Size Structure of Manufacturing Industry and Implications for Growth and Poverty

Bangladesh Country Paper

Nazneen Ahmed
Zaid Bakht
Md. Yunus

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Bangladesh Institute of Development Studies
E-17 Agargaon, Sher-e-Bangla Nagar, Dhaka-1207, Bangladesh

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I. Introduction

The developmental odds faced by Bangladesh at the time of independence in 1971 were formidable. The challenges of high population growth, constant food shortages, recurring natural disaster, high aid-dependence, limited production of tradable, widespread poverty and low levels of human development were compounded by the dislocations caused by the war of liberation. Against that backdrop, the prospect of Bangladesh economy appeared rather bleak.

However, Bangladesh's achievements over the past four decades negated considerably that pessimistic outlook. Against the benchmark trend GDP growth rate of 3.2 percent during 1950-1970, Bangladesh achieved a reasonably steady annual rate of growth of over 4 percent during the first two decades of her independence and was successful in moving into the higher growth trajectory of nearly 5 percent during 1990s. The economy achieved a trend growth rate of 5.8 percent during 2000-2009.

The boom in export and remittance earnings, with yearly compound growth of more than 12 percent in each during 1980-2009, coupled with the decline in population growth rate from the post-independence peak of 2.7 percent to 1.2 percent in recent years helped raise average yearly per capita GNI growth to about 5 percent during the last decade. This was more than twice the global median for per capita growth during the same period.

The acceleration in the pace of growth started since the early 1990s when Bangladesh returned to a democratic form of government after almost a decade of autocratic rule. This also coincided with the intensified phase of wide ranging policy reforms involving deregulation of investment, trade liberalization, exchange rate, fiscal and financial sector reforms.

On the face of it, the rise in per capita income seems to have resulted in significant decline in the level of absolute poverty. Household income survey showed incidence of income-poverty to be around 40 percent in 2005 against 58.8 per cent in 1991-92. Bangladesh also achieved impressive successes in the broad area of human development as reflected in the aggregate measure of human development index and human poverty index.

However, despite these impressive records with growth and equity, there has been some concern in recent years that economic growth in Bangladesh has not been sufficiently pro-poor and the low employment content of the growth achieved has been suggested as a reason behind this (Islam 2006). One aspect of this concern is that agriculture has continued to account for nearly 50 percent of employment although its share in GDP has been steadily declining. There has also been the disturbing evidence of widening social inequality as reflected in the rising Gini coefficient of income distribution (GOB 2009). The incidence of spatial inequality has also been high in Bangladesh.

In a labor surplus economy like Bangladesh the nexus between growth and equity is largely determined by the evolving pattern of structural changes of the economy. The pace at which surplus labor from agriculture is siphoned-off depends on how labor intensive is the growth outside agriculture, particularly in the manufacturing sector, which often shoulders key responsibility in carrying the economy forward.

Again, the employment intensity of manufacturing growth and its spatial attributes are expected to be closely linked with the size structure of the sector. Faced with factor prices closer to their social opportunity costs, smaller enterprises are often more efficient users of resource and tend to be more labor intensive in labor surplus economies. Low capital, skill and technology content also enable the smaller enterprises to be geographically more dispersed. These attributes thus render these enterprises more supportive of poverty reducing development strategies. The issue of size structure has generated considerable research interests in recent years (Mazumdar, 2003).

The present paper aims to examine the evolving pattern of size structure in the manufacturing sector of Bangladesh and its implications for growth and equity. The paper is organized in the following manner. After the introductory remarks in Section I, Section II provides an account of the structural transformation of Bangladesh economy during the past three decades. Section III looks at the changing pattern of size structure in the manufacturing sector and this is followed in Section IV by an analysis of productivity and wage differentials across different size groups in the manufacturing sector. Finally, Section V provides the summary of findings and concluding remarks.

II. Structural Transformation of Bangladesh Economy

Bangladesh economy remained predominantly agrarian during the first two decades of her independence with agriculture (including fishery, livestock and forestry) accounting for almost 37 percent of GDP in 1988-89 (Table 1). During this period, the moderate decline in the share of agriculture was made up by growth in the service sector, particularly transport and communication. The decline in the share of agriculture accelerated during 1990s which coincided with the intensified phase of policy reform. During this and the subsequent decade, the decline in agriculture's share was matched by an increase in the share of industry (which includes manufacturing, utility, construction and mining), with the share of service sector remaining virtually unchanged. Thus, in terms of composition of GDP, the structural transformation of Bangladesh economy since early 1990s seems like a transition from agriculture to industry rather than to service. As mentioned earlier, this has also been the period when Bangladesh moved into a higher growth trajectory.

Table 1: Sectoral Composition (%) of GDP (1978 – 2009)

Year	Agriculture	Industry	Service	All
1978-79	44.9	18.2	36.9	100
1988-89	37.1	17.1	45.8	100
1998-99	25.3	25.7	49.0	100
2008-09	20.6	29.7	49.7	100

Source: BBS Statistical Yearbooks

The evidence with respect to employment, however, presents a different picture (Table 2). There has been some decline in the share of agriculture in employment and the consequent increase in the share of industry and service sector between 1985 and 1995, but beyond 1995 agriculture's share in employment declined only marginally with modest growth in the share of industry. Agriculture has thus continued to be the mainstay of employment accounting for as high as 48 percent of employment in 2005-06. Clearly, the employment content of the observed growth in industrial and service output has not been strong enough to reallocate surplus labor out of agriculture, although some components of the service sector such as health, education, public

administration, real estate and transport experienced quite high growth in employment. As shown in Table 2, the overall yearly growth in employment during 1995-2006 was a paltry 3.1 percent while growth in labor force during the same period was estimated to be nearly 3.2 percent. The picture becomes even more worrisome when the incidence of underemployment is taken into account, which stood at nearly 25 percent in 2005-06.

Table 2: Sectoral Composition (%) of Employment (1985 – 2006)

Year	Agriculture	Industry	Service	Total
1985-86	57.1	12.1	30.7	100
1995-96	48.9	13.3	37.8	100
2005-06	48.1	14.4	37.5	100
Yearly growth in employment 1995-2006 (%)	3.0	4.1	2.5	3.1

Source: BBS Labor Force Surveys

A second major structural change in Bangladesh economy has been the transition to a more open economy, particularly following the liberalization measures undertaken during early 1990s (Table 3). Exports rose from $1718 million in 1990-91 to $6467 million in 2000-01 indicating a yearly compound growth of 14.2 percent. Similar trends are observed with regard to imports and remittance. The openness of the economy shown by total external trade as a percentage of GDP increased from 21 percent in 1980-81 to 42.6 percent in 2008-09.

The composition of the export basket has also undergone significant changes during this period (Table 4). In 1981-82, raw jute and jute goods were the dominant export items accounting for 16.2 percent and 46.5 percent respectively of total exports. Woven garments accounted for a tiny 1.1 percent of total exports and there was no export of knitwear in that year. In 1991-92, the share of raw jute and jute goods in total exports came down to 4.3 percent and 6.4 percent respectively while the share of woven garment went up to 53.4 percent. This was the first year of knitwear export and accounted for 5.9 percent of total export. In 2008-09, one finds a very different picture with knitwear accounting for 41.3 percent of export followed by woven garment accounting for 38 percent of exports. The combined export of raw jute and jute goods stood at less than 3 per cent of total exports. During this period the share of manufactured goods in total

exports rose significantly while that of primary goods registered commensurate decline. Bangladesh, thus, seems to have made successful transition from resource based export to process based exports, although exports remains precariously dependent on one item, namely, readymade garments.

Table 3: Trend in the Openness of the Economy

Description	1980-81	1990-91	2000-01	2008-09
Export (Million $)	710	1,718	6,467	15,565
Yearly export growth (%)	-	9.2	14.2	11.6
Import (Million $)	2,282	3,510	9,364	22,507
Yearly import growth (%)	-	4.4	10.3	11.6
Remittance (Million $)	381	764	1,882	9,689
Yearly remittance growth (%)	-	7.2	9.4	22.7
Export as % of GDP	5.0	7.3	13.7	17.4
Import as % of GDP	16.0	15.0	19.9	25.2
Remittance as % of GDP	2.7	3.3	4.0	10.8
Openness of the economy	21.0	22.3	36.9	42.6

Source: GOB Ministry of Finance, Economic Review

Table 4: Share (%) of Major Export Items

Year	Jute good	Raw jute	Frozen food	Woven garment	Knitwear	Primary commodity	Manufactured goods
1981-82	46.5	16.2	8.4	1.1	0.0	35.0	65.0
1991-92	6.4	4.3	7.3	53.4	5.9	15.0	85.0
2008-09	1.8	1.0	3.0	38.0	41.3	5.6	94.4

Source: GOB, Ministry of Finance, Economic Review

A third aspect of structural change in Bangladesh has been with regard to the relative role of the public and private sector. Policies towards private sector development underwent significant

changes during the first three decades of independence. These changes were often closely associated with political changes in the country.

The development philosophy of the government at the time of Bangladesh's independence in 1971 was to confer on the state the leading role in the development process. Accordingly, immediately after independence, the government took over all industrial units abandoned by the non-Bengali entrepreneurs and also nationalized all Bangladeshi owned banks, insurance companies and industrial enterprises in the large and medium category. The scope of domestic private investment was limited to small and cottage enterprises.

The strategy of public sector led industrialization was abandoned after the political change in 1975 and the stage was set for the pursuit of mixed economy strategy with simultaneous emphasis on public and private sector. Between 1975 and 1981, a number of policy changes were made to give more room to the private sector. These included elimination of ceiling on private investment, amendment of the constitution to allow denationalization and actual divestiture of a number of public enterprises.

After the political change in 1981, the New Industrial Policy was announced in 1982 which marked a clear shift towards private sector led industrialization strategy. All subsequent governments adhered to this strategy of letting the private sector play the leading role in industrialization. In line with this strategy, privatization of public enterprises has been pursued and policies have been reformed to facilitate private sector growth resulting in secular decline in the share of public enterprises in industrial value added and employment (Table 5).

There have also been some changes in the composition of the industrial sector (Table 6). Manufacturing has all along been the dominant component of the industrial sector and it share in GDP increased from about 10 percent in 1988-89 to nearly 18 percent in 2008-09. However, its share in industrial output registered some decline as mining, construction and utilities experienced significant gains following deregulation of investment and inflow of foreign investment in some of these subsectors. A similar picture is seen with regard to employment share, with manufacturing having a more dominant position because of higher labor intensity in manufacturing compared to the other components of the industrial sector (Table 7).

Table 5: Declining Share of Public Enterprises in Industrial Value Added and Employment

Year	Share in VA (%)	Share in employment (%)
1976-77	55.1	78.3
1986-87	44.1	45.9
1991-92	23.1	21.1
1995-96	11.4	10.6
2001-02	6.9	5.6
2005-06	1.6	2.7

Source: BBS Census of Manufacturing Industries 2005-06

Table 6: Changing Composition of the Industrial Sector in terms of GDP Share

1978 – 2009

Year	Share in GDP (%)					Share of Mfg in Industry (%)
	Manufacturing	Construction	Utility	Mining	Industry	
1978-79	12.25	5.69	0.28	0.01	18.23	67.2
1988-89	9.89	6.18	1.03	0.00	17.10	57.8
1998-99	15.60	7.67	1.42	1.00	25.69	60.7
2008-09	17.78	9.13	1.57	1.25	29.70	59.9

Source: GOB Ministry of Finance, Economic Review

Table 7: Changing Composition of the Industrial Sector in terms of Employment

1995-2006

Year	Employment (Million persons)					Share of Mfg in Industry (%)
	Manufacturing	Construction	Utilities	Mining	Industry	
1995-96	3.5	1.0	0.1	0.0	4.6	76.1
2005-06	5.2	1.5	0.1	0.1	6.9	75.4

Source: BBS Labor Force Surveys

As shown in Table 7, manufacturing employment increased from 3.5 million in 1995-96 to 5.2 million in 2005-06 registering a yearly compound growth of 4 percent. According to the national income data, manufacturing value added increased at an annual compound rate of 6.6 percent during the same 10 year period. This would imply an employment elasticity of nearly 0.61 with respect to value addition, which suggests that recent manufacturing growth in Bangladesh has been moderately employment-intensive.

Manufacturing industry also seems to have lost some ground to service sector with regard to share in non-farm employment during 1986-2002. Thus, according to the data from the Economic Census, while manufacturing employment recorded modest growth during the inter census period of 1986-2002, the share of manufacturing employment in total non-farm employment declined from 42.9 percent in 1986 to 31.1 percent in 2002, which was largely taken up various service activities (Table 8).

Table 8: Share of Manufacturing in Non-farm Employment 1986-2002

Year	Share in non-farm employment (%)			All
	Manufacturing	Wholesale & retail trade	Other services	
1986	42.9	33.0	24.1	100
2002	31.1	35.4	33.5	100

Source: BBS Economic Census 1986 and 2001/03

One also notices significant changes in the composition of the formal manufacturing sector during the past two decades. Table 9 and 10 lists top ten (in terms of value added share) 4-digit industries in "10 or more workers" size category for 1990-91 and 2001-02. As is evident from the Tables, the formal manufacturing sector in Bangladesh remained quite narrowly based during 1990s. The top ten 4-digit industries in terms of value added accounted for about 18 percent of establishments, 67 percent of manufacturing value added and 68 percent of manufacturing employment in the 10 or more workers size category in 2001-02. A number of industries gained significantly in terms of value added contribution during the reference period and this includes readymade garments, pharmaceuticals, silk and synthetic textiles, wooden furniture, cement and other non-metallic minerals and leather footwear.

Table 9: Top Ten 4-digit Industries in terms of Value Added Share (10 or more workers) 1990-91

Sl. No.	BSIC (old code)	Industry	Value added share (%)	Employment share (%)
1	3213	Jute textile	11.51	19.91
2	3231	Readymade garments	10.98	16.73
3	3141	Cigarettes	10.82	0.87
4	3524	Fertilizer	6.82	0.67
5	3211	Cotton textile	5.82	8.60
6	3511	Pharmaceuticals	5.44	1.30
7	3216	Handloom textile	3.68	13.36
8	3123	Sugar factories	3.42	1.78
9	3533	Soap and detergents	1.94	0.51
10	3713	Iron and steel re-rolling	1.84	0.91
Total			62.27	64.64

Source: BBS Census of Manufacturing Industries 1990-91

Table 10: Top Ten 4-digit Industries in terms of Value Added Share (10 or more workers) 2001-02

Sl. No.	BSIC	Industry	Value added share (%)	Employment share (%)
1	1811	Readymade garment	22.03	48.11
2	2423	Pharmaceuticals	18.27	4.08
3	1711	Cotton textile	6.88	6.35
4	1714	Silk and synthetic textiles	4.57	1.48
5	1601	Cigarettes	4.36	0.32
6	3611	Wooden furniture	2.91	1.22
7	1713	Jute textile	2.48	5.38
8	2694	Cement & other non-metallic minerals	2.03	0.23
9	1921	Leather footwear	1.98	0.35
10	2424	Soap & detergents	1.82	0.17
Total			67.33	67.69

Source: BBS Census of Manufacturing Industries 2001-02

The impact of the observed changes in the composition of the formal manufacturing sector on employment generation was somewhat mixed. Readymade garments replaced jute textiles as the top most industry both in terms of value added and employment share. In fact, readymade garments, with average employment size of 326 against 100 recorded for all manufacturing enterprises (with 10 or more workers), accounted for nearly half of all employment in the

manufacturing sector in the stated size category in 2001-02. Rapid growth of the readymade garment industry, in turn, contributed to the growth of backward linkage industries including cotton, silk and synthetic textiles. However, being less labor intensive the employment contribution of these backward linkage industries has been much less than readymade garments industry. Similarly, pharmaceutical is also a less labor intensive industry whose rapid growth has been facilitated largely by WTO waiver regarding patent protection for LDCs.

Both wooden furniture and leather footwear are labor intensive activities whose growth was facilitated by easier access to imported inputs provided through trade liberalization measures. Cement, bricks and other non-metallic minerals gained from rapid growth of the construction sector, Except cement, other activities under this industry are labor intensive. Thus, growth of manufacturing industry in Bangladesh since early 1990s presents a mixed picture in terms its contribution to employment generation.

III. Size Structure of Manufacturing Enterprises in Bangladesh

Official data pertaining to manufacturing industry in Bangladesh is available from several sources. These include the following:

i) Labor Force Survey (LFS)

ii) Economic Census (EC)

iii) Annual Establishment and Institution Survey (AEIS), and

iv) Census of Manufacturing Industries (CMI)

These censuses and surveys are all carried out by the Bangladesh Bureau of Statistics (BBS). However, the reference period of the latest manufacturing data is not the same in all cases. There are also differences with regard to coverage, definitions and methodology used, both between data sources and also within each source at different points in time.

The manufacturing employment data from LFS has already been reported. Unfortunately, LFS does not provide employment data by size classes. Hence in this section, we examine data from the remaining three sources only.

Economic Census (EC)

The first census of non-farm economic activities in Bangladesh was carried out by the BBS in 1986. The census was repeated in 2001 but was limited to the urban areas. Enumeration of the rural undertakings was done in 2003. The main limitation of the EC data is that information for less than 10 workers category is not available broken down by smaller size groups, e.g. 1-5 workers and 6-9 workers category. Similarly, beyond 100 workers, the information is not broken down by disaggregate size groups such 100-299 workers, 300-499 workers etc. The EC data also does not provide value added information.

Table 11 shows distribution of manufacturing employment by size classes in the two census periods. The Table shows a U shaped distribution with the size groups at the two ends accounting for bulk of employment. However, one notices significant change in the size distribution of the manufacturing undertakings between 1986 and 2001-03. In 1986, micro manufacturing units (less than 10 workers) accounted for nearly 61 per cent of all manufacturing employment. A large part of these micro units consisted of household based cottage industries that are operated wholly or mainly with family labor. These are mostly residual type activities using traditional technologies where factor productivity and rates of return are abysmally low, often lower than the wage rate of agricultural laborers. People are usually driven to these activities when more productive employment is not available. During the inter-census period, both the absolute level of employment and share in total manufacturing employment declined significantly for this smallest size group.

Table 11: Changes in the Size Distribution of Manufacturing Employment according to Economic Census Data

Year	Share in manufacturing employment (%)				Total
	Less than 10 workers	10-49 workers	50-99 workers	100 or more workers	
1986	60.5	9.3	3.3	26.9	100
2001/03	40.4	13.1	4.2	42.3	100

Source: BBS Economic Census Report

In contrast, small (10-49 workers) and large enterprises (100 and more workers) demonstrated a more vibrant situation. Employment share of small enterprises went up by nearly 4 percentage points from 9.3 percent to 13.1 percent while the employment share of large enterprises went up by nearly 15 percentage points from 26.9 percent to 42.3 percent. In contrast, medium enterprises (50-99 workers) experienced growth in employment share by less than 1 percentage point. However, significant inter-industry variations were also observed amongst enterprises in 10-99 employment size-group with respect to employment growth. Of the top 25 industries in terms of employment share in 2001/03, 14 experienced yearly employment growth of more than 5 percent. This means that there has been a fairly dynamic component within the 10-99 workers size category although, on the whole, this size group has registered only moderate growth in employment (Table 12).

Annual Establishment and Institution Survey(AEIS)

The AEIS is a sample survey of non-farm economic activities. Its coverage includes the following six sub-sectors.

- Manufacturing establishments with less than 10 workers
- All household based manufacturing activities
- Wholesale and retail trade (all employment sizes)
- Hotels and restaurants (all employment sizes)
- Establishments providing business, community, social, cultural and personal services (all employment sizes)
- Household based non-manufacturing service activities

Table 13 presents evidence on employment and value added at constant price for the manufacturing segment of the AEIS during 1992-93 and 2002-03. As can be seen from the Table, the evidence reaffirms the Economic Census findings that household based manufacturing activities have been on decline since early 1990s. Non-household based manufacturing establishment with less than 10 workers also stagnated with about 2.5 per cent yearly growth in employment during the reference period. The only silver lining in the case of the non-household

based manufacturing is the indication of some improvement in labor productivity as growth in value added is seen to be somewhat higher than growth in employment in this segment of the manufacturing sector.

Table 12: Growth in Employment in Top 25 Industries with 10-99 workers 1986-2001/03

ISIC	Description	Employment		Yearly growth in employment (%) 1986-2002
		1986	2001/03	
171	Spinning, weaving & textiles finishing	156,565	234,186	2.55
269	Non-metallic mineral products	34,126	78,727	5.36
153	Grain mill products	49,386	69,919	2.20
181	Wearing apparel	10,591	36,323	8.01
154	Other food	9,778	32,878	7.87
361	Furniture	7,128	17,252	5.68
252	Plastic products	4,367	15,070	8.05
172	Other textiles	4,848	13,754	6.73
281	Metal tanks and reservoirs	5,389	12,601	5.45
222	Job printing	4,176	11,778	6.70
192	Footwear	3,475	11,701	7.88
242	Other chemical products	3,948	11,536	6.93
173	Knitted wear and fabrics	3,805	11,024	6.87
210	Paper products	1,357	8,456	12.11
369	Jewelry, musical, sports & stationary	3,759	8,084	4.90
289	Other fabricated metal products	14,648	7,097	-4.43
271	Basic iron and steel	7,641	6,215	-1.28
160	Tobacco products	10,833	5,970	-3.66
191	Luggage, handbags etc.	3,323	4,705	2.20
201	Saw milling	7,142	4,213	-3.25
151	Processing meat, fish, fruit etc	1,261	3,933	7.37
221	Publishing	6,139	3,874	-2.84
362	Decorative handicrafts	1,652	3,286	4.39
351	Repairing and building of ship and boat	1,382	2,740	4.37
251	Rubber products	914	2551	6.63
Total		357,633	617,873	3.48

Source: BBS Economic Census Reports

Table 13: Employment and Value Added in Manufacturing Units Covered by the AEIS

Description	Household based manufacturing			Non-household based manufacturing with <10 workers		
	1992-93	2002-03	Growth (%)	1992-93	2002-03	Growth (%)
Total persons engaged	1,166,085	1,082,957	Negative	495,653	631,800	2.5
Value added at 1995-96 prices (million Tk.)	25,521	24,896	Negative	18,667	26,957	3.7

Source: BBS Annual Establishment and Institution Survey

Census of Manufacturing Industry (CMI)

The CMI is a sample survey of manufacturing enterprises with 10 or more workers. To get a complete picture of the size distribution of non-household manufacturing we need to combine AEIS data with CMI data. But AEIS data are available only for 1992-93 and 2002-03 while the available disaggregate CMI data are for the years 1995-96 and 2001-02. Hence, to present employment and value added share of different size categories in the total non-household sector we have estimated employment and value added in the less than 10 workers non-household manufacturing for the same years as CMI data on the basis of available AEIS data using inter-survey growth rates.(Table 14).

Table 14: Percentage Distribution of Employment and Value Added by Size Groups of Non-household Manufacturing Enterprises

Size groups (No. of workers)	Employment share (%)		Value added share (%)	
	1995-96	2001-02	1995-96	2001-02
<10 Non-household	21.1	18.1	10.1	9.6
10 – 49	13.9	9.3	8.0	4.8
50 – 99	5.0	5.8	4.9	5.6
100 – 199	9.5	7.4	8.0	6.4
200 – 499	20.6	22.4	21.3	23.7
500 or more	29.9	37.0	47.6	49.9
All	100	100	100	100

Source: BBS, Annual Enterprise and Establishment Survey, and Census of Manufacturing Industries

The evidence again presents a U shaped distribution with large enterprises (500 and more workers) dominating the scene. Clearly, growth in non-household manufacturing in Bangladesh during 1990s has been overwhelmingly led by large enterprises.

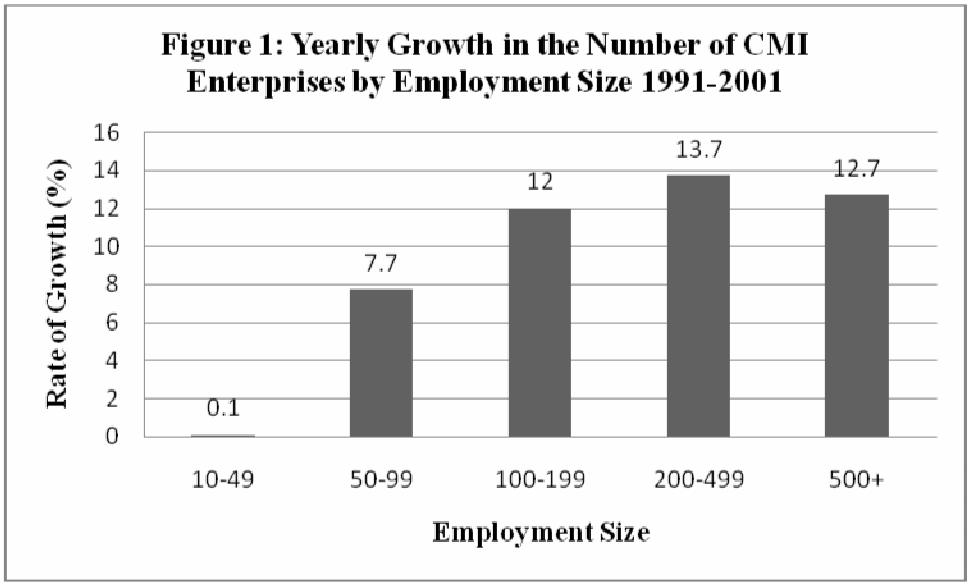
To explain the observed change in the size structure of the manufacturing sector in terms of growth of readymade garments in Bangladesh, we have presented percentage distribution of firms in 10 or more workers category and the share of readymade garments industry in each size category of firms for 1991-92 and 2001-02 (Table 15). As can be seen from the Table, the share

of enterprises with 200 or more workers has increased significantly during 1990s and readymade garment industry accounts for bulk of this increase in large firms.

Table 15: Percentage Distribution of Firms by Size Groups and the Share of Readymade Garments Industry 1991/92 – 2001/02

Size Group (No. of workers)	Share in number of firms (%)		Yearly growth in number of firms	Share of readymade garments in number of firms (%)	
	1991/92	2001/02		1991/92	2001/02
10 - 49	86.2	71.0	0.1	0.2	5.5
50 - 99	6.3	9.9	7.7	1.2	5.0
100 – 199	2.8	6.6	12.0	18.7	22.6
200 – 499	3.0	8.3	13.7	68.9	75.5
500 or more	1.7	4.2	12.7	22.8	62.6
All	100	100	2.3	2.6	14.8

Source: BBS, Census of Manufacturing Industries



IV Employment and Productivity Trends

The AEIS based evidence presented in the earlier section showed that employment in the "less than 10 workers non-household manufacturing" increased at a yearly rate of 2.5 percent during the ten year period 1992-2002 while the rate of growth of value added during the same period was 3.7 percent. This implies an employment elasticity of 0.68 with respect to value added for this size group of manufacturing establishments. The evidence also shows that labor productivity for these enterprises increased from about Tk. 37.7 thousand in 1992-93 to about Tk. 42.7 thousand in 2002-03 in constant 1995-96 price indicating a yearly growth in productivity of 1.3 percent only. The contrasting picture with regard to the formal manufacturing sector employing 10 or more workers based on CMI data for 1991-92 and 2001-02 is shown in Table 16.

Table 16: Labor Productivity Trends in Formal Manufacturing in Bangladesh

(All values are in constant 1995-96 prices)

Description	1991-92	2001-02	Yearly rate of growth (%)
No. of employees (000 persons)	1,156	2,466	7.9
Value added (million Tk.)	85,272	247,520	11.2
Value added per employee (Tk.)	73,752	100,385	3.1
Employment cost (million Tk.)	30,235	66,500	8.2
Annual wage rate (Tk.)	26,302	26,970	0.3
Fixed capital per employee (Tk.)	103,118	115,995	1.2

Source: BBS, Census of Manufacturing Industries

The evidence presents a much more vibrant picture with employment growth estimated at 7.9 percent while value added growth is estimated at 11.2 percent indicating an employment elasticity of nearly 0.71. As can be seen from the Table, labor productivity in formal manufacturing (employing 10 or more workers) was nearly 2 times higher than that in non-household manufacturing (employing less than 10 workers) in early 1990s. During 1991-2001,

labor productivity in the former group increased at a yearly rate of about 3.1 percent, which though modest was higher than that observed for the latter group. As a result, productivity differential between the two groups widened further and in 2002 stood at 2.4:1.

However, productivity differentials between different size groups within the formal sector (employing 10 or more workers), shows a somewhat different trend. Table 17 depicts indices of fixed assets per worker (K/L), value added per worker (VA/L) and wage rate for different size groups of enterprises with values for the largest size group (500 or more workers) equal to 100. The indices have been presented for two years – 1995/96 and 2001/02. The evidence clearly shows a narrowing of the spread between the large enterprises (500 or more workers) and small and medium enterprise (10-199 workers) with respect to all three parameters.

Table 17: Factor Intensity and Labor Productivity Indices by Size Groups

No. of workers	1995-96				2001-02			
	K/L	VA/L	Wage	Wage as % of VA/L	K/L	VA/L	Wage	Wage as % of VA/L
10-49	23	36	41	30.4	64	38	65	38.8
50-99	38	62	50	21.5	47	72	74	23.5
100-199	32	53	54	27.2	69	64	90	32.2
200-499	32	65	77	31.8	44	79	95	27.9
500+	100	100	100	26.6	100	100	100	23.0

Source: BBS, CMI Unit Level data

Growth of large manufacturing enterprises (500 or more workers) has been spearheaded mainly by readymade garments industry, which is a highly labor intensive activity, and it has resulted in capital intensity and labor productivity in this size group to decline. At the same time, the evidence also supports the notion that significant capital deepening has taken place amongst the small manufacturing enterprises in Bangladesh during 1990s. Although as indicated by the Economic Census data, a number of traditional small industries such as grain mill, saw mill, handloom etc either stagnated or experienced decline in employment, there were the more dynamic components of the small and medium industry group who by taking advantage of the liberalized trade regime upgraded their technology and catered to both domestic and export

markets. According to the Economic Census data, this group included plastic products, footwear, miscellaneous food products, job printing, apparel making, knitted wear, chemical products etc.

As can be seen from the Table 17, wage rate increased with the size of the enterprise. In 1995-96, wage rate in small enterprises was only 41 percent of wage in the large enterprises. But the wage spread seems to have declined overtime. However, wage as a proportion of labor productivity has remained higher in the case of small enterprises and the gap seems to have widened during the reference period. This means that growth of readymade garments industry despite being labor intensive has not been sufficiently poverty reducing because of low productive employment generated and also because of low share of wage in the output.

Another manifestation of the overwhelming role of readymade garment industry in the employment generated in the manufacturing sector is the fact that employment elasticity of the formal manufacturing sector (10 or more workers) excluding readymade garments was estimated to be around 0.50 while the employment elasticity of value added in the sector inclusive of readymade garment industry was estimated to be as high as 1.2 during 1995-2001.

V. Concluding Remarks

The evidence presented has shown that the non-household manufacturing enterprises employing less than 10 workers and those employing between 10-49 workers accounted for a significant proportion of manufacturing establishment and employment during early 1990s. At the other end enterprises having 200 or more workers constituted the other major component of manufacturing establishment and employment and accounted for bulk of manufacturing value added. This conventional dualistic look of the manufacturing sector with a missing middle, however, seems to be on decline in Bangladesh.

During the decade of 1990s, non-household manufacturing establishments employing less than 10 workers stagnated with low employment and value added growth resulting in substantial decline in employment and value added share. Growth in manufacturing during this period has been spearheaded by large enterprises employing 200 or more workers. The disaggregate picture

shows that growth of large manufacturing enterprises was again dominated by a single industry, namely, readymade garments.

Given the high labor intensity and low labor productivity entailed in readymade garments industry, the overwhelming role of the industry in the growth of manufacturing sector resulted in capital intensity and labor productivity in the overall sector to decline.

At the same time, a core dynamic component in the small industry group (10-99 workers) seems to have undergone considerable modernization taking advantage of trade liberalization measures and raised both fixed assets per worker and labor productivity and has been successful in bringing under its fold a larger segment of the domestic market and also making foothold in the export market. This has resulted in narrowing down of the spread with respect to capital intensity and labor productivity between small and large industry reflecting upward mobility on the part of the modern component of the small industry group.

On the whole, however, the quality of manufacturing employment growth in Bangladesh seems to have been low as reflected in low growth of labor productivity and real wages with consequent low impact on poverty reduction and equitable growth. This has happened because manufacturing growth in Bangladesh has been too narrowly based on low productive readymade garments industry alone.

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