

Issues in Employment and Poverty

Discussion Paper

10

Employment Poverty Linkages: Bangladesh

By

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Preface

The experience of countries that succeeded in reducing poverty significantly indicates the importance of high rates of economic growth in achieving this. High growth, however, is not a sufficient condition for poverty reduction; the pattern and sources of growth as well as the manner in which its benefits are distributed are equally important from the point of view of achieving the goal of poverty reduction. And employment plays a key role in that context. Indeed, countries which attained high rates of employment growth alongside high rates of economic growth are also the ones who succeeded in reducing poverty significantly.

In view of the importance of employment as a route out of poverty, the ILO and SIDA agreed to collaborate in undertaking a series of studies to examine the linkage between economic growth, employment and poverty reduction. The present study on Bangladesh, along with the studies on Bolivia, Ethiopia, Uganda and Vietnam, forms part of that series. The main purpose of these studies is to contribute to an understanding of the linkage mentioned above, and to the identification of policies that could be used to engender higher rates of economic growth and employment generation, and thus achieve a faster reduction in poverty.

Bangladesh was able to achieve significantly higher rates of economic growth during the 1990s compared to the 1980s. The incidence of income poverty declined during the nineties. Changes in the human poverty index also show a significant decline in poverty, especially during the nineties. It would thus appear that higher rates of economic growth in Bangladesh have yielded benefits for the country's poor. Indeed, this conclusion would be valid if a simple comparison of economic growth rates and rates of poverty reduction is made for the 1980s and the 1990s. However, a more careful examination of the economic growth, rates of poverty reduction, changes in the degree of inequality in income/consumption, and in the employment and labour market outcomes would indicate that economic growth in Bangladesh could be more pro-poor. And employment and labour market variables play an important role in that regard.

Looking at sub-periods of the nineties, one can see that the rate of GDP growth was higher during 1996-2001 compared to 1991-1996, but the annual rate of reduction in poverty was lower. Thus, although the incidence of poverty continued to decline throughout the 1990s, the *rate* of decline was lower in the second half when the rate of economic growth was higher. This is particularly noticeable when one compares growth in agriculture with the rate of decline in rural poverty. During 1996-2001, output growth in agriculture was over five per cent per annum compared to 1.5 per cent during 1991-96; and yet, rural poverty declined by less than one percentage point per annum during 1996-2001, compared to 1.13 percentage point per annum during 1991-96.

The lack of a direct correspondence between a faster rate of economic growth and the rate of decline in poverty appears to be consistent with other developments in the economy during the nineties (some of which have been brought out in the present paper).

First, there has not been a shift in the structure of employment from lower productivity sectors to those characterized by higher productivity. Indeed, the share of manufacturing employment declined after 1989; and despite a reversal of the trend in the latter half of the nineties, even the level of 1989 has not been achieved. Second, the employment intensity of growth (measured by the elasticity of employment with respect to output) in manufacturing declined during the nineties. Third, open unemployment increased during 1996-2002. Fourth, the rate of real wage increase has been slower in agriculture compared to other sectors. Indeed, for some years towards the end of the

nineties, real wages in agriculture declined. Finally, inequality in the distribution of income has increased during the nineties.

Analysis of household level data indicates that employment and labour market related variables are important amongst factors influencing the probability of a household being poor. In terms of education, the percentage of the poor who have never gone to school is double that of the non-poor. The difference is sharper at higher levels of education. Likewise, a higher percentage of the non-poor labour force are skilled compared to the poor. The poor are more in informal employment and are more likely to be casual workers. Employment in non-farm sectors reduces the probability of a household being poor.

The findings and analysis of the present paper thus point to the possibility that economic growth in Bangladesh could have been more pro-poor in character. Had inequality in the distribution of income not worsened and had there been more positive developments in the employment and labour market situation, the outcome in terms of poverty reduction could, perhaps, have been more positive. The analysis of the present paper does provide pointers to ways in which growth can be made more pro-poor. Some of the major points that emerge are highlighted below.

First, both output and employment growth in manufacturing needs to be higher than before, so that the share of employment in higher productivity sectors can increase. The present study has identified industries (e.g., food, textiles, leather and leather products, wood products, non-metallic minerals, etc.) where output growth can be quite employment intensive, and yet can be associated with rising productivity. Appropriate policies to promote the growth of such industries can contribute to pro-poor growth. Likewise, promoting the growth of higher productivity non-farm activities in rural areas is essential for reducing rural poverty. Availability of remunerative and productive employment outside agriculture would be key to a tightening of the rural labour market and a sustained rise in wages of agricultural labourers. Finally, on the supply side, investment in education and skills can make a significant contribution to poverty reduction. It would, of course, be essential to ensure that the poor have access to education and skill development opportunities.

As mentioned earlier, the present paper is part of the outputs of a collaborative project between the ILO and the Swedish International Development Cooperation Agency (SIDA). While funding provided by SIDA for the study (and the others in the series) is thankfully acknowledged, mention should be made of Dr. Per Ronnas, Chief Economist, SIDA, who played a critical role in initiating this collaborative project. We would like to thank him for his personal interest, encouragement, and technical support (by way of suggestions and comments at various stages). Thanks are due to Mr. Gopal Bhattacharya, Director, ILO Office, Dhaka for his support in undertaking the study. Indeed, his office provided valuable logistic support. In the Bangladesh Institute of Development Studies, Dhaka, we found a willing and capable collaborator.

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In the process of preparation of the study, debts have been incurred to BBS for providing their unpublished data.

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1. Introduction

Despite recent progress in poverty alleviation, the magnitude of poverty in Bangladesh remains high in terms of both absolute magnitude and as a per cent of the population. A rapid progress in poverty reduction is not possible without an acceleration of economic growth. In a resource poor country like Bangladesh, economic growth hinges on the proper utilization of its labour force. The country has few natural resources, and agricultural land per rural household is low and is continuing to decline. Therefore, the growth of the economy will require improved productivity of all available resources, including labour. It must, however, be emphasized that the nature of economic growth will be critical for the success of poverty alleviation. Poverty reduction requires employment-friendly and equitable growth. The growth process must generate employment opportunities for the poorer sections and the wage rate and productivity of employment must be such as to generate adequate earning for them.

Strategies for reducing poverty in Bangladesh should therefore be based on an analysis of the linkage between economic growth, employment and poverty. Such analysis will help to highlight how GDP growth can be made pro-poor, through the growth of employment. The objective of the present study is to examine the interlinkages between poverty and employment and to arrive at specific policy suggestions for poverty alleviation. This will involve analyses at both macro and micro level.

1.1 Components of the study

The study will include the following specific components:

- **Analysis of the pattern of economic growth and poverty alleviation**

An overview of the performance of the country in terms of economic growth and poverty reduction will be presented. Real GDP growth over various sub-periods will be examined. The standard measures of poverty will be used to document the trends.

Poverty analysis will use direct calorie intake method and the cost of basic needs method based statistics. In addition to income poverty, the achievements in the 'human development' aspects will find a place in the analysis of poverty-employment-growth linkages. The multidirectional interfaces between income poverty and human poverty need attention.

- **The Sectoral GDP growth rates, employment elasticities and labour productivity**

The objective of this component of the study is an analysis of the relationship between the changes in the elasticity of employment and the changes in the incidence of poverty. A direct analysis of such linkage between employment elasticity and poverty may be constrained by data availability and methodological problems. Therefore the paper will examine how employment intensive has been the pattern of growth in Bangladesh and, in turn what type of linkage between the pattern of growth and employment creation can be identified.

A large part of this Chapter will consist of separate estimates of employment elasticities and their changes for major manufacturing sub-sectors.

- **The trends in wage rates and their implications for poverty**

Wage income is the major source of income for about one fifth of rural households. In addition, a large per cent of the urban poor households depends on wage from unskilled labour. Trends in wage rate should, therefore receive attention in the analysis of employment-poverty linkage. Wage rate of unskilled workers in manufacturing and in agriculture will be examined. The discussion will focus on the inter-linkage between trends in productivity, real wages and poverty.

- **Micro level analysis of employment-poverty linkage**

At the micro level, employment poverty linkage operates in both directions. Labour force and employment related characteristics of a household are likely to influence the probability of its being poor. The poverty status in turn can influence the possibility of being engaged in employment with higher productivity. Factors affecting the probability of being below the poverty line will be examined in this Chapter.

- **Policy implications**

Policy suggestions will be provided both at a general level and specific sectoral and programme level.

1.2 Data sources

The study is based on various types of information.

- ▲ Published reports of relevant national surveys including Labour Force Survey, Census of Manufacturing Industries and Household Expenditure Survey will be used. In addition, data and findings from other published studies will be quoted.
- ▲ Household level data from the National Labour Force Survey, 1999-2000 has been used for household and worker level analysis.¹ The survey covered a national representative sample of 9790 households. After excluding some cases with partially missing or inconsistent data, 18983 workers' data from the 9790 households has been used.

¹ The data set has been officially procured.

2. Economic Growth and Poverty

The present study will examine the poverty trends on the basis of the commonly used indicators. The head count ratio of poverty will be presented²

- ▲ on the basis of cost of basic needs and
- ▲ on the basis of calorie intake.

These two indices can supplement each other. Improvement in income poverty may not be a sufficient indicator of sustained improvement in household/individual well being, both in terms of non-income, material indicators as well as non-material achievements. In addition to the poverty estimates based on poverty lines, the importance of non-income dimensions (e.g. education, health etc.) should not be underemphasized. The present study will also focus on the trend of human poverty estimates and examine whether improvements in income and non-income dimensions have moved together. These links are likely to have special importance for the employment-poverty relationship and therefore, deserve attention.

2.1 Income poverty trends: rural and urban

To obtain insights into the link between poverty and economic growth, it will be pertinent to present a disaggregation of poverty trends by rural and urban location. Locational pattern of economic growth may then be linked with the poverty trends. Even if a strictly locational disaggregation of economic growth data is not available, the sectoral pattern of growth may provide a relevant basis for analysis.

Data on head count ratio (HCR) of poverty incidence based on a 'poverty line income' has been presented in Table 2.1. The poverty line is based on the 'cost of basic needs' (CBN) method. The table provides the following features of poverty trends (Table 2.1):

- ▲ Poverty incidence in Bangladesh has continuously declined during 1988-89 to 2000. (The decline has been continuous since 1985/86 if one considers the DCI based HCR.)
- ▲ Poverty incidence (according to CBN method) has increased during 1986 to 1992.
- ▲ In the rural areas, poverty incidence increased at a higher rate. There has been an 8.1 percentage point increase during this period. Among the urban households, poverty increased by 2.0 percentage points during these seven years.
- ▲ During the following four years, that is, during the first half of the nineties, both the urban and rural poverty situation improved, but the improvement was less pronounced for the rural areas, compared to the urban areas: the rate of poverty reduction has been 1.1 and 2.5 percentage points per year for the rural and urban households respectively.

²DCI Method uses the calorie intake level of 2122 Kilo calorie as the cut off point for moderate poverty and 1805 kilo calories for extreme poverty. In the CBN method, poverty lines represent the level of per capita expenditure at which the members of the household can meet their basic needs (defined by a standard bundle)

- ▲ A contrasting trend has been observed during the later part of the nineties. Rural poverty declined by 3.7 percentage points while the urban poverty situation increased by 1.6 percentage point during this four-year period.
- ▲ Above observations are based on the moderate poverty line. Similar trends hold for extreme poverty estimates which are shown in Table A.2.2 and A.2.3.

Table 2.1
Trends in Rural and Urban Poverty, 1985-86 to 2000: Head Count Ratio
Based on Upper Poverty Line

Year	HCR based on CBN (per cent)			HCR based on DCI (per cent)		
	Rural	Urban	National	Rural	Urban	National
1985/86	53.1	42.9	51.7	54.7	62.6	55.7
1988/89	59.2	43.9	59.1	47.8	47.6	47.8
1991/92	61.2	44.9	58.8	47.6	46.7	47.5
1995/96	56.7	35.0	53.1	47.1	49.7	47.5
2000	53.0	36.6	49.8	42.3	52.5	44.3

Source: BBS (various years), WB (1998, 2002).

Table 2.2
Comparison of Poverty Trends between 1973-74 to 81-82
and 1983-84 to 1995-96

	Percentage point change per year	
	1973-74 to 1981-82	1983-84 to 1995-96
Urban	2.97	2.93
Rural	1.10	0.40
National	1.29	.92

Source: Khan (2000)

So far we have not focused on the earlier period and examined only the period of 1985-86 to 1999-2000. There are methodological problems in making direct long-term comparison of poverty incidence for the earlier period. Nonetheless, the data for 1973-74 and 1981-82 are comparable. The extent of poverty reduction during the two sub-periods are shown in Table 2.2. Even if there are methodological differences, the difference in the rate of poverty reduction is so large between the two periods that one may accept the observation that 'the incidence of poverty declined at a faster rate in the first period than in the second period' (BIDS 2001). The same view has been expressed by other researchers (e.g. by A.R. Khan in his recent public lecture on Globalization, delivered on September 12, 2001 at BIDS).

Direct calorie intake based poverty

The following aspects of the trends of poverty incidence based on the calorie norms (Direct Calorie Intake or DCI method) and the differences of the results with CBN method (from Table 2.1 and 2.2) are worth highlighting:

Based on DCI, there has been a decline in head count ratio of poverty (HCR) between 1984-85 and 1995-96 and between 1995-96 and 2000. Between 1988-89 and 1995-96 the poverty situation remained virtually unchanged.

Despite the difference in definition there is no disagreement that there has been a decline in poverty between 1985-86 and 2000. According to the DCI based estimate,

poverty declined by 11.4 percentage points between these years and according to the CBN estimates, the decline has been 1.9 percentage points.

The following aspects of the contrasting trend of poverty measured by CBN and DCI methods are worth highlighting:

- ▲ According to CBN estimates, the decline in HCR of poverty took place mostly between 1991-92 and 1995-96. Before this period, poverty increased. Estimates based on DCI show a different timing of the improvement of the poverty situation: between 1984-85 and 1988-89 some decline in the poverty incidence had taken place and after that the poverty situation remained virtually unchanged and again declined slightly during 1996 to 2000.
- ▲ Between 1985-86 to 1988-89 and between 1988-89 and 1991-92 the percentage of poverty increased according to the CBN method and declined on the basis of the DCI method.
- ▲ The contradiction becomes even more glaring when one compares the urban figures in the two estimates. In the CBN estimates urban poverty decreased between '91-92 and '95-96 by about 10 percentage points, whereas the DCI estimates show an increase during this period.
- ▲ Between 1992 and 1996, rural poverty showed a decline on the basis of CBN method but was almost stagnant when the DCI method was used.

It is difficult to reconcile the contrasting picture obtained by the CBN and DCI methods. The first observation mentioned above implies that the improvement in the income poverty during the nineties has not been transformed into an actual improvement in the calorie consumption. The improvement in the 'command' over the bundle of basic needs may not be translated into improvement in the standard of calorie intake due a variety of social reasons. The following explanations of the difference between the poverty trends based on CBN and DCI methods are being offered.

- a) An obvious explanation for these contrasting pictures obtained by the two is based on the observation that the urban poor spend a significant part of income on non-basic needs and as income increases, they may increase the proportion of income spent on the items not included in the 'bundle for the poor'. However, one has to stretch one's imagination to visualize a scenario where this would take place at the cost of a decline in food consumption and calorie intake. It is conceivable that a lack of education in general and absence of knowledge of balanced food may result in inadequate nutrition intake. But it is unlikely that with an upward shift in income, calorie intake will actually decline.
- b) An alternative explanation for this contradiction (rising poverty in terms of calorie and falling poverty in terms of expenditure required for command over basic needs) lies in the change of prices of food and non-essential non-food. A price index of non-food basic need expenditure is incorporated into the calculation of the poverty line. But the actual consumption pattern may include a much larger percentage of non-food, particularly in the urban areas. If the prices of these items increase more than in proportion to the price index of the package of non-food basic needs basket, and the quantity consumed remains fixed, then the income

allocated for food may decline resulting in a decline of actual calorie intake. This actually implies that a comparison on the basis of CBN is not free from the biases built in the baseline 'consumption basket' and the associated price vector of this basket.

- c) Another minor point that may be relevant is that household expenditure in the HES survey includes imputed expenditures for many items. Total expenditure may show an increase due to the increase in the value of these items. More specifically, many of the urban poor living in slums construct their own shacks on the public land. No rent is paid for these dwelling units of the 'owner-occupants' whereas; those who rent a room in a slum pay the 'market rent'. Such market price would be imputed for the owner occupants. When the market rent of these slum houses rise, so does the imputed expenditure. But there is no possibility of converting this imputed expenditure into calories and thus the contradictions.

Given the problems of contrasting results given by the two methodologies, a combination of CBN and DCI methods should be used in poverty analysis, the former providing a hypothetical picture based on poverty level income and the latter providing the actual, in terms of calorie intake. DCI method provides a strictly consistent estimate of poverty, which ensures comparability over time even if the welfare implication of this index is rather narrow.

The above differences should not undermine one important achievement in the reduction of poverty. The country has so far achieved a substantial decline in HCR of extreme poverty. Whether the CBN or the DCI method is used, the decline has been more than ten percentage points during the entire period of 1983-84 to 1999-2000.

Other dimensions of poverty, that is, the depth and severity of poverty, measured by the poverty gap and the squared poverty gap are presented in Table A.2.4. The trends in depth and severity of poverty are similar to the trends in HCR. There has been an overall improvement in these two measures. For the urban areas, the situation worsened by these measures during the late nineties. The changes have been more or less continuous except between 1988-89 and 1991-92 in the rural areas and between 1995-96 and 2000 in the urban areas. Depth and intensity of poverty is higher in the rural areas.

The poverty situation is linked with income inequality in urban and rural areas. The period under review witnessed increases in inequality. This is especially true for urban income (Table A.2.5). Improvement in poverty situation could have been more impressive if the degree of income inequality did not increase.

A number of micro surveys provide estimates of the poverty incidence. CBN based estimates of poverty have been provided by the BIDS study 'Analysis of Poverty Trends' (APT) and by 'Poverty Monitoring Survey' (PMS) conducted by BBS (under the auspices of CIRDAP). According to APT, rural poverty (both extreme & moderate) increased between 1987 to 1989-90 and then declined in 1994. According to the PMS, the poverty incidence varied from 47 per cent in 1995 to 45 per cent in 1999 (BBS 2002) in the rural areas and stagnated at 44 per cent in the urban areas.

The APT study shows a significant decline in the non-income indicators of extreme poverty over the 1990-95 period (Hossain 1992, 1996). For example, the percentage of rural population without basic clothing declined from 15 to 4 and the

percentage of households living in extremely vulnerable housing (i.e. *jhupri*) declined from 9 to 2. Such a large improvement in housing situation may appear incompatible with the much smaller change in calorie based poverty estimates. Nonetheless, other studies (Alam 2002) also show a significant improvement in housing condition during the recent years, with very small change in average food intake among the poor households. This shows that the rural poor have a high propensity to invest in their housing.

The above quantitative findings have been based on structured questionnaire based survey and are subject to the usual criticism against such methods. Qualitative studies on poverty, including participatory studies utilize the poor's own perception about their situation. Such studies are also subject to a number of problems. The most important problems are:

- ▲ People's own perception is likely to set up a higher standard of living (than others' prescription of poverty bundle) as the norm.
- ▲ Intertemporal comparison is difficult because people's perception about poverty changes with the growth and availability of consumer goods and knowledge and information.
- ▲ Participatory studies on poverty sometimes tend to combine the notions of absolute and relative poverty, and the symptoms of poverty and causes of poverty.

As a result, poverty studies based on participatory assessment provide higher figures of the incidence of poverty. For example, Shamunnay (2000)'s participatory assessment shows that 75 per cent of rural households were poor in 1996 (as against 47 per cent in BBS survey). Another participatory study (IMEC 1999), however, provides similar estimates of poverty obtained through quantitative survey (in the same study). In fact, an important role of qualitative studies will be to suggest improvements in the indicators for poverty assessment, which may then be used in quantitative studies to quantify the extent of poverty.

Some of the recent studies on poverty observed that the comparison of the changes of poverty incidence is complicated because the changes during various intervals are not consistent with evidences provided by other time series data on trends in consumption expenditure. In particular, the changes in per capita expenditure obtained from HIES and national accounts statistics show contradictory trends. If the mid point data set (1995-96) of HIES is dropped, the above complications concerning the fluctuations of the poverty incidence and the contradictions with other evidences do not arise (WB 2002, IPRSP 2002).

Given the large intervals at which these surveys are conducted, loss of one data point on these grounds involves costs, which should be carefully considered before this is done.

2.2 Human poverty trends and its comparison with income poverty

Income or calorie based measures of poverty incidence faced criticism on the grounds that these are inadequate indicators of welfare or standard of living. The human Development Index developed by UNDP incorporated a number of other aspects of

improvement in the quality of life. These include education, health, mortality, women's empowerment etc. Human Poverty Index has been defined as a corollary to the HDI and provides a measure of the percentage of households/persons below a cut-off point of HPI.

Human Poverty Index (HPI) has registered a sharp decline between 1983 and 1997 (Table 2.3). A comparison of the rate of decline of human poverty and income poverty (Tables 2.2 and 2.1) shows that an improvement in 'human poverty' in Bangladesh has been accompanied by a much smaller decline in income poverty. This illustrates that a decline in HPI is possible without a commensurate change in income poverty. In addition, the weak linkage implies that an improvement in human development is not being translated into higher income of the poor households.

Table 2.3
Changes in Human Poverty Index

Year	Value of HPI (per cent)	Decline in HPI (Percentage point per year)
1981-82	61.3	-1.41
1993-94	47.2	
1995-97	40.1	-2.37

Source: BIDS (2001) and author's calculations.

This is likely to be due to the lack of opportunity for productive utilization of human capital. The increase in the educated unemployment rate discussed in Section 5 provides supporting evidence. Moreover, the positive impact of human development may take place with a gestation gap and therefore the income enhancement of the poor households may not be immediately observed. In addition, an increase in HPI may have taken place through improvement in the situation of the higher income groups compared to the poorer groups. This may have a positive impact on income of this relatively better off group which does not lead to a reduction of the incidence of income or calorie based poverty.

Thus the increase in the average value of HPI is not a sufficient indicator of an improvement in the situation of human capital of the households in the lowest decile/s based on income.

2.3 GDP growth and poverty trends

In the introductory remarks of the paper, it has already been mentioned that a growth of the mean income is essential for reduction of the number of households below poverty level income.

The positive impact of economic growth on poverty reduction has been established on the basis of cross-country studies. Such studies do not, however, establish that growth is a sufficient condition for poverty alleviation. The relationship may hold because of the special features of economic growth of the countries, which have succeeded in poverty alleviation. In other words, even if the relationship is significant, there will be countries for which growth did not lead to poverty alleviation. Such cross-country studies also suggest that there can be large variations in the poverty reduction impact resulting from the same rate of economic growth (Kakwani 2002). Therefore, in addition to cross-country correlation studies, individual countries should assess whether growth has been pro-poor in their particular case. A positive relationship between the two can indicate that the growth pattern that is being realized is of the right type. If the

contrary result is obtained, there will be need for caution and policies must be revised to achieve pro-poor growth.

Whether growth is pro-poor will depend on the structure of growth as well as on the importance of various productive factors in the growth process. This section will examine the trends of GDP growth rate and its relationship with poverty trends. To obtain better insights into the growth-poverty linkage, GDP growth rate will be disaggregated for the major economic activities (agriculture and industry). The employment elasticity in the manufacturing sector is important in this context and will be examined in the next section.

A discussion of the trend GDP growth rates during the last one and a half (or two) decades will provide insights into the overall economic environment, which resulted in the poverty decline during the nineties. In addition, we shall compare the extent of improvement in the poverty situation at various points of time and the trend growth rate of GDP during the relevant period. Insights into the poverty reducing impact of GDP growth may also be obtained through the analysis of the links between sectoral GDP growth rates and urban and rural poverty reduction rates. More specifically, the hypotheses behind such analysis is that urban poverty may depend on growth rates in industry and service sectors which are the dominant sources of income of poor households in the urban areas. Similarly, agricultural income growth and rural poverty are expected to be interlinked. Such analysis assumes importance especially in view of the small number of data points available for the analysis of growth - poverty linkages.

Growth rate of GDP and poverty trends: 1986 to 2000

A number of studies (Mujeri 2001 Bhattacharya 2001) have already highlighted the high annual growth rates of GDP during the recent years. Annual growth rates are influenced by the growth in the previous year. The trend growth rates of GDP should therefore, be examined to assess the performance of the economy during longer periods.

The trend growth rate of GDP for the three sub-periods have been presented in Table 2.4. The trend growth rate was 2.46 per cent per annum during 1986 to 1991. The trend growth rates rose to 4.50 per cent and 5.29 per cent per annum during the first and second half of the nineties respectively. Even if there has been an acceleration of the rate of growth, the growth rate achieved during the latest period was much less than the growth rate targeted for the Sixth Five-Year Plan (1998-2003).

Table 2.4
GDP growth rates and the trends of poverty in Bangladesh: 1986 to 2001

Year	Per cent per annum GDP growth rate	Percentage point per year		
		Change of GDP growth rate	CBN method based HCR decline	
			Moderate Poverty decline	Extreme Poverty decline
1986-1991	2.46	1.04	+ 1.18	+ 1.48
1991-1996	4.50	0.79	- 1.43	- 2.08
1996-2001	5.29		- 0.23	- 0.98

Source: Calculated from BBS (various years).

The acceleration of GDP growth during the latest years has been modest because of the devastating floods of 1998. One may, therefore, visualize that there exist potentials of a higher rate of acceleration of GDP growth. The trend rate of growth could be much

higher if the flood damage of 1998 did not occur. Such hypothetical case should not be overstretched because natural calamities are facts of life in this country and are observed to occur frequently. Such calamities caused a downturn in economic growth at least once during each of the five-year periods: 1986 to 1991, 1991 to 1996, and 1996 to 2000.

The GDP growth rate shows the expected relationship with poverty reduction. During the first sub-period, growth rate has been low; and HCR of poverty has increased. The GDP growth rate accelerated during the second sub-period, i.e., 1991 to 1996. During this period, head count ratio of moderate poverty declined at a rate of 1.4 percentage point per year. The decline of extreme poverty was faster: 2.1 percentage point per annum.

During the second half of the nineties, GDP growth has been faster. HCR further declined during this period, though the decline per year was smaller than 1991-96. The decline in HCR of moderate and extreme poverty per year was 0.73 and 0.98 percentage points respectively during these two periods. The percentage point of acceleration of GDP growth has been 0.79 points per year during the second half of the nineties, which was smaller than the acceleration of GDP growth rate during the previous sub-period (Table 2.4). The crucial importance of GDP growth for poverty reduction is reflected in the association of a smaller acceleration of GDP growth rate with a smaller rate of decline of poverty during this period. Nonetheless, growth appears to have been less pro-poor during the second half of the nineties.

The above conclusion stands in contrast with the observations made in a number of other recent papers (Mujeri 2000). Mujeri (2000) states: 'It is clear that an average growth rate of around 4 per cent per year is not rapid enough to make any significant impact on poverty (P 99)'. Such lack of recognition of the concomitant variations of GDP growth and poverty reduction has been due to a number of reasons. The 2000 HIES results were not available when the paper (Mujeri 2000) was prepared. Therefore the evidence of improvement of poverty during the entire decade was not in the hands of the author of the above study. In contrast, WB (2002) recognizes that poverty declined during 1991-92 to 2000, which is 'consistent with the growth performance'. One may however question the validity of such (WB 2002) comparison on the basis of changes at two points over almost a decade. This point has been discussed at the end of Section 2.1.

GDP growth rate in the range of 4 to 5 per cent per annum could have led to a larger poverty reduction impact, if the inequality of income (expenditure) declined. However, inequality increased during the nineties. Since urban income inequality is higher and future GDP growth is likely to take place through a higher rate of growth of urban sectors, a drastic decline of income inequality in the near future is not foreseen. Therefore, poverty reduction at a rate of 1.5 percentage point per annum (which is the target in the 'Mid-term Development Goal') will require GDP growth rate higher than 6 per cent per annum.

Sectoral growth rates and poverty reduction

Given the structure of the Bangladesh economy, the role of agricultural growth in poverty alleviation deserves special attention. Poverty incidence is higher among the rural households. All sources of data show that the poor in Bangladesh live mostly in rural areas and are engaged in agricultural activities. Growth of the manufacturing sector is expected to provide the impetus of poverty reduction in the urban areas. Therefore, the present section examines the links between agricultural growth and rural poverty, which

is followed by an analysis of the relationship between urban poverty trend and non-agricultural growth rates.

Agriculture's share in GDP is the highest despite the decline of this share during the last two decades: from 50 per cent in the 1970s to about 25 to 30 per cent at the end of the century. The share of agriculture in employment remains high with more than 60 per cent of the labour force engaged in such activities. Such employment consists of both wage employment and self-employment.

Within the rural areas, poverty incidence is higher among the wage labourers and small and tenant farmers. The link between poverty and agricultural growth follows from these features of the poor.

Poverty reducing impact of agricultural growth works along three channels:

- ▲ Such growth raises the demand for rural labourers, which results in larger number of days of employment for these workers. Higher demand is also likely to raise wage rates. Both factors will contribute to increased earnings.
- ▲ Second, such growth helps to raise the income of small and tenant farmers. Initially there has been some controversy about the possibility of participation of these groups of farmers in the process of agricultural modernization. The doubts were based on the following observations: the marginal landowners and tenant farmers cannot take the risks associated with the cultivation of modern rice varieties; they lack access to credit and other sources of funds for investment in agricultural inputs. Subsequently, most research findings demonstrated their ability to participate in the agricultural growth process.
- ▲ The third route works through the impact of such growth on the prices of the staple food. A higher growth reduces the price of foodgrain and helps the poor households who are often net buyers of foodgrain.

The above channels may work simultaneously and help in the poverty reduction process.

Data on poverty incidence in the rural and urban areas and the extent of growth in agriculture and non-agricultural sectors during the sub-periods are presented in Table 2.5 and 2.6. However, data shown in columns 2 through 5 do not show a direct relationship of agricultural growth rate with rural poverty. The two magnitudes vary in different directions at certain periods. This may not, however, signify a lack of relationship between GDP growth and poverty, which was observed to exist when total GDP instead of sectoral GDP was considered. It is plausible that the decline of poverty incidence in the rural areas is not linked only with agriculture but with other sectors because the growth of industrial sectors and urban service sectors draw workers from the rural areas. Such predictions have been made by a range of two sector development models where the modern sectors flourish through the withdrawal of labour from the traditional rural sectors. This is expected to increase the average labour productivity of agricultural workers. With the gradual withdrawal of the landless labourers and their migration to urban areas, rural wage rates will be subjected to an upward pressure.

Table 2.5
GDP growth in agriculture and the extent of poverty decline in the rural areas

Year	GDP growth rate in agriculture	Decline of rural* moderate poverty	Decline of rural extreme poverty
	(Per cent per annum)	(Percentage point per annum)	
1986-1991	2.19	+ 1.35	+ 1.67
1991-1996	1.50	- 1.13	- 1.88
1996-2001	5.07	- 0.82	- 0.98

Source: Calculated from BBS (various years).

Table 2.6
GDP growth rate in industry and the extent of poverty decline in the urban areas

Year	GDP growth rate in industry (Per cent per annum)	(Percentage point per year)	
		Decline of urban* moderate poverty	Decline of urban extreme poverty
1986-1991	5.06	+ 0.33	+ .57
1991-1996	7.81	- 2.53	- 2.40
1996-2001	6.42	+ 0.36	+ 0.71

+ Change means poverty increased.

Source: Calculated from BBS (various years).

Similarly, the growth of food production will raise the real earnings of both urban and rural wage labourers. Therefore the reduction of poverty in the relevant region: urban or rural is not directly linked with the sectoral growth rates. Rather the combined result of overall GDP growth is linked with the poverty alleviation impact of growth. This becomes clearer if one examines certain features of the relationship between the growth of the agricultural sector and the non-agricultural sectors.

In Bangladesh the industrial base is very small and the growth of agriculture and non-agriculture is expected to show progress in the same direction. This would lead to simultaneous improvement in both rural and urban areas. In contrast, the observed sectoral pattern of growth is the reverse, as shown in Table A.2.6.

The annual growth rate of the two sectors moves in the reverse direction in eight years out of 15. In three years the growth rates of both agriculture and industry declined. Only in four years both agriculture and industry had experienced positive changes in growth rate. Explanation of this inverse relationship will consist of a number of factors. Such negative association, to some extent is a reflection of the fluctuations in the growth rates of both agriculture and industry. The fluctuations in agricultural growth have been associated with natural calamities. The fluctuations of industrial growth have been linked with a variety of factors, including both natural factors and the demand side forces. For example, the devastating flood of 1988 and 1998 affected both agriculture and industry. Moreover, this will be the result of a natural response of the economy where the work force is involved in different occupations. When one type of activity faces a setback, the labour force automatically switches to other activities. The same argument may be extended, whereby the industrial growth is expected to accelerate, as labour is more easily available in years of downturn of agricultural growth. However, such responses are not likely to be so large in magnitude as to have a sufficient counter cyclical impact. A more plausible explanation of the observed phenomenon lies in the nature of government

interventions and conscious policy efforts to ensure the level of growth and to alleviate poverty. When agriculture faces a setback due to adverse weather condition etc., government tries to ease credit and other services for accelerating growth of industry and other urban activities. Such development encourages a movement of labour to the urban areas. Therefore, lower agricultural growth may not necessarily lead to a worsening of rural poverty. Similarly, when industry lags, the government makes more investment in agriculture and infrastructure building. Thus the interventions producing reverse pattern of growth of agriculture and non-agricultural sectors perhaps contribute towards the absence of a direct association between such sectoral growth and rural/urban poverty trends.

The lack of direct association between sectoral growth and the extent of poverty reduction (in rural or urban areas) also show that growth is necessary for poverty reduction but it is not a sufficient condition. Agricultural growth during the latter part of the nineties, especially in the aftermath of flood year, did not lead to a recovery of employment and wage rate (will be discussed in Chapter 4). As a result, the rate of poverty reduction was slow.

Similarly, during the second half of the nineties, industrial growth was not accompanied by poverty reduction. Industrial growth was 6.4 per cent per annum. Urban moderate poverty (and extreme poverty) increased by .36 (and .71) percentage points per year. This is explained by the increase in income inequality and rising urban unemployment during this period. The increase in unemployment led to a stagnation in the wage rates (especially in the informal sectors). This is also reflected in a decline in employment elasticity of most of the subsectors of manufacturing (see Chapter 3). Thus industrial growth cannot reduce poverty unless growth is employment intensive and inequality reducing in nature.

3. Sectoral Employment Growth and Poverty

As employment is an important variable in making economic growth pro-poor, it is important to examine what has happened to employment as a result of growth. There can be two ways of looking at the issue. The first would be to ask how employment-intensive growth has been. This question can be addressed by using the concept of employment elasticity with respect to output growth. And the concept can be applied to the economy as a whole and/or to its major sectors. The second approach (which can actually complement an analysis based on employment elasticity) would be to examine how the structure of employment has responded to economic growth. For growth to be able to contribute to poverty reduction, it must lead to a transformation of the structure of employment towards sectors characterized by higher productivity and returns. For a country like Bangladesh, this would typically imply a shift towards manufacturing and other modern sectors.

The present section of the paper adopts both the approaches mentioned above. It starts by looking at the structure of employment, and then goes into the issue of employment elasticity.

3.1 Changes in employment structure between 1980s and 1990s

We first examine, in the present section, a few indicators such as (1) sectoral composition of employment (2) employment-population proportion and (3) labor force participation.

Table 3.1 shows the size and structure of the labour force over the 1980s and 1990s. It can be seen from the table that Bangladesh labor force (civilian) grew from 25.9 million in 1981 to 60.3 million in 2000, with an average annual growth rate of 4.5 per cent³. In terms of absolute numbers, this suggests an addition of 1.8 million members to the total workforce annually. It follows that an additional 1.8 million jobs are needed annually to maintain a stable labour market.

As regards labor force participation rate, it can be seen from the table that it was more or less stable in the 1980s and 1990s, with a tendency, however, to increase over the period, growing from 44.3 per cent in 1981 to 53.7 per cent in 2000. This estimates an average annual rate of increase of 0.5 percentage points. Average annual rate of increase in the 1980s estimates as only 0.15 percentage points while this is found to be 0.35 percentage point in the 1990s.

As regards labor force to population ratio, however, there appear to be significant fluctuations over the last two decades; the ratio ranges from 28 per cent in 1981 to 47 per cent in 2000 (not shown in Table). The unemployment rate of the civilian labor force ranges from around 2 to 4 per cent between 1990 and 2000. The unemployment rate rose modestly, from 2 per cent in 1991 to 2.5 per cent in 1996, but rose substantially to around 4 per cent in 2000.

³ Here, labor force represents civilian one, and for the sake of appropriate comparison over the period 1981-2000, we have used the uniform definition of age, 15 years and above.

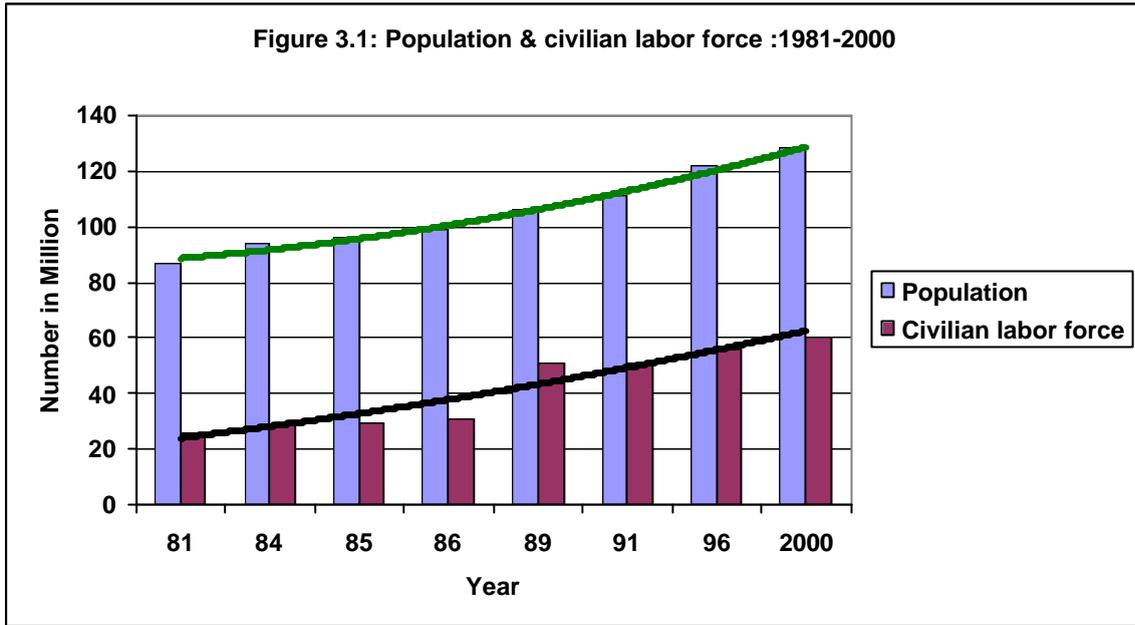
Table 3.1
Size of Labor Force and Sectoral Composition

Mid Year	Population (million)	Civilian labor force (million)	Participation rate (%)	Sectoral composition of employed workforce (%)			
				Agriculture	Manufacturing	Service	HH work
1981	87.1	25.9	44.3	70.1	19.6	8.7	1.6
1984	94.0	28.5	43.9	58.8	9.0	26.2	6.0
1985	96.4	29.5	43.9	57.7	9.3	28.2	4.8
1986	98.8	30.9	46.5	57.4	11.8	26.6	4.3
1989	106.4	50.7 *(33.3)	46.9 *(74.7)	65.0	15.5	14.8	4.8
1991	111.5	51.2 *(35.9)	46.9 *(69.6)	66.3	12.7	16.1	4.6
1996	122.1	56.0 *(50.3)	48.3 *(64.8)	63.2	9.5	25.1	2.2
2000	128.3	60.3 *(53.5)	53.7 *(72.1)	62.1	10.3	24.8	2.8

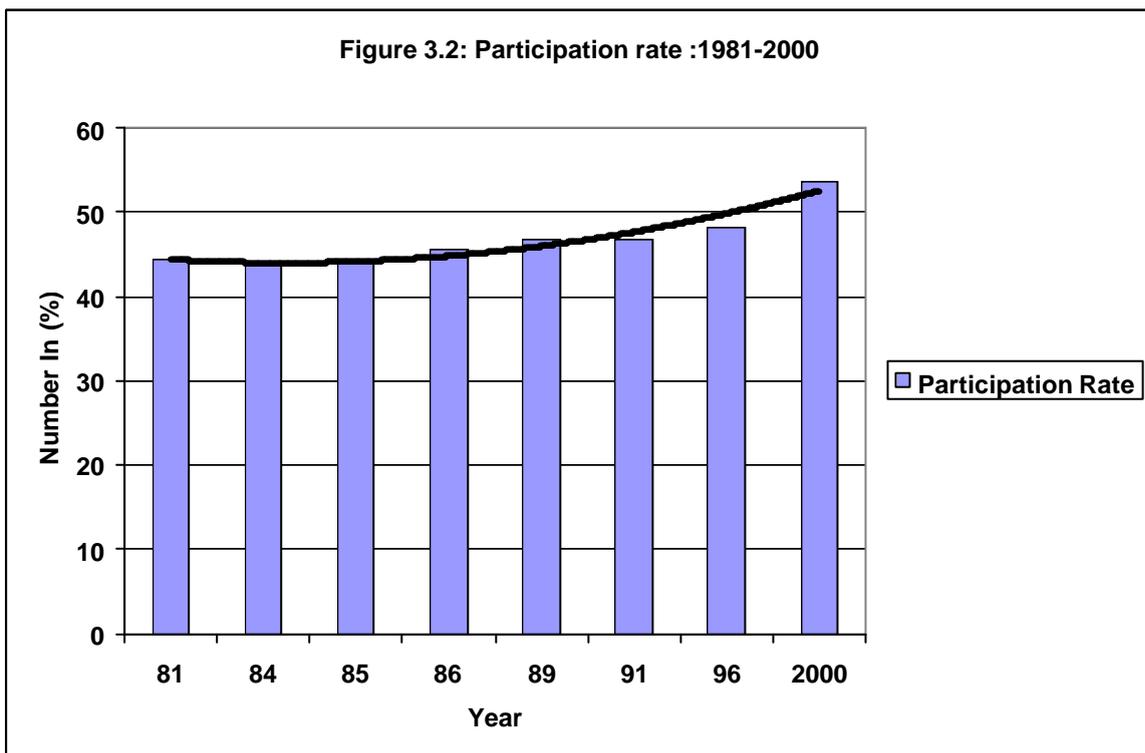
Note: * The figures represent extended definition of labor force at age 15 years & above

Source: Various labour force survey reports.

Table 3.1 also shows the sectoral composition of the workforce over the two decades. The employment share of the agriculture sector had fell substantially from 70 per cent in 1981 to 59 per cent in 1984. Since then, the fluctuations were moderate, experiencing a rise of up to 66 per cent in 1991 and then again a fall, down to 62 per cent in 2000. Employment in the manufacturing sector also declined from nearly 20 per cent in 1981 to 9 per cent per cent in 1984, then experienced a rise of up to 16 per cent in 1989 with again a fall of up to 13 per cent in 1991. Since then, it has remained more or less stable entailing a modest fluctuation in the range of 10 per cent. The employment share of the service sector, on the other hand, has been somewhat unstable during the last two decades. It rose substantially from 9 per cent in 1981 to more than 26 per cent in 1984, which again declined to nearly 15 per cent in 1989 but rose to nearly 25 per cent in 2000.

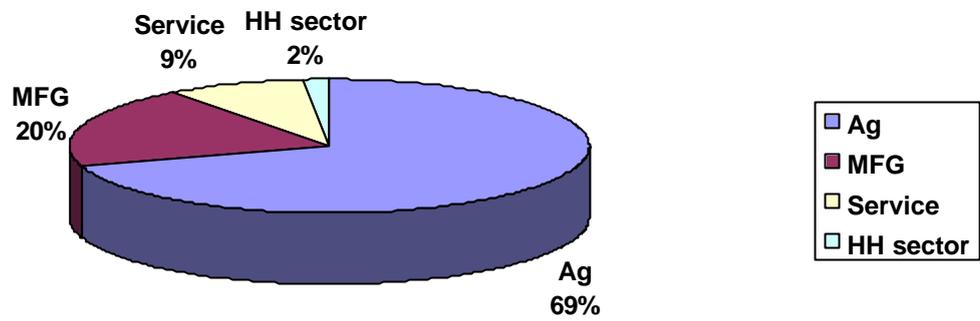


Source: Prepared from data provided by various labour force survey reports.



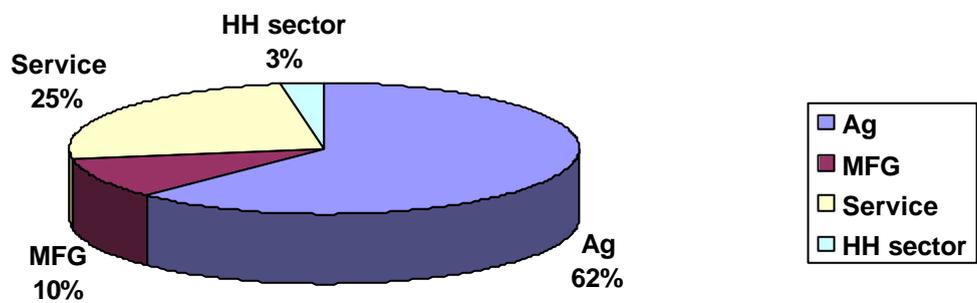
Source: Same as in Figure 3.1.

Figure 3.3: Sectoral composition of employed workforce :1981



Source: Same as for Figure 3.1.

Figure 3.4: Sectoral composition of employed workforce: 2000



Source: Same as for Figure 3.1.

3.2 Growth of sectoral employment

Data on the sectoral growth of the labour force shows that (Table 3.2) the percentage of labor force employed in manufacturing declined to a significant extent during the first half of the nineties, from 1989 to 1995-96. This is somewhat inconsistent with the acceleration of growth of manufacturing GDP that occurred during this period, as shown in Table 2.6. GDP growth in industry was associated with the rapid growth in the readymade garments sector, which employed more than 75,000 women during this period. In contrast, LFS shows decline in female manufacturing employment (Table 3.2). A number of other forces have been at work during this period, influencing employment opportunities in manufactures. For example, the loss making state owned enterprises have been closed down. The privatized SOEs retrenched excess labour. The exact magnitude of such job loss is not known. The scope for reemployment is extremely limited for the retrenched workers. Therefore, many workers may have to resort to reverse migration to the rural areas and generate self-employment in agriculture and non-farm activities. If such process of deindustrialization and decline in manufacturing employment did not take place, poverty reduction could take place at a faster rate.

Table 3.2
Average annual growth rate of labour force by industry and gender

Major industry	Annual growth rate %			Annual growth rate %		
	1990-91 to 1995-96			1995-96 to 1999-2000		
	Both sex	Male	Female	Both sex	Male	Female
Total	1.8	2.2	1.1	3.0	1.1	14.7
Agriculture, forestry, fisheries	0.7	2.2	-0.9	4.1	0.8	41.0
Mining quarrying	10.7	9.3	100.0	172.7	93.7	982.0
Manufacturing	-6.2	-7.8	-2.6	1.3	0.5	2.7
Electricity, gas, water	31.5	26.1	240.0	7.5	7.2	9.6
Construction	18.7	18.6	19.0	2.0	1.7	6.2
	8.3	6.0	59.3			
Trade, hotel & restaurant	9.5	8.1	61.8	0.7	0.5	0.6
Transport, storage, communication	5.6	6.7	6.7	3.2	3.2	5.3
Finance, business services	33.3	20.6	113.4	22.3	20.3	46.9
Community and personal services and others	-9.7	-14.8	-1.1	1.6	-0.2	4.8

Source: Various labour force survey reports.

The LFS 1999-2000 report provides data on sectoral composition of employment, indicating a growth rate of manufacturing employment close to that indicated by the CMI data. The latest LFS shows 0.9-per cent (0.5 per cent for male and 1.4 per cent for female labour) per annum growth of manufacturing employment, while employment in agriculture had grown by 0.8 per cent per annum.

An alternative source of data on manufacturing sector employment has been provided by Census of Manufacturing Industries (CMI). For an assessment of structural change in the economy, CMI data may be more relevant because this covers enterprises with 10 or more persons. According to this data source, manufacturing employment has undergone stagnation during 1981 and 1986 when the increase was 1.3 per cent per year. During 1986 to 1990, there was 5.3 per cent per year average growth in employment.

Employment growth declined to less than 2 per cent per year during the first part of the nineties.⁴ During the nineties female employment growth was double that of male employment growth, which stands in sharp contrast with LFS data of 1995-96.

The balance of the evidence thus shows that there has been a slow and fluctuating increase in both agricultural and manufacturing employment. Other tertiary sectors (trade etc.) also absorbed labour at a rate higher than the manufacturing sector. Thus there is no evidence that the pattern of employment has undergone a significant structural change during this period.

It is not out of place here to say a few words on CMI employment data and its trend over the last two decades. It needs to be kept in mind that CMI data are not based on a complete census of all industrial activities in the country. An increase in the sample coverage under the survey is made almost on a yearly basis. The activities under CMI include large (50+ labors) and medium-sized (10-49 labors) enterprises, including handloom units with employment of 10+ labors. The total employment provided by CMI activities during the period 1990-98 estimates as nearly 15.5 million against that of 5.5 million provided during the period 1980-89. In other words, total employment in CMI activities has increased by 2.7 times between the two periods. The trend rate of increase in employment during the whole period 1980-1998 is estimated to be around 8 and 17 per cent for the selected 3- and 4-digit level respectively. The overall trend rate of increase has been in the range of 11 per cent. The increase in total employment in 1990-98 (over 1980-89) has been in the range of 106 per cent and 394 per cent for the selected 3- and 4-digit level activities respectively (See Figures 3.7 and 3.8)⁵. Among the 3-digit activities, the increase in employment between the two sub-periods has been the highest for non-metallic minerals (1261%) and lowest for non-electric machinery (- 12%). (Table A.3.16). Among the 4-digit activities, the employment increase between the two sub-periods has been the highest for bricks tiles & non-clay (1623%) and lowest for tea and coffee (- 8%) (Table A.3.17).

As regards National Labour Force Survey (LFS), the survey aims to collect comprehensive data on labor force both aged 10 and 15 years and above. The survey covers all the populations aged as above, disaggregated by urban and rural areas, who are engaged in economic activities as defined by UN Systems of National Accounts (1993), using Integrated Multipurpose Sample (IMPS) design. The design consists of 442 primary sampling units (PSUs), 252 for rural and 190 for urban areas, with probability proportional to size. The total size of the sample was 9790 households (LFS, 1999-2000).

3.3 The methodology of employment elasticity estimates

The growth of the overall economy requires that the manufacturing sector, which is the driving force of economic development, is able to generate additional job opportunities so that it may not only offer employment to the additions in labor force of the urban sector but also absorb some people from the subsistence agriculture sector, which is characterized by disguised un- and under- employment.

Hence, it is important to achieve a greater understanding of the responsiveness of manufacturing employment to the change in the factors that determine it. Two possible

⁴ This has similarity with LFS data, which show lower growth of employment during 1990-91 to 1995-96 compared to the previous period.

⁵ See Appendix Tables A.3.15.

determining variables of employment are output and wage rates. However, the labor demand function may be estimated independently irrespective of wages, capital or investment. For given complementary inputs, it is envisaged that a close relationship exists between employment and output flows. Hence, the research questions of this part of the analysis are: first, how employment intensive has been economic growth and how the employment intensity changed during the 80s and 90s and second, whether employment intensity of output (or value added) in the major economic sectors played a role in poverty trends in Bangladesh. This may be explored through estimating output (or value added) elasticity of employment. Low labor productivity and low-paid jobs in an economy usually signify the possibility of a higher incidence of poverty. In contrast, higher productivity and relatively higher wages suggest improvement in the poverty situation via an improvement of the standard of living and consumption. Thus, poverty alleviation is directly linked with employment generation, labor productivity and wages, which together improve upon income and entitlement.

From a poverty analysis point of view, growth of output/value added is not the only factor that is important. What may be yet more important is the extent to which output/value added is employment friendly. Employment elasticity, as is well known, is regarded as a useful statistic for assessing the employment intensity of economic growth. Higher employment elasticity in a sector would usually imply higher job creation for any given growth, by drawing less-skilled workers from the informal economy, which, in conventional interpretation of employment–poverty linkage, is expected to have a positive impact on income and hence on poverty reduction. However, higher job creation often takes place at the expense of productivity. In this case, an employment elasticity that exceeds unity is often associated with low-productivity jobs. Thus, from a poverty analysis point of view, aside from employment-friendly job creation, what is also important is the growth of labor productivity.

This part of the analysis, thus, addresses the relationships between poverty and different indicators of employment. In other words, it entails an understanding as to what extent poverty reduction strategies in Bangladesh has been a reflection of employment growth, as a whole. The link between output and employment can be examined both at the macro and micro levels. Due to data constraint, the analysis is limited to examining the employment aspects of the manufacturing sector, which is an important driving force for economic growth. Thus, this section is a case study analysis of the manufacturing sector in the context of employment elasticity and its implications for poverty.

The analysis is carried out separately for 23 sub-sectors at 3-digit level, and 23 sub-sectors at 4-digit level of Census Manufacturing Industrial (CMI) activities⁶. In all, CMI generates manufacturing data for 49 three-digit level activities, from which the present analysis included 23 categories of activities. The employment in the selected 23 categories at 3-digit level accounts for 77 per cent of the total employment in CMI activities⁷. However, because of the heterogeneous character within different sub-sectors it is important that the analysis is carried out also at some further disaggregated level.

⁶CMI covers industrial units (subject to Factories Act (1934)) under Bangladesh Standard Industrial Classification (BSIC). According to the BSIC (1986), various industries are grouped into 38 major industrial groups at 3-digit level, which are again divided into 162 industrial sub-groups at 4-digit level (1995-96). The activities include large (50+ labourers) and medium-sized (10-49 labourers) enterprises, including handloom units with employment of 10+ labourers. See Tables 3.4 and 3.5 for the list of selected sub-sectors at 3- and 4- digit level.

⁷ See Appendix Tables A.3.2 and A.3.3; for the employment weights of individual sub-sectors (with their ranks) at 3- and 4-digit level, see Appendix Table A.3.12.

Hence, further 23 (out of 162) four-digit level activities are selected in the current analysis, the employment of which accounts for 58 per cent of the total CMI employment. Employment and value added provided by the CMI industries constitute more than half of those of the whole manufacturing sector. In terms of coverage, thus, the analysis fairly represents the manufacturing sector. The analysis has considered two sub-periods, 1980-89 and 1990-98, referred to as approximately 1980s and 1990s, and changes, if any, between these two periods have been analysed.

3.4 Changes in employment elasticity and implication for poverty

The estimate of output (or value added) elasticity measures the responsiveness of employment with respect to a change in output (or value added). A positive sign of the estimate indicates a positive association between output and employment. Higher employment elasticity, in usual conditions, implies greater job creation, which should have a potentially positive impact on poverty reduction. The conventional wisdom, however, is that employment elasticity exceeding unity is largely associated with low-productivity jobs, often at the expense of labor productivity.

As mentioned earlier, the present analysis is based on 23 categories of activities selected from 3-digit level and 23 categories from 4-digit level activities. The employment in the 3-digit category industries, as mentioned earlier, accounts for 77 per cent, and that in the 4-digit category units accounts for 58 per cent of total employment in CMI activities. The following analyses have been conducted for the present study, for both 3- and 4-digit level of CMI activities:

- Employment elasticity with respect to value added and output, for total volume
- Employment elasticity with respect to value added and output, standardized to per enterprise.

3.4.1 Employment elasticity with respect to value added and output (for total volume)

Table 3.3 shows employment elasticities with respect to value added and output (for total volume) for two sub-periods, 1980-89 and 1990-98, referred to approximately as the 1980s and 1990s. It can be seen from the table that employment elasticity with respect to value added for the total period 1980-1998 is estimated at 0.76 and 0.78 for the 3-digit and 4-digit level activities respectively. Similarly, the employment elasticity with respect to output is estimated at 0.78 and 0.69 for the 3- and 4 digit level activities respectively. For all the cases of value added and output, at 3-digit or 4-digit level, the estimates are found to be statistically significant, at more than 99 per cent⁸.

⁸ In case of individual sub-sectors, for both value added and output, all the estimates other than for the textile manufacturing and non-electrical machinery are significant at more than 99 per cent level. The estimates for these two activities are significant at more than 95 per cent level.

Table 3.3
Value added/Output Elasticities of Employment in Census
Manufacturing Industrial (CMI) Activities

Level	Value Added/ Output	Value Added/Output Elasticity of Employment		1980-98	% Change between Two periods
		1980-89	1990-98		
3- Digit	Value added	.7463	.6859	.7580	- 8.1
4- Digit	Value added	.7848	.7263	.7845	- 7.5
3- Digit	Output	.7557	.7226	.7788	- 4.4
4- Digit	Output	.7359	.6046	.6929	- 17.8

Source: Census of Manufacturing Industries, various years.

Table 3.4
Ranges of Value Added Elasticities of Employment at 3-Digit Level

Range of VA elasticity of employment (1980-98)	No of activities under study	% of total CMI employment	Sub-sector
<0.50	7 (30.4)	45.5	321 Textiles Manufacturing 341 Paper & Paper Products 352 Industrial & Chemicals 353 Other Chemical Products 371 Iron & Steel Basic 382 Fabricated Metal Products 383 Non-Electrical Machinery
0.50 – 0.75	8 (34.8)	13.9	312 Food Manufacturing 332 Furniture & Fixture 342 Printing & Publishing 351 Drugs & Pharmaceuticals 356 Rubber Products 357 Plastic Products 384 Electrical Machinery 385 Transport Equipment
0.75 & above	8 (34.8)	17.8	311 Food Manufacturing 314 Tobacco Manufacturing 322 Textiles Manufacturing 324 Leather & lt. Products 331 Wood & Cork Products 361 Pottery 369 Non-Metallic Minerals 381 Fabricated Metal Products
Average 0.76	23 (100.0)	77.2	All 23 sub-sectors

Source: Same as for Table 3.3.

Table 3.5
Ranges of Value Added Elasticities of Employment at 4-Digit Level

Range of VA elasticity of employment (1980-98)	No of activities under study	% of total CMI employment	Sub-sector
<0.50	2 (8.7)	1.5	3533 Soap & All Detergents 3713 Iron& Steel Re-Rolling
0.50-0.75	5 (21.7)	10.9	3116 Oil Except Hydro 3126 Tea& Coffee Processing 3211 Cotton Textiles 3321 Mfg of Wooden Furniture 3832 Ag. Machinery& Equipment
0.75 & above	16 (69.6)	45.8	3118 Grain Milling 3122 Bakery Product 3124 Manufacture of Gur 3128 Edible Salt 3143 Bidies Manufacturing 3214 Silks & Synthetic Textiles 3216 Handloom Textiles 3223 Knitwear 3231 Readymade Garments 3241 Tanning & Leather Finishing 3311 Saw & Planning Mills 3318 Bamboo & Cane Product 3611 Earthenware 3691 Bricks Tiles & Non Clay 3814 Furniture & Fixture 3857 Ship Breaking Dismantling
Average 0.78	23 (100.0)	58.2	All 23 sub-sectors

Source: Same as Table 3.3.

Comparing the elasticity between the 1980s and 1990s, it can be seen that for all the selected activities at both 3- and 4-digit level (with either value added or output), the elasticities for the latter period (1990s) have declined. The rate of decline for value added has been in the range of 8 per cent for 3-digit level and 7.5 per cent for 4-digit level. In the case of output, however, the picture with regard to the rate of decline is mixed: in the range of 4.4 per cent for 3-digit, and as high as 17.8 per cent for 4-digit level of activities.

The much higher values of manufacturing employment elasticity in the 1980s imply that the manufacturing sector used to generate more jobs of relatively less-skilled categories, possibly from the rural and informal economy. The lower values of employment elasticities during the 1990s indicate that the employment generating capacity of the manufacturing sector has declined.

Tables 3.4 and 3.5 present ranges of value added elasticities of employment at 3- and 4- digit level respectively⁹. As can be seen from Table 3.4, some 30 per cent of the 3-digit activities under study (7 out of 23) entailing more than 45 per cent of total CMI employment have value added elasticities less than 0.5. Nearly 35 per cent (8 out of 23) of the activities (entailing about 14 per cent of the total CMI employment) have elasticities between 0.50 and 0.75, with again 35 per cent (8 out of 23) of the activities,

⁹ For a similar analysis on output elasticities, see Appendix Table A.3.2.

entailing 18 per cent of total CMI employment) have elasticities more than 0.75. A complete list of activities by range of elasticities can be seen from table 3.4.

As can be seen from Table 3.5, the picture is somewhat different in the case of 4-digit level activities. Relatively fewer numbers of activities seem to have lower elasticities with greater number of activities having relatively higher elasticities. Some 6 per cent of the 3-digit activities under study (2 out of 23) entailing less than 9 per cent of total CMI employment have value added elasticities less than 0.5. Nearly 22 per cent (5 out of 23) of the activities (entailing about 10 per cent of the total CMI employment) have elasticities between 0.50 and 0.75, with 70 per cent (16 out of 23) of the activities, but entailing 47 per cent of total CMI employment) have elasticities more than 0.75. It can be seen that the garments industry, the number one export sub-sector providing more than 5 million jobs, mostly women, with employment elasticity of 0.96, falls in this category. A complete list of activities by range of elasticities can be seen from Table 3.5.

Similar finding also applies to output elasticities, which can be found from Appendix Tables A.3.2 and A.3.3.

Appendix Tables A.3.4 through A3.11 provides useful information on employment elasticities on individual industries within CMI activities, which, as mentioned earlier, include largely medium and large enterprises. The estimates of elasticity have been found to be highly significant for nearly all the activities, for both value added and output and at 3- and 4-digit level (standard errors are not presented here). The sign of the estimates being positive for most of the activities indicate a positive association between output (value added) and employment. The estimates for some of the activities are found to exceed unity indicating that a one per cent increase in output in such activities would lead to more than one per cent increase in employment.

The activities having elasticity estimates (for value added) more than unity at 3-digit level are: Food Manufacturing (311), Tobacco Manufacturing (314), Leather and Leather Products (324), Wood and Cork Products, Pottery (361) and Non-metallic Minerals (369) (Table A.3.4). Of the 3-digit category activities (for value added), Non-metallic Minerals (369) is found to have the highest elasticity e.g., 1.70. Non-electrical Machinery is found to have the lowest elasticity e.g., 0.16. Among the 4-digit level activities under study, as evident from Table A.3.5, only three activities have elasticity more than unity. These are: Bakery Product (3122), Tanning and Leather Finishing (3241) and Bricks, Tiles and Non-clay (3591) (Table A.3.5). Among the 4-digit industries, the highest elasticity (1.19) was found for Bricks, Tiles and Non-clay and lowest (0.34) found for Iron and Steel Re-rolling. The Readymade Garments industry, which is the country's number one export sub-sector, providing employment for more than 5 million (mostly women), has an employment elasticity (with respect to value added) of 0.96. Such high elasticity estimates for some of the activities seem to be consistent with conventional interpretations of relatively labor intensive and low productivity jobs in these sub-sectors.

For most of the industries, however, the estimates for value added (and output) elasticity are found to be less than unity, much lower values in some cases, indicating that certain increase (decrease) in value added (output) would lead to a less than proportionate increase (fall) in employment in these activities. Such activities under the 3-digit category are: Non-electrical Machinery (0.17), Iron and Steel Basic (0.21), Fabricated Metal Products (0.31) and other Chemical Products (0.37) (Table A.3.4). At the 4-digit level,

the activities such as Soap & Detergents (0.28) and Iron & Steel Re-rolling (0.34) are among those showing very low values of elasticity. Returns to scale, however, are greater than unity for activities such as Food Manufacturing, Textiles Manufacturing, Furniture and Fixture, Paper and Paper Products, Printing and Publishing, Drugs and Pharmaceuticals, Other Chemical Products, Plastic Products, Fabricated Metal Products and Electrical Machinery (not shown in Tables). The remaining activities have returns to scale less than unity. At 4-digit level, returns to scale are greater than unity for activities such as Edible Salt, Cotton Textiles, Handlooms Textiles, Knit wear, Readymade Garments, Bamboo and Cane Products, Iron and Steel Re-rolling and Furniture and Fixture. All the remaining activities have returns to scale less than unity.

3.4.2 Employment elasticity with respect to value added and output, standardized to per enterprise

Following the calculation of elasticities for the total volume of value added/output in the preceding section, we have, in this section, addressed the elasticities, taking value added and output standardized to per enterprise. The estimates of elasticities for per enterprise value added are 0.55 and 0.61 for the 3- and 4-digit levels respectively. For per enterprise output, the estimates are found to be 0.57 and 0.51 for the 3- and 4-digit level respectively (See Appendix Table A.3.1).

In comparing the elasticity estimates between the 1980s and 1990s, it can be seen from the table that for all the selected activities at both the 3- and 4-digit level (with either value added or output), the elasticities for the latter period (1990s) have declined. As can be recalled from table A.3.1 in the earlier section, the elasticities showed a decline in the 1990s, calculated on total volume of value added and output. The rate of decline in this case, however, has been relatively much higher, 13 per cent for value added and 11 per cent for output at 3-digit level; and 14 per cent for value added and as high as 25 per cent for output at 4-digit level.

3.5 Changes in employment elasticities

The experience of other developing countries shows that employment elasticities close to unity would be desirable for poor countries as it does not lead to rapid expansion of low productive employment (in case of much higher elasticity) or too little employment (in case of low elasticity). Apart from such historical guidelines, a direct link between employment elasticity (calculated above) and poverty is difficult. In terms of historical experience, the elasticities for most sub-sectors are in the desirable range.

Same amount of employment growth through the growth of low employment elasticity sectors than through high elasticity sectors can have a greater degree of poverty alleviation impact. Data presented in Tables A.3.16 – A.3.19 (Appendix Tables) show that generally the sub-sectors, which have undergone a decline in employment elasticity, experienced higher employment growth than the others. In addition, Tables A.3.20-A.3.21 (Appendix Tables) show that wage increases generally have been much faster in industries with more employment growth.

In this regard, mention can be made of the case of 3-digit sub-sectors like 322:Textile manufacturing, 324:Leather and Leather Products 342:Printing and Publishing 382:Fabricated metal and the case of the 4-digit sub-sectors such as Bakery, Knitwear, Readymade Garments and Leather. The only exception is Non-metallic

Minerals sub-sector. These features reveal some positive prospects of poverty alleviation through growth of the relevant manufacturing sub-sectors.

3.6 Summary and concluding remarks

Employment elasticity, as is well known, is regarded as a useful statistic for assessing employment intensity of economic growth. The preceding discussion is based on a case study analysis of the manufacturing sector in the context of employment elasticity and its implication for poverty. It is evident from the analysis that as far as CMI activities are concerned, output (and also value added) growth are positively associated with employment. Output (and value added) is found to have explained more than ninety per cent of variation in employment for the period under study.

The estimates of elasticity have been found to be positive and highly significant for nearly all the activities, for both value added and output and at 3- and 4-digit level sub-sectors. The elasticity estimates for some of the activities are found to exceed unity indicating that a one per cent increase in output in such activities would lead to more than a one per cent increase in employment. Such activities at the 3-digit level are: Food, Tobacco, Leather, Wood, Pottery and Non-metal. Among these, Non-metallic Minerals is found to have the highest elasticity (e.g., 1.70, with respect to value added)). Among the 4-digit level activities, those showing elasticity exceeding unity are Bakery, Tanning and Bricks. Among the 4-digit industries, the highest elasticity was found for Bricks (e.g., 1.2) and lowest for Steel Re-rolling (e.g., 0.34 with respect to value added). The Readymade Garments industry, which is the country's number one export sub-sector, providing more than half a million employment (mostly women, at that), has an employment elasticity (with respect to both value added and output) of 0.96. Such high elasticity estimates for some of the activities seem to be consistent with conventional interpretations of relatively labor intensive and low productivity jobs in these sub-sectors.

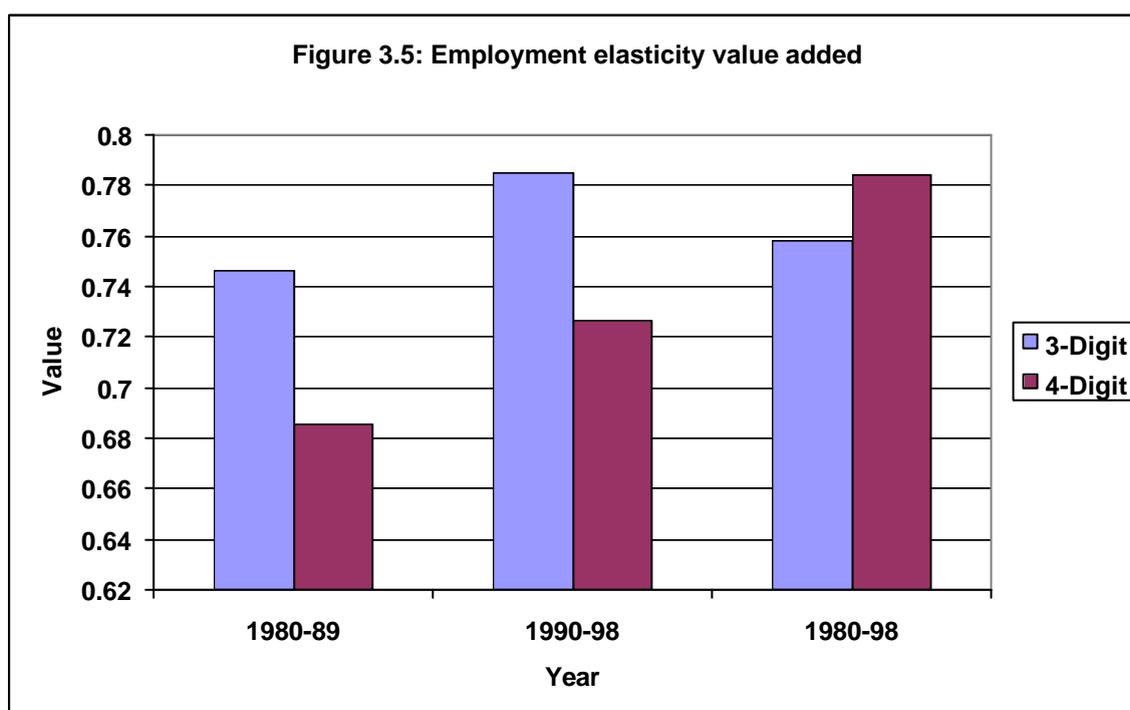
For most of the industries, however, the estimates of value added (and also output) elasticity are found to be less than unity, much lower in some cases, indicating that certain increase (decrease) in value added (output) would lead to a less than proportionate increase (fall) in employment in these activities. Such activities at the 3-digit level having low value of elasticities are Non-electrical Machinery, Iron, Fabricated Metal and Chemical Products. Among these, Non-electrical Machinery is found to have the lowest elasticity (e.g., 0.16). At 4-digit level, the activities such as Soap and Steel Re-rolling are among those showing extremely low values of elasticity.

Compared to the 1980s, the employment elasticities have almost invariably declined during the 1990s. Relatively lower values of employment elasticity in the 1990s indicate that the employment generating capacity of the manufacturing sector from a given rate of output growth has declined over time.

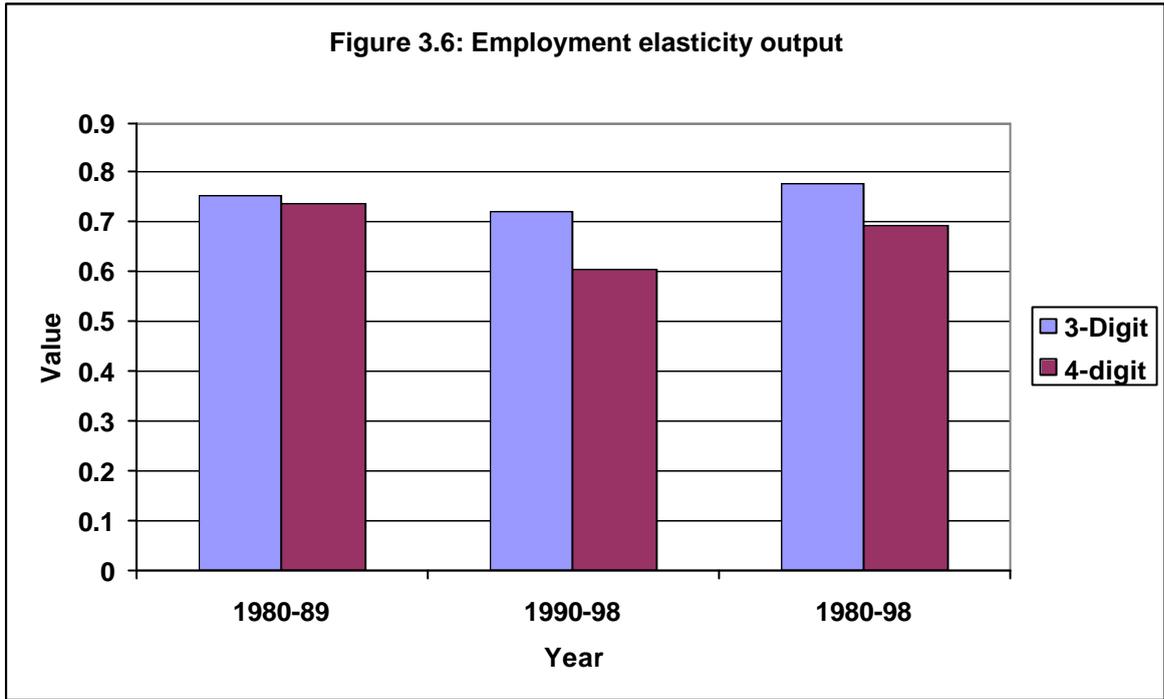
From the perspective of poverty analysis what matters is not the growth alone but also the extent to which it is employment friendly. For any given growth, employment generation would be higher for growth in activities having higher elasticities. Such activities at the 3-digit level are: Food, Tobacco, Leather, Wood, Pottery, Non-metallic minerals, and Textile. Among these, Non-metallic Minerals is found to have the highest elasticity. Among the 4-digit level activities, the high elasticity activities are Bricks, Bakery, Tanning, Silk textiles, Handlooms, Grain mills and Readymade garments. The highest elasticity was found for Bricks and the lowest for Steel Re-rolling.

Employment generation per unit of output growth would be limited for those activities having relatively lower elasticities. Such low elasticity activities at the 3-digit level are, among others, Non-electrical Machinery, Iron, Fabricated metals and Chemical Products. Among these, Non-electrical Machinery is found to have the lowest elasticity. At the 4-digit level, the activities such as Soap and Steel Re-rolling are among those showing extremely low values of elasticity. However, along with the generation of employment-friendly growth, it is imperative that productivity is also increased which have a direct bearing on income and hence poverty.

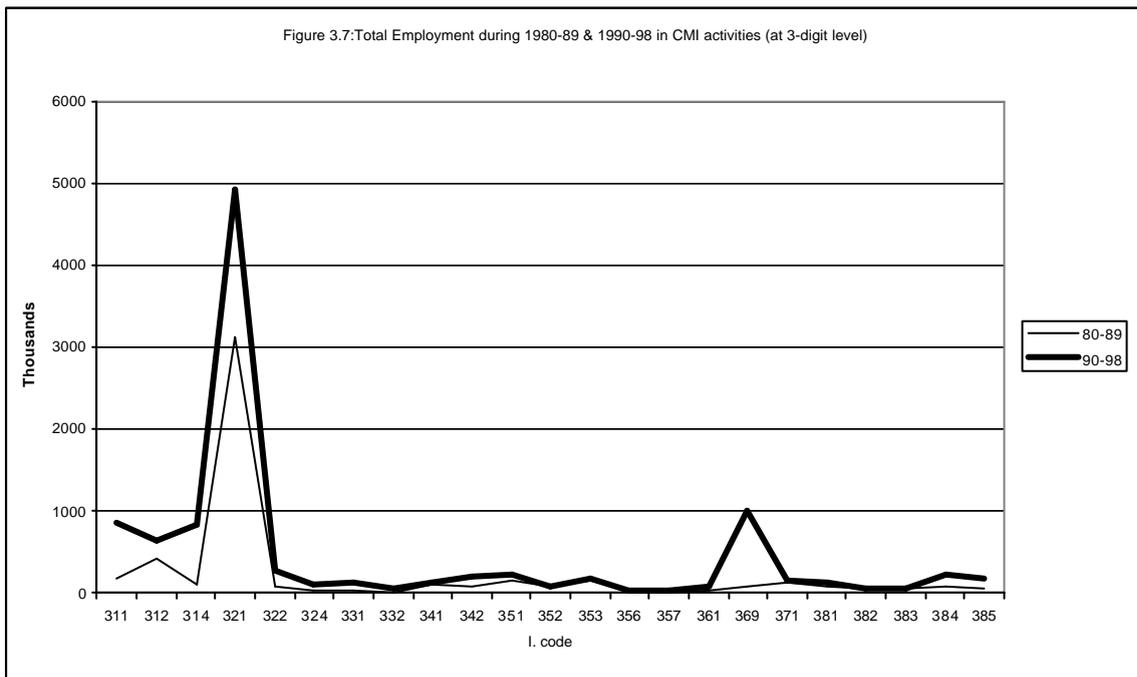
Therefore, it may be argued that if total employment can be increased through high growth of sectors where the elasticity of employment has declined, with an associated increase in productivity and wage, this can be an effective step for poverty reduction. Leather and leather product, knitwear and RMG, food manufacturing and printing and publishing are among such sub sectors (tables A. 3.18 to A.3.21). The first two are the largest export sectors of the country. Thus, the current sectoral growth pattern, if pursued vigorously, can help in both GDP growth and poverty reduction.



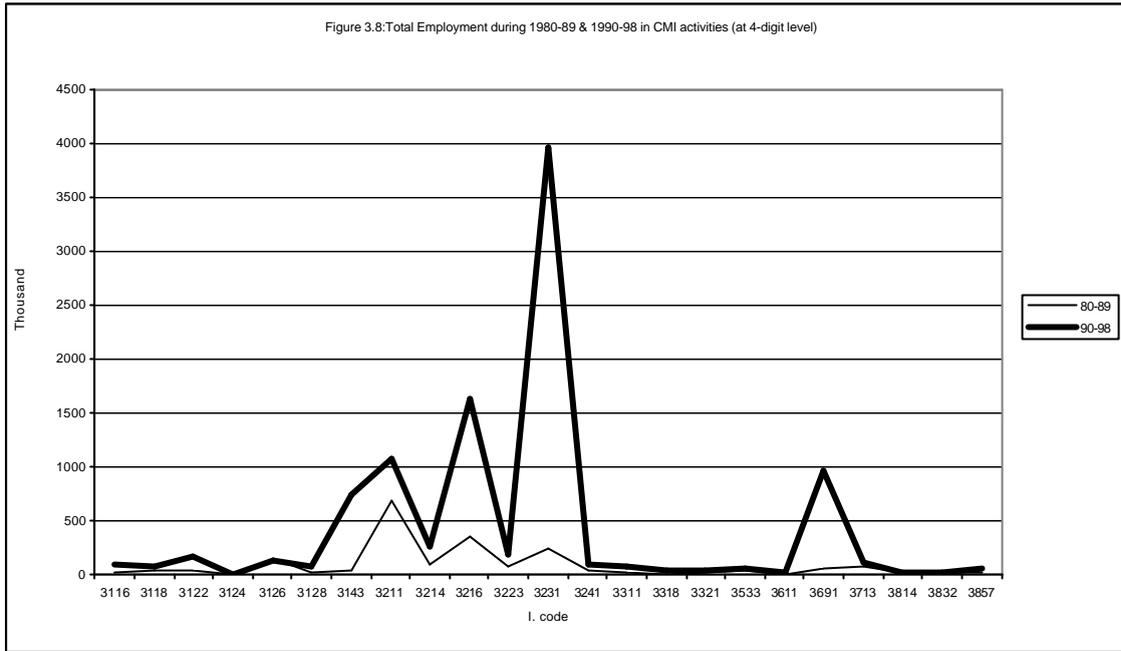
Source: Prepared from Census of Manufacturing Industries data.



Source: Same as for Figure 3.5.



Source: Appendix Table A.3.13.



Source: Appendix Table A.3.14.

4. Wage Rate and Poverty

4.1 Trends of real wage rate

Real wage rate indices in construction, manufacturing and agriculture sectors are presented in Table 4.1. These data show that there have been increases in real wage rate indices in all sectors. The increase has been smaller in the case of construction and agriculture compared to the manufacturing sector (9, 10 and 23 points increase for the three sectors, over 1990-91 to 1999-2000).¹⁰ Moreover, the real wage indices in construction and agriculture went through fluctuations as demonstrated by annual data.

Table 4.1
Wage Rate Indices By Sector
(Base: 1969-70=100)

Year	Nominal indices				Real wage indices			
	General	Manufacturing industry	Construction	Agriculture	General	Manufacturing	Construction	Agriculture
1990-1991	1482	1575	1487	1321	107	114	107	95
1991-1992	1553	1641	1512	1425	107	113	104	98
1992-1993	1638	1724	1579	1523	113	119	109	105
1993-1994	1709	1828	1598	1593	114	121	106	106
1994-1995	1786	1947	1613	1653	111	121	100	103
1995-1996	1900	2064	1754	1738	114	123	105	104
1996-1997	1989	2161	1848	1804	120	130	111	108
1997-1998	2141	2395	1990	1870	122	137	114	107
1998-1999	2259	2522	2163	1950	118	131	113	102
1999-2000	2390	2702	2286	2037	121	137	116	105

Source: BBS: LFS (Various Years), Economic Survey 2001.

The rising trend of wage rates in modern sectors is in conformity with a decline of the male underemployment rate which has already come down to one digit level in the urban areas (Table 5.1) thus reflecting a tightening of the market. With the growing importance of rural non-farm self-employment, the opportunity cost of labour is rising. Both urban and rural real wage rates have to respond to the rise. Moreover, when employed in the informal sector, workers simultaneously engage in a number of activities and try to enhance earning which they cannot do when they are in full time employment in manufacturing and therefore the wage rate in the latter has to be higher.

However, the overall real wage indices in both agriculture and manufacturing stagnated during the late nineties (Table 4.1). This explains, at least in part, why GDP growth during the late nineties failed to achieve poverty reduction during this period. The

¹⁰ Real wage index (base 1985-86) has been published by BBS only for these ten years.

lesson from this experience is that GDP growth cannot lead to poverty alleviation if does not generate demand for hired labour and a rise in real wage rate. A decline in the employment elasticity of output, as has been shown in Chapter 3 is consistent with the observed pattern. Similar research on employment elasticity in rural agricultural sectors should be undertaken.

Table 4.2
Real wage rates (per person per day) in urban and rural areas: 1989-2000 (base: 1985-86)

Sector	1999-2000		1995-96		1989	
	Male	Female	Male	Female	Male	Female
Agri/Rural	26.6	14.8	23.0	13.0	23.4	16.8
Non-agricultural/Urban	36.9	25.6	32.2	19.3	33.4	15.2

(Taka)

Note: For '95-96, wage rate is given for rural-urban classification. For other years, by agriculture and non-agriculture (rural & urban consumer price index uses based year of 1985-86 = 100)

Source: BBS: LFS (Various Years), Economic Survey 2001.

Table 4.2 presents real wage data for male and female labour calculated on the basis of data from LFS. Real wage data (LFS) shows that between 1989 and 1995-96, there has been a stagnation of male real wage rate. Real wage rate for male labour, in both rural and urban areas increased during the late nineties. However, the increase in male real wage is only 12 per cent over 11.5 years. The real wage rate of urban female labour increased by about 60 per cent over the entire period. In contrast women's real wage in the rural areas showed a much smaller increase. One can therefore easily see the rationale behind the recent trend of rural to urban migration of female workers.

4.2 Gender differences in wage rate and female poverty

The analysis of underemployment, structural change in the labour market, wage rates, and poverty have so far been based on aggregate figures for the male and female labour force (though some of the tables contain gender disaggregated data). Male-female difference in wage rate deserves emphasis because these differences have implications for gender equity and also for the overall functioning of the labour market and poverty levels. Such differences may also highlight the need for rethinking about the industrial development process based on surplus labour.

The wage rate of female workers is much lower than the wage rate of male workers (Table 4.3). The ratio between the male and female wage rates increased in the rural/agricultural sector, from 1.4 in 1984-85 to 1.8 in 1995-96 and was found at the same level (1.8) in 1999-2000. Thus in the rural areas, the growth of male wage rate has been much higher than the growth of the female wage rate. In the case of urban wage rate, the ratio declined, and was 2.38, 1.67 and 1.4 during the three years mentioned above. During this period there has been an expansion of employment opportunities for women in the urban areas and such expansion has been instrumental in raising their wage rate. Some of the wage increase may have been due to an increase in skills, experience and education among the female workers.

Rural female labour's real wage rate in 1999-2000 was lower than their real wage in 1989 (Table 4.2). The real wage trend of female workers implies that rural households depending on female wage for a substantial part of their income face a continuation of poverty. This group has hardly benefited from the growth of the rural economy.

Table 4.3
Male and female Wage Rates: 1989 to 1999-2000

Sector	1999-2000		1995-96*		1989	
	Male	Female	Male	Female	Male	Female
Agri/Rural	63.0	35.0	44.0	25.0	31.6	22.7
Non-agricultural/Urban	85.0	59.0	60.0	36.0	46.0	20.9

(Taka)

Note: For '95-96, wage rate is given for rural-urban classification. For other years, by agriculture and non-agriculture (rural & urban consumer price index uses based year of 1985-86 = 100)

Source: BBS: LFS (Various Years), Economic Survey 2001.

A number of factors have contributed to the low level of wage rate of women. The following reasons deserve attention in the context of formulation of policies for women's employment.

- i) During the last decade, the growth of the female labour force has been much higher than the growth of the male labour force. An increase in female labour force occurred due to both increasing poverty in households who do not have male workers as well as due to the social changes, which resulted in readiness to accept women's employment.
- ii) Unemployment and underemployment rates are higher among women compared to men. The difference is much higher in the case of underemployment. The average underemployment rate for men and women together is high because of the high figure for women.
- iii) One can also argue that the intensity of poverty of female wage labourers' households and the low wage rate received by women reinforce each other. Since the uneducated female wage labourers usually come from poor households, their bargaining position is weaker than male labourers, which in turn makes them vulnerable to low wage and poverty. Once the young women get a job, there is a pressure from her family that she cannot lose the job, however arduous the work may be and however large the male-female wage difference is.
- iv) In the rural areas, job segmentation along gender line is widespread. In most districts, women are not hired for field operations of major crops. Therefore the total demand for female wage labour is small.

The implications of the low female wage rate for the poverty situation becomes clear from Table 4.4. The female wage rate is such that a day's wage cannot maintain a family of three members even if she gets year round employment (Table 4.4). The situation is worse for rural women. Female wage rate usually supported less than 2 members above the poverty level. The 1999-2000 urban male wage rates supported 3.2 members compared to 2.2 by the female wage.

The above observations have far reaching implications for gender equity in the labour market and women's poverty situation as well as for the growth of labour intensive industrialization. Women's wage being 45 and 31 per cent lower than men (in the rural and urban areas respectively), families depending on female labour is subject to more

intense poverty. Section 5 of the present study will examine whether the households with female wage labourer face a greater probability of being poor (Hossain 1996).

The difference between male and female earning will be even higher than the difference in wage rate because women get employment for much smaller number of days than men, especially in the rural areas. Table 5.11 shows that underemployment rate is substantially higher among the female labour force).

Table 4.4
Male and Female Wage Rates Relative to (Moderate) Poverty Line

Year	Sector	Wage Rate (in Taka/day)		Number of persons who can be sustained above poverty level by a days wage	
		Male	Female	Male	Female
1989	Agriculture	31.6	22.7	2.1	1.5
	Non-agriculture	46.0	20.9	2.1	1.0
1995-96	Rural	44.0	25.0	2.2	1.3
	Urban	60.0	36.0	2.5	1.5
1999-2000	Agriculture	63.0	35.0	2.5	1.4
	Non-agriculture	85.0	59.0	3.2	2.2

Source: Calculations based on BBS: LFS (Various Years), Economic Survey 2001.

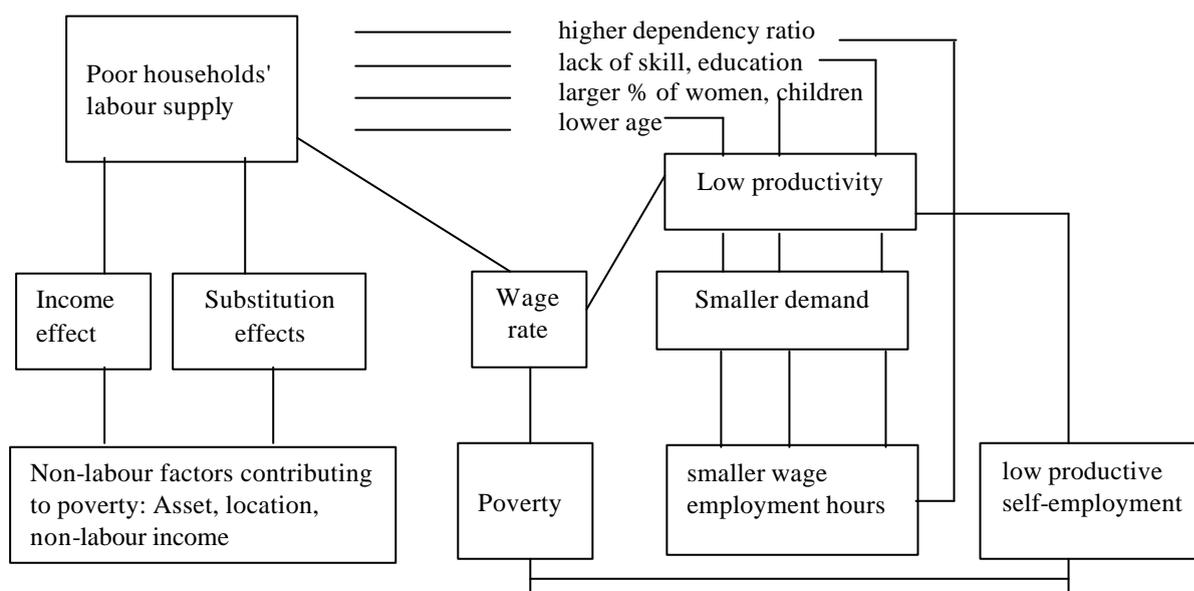
5. Interdependence of Labour Market and Poverty: Micro Level Analysis

In the labour market analysis for countries with a high population density, the lack of adequate demand for labour, reflected in a surplus labour situation, has been the predominant concern until the recent past. An analysis of the links between employment of individual workers and poverty requires an understanding of both the supply side of labour and the demand side. The picture of the supply side will be viewed through an examination of (i) the characteristics of the labour force, especially the educational qualifications of the poor and non-poor workers; and (ii) the labour force participation rate, the number of workers in a household and their characteristics.

The situation of the poor in the labour market will also depend on a range of demand side influences. The demand side will be reflected in the extent of employment, sectoral pattern, mode and type of employment. The difference between the poor and non-poor with respect to these characteristics will be examined.

The following schematic diagram shows some of these interlinkages.

Figure 5.1: Changes of Employment Poverty Linkage



5.1 Poor households' labour force characteristics

Though the demographic aspects of households' labour supply are not amenable to policies in the short run, the differences between poor and non-poor in these respects may be highlighted to provide an idea about whether such characteristics are important contributors to poverty.

Among the characteristics of the supply of labour, the size of the family labour force, and gender composition are likely to differ with the poverty status of households. The current hypothesis is that a family with a younger head of household and larger percentage of female workers has a higher probability of being in poverty.

In addition, better skill and better educational endowment of the working age members should influence their productivity positively and through such productivity, should enhance the wage rate and earning prospects of the hired workers and self

employed workers respectively. The labour force from poor households is likely to be faced with more disadvantages on this front.

The ownership of assets, especially land is expected to exert a negative effect on the possibility of being below the poverty line. Therefore these characteristics deserve attention.

Data on the labour force participation ratio, skill and the educational distribution of the work force and their type of employment are presented in Tables 5.1 to 5.5.¹¹

Table 5.1
Average age of poor & non-poor workers by location

Location	Poverty status	Age in years
Rural	Poor	34.62
	Non-poor	35.66
	Total	34.99
Urban	Poor	34.04
	Non-poor	34.75
	Total	34.45

Table 5.2
Labour force participant as per cent of total 15+ age family members among poor and non-poor households in the urban and rural areas

Area	Poverty situation	Male LFPR	Female LFPR	(Per cent)
				Male & Female LFPR
Rural	Poor	92.82	63.86	77.09
	Non-poor	89.90	66.30	77.09
Urban	Poor	92.40	38.36	64.70
	Non-poor	86.92	36.46	62.60

Table 5.3
Number of male and female labour force members by poverty status and location

Area	Poverty situation	No. of male LF, Age 15+	No. of female LF, Age 15+	No. of Male+Female LF (15+)
Rural	Poor	1.24	.81	2.05
	Non-poor	1.36	.88	2.25
	Total	1.28	.84	2.12
Urban	Poor	1.20	.51	1.71
	Non-poor	1.29	.49	1.78
	Total	1.25	.50	1.75

¹¹ Data presented in the tables and figures of this chapter are based on the Labour Force Survey of 1999-2000, published in 2002.

Tale 5.4
Working age members and family size by poverty status and location

Area	Poverty situation	No. of male Age 15+ years	No. of female Age 15+ years	No. of Male+Female (15+) years	Family size
Rural	Poor	1.38	1.32	2.71	5.05
	Non-poor	1.59	1.40	2.99	4.57
Urban	Poor	1.35	1.36	2.72	5.15
	Non-poor	1.59	1.46	3.05	4.51

Table 5.5
Poor and non-poor workers' distribution by education

		(Per cent)	
Workers sex	Workers education	Poor	Non-poor
Female	Never go to school	68.0	42.1
	Class-I to V	21.7	25.8
	Class-VI to VIII	6.3	12.6
	Class IX to X	2.2	6.8
	SSC/HSC & Equivalent	1.4	8.9
	Bachelor & above, other diploma	.4	3.7
	Total	100.0	100.0
Male	Never go to school	50.3	22.0
	Class-I to V	27.3	21.0
	Class-VI to VIII	12.6	16.8
	Class IX to X	4.1	9.0
	SSC/HSC & Equivalent	4.5	18.1
	Bachelor & above, other diploma	1.3	12.6
	Total	100.0	100.0
Male & Female	Never go to school	56.7	28.6
	Class-I to V	25.2	22.6
	Class-VI to VIII	10.3	15.4
	Class IX to X	3.4	.3
	SSC/HSC & Equivalent	3.4	15.1
	Bachelor & above, other diploma	1.0	9.9
	All	100.0	100.0

Workers from poor households are found to be younger (Table 5.1) though the difference is small. The average age of poor workers is 34.4 years, vis-à-vis 35.2 years for the non-poor.

Data presented in table 5.2 shows that the activity ratio among poorer families is higher. The differences are larger in the urban areas, for both men and women. The family size is larger among the poor household whereas the number of labour force participants is smaller than among the non-poor (Table 5.3 and 5.4). The number of family members aged above 15 years is lower among the poor compared to the non-poor (Table 5.4). Thus the ratio of average non-earners to earners is larger for poor households. The average number of female earner is larger among poor and the average number of male earner is smaller. Thus there are evidences of demographic disadvantages adversely affecting the situation of the poor households.

The other important aspect of the difference in the labour force characteristics of the poor and non-poor households, is the educational endowment of the workers. Such endowment is likely to be lower among the poor. The rationale is that they may not

consider it worthwhile to invest in human capital because of their priority for immediate consumption. They may not be in a position to bear the expenses of schooling of children, particularly girl children who will leave the family after marriage. Since such priorities are rational responses to poverty, governments in many countries invest in education and especially in primary education. The same is true for Bangladesh. In addition to free primary education, scholarship programmes for secondary students have been introduced.

Making education free may not be sufficient for keeping poor children in school. Investment in human capital requires that labour force participation be postponed, indicating that there is an opportunity cost of such an investment. Still, there has been a positive impact of government investment in school education and enrolment has increased both among the poor and the non-poor.

How much the composition of education differs among the labour force in the poor and non-poor group is shown in Figure 5.1 (and Table 5.5). The data shows some interesting features. The percentage of workers with SSC or higher education is much smaller among the poor compared to the non-poor. This holds for both male and female labour force. A large percentage of the female labour force, both poor and non-poor is without any schooling.

Table 5.6 shows the skill endowment. It must be clarified that in most cases the attainment of skill may be through on the job training and not through institutional training. From the questionnaire used in the labour force survey, these two cannot be distinguished. The percentage of skilled workers is much lower among the poor compared to the non-poor and among women compared to men.

Figure 5.1: Percentage Distribution of Male and Female Workers from Poor and Non-poor Households by Education.

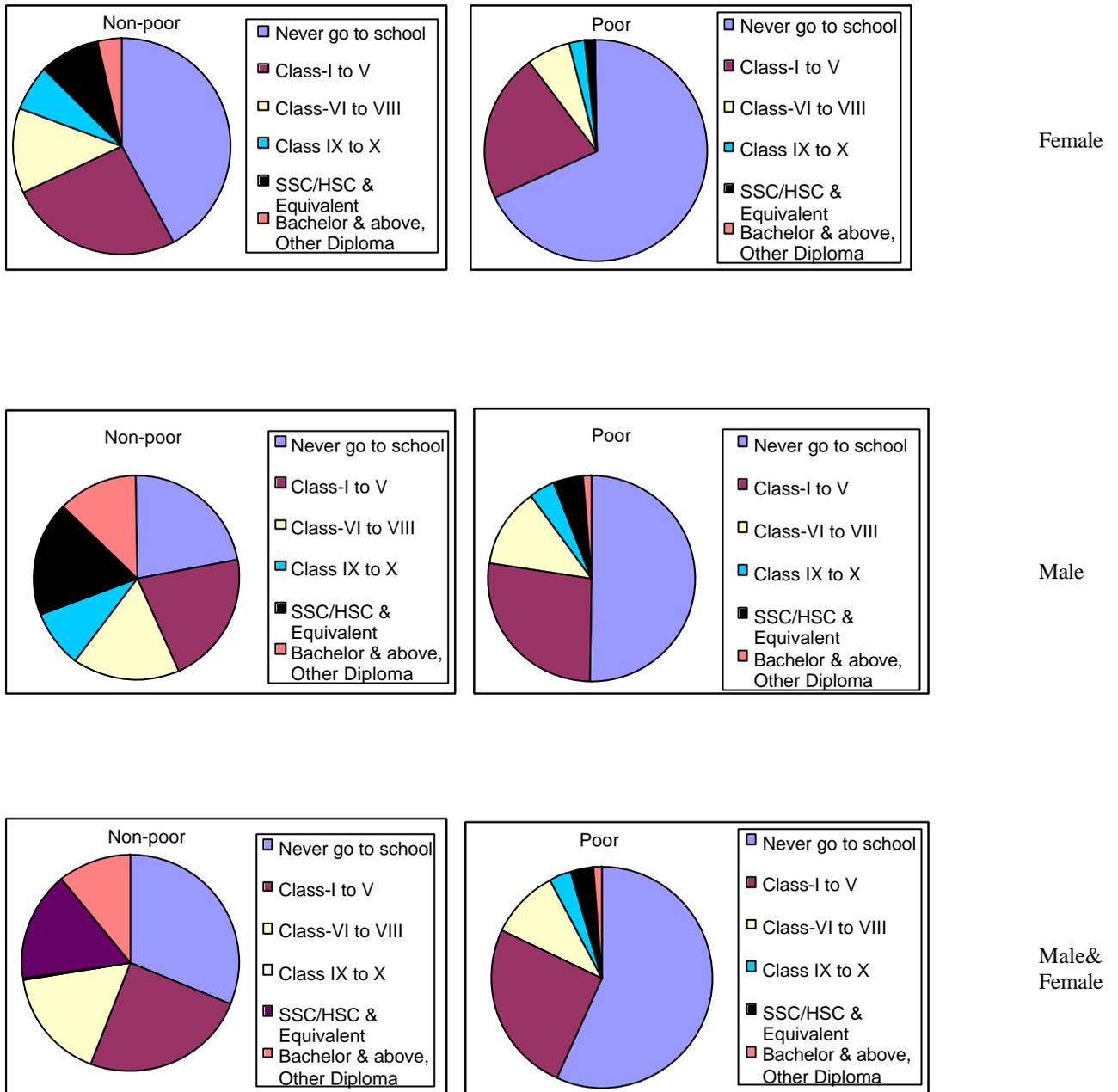


Table 5.6
Distribution of poor and non-poor labour force by skill

(Per cent)

Area	Workers' sex	Poverty status	Skilled	Unskilled	Total
Rural	Female	Poor	8.9	91.1	100.0
		Non-poor	9.0	91.0	100.0
		Total	8.9	91.1	100.0
	Male	Poor	32.6	67.4	100.0
		Non-poor	45.5	54.5	100.0
		Total	37.2	62.8	100.0
Urban	Female	Poor	8.5	91.5	100.0
		Non-poor	14.6	85.4	100.0
		Total	11.9	88.1	100.0
	Male	Poor	26.7	73.3	100.0
		Non-poor	40.4	59.6	100.0
		Total	34.6	65.4	100.0

Table 5.7
Mode of employment by poverty situation

(Per cent)

Area		Employment status in last week					Total
		1 Self employment	2 Employer	3 Salaried worker	4 Household worker without pay	5 Daily labour/casual labour	
Rural	Poor	31.1	.1	6.1	36.0	26.8	100.0
	Non-poor	40.1	.2	10.7	41.9	7.1	100.0
Urban	Poor	40.2	.1	27.1	14.5	18.1	100.0
	Non-poor	37.7	.9	39.8	14.3	7.4	100.0

Table 5.8
Distribution of sector of employment by poverty situation

(Per cent)

Area		Agriculture	Manufacturing	Construction	Trade	Transport	Financial service	Other service	Total
Rural	Poor	74.9	5.8	1.8	8.3	3.8	.2	5.2	100.0
	Non-poor	68.6	5.9	1.6	11.9	2.2	.6	9.2	100.0
Urban	Poor	23.7	16.5	5.2	20.2	14.3	.7	19.4	100.0
	Non-poor	16.0	16.7	3.5	25.7	8.6	3.5	26.1	100.0

Tables 5.7 and 5.8 show the distribution of poor and non-poor workers by mode of employment and sector of employment respectively. As expected, a larger percentage among the poor are engaged as daily labours (24 and 7 per cent among the poor and non-poor respectively). The difference has been made up by a smaller per cent of poor workers' involvement as 'employer', 'salaried worker' and 'household worker without pay'. Extent of self employment among poor workers shows a different picture between rural and urban areas. In the rural areas, the per cent of wage workers in self employment is lower among the poor than the non-poor. The reverse is true for the urban areas.

Sectoral distribution of the labour force by poverty status has been shown in table 5.8. There are a higher percentage of workers from poor households in agriculture, construction and transport with a reversal of this situation in manufacturing, trade and other services.

As expected, a much lower per cent of poor workers vis-à-vis the non-poor are in formal employment (Table 5.9).

Table 5.9
Distribution of poor and non-poor labour force between formal and informal employment

		(Per cent)		
Area		Informal	Formal	Total
Rural	Poor	89.7	10.3	100.0
	Non-poor	82.1	17.9	100.0
Urban	Poor	67.7	32.3	100.0
	Non-poor	49.9	50.1	100.0

5.2 Factors determining households' poverty status: Results of multiple regression

The determinants of a household's poverty status have been analyzed (whether below the poverty level) through logistic regressions using LFS 2000 household data. The explanatory variables used in the regressions include

- ▲ Household's characteristics, including demographic features and labour force endowment.
- ▲ Household's asset situation, including physical and land assets, education and remittance receipt.
- ▲ Employment characteristics, in terms of mode of employment, sector of employment etc.

Household characteristics included in the equation are: Age of head of household and its square, sex of household head (male=1), number of 15+ years working members, number of child workers, number of dependent members, ratio of female workers and education of working members of household (consists of two variables: years of education of head of household and total years of education of other working member).

Several interesting findings are given by the regressions (Table 5.10A and 5.10B). The variables 'age' and 'square of age' have different signs in both the rural and urban regressions. These variables are significant in the rural equation, but not so in the urban. Coefficients of most of the other variables are similar in the two equations. Both variables representing household's endowment of education have significant negative coefficients and thus reduce the probability of being in poverty. This is expected, since education enhances productivity and thereby the earnings. Sex of head of household has an insignificant coefficient, which is contrary to the current hypothesis and therefore requires an explanation. The current notion is that poverty incidence is higher among the female-headed households. The results of regression obtained in the present case show that households with female heads do not have a higher probability of being in poverty. This has happened because of the wider definition (de jure) of female headedness. LFS (and other surveys of BBS) include within female-headed households those who have male earners living in other places. Therefore these households receive remittance and

have a higher chance of being non-poor. This counterbalances the other female-headed households who do not have male earners and are in greater chance of being poor with a net impact as insignificant.

A larger number of dependent members increase the probability of being poor (the coefficient is positive and significant). This is quite expected. Contrary to expectation are the positive coefficients of two variables: number of working members of age 15 and above, number of working members aged 8 to 14 years. While more earners are likely to raise income and reduce the chances of being poor, the contrary effect works: poorer households mobilize more workers. Due to similar reasons, the ratio of female workers to total workers raises the probability of being in poverty.

Mode of employment and sector of employment (of head of household) have been included as dependent variables and these variables have the expected signs of the coefficients. Those employed as wage labour have higher chance of being poor. Formal sector (versus informal) reduces the probability of the household's poverty. Employment in non-farm sectors reduces the probability, with negative and for most sectors significant coefficients. The poverty-alleviating role of rural non-farm activities has been emphasized by other studies as well (Mahmud 1996, Bakht 1996).

A number of other assets have been included as explanatory variables. These variables were included in the questionnaire in binary form and a household was asked whether or not they possess it. Values of these assets were not included in the questionnaire. Hence the interpretation of the coefficients has to be done cautiously. For example, in the urban area, the ownership of rickshaw and sewing machine has positive coefficients raising the probability of being poor. This implies that these assets are usually owned by poorer groups.

The percentage of correct predictions is high and most of the variables are significant at .00 level.

5.3 Unemployment and poverty: concepts, measurement and empirical results

The existence of surplus labour in Bangladesh and other South Asian countries with high population density has been considered as almost axiomatic. Such characterization led to the development of theories, which visualized that industrialization would proceed through the absorption of surplus labour from the traditional sectors where they subsist through work sharing practices (Lewis 1954). The success of growth strategies based on such theory and the impact of growth on poverty will to some extent depend on the correctness of the assumption of an elastic supply of labour. Therefore the assumption of 'unlimited supply of labour' or in other words the existence of un and underemployment should be reassessed periodically.

If the success of labour absorption by a growing industrial sector is not quite impressive, then the un- and underemployed labour force will try to find gainful employment in the other sectors or generate self-employment with varying levels of productivity. Therefore, there is a need for assessment of the earnings of the workers along with their underemployment status. This will help a better understanding of the dynamics of the labour market as well as the livelihood strategies of the poor through combinations of wage employment and self-employment.

Table 5.10A

Determinants of poverty status: Results of logistic regression: Rural

Explanatory variables	Coefficient	Standard error	Significance
Age of head of household	-.04	.02	.01
Square of age of head	.0004	.0002	.02
Educ of head	-.24	.03	.00
Educ of other workers	-.11	.02	.00
Sex of head	-.18	.17	.28
Number of child worker	.43	.08	.00
Whether Wage labourer	1.26	.11	.00
Whether Employee	.21	.13	.11
Whether formal sector	-.52	.10	.00
Whether Manufacturing	-.12	.09	.21
Whether Construction	-.46	.18	.01
Whether Trade	-.30	.08	.00
Whether Transport	.20	.15	.17
Whether SERVICE	-.26	.41	.52
Whether other sector	-.22	.10	.03
Number of dependent	.56	.03	.00
Number of workers	.33	.06	.00
Ratio of female workers	.60	.16	.00
Whether employer	-.82	.80	.30
Land ownership	-.003	.0003	.00
Whether remittance received	-1.99	.23	.00
Asset1	-.34	.13	.00
Asset2	-.14	.19	.46
Asset3	-1.75	.54	.00
Asset4	-6.42	5.30	.23
Asset5	-.54	.10	.00
Constant	.72	.40	.03
-2 log likelihood	4664.2		

Per cent correct prediction	
Poor	88.4
Non poor	55.3
Overall	77.3

Table 5.10B

Determinants of poverty status: Results of logistic regression: Urban

Explanatory variables	Coefficient	Standard error	Significance
Age of head of household	-.02	.02	.21
Square of age of head	.0001	.0002	.75
Educ of head	-.46	.03	.00
Educ of other workers	-.10	.02	.00
Sex of head	.16	.17	.34
Number of child worker	.09	.08	.29
Whether Wage labourer	.47	.13	.00
Whether Employee	-.02	.10	.82
Whether formal sector	-.42	.09	.00
Whether Manufacturing	-.30	.08	.00
Whether Construction	-.55	.14	.00
Whether Trade	-.52	.08	.00
Whether Transport	-.50	.10	.00
Whether SERVICE	-1.01	.26	.00
Whether other sector	-.27	.08	.00
Number of dependent	.59	.03	.00
Number of workers	.40	.08	.00
Ratio of female workers	.95	.17	.00
Whether employer	-1.21	.58	.04
Land ownership	-.005	.0007	.00
Whether remittance received	-2.49	.31	.00
Asset1	-.72	.11	.00
Asset2	.49	.20	.01
Asset3	-1.51	.44	.00
Asset 4	-1.19	.93	.20
Asset 5	-.25	.13	.05
Constant	.24	.41	.56
-2 log likelihood	4501.5		

Per cent correct prediction	
Poor	73.0
Non poor	79.2
Overall	76.5

The vision of the surplus labour theory consists of a transfer of the surplus labour from the 'traditional sector' to a 'modern industrial sector' and through the process, generation of surplus for reinvestment. The impact of such process on poverty was not explicitly formulated because the centrepiece of the theory was the process of industrial growth. One important assumption of the theory is that the wage rate will not rise before the surplus labour is exhausted. The 'turning point' of wage rate in the modern sector may take time and this will depend on the labour intensity of the industries. Therefore a

significant reduction of poverty would not be foreseen during the initial period of industrial growth. It is possible to draw the corollaries of the theory, which predict a slow but continuous improvement of income of the underemployed labour force of the traditional sector. When some of the labour force is withdrawn from the traditional sector, the average consumption of the families where they previously shared the consumption basket will increase and a reduction of poverty is expected.

Before the empirical data on underemployment is presented it will be useful to examine the available methods of measurement of un/under employment and suggest suitable indicators for the analysis of underemployment in the present context. An assessment of surplus labour in such a predominantly rural economy cannot be based on the usual concepts and method of measurement of unemployment.

The fact that the usual definition of unemployment developed in the context of the formal labour markets in the industrial economies is not valid for self employed workers had been pointed out by economists long ago (Myrdal 1966). The observation that self-employed workers may not be openly unemployed led to the development of the concept of disguised unemployment. The empirical application of the concept is difficult and few attempts of such application were made. The concept of disguised unemployment has nevertheless been useful in directing attention to the fact that many of the rural workers are engaged in low productive employment and many of them are engaged in worksharing in the family farm. With increasing landlessness, the nature of underemployment among the self-employed workers has also been changing. Worksharing in a family farm is not an available choice for many such workers. Workers from marginal landowning families resort to a number of non-agricultural employment with varying levels of productivity. This complicates the identification and measurement of disguised unemployment.

In this situation the following methods have been used for the measurement of underemployment.

- ▲ A cut off point of less than a standard hours of employment is chosen and those who work less than this norm are identified as underemployed. The labour Force Survey of Bangladesh uses 35 hours per week as the cut-off point.
- ▲ To take into account the extent of variation of underemployment, the time criterion index of 'unemployment equivalent' has been widely used by micro studies. 'Unemployment equivalent' based on time criterion is measured as the difference between a hypothetical norm of supply of days over a year and a worker's actual days of employment (Krishna 1973, Khan, Islam and Haq 1981, Rahman 1996, Rahman and Saha 1995).

In the subsequent analysis, we shall examine the relationship between poverty and underemployment (based on a cut-off point of 0-34 hours, as defined by LFS). Such measurement of underemployment provides a total of unemployed, with zero hours of employment and underemployed (Working one to 34 hours).

Table 5.11
Distribution of male, female and the total labour force by underemployment situation

(Per cent)

Area	Poverty situation	Underemployed		Not-underemployed		Total
		0-15 hours	16-34 hours	35-41 hours	42+ hours	
Rural	Poor	10.6	25.6	15.1	48.7	100.0
	Non-poor	10.3	27.4	14.7	47.6	100.0
	Total	10.5	26.2	14.9	48.3	100.0
Urban	Poor	11.1	14.3	12.6	62.1	100.0
	Non-poor	9.0	11.5	12.3	67.2	100.0
	Total	9.9	12.6	12.4	65.0	100.0
Male						
Rural	Poor	3.8	7.6	14.6	74.0	100.0
	Non-poor	4.4	7.9	15.1	72.5	100.0
	Total	4.1	7.7	14.8	73.5	100.0
Urban	Poor	6.0	4.4	11.4	78.2	100.0
	Non-poor	6.0	3.1	11.0	79.8	100.0
	Total	6.0	3.7	11.2	79.2	100.0
Female						
Rural	Poor	21.0	52.9	15.9	10.2	100.0
	Non-poor	19.4	57.4	14.0	9.2	100.0
	Total	20.4	54.5	15.2	9.8	100.0
Urban	Poor	23.0	37.4	15.3	24.3	100.0
	Non-poor	17.2	33.4	15.5	33.9	100.0
	Total	19.8	35.2	15.4	29.6	100.0

Table 5.11 provides a distribution of the workforce in the poor and non-poor category by the percentage of underemployment. One of the results, which should receive attention, is the low magnitude of un-underemployment among the male workers. Only 11 per cent of male workers are underemployed. Low male underemployment prevails in both rural and urban areas (11.8 and 9.7 per cent respectively). This scenario implies that poor workers are not actually without work, rather they are working for long hours and a more appropriate description of the situation is given by the term 'hard working poor'. Among the rural poor 11.4 per cent and among the urban poor 10.4 per cent of male workers work less than 35 hours a week and the rest (about 90 per cent) belongs to the category of hard working poor.

In contrast, the un- and underemployment rate is much higher among the female labour force. Among the poor female labour force, 74 per cent and 60.4 per cent are underemployed in the rural and urban areas respectively. The interpretation of female underemployment is, however, complicated due to the fact that most of the domestic work is also performed by them.

Table 5.12
Hours worked per week by male and female workers from poor and non poor households

Poverty status	Hours worked		
	Male	Female	All
Poor	47.7	26.1	39.8
Non-poor	48.0	28.6	41.7

The average hours of employment of the two groups have been shown in Table 5.12. Average employment per week among the poor and the non-poor are 39.8 and 41.7

hours respectively. Both male and female workers in the non-poor group work slightly larger number of hours compared to the poor.

The difference in employment per worker being small, the differences in earning per hour is likely to account for much of the income differential between the poor and non-poor. Since a larger percentage of workers of poor households are engaged in wage employment, the low income of such households is also likely to be due to the lower income per hour of wage employment compared to hourly return from self-employment. In addition, the self-employed persons have greater flexibility about the hours they work. As a result they may choose to work for longer hours.

How far these differences contribute to poverty will be examined through

- ▲ a comparison of employment per worker in paid employment and self-employment.
- ▲ a comparison of the rate of payment received by poor and non-poor workers engaged in paid employment.
- ▲ a comparison of earning per hour of self-employment among the workers from poor and non-poor households.

Table 5.13
Average hours worked by workers of various mode of employment from poor and non-poor households*

Poverty situation	Area	Weekly self employment hours	Weekly employers working hours	Weekly salaried working hours	Weekly unpaid workers working hours	Weekly wage employment hours	Worker weekly working hours
Poor	Rural	46.0464	10.0000	49.6225	25.6253	48.5981	39.57
	Urban	46.8740	33.5000	48,9890	23.5914	49.7736	44.57
	Total	46.3729	20.4444	49.1851	25.2821	48.8958	41.25
Non-poor	Rural	46.6601	53.6667	48.5390	27.3561	51.6780	39.13
	Urban	49.9560	49.8974	50.2510	29.0466	51.5210	47.20
	Total	48.4228	50.4000	49.9412	27.8516	51.5903	43.57

* Average hours include employment of all types, categorization of mode of employment is based on 'major source of employment'.

Relevant data has been presented in Tables 5.13 and 5.14 (and Figure 5.2 and 5.3). Data presented in Table 5.13 shows that the non-poor wage workers work for more hours vis-à-vis the poor wage workers. In contrast, among the self-employed workers in the rural areas, the difference is small. In the urban areas self-employment hours among the non-poor are longer. The differences in hours per week per worker are, however, small. For example, urban self-employment hours among the non-poor are only 6 per cent higher than amongst the poor. In other cases, the differences are even smaller.

Table 5.14
Income per hour from wage and self employment of poor and non-poor

Sector	Area	Whether poor	Income per hour from wage (taka)	Income per hour (taka) from self-employment
Agri sector	Rural	Poor	8.2459	15.6073
		Non-poor	8.6288	24.1097
		Total	8.2904	19.2813
	Urban	Poor	9.9138	16.2292
		Non-poor	9.8223	28.599
		Total	9.8925	22.4131
Non-agri sector	Rural	Poor	11.5863	12.1398
		Non-poor	12.2665	21.8515
		Total	11.7188	16.0080
	Urban	Poor	11.6962	12.3951
		Non-poor	12.9735	26.3195
		Total	12.2124	20.2919
Total	Rural	Poor	8.7480	14.0604
		Non-poor	9.5242	23.1793
		Total	8.8481	17.8676
	Urban	Poor	11.0952	12.9664
		Non-poor	12.3886	26.5880
		Total	11.5552	20.5711

Figure 5.2: Hours Worked per Week by Male and Female Workers in Poor and Non-poor Households

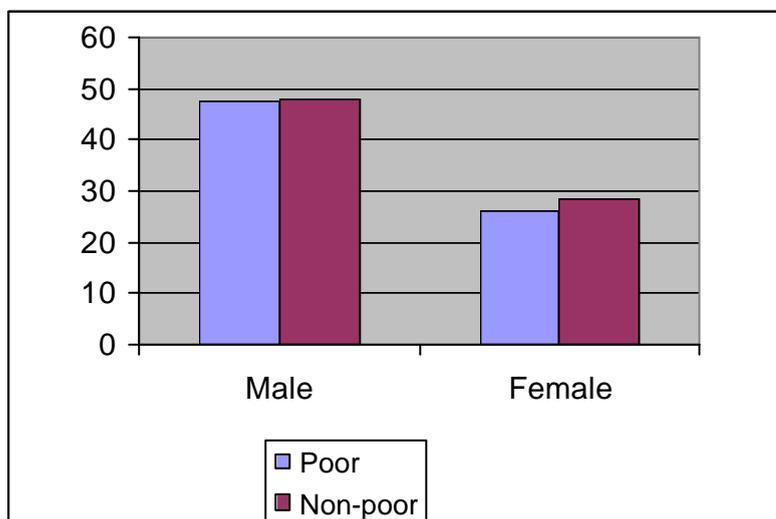


Figure 5.3: Income per hour from wage and self-employment among poor and non-poor workers



Moreover, the difference of average hours worked in wage employment and self-employment are small, both among the poor and non-poor labour force. The differences are in the range of 5 to 7 percent. In contrast to the above hypothesis, average hours worked by the self-employed is smaller than by those employed as wage labourers. The reason is that the latter have no choice, but to accept the prevailing standard hours.

Unpaid family helpers are observed to work much smaller hours compared to other categories of workers. The workers of this group are not the main earners of the household and many of them are engaged in studies or domestic responsibilities along with their income generating employment.

A comparison of working hours among poor and non-poor workers engaged in different 'status' of employment as shown in Table 5.13 reveal large variation among the 'employers' because this is a heterogeneous group with employers from all sectors, size of enterprises and qualification of the employers.

Since the difference between the poor and non-poor's employment hours in wage and self employment are observed to be small, the difference in income per hour from the two sources is likely to contribute most of the difference in income of the two groups. Data on income per hour of wage and self-employment has been presented in Table 5.14. Data has been presented separately for agriculture and non-agriculture. Since non-agriculture consists of diverse types of activities, the 'income per hour' from this source will also capture the difference in the activities pursued and the qualification of the workers.

The difference between the agricultural wage rate of labourers from poor and non-poor households is observed to be small. The difference is taka 2.4 per day, which is about 4 per cent of the wage rate of the poor. As expected, wage rate in non-agriculture shows a larger difference between these two groups (taka 5.6 for an eight-hour day). The differences are even larger in the urban areas, which accommodate a much wider range of activities. Moreover, the qualification of workers in the urban areas is more likely to vary with consequent variation in productivity, which has been reflected in the difference in the wage rates of poor and non-poor workers. Non-poor wage workers in urban non-agriculture receive about 12 taka more than the poor workers (for an eight-hour day).

Average wage rates are, however, varying within the small range of taka 8.2 to 12.9 per hour. This contrasts with the pattern of much larger difference in average income per hour of self-employment, which ranges from taka 12 to taka 29. In the rural area, self-employed workers in agriculture, coming from poor and non-poor group earn taka 15.6 and 24.1 per hour. The earnings per hour of their counterpart from non-agriculture in the urban areas are respectively 12.4 and 26.3.

A methodological question is pertinent at the end. Earning per hour from wage employment and self-employment may not be strictly comparable. Wage workers are usually closely supervised, so that the intensity of their work can be expected to be higher than those in self-employment. In contrast, some degree (and form) of worksharing is possibly taking place among the self-employed and unpaid family workers. This may reduce the income per hour from self-employment, thus reducing the difference between income from self-employment and wage employment.

6. Poverty alleviation policies for Bangladesh and Future Research Issues

6.1 Relevance of macro policies

Employment policies for poverty alleviation must address two issues simultaneously:

- a) creating new jobs for the labour market entrants
- b) improving productivity of existing jobs

They can be addressed effectively with a combination of a high rate of output growth with the growth of the labour intensive sectors of the economy. That, in turn, would require suitable macro policies and the creation of a conducive environment for acceleration of the rate of investment. In addition, given the resource constraints, the efficiency of resource use must be increased. In addition to the conventional macro policies for acceleration of investment, resource use efficiency can increase through an improved governance. Such improvement is necessary for the whole range of large to small enterprises and for both domestic and foreign investment. The present discussion will not provide a detailed suggestion of macro policies which have been the subject of a number of other recent studies. The focus of the following discussion is sectoral policies and specific issues of employment generation for poverty alleviation.

Bangladesh's policy makers are confronted with the daunting task of acceleration of the pace of economic growth and a perceptible reduction of poverty within an identified span of time in the near future. Well-designed policies and targeted interventions in the labour market can provide effective stimulus for simultaneous progress with both tasks.

A rise in the income level of the poorest group will be possible through the following channels.

- An increase in employment opportunities for the underemployed workers
- An increase in productivity through
 - ▲ increase in productive assets of the poor
 - ▲ provision of financial capital
 - ▲ access to education and skill training
- An increase in the wage rate

The observed trends of the slow growth of wage rate in agriculture and urban informal sector imply that a small manufacturing sector cannot influence the wage rate at the source of supply, i.e. the rural and informal sectors. It is even more difficult to directly implement interventions in the form of minimum wage legislation for agriculture, though an attempt has been made. Rapid growth of the modern sector is therefore, a top priority not only for a sustained GDP growth but also for transmitting a pressure on the wage rates in the informal sector and agriculture. These wage rates can rise if along with a rising demand from modern sectors, agricultural growth accelerates.

6.2 Agricultural growth

Agricultural growth can help to reduce poverty if its labour intensity does not decline, and if an appropriate environment prevails to ensure that marginal and small

farmers can participate in such growth. If agricultural growth is expected to reduce poverty, the demand for hired labour must rise.

Agricultural intensification as a policy measure for an acceleration of GDP growth and for the reduction of poverty must emphasize higher cropping intensity and crop diversification. In addition, yields can be increased for all crops, through more intensive application of all inputs including labour. Improved varieties of crops demonstrate much higher yield in the research stations, indicating the importance of extension services for achieving better yield by farmers.

Non-crop agriculture, including livestock and fisheries and horticultural products can have an important impact on growth and also on poverty reduction. Promotion of agro-processing industries and marketing facilities involving preservation and quality control are preconditions for the acceleration of growth of non-crop agriculture. Public investment in infrastructure and market information is important for the development of secondary and tertiary sector activities linked with agriculture. Incentives for crop growth should not however be neglected because crop sector income will provide demand impetus for the growth of non-crop food products.

Targeted credit for farmers growing specific crops, and for poor and marginal farmers, may help them to use inputs more efficiently. Such programmes should be based on an understanding of patterns of input use among the poorest farmers. Mechanization may lead to labour displacement. Its impact should be closely monitored and only the essential components of mechanization should be encouraged.

The agricultural growth potential of the poorest areas needs to be assessed, and programmes should be adopted to realize its potentials. The provision of subsidized inputs, and the implementation of small infrastructure projects and marketing support projects can help agricultural growth in these areas which can have a poverty alleviation impact.

6.3 Development of rural non-farm activities

The other option for enhancing income levels of informal sector workers is to create a scope for supplementary earnings through self-employment, where not only the wage labourer but his/her entire family may participate, thus raising the LFPR and thereby the family income.

As has been shown in the above analysis, the daily earning of an unskilled worker engaged either as an agricultural wage labourer or as an RNF labourer (or even in a formal sector job such as the ready-made garment sector) is insufficient for supporting more than a three-member family above the poverty line. In such a situation, crossing the 'line' will be possible only if there is a shift in the productivity of non-farm activities which may lead to a rise in the wage rate as well. This will be possible only through an increase in the scale of activity and the introduction of modern technology in the case of RNF self-employment.

Productivity of the traditional sectors can be raised through appropriate investment on infrastructure and through properly designed credit facilities. During the

last two decades, microcredit (MC) schemes have been developed to address the need for the generation of self-employment.¹²

Studies on rural non-farm activities in general provide an optimistic picture (Bakht 1996, Mahmud 1996, Rahman and Khandker 1994) and show that the returns to RNFAs are much higher than the wage rates and this can lead to poverty alleviation or at least a significant increase in the income of poor households. However, there is evidence that RNFAs comprise of different types of activities and operate at various scales. Studies on MC show that the rate of return per hour is very low for some of the activities undertaken by poor households receiving MC. This is to some extent due to the small size of credit and the need for investing it mostly in working capital so that it can yield quick return, which in turn can be used to make monthly/fortnightly repayment. Microfinance institutions should consider the provision of loans of larger size for the expansion of scale of RNFA activities which use wage labour.

Expansion of education and training for the poor can help in generating RNA with higher productivity. Human capital generation, however, is not a sufficient condition for employment generation or poverty alleviation. The recent increase in the mismatch between the supply of secondary/higher secondary graduates and their demand shows that the policy makers must not only expand the facilities for education but also consider the creation of more employment options. Young boys and girls may lack the experience and managerial and entrepreneurial skills for generating self-employment. Therefore there is a need for provision of access to services required for self-employment. Initiatives in this direction may be taken by commercial ventures or NGOs.

6.4 Industrialization and locational dispersion

The unemployment and underemployment situation in Bangladesh described earlier makes it clear that the available surplus labour force is not very large in size. This is especially true for the male labour force. Therefore it may not be possible to reduce poverty through a traditional surplus labour-based urban industrial growth.

Moreover, the opportunity cost of labour will be higher than the rural wage rate as the poor workers in the rural areas resort to supplementary income generating activities. The formal sector may not be able to attract a large supply of labourers from the rural areas because many of the industries will not be competitive at a higher wage rate. Competitiveness at a higher wage rate can be ensured only by increasing the productivity of labourers through various means including better training and skill generation among the workers and by increasing managerial efficiency of the enterprises. Therefore policies must be pursued along these lines.

The scope for surplus labour utilization for poverty alleviation may further decline as the informal sectors in both urban and rural areas increase investment and absorb more family members into these activities. A large number of MFIs in the country provide credit for non-farm activities pursued by the landless households. Such activities create part-time involvement of the wage labourers and draw women into self-employment.

¹² The problems and prospects of MC and its role in the creation of employment and income for the poor is a vast subject and has been deliberately kept outside the scope of the present paper. In fact, a vast research on the issues related to MC has emerged both in Bangladesh and among the international development researchers and practitioners and a few relevant findings will be mentioned here.

Thus, unemployment is giving way to a 'high employment with low productivity' scenario. Policies for poverty reduction through formal sector employment will need to take these processes into account and emphasize productivity improvement.

Industrial entrepreneurs may consider going closer to the sources of labour and operate in semi-urban location and derive the advantages of hiring workers with some education. The government may consider the provision of some incentives for locating enterprises close to rural areas and allocating a certain percentage of jobs for women. Incentives may take the form of fiscal provisions or subsidized access to utilities, etc.

6.5 Employment generation for women

Since the under-employment and unemployment rates are much higher among women, a policy option for poverty alleviation is to promote labour intensive industrialization based on the employment of female workers. This option has already been utilized by the export oriented garment industries of the country which are based on the use of unskilled and cheap female labour which constitutes about 70 per cent of total employment in this sector.

Despite the overwhelming role of private employers in the labour market, public policies can have a significant contribution to the reduction of gender inequality. The government can play an important role in a number of spheres, including both direct and indirect interventions, developing general guidelines along with specific interventions through various programmes.

In Bangladesh the mainstream development institutions and private sector growth evolved around a male dominated clientele and therefore, incorporate deeply rooted prejudices, which have adverse impact on the progress towards gender equity in employment. A determined and deliberate effort to change this environment is a prerequisite for ensuring gender equity in any sphere.

To encourage women's employment in urban industries, the government may adopt programmes for provision of services for the female employees (including transport services, health and, housing facilities etc.). Moreover, employment in export-oriented sectors implies the possibilities of job loss with the fluctuations in export growth. Programmes must be adopted to minimize the adjustment costs of the workers who lose jobs.

In addition, women are currently employed in low wage jobs. Return to women's self-employment is lower. Education and skill training provide a key to the solution of both problems.

One may ask the question as to whether a part of the female labour force can be absorbed through employment generation in agriculture. Recent experience of labour absorption and wage rate in agriculture suggests that the prospects of employment of women in this sector are not so bright.

Finally, it should be emphasized that labour standards for female workers and gender equity in employment can be improved only when it is not at the cost of a deterioration of the labour standards provided to the male workers.

6.6 Regional diversification

In the present study an analysis of the regional variation or districtwise variation of employment opportunities has not been attempted because of problems related to regional representativeness of the sample of LFS. Studies on the variation of GDP, however, show a wide interdistrict variation of GDP growth. Moreover, districts with slow growth of agriculture have also experienced slow growth of non-farm GDP (Rahman 2001). If we assume, more or less same employment elasticity of output in different districts, then the lagging districts need urgent policy attention in terms of employment generation.

6.7 Institutional aspects of employment policies for poverty alleviation

The adoption and implementation of employment generation policies for poverty alleviation is rendered difficult by the fact that a multiplicity of organizations may be involved in the process. After a decade's experience of economic reforms, the process of creation (and destruction) of employment is now mostly in the hands of private sector. Self-employment is not entirely in ones own control, as the term suggests. It requires training, finance, infrastructure facilities and marketing services where a combination of private entrepreneurs and NGO/government may be involved.

Therefore the adoption of employment policies and programmes for poverty alleviation must involve a participatory process among the above listed stakeholders. Such participation must begin from the initial policy formulation process and continue not only up to the implementation process but also up to the monitoring and evaluation of the success of the programme. The policies should be flexible but well targeted at the poor. These should cater to the specific well-designed demands of the poor. All institutions involved in the process must come forward with an attitude of cooperation, which was often missing in the past.

In this context the NGOs and informal/semi formal organizations often demonstrate an advantage. They have a better link with local culture, social and physical environment where they work. The formal private sector and public agencies can benefit from these linkages between local experience and broader development framework.

A significant upward shift in self-employment among the poor requires new initiatives, new activities and new modalities of investment. Such changes require a restructuring of the institutional relationships and linkages. In the past, many institutions - both formal and informal - not only bypassed the poor but sometimes directly or indirectly acted against them. It is time to change the institutional processes so that the poor can participate in these processes that provide them with security against theft, violence and illegal toll collection.

6.8 Policy measures for counteracting the forces of downward mobility

Special attention is needed to address the risk factors that erode the income and asset base of poor households. Health problems, for instance, increase the vulnerability of all groups of poor. More effective health services may reduce health related expense and workdays lost due to the sickness episodes (Rahman 1996).

6.9 Dissemination of labour market information and recruitment channels

Programmes are required for assessment of market demand for various types of skills and for publicizing such information. A mechanism should be worked out for monitoring and dissemination of short-term labour market signals, and for generating relevant information on the supply of and demand for various skills on a continuous basis. Studies have revealed that for the female workers, the most important sources of information about jobs in the garments sector and other formal sectors were the links with relatives employed in the same sector. When a factory faces closure, the workers who become unemployed find it difficult to get information about when it will reopen. Therefore, many of them do not go back to their village home or frequently come back to the city to obtain the information and thus incur expenses which is an additional burden.

An institutional arrangement, involving public-private partnership, could be made for the purpose of dissemination of information about job opportunities, redundancies, etc. Here workers may personally come or communicate through mail/phone. It should have a capacity for the preparation of an independent assessment of the labour market situation and its dissemination.

Employers' views on the scheme suggested above should be sought because they will have to play a critical role in its implementation. Capacity creation for management of such an office should be planned and implemented at an initial stage. Initially only one sector may be covered and ready-made garments will be the most obvious choice. A pilot scheme in one city may be launched. The experience may be replicated through NGOs as well.

6.10 Safety net programmes

Recent safety net measures undertaken by the government (in the form of targeted employment, housing facilities combined with self employment etc.) deserve appreciation for their welfare impact. Their impact on the 'graduation process' can only be assessed after a longer interval.

Effective policies must be adopted for alleviating the extreme poverty of rural households that are constrained by lack of initiative, entrepreneurship and human capital and therefore cannot be expected to graduate from poverty through self-employment. Safety net programmes - consisting of targeted employment programmes can provide some hope for this group. Special employment schemes based on food aid have proved successful and should continue. But there has been a recent decline in donor resources for this purpose. This requires rethinking.

6.11 Priority research agenda on employment-poverty linkages

On the basis of the analysis of the present study, the following issues have been identified as the priority areas of future research.

The first one relates to the question of wage rates in agriculture. A closer examination is required to explain why the real wage rate of agricultural labourers rose so slowly over the last decade(s) and how to reconcile this with the GDP growth rate of agriculture. Moreover, the wage rate in agriculture is likely to be linked not with productivity growth in agriculture alone, but also with productivity and wage rate in rural

non-farm activities. Published sources of agricultural wage rate provide only annual data. But seasonal variation of wage rate can be an important issue linked with rural poverty. To examine these linkages, more disaggregated data on wage rate and sectoral labour demand is required.

The second priority research question is the link between education and poverty and the role of educated unemployment in the process of poverty accentuation. The point has been made that an increase in the level of education raises income and reduces the probability of being poor. How far it reflects the causality that increased income is due to education or the reverse causality that non-poor have more access to education deserve more detailed analysis. Education can reduce poverty through more employment and/or a higher wage rate through higher productivity. Whether this is taking place or the negative role of education in the form of educated unemployment is indicating a bleak prospect of poverty alleviation through increased education needs an early assessment.

The expansion of education, particularly at the primary and secondary level depends on government expenditure in the social sector development. Programmes have been initiated by the government to extend free education up to the secondary level.

Education can play an effective role in accelerating GDP growth only if the educated persons have access to employment and if the productivity of such employment is higher than the uneducated/unskilled workers. Education can also help in poverty alleviation if the poorer sections in the society have greater or at least equal access to education.

The question of educated unemployment has always received attention in the South-Asian countries where educational endowment is inadequate. However, the concern emerged mainly from the point of view of underutilization of higher education and for appropriate planning of expansion of higher studies only in subjects where there is no educated unemployed. Such concern about unemployed persons with higher education continues. In addition, the concern related to unemployed secondary graduates and how to improve productivity of such labour is increasing recently.

A resource poor country like Bangladesh cannot afford wastage of investment in the form of human capital. Therefore the utilization pattern of higher education should be investigated before further intensification of investment in higher education takes place.

References

- Alam, M.S. (2002): "Poverty Profile of Bangladesh 99: Selected Socio-economic Indicators". Paper presented at the Regional Seminar on Poverty Monitoring Survey - 99, held at Dhaka, organized by CIRDAP & BBS.
- Bakht, Z. (1996), "The Rural Non-farm Sector in Bangladesh: Evolving Patterns and Growth Potential", National Workshop on Stimulating Growth through the Rural Non-farm Activities in Bangladesh: Review of the Experience and Search for a Policy Agenda, BIDS and World Bank, Dhaka.
- Bangladesh Bureau of Statistics: *Statistical Yearbook of Bangladesh*, various years, GOB, Dhaka.
- Bangladesh Bureau of Statistics, BBS Yearly Series. *Report on Bangladesh Census of Manufacturing Industries*, Dhaka
- Bangladesh Bureau of Statistics, BBS Yearly Series. *Report on Labour Force Survey (1999-2000)*, Dhaka
- Bangladesh Bureau of Statistics (BBS): *Labour Force Survey*, Various Years, GOB, Dhaka.
- _____(2001): *Household Income Expenditure Survey, 2000*, GOB, Dhaka
- BBS 2002: *Report of Poverty Monitoring Survey*, Ministry of Planning, Dhaka, Bangladesh.
- BBS 2001: *Bangladesh Economic Survey*, Ministry of Finance, Dhaka, Bangladesh.
- Bhattacharya, D. 2001: "Bangladesh Economy in FY 2000: Macro economic outlook", in *Changes and Challenges. A Review of Bangladesh's Development 2000*, CPD and UPL, Dhaka
- Bhagwati, J.N.(1988.). "Poverty and Public Policy." *World Development* 16(5):539-654.
- BIDS (2001). *Fighting Human Poverty, Bangladesh Human Development Report - 2000*, Dhaka
- Economic Relations Division 2002: *Bangladesh. A National Strategy for Economic Growth and Poverty Reduction (IPRSP)*, GOB.
- Hossain, M. (1992), "Determinants of Poverty" in H.Z. Rahman and M. Hossain (eds.), *Rethinking Rural Poverty: A Case for Bangladesh*, BIDS, Dhaka.
- _____ (1996), 'Rural Income and Poverty Trends', in H.Z. Rahman, M. Hossain and B. Sen (eds.) (1996), 1987-1994: Dynamics of Rural Poverty in Bangladesh, BIDS, Dhaka (mimeo).

- _____ (1996), 'Structure of the Labour Market, Unemployment Poverty in Bangladesh', Regional Seminar on Labour Market and Industrial Relations in South Asia: Emerging Issues and Policy Options, ISLE/IIRA, New Delhi, September 18-20.
- IMEC (1999): Proshika's Impact Assessment Study 1998-99. Proshika, Dhaka.
- Islam, I. (2002). Poverty, Employment and Wages: An Indonesian Perspective, ILO
- IPRSP, A National Strategy for Economic Growth and Poverty Reduction. Bangladesh, 2002, External Resource Division, Ministry of Finance, Dhaka.
- Kakwani, N. (2002). Estimating Poverty Measures from Household Survey
- Kakwani, N. and Son, H. 2002: "Pro-poor Growth and Poverty reduction: The Asian Experience". Paper presented at the 'Poverty Alleviation Workshop', organized by UNDP at Katmandu, October 2002.
- Khan, A.R. 2001: 'Bangladesh Economy 2000: Selected Issues - A review' in *The Bangladesh Development Studies*, June 2001, No. 2.
- Khan, A.R., Islam, R. and Huq, M. 1981, *Employment, Income and the Mobilizing of the Local Resource: A Study of Two Bangladesh Villages*, Asian Employment Programme, ILO-ARTEP, Bangkok.
- Krishna, R. 1973, "Unemployment in India", *Economic and Political Weekly*, No.8 (9), pp. 375-484.
- Khan, A.R. 2000: "Globalization and Development :Opportunities and Hazards", Public Lecture delivered at BIDS, September 12, 2000.
- Lewis, W.A. (1954), 'Economic Development, with Unlimited Supplies of Labour', *The Manchester School of Economic and Social Studies*, No. 22.
- Mahmud, W. (1996), 'Employment Patterns and Income Formation in Rural Bangladesh: The Role of Rural Non-farm Sector', National Workshop on Stimulating Growth through Rural Non-farm Activities in Bangladesh, BIDS and The World Bank, Dhaka.
- Mahmud, W. 1995: 'Recent Macroeconomic Developments', in *Experience with Economic Reform. A Review of Bangladesh's Development 1995*, CPD and UPL.
- Mahmud, W. 1997: "Macroeconomic Update in Growth or Stagnation?" *A Review of Bangladesh's Development 1996*, CPD and UPL.
- Mujeri, M.K. 2001: "Macroeconomic Developments in the 1990s", in *Bangladesh Economy 2000. Selected Issues*, by Abdullah, A. (ed.), BIDS, Dhaka.
- Mujeri, M.K. 2000: "Poverty Trends and Agricultural Growth Linkages", FMRSP Working Paper No. 26, Government of Bangladesh & IFPRI.
- Myrdal, G. 1966: *Asian Drama*, Pelican

- Rahman, R.I. and Saha, B.K. (1995), "Impact of Grameen Krishi Foundation on the Socio-economic Condition of Rural Households", BIDS, Dhaka (mimeo).
- Ravallion, M. and Sen, B. (1996), 'When Method Matters: Monitoring Poverty in Bangladesh', *Economic Development and Cultural Change*, pp. 762-792.
- Rahman, R.I. and Saha, B.K. (1995), 'Impact of Grameen Krishi Foundation on the Socio-Economic Condition of Rural Households', BIDS, Dhaka (mimeo)
- Rahman, R.I. and Khandker, S.R. (1994), 'Role of Targeted Credit Programmes in Promoting Employment and Productivity of the Poor in Bangladesh, *The Bangladesh Development Studies*, Vol xxii, Nos 2&3, BIDS, Dhaka.
- Rahman, R.I. 1996: "Unemployment Wages Rate and Poverty, 1987-94: Dynamics of Rural Poverty in Bangladesh", BIDS.
- _____, 2002: "Pattern of economic Growth and its Sustainability", Paper Presented at a Special BIDS Seminar on "Performance of the Bangladesh Economy ".
- Rahman, R.I. 2001: "Tractor use, Irrigation and Productivity in Bangladesh Agriculture", in *Bangladesh Economy 2000: Selected Issues*, by (ed.) A.A.Abdullah, BIDS, Dhaka.
- Shamunnay (2000): *The Budget and the Poor*, University Press Ltd., Dhaka.
- World Bank, (1996): *Labour Market Policies for Higher Employment in Bangladesh*. The World Bank, Dhaka.
- World Bank 1998: *From Counting the Poor to Making the Poor Count*. World Bank, Dhaka.
- _____,(2002): *Poverty Assessment in Bangladesh*. World Bank, Dhaka.

Appendices

Appendix Tables to Chapter 2

Table A.2.1: Alternative Estimates of Poverty by Ravallion and Sen (1996), Using CBN Method

Year	Head count ratio	
	Rural	Urban
1983/84	53.8	40.9
1985/86	45.9	30.8
1988/89	49.7	35.9
1991/92	52.9	33.6
1995/96	51.1	26.3

Table A.2.2: Estimates of Extreme Poverty by DCI Method

Year	Head count ratio		
	Rural	Urban	National
1983/84	36.7	30.4	36.7
1985/86	26.3	30.7	26.9
1988/89	28.6	26.4	28.4
1991/92	28.3	26.3	28.0
1995/96	24.6	27.3	25.1
2000	18.7	25.0	20.0

Source: BBS (Various years).

Table A.2.3: Estimates of extreme poverty based on CBN method

Year	Per cent of households		
	Rural	Urban	National
1983-84	42.6	28.0	40.9
1985-86	36.0	19.9	33.8
1988-89	44.3	21.9	41.3
1991-92	46.0	23.3	42.7
1995-96	38.5	13.7	34.4
2000	34.1	16.9	30.0

Source: BBS (Various years).

Table A.2.4: Trends in Depth and Severity of Poverty

Year	(Per cent)					
	Poverty gap			Squared poverty gap		
	Rural	Urban	Total	Rural	Urban	Total
1983/84	16.8	14.3	16.5	6.7	5.8	6.6
1988/89	16.0	11.1	15.4	6.1	3.8	5.8
1991/92	18.1	12.0	17.2	7.2	4.4	6.8
1995/96	15.4	9.2	14.4	5.7	3.4	5.4
2000	13.8	9.5	12.9	4.8	3.1	4.5

Source: World Bank 1998 and BBS 2001.

Table A.2.5: Relative inequality in income distribution

	Gini coefficient	
	Rural	Urban
1991/92	.243	.307
2000	.271	.368

Source: ERD 2002: IPRSP

**Table A.2.6: Annual GDP growth rate in agriculture and manufacturing
(at constant 1995-96 prices)**

(Per cent per annum)

Year	Agriculture	Manufacturing
1986	3.49	7.31
1987	-0.25	7.95
1988	-0.88	0.65
1989	-0.38	2.77
1990	10.75	7.68
1991	1.25	6.38
1992	1.39	7.38
1993	1.35	8.62
1994	-0.65	8.15
1995	-1.93	10.48
1996	2.03	6.41
1997	5.57	5.05
1998	1.64	8.54
1999	3.24	3.19
2000	6.92	4.76
2001p	3.99	9.10

Source: BBS various years.

P : Provisional.

Appendix tables to chapter 3

Table A.3.1: Per enterprise value added/output elasticities of employment in CMI activities

Level	Value added/ Output	Elasticity of employment		1980-98	% Change between two periods
		1980-89	1990-98		
3-digit	Per enterprise Value added	.5707	.4932	.5484	- 13.6
4-digit	Per enterprise value added	.6650	.5699	.6079	- 14.3
3-digit	Per enterprise output	.5847	.5184	.5690	- 11.3
4-digit	Per enterprise output	.6130	.4577	.5090	- 25.3

Table A.3.2: Ranges of output elasticities of employment at 3-digit level

Range of output elasticity of employment (1980-98)	No of activities Under study	% of total CMI employment	Sub-sector
< 0.50	6 (26.1)	5.7	341 Paper & Paper Products 352 Industrial & Chemicals 353 Other Chemical Products 357 Plastic Products 371 Iron & Steel Basic 382 Fabricated Metal Products
0.50 – 0.75	3 (13.0)	3.7	332 Furniture & Fixture 342 Printing & Publishing 351 Drugs & Pharmaceuticals
0.75 & above	14 (60.1)	67.8	311 Food Manufacturing 312 Food Manufacturing 314 Tobacco Manufacturing 321 Textiles Manufacturing 322 Textiles Manufacturing 324 Leather & It. Products 331 Wood & Cork Products 356 Rubber Products 361 Pottery 369 Non-Metallic Minerals 381 Fabricated Metal Products 383 Non-Electrical Machinery 384 Electrical Machinery 385 Transport Equipment
Average 0.76	23 (100.0)	77.2	All 23 sub-sector

Table A.3.3: Ranges of output elasticities of employment at 4-digit level

Range of output elasticity of employment (1980-98)	No of activities Under study	% of total CMI employment	Sub-sector
< 0.50	3 (13.0)	1.3	3533 Soap & All Detergents 3713 Iron & Steel Re-Rolling 3857 Ship Breaking & Dismantling
0.50 – 0.75	4 (17.4)	2.3	3116 Oil Except Hydro 3223 Knitwear 3321 Mfg of Wooden Furniture 3832 AG. Machinery & Equipment
0.75 & above	16 (69.6)	54.6	3118 Grain Milling 3122 Bakery Product 3124 Manufacture Of Gur 3126 Tea & Coffee Processing 3128 Edible Salt 3143 Bidies Manufacturing 3211 Cotton Textiles 3214 Silks & Synthetic Textiles 3216 Handloom Textiles 3231 Readymade Garments 3241 Tanning & Leather Finishing 3311 Saw & Planning Mills 3318 Bamboo & Cane Product 3611 Earthenware 3691 Bricks Tiles & Non Clay 3814 Furniture & Fixture
Average 0.69	23 (100.0)	58.2	All 23 sub-sectors

Table A.3.4: Value added elasticities of employment at 3-digit level of manufacturing (CMI) activities

I code	Sub-sector	VA elasticity of employment		1980-98
		1980-89	1990-98	
311	Food manufacturing	1.0488	.2155	1.0215
312	Food manufacturing	.7950	-.0924	.5573
314	Tobacco manufacturing	-.9025	.4272	1.5089
321	Textiles manufacturing	.4816	-.0318	.4535
322	Textiles manufacturing	1.0914	.5087	.8526
324	Leather & l. Products	.9051	.0321	1.1717
331	Wood & cork products	.5528	.2664	1.2227
332	Furniture & fixture	.3614	.1162	.5646
341	Paper & paper products	.3931	.4323	.4484
342	Printing & publishing	.7655	.4225	.6543
351	Drugs & pharmaceuticals	.6316	.6775	.6284
352	Industrial & chemicals	.3560	.1193	.3501
353	Other chemical products	.0685	.4582	.3686
356	Rubber products	.5940	-.0202	.7537
357	Plastic products	.4582	-.2128	.5825
361	Pottery	.8272	-1.3361	1.0565
369	Non-metallic minerals	1.6811	.7011	1.6999
371	Iron & steel basic	.1055	-.1065	.2080
381	Fabricated metal products	.9886	.2884	.7932
382	Fabricated metal products	.5062	.2538	.3091
383	Non-electrical machinery	.3508	.0826	.1609
384	Electrical machinery	.8196	.4235	.7329
385	Transport equipment	.6999	-.0423	.6015
	All industries	.7463	.6859	.7580

Table A.3.5: Value added elasticities of employment at 4-digit level of manufacturing (CMI) activities

I code	Sub-sector	VA elasticity of employment		1980-98
		1980-89	1990-98	
3116	Oil except hydro	.6197	.10121	.6294
3118	Grain milling	1.0101	.0339	.9345
3122	Bakery product	1.3505	.1337	1.1895
3124	Manufacture of gur	-	.0586	-
3126	Tea & coffee processing	.6347	.2905	.5260
3128	Edible salt	.9083	.2308	.8170
3143	Bidies manufacturing	-	.9634	-
3211	Cotton textiles	.1941	.3945	.5414
3214	Silks & synthetic textiles	.9830	.7271	.9785
3216	Handloom textiles	.8363	.8304	.9755
3223	Knitwear	.8009	.7351	.7789
3231	Readymade garments	.9439	.8596	.9582
3241	Tanning & leather finishing	.9093	.0140	1.1681
3311	Saw & planning mills	.7139	.3837	.8961
3318	Bamboo & cane product	-	.1108	-
3321	Mfg of wooden furniture	.3589	.1082	.6092
3533	Soap & all detergents	.2913	.1907	.2820
3611	Earthenware	-	.6803	-
3691	Bricks tiles & non clay	1.4953	.3091	1.1948
3713	Iron & steel re-rolling	.1583	.0963	.3394
3814	Furniture & fixture	.8950	.4975	.8754
3832	Ag. Machinery & equipment	.6815	.7680	.7428
3857	Ship breaking & dismantling	1.8660	1.1657	.8636
	All industries	.7848	.7263	.7845

Table A.3.6: Value added elasticities of employment at 3-digit level of manufacturing (CMI) activities (estimated for per enterprise)

I code	Sub-sector	VA elasticity of employment		1980-98
		1980-89	1990-98	
311	Food manufacturing	.3572	.1678	.3896
312	Food manufacturing	.6763	-.0719	.6973
314	Tobacco manufacturing	.2727	.2890	.2294
321	Textiles manufacturing	1.0037	.0187	.7691
322	Textiles manufacturing	.4331	.5674	.4808
324	Leather & l. Products	.4285	.8556	.6812
331	Wood & cork products	.4711	.2719	.5721
332	Furniture & fixture	.5905	.0294	.6222
341	Paper & paper products	.0760	.6019	.7319
342	Printing & publishing	-8.8403	.5921	.5295
351	Drugs & pharmaceuticals	.1068	.6990	.4752
352	Industrial & chemicals	.0017	.3737	.0490
353	Other chemical products	.0422	.2974	-.0166
356	Rubber products	.5502	-.0514	.6321
357	Plastic products	.2461	.0264	.1464
361	Pottery	.9264	-.3988	.8665
369	Non-metallic minerals	.3574	-.5605	.2669
371	Iron & steel basic	.4287	-.1338	.2839
381	Fabricated metal products	.7469	.1361	.3665
382	Fabricated metal products	.1675	.1466	.1075
383	Non-electrical machinery	.2341	.2231	.2321
384	Electrical machinery	1.0114	.5397	.6366
385	Transport equipment	.6077	-.0737	.0298
	All industries	.5707	.4932	.5484

Table A.3.7: Value added elasticities of employment at 4-digit level of manufacturing (CMI) activities (estimated for per enterprise)

I code	Sub-sector	VA elasticity of employment		1980-98
		1980-89	1990-98	
3116	Oil except hydro	-.0663	.1012	.1395
3118	Grain milling	.3035	-.0018	.2161
3122	Bakery product	.5623	.0750	.5428
3124	Manufacture of gur	-	.0461	-
3126	Tea & coffee processing	.5782	.3053	.4665
3128	Edible salt	.5369	.2101	.3622
3143	Bidies manufacturing	-	.9654	-
3211	Cotton textiles	.1483	.5479	.4378
3214	Silks & synthetic textiles	.8805	.6453	.6963
3216	Handloom textiles	-1.3997	.7175	.2186
3223	Knitwear	.3727	.7659	.5850
3231	Readymade garments	.8631	.3273	.8530
3241	Tanning & leather finishing	.3879	.9165	.6443
3311	Saw & planning mills	.3029	.4376	.3229
3318	Bamboo & cane product	-	.0971	-
3321	Mfg of wooden furniture	.5879	.0305	.6502
3533	Soap & all detergents	.0473	.2215	.2386
3611	Earthenware	-	.5927	-
3691	Bricks tiles & non clay	.3645	.0218	.2802
3713	Iron & steel re-rolling	.2667	.0192	.0410
3814	Furniture & fixture	.3610	.6251	.7704
3832	Ag. Machinery & equipment	.7050	.4782	.5985
3857	Ship breaking & dismantling	.6523	.4825	.5709
	All industries	.6650	.5699	.6079

Table A.3.8: Output elasticities of employment at 3-digit level of manufacturing (CMI) activities

I code	Sub-sector	Output elasticity of employment		1980-98
		1980-89	1990-98	
311	Food manufacturing	1.0250	.7454	1.0901
312	Food manufacturing	1.0574	.1851	.8239
314	Tobacco manufacturing	1.0051	.5842	1.7010
321	Textiles manufacturing	.6350	-.1735	.9510
322	Textiles manufacturing	1.0545	.6601	.9046
324	Leather & l. Products	.8136	.4811	1.0582
331	Wood & cork products	.6413	.2155	1.2420
332	Furniture & fixture	.3723	.1794	.5740
341	Paper & paper products	.0415	.5858	.1914
342	Printing & publishing	.6534	.4652	.6826
351	Drugs & pharmaceuticals	.7627	.4820	.6205
352	Industrial & chemicals	.4233	.9530	.4280
353	Other chemical products	-.0098	.3185	.3610
356	Rubber products	.7246	-.0651	.9175
357	Plastic products	.4557	-.3626	-.2635
361	Pottery	.7085	1.1105	.8876
369	Non-metallic minerals	2.7469	.8682	2.0083
371	Iron & steel basic	.4751	-.0821	.4485
381	Fabricated metal products	.9363	.4429	.8546
382	Fabricated metal products	.6697	.4307	.4564
383	Non-electrical machinery	.4489	.1240	.1986
384	Electrical machinery	.7103	.4998	.8646
385	Transport equipment	.8840	.6679	.7613
	All industries	.7557	.7226	.7788

Table A.3.9: Output elasticities of employment at 4-digit level of manufacturing (CMI) activities

I code	Sub-sector	Output elasticity of employment		1980-98
		1980-89	1990-98	
3116	Oil except hydro	.6739	-.8399	.6931
3118	Grain milling	.9280	.2893	.9203
3122	Bakery product	1.2924	.2386	1.1804
3124	Manufacture of gur	-	-1.2247	-
3126	Tea & coffee processing	.9343	.4430	.9097
3128	Edible salt	1.0176	.4770	.8373
3143	Bidies manufacturing	-	.9977	-
3211	Cotton textiles	.4080	.7143	.7797
3214	Silks & synthetic textiles	.7823	.7101	.8818
3216	Handloom textiles	.7125	-.4903	.9260
3223	Knitwear	.6091	.8000	.8052
3231	Readymade garments	.9837	.9053	.9563
3241	Tanning & leather finishing	.8208	.4500	1.0547
3311	Saw & planing mills	.7458	.0202	.9142
3318	Bamboo & cane product	-	.1499	-
3321	Mfg of wooden furniture	.3708	.1958	.5708
3533	Soap & all detergents	.5843	.2426	.3381
3611	Earthenware	-	.5490	-
3691	Bricks tiles & non clay	1.5396	.9708	1.4127
3713	Iron & steel re-rolling	.3082	.3013	.4829
3814	Furniture & fixture	.8591	.2337	.9173
3832	Ag. Machinery & equipment	.7226	.4622	.5817
3857	Ship breaking & dismantling	.2104	1.1339	.4483
	All industries	.7359	.6046	.6929

Table A.3.10: Output elasticities of employment at 3-digit level of manufacturing (CMI) activities (per enterprise)

I code	Sub-sector	Output elasticity of employment		1980-98
		1980-89	1990-98	
311	Food manufacturing	.4317	.7246	.5611
312	Food manufacturing	.7006	.1826	1.0233
314	Tobacco manufacturing	.2939	.4723	.2449
321	Textiles manufacturing	1.0974	.2493	.9875
322	Textiles manufacturing	.6319	.7090	.6540
324	Leather & l. Products	.5386	.8673	.8566
331	Wood & cork products	.5227	.1051	.6100
332	Furniture & fixture	.5826	.0628	.6451
341	Paper & paper products	-.0242	.7396	.2661
342	Printing & publishing	.0138	.6406	.5740
351	Drugs & pharmaceuticals	.1882	.4478	.4564
352	Industrial & chemicals	.1445	.7226	.0913
353	Other chemical products	-.1264	.2269	.1513
356	Rubber products	.7542	.3752	.7797
357	Plastic products	.2450	.0902	.2197
361	Pottery	.9332	.9928	1.0254
369	Non-metallic minerals	.3041	.5697	.2506
371	Iron & steel basic	.6487	-.2785	1.1181
381	Fabricated metal products	1.1210	.2119	.5491
382	Fabricated metal products	.6394	.4000	.5042
383	Non-electrical machinery	.3042	.2673	.2736
384	Electrical machinery	.9372	.6286	.6904
385	Transport equipment	.6377	.4249	.4962
	All industries	.5847	.5184	.5690

Table A.3.11: Output elasticities of employment at 4digit level of manufacturing (CMI) activities (per enterprise)

I code	Sub-sector	Output elasticity of employment		1980-98
		1980-89	1990-98	
3116	Oil except hydro	.1921	-.1840	.2017
3118	Grain milling	.2276	.6336	.4221
3122	Bakery product	.6482	.2056	.6143
3124	Manufacture of gur	-	-.4044	-
3126	Tea & coffee processing	.8963	.4708	.8430
3128	Edible salt	.6599	.4044	.3861
3143	Bidies manufacturing	-	.9720	-
3211	Cotton textiles	1.0677	1.0830	1.0127
3214	Silks & synthetic textiles	.6938	.5851	.6870
3216	Handloom textiles	-.5079	-.1189	-.0997
3223	Knitwear	-.8485	.8206	.5590
3231	Readymade garments	.9729	.4640	.8935
3241	Tanning & leather finishing	.5343	.8510	.8468
3311	Saw & planing mills	.3395	-.7087	.3474
3318	Bamboo & cane product	-	.1815	-
3321	Mfg of wooden furniture	.5802	.0812	.6523
3533	Soap & all detergents	.3086	.2609	.2849
3611	Earthenware	-	.3884	-
3691	Bricks tiles & non clay	.3313	1.3100	.3044
3713	Iron & steel re-rolling	.3643	.1538	.4127
3814	Furniture & fixture	.5702	.0897	.6446
3832	Ag. Machinery & equipment	.7402	.2810	.4699
3857	Ship breaking & dismantling	.0918	.4229	-.3143
	All industries	.6130	.4577	.5090

Table A.3.12: Ranking of selected CMI activities in terms of employment

I code	Sub-sector	Empl. Weight	Rank	I code	Sub-sector	Empl. Weight	Rank
311	Food manufacturing	0.0512	4	3116	Oil except hydro	0.0057	12
312	Food manufacturing	0.0522	3	3118	Grain milling	0.0048	14
314	Tobacco manufacturing	0.0463	5	3122	Bakery product	0.0103	9
321	Textiles manufacturing	0.3943	1	3124	Manufacture of gur	0.0002	23
322	Textiles manufacturing	0.0169	7	3126	Tea & coffee processing	0.0135	7
324	Leather & l. Products	0.0069	17	3128	Edible salt	0.0039	16
331	Wood & cork products	0.0083	15	3143	Bidies manufacturing	0.0380	5
332	Furniture & fixture	0.003	21	3211	Cotton textiles	0.0858	3
341	Paper & paper products	0.0117	12	3214	Silks & synthetic textiles	0.0169	6
342	Printing & publishing	0.0144	10	3216	Handloom textiles	0.0969	2
351	Drugs & pharmaceuticals	0.019	6	3223	Knitwear	0.0125	8
352	Industrial & chemicals	0.0082	16	3231	Readymade garments	0.2057	1
353	Other chemical products	0.0159	8	3241	Tanning & leather finishing	0.0067	11
356	Rubber products	0.0027	23	3311	Saw & planning mills	0.0043	15
357	Plastic products	0.0027	23	3318	Bamboo & cane product	0.0018	19
361	Pottery	0.0047	20	3321	Mfg of wooden furniture	0.0029	18
369	Non-metallic minerals	0.0524	2	3533	Soap & all detergents	0.0051	13
371	Iron & steel basic	0.0132	11	3611	Earthenware	0.0010	22
381	Fabricated metal products	0.0104	14	3691	Bricks tiles & non clay	0.0504	4
382	Fabricated metal products	0.0056	19	3713	Iron & steel re-rolling	0.0089	10
383	Non-electrical machinery	0.006	18	3814	Furniture & fixture	0.0014	21
384	Electrical machinery	0.0145	9	3832	Ag. Machinery & equipment	0.0014	21
385	Transport equipment	0.0114	13	3857	Ship breaking & dismantling	0.0035	17
	All	0.7718			All	0.5816	

Table A.3.13: Employment weight at 3digit level of manufacturing (CMI) activities

I code	Sub-sector	No. Of units 1980-1998	Employment 1980-1998	Employment Weight
311	Food manufacturing	46246	1045133	.0512
312	Food manufacturing	18297	1065710	.0522
314	Tobacco manufacturing	5225	944148	.0463
321	Textiles manufacturing	117572	8046139	.3943
322	Textiles manufacturing	16625	344603	.0169
324	Leather & l. Products	3952	139935	.0069
331	Wood & cork products	11951	166478	.0082
332	Furniture & fixture	3325	60857	.003
341	Paper & paper products	988	239210	.0117
342	Printing & publishing	8284	294158	.0144
351	Drugs & pharmaceuticals	4256	388683	.019
352	Industrial & chemicals	648	167713	.0082
353	Other chemical products	5111	324748	.0159
356	Rubber products	1957	55860	.0027
357	Plastic products	2299	54492	.0027
361	Pottery	3135	96330	.0047
369	Non-metallic minerals	10792	1068978	.0524
371	Iron & steel basic	2546	269116	.0132
381	Fabricated metal products	7828	213047	.0104
382	Fabricated metal products	4123	113297	.0056
383	Non-electrical machinery	2508	122607	.006
384	Electrical machinery	4142	296533	.0145
385	Transport equipment	2584	231705	.0114
	All industries	284394	15749480	.7718

Note: Total employment in CMI activities =20408,375

Table A.3.14: Employment weight at 4-digit level of manufacturing (CMI) activities

I code	Sub-sector	No. Of units 1980-1998	Employment 1980-1998	Employment Weight
3116	Oil except hydro	5244	117306	.0057
3118	Grain milling	4598	98914	.0048
3122	Bakery product	9766	209228	.0103
3124	Manufacture of gur	1045	4450	.0002
3126	Tea & coffee processing	2546	275310	.0135
3128	Edible salt	2983	80448	.0039
3143	Bidies manufacturing	8170	775880	.0380
3211	Cotton textiles	2584	1751914	.0858
3214	Silks & synthetic textiles	8892	345743	.0169
3216	Handloom textiles	100795	1977121	.0969
3223	Knitwear	13604	254372	.0125
3231	Readymade garments	12160	4197423	.2057
3241	Tanning & leather finishing	3819	136496	.0067
3311	Saw & planing mills	9101	88426	.0043
3318	Bamboo & cane product	4503	36170	.0018
3321	Mfg of wooden furniture	3268	59869	.0029
3533	Soap & all detergents	3211	103664	.0051
3611	Earthenware	5073	20590	.0010
3691	Bricks tiles & non clay	10412	1028128	.0504
3713	Iron & steel re-rolling	2090	181678	.0089
3814	Furniture & fixture	1862	28215	.0014
3832	Ag. Machinery &equipment	266	27588	.0014
3857	Ship breaking & dismantling	361	70984	.0035
	All industries	216353	11869917	0.5816

Note: total employment in CMI activities =20408,375

Table A.3.15: Change of value added elasticities and employment in census manufacturing industrial (CMI) activities

Sub-sector	Value added/ Output	% Point change in value added elasticity	% Change in employment
3- digit	Value added	-6.04	+ 106.4
4- digit	Value added	-5.85	+ 394.3
3- digit	Output	-3.31	+ 106.4
4- digit	Output	-13.13	+ 394.3

Table A.3.16: Change of value added elasticities and employment at 3digit level of CMI activities

I code	Sub-sector with + inv elasticity	Change in employment elasticity of value added between 1980-1989 and 1990-98	% Change in employment Between 1980-1989 and 1990-98
311	Food manufacturing	- .83	+383.9
312	Food manufacturing	- .89	+ 48.6
314	Tobacco manufacturing	+ 1.33	+629.7
321	Textiles manufacturing	- .51	+ 57.9
322	Textiles manufacturing	- .58	+ 294.5
324	Leather & l. Products	- .87	+127.4
331	Wood & cork products	- .29	+279.3
332	Furniture & fixture	- .25	+206.8
341	Paper & paper products	+ .04	+ 18.7
342	Printing & publishing	- .34	+150.1
351	Drugs & pharmaceuticals	+ .05	+ 53.8
352	Industrial & chemicals	- .24	+ 18.9
353	Other chemical products	+ .39	+ 17.0
356	Rubber products	- .61	+ 92.7
357	Plastic products	- .67	+ 17.0
361	Pottery	-2.16	+255.7
369	Non-metallic minerals	- .98	+1260.8
371	Iron & steel basic	- .21	+ 32.6
381	Fabricated metal prod	- .70	+ 99.5
382	Fabricated metal prod.	- .25	+ 26.5
383	Non-electrical machinery	- .27	- 11.6
384	Electrical machinery	- .40	+176.9
385	Transport equipment	- .74	+217.7

Sub-sector with - ive elasticity		
-	-	-
All industries	-.060	+ 106.4

Table A.3.17: Change of value added elasticities and employment at 4digit level of CMI activities

I code	Sub-sector with + inv elasticity	Change in employment elasticity of value added between 1980-1989 and 1990-98	% Change in employment Between 1980-1989 and 1990-98
3116	Oil except hydro	-.52	+ 283.5
3118	Grain milling	-.98	+ 186.7
3122	Bakery product	-1.22	+ 313.5
3124	Manufacture of gur	-	+ 615.0
3126	Tea & coffee processing	-.34	- 8.1
3128	Edible salt	-.68	+ 425.2
3143	Bidies manufacturing	-	+1581.0
3211	Cotton textiles	+.20	+ 58.5
3214	Silks & synthetic textiles	-.26	+ 163.7
3216	Handloom textiles	-.01	+ 373.3
3223	Knitwear	-.07	+ 134.3
3231	Readymade garments	-.08	+1618.0
3241	Tanning & leather finishing	-.90	+ 122.9
3311	Saw & planning mills	-.33	+ 508.8
3318	Bamboo & cane product	-	+ 887.2
3321	Mfg of wooden furniture	-.25	+ 200.5
3533	Soap & all detergents	-.10	+ 44.2
3611	Earthenware	-	+1523.0
3691	Bricks tiles & non clay	-1.19	+1623.0
3713	Iron & steel re-rolling	-.06	+ 62.4
3814	Furniture & fixture	-.40	+ 174.7
3832	Ag. Machinery &equipment	+.09	+ 97.6
3857	Ship breaking & dismantling	-.70	+ 116.8
Sub-sector with - ive elasticity			
-	-	-	-
	All industries	-.058	+ 394.3

Table A.3.18: Change of output elasticities and employment at 3digit level of CMI activities

I code	Sub-sector with + inv elasticity	Change in employment elasticity of value added between 1980-1989 and 1990-98	% Change in employment Between 1980-1989 and 1990-98
311	Food manufacturing	- .28	+383.9
312	Food manufacturing	- .87	+ 48.6
314	Tobacco manufacturing	- .42	+629.7
321	Textiles manufacturing	- .81	+ 57.9
322	Textiles manufacturing	- .39	+ 294.5
324	Leather & l. Products	- .33	+127.4
331	Wood & cork products	- .43	+279.3
332	Furniture & fixture	- .19	+206.8
341	Paper & paper products	+ .54	+ 18.7
342	Printing & publishing	- .19	+150.1
351	Drugs & phamaceuticals	- .28	+ 53.8
352	Industrial & chemicals	+ .53	+ 18.9
353	Other chemical products	+ .33	+ 17.0
356	Rubber products	- .79	+ 92.7
361	Pottery	+ .40	+255.7
369	Non-metallic minerals	- 1.88	+1260.8
371	Iron & steel basic	- .56	+ 32.6
381	Fabricated metal prod	- .49	+ 99.5
382	Fabricated metal prod.	- .24	+ 26.5
383	Non-electrical machinery	- .32	- 11.6
384	Electrical machinery	- .21	+176.9
385	Transport equipment	- .22	+217.7
Sub-sector with - ive elasticity			
357	Plastic products	- .82	+ 17.0
	All industries	- .03	+106.4

Table A.3.19: Change of output elasticities and employment at 4digit level of CMI activities

I code	Sub-sector with + inv elasticity	Change in employment elasticity of value added between 1980-1989 and 1990-98	% Change in employment between 1980-1989 and 1990-98
3116	Oil except hydro	- 1.51	+ 283.5
3118	Grain milling	- .64	+ 186.7
3122	Bakery product	- 1.05	+ 313.5
3124	Manufacture of gur	-	+ 615.0
3126	Tea & coffee processing	- .49	- 8.1
3128	Edible salt	- .54	+ 425.2
3143	Bidies manufacturing	-	+ 1581
3211	Cotton textiles	+ .31	+ 58.5
3214	Silks & synthetic textiles	- .07	+ 163.7
3216	Handloom textiles	- 1.20	+ 373.3
3223	Knitwear	+ .19	+ 134.3
3231	Readymade garments	- .08	+1618.0
3241	Tanning & leather finishing	- .37	+ 122.9
3311	Saw & planning mills	- .73	+ 508.8
3318	Bamboo & cane product	-	+ 887.2
3321	Mfg of wooden furniture	- .18	+ 200.5
3533	Soap & all detergents	- .34	+ 44.2
3611	Earthenware	-	+1523.0
3691	Bricks tiles & non clay	- .57	+ 1623
3713	Iron & steel re-rolling	- .01	+ 62.4
3814	Furniture & fixture	- .63	+ 174.7
3832	Ag. Machinery &equipment	- .26	+ 97.6
3857	Ship breaking & dismantling	+ .92	+ 116.8
Sub-sector with - ive elasticity			
-	-	-	-
	All industries	- .13	+ 394.3

Table A.3.20: Change in wages rate at 3-digit level of manufacturing (CMI) activities

I code	Sub-sector	Wages/employment 1985-86	Wages/employment 1995-96	%Change in wages rate between 1985-86&1995-96
311	Food manufacturing	13.99	18.86	34.81
312	Food manufacturing	14.73	33.83	129.67
314	Tobacco manufacturing	29.42	21.96	-25.36
321	Textiles manufacturing	17.07	23.59	38.20
322	Textiles manufacturing	12.34	26.52	114.91
324	Leather & l. Products	14.84	31.25	110.58
331	Wood & cork products	20.81	24.85	19.41
332	Furniture & fixture	18.98	24.7	30.14
341	Paper & paper products	31.15	35.25	13.16
342	Printing & publishing	16.23	43.92	170.61
351	Drugs & pharmaceuticals	26.86	66.06	145.94
352	Industrial & chemicals	40.60	78.53	93.42
353	Other chemical products	22.66	20.98	-7.41
356	Rubber products	14.21	18.30	28.78
357	Plastic products	13.68	19.02	39.04
361	Pottery	12.39	27.89	125.10
369	Non-metallic minerals	21.94	0.19	-99.13
371	Iron & steel basic	27.03	40.12	48.43
381	Fabricated metal products	13.44	21.68	61.31
382	Fabricated metal products	15.49	49.12	217.11
383	Non-electrical machinery	19.09	29.75	55.84
384	Electrical machinery	28.18	32.64	15.83
385	Transport equipment	28.83	36.22	25.63
	All industries	18.52	23.93	29.21

Table A.3.21: Change in wages rate at 4-digit level of manufacturing (CMI) activities

I code	Sub-sector	Wages/employment 1985-86	Wages/employment 1995-96	%Change in wages rate between 1985-86&1995-96
3116	Oil except hydro	10.46	20.49	95.89
3118	Grain milling	13.20	27.20	106.06
3122	Bakery product	12.97	30.00	131.30
3124	Manufacture of gur	-	-	-
3126	Tea & coffee processing	10.70	18.22	70.28
3128	Edible salt	9.87	16.58	67.98
3143	Bidies manufacturing	-	-	-
3211	Cotton textiles	15.56	32.09	106.23
3214	Silks & synthetic textiles	13.06	25.16	92.65
3216	Handloom textiles	7.53	12.09	60.56
3223	Knitwear	7.10	23.11	225.49
3231	Readymade garments	10.36	25.98	150.77
3241	Tanning & leather finishing	14.87	31.24	110.09
3311	Saw & planing mills	20.34	22.87	12.44
3318	Bamboo & cane product	-	-	-
3321	Mfg of wooden furniture	18.98	24.69	30.08
3533	Soap & all detergents	37.09	27.78	-25.1
3611	Earthenware	-	-	-
3691	Bricks tiles & non clay	12.87	9.66	-24.95
3713	Iron & steel re-rolling	16.95	35.12	107.20
3814	Furniture & fixture	10.14	20.21	99.31
3832	Ag. Machinery & equipment	28.42	27.15	-4.47
3857	Ship breaking & dismantling	-	-	-
	All industries	13.55	22.69	67.45

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