiency will be entertained. Even in the absence of either backward or forward linkages, pure agglomeration of similar types of firms could be advantageous due to the high market effect (Diamond [50] and Fujita, Krugman and Venables [70] and Fujita and Thisse [71]). This means that transaction costs, needed to buy commonly used inputs and sell similar products to common types of customers, could be reduced if firms producing similar goods are located within close proximity.

Agglomeration of firms and intersector linkage can also produce dynamic effects. First, the agglomeration of firms producing similar products makes the diffusion of a new technology easy. In other words, agglomeration reduces costs of technology adoption. Secondly, backward and forward linkage may entail technology transfer to low-tech firms. In the terminology of value chain research, industrial upgrading could follow the participation in a value chain through interaction with lead firms in the chain. If the chain runs across a country, the likelihood of lead firms abroad bringing in revolutionary ideas and technologies is enhanced. Finally, linkage with agriculture and/or rural industries facilitates poverty reduction by involving the poor, who are engaged in agriculture and/or rural industries. The development of agro-based industries is likely to increase the demand for agricultural goods and rural services and manufactures which, in turn, bring about income generation opportunities for the poor, who supply the goods and services. Thus, intersector linkages amplify the effects of industrial development on poverty reduction.

4. Labour-intensive industrialization presenting employment opportunities for the poor

Chapter II examined, in detail, labour-intensive industrialization. It revealed cases where low-income countries were successful in exporting labour-intensive manufactures to a great extent, and where the poor were employed on a large scale with earnings exceeding the poverty line. Even entry barriers for unskilled workers to join the industry were low. Thus, the development of a labour-intensive industry not only substantially contributes to poverty reduction of workers employed by the industry, but its impact also extends to members of the family of the worker. The poor are more likely to live in rural areas, and some members of poor families migrate to areas where labour-intensive industries are located. As the majority of workers earn more than they spend on themselves, a considerable share of these earnings is remitted to their families living in rural areas, thus easing any budgetary constraints on the families. In this manner, the family generally increases both consumption and investments in physical, human and social capital. The accumulated capital enhances the opportunities for income generation by the family, whereby the spillover effects of employment of an unskilled worker in a labour-intensive industry are not only beneficial for the worker but also enables his or her family to get out of poverty.

5. Labour-intensive industrialization facilitates empowerment of female workers

A labour-intensive industry has the tendency to employ a proportionally higher number of female workers. This tendency can be, at least in part, attributed to managers, who claim that it is easier to deal with female workers. Despite this attitude of managers towards female workers, being employed by the industry empowers them in many ways. The most direct empowering factor of female employment is their earnings, which allow them a high degree of economic freedom and strengthens their bargaining power over men in the household. Moreover, contacts with people outside the family provide exposure to new knowledge about society and technology, and boost their confidence to live away from the family. They are also confronted with various new issues, such as the urban system, factory management, labour unions, national politics and international relations for the first time in their lives. This empowerment effect is phenomenal in a society where, otherwise, women are obliged to stay at home and have no contact with the outside world, as is the case in many countries in South Asia. It is nevertheless necessary to understand that female workers employed by the formal sector have a high price to pay. These include inhumane labour conditions, assaults on the street and at the factory, health problems due to unfavourable working environments and psychological problems caused by living away from the family. All these aspects must be taken seriously and addressed by the industry, governments and international society alike.

6. Openness matters, size does not

The case study on the garment industry in Kenya revealed that export-oriented garment production was growing, while that for local markets was shrinking. There are critical differences between the two types of firms, not only in terms of market but also in the technique and production systems adopted. Export-oriented garment production is placed in a global value chain and led by foreign direct investment. As a result, both profitability and productivity levels are higher in export-oriented firms than those oriented to local markets. In Bangladesh, the importance of incorporating global dynamism is widely recognized. The garment industry, which is currently leading the economy of Bangladesh, was initiated through foreign direct investment from the Republic of

Korea. There is an anecdote on the catalytic role that a Korean multinational company, Daewoo, played in initiating capacity building and technology transfer for promoting export-oriented garment production through a joint venture with its local partner, Desh Garments (Rhee [181]). Without the foreign direct investment from the Republic of Korea, Bangladesh might not have been able to start its export-oriented garment production in the early 1980s.

It is, however, important to note that the initial importance of foreign direct investment could diminish as local counterparts grow. Even in the case of the garment industry in Bangladesh, the presence of multinationals is becoming less pronounced, as local firms continue to expand their production, exports and market shares. Nevertheless, it is unclear whether the expansion of local firms, accompanied by the gradual contraction of multinationals, such as Daewoo, is due to the voluntary withdrawal of multinationals as part of their global strategy, or due to the elimination of multinationals by local firms supported by a policy of the Government of Bangladesh against the inflow of foreign direct investment in the garment industry, which was already considered overcrowded. Regardless of the possible causes for the diminishing importance of multinationals in the garment industry in Bangladesh, it is evident that local firms have fared well and the industry is growing markedly, despite the declining presence of multinationals.

Another interesting case of replacement of multinationals with local firms in export-oriented garment production is Mauritius, which is a well established exporter of garments in sub-Saharan Africa (Biggs and others, [29, 30], Bonaglia and Fukasaku [32], Lamusse [124], Subramanian and Roy [199] and Wellisz and Saw [220]). Here too, the presence of multinationals in the garment industry is diminishing. Although the export-oriented garment industry was initiated by foreign capital, it is now estimated that some 50 per cent of the total equity of firms located in the export processing zones is owned by Mauritians (Subramarian and Roy [199], p. 228).

The flip side of an increase in local firms in the garment industry in Bangladesh is the success of smaller firms because the scale of local firms is smaller than that of multinationals. In comparison with the standard definition of small and medium enterprises,[62] the average number of workers in export-oriented garment factories is large. The average number of workers in garment factories in Bangladesh is around 400-500, as indicated in chapter II. Incidentally, the same average for Kenyan garment factories located in export processing zones is 843. It is evident that the number of workers employed by labour-intensive industries has a natural tendency to be higher. Even though most of the sample firms interviewed for the survey in Bangladesh are too many, in terms of number of workers, to be called small or medium enterprises, comparisons between smaller firms and larger firms in profitability and productivity are still insightful. There is actually no significant difference in profitability and productivity between smaller and larger factories of the garment industry in Bangladesh. Therefore, even if promotion policies for smaller enterprises are applied at the distributional level, these will accrue little efficiency loss.

Finally, it must be stressed that inflows of foreign direct investment are not automatic for low-income countries. While a good investment climate definitely facilitates the inflow of foreign direct

[62]According to Little, Mazumdar and Page [131], "small" firms are likely to be defined as those employing fewer than 50 workers and "medium" firms as those employing between 50 and 99 workers in developing countries ([131], p. 8).

investment, it is hard for a country to penetrate a market without adequate knowledge and guidance on the preference of the market and its distribution system. This is often possible through foreign direct investment. A good investment climate evidently offers great advantages to a country. However, the investment climate in most low-income countries is generally unfavourable. A good investment climate is sometimes the result of development, making it necessary for low-income countries to initiate pro-poor industrialization despite the lack of favourable conditions. As already mentioned, according to the Corruption Perceptions Index, published by Transparency International, corruption in Bangladesh is a major problem. Bangladesh is also located far from main markets, such as North America and Europe, and is regularly visited by floods and cyclones. The level of physical, human and institutional infrastructure is not high enough. The only apparent advantages of the country are its large population and coastal location. Despite a discouraging environment, Bangladesh has continued to compete in exports of garments in the international market for almost two decades. This proves that a good investment climate is not strictly a necessary condition. Low-income countries can overcome these obstacles if they can be offset by the cost advantage emanating from low wages.

B. Recommendations for UNIDO's activities

Based on the general policy implications derived in the previous section, recommendations for UNIDO's activities are provided here. These recommendations are derived from the general policy implications developed in section III.1, referring to UNIDO's current activities on poverty reduction.

1. The adoption of the labour-intensive industrialization strategy

Throughout the present report, Bhagwati's indirect route to poverty reduction, whereby the poor generate income, has been examined. Among all the indirect routes that can be taken, agro-based industrialization and labour-intensive industrialization are two routes along which industrialization can effectively contribute to poverty reduction. The active and intense involvement of the poor in the production processes and cost advantage that can emanate therefrom are the main criteria for selecting these two patterns of industrialization that should be strategically pursued by low-income countries. UNIDO's current activities on poverty reduction are evidently more in line with the agro-based industrialization strategy [213]. "Agro-industries", which is one of the service modules of UNIDO, is a core of UNIDO's overall activities. Moreover, the bottom-up growth, which is a key concept of pro-poor growth in UNIDO's Medium-Term Programme Framework 2004-2007, is strongly linked to industrial upgrading, allowing peasants and farmers to expand their economic activities from agriculture to agro-based industries, and generally increase the value added ([213], p. 40). Thus, UNIDO's pro-poor activities are more comprehensively linked to agro-based industrialization.

The present report suggests that labour-intensive industrialization should be regarded by UNIDO as a feasible and promising pro-poor industrialization pattern, which should be proposed to some low-income countries. The feasibility and promise of this pattern of pro-poor industrialization are

based on the successes of some low-income countries, mainly in the garment industry.[63] The case study of the garment industry in Bangladesh and Kenya, in chapter II, highlighted both the feasibility and the promise of the pro-poor industrialization pattern even after the phasing-out of the Multi-Fibre Arrangement. As a matter of fact, a new export pessimism prevails among low-income countries because of the limitation on export promotion policies imposed by the World Trade Organization. Despite this, some low-income countries succeeded in increasing the exports of labour-intensive products without strong preference. The adoption of any industrial promotion policy will permit labour-intensive industry to grow and enhance the effects of poverty reduction, as long as the industry continues to employ a large number of unskilled workers without high entry barriers. The government of a low-income country may provide preferential treatment for the industry as long as it complies with the non-discrimination principles of the World Trade Organization. Bilateral and multilateral donors, including UNIDO, can support the country by, for example, offering financial assistance, organizing training programmes and providing expertise to assist in the development of appropriate technology. Participation in and promotion of value chain cooperation are promising policies as well.

In fact, many projects of UNIDO have been extended to include some of the above services to the textile and garment industry in developing countries. As they have neither been interpreted as a pro-poor policy, nor emphasized within the context of poverty reduction, it is suggested that those services be reviewed for promoting poverty reduction in low-income countries, and should also be expanded in those countries. As mentioned below, labour-intensive industrialization should not be viewed as the one and only pro-poor industrialization strategy for UNIDO, but should be added to UNIDO's portfolio of strategies leading to poverty reduction. At present, only the agro-based industrialization strategy is included in the portfolio as a feasible and promising pro-poor pattern of industrialization. By adding labour-intensive industrialization, the composition of the portfolio could become an optimal one.

2. Agro-based industry as a core sector for pro-poor industrialization

As stressed earlier, agro-based industrialization should remain an important pro-poor strategy of UNIDO. Note that the agro-based industries satisfy the two criteria for a successful pro-poor industrialization strategy: strong and intense involvement of the poor and cost advantage. If an agro-based industry increases the demand for agricultural products supplied by peasants and farmers, then the development of the agro-based industry would greatly reduce poverty. Moreover, if an area is rich in agricultural products and they are cheaply supplied, the agro-industry in the area has a cost advantage over the same industry in other areas. This strategy is also consistent with agricultural-development-led industrialization strategy. Even though the agro-based industrialization strategy has an advantage over labour-intensive industrialization strategy, the success of the latter is dependent on the level of demand for labour-intensive products abroad. Moreover, it is implicitly assumed that the cost advantage, due to low wages, is sufficient to offset the disadvantages posed by obstacles, which low-income countries generally face, such as poor infrastructure,

[63] A caveat is applicable to this suggestion. As mentioned repeatedly, the report explored the case of the garment industry in Bangladesh and Kenya in depth, and derived the suggestion mainly from the case study. The possibility of the substantially positive impact of development of other labour-intensive industries on poverty reduction in low-income countries should be examined in order to reinforce the policy implications drawn from the analyses of the report.

inefficient public administration, internal insecurity and high costs on imports of capital goods and parts. If the obstacles are too many, labour-intensive industrialization will not be successful.

Earlier in the report, it was emphasized that such obstacles can be overcome in some cases. The serious obstacles in Bangladesh cannot be overlooked. Bangladesh succeeded in maintaining a high rate of growth in garment exports despite these serious obstacles, which proves that they are not necessarily fatal. However, there are countries where the disadvantages are greater than those in Bangladesh. For example, a country with a seaport that has been damaged by military conflict cannot adopt labour-intensive industrialization strategy, even if inland areas are peaceful. By contrast, even in such an environment, agro-based industrialization strategy may work in peaceful areas. In addition, landlocked countries have a serious disadvantage in international trade. Bangladesh neither suffers from military conflicts nor is it landlocked.[64] Thus, there could be countries where the agro-based industrialization strategy is the only realistic choice for pro-poor industrialization.

3. Horizontal diversification for deepening industrialization

Hypothetically speaking, suppose a strategic industry is promoted and kept on the right track, the next challenge would be to promote another industry and to diversify the industrial structure of the country in order to reduce the extent of vulnerability in industrial development. The main concern of UNIDO is vertical diversification ([213], pp. 41-47 and 77-79). Vertical diversification involves upstream to downstream processes of production in a value chain. Through business relations, such as procurement, sales, advertising, consultation, etc., knowledge and information in business upstream and downstream are accumulated spontaneously. Thus, there is no doubt that vertical diversification is a feasible and effective way to augment value added. On the other hand, horizontal diversification was successful in East Asia. When a labour-intensive industry is developed in a low-income country because of cost advantages caused by low wages and high labour intensity, other industries with high labour intensity could be competitive because low wages combined with high labour intensity could result in low unit costs. In other words, factor price and factor intensity can be the criteria for selecting strategic industries in order to diversify the industrial structure of an economy "horizontally".

A feasible and proven example of horizontal diversification is again derived from experiences of industrial development in East Asia. All middle-income economies in East Asia passed through the phase of industrialization, led by the textile and garment industry, before they proceeded to the next phase, led by electric and electronic machinery. In the early phase of development of the latter industry, the East Asian economies specialized more in the labour-intensive segments of the production processes, such as assembling of parts. Current low-income countries, which specialize in garment production, may diversify the industrial structure horizontally by supplying cheap labour to another labour-intensive industry, in the same manner as was done by East Asian economies. Vertical diversification is more often discussed from the viewpoint of global value chains than horizontal diversification. Efforts have been made to find out whether a country or firm, exclusively engaged in the production process, can also handle the design and marketing

[64] Needless to say, being landlocked is not at all lethal to labour-intensive industrialization. Lesotho exports garments substantially even though it is a landlocked country [212].

processes in the same value chain, both of which are often more profitable than production. Technically speaking, design and marketing are generally processes that necessitate a certain level of education. There may be only a narrow scope for manpower in low-income countries, where "uneducated" labour is in abundance and where the competitive edge in dealing with design and marketing is high. On the other hand, horizontal diversification exploits high factor intensity of cheap inputs, making horizontal diversification advantageous over the vertical one.

4. Openness could be an opportunity

There is a consensus among scholars that globalization poses opportunities and risks to participants in global competition (Oxfam [154] and World Bank [228], among others). Some low-income countries seized the opportunity and grew to become middle-income countries. Similarly, there are some firms in low-income countries which seized the opportunity and succeeded in expanding business. The case study introduced in section II.2 revealed that, on average, export-oriented garment-producing firms in Kenya attained considerably high profits, while those producing for local markets incurred losses. Another critical issue related to globalization is the incorporation of dynamism through foreign direct investment. For the development of the export-oriented garment industry in Bangladesh and Kenya, inflows of foreign direct investment were crucial, in particular, in the initial phase of development of the industry in Bangladesh.

A serious concern is that foreign capital might be capricious and footloose so that industrial areas where export-oriented factories are located might end up as enclaves that are almost independent of the rest of the country, and where benefits from the development of the area rarely permeate to the rest of the region (UNCTAD [207], pp. 207-211). The potential benefits could be transferred in the form of technology transfer and employment of local resources. However, before the benefits reach the rest of the economy, multinational firms could relocate to other countries. In fact, the presence of multinational firms in garment production in Bangladesh is currently very low. Multinationals that initiated export-oriented garment production in Bangladesh, such as Daewoo, are gradually withdrawing. It is important to note that despite the low profile of multinational firms, the garment industry in Bangladesh has expanded. This shows that even if foreign capital is withdrawn at a later date, it does not mean that the inflow was in vain. The development of the garment industry in Bangladesh thereafter implies that local firms benefited from the presence of foreign firms through technology diffusion before they withdrew.

5. Smaller firms can compete

By nature, a labour-intensive industry is likely to require a small amount of capital. Small enterprises can easily start a business even if they employ a high number of workers. Probably because of the small capital requirement, no scale economy was observed for the garment industry in Bangladesh and Kenya once the market was controlled. This observation implies that there is little efficiency loss involved for promoting smaller firms. Generally speaking, there might be a trade-off between welfare and efficiency, if an efficiency gain does not include equal distribution in income/wealth. Especially in the case of labour-intensive industry, the efficiency loss due to the promotion of small enterprises might be minimal because of the quasi constant returns-to-scale nature. Therefore, support to small enterprises is justified not only from the viewpoint of income distribution but also of economy-wide efficiency.

6. Targeting workers as well as entrepreneurs

UNIDO's focus on agro-based industry naturally results from the importance placed on peasants and farmers among the poor. In line with research on value chains, UNIDO promotes them in an effort to get them involved in value chains in either upstream or downstream activities. In other words, the poor are encouraged to become entrepreneurs. The majority of the population in developed countries became rich by being employed as workers rather than entrepreneurs. Unlike workers, entrepreneurs have to take risks. Many risk-averse people, therefore, prefer to be employed as workers instead of becoming entrepreneurs.

The labour-intensive industrialization strategy aims at income generation of the poor employed as workers. As labour demand increases, the bargaining power of workers is strengthened, and their earnings could increase either through negotiation or promotion within a firm or by moving to another firm. The impact of a rise in rural entrepreneurship on employment creation in rural areas is small, according to analyses of microfinance (Khandker [114], pp. 53-54, among others). The scale of employment opportunities created by fostering rural entrepreneurship is generally smaller than that of export-oriented labour-intensive industries. The bottom line is that the poor will be able to get out of poverty if they are employed as workers. In addition to efforts made to promote rural entrepreneurship, providing decent job opportunities and raising the earnings of unskilled workers should, therefore, be among the focal issues of UNIDO to achieve poverty reduction in low-income countries.

Concluding remarks

At the beginning of the millennium, the determination of international society to reduce global poverty by half by 2015 led to its inclusion in the Millennium Development Goals. Since then, not only the United Nations and its specialized organizations but also bilateral donors, multilateral development banks, aid-recipient countries and various non-governmental organizations are making a concerted effort to achieve this goal. Over the past five years, the option of applying the "direct route", using the terminology of Bhagwati [26], has been the major concern of the international community. Accordingly, public expenditure directly targeting the poor has been considered the main tool for poverty reduction and for which questions, such as how to accurately target the poor and how public service can benefit the poor,[65] have been intensively studied. In line with this view, both aid-recipient countries and donors have attempted to improve education and health, to reduce the gender gap and to provide emergency relief swiftly and efficiently.

The "indirect route" leading towards poverty reduction, within the context of the achievement of the Millennium Development Goals, has only recently been given due attention. The indirect route is defined as a path towards poverty reduction through income generation of the poor. This route is more likely to be implicated with agriculture, instead of industry, for income generation. However, for the first time the United Nations Millennium Project [215, 216] has linked industrial development and achievement of the Millennium Development Goals. Sachs [188], as the Director of the project, also supports the linkage between industrialization and the Millennium Development Goals. The importance and necessity of adopting the indirect route approach for poverty reduction in the long term cannot be denied. In light of this, it is crucial to consider what kind of indirect routes should be pursued. The report proposes two "indirect routes" to poverty reduction: *(a)* through industrialization, specifically agro-based industrialization; and *(b)* labour-intensive industrialization. The former has already been viewed as a pro-poor industrialization strategy by scholars of poverty in low-income countries.

Similarly, UNIDO has adopted the agro-based industry as one of the focal sectors of its corporate strategy. As regards the latter, it was considered outdated, in particular, because it was the main approach to industrialization and poverty reduction that was adopted by the East Asian economies up to the 1980s, and because some of the export promotion policies that the economies had invoked are not permitted under the current regime of the World Trade Organization. Considering that agro-based industrialization strategy is openly accepted for poverty reduction by most scholars in the field, and that it has already been incorporated in UNIDO's policies, chapter II of the present report was devoted to examining labour-intensive industrialization strategy.

[65] This is the main issue taken up by the *World Development Report 2004* [230].

The challenging task taken up by the report was to review the labour-intensive industrialization strategy within the context of poverty reduction in contemporary low-income countries. Another important aspect of the report, which focuses on labour-intensive industrialization, is the presentation of concrete examples of a labour-intensive industry that has been growing for a specific number of years and which employs the poor on a large scale. The garment industry in Bangladesh and Kenya was singled out as a typical labour-intensive industry. In Bangladesh, it has held a high position in world garment trade, and maintained its prominence as a garment exporter among low-income countries, even following the phasing-out of the Multi-Fibre Arrangement at the beginning of 2005. Kenya, in sub-Saharan Africa, is an emerging exporter of garments. The case of the garment industry in Bangladesh is particularly interesting for two reasons: *(a)* the country attracted foreign direct investment which initiated the export-oriented garment business even though the investment climate of the country can be compared with other low-income countries; and *(b)* currently local firms are in control of foreign capital. In addition, it is worth noting that the export-oriented garment business is remarkably profitable, on average, to both Bangladesh and Kenya.

The success of Bangladesh in maintaining its competitive edge in the garment industry in the global market, and ensuring that the industry continues to employ the poor to the same extent as it employs unskilled workers, is more than encouraging for other low-income countries. Kenya, together with a few other countries in sub-Saharan Africa, appears to be following the same "indirect route" as Bangladesh. This "indirect route" could be even more promising if China shifts resources away from labour-intensive industries to more capital and skilled labour-intensive industries. This would help to ease the relations caused by trade frictions with the United States and the European Union, the appreciation of yuan, and a surge in wage rates and curb the frequency of labour disputes. It must be emphasized that the achievements of Bangladesh and Kenya cannot automatically guarantee the success of other low-income countries in labour-intensive industrialization. It is evident that the role of foreign direct investment, at least in the initial phase, is critical. Failure to attract foreign direct investment would not have resulted in successes.

The agro-based industrialization strategy is appropriate and comprehensively applicable to low-income countries. This strategy is effective even in countries where conditions for labour-intensive industrialization, such as physical and institutional infrastructure for foreign trade and the mobilization of the poor as workers, are not met. Moreover, the agro-based industrialization strategy can be applied to a certain region in a country. In other words, the geographical area where the strategy takes effect can be compact.

As the objective of the present report is to expand the portfolio of pro-poor industrialization strategies by adding labour-intensive industrialization strategy, if labour-intensive goods produced in low-income countries penetrate global markets, the scale of production of the industry can increase in proportion with the employment of the poor. Thus its impact on poverty reduction could be enormous. Labour-intensive industrialization has the potential to impact on alleviating poverty in a more direct manner, while agro-based industrialization takes effect in a slow but sure manner. By including labour-intensive industrialization strategy, the portfolio of pro-poor industrialization strategy will be enriched and expanded, making it possible for a low-income country to get out of poverty and to graduate from the ranks of least developed countries to those of developing countries.

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ANNEX I. SAMPLING METHODS TO COLLECT FIRM-LEVEL DATA IN BANGLADESH AND KENYA

The surveys of garment-producing firms were conducted between August and November 2003 in Bangladesh and Kenya. The Institute of Developing Economies (IDE) team worked closely with two research institutes in Bangladesh and Kenya: the Institute of Business Administration, University of Dhaka, Bangladesh, and the Institute for Development Studies, University of Nairobi, Kenya. The two counterpart institutes and IDE jointly conducted the surveys, using the questionnaire shown in annex II. The summary of data collected in Bangladesh and Kenya has been compiled by Ahmad, Rahman and Khan [8] and the Institute of Development Studies [95], respectively.

1. BANGLADESH

Quantitative restrictions referred to as export quotas were imposed on most garment items, which were exported to the United States and Canada before 1 January 2005. There are two garment manufacturers' associations in Bangladesh through which member firms received export quotas to the United States and Canada. One is the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), which is the biggest association, comprising more than 3,000 member establishments, and the other is the Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA), with around 600 member firms producing knitwear-related products. Any firm exporting garments to the United States and Canada were affiliated with either BGMEA or BKMEA, or both. BGMEA member firms engage in production of either woven garments or knitwear, or both, while those of BKMEA produce only knitwear.

In order to collect information about garment producing firms efficiently, it was necessary to work with either one of the two associations. BGMEA was selected as the counterpart for a field survey because of its large scale and wide coverage in export items.[66] Finally, the cities of Dhaka and Chittagong were selected because they are the only major areas where export-oriented garment producing factories are densely located. While Dhaka is the capital of Bangladesh, Chittagong is the biggest international seaport in Bangladesh. Since the number of firms located in Chittagong district is far smaller (554 firms) than that of the Dhaka district (2,560 firms), the survey area was restricted to the centre of the Dhaka district to save transportation costs and to maximize the sample size. The district includes all major industrial areas, such as Dhaka, Narayanganj, Savar and Gazipur, but not Chittagong. No serious bias was detected due to the exclusion of firms in the Chittagong district. Note that this sampling strategy naturally excludes garment factories producing for local markets.

[66] See Bakht and others [17] for a study with BKMEA member firms for similar purposes.

The stratified sampling method, in terms of variety of products and size of firms, was used to select sample firms. Garments are divided into three categories, namely, woven garments, knitted garments and sweaters.

Sampling was undertaken so as to maintain the composition of BGMEA member firms by a variety of products and production scales. Tables AI-1 and AI-2 endorse a similarity in size distribution between samples and all BGMEA member firms. A critical difference is the scarcity of very large firms in the sample, as large firms appeared hesitant to being interviewed. In addition, the share of sample firms falling under the smallest category, "from 0 to 500", is a little lower than that of all BGMEA member firms.

TABLE AI.1.
SIZE DISTRIBUTION OF BGMEA MEMBER FACTORIES IN 2002-2003

Number of persons employed	*Count*	*Percentage*	*Cumulative count*	*Cumulative percentage*
(0, 500)	2 255	78.00	2 255	78.00
(500, 1 000)	529	18.30	2 784	96.30
(1 000, 1 500)	62	2.14	2 846	98.44
(1 500, 2 000)	14	0.48	2 860	98.93
(2 000, 2 500)	15	0.52	2 875	99.45
(2 500, 3 000)	5	0.17	2 880	99.62
(3 000, 3 500)	6	0.21	2 886	99.83
(3 500, 4 000)	1	0.03	2 887	99.86
(5 000, 5 500)	3	0.10	2 890	99.97
(7 500, 8 000)	1	0.03	2 891	100.00
Total	2 891	100.00	—	—

TABLE AI.2.
SIZE DISTRIBUTION OF THE SAMPLE

Number of persons employed	*Count*	*Percentage*	*Cumulative count*	*Cumulative percentage*
(0, 500)	125	56.31	125	56.31
(500, 1 000)	83	37.39	208	93.69
(1 000, 1 500)	12	5.41	220	99.10
(1 500, 2 000)	2	0.90	222	100.00
Total	222	100.00	—	—

2. KENYA

The scale of production of the Kenyan garment industry is far smaller than that of Bangladesh. According to the most extensive survey by Ongile and McCormick [151] (cited in McCormick and others [138]), which covered some 2,200 garment firms, including those in the informal sector, microfirms with less than three workers amounted to 75.2 per cent of samples, and firms with more than 49 workers were only 1.4 per cent in Nairobi in 1989. The latest *Census of Industry* compiled by the Central Bureau of Statistics reported that there were only 169 garment firms with 10 or more workers. Since 1999, however, 30 firms with several hundreds or thousands of employees have been set up in export processing zones, while many smaller firms producing for the local market have shut down due to a large inflow of imported garments, including second-hand ones. In Kenya, there is no industrial association for garment producing firms, which can be compared with BGMEA. Hence, our first task was to make a list of garment producing firms by which sampling would be undertaken. Lists owned by the Central Bureau of Statistics, the Investment Promotion Centre, the Export Processing Zones Authority, the Kenya Association of Manufacturers, the World Bank's Regional Program on Enterprise Development, and the Institute for Development Studies, University of Nairobi, were combined, and contact addresses of 382 garment producing firms in five major cities of Kenya, namely Eldoret, Mombasa, Nairobi, Nakuru and Thika were collected.

Based on the compiled list of garment producing firms, a field survey was conducted jointly by the Institute for Development Studies and the Institute of Developing Economies. Though the survey teams attempted to interview all 382 firms, more than half of the firms contacted were found to be out of business. As a result, questionnaires were collected from 117 firms. Of these, 79 questionnaires were applicable to the study.

TABLE AI-3.
DISTRIBUTION OF FIRMS VISITED

	Number of firms		
Status	*More than 10 workers*	*5-10 workers*	*Total*
All listed firms	322	60	382
Contacted	156	28	184
Unable to contact (out of business)	166	32	198
Questionnaires collected	105	12	117
Questionnaires completed	72	5	79

Annex II. Questionnaire

The purpose of this survey is to better understand the current situation of garment producing firms and to promote garment production in Bangladesh/Kenya. Information provided by you on your company will be treated as strictly confidential and the information will be used for research purposes only. Neither your, nor your company's, name will be used in any document prepared based on this survey. This questionnaire is supposed to be filled in by a single factory. If your company has multiple factories, please fill out separate answer sheets for other factories.

Schedule No. /__/__/__/

1. Basic information

Name of company _____

Legal status of the company _____

Codes: 1 = Sole proprietorship; 2 = Partnership; 3 = Private limited company; and
4 = Public limited company

Address

Office: _____

Factory: _____

Telephone: Fax:

Office: _____ Office: _____

Factory: _____ Factory: _____

E-mail: _____

Contact person:

Name: _____ Designation: _____

(It is ideal that the contact person fills in this questionnaire.)

2. History of the company

2.1. Year of establishment of the company _____

2.2. Year in which operation started _____

3. Company characteristics

3.1. ☐ Independent ☐ Holding company ☐ Subsidiary

Name of the group (if applicable) _____

3.2. Subcontractor (CMT) ☐ Yes ☐ No

4. Sources of finance

4.1. What was the ratio of equity to debt of your company as of July 2003? (*adds to 100%*)

Equity ____% (family ____%; other domestic ____%; foreign ____% (country_____))

Debt ____%

4.2. What were the sources of debt of your company as of July 2003? (adds to 100%)

Financial institutions ____%, Informal ____%, Others ____%

5. Management

5.1. Who is the most influential decision maker on business of your company?

Name: _____ *Designation:* _____

Age _____ (in years); Academic qualification (Exam Passed) _____

Previous occupation _____

Code: 1: Same company in lifetime; 2: Employee in other textile firm; 3: Employee in other non-textile firm; 4: Government officer; 5: Other (specify_____)

5.2. How long has she/he been involved in your company? _____ years

5.3 How long has she/he been involved in garment industry? _____ years

5.4. What is her/his ethnic origin? _____

Code: (0. Bengali) 1. African; 2. Indian; 3. Chinese; 4. Caucasian; 5. Others.

5.5. What is her/his nationality if not Kenyan /Bangladeshi? _____

Code: 1. African; 2. Indian; 3. Chinese; 4. European or American; 5. Others.

6. Production

6.1. Which production process does your company undertake? Circle the number of the applicable item(s).

1. Knitted fabrics; 2. Knitted sweaters/socks; 3. Dyeing; 4. Sewing (T-shirts, polo-shirts, woven shirts, blouses, etc.) 5. Other (specify)_____

_____

6.2. Production level (Fiscal year 2002-2003)

6.2.1. Knitted fabrics

Types of fabrics	Fabrics produced		Yarn used		
	Quality (kg)	Price (Tk/kg)	Country of origin	Quantity (kg)	Price (Tk/kg)

Fabric Types. 1: Single jersey; 2: Rib; 3: Fleece; 4: Pique; 5: Lacoste; 6: Interlock; 7: Others

6.2.2. Dyeing

Fabrics dyed		Fabrics used			Dye used		
Quantity (kg)	Price (Tk/kg)	Country of origin	Quantity (kg)	Price (Tk/kg)	Country of origin	Quantity (kg)	Price (Tk/kg)

6.2.3. Knitted and woven garments

Types of garments	Goods produced		Material used			
	Dozens	Price per dozen	Material (yarn or fabrics)	Quantity (kg)	Country of origin	Price (Tk/kg)

Types of garments

Knitted garments: 01 T-shirts; 02 Other shirts; 03 Sweaters; 04 Trousers and slacks; 05 Ladies' tops; 07 Dress; 08 Nightwear and pyjamas; 09 Underwear; 10 Socks; 11 Other knitted garments;

Woven garments: 12 Men's shirts; 12 Blouses; 14 Trousers and slacks; 15 Skirts;16 Dress; 17 Nightwear and pyjamas; 18 Underwear; 19 Suit-type coat; 20 Other woven garments.

7. Market

Which country/ies did your company supply garments to in the period 2002-2003?

Types of garments	Sold		
	To which country	Quantity	Value

Types of garments: See legends above.

8. Equipment

Type and number of equipment: What kind of and how many knitting machines did your company have at the end of July 2003? Please fill the following table for all machines in operation by their type and vintage.

No.	Type	Numbers	Country made	Year made	Year bought	Purchase price	Operation rate (percentage)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Code: Sewing machines: 01 = Straight lockstitch; 02 = Overlock; 03 = Others,
knitting machines: 11 = Circular knitting; 12 = Flat knitting; 13 = Socks knitting;
14 = Linking, other machines: 21 = Generator; 22 = Dyeing; 23 = Printing; 24 = Fabrics finishing.

9. Employment, wage level and working conditions

9.1 Employment: How many workers of the following categories were employed on average in fiscal year 2002-2003? (number of part-time employees in parentheses)

(numbers)

		Experience							
		Less than 1 year		1-5 years		6 years+		Total	
	Designation	Male	Female	Male	Female	Male	Female	Male	Female
Administration section	Managerial/executive								
	Other officers								
Garment section (sewing and knitting sweaters/socks)	Engineer								
	Supervisor								
	Operator								
	Helper								
Other production sections (knitting fabrics, dyeing and finishing)	Engineer								
	Supervisor								
	Operator								
	Helper								

9.2 Change in employment: Increase/decrease in the number of workers over the past three years? + / – _____ persons

9.3 Wage level: What were the average monthly wage rates of the following categories of workers in fiscal year 2002-2003?

(Tk.)

	Designation	Experience							
		Less than 1 year		1-5 years		6 years+		Total	
		Male	Female	Male	Female	Male	Female	Male	Female
Administration section	Managerial/executive								
	Other officers								
Garment section (sewing and knitting sweaters/socks)	Engineer								
	Supervisor								
	Operator								
	Helper								
Other production sections (knitting fabrics, dyeing and finishing)	Engineer								
	Supervisor								
	Operator								
	Helper								

9.4 Incentive payment in wage:

Piece rate ☐ Yes (Share in total remuneration ____ %)

☐ No

Attendance bonus ☐ Yes (Share in total remuneration ____ %)

☐ No

9.5 Change in wage: By how much percentage has the wage for a first-year employee changed for last three years? + / – _____ %

9.6 Working days: How many days in fiscal year 2002-2003 did your company operate? _____ days

9.7 Working hours: How long did a typical worker work in each shift (including overtime) on average in fiscal year 2002-2003?

(hours)

	Shift A	Shift B	Shift C
Knitting section (e.g. fabrics, sweaters, socks)			
Sewing section (other knit and woven garments)			
Dyeing section			

10. Skill of workers

10.1 Educational requirements: Is there any educational requirement for employees in your company?

Supervisor _____ Operator _____ Helper_____

Code: 0. No requirement; 1. Class 1-5; 2. Class 6-9; 3. SSC; 4. HSC; 5.Bachelor or higher

10.2 What is the average educational level?

Supervisor _____ Operator _____ Helper_____

Code: 1. Class 1-5; 2. Class 6-9; 3. SSC; 4. HSC; 5.Bachelor or higher

10.3 Training: Does your company have any training scheme for employees?

☐ Formal in-house training How often? _____ times/year; How long? _____ days

☐ Formal outside training How often?_____ times/year; How long? _____ days

☐ No formal training scheme

10.4 Promotion:

How many current supervisors in the sewing section were sewing-machine operators before they became supervisors? _____ persons

How long does it take for a helper to be promoted to a sewing-machine operator on average? _____ months

11. Problems in business

11.1 Delay in delivery: How many times have you experienced delay in material delivery and payment for your sales over the past three months? _____ times

11.2 Delay in payment: On average, how many days does it take to collect payment for your sales? _____ days

11.3 Power failure: How many days did your company experience an electric power failure during working hours over the past three months? _____ days

12. Policy-related issues

12.1 Did your company have a bonded warehouse during fiscal year 2002-2003?

☐ Yes ☐ No

12.2 Did your company receive a duty drawback concerning exported component of imported materials during fiscal year 2002-2003?

☐ Yes ☐ No

12.3 Was the advance income tax deduction on export earnings applied to your company during fiscal year 2002-2003?

☐ Yes ☐ No

12.4 Was a tariff exemption on imports of capital machinery for export-oriented sector applied to your company during fiscal year 2002-2003?

☐ Yes ☐ No

12.5 Were any preferential interest rates to export oriented sectors applied for loans granted to your company during fiscal year 2002-2003?

☐ Yes ☐ No

13. Data flow for 2002-2003

Items	Value (Tk)
A: Gross value of output	
B: Industrial costs	
B1: Costs of materials (yarn, fabrics, etc.)	
B2: Costs of fuel and electricity (production)	
B3: Wage and salary for workers	
C: Non-industrial costs	
C1: Utilities (water/electricity/telephones)	
C2: Transportation	
C3: Printing/stationery	
C4: Insurance payment	
C5: Interests	
C6: Rent	
C7: Others	

Name of the Field Investigator : _____ Date: _____

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