

The Economy of Bangladesh

A Quarter Century of Development

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Agriculture in Bangladesh has other immediate priorities to respond to. First, it will need to continue to satisfy the increasing domestic demand for food, as well as substitute the competitive part of food imports. Second, as Bangladesh continues to grow, it will have to respond to demand for greater diversification of domestic food demand. The demand for livestock products will undoubtedly rise faster than the demand for cereals and livestock products are land intensive. Indeed, on the evidence of the historical development experience of land-scarce countries, it is hard to imagine Bangladesh becoming several times as rich per capita as it is today without becoming a substantial net importer of agricultural products.

The best thing that can happen to agriculture in the foreseeable future is rapid growth of the rest of the economy creating enough demand for labor to relieve it of the immense burden of providing livelihood to more than twice as high a proportion of labor force as the proportion of GDP that it contributes. Even after taking into account the possibility that the number of workers shown to be principally employed in agriculture is an overestimate of the "full-time equivalent" of labor used by the sector, it is urgent for it to shed a substantial proportion of those it currently provides with livelihood. In this sense, the solution of agriculture's biggest problem has to be found outside agriculture.

Finally, a word on the issue of institutional reform. There are at least three reasons why we feel that the issue of redistributive land reform, in favor of which we strongly argued at the time of independence,²⁵ is no longer important. First, more than four decades since independence, sheer demographic forces have rendered the redistributive surplus, above any reasonable ownership limit, quite small. Second, as demonstrated earlier, access to land and the distribution of landownership have ceased to be a significant contributor of overall rural and national inequality which are now being driven by other sources of income discussed in detail in Chapter 9. Third, even if there were sufficient redistributable surplus and redistribution were necessary, the current state of governance would have made it impossible. As we hope to demonstrate in the concluding chapter, Bangladesh lacks the administrative ability to distribute any rent-embodiment asset to appropriate target group. The existence of such administrative capability was a critical element in making the East Asian land reforms such great successes as they have been. There is little chance that a valuable asset like land would reach the powerless given the present state of governance in the country.

6 Structure, Growth and Direction of Manufacturing Industries

The size and structure of manufacturing industries

According to national accounts data, manufacturing industries have been contributing close to 18 percent of GDP in recent years, of which about 14 percent is contributed by "large and medium-scale" industries while the remainder is contributed by "small-scale" industries (Table 2.2). Together manufacturing has already become the largest sector of the economy though still substantially below its peak share in recent history of development, as demonstrated in Chapter 4. Indeed, we argue here that the share of manufacturing in GDP may already be higher than what the national accounts data show.

The most basic and comprehensive source of statistics on manufacturing industries is the periodic censuses/surveys of manufacturing (CMI/SMI), some of the most recent ones having been for years shown in Table 6.2.¹ The SMI collects information for different employment size groups of enterprises. For 2010/11, the reference year of the most recent SMI,² the size groups are: micro (employing 10–24 persons); small (25–99 persons); medium (100–249 persons); and large (250 persons or more).³ This means that the enterprises employing less than ten persons and all household enterprises are excluded from the SMI.

In the past the BBS complemented the CMI/SMI with information for the smaller enterprises collected in the Annual Enterprise and Establishment Survey which had become very infrequent in recent years. A Cottage Industries Survey (CIS) was carried out in 2011, with fiscal 2009/10 as the reference year, which covered all enterprises with less than ten workers.⁴

One important issue is whether the coverage of the SMI and the CIS is co-extensive with the manufacturing sector as a whole. The double

Table 6.1 Comparison of the SMI/CIS value added with the GDP value added in manufacturing (million taka)

	2009/10	2010/11
SMI		1,562,947
CIS	314,860	343,704
SMI + CIS		1,906,651
Manufacturing in GDP accounts		1,355,510
Large and medium scale		971,210
Small scale		384,300

Note: Since the reference year for the CIS is 2009/10, we estimated its value added for 2010/11 by using a real growth rate of 6 percent – approximately the rate underlying small-scale manufacturing in the GDP accounts – and the manufacturing GDP deflator of 3.1 percent between the years. Manufacturing value added in GDP accounts is from BES (2014, p. 283).

criteria of defining a cottage industry spelled out in the preceding note leave the possibility open that there are enterprises with more than half a million taka of assets, other than land and building, employing fewer than ten workers, which are left out in both the surveys. On the other hand, enterprises employing exactly ten workers would in principle be covered by both surveys. But these are almost certainly negligible concerns. Of much greater importance is the accuracy of coverage of what the surveys set out to cover.

Table 6.1 sums values added from the two surveys and compares it with the value added in manufacturing in the GDP accounts at current prices. Manufacturing value-added in the GDP accounts is 29 percent lower than the value added shown by the SMI and CIS and the underestimation is more than fully explained by the underestimation of the large- and medium-scale manufacturing in the GDP accounts.⁵ It is very clear that the best and the most recent data sources for manufacturing industries suggest that the GDP accounts seriously understate the contribution of the sector to domestic product. If the value added figures from SMI and CIS were used, the share of manufacturing in GDP at current prices in 2010/11 would have been 22.4 percent instead of 17.8 percent shown in the present estimates (see Table 2.2).

There could be further understatement in value added in manufacturing due to an under-coverage by the SMI, a suggestion strongly implied by the recent work by some researchers. For example, the 2010/11 SMI shows total employment in ready-made garments, including Knitwear [RMG for short, covering Bangladesh Standard Industrial Classification (BSIC) four digit categories 1410–1430] to be 2.762 million. An attempted

survey by the BIDS concluded that for the reference year 2011/12 total employment in the directly exporting garments and knitwear enterprises was 4.03 million, and if allowance is made for the subcontracting enterprises that serve the direct exporters, the number should be close to 4.4 million.⁶ Annual growth in employment between the reference year of the SMI and the year of the BIDS survey can at best explain a small fraction of the difference. While one can argue that there is inadequate basis to choose from two estimates made independently, in the absence of a convincing methodological case in favor of preferring one to the other, the BIDS estimate seems closer to what is commonly believed to be the size of the industry.

The next notable point is that the gross value added in large and medium manufacturing enterprises in the GDP accounts monotonically decreases as a proportion of the gross value added in manufacturing in the SMI, both at current prices (Table 6.2). In 1997/98 the former is actually 9 percent higher than the latter, suggesting an attempt on

Table 6.2 Basic indicators of large- and medium-scale manufacturing industries (values are in million current taka unless otherwise stated)

Indicator	1997/98	2000/01	2005/06	2010/11
No. of establishments	29,573	28,065	34,710	42,792
Fixed assets	214,705	336,145	925,189	1,188,105
Land and buildings	67,403	110,825	160,376	498,117
Machineries	130,257	191,812	299,356	533,889
Other	17,045	33,508	465,457	156,099
Total employment (thousand)	2,591	2,819	3,706	5,016
Male	1,811	1,837	2,409	3,062
Female	780	982	1,297	1,954
Employment cost	51,257	85,386	196,666	569,067
Male	38,587	63,448	–	–
Female	12,670	21,938	–	–
Gross output	576,656	901,937	1,912,048	5,394,905
Industrial cost	372,696	611,026	1,193,809	3,831,958
Gross value added (\$MI/CMJ)	203,960	290,910	718,239	1,562,947
Manuf. VA (GDP accounts): all	312,690	382,340	689,230	1,355,510
Large and medium manuf.	221,750	273,400	489,740	971,210
Manufacturing VA deflator	1.113	1.180	1.472	2.139
Gross real VA (\$MI/CMJ)	183,252	246,534	487,934	730,691

Note: For 1997/98 to 2005/06 the data are from CMJ/SMI conducted by the BBS and reported in BES, Statistical Yearbook (2012). For 2010/11 the data are from the SMI 2012. The base year for the Manufacturing VA deflator is 1995/96. For further explanations, see the text, and for the source of the data from GDP accounts, see note to Table 6.1.

the part of the GDP accounts to adjust for an under-coverage by the CMI. In the subsequent years the value added in the GDP account progressively falls below the value added in the CMI/SMI by 6 percent in 2000/01, 32 percent in 2005/06 and 38 percent in 2010/11. Even if one accepts that the CMI/SMI have been measuring pretty accurately the value added in large and medium manufacturing enterprises, one must conclude that the GDP accounts have not only underestimated the value added in manufacturing in 2010/11, but also systematically underestimated the *rate of growth* of value added in manufacturing. Annual growth rate in real value added between 2000/01 and 2010/11 is 11.5 percent according to CMI/SMI, but only 7.8 percent according to GDP accounts.⁷

Much of the remainder of this chapter will be devoted to an analysis of the large and medium industries which accounts for more than four-fifths of manufacturing output, has been growing faster than the rest of manufacturing and for which the SMI provides more detailed information than the CIS does for cottage industries. Later in the chapter a similar, but shorter, analysis of the cottage industries will follow.

Changing structure of manufacturing

Around the time of independence, large- and medium-scale manufacturing industries (comparable to what is currently covered by the SMI) in Bangladesh employed only about 2 percent of the civilian labor force and were dominated by jute textiles, cotton textiles, tea processing, matches and paper to name five largest industries in terms of employment.⁸ These remained the dominant industries until the mid-1980s when RMG and a number of other industries started growing rapidly while some of the previously dominant industries declined in absolute terms. Table 6.3 provides a glimpse of the changing composition of industries by showing changes in output indices of the declining and rising manufacturing industries during the past quarter century.

The largest of the old industries, jute textiles, went into steady decline from the base in 1988/89 until 2005/06, losing a half of its output. Thereafter it regained some of the lost output though still remaining a sixth below the base. It is not clear why this one-time giant faced such decline. In a period of increased international concern about the environment hostility of synthetic packaging materials, it would have appeared that, with investment in product development, jute manufactures would prosper in the export market. It is possible that domestic incentives for competing rice crop reduced the incentive for jute, the

Table 6.3 Index of industrial production (1988/89 = 100)

Name	1993/94	1999/2000	2005/06	2010/11	2012/13
General	153.89	214.31	327.09	502.47	621.12
Fish products	143.64	185.18	248.00	428.80	349.34
Tea processing	123.53	121.57	131.82	144.36	145.78
Tobacco products	89.83	140.06	174.60	168.07	186.47
Jute textiles	82.75	66.42	50.08	60.31	83.75
Cotton textiles	103.15	98.07	206.63	365.44	355.65
RMG	273.56	766.32	1122.39	2224.56	3216.31
Paper	105.41	64.16	30.00	24.52	66.48
Fertilizer	148.02	119.11	120.53	63.40	67.24
Pharmaceuticals	217.91	318.00	604.97	1098.34	1048.42
Cement	94.04	399.39	638.39	866.92	1006.22

Source: BBS quoted in Ministry of Finance, *Bangladesh Economic Survey*, various issues.

raw material for the industry. Perhaps the explosive growth of newly found export, RMG, took away the incentive from preserving the exports of jute products. Whatever combination of these factors may have led to the outcome, it would appear to have been a case of lost opportunity.

None of the other four dominant industries of the past was able to maintain their pre-eminence. Paper declined absolutely, perhaps due to lack of competitiveness as the level of protection declined. Tea processing maintained modest growth, though orienting itself away from export toward sale in the domestic market. Cotton textiles stagnated during the 1990s but overcame it thereafter, due largely to the backward linkage provided by RMG which emerged as the most rapidly growing industry during the past quarter century.

Table 6.4 lists top ten industries respectively by value added and employment. At two-digit level of BSIC industries, they hide some diversity. Altogether the manufacturing sector has become significantly more diversified with a wide range of products and exports even though the sector is disproportionately dominated by RMG. RMG accounts for 55 percent of employment in manufacturing – note, however, the argument cited earlier that its employment is seriously undercounted by our present source – but, being a labor-intensive industry, contributes just 36 percent of value added. RMG started out as made-up wearing apparel – garments hereinafter – but later expanded into a whole new line of production, knitwear. By now garments account for two-thirds of employment and output while knitwear accounts for the remaining third of the industry. RMG is almost exclusively an export-oriented

Table 6.4 Top ten industries in terms of value added and employment

Ranked by VA	Percent of total VA	Ranked by employment	Percent of total
RMG	35.6	RMG	55.1
Textiles	14.1	Textiles	16.1
Basic metals and products	13.9	Non-metallic mineral products	9.4
Food products	11.1	Food products	5.6
Non-metal min prod	7.1	Basic metals and products	2.4
Electrical equipment	2.6	Leather and products	1.5
Chemicals and products	2.4	Pharmaceuticals	1.4
Pharmaceuticals	2.2	Chemicals and products	1.1
Leather and products	1.4	Tobacco products	1.0
Paper and products	1.0	Electrical equipment	0.9

Source: SMI (2012).

industry: just 6 percent of its total sales is destined for the domestic market (Table 6.5).

Textiles, the next largest industry accounting for approximately a seventh of net output and a sixth of employment of manufacturing, consists of spinning and weaving of cotton and jute textiles (excluding handloom) and products made thereof. The two types of textiles are very different in both the composition of inputs and destination of output. Cotton textiles are based largely on imported fiber and yarn and their output is mainly domestically consumed or used as inputs for RMG. Jute textiles process the domestically produced raw jute, and the products of the industry are largely exported. According to the latest SMI 54 percent of the entire output of textile industry is exported.

Next in terms of share of value added is basic metals and metal products – a highly capital-intensive industry accounting for 14 percent of net output but a mere 2.4 percent of employment. Its products include iron and steel; casting of iron and steel; construction steel; water tanks and cutleries. The booming urban construction has been a major user of the sector's products as inputs. The industry is almost exclusively oriented to production for the domestic market; less than 2 percent of its products are exported.

Food products rank fourth in terms of both output and employment shares. This includes a wide variety of processing and production of food, drinks and tobacco. Its major components are rice milling; bakery products; tea processing; processing and preservation of fish; edible oils; and tobacco products (cigarettes and *bidis*). While the products of the

industry are principally used as domestic consumption goods, about 13 percent of its output is exported.

Non-metallic mineral products, the next ranking industry in terms of value added but ranking third in terms of employment by virtue of its high labor intensity, is dominated by brickmaking and cement, but also includes such consumer goods as porcelain, ceramic products and glassware. As Table 6.3 shows, cement had third fastest growth of all industrial products after RMG and pharmaceuticals. Nine percent of the industry's sales consist of exports.

Each of the other industries at two-digit level contributes less than 3 percent of net output and employs less than 2 percent of workers in manufacturing. Some of them still deserve to be noted. As Table 6.3 shows, pharmaceuticals have been the second fastest growing manufacturing sector after RMG. Thanks to the WTO waiver of patent protection, the growth of this industry has protected domestic consumers from much of the high cost of pharmaceuticals in the international market. Understandably the industry is oriented to the domestic market with less than 3 percent of sales destined abroad.

Electrical equipment – including batteries and accumulators; wires and cables; lighting equipment; wiring devices; and domestic appliances – accounts for 2.6 percent of manufacturing value added but barely 1 percent of employment. The industry, however, exports 32 percent of its total sales.

"Other transport equipment", a residual two-digit level industry contributing less than 1 percent of net manufacturing output, nevertheless includes shipbuilding and bikes which are export oriented. Nearly 70 percent of the sales of the sector are in foreign markets. While paper and paper products have declined in absolute output, some of the industry's products have prospered in the export market.

Table 6.5 Foreign sales as percent of total sales (two-digit level of BSIC)

RMG	Percent of total sales
Leather and leather products	93.8
Other transport equipment	71.8
Paper and paper products	69.4
Textiles	68.5
Computer, electronics, optical products	53.9
Electrical equipment	45.0
	31.7

Source: SMI (2012), table 25. Only the industries with more than 30 percent sales abroad at two-digit level are shown.

Bangladesh has not succeeded in breaking into the IT hardware or software in a significant way and it has not significantly benefited from the shift of location of electronics manufacturing away from industrial countries towards low-wage countries. But there has developed a small domestic industry producing computers and peripheral equipment; communication equipment and consumer electronics, together amounting to less than 1 percent of manufacturing value added. As Table 6.5 shows, 45 percent of the sales of these products are exports abroad.

It is quite clear that the overwhelming presence of RMG creates a kind of "false" impression of lack of diversity in manufactured exports. Once its massive presence is removed from the picture, the remainder of manufacturing demonstrates much possibility of broad-based diversified exports. Later in this chapter we shall return to the issue of whether the single-mindedness in promoting RMG has indeed taken the form of a kind of "Dutch disease" which has blighted other possibilities.

Labor productivity, factor intensity and profitability

Table 6.6 shows a number of indicators for major manufacturing industries based on the data from the *SMI* (2012). The first important fact that stands out is the very low capital/value added ratio, the coefficient widely known in economic literature as the capital/output ratio. It is only 0.76 for the entire manufacturing sector and below 1 for most industries.⁹ The overall capital/output ratio in the previous CMI/SMIs were also low – respectively, 1.05, 1.16 and 1.29 for 1997/98, 2000/01 and 2005/06 – but for 2010/11 the figure is not only lower than for any of the earlier estimates, but it also marks a sharp change in direction from the upward trend revealed by the previous CMI/SMIs. The capital/output ratio for RMG, the largest industry, is far lower than for the rest of manufacturing: it is 0.58 for garments and 0.61 for knitwear as compared to 0.86 for the rest of the manufacturing sector.

The decline in the capital/output ratio is somewhat of a mystery. One could explain the low level of capital/output ratio by arguing that the *SMI* figures are book values which have been written down for depreciation over the years and hence are underestimates of replacement cost which is the appropriate measure of capital for the purpose of estimating the ratio. But this argument should have applied to the earlier CMIs as well and is therefore unable to explain the decline in the ratio. Another explanation of the low level of the ratio is the exclusion of working capital. But this too was the case with the estimates for earlier

years. We tried to allow for stock figures from the *SMI*, but they are so minuscule that their inclusion makes no difference for 2010/11. The only remaining explanation is a rise in the share of industries with very low capital/output ratio – which was probably a part of the explanation due at least to the rising share of RMG – and a higher rate of capacity utilization, which we are unable to document.

Value added per worker – labor productivity – varies a great deal across industries.¹⁰ It is lowest for the two RMG industries, well below half of what it is for the average of non-RMG industries. RMG also has only about 30 percent of capital per worker as compared with the average for non-RMG industries. Among the 11 industry groups in Table 6.6, Spearman's rank correlation coefficient between labor productivity (VA/L) and capital intensity (K/L) is 0.85 which is significant at 1 percent level of probability.

Table 6.6 Performance indicators for major industries (values in thousand taka)

	VA/L	W/L	K/L	VA/GVO	W/VA	VA/K	(VA – W)/K
Garments	201.3	114.2	118.0	0.301	0.567	1.706	0.738
Knitwear	194.4	113.4	118.7	0.315	0.583	1.638	0.683
All non-RMG manuf.	445.3	112.9	380.8	0.282	0.254	1.169	0.873
Textiles	272.6	107.5	305.2	0.307	0.394	0.894	0.542
Basic metal and products	1793.4	148.1	809.0	0.240	0.083	2.217	2.034
Food products	621.4	115.4	398.1	0.286	0.186	1.559	1.269
Non-metal min prod.	234.3	100.5	188.3	0.314	0.429	1.244	0.710
Electrical equipment	913.3	115.6	449.8	0.283	0.127	2.030	1.773
Chemicals and products	701.9	141.4	993.6	0.266	0.201	0.706	0.564
Pharmaceuticals	477.5	153.4	972.0	0.300	0.321	0.491	0.333
Leather and products	292.1	111.0	378.6	0.291	0.380	0.772	0.478
Paper and products	373.8	109.4	370.8	0.274	0.293	1.008	0.713

Note: These are the author's estimates based on the data in *SMI* (2012). The first three columns are values in thousand current taka and the last four are ratios. VA/L is gross value added per employed worker. W/L is employment cost per worker including wages, salaries, benefits and social security. K/L is the value of fixed assets (land, buildings, machines, transport equipment) per worker. VA/GVO is the ratio of gross value added to gross value of output. W/VA is the ratio of employment cost to value added. VA/K is the ratio of value added to fixed assets, the inverse of the fixed-capital/income ratio. The last column is a crude measure of gross pre-tax rate of return on capital (or rather fixed capital).

In stark contrast to the widely varying output per worker among industries – the highest (basic metals and metal products) being more than nine times that of the lowest (knitwear) – employment cost per worker is much more compressed, the highest (pharmaceuticals) being only 43 percent above the lowest (textiles). Employment cost in the table includes wages, cash and non-cash benefits and social security; but wages typically account for 90 percent or more of total employment cost. While output per worker in RMG is only 44 percent of the average for non-RMG industries, the wage rate is the same as for average non-RMG industries. The rank correlation between labor productivity and wage per worker is weaker at 0.64, which is still significant at 5 percent level.

A notable asymmetry between RMG and other industries is the very big difference between them with respect to the ratio of wage cost to value added. In Garments and Knitwear wages account, respectively, for 57 and 58 percent of value added. For the rest of manufacturing the average share of wages in value added is less than half of that at 25 percent, ranging between the high of 43 percent in non-metallic minerals to the low of 8 percent in basic metals and metal products.

The last column of Table 6.5 shows an approximation of the rate of return on capital. Admittedly it is biased upward because of the underestimation of the value of capital: at book value it is lower than replacement cost and it excludes working capital. It is, however, noteworthy that even if we double the reported value of capital, all the industries would show very healthy rate of return. After such augmentation, the rate of return in garments and knitwear would respectively be 37 percent and 34 percent; on average it would be 44 percent for non-RMG manufacturing.¹¹ Basic metals and metal products would show the highest rate of return (102 percent) while pharmaceuticals would show the lowest, though still a healthy, rate of return (17 percent).

That the rate of return in RMG is not much below that for the average non-RMG industries, despite its much higher share of wage cost in value added, is of course largely explained by its substantially lower capital/output ratio. To summarize the main aspects of the difference between RMG and the average of the rest of manufacturing (which of course has differences between industries among them): RMG has much lower average labor productivity, but pays the same average wage, thereby ending up with a much higher (lower) share of wages (profit) in value added; but because of its much lower capital/output ratio, ends up with a rate of profit which is relatively close to the average for the rest of the manufacturing sector. It remains a puzzle that the wage rate in RMG is as high as that for the rest of manufacturing despite its much lower output per worker.

Often in Bangladesh arguments are made that RMG industry would lose its international competitiveness if wages were to increase further. The desirability of increasing wages has to be seen in the overall context of the labor market condition. We would avoid taking a position on the issue especially in view of the finding that wages in RMG are as high as that in the rest of manufacturing despite its lower labor productivity. It is, however, not the case that the industry is operating at the very margin of international competitiveness. A 10 percent upward adjustment in wage cost per worker would reduce the rate of return of garments from 37 percent to 32 percent and of knitwear from 34 percent to 27 percent if we follow the exact steps and assumptions as outlined earlier (including the doubling of the value of capital). These would still be quite decent rates of return and should prove incentive enough for the industry to keep growing.

The very low capital/output ratio of the industry reflects not only the low investment per worker that this labor-intensive industry requires but also the reluctance in making adequate investment in the safety of the workplace which led to the massive disasters like the collapse of Rana Plaza in 2013 killing 1,129 people and numerous other accidents causing death and injury. Making adequate investment in the safety of the workplace was well within the capacity of the industry. One wonders if our generous doubling of the value of capital, in the estimation of the rate of return, already makes room for such improvement.

Gender distribution of employment

The late Abu Abdullah, in a characteristically perceptive paper written on the occasion of the 25th anniversary of Bangladesh independence, cited female employment in garments industry – “*purdah* meets factory” to quote his inimitable heading of the section of the paper dealing with the subject – as one of the three examples of how “the people of Bangladesh, or at least some important segments, are making, perhaps unwillingly, and/or subconsciously, compromises with tradition and generating practices and attitudes that embody important elements of “modernization”.¹² That process of hesitant modernization continued and transformed the manufacturing sector of Bangladesh into one in which women are dominant among production workers. Table 6.7 provides some data from the 2012 SM7.

Women represent 44 percent of employment in all manufacturing taken together and 64 percent of those employed in RMG. But among the production workers – an overwhelming 82 percent of all workers in

manufacturing and an even higher 92 percent of all workers in RMG – women represent the majority for all manufacturing taken together and more than two-thirds for RMG industries. Even in the non-RMG industries, a fifth of all workers and almost a quarter of production workers are women.

Apparently surprisingly women workers do not appear to be in much disadvantage in comparison with men with respect to per capita earning. Indeed for production workers the earnings for men and women are very close and for the production workers in the non-RMG industries women have a little higher earning than men. The difference for the non-production workers is also quite small in favor of the male, between 5 percent and 10 percent for the administrative and managerial workers and much less for the clerical and sales workers. The puzzle of apparent non-discrimination against female workers in wages and benefits is perhaps explained by the fact that the annual earnings figures shown in Table 6.6 are not adjusted for hours of work. It seems likely that women work longer hours.

Discrimination that women suffer seems to take the form of exclusion from higher-paid employment categories like administration and

management. In this category only 6 percent of employees are women for manufacturing as a whole, less than 3 percent for the non-RMG industries and close to 11 percent for RMG.

We do not have a recent profile of the women workers who have rapidly grown during recent decades in manufacturing employment and have often literally changed the color of urban work scene. A 1990 survey of the garment workers is perhaps still relatively valid as a description of the female work force:¹³ 80 percent of them are below the age of 25; 54 percent have never been married while 39 percent are currently married, the rest being widowed, divorced or abandoned; they have a higher than average level of education, 35 percent having studied up to grade five, 27 percent to grade 10 and 7 percent to a higher level; more than three-quarters of them had no prior employment; nearly 70 percent are of rural origin; most of them – more than 90 percent – lived with own families and relatives while only about 8 percent set up communal households shared with other female workers; three-fifths of the female workers walked to and back from the place of work while only 17 percent used public transport, far fewer than male workers;¹⁴ average workday was between 11 and 12 hours; and, finally, while there was some report of harassment on way to and in workplace, including sexual harassment, their incidence was limited.

The profile of the women workers have changed in some respects. For example, the number of those who now live in communal hostels has almost certainly gone up. But the basic profile seems to have remained much as the 1990 survey found. It is amazing how quietly the society has absorbed these changes. It is tempting to end this section by quoting Abdullah:¹⁵

Clearly, factory work of this kind represents for most of these women, and for their families, a fundamental rupture with what women are “normally” expected to do. Capitalist work-discipline is radically different from the way activity is patterned and authority exerted in the context of, say, domestic work, not to speak of housework for one’s own family. Above all, their irruption into public spaces, which were and predominantly remain male spaces, walking through streets crowded with men, working in factories under (non-kin) male supervision and with male co-workers, all this must outrage the norms of *pardaiti*, of female seclusion and modesty, and call down general condemnation, perhaps social ostracism, certainly sexual harassment – those who defy *pardaiti* can be considered to be fair game, to be “asking for it”.

The interesting thing is that none of this seems to be happening.

Table 6.7 Women in manufacturing industries

Employment type	Women as percent of employees by category					
	All industries	RMG	Non-RMG			
Administrative and management	6.1	10.6	2.8			
Clerical and sales	8.6	12.0	6.9			
Production workers	51.3	68.1	23.6			
Other	17.3	26.6	16.3			
All employees	44.2	64.0	19.9			
Wage cost per worker by gender (thousand taka/year)						
	All industries		RMG		Non-RMG	
	Male	Female	Male	Female	Male	Female
Administrative and management	158.9	150.7	157.9	144.2		
Clerical and sales	128.2	127.0	121.3	118.5		
Production workers	108.2	110.3	111.2	110.8	106.2	108.1

Source: SMI (2012), tables 4 and 5. Wage cost per employee includes wages, salaries, cash and non-cash benefits and social security. Wage cost for all workers in Table 4 is shown only for male and female together which we have chosen not to show.

Labor productivity, factor intensity and profitability by size and ownership

The *SMI* classifies enterprises into four different groups by employment size: micro enterprises employing 10–24 workers; small enterprises employing 25–99 workers; medium enterprises employing 100–249 workers and large enterprises employing 250 workers or more. The survey reports summary data for the entire industrial sector by size group, but not the data for individual industries by size group. This is an obstacle to determine the effect of size on indicators of performance because industries performing differently may differ in size. For example, the average size of an enterprise for the highly profitable basic metal and metal products is only 100 while for the RMG with about average profitability it is close to 400 and for the least profitable pharmaceuticals it is 144. Thus the indicators shown in Table 6.8 for different size groups need to be interpreted as being subject to possible coincidence between size and product category.

Given this qualification, it is striking that the rate of profit monotonically decreases with size. The highest profitability for the micro enterprises is the result of the higher-than-average productivity and the lowest wage and capital intensity per worker. For the small, medium and large enterprises, both productivity per worker and capital intensity per worker sharply diminish with size; but productivity diminishes at a

higher rate than capital intensity, thereby making profitability decrease with size. There is not much variation among these size groups in terms of wage per worker. Almost certainly this perverse pattern is largely due to the fact that the larger size groups are dominated by RMG enterprises which have both low productivity and low capital intensity per worker.

Table 6.9 shows the same indicators for enterprises grouped into different ownership categories. These results are also subject to the same qualification as are the ones for size groups, namely, that different ownership groups may consist of industries of different levels of performance indicators. But this qualification is of far less practical relevance in this case because the domestically owned private sector accounts for 90 percent of workers and another 8 percent of them is in private enterprises owned by foreigners and jointly by foreigners and nationals. Only 2 percent of workers are employed in enterprises owned by the government or jointly by the government and private owners. The transition from nearly complete government ownership of all medium and large enterprises immediately after independence occurred rather quickly starting in the late 1970s. Private ownership has come to be the exclusive vehicle for industrial development.

The small category of foreign-owned enterprises, accounting for about 6 percent of employment and net output, have the highest

Table 6.8 Performance indicators for manufacturing enterprises of different size

Size group	%L	%VA	VA/L	W/L	K/L
Micro	5.4	5.9	339.0	102.0	171.3
Small	14.7	23.7	500.8	111.5	383.5
Medium	20.8	23.3	349.3	105.6	275.5
Large	59.1	47.2	248.7	117.8	192.7
All	100	100	311.6	113.5	236.9
Size group	W/VA	VA/K	(VA - W)/K		
Micro	0.301	1.979	1.384		
Small	0.227	1.306	1.015		
Medium	0.302	1.267	0.884		
Large	0.473	1.290	0.679		
All	0.364	1.315	0.837		

Note: Estimates have been made by the author from data in Annex table 29 of the *SMI* (2012). All values - columns 3–5 - are in thousand taka. The first and second columns respectively show the percent shares of total employment and value added. For explanation of all other columns, see the note to Table 6.6.

Table 6.9 Performance indicators for manufacturing enterprises by ownership type

Ownership type	%L	%VA	VA/L	W/L	K/L
Government	1.7	2.3	431.3	133.3	945.1
Private	90.4	88.7	305.9	112.6	217.7
Joint govt./private	0.4	0.3	248.7	110.7	546.0
Joint local/foreign	1.8	2.7	467.3	118.7	563.8
Foreign	5.7	5.9	322.0	120.0	206.0
All	100	100	311.6	113.5	236.9
Ownership type	W/VA	VA/K	(VA - W)/K		
Government	0.309	0.456	0.315		
Private	0.368	1.405	0.888		
Joint govt./private	0.445	0.455	0.253		
Joint local/foreign	0.254	0.829	0.618		
Foreign	0.372	1.563	0.981		
All	0.364	1.315	0.837		

Note: Estimates have been made by the author from data in table 30 of the *SMI* (2012). For explanation of column headings, see the note to Table 6.7.

rate of return followed relatively closely by the domestic private sector whose performance indicators are broadly similar. Excepting the minuscule joint government/private category, the government enterprises have the lowest rate of return: they have higher output per worker than either foreign or domestic private industries; their low rate of return is explained by their extraordinarily high capital per worker.

Cottage industries

Cottage industries employed close to 3 million people as compared to 5 million in large and medium industries. These workers are employed in more than 830,000 establishments, averaging 3.6 workers per establishment. Most of the workers, 92.5 percent, work round the year although it is not known how many have enough work throughout the year. Forty percent of the establishments are located within the household premises while 60 percent are located away from the owners' homes. Fifty-six percent are located in rural areas, the remaining being in urban locations. Over 96 percent are individually owned while 2.8 percent are partnerships and 1 percent are in "other" categories of ownership. Eighty-five percent of the owners are male and the remainder are female. The educational level of 83 percent of the owners is below the secondary school certificate level. Ninety-three percent of the establishments have no bank account, 81 percent have had no institutional credit and 56 percent keep only verbal account. The sector is largely unregulated: 53 percent do not require any kind of license for their operation and an additional 31 percent also have no license, presumably in violation of requirement. Only 15 percent have some kind of license.¹⁶

Table 6.10 Basic indicators for cottage industries, 2009/10 (employment in thousand; all other in million current taka)

Industry	VA	Employment	Fixed assets	Employment cost
Total	314,860	2,962.7	23,584.4	113,875.8
Food products	68,141	570.4	6,300.3	22,883.2
Furniture	56,695	364.9	2,399.2	17,286.2
Metal products	38,939	238.1	2,235.2	10,796.0
Textiles	30,278	680.5	3,926.5	18,974.6

Source: CIS (2011).

Table 6.11 Selected performance indicators for cottage industries

	VA/L	W/L	K/L	(VA - W)/K
Total	106.3	38.4	7.96	8.52
Food products	119.5	40.1	11.05	7.18
Furniture	155.4	47.4	6.57	16.43
Metal products	163.5	45.3	9.39	12.59
Textiles	44.5	27.9	5.77	2.88

Note: Calculations are based on the data in Table 6.10. For the explanation of the notation, see note to Table 6.6. VA/L, W/L and K/L are in thousand taka.

Tables 6.10 and 6.11 provide information on the basic features of the cottage industries, both for the aggregate of the sector and for four of the most important ones together accounting for 62 percent of value added and 63 percent of employment for the sector as a whole. Even in comparison with the micro enterprises in the industries covered by the *SMI*, cottage industries represent a completely different world. Labor productivity is only about a third of that for the medium and large industries and actually less than a third of the micro enterprises.¹⁷ Employment cost per worker is also about a third of that for the medium and large industries, although, as we shall see later, employment cost is defined somewhat differently for the cottage industries.

The most striking difference between cottage industries and the medium and large industries is with respect to that in their capital cost. Fixed capital per worker in cottage industries is only one-thirtieth of that for all large and medium industries and less than a twentieth of the microenterprises in the *SMI* group. Working capital, as in the *SMI* industries, is minuscule, just 4 percent of fixed capital. Furthermore, the value of fixed assets is close to replacement cost, unlike the case for large and medium industries.¹⁸ As a result, the conventionally defined "rate of return on assets", the profit rate, is astronomically high, 852 percent for cottage industries as a whole and 288 percent for textiles which has the lowest rate of profit. Any adjustment for possible undervaluation of assets would have little effect on these estimates of rates of return on capital.

Clearly these rates of return cannot explain the size of the sector and incentives for investment in the sector. In some sense, we are in the world of Adam Smith in which fixed capital, or even working capital in the form of inventories of raw materials and finished products, are unimportant and insignificant. In Smith's system capital was mainly the working capital in the form of wage fund. In the present case too

Table 6.12 Composition of employment in cottage enterprises

Gender/age composition (% of total employment)			
Total	Adult male	Adult female	Child below 18
100.0	71.5	24.9	3.6
Composition of gender/age groups into employment categories (%)			
	Total	Male	Female

Proprietor/partner	33.0	33.6	35.8	0.0
Manager/sales/clerk	1.9	2.0	1.6	1.8
Regular production worker	20.7	23.3	11.4	32.9
Daily contractual worker	28.1	33.0	13.2	34.6
Unpaid family helper	16.4	8.1	38.0	30.6

Source: CIS (2011).

Table 6.13 Average annual wages and benefits in cottage industries (taka)

Type of worker	Wage	Cash/non-cash benefits	Total
Proprietor/partner	0.0	52,211	52,211
Manager/sales/clerk	33,888	6,953	40,841
Regular production worker	36,338	6,576	42,914
Daily contractual worker	26,790	3,329	30,119
Unpaid family helper	0.0	19,094	19,094

Source: CIS (2011).

we need to understand the incentive for investment in the sector as "wages" and incomes earned, and compare them with alternatives foregone. We need to ask what is the aggregate return to the owner from operating a cottage enterprise?

Table 6.13 divides employment cost or return to labor as consisting of wages and other cash and non-cash benefits. It shows that the proprietors receive compensation for their work as members of the labor force which is only about 20 percent higher than the compensation received by an average production worker, a difference that might be justified by their leading role in organizing production on the floor, to be separated from their entrepreneurial role and ownership of assets. But their labor remuneration is shown entirely as cash and non-cash benefit, not wages. This clearly is not the entire earning of the proprietors from the enterprise; they also receive the profit, the difference between value added and employment cost. Annual average return per proprietor, thus

estimated, would be 198,000 taka.¹⁹ Adding the proprietor's return to labor, the total earning per proprietor turns out to be approximately 250,000 taka per year which is 2.2 times the average wage earned in large and medium enterprises.²⁰ This is much more useful an indicator of incentive to engage in cottage industrial enterprise. The rationale behind the distinction between profit and return to labor is not entirely clear. In a system in which 56 percent of the enterprises keep only verbal accounts, is this perhaps a contrived distinction imposed by the designers of the survey? A perusal of the questionnaire does not suggest this.²¹ Proprietors and owners account for 33 percent of all workers, the largest of all groups (Table 6.12). Perhaps they have a clear idea of what their earnings as pure workers would be.

Women represent a much smaller proportion of workers in cottage industries (a quarter) as compared to large and medium enterprises (44 percent of all workers). Also a much higher proportion of them are "unpaid family helpers" (38 percent) as compared to male workers (8 percent). Note, however, that "unpaid" family helpers are actually paid: like proprietors, they are paid cash and non-cash benefits though no wages. Unpaid family helpers, mostly women, are the lowest-paid of all categories of workers. Unfortunately, we do not have further information on the gender difference in employment cost for different categories of workers.

Of all categories of workers, other than the proprietors, regular production workers have the highest rate of compensation, higher than for the managerial and sales workers. Casual workers, hired on a daily basis, receive 30 percent lower compensation than the regular workers. There is a small proportion of workers aged less than 18 years, divided roughly equally among regular production workers, casual workers and unpaid family helpers.

Incentives and obstacles

What has been the impetus behind the development of industries in Bangladesh? How has the integration of Bangladesh into the globalized international economy influenced industrial development? What has been the role of public policy in the development of industries? We shall seek an understanding of these issues in this concluding section of the chapter.

Developing economies have been moving away from the strategy of import substituting industrialization (ISI) – tariff and quantitative restrictions on trade creating high but non-uniform protection,

leading to strong incentive for replacing imports by domestic production for sale in the domestic market – since the 1980s. By the 1990s, the creation of the WTO and adherence to its rules made it impossible to pursue the ISI strategy. But it does not mean that countries can or should no longer provide support for worthwhile activities. Support, however, need to obey certain rules that make them efficient. Development literature in recent decades have often identified the experience of the East Asian countries as defining the essential features of the incentive system most conducive to the promotion of desirable economic activities.

The first rule is that support should be neutral between production for the domestic market and production for exports. Quite apart from the argument of trade theory that such neutrality of incentive between domestic and export market maximizes society's welfare, there are also important dynamic considerations, namely, that the limited size of the domestic market prevents the exploitation of economies of scale; and protection, by sheltering industries from the pressure of international competition, breeds inefficiency. Since in practice abolition of all tariff would be impossible, if only for reasons of generating revenue, this would require countervailing support for exports. Even if it were possible to abolish all tariff protection, it might be desirable to provide some limited, time-bound support for exports because, for a developing country competing in the international market, all exports are "infants".

Since the objective is to promote infants with a potential to turn quickly into adults, support should be ex ante and non-arbitrary. It is false export promotion to rescue by ex post support an industry that is set up for export but unable to compete. Instead a uniform system of support should be set up for all potential exports to take it into account before making investment decisions. Ad hoc support for specific industries should be avoided.²² Needless to say that tariff protection should be moderate so that the countervailing support for exports can be kept modest. Needless also to say that quantitative restrictions on imports as an instrument for protection should be avoided because they make protection non-uniform and it is hard to measure their effect in terms of equivalent tariff. Moreover, they impose inflexible constraints to obtaining supplies of critical inputs.

Bangladesh provides much support to a variety of economic activities, but such support is not defined ex ante; nor are they uniform or non-arbitrary. Take the case of the two industries that have grown most rapidly, RMG and pharmaceuticals. The original impetus for RMG

came from some of the East Asian exporters of garments who had hit their quota under the Multi-Fiber Arrangements (MFA) in the 1970s and 1980s and entered into collaborative arrangements with entrepreneurs in Bangladesh which had unfilled quota. RMG exports owe their initial growth to the protection that they received in the form of export quota in advanced industrial economies under the MFA and the generalized system of preferences (GSP). The industry, once established, negotiated a variety of concessions and support from the government, in addition to what exports are typically offered. These included not only exemption from most taxes but also relaxation of labor laws, tolerance of low workplace safety standards and a variety of periodic ad hoc supports.²³ Pharmaceuticals received impetus from the WTO waiver of copyright and patents for poor countries and rapidly expanded sales in the domestic market. It pleaded for and received high protection from imports of competing drugs. In effect, most of the high tariff on drugs turned out to be redundant as the government also imposed price control on pharmaceuticals to protect the consumers. The point is that not only are the supports to industries ad hoc and arbitrary, but they are also non-transparent.²⁴ The propensity for arbitrary interventions has worked against the policy of simplifying and unifying the tariff structure as additional arbitrary para tariff was superimposed on the original tariff slabs to provide high protection for some industries. This subject is dealt with in the next chapter.

As we saw earlier in the chapter, once the gaze is shifted away from RMG, one finds a large number of diversified manufactured products and exports – encompassing metal products, electrical equipment, shipbuilding and miscellaneous transport equipment among others – which have the possibility of achieving rapid export-oriented growth once provided with adequate incentives. Entrepreneurial enthusiasm to engage in a broad range of potentially profitable activities is not generated by a system of support that is essentially ex post, arbitrary and ad hoc. Such a system of incentives especially bypasses the small and medium entrepreneurs who lack the clout to deal with complex and corrupt bureaucracy.

An important lesson of the East Asian experience is that a system of incentives that is neutral between exports and sales in the domestic market and avoids arbitrary interventions by itself does not produce broad-based industrial growth. There must be public action to remove the well-known obstacles that inhibit growth. Of many such obstacles prevalent in Bangladesh, we shall highlight three that can all be subsumed under the umbrella of infrastructural inadequacy.

The first of them is educational infrastructure, the provision of basic and secondary education to be supplemented by a complementary development of tertiary education, all emphasizing quality along with quantity. While Bangladesh has achieved impressive progress in the primary school enrolment rate, there are serious questions about the quality of its contents, a question that is even more strongly applicable to secondary education. The inadequate quality and relevance of the contents of tertiary education has been a major factor in depriving Bangladesh of a share of the world market in information technology software and outsourcing. All this is highlighted by Bangladesh's second lowest score in knowledge economy index among 28 Asian countries in a recent study by the Asian Development Bank, lower than the scores for Nepal, Cambodia and Lao PDR.²⁵

The second major obstacle in this category consists of inadequate physical infrastructure, transport and energy to specifically highlight two components. Poor transport infrastructure – inadequate roads and port facilities – are a major obstacle to the movement of goods and the development of tourism services. High and uncertain time requirement for the transit of merchandise adds to the overall cost of production and causes physical limits on production. Shortage of fuel and power is another physical constraint limiting production. Industries have at times remained idle for want of fuel and power and the irregularity and uncertainty of their supply has impeded competitiveness.

Note that education, transport and energy are areas in which the private sector can have at best a very limited role. Because of the indivisibility of investment and high externality of these goods and services, public investment is the natural vehicle for their development. This is yet another important lesson of the East Asian experience. We discuss issues related to these obstacles and policies for their alleviation in Chapter 8.

The third major obstacle to growth is the absence of a system of governance that guarantees entrepreneurs security of returns to their investment; institutes a non-arbitrary system of incentives; and limits transactions costs by curbing corruption and inefficiency in public administration. All societies suffer from corruption in various degrees. Bangladesh has consistently ranked very high in public perception of corruption. Its eradication would be an impossible precondition for development. It is, however, imperative to find ways to limit its crippling effect on productive efficiency and transactions costs. The concluding Chapter 10 discusses what little we have to say on this important but intractable subject.

7 Trade and Global Links

Trade regime and development

It is useful to begin by outlining the features of a desirable and efficient trade regime. Rather than embarking on the difficult task of constructing the attributes of a desirable trade regime in the abstract, one might take the actual trade and development regime pursued by the most successful cases of development in recent history. By nearly universal consensus the East Asian development model, the one adopted by the pioneers like Japan, the Republic of Korea, Taiwan and others, is the natural candidate for an example of such a regime.¹ A slightly stylized version of the system of promoting East Asia's export-led industrialization might be described as follows. It avoided widely varying arbitrary protection that robs the economy of indicators that guide efficient allocation of resources; but it was not a free trade regime. There were widespread public intervention to provide direct incentives to worthwhile infant industries. But such incentives did not discriminate against sales in the export market vis-à-vis the domestic market. The defining characteristic of the East Asian trade regime is not free trade or near-free trade, but non-discrimination against exports. This is best expressed by what Ian Little, a high-priest of neoclassical development policy, said while responding to critics who argued that the success of the Republic of Korea and Taiwan cannot be attributed to liberal economic policies:

Let us have no straw men. I know of no economist who has claimed that their success has been due to free trade and *laissez-faire*. What I and others have claimed is that their success (like that of the other members of the Gang of Four) is largely due (among other things,

naturally) to the establishment of a trade regime that is virtually unbiased as between the home market and exports.²

Indeed, in contrast to the principles of orthodox economic theory, incentives between exports and import substitution were not exactly neutral. They were biased in favor of exports. Available estimates of effective exchange rates for the Republic of Korea and Taiwan at different periods of time show that they were generally higher for exports than for import substitutes. In other words, taking all direct and indirect payments into account, the return in domestic currency to earning a dollar in exports was greater than the return in domestic currency to saving a dollar by replacing imports. Thus the trade regime appears to have been premised on the argument that exports, competing with those from the established industrial economies, were “infants” that needed support. It also appears that the categories of exports that received such support, or more of such support relative to other exports, kept changing over time to bring about radical changes in their composition, steadily helping these countries climb up the hierarchy of exports of increasing technological sophistication. The instrument used was countervailing subsidies for exports through a variety of means. The most important method, in the case of the Republic of Korea, was subsidized credit for the exporters, largely financed by the banking system through moderate financial repression.³ To what extent does the trade regime in Bangladesh adhere to the principles of the East Asian trade regime?

At independence Bangladesh inherited an import-substituting industrialization (ISI) regime which was characterized by a fixed and overvalued rate of exchange buttressed by quantitative restrictions of imports. Additionally there were widely varying rates of import tariff, the average level of which was high. Nevertheless, nominal rates of protection were actually determined not by the rates of tariff, but by the “tariff equivalents” of import quotas, that is, the difference between actual domestic price and the price that would obtain in the absence of quota and tariff. Not only were the nominal protection rates highly variable, they could not even be estimated ex ante at the time of setting quotas and tariff rates. The effective protection rates, combining the total effect on values added of nominal rates of protection on outputs and on inputs, varied wildly and often in ways that policymakers did not anticipate or intend. The result was vast misallocation of resources due to the artificial divergence between actual and social profitability of industries. A particularly harmful effect of the system was that it hugely discriminated against exports by shifting resources away from their production to production

for the domestic market. The effect of the system on the distribution of income was arbitrary and adverse as high rent on imports and protected industries benefited the rich and were detrimental to the consumers who paid higher prices for import-substitutes.

The shift away from the ISI regime began in a small way in the late 1970s at the behest of the donor agencies and picked up momentum in the early 1990s by making a decisive break with the ISI. The overvaluation of the exchange rate was by and large eliminated by allowing it to float with very limited intervention by the Bangladesh Bank. Quantitative controls on imports were abolished. The large number of tariff slabs were sharply reduced with average rate of customs duty falling to 13 percent. Exports were provided with a variety of supports. Current account convertibility was substantially achieved, but the capital movements continued to be controlled. In practice this broad-brush picture had many different shades and hues.

An evaluation of the reformed trade regime

At the beginning of the 1990s the average tariff on all categories of imports was 84.1 percent with a standard deviation of 26.1 percent, signifying both a very high and highly variable level of protection.⁴ There were 17 different tariff slabs at the time. Table 7.1 shows that the average tariff rate has been sharply reduced since then, falling to 16 percent by 2005 and thereafter crawling further down to 13 percent in recent years. The number of tariff slabs has been brought down to just four.

Table 7.2 shows that this average tariff is just about the same as the South Asian average, but higher than the average for the low-income countries and way higher than the average for the countries of East Asia

Table 7.1 Trend in tariff rate (percent)

Type of tariff	2001	2005	2010	2012	2014
Average tariff	21.1	16.3	13.7	13.6	13.2
Average para tariff	7.1	10.2	10.2	12.9	14.1
Average nominal protection	28.2	26.5	23.9	26.5	27.3
Top tariff	37.5	25.0	25.0	25.0	25.0
Top nominal protection	59.0	60.0	79.0	88.0	108.0

Note: Average tariff is the rate of customs duty. Para tariff is additional tariff or similar levy on import in addition to customs duty. Nominal protection is the sum of the two. Averages are all unweighted. Years refer to fiscal years ending in June of the year shown. The estimates are from the National Board of Revenue and those made by the staff members of the Policy Research Institute quoted in Sattar (2014).

Table 7.2 Comparative average tariff rates, 2012

Bangladesh	13.6
Bhutan	18.2
India	11.5
Nepal	12.6
Pakistan	14.8
Sri Lanka	8.7
South Asia	13.2
East Asia and Pacific	7.7
Low income countries	11.5
China	7.9
Indonesia	5.0

Source: WDI (2014).

and Pacific. It is also higher than for three of its South Asian neighbors – India, Nepal and Sri Lanka – and much higher than for China and Indonesia.

Still, the average rate of tariff itself does not seem to be an insuperable problem in the way of an efficient trade regime. The real problem is the emergence of numerous other practices, notably the use of “para tariff”, additional levies such as supplementary import duties and surcharges on imports at increasing rates. The reduction in tariff rates petered out after 2005; but the rates of para tariff kept going up since the beginning of the century. The sum of para tariff and para tariff – “total” tariff – indicates the nominal rate of protection, the average rate of which in 2014 is nearly as high as it was at the beginning of the century.

We are not aware if similar supplements to tariff rates exist in the other countries listed in Table 7.2. Assuming that they do not to any significant extent, the nominal rates of protection in Bangladesh would appear to be qualitatively higher than in the rest of South Asia, East Asia and the low-income countries.⁵ These high rates of protection would require very high rates of countervailing export subsidies to ensure neutrality of incentives between import replacement and export.

Note further that in recent years the ratio of top nominal protection to top tariff has been more than twice as high as the ratio of average nominal protection to average tariff. This means that the imposition of para tariffs have not only doubled the nominal protection rates, they have also increased the variability of the rates of nominal protection. This is yet another obstacle to a rational trade regime.

The four tariff slabs relate to four different categories of goods: 3 percent (reduced to 2 percent in the 2014 budget) on capital goods

imports; 5 percent on basic raw materials; 12 percent (reduced to 10 percent in the 2014 budget) on intermediate goods; and 25 percent on consumption goods.⁶ In the 2014 budget the number of supplementary tariff slabs have been increased from 9 to 10; they are at the following percentage rates: 10, 20, 30, 45, 60, 100, 150, 250, 350 and 500.⁷ There are also a number of specific tariffs per given quantities of certain goods (e.g., raw and refined sugar, MS Billet/Ingot, gold and silver bullion).⁸ Supplementary tariffs are by and large concentrated on consumption goods. Thus the structure of protection remains almost as complex as under the ISI regime with one major and important exception, namely, the abolition of quantitative trade restrictions.

The main characteristics of the tariff regime may be summarized as follows:

1. The tariff structure is highly differentiated.
2. It is designed to result in very high effective protection rates for consumer goods that much of domestic production consists of. The highest basic tariff slab that applies to them is greatly accentuated by supplementary tariffs while their inputs receive much lower rates of nominal protection.
3. There is a very strong incentive to under-invoice imports, especially those that are subject to high rates of aggregate tariff.

What about the relative incentives for export and import replacement? A recent study, based on a 2012 survey made preliminary estimates of effective rates of protection (ERP) across a wide range of products and firms, reveals that for most industries the ERP is exceedingly high for domestic sales.⁹ Pharmaceuticals have a low ERP (3.1 percent). For all the other products sold in the domestic market the ERP ranges between 187 percent (agro-based industries) and 273 percent (footwear).¹⁰ ERPs for sales in the export market are almost always estimated to be negative.

The explanation for these results is obvious: most of the outputs of these industries are consumption goods and hence subject to the highest tariff slab of 25 percent plus whatever the producers’ lobby could extract in the form of para tariff. Their imported raw materials are subject to tariff at the rate of 5 percent and other intermediate inputs are subject to 12 (10 since 2014) percent tariff. Producers’ lobby naturally does everything to avoid para tariff on the imports of raw materials and inputs. Thus value added is inflated by the structure of protection as a whole. For exports, output prices are the same as world prices and so are the input prices in fully functioning system of duty drawbacks, unless, as

is often the case, there are transaction costs involved in administering duty drawbacks.

The trade regime clearly does not even remotely resemble its East Asian counterpart. It has a tariff structure which is highly differentiated and an incentive structure which strongly discriminates against exports relative to import replacement. The original four-slab tariff structure itself was designed to provide high effective protection to domestic consumption goods. This was further exacerbated by arbitrary interventions arising out of the collusion between the policymakers and the organized industry lobbies.

The one major positive change was the abolition of quantitative import control which was arbitrary and inflexible. Many domestic industries, previously facing enormous difficulty in obtaining supplies of critical inputs, were able to overcome these constraints by resorting to imports. It is also the case that with the abolition of quantitative restrictions on imports, the fixed overvalued exchange rate was no longer sustainable. Tariff alone is an uncertain instrument for limiting imports to sustainable levels when overvalued exchange rate encourages imports once they are freed from quantitative restrictions. The abolition of import quotas goes hand in hand with the market-determined exchange rate, rendering insignificant the premium on foreign exchange.

The drastic reduction in the premium on foreign exchange, bringing down its free-market price close to its official price, in turn had profound effect on trade misinvoicing. As noted earlier, incentive for import over-invoicing was replaced by the incentive for import under-invoicing. Absence of significant foreign exchange premium also took away the incentive for under-invoicing export as a vehicle for capital flight. There remained other powerful incentives for capital flight, notably the need to conceal illegitimate earnings and to seek refuge from the insecurity of property rights. But there are other convenient channels to effect such capital flight.¹¹

Export-led development?

Given the aforementioned export-hostile characterization of the trade regime, it would be a puzzle to explain the rapid rise in the export/GDP ratio in the period since the end of the 1980s (Table 7.3). Over the 23 years since 1989/90 the ratio of exports to GDP increased by 3.7 times. If one considers total foreign exchange earnings by including remittances then the picture looks even better: In 1989/90 remittances

amounted to only 2.5 percent of GDP whence it rose to 11.1 percent of GDP in 2012/13. There also appears to have been a radical change in the composition of exports with a sharp fall in the proportion of primary exports and a corresponding increase in the proportion of manufactured exports. No doubt these represent important improvement over the past and these are often claimed to indicate the positive outcome of the reform of the trade regime by way of moving away from the ISI strategy, an overvalued exchange rate and strong discrimination against exports.

On closer examination, these outcomes are in stark contrast to those of the East Asian kind of export-led growth. First, it is indeed the case that the export/GDP ratio has increased a good deal, reaching the average ratio for the South Asian countries (23 percent in 2012) and the low-income countries (also 23 percent).¹² But this growth has to be properly qualified. These ratios are between values of exports and GDP at current prices over time. Exports were converted into domestic currency values by using the rate of exchange which has depreciated much faster than the rate of increase in the GDP deflator. Today's exports are being converted into domestic currency values at the market price of foreign exchange. Prior to liberalization exports were converted into domestic currency values by using an artificially low price of foreign exchange. If correction could be made to re-estimate the export/GDP ratio prior to liberalization at what would have been the market price of foreign exchange, it would be higher, making the increase in the ratio less than what Table 7.3 shows.

There is a second upward bias in the export/GDP ratio due to the change in the composition of exports. All the exports shown in Table 7.3 for years until 1980 were based on indigenous raw materials. They used very little imported current inputs which were low as proportion of their output values. This changed radically after the emergence of the garments as the dominant export. Garment exports are heavily dependent on imported raw materials and current inputs. Unfortunately, we do not have any recent estimate of the import intensity of garment exports. A 1984 study showed that imported input per dollar value of output for two typical garment exports at the time – men's shirts and men's trousers – were, respectively, 69 percent and 72 percent.¹³ Since those early days there has been much change in the composition of outputs and inputs of exported garments. Some degree of vertical integration has taken place: imported textiles have partly been replaced by domestically produced textiles. Imported accessories have been partly replaced by domestically produced ones. But domestically produced textiles themselves have high import intensity: they use imported yarn

and even domestic yarn production is dependent on imported fiber. There has thus been a profound structural change in external trade: export growth has become substantially more import intensive than in the past. The amount of “uncommitted” foreign exchange from a unit export growth is much smaller now than before.

Finally, as noted earlier, there was significant export under-invoicing during the previous trade regime, the incentive for which has largely vanished under the current regime. This is yet another possible source of overstatement in the export/GDP ratio between the days of the old trade regime and the present times.

The next issue concerning export performance concerns the change in the composition of exports. Thirty years ago, nearly three-quarters of merchandise exports were accounted for by jute in raw and manufactured form. Today more than four-fifths of merchandise exports are accounted for by a single category of goods, ready-made garments (including knitwear). By most indices, exports today are less diversified than they were three decades before. Jute goods and tea have virtually been eliminated as exports and, items that were non-traditional before – leather products and frozen food to cite as examples – have lost their market share. Hidden in the residual category, “other”, are some small non-traditional goods, for example, engineering products, but none of them contributes more than 1 percent of exports or shows a strong upward trend.

The question that must be staring in the face of the reader is how did garments attain such explosive growth under an incentive system that is not friendly to export growth? The answer seems to be that having found a foothold under protection provided by the MFA, the industry organized itself under two powerful trade bodies, the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) and Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA), which successfully lobbied and extracted a whole range of concessions: duty drawback on imported inputs; special bonded warehouse; liberal access to credit; cash subsidies as incentives for numerous kinds of “virtuous” behavior (e.g., the use of local substitutes for imported inputs); tax exemptions; protection from trade union militancy; tolerance of bad and unsafe workplace environment; and a host of possible others that cannot be documented. An important characteristic of these support measures is that they are arbitrary, specific to the industry, and in good part ad hoc in nature. These measures succeeded in ensuring the rapid growth of exports of this industry, but the fact that they were not a part of generalized system of support for export meant that its effects

were limited to the growth of garment exports alone. This selective and substantial support enabled explosive export growth of this industry which owed its original impetus to protection under MFA. To confuse this with the East-Asian kind of export-led growth would be a mistake of fantastic proportion.

Not only has there been a lack of growth of broad-based, diversified exports, but the traditionally important exports with proven comparative advantage, like jute, jute manufactures and tea, virtually died out. Given proper policies and incentives for product innovation, it is possible that jute and jute goods would have flourished in a period when the world moved toward green packaging. Tea exports were diverted to domestic consumption rather than seeking an alternative in expanded output to meet increased domestic demand. Leather products and frozen food, which started making inroads in the exports market, sharply lost their share of exports.

The explanation for this must be the overall export hostility of the incentive system. Easy access to foreign exchange resources from RMG exports and remittances of workers abroad, exacerbated by foreign aid

Table 7.3 Growth and composition of exports

A. Export/GDP ratio (current prices)		Merchandise		Total
1989/90	–			6.1
1995/96	8.3			9.5
2005/06	15.1			16.8
2010/11	18.1			20.2
2012/13	20.4			22.6
B. Composition of merchandise exports				
Category	1975/80	1991/92	2005/06	2013/14
Raw jute	23.9	4.3	1.4	0.4
Jute manufactures	48.9	15.1	3.4	2.3
Leather products	9.8	7.2	3.3	3.6
Frozen food	4.7	6.6	4.4	2.3
Tea	6.6	1.6	0.1	Negligible
Garments and knitwear	–	59.3	75.1	81.4
Other	6.1	5.9	12.3	10.0

Note: Data are from BBS (2001); BES (2003, 2014); Bangladesh Bank, *Monthly Economic Trends*, various issues; and Khan and Hossain (1989). The difference between merchandise and total exports is accounted for by non-factor services, for which the figure used for 1995/96 is actually for the year 1996/97.

flows, might have robbed the policymakers of the sense of urgency to find ways to broaden the composition of exports. If so, then the situation closely resembles the phenomenon of "resource curse" or "Dutch disease". These flows kept the rate of exchange well above the critical level at which a broad range of exports would have become competitive and some of the traditional exports that have been wiped out would have remained competitive by finding it profitable to invest in innovative product development.

Merchandize imports

Table 7.4 shows the growth and composition of imports since before the liberalization of the trade regime. Comparison is made between levels in three different time periods: five-year average of 1982/83 to 1986/87 when the old trade regime was largely in place; three-year average of 1993/94 to 1995/96 when reforms had been substantially in place; and the average of most recent three years for which data are available, 2010/11 to 2012/13. Between the mid-1980s and the most recent period the ratio of imports to GDP has increased by two and a half times. There are obvious explanations for this high GDP-elasticity of imports. The abolition of quotas removed the physical obstacle to imports. Even though the official tariff rates are deceptive, the rates of

nominal protection are almost certainly lower than they were before. Finally, as noted before, industrial growth has been concentrated in import-intensive products, notably garments.¹⁴

Change in the composition of imports cannot be adequately analyzed because of the nature and change in the classification in which data are available. Many items in the classification for the two recent periods were lumped together into the residual category for the mid-1980s. More unhelpfully, the residual "Other including EPZ" category for the last two periods hides much information about composition. Still, we can identify a number of changes and hazard guesses about a few further possible patterns of change.

First, rice and wheat used up 15 percent of imports during the 1980s. This has sharply declined, despite a significant improvement in per capita consumption. This has been made possible by the success in increasing the domestic output of basic grains, an issue discussed in some detail in Chapter 5. Other food imports fell at first, then rose again. The asymmetry between the trend in the import of food grains and other food (notably oilseeds and edible oil) is that the former has fallen as a proportion of GDP while the latter has risen as a proportion of GDP. This is due to a combination of emerging consumer preference and comparative advantage in production for Bangladesh. The bottom line is that while in the 1980s 28 percent of resources for imports was committed to food imports, by now the proportion has fallen sharply to just 12 percent.

Petroleum and petroleum products used up a sixth of all resources for imports during the 1980s. This fell sharply during the 1990s due both to the increased use of indigenous natural gas for power generation and the use of liquefied natural gas for a part of the rapidly rising demand for fuel for transportation. This process was substantially reversed in recent years. To overcome the unpopular consequences of acute power shortage, the government went for large-scale capacity creation in short-gestation power units which are based on petroleum fuel. The rising international price of petroleum was another important cause.

Comparison over time of the share of capital goods in imports is complicated by the fact that the 1980s ratio represents the share of machineries and transport equipment while the ratio for the later periods represents the share of machineries alone. After whatever reasonable allowance for the share of transport equipment one might choose to make, it would appear that the share of machineries in total imports has fallen since the 1980s. Chapter 3 documented the relative stagnation in the rate of investment since before the beginning of the century. For a country that

Table 7.4 Growth and composition of imports

Categories	1982-87	1993-96	2010-13
Food grains	14.9	7.1	3.3
Other food	12.8	6.0	8.9
Petroleum and products	16.4	6.6	13.4
Clinker		0.3	1.4
Chemicals/pharmaceuticals		3.2	3.9
Fertilizer		2.2	3.7
Cotton, yarn, textile, fibers		23.8	20.3
Dyeing, tanning, plastic material		3.4	5.0
Iron and steel		3.8	6.4
Machinery/capital goods	18.5*	4.7	5.9
Other including EPZ		38.9	27.7
"Other" category for 1982/83 to 1986/87	37.5		
Import/GDP ratio	11.6	15.2	28.8

Note: * Includes transport equipment. For 1982-87 the source is Khan and Hossain (1989, p. 102). For other years, the source is Bangladesh Bank (May 2014). Classification for 1982/83 to 86/87 is different from that of other periods; several items showing no entry in that period are in the "Other" category.

imports most of its investment machinery from abroad, the low ratio of import of these goods is a reflection of low rate of investment.

The import of raw materials for garments exports cannot be quantified because it is part of two categories each of which hides details: "Cotton, Yarn, Textile & Textile articles and Staple Fiber" and the residual category of "Other including EPZ". But these two categories account for a half of all imports so that, even after allowing for a large share of consumption goods in them, they would accommodate large imports of inputs for garments. The fall in the share of these categories between the 1990s, when they accounted for 63 percent of all imports, and recent years probably is in part a reflection of the import substitution of some garment inputs, for example, textiles, yarn and accessories.

One part of imports for which we do not have a quantitative estimate is that of consumption goods; but, as just indicated, a substantial share of the two largest groups, especially the residual group, includes consumption goods. All kinds of indicators show that imports of many consumption goods, scant in the past, are widely available in the market. Certain categories – computers and related goods – are allowed in free of duty and their domestic price often is in line with world market prices. But a great variety of goods ranging from all kinds of consumer electronics to fancy food items are sold in the market at prices that reflect high nominal rates of protection. The sharp increase in inequality of income distribution – the concentration of very high incomes at the hands of the recipients at the top of the income scale – is part of the explanation of the phenomenon.

But why has the very high protection failed to induce import substitution in these products? In fact, there appears to have been some import substitution: to give an anecdotal example, domestically produced and imported electrical fittings sell side by side, the latter at a very high premium. To an extent this again is explained by the "snob premium" that enough consumers with high incomes are willing to pay. But a major explanation of this must be that high protection alone does not ensure successful competition with imports in the absence of essential preconditions for growth: access to energy, infrastructure, educated labor force and, above all, a system of governance that is a help not a hindrance to entrepreneurial development. These are the issues that we hope to return to in later chapters.

Remittances

Remittances made by nationals working abroad has grown steadily over the decades to reach 11.1 percent of GDP in recent years (see Table 3.1).

Bangladesh ranks eighth among nations in terms of total remittances which reached US\$ 14.5 billion in 2012/13, the latest complete year for which information was available at the time of writing.¹⁵ Almost 8.6 million Bangladeshis are working abroad, which makes the annual remittance per worker US\$ 1,681. The distribution of source countries were as follows (in billion US\$ for 2012/13):¹⁶

Saudi Arabia	3.83	UAE	2.83
USA	1.86	Kuwait	1.19
Malaysia	1.00	UK	0.99
Oman	0.61	Singapore	0.50
Bahrain	0.36	Qatar	0.29
Other	1.01	Total	14.46

We do not have consistent information about the distribution of migrants by countries. It is, therefore, not possible to determine per worker remittance by country.

A recent Bangladesh Bureau of Statistics (BBS) survey on the use of remittances focuses on the recipients of remittances and the use that the receipts are made of.¹⁷ But the survey also provides some information on the characteristics of the expatriates. An overwhelming proportion of migrants – 97.4 percent – are male. Most tend to be young: 63 percent of the male workers and 72 percent of female workers are less than 35 years of age. The largest age group for male workers is 25–29 years, accounting for 26 percent workers while the largest age group for female workers is below 25, accounting for 30 percent.

Nearly 10 percent of the migrants are illiterate; 62 percent have had schooling between grades I and IX; 16 percent have Secondary School Certificates or equivalent; 7 percent have Higher Secondary Certificate or equivalent; 5.5 percent are graduates of tertiary education of which 2.4 percent are medical or engineering graduates. Educational level of the migrants tends to be higher for the USA, Canada, Japan, South Korea, Australia and Germany. The distribution of expatriates by length of working abroad shows that the highest proportion (35 percent) have worked for five to ten years; 17 percent have worked three to five years; 19 percent have worked one to three years and 7 percent have been abroad for less than a year. Only 22 percent have worked abroad for ten years or longer. That 48 percent of the remittance-receiving households are headed by female members indicates that the migrants are mostly the principal earners of their families. They work abroad, leaving

their families behind, with an intent to return home after fulfilling their wealth or assets accumulation targets.

While remittances have grown rapidly, it is altogether possible that it has been below its potential level. In Chapter 3 we reported the finding by the UNDP study that there has been very large under-invoicing of imports for which incentives were plentiful due to the high nominal protection rate on consumption imports. Under-reporting of import would be profitable as long as the premium on foreign exchange – the premium that would induce the remitters to sell their foreign exchange earnings to importers rather than sending those through official channel – is lower than import duty. As we have seen, on many consumer goods the sum of tariff and para tariff often ranged above 50 percent and more than 100 percent rates were not unknown. The premium on foreign exchange, on the other hand, has been quite modest in recent decades: 5 percent might indicate something like an upper limit. Thus there was an incentive to under-invoice imports even after absorbing significant transactions costs involved in suppressing the incredulity of the customs authorities. It is possible that diverting potential remittances was a way to finance under-reported imports as well as unrecorded border trade (smuggling).

Arguably these methods of reverse capital outflow by themselves did not cause much net reduction in remittance flows into the country which received the diverted remittance in the form of illegal capital inflow. But the country sustained loss of tax revenue, an outcome that must be blamed on the irrational and unsustainable system of protection.

Global links: foreign direct investment, foreign debt and exchange rate

Foreign direct investment

The attraction of foreign direct investment (FDI) far exceeds that for the augmentation of savings; in addition to funds, it brings entrepreneurship, technology and possible market access which are all very scarce in a developing country. Indeed FDI can often be financed by raising funds within the country of its destination so that the promise of augmenting investible funds is not a necessary reason behind its attraction. Furthermore, as we have tried to show in Chapter 3, arguably savings are less scarce in Bangladesh than the other resources that best kinds of FDI brings in. It is thus understandable that policymakers in Bangladesh have tried hard to attract FDI. Unfortunately success has at best been very limited. At the turn of the century – for the years 1999/2000, 2000/01 and 2001/02 – the average annual FDI flow was US\$144 million or just

Table 7.5 Foreign direct investment, 2012 (percent of GDP)

Bangladesh	1.0	Sub-Saharan Africa	2.4
India	1.5	Middle East/North Africa	1.6
Nepal	6.9	Latin America/Caribbean	3.2
Pakistan	0.5	East Asia	3.6
Sri Lanka	1.4	Indonesia	2.7
South Asia	1.4	Thailand	3.3
		Low income countries	3.9

Source: WDI (2014).

0.1 percent of GDP. For the most recent three years for which information is available – 2010/11, 2011/12 and 2012/13 – average FDI increased to US\$ 1089 million, which was still only 0.9 percent of GDP.¹⁸

Table 7.5 shows the ratio of FDI to GDP in 2012 for Bangladesh, its South Asian neighbors, other developing regions, the average for all low-income countries and a few selected South-East Asian countries. With the exception of Pakistan, a country with enormous problem of insecurity and instability, Bangladesh has the lowest FDI/GDP ratio among the countries and groups cited. Indeed the entire South Asia seems to be unattractive to FDI. Even the turbulent Middle East and North Africa had more FDI inflow as proportion of GDP. Once that region is excluded, the rest of the developing regions have very substantially higher FDI/GDP ratio as compared to South Asia. Of the possible explanations of this the ones that stand out are: poor physical infrastructure; low overall skill and education of the labor force; low business friendliness of bureaucratic and political infrastructure; and inter-country hostilities that prevent economic integration. Sub-Saharan Africa is probably worse off in terms of these indicators, but in its case these adverse factors are outweighed by the attraction of access to natural resources.

Indeed, historical experience by and large strongly rejects the possibility for the poor and backward countries to develop by piggybacking on FDI. FDI is just like other kinds of investment; it is pulled by the profitability of investment. A country must create the preconditions of high profitability of investment – good physical infrastructure; skilled labor force; efficient and business-friendly administration; institutions that keep down transactions cost – by its own effort in order to be able to attract FDI, unless there is assured promise of access to natural resources, as is the case in Sub-Saharan Africa, or other special circumstances. Recent historical experience also demonstrates that large FDI is not a necessary condition of rapid growth. Among the East Asian miracle countries, Japan and the Republic of Korea were distinctly hostile to

FDI. Taiwan had a surplus in the external account ever since the 1960s and thus had little need for “foreign savings”. The huge FDI inflow into China followed, not preceded, China’s take off into hyper-growth trajectory and FDI inflow in China has been far outweighed by the increase in China’s own accumulation of foreign assets.

External debt

Bangladesh has the distinct advantage of a low debt/GDP ratio and a low debt-service burden. This is an improvement over the circumstances in which the country found itself during the mid-1980s due to its high aid dependence at the time and the need to make short-term borrowing from the IMF and commercial sources for balance-of-payments support. In 1985/86 debt service shot up to 37 percent of total foreign exchange earnings.¹⁹

Table 7.6 shows that there has been much improvement since then. As discussed in Chapter 3, Bangladesh had very little capital inflow in recent decades as a result of rapid growth in foreign exchange earnings. By 2013, external debt, at less than 20 percent of GNI, and debt service ratio, at 5.2 percent of export earnings, are the lowest among the South Asian countries and very low by international standard.

It is also worth repeating that the UNDP study of capital outflow from Bangladesh, discussed in Chapter 3, shows that, in the absence of the outflow, Bangladesh would have become a large international creditor nation. In other words, if the capital outflow had all been legal and open, Bangladesh would have very large net foreign assets by now. There is little comfort to be had from the thought that “criminal” actions by exporters, together with those of the traders and others in collusion with them, have deprived Bangladesh of its rightful position of being an international creditor and relegated it to the position of a debtor, albeit

with a tolerable burden of debt service. Flight of capital derives from perceived lack of safety and profitability of investment. It is by changing these conditions, rather than self-defeating policing, that the country can reverse the flow of assets that its nationals own.

Exchange rate

As part of its reform of the trade regime, Bangladesh moved away from fixed exchange rates and import quotas to managed float during the 1990s with controls on capital movement. The guiding principle is to allow the exchange rate to be determined by market forces balancing the supply of and demand for foreign exchange while leaving the exchange control authority, the Bangladesh Bank, to intervene in order to prevent undesirable movements in the exchange rate that might hamper development objectives, for example, an overvaluation caused by transitional factors that might harm exports.²⁰

Controlling the international value of the taka by purchase and sales of foreign currency in the international market is perhaps not a realistic option for Bangladesh. Thus the policy of influencing the exchange rate would have to focus on the real exchange rate by working on the rate of domestic inflation via monetary and fiscal policy. The Bangladesh Bank makes estimates of the index of “real effective exchange rate” which is published by the Ministry of Finance in the annual *Bangladesh Economic Survey*. From 1994/95 – the base year – to 2006/07 the index is trade-weighted against 11 major currencies; a second index, trade-weighted against 8 major currencies and still based on 1994/95, covers the period from 2004/05. In the absence of any explanation of how the index is calculated, it is hard to be certain how it should be interpreted.²¹

Table 7.7 “Real effective exchange rate” index (1994/95 = 100)

Year	11 currency basket	Year	8 currency basket
1998/99	111.64	2004/05	88.42
1999/2000	108.06	2005/06	83.86
2000/01	102.04	2006/07	86.55
2001/02	101.48	2007/08	86.02
2002/03	96.98	2008/09	91.30
2003/04	93.42	2009/10	97.74
2004/05	91.74	2010/11	89.92
2005/06	86.90	2011/12	91.37
2006/07	89.65	2012/13	101.49

Source: BES (2014), table 48.

Table 7.6 Foreign debt and debt service, 2013

Country/region	Debt as % of GNI	Debt service as % of exports
Bangladesh	19.5	5.2
India	23.0	8.6
Nepal	19.7	8.7
Pakistan	22.8	26.3
Sri Lanka	38.5	11.9
South Asia	23.2	9.4

Note: The source is *WDI* (2014). GNI is defined as the sum of GDP, remittances and other net factor income (see Annex to Chapters 2 and 3).

Interpreting it the usual way – that is, assuming that a fall in the index represents fewer units of taka in real terms exchanging for a unit of foreign currency – the index shows three distinct phases: between 1994/95 and 1998/99 the taka depreciated in real terms against the major currencies; thereafter until 2005/06 it appreciated very sharply; and finally, after 2005/06 it has been depreciating again. It is somewhat odd that the RER appreciated during the period of relative price stability – of the three periods the GDP deflator registered the slowest rate of increase during 1998/99 and 2005/06 – while it appreciated during the periods of faster rates of domestic inflation (measured by change in the GDP deflator underlying the estimate of column 2 of Table 7.8).

The movement of the taka against the Indian rupee reveals a different pattern (Table 7.8). It shows steady depreciation between 1993/94, the first year for which estimates are made, to 2007/08; thereafter it appreciates moderately.

While the major currencies represent the countries of destination of Bangladesh's exports, India is the country with which Bangladesh, in

addition to having substantial legitimate trade, also has a great deal of unrecorded border trade, smuggling or "illegal free trade". Change in the real exchange rate with the major currencies might not have much effect on the major merchandise export, garments, for which price negotiations are carried out in foreign currency and the effect of exchange rate variation is absorbed by the primary factors of production. But it must have significant effect on the profitability of many marginal and potential exports. Changes in the direction and volume of border trade with India must be strongly associated with the change in the exchange rate between the taka and the rupee. Exchange rate changes must also have an effect on the remittance flows; an appreciation of the taka in real terms would divert remittance flows to channels other than direct official flows, for example, financing of capital flight and smuggling. It would be desirable to avoid large variations in these exchange rates. It is, however, unclear how much policy freedom there is for the country to influence what are essentially market determined rates, beyond stabilizing domestic prices relative to that of the trading partners. This possible instrument of influencing the real exchange rate has its own constraints.

Table 7.8 Taka/rupee nominal and real exchange rate (base 2004/05)

Year	Taka/rupee	Ratio of GDP deflators	RER taka/rupee
1993/94	1.27	0.821	1.04
1994/95	1.28	0.855	1.04
1995/96	1.20	0.894	1.07
1999/2000	1.15	0.989	1.14
2000/01	1.16	1.018	1.18
2001/02	1.19	1.007	1.20
2002/03	1.21	0.999	1.21
2003/04	1.30	0.995	1.29
2004/05	1.38	1.000	1.38
2005/06	1.50	0.991	1.49
2006/07	1.57	0.988	1.55
2007/08	1.71	0.962	1.65
2008/09	1.45	0.980	1.42
2009/10	1.49	0.977	1.46
2010/11	1.57	0.989	1.55
2011/12	1.58	0.989	1.56
2012/13	1.46	0.994	1.45

Note: Author's estimate based on taka/rupee value shown in Bangladesh Bank (May 2014); the Indian GDP deflator estimated by comparing current and constant price GDP shown in Wikipedia, "The Economy of India", and the Bangladesh GDP deflator estimated by comparing the current and constant price GDP shown in Bangladesh Bank, *op. cit.* The second column shows the ratio of Indian GDP deflator to Bangladesh GDP deflator which has been rebased to 2004/05, the base year for Indian constant price GDP series.

8 Infrastructure and Environment

port by road and rail, apart from facilitating the laying of electric, gas and fiber-optic communication lines. A bridge over River Padma, after initial vicissitudes, is currently under construction to extend similar connection for the western and south-western districts. Rapid expansion of roads – especially the regional highways and the feeder roads – helped create access for remote rural areas which were previously without easy access to markets and sources of input supply. This was a major factor in improving the livelihood of the rural population and promoting diversification of rural economic activities. Bangladesh has second highest road density among the South Asian countries, much higher than the South Asian average.¹ And yet inadequate transport infrastructure is a major obstacle to efficient freight and personnel movement, essential preconditions for economic growth and competitiveness.

The high road density by South Asian standard is misleading, partly because entire South Asia suffers from inadequate transport infrastructure; but also because the index of road density needs to be normalized for such factors as population density, which is very high for Bangladesh; and the quality of road network, which is not captured by crude density indicators. Finally, roads are just one of many methods of transport and the ratios of different methods vary among countries.

We cannot systematically quantify the extent to which inadequate transport infrastructure is a bottleneck to economic development. Reports are, however, aplenty about how transport delays lead to delayed shipment of exports and/or far more expensive alternative of air shipment. Delayed unloading at the port, a consequence of limited handling capacity, is widely reported to add to the cost of production and capacity utilization in industries. High incidence of accidents – a consequence of poor road quality, poorly maintained transport equipment and poorly enforced regulations for vehicle operation – also add to economic and human cost. These costs offset much of the competitive advantage that Bangladesh derives from the low labor cost.

Table 8.1 shows the contributions of various methods of transport to the sector's contribution to GDP. Value added is not the best measure of the importance of a transport mode in facilitating economic activity. Physical measurements, like ton-miles and passenger miles of service, or even gross output value – indices that are unavailable – would be better. But the starkness of the difference in the shares of value-added in this case tells a clear story. Road transport is the overwhelmingly important contributor of transport services. Railways have increasingly become a marginal source of transport service. Air transport also has an insignificant role. Water transport too is a small provider of transport services.

Introduction

This chapter is concerned with what might broadly be subsumed under the heading of infrastructure. Infrastructure, physical and social, has many components of which we shall focus mainly on transport, energy, education and governance as the principal constraints to development in Bangladesh. Of these, we shall deal with the issues of governance in the concluding chapter.

Environment is not usually put under the heading of infrastructure in recognition of which the heading of this chapter separately singles it out. There are, however, strong similarities between environment and components of infrastructure. Adverse environment impedes productive efficiency just as inadequate infrastructure does. Like the components of infrastructure identified earlier, environment has broad externalities which make it an area of public action as much as, if not even more, than infrastructure.

The purpose of this chapter is not to provide detailed overviews of components of infrastructure and environment, but rather to briefly outline the major economic issues and choices from the standpoint of alleviating obstacles to growth and welfare. Informed economic choices in these matters are areas of competence for economists specialized in respective fields. Our analysis will therefore be rudimentary and tentative.

Transport

Bangladesh has made significant improvement in the transport network during the period under review. The bridge over river Jamuna, completed in 1998, connected the northern districts with the capital and the main

Table 8.1 Shares of different modes of transport, 2011/12 (percent of sector's value added at current prices)

Land transport	93.3
Railway	0.7
Mechanized road transport	63.2
Non-mechanized road transport	29.4
Water transport	5.8
Mechanized	4.1
Non-mechanized	1.7
Air transport	1.0

Source: BBS, *Statistical Yearbook* (2012, p. 209).

As Table 8.2 shows, railways experienced some growth in the early years after independence. During the past quarter century it had little net growth in tracks; and a sharp decline in rolling stocks, the number of passenger coaches registering no growth and the number of freight wagons sharply declining. Freight carried by railways has declined by a fifth during this period. Incredibly, passenger mileage carried by railways increased by 63 percent despite no growth in the passenger carrying capacity, signifying overcrowding and a decline in the quality of service.

Growth has been concentrated in road transport. Significant growth has taken place in all types of roads: national highways, regional highways and feeder roads. Since the turn of the century there has been a very rapid growth in regional highways and a decline in feeder roads. This may have been due to an upgrading of feeder roads into regional highways and/or a change in the definition of the categories.

There are reasons to believe that the neglect of railways reflect inappropriate priorities in transport development. First, the basic railway infrastructure could at least have been maintained and incrementally expanded at relatively modest cost in terms of investment. Secondly, roads are more land intensive than railways. Bangladesh is an extremely land-scarce country. A better balance between roads and railways would have made less demand on this scarce resource.

For as riverine a country as Bangladesh the contribution that water transport makes is very limited. The sector is largely unregulated with low safety record. The importance of the sector has declined over time as bridges have expanded the reach of surface transport.

Inner-city transport has emerged as a serious bottleneck in the major cities, especially the capital and the main port city, in recent decades. Vast expansion in city population has far outpaced all infrastructural

Table 8.2 Growth of road transport

A. Railways					
Year	Tracks (km)	Engines	Passenger coaches	Wagons	
1974/75	1,786	491	1,207	13,626	
1989/90	2,746	307	1,490	15,536	
1999/2000	2,768	268	1,282	10,929	
2013/14	2,877	277	1,489	9,142	
Index of growth of railway services for 2012/13 (1989/90 = 100)					
Passenger (km)	163				
Freight ton (km)	79				
B. Road transport (km)					
Year	National highways	Regional highways	Feeder roads		
1975	2,570	1,230	582		
1990	2,929	1,553	9,147		
2000	3,086	1,751	15,962		
2014	3,536	4,278	13,638		

Note: The data are from *BES* (2014, pp. 333–35).

facilities. Inadequate transport infrastructure has immensely added to commuter time and discomfort. This has not only resulted in huge economic loss and environmental pollution but has also been a source of negative externality in the form of disruption of social interaction among urban population.

To summarize: significant improvement in the access of rural communities to urban markets and sources of input supply has taken place. The construction of the Jamuna Bridge and many lesser river bridges has improved the physical integration of the country. Inadequate transport, however, remains a major obstacle to growth. Large investment is needed for the development of inner-city transportation; a balanced and complementary development of roads and railways; and an improvement of the ports. Some of the major directions of future development have emerged. The construction of the Padma Bridge will expand road transport facilities for the 19 south and western districts with vastly improved connections between them and the rest of the country. In railways some expansion, mainly the construction of double-tracks between Tongi and Bhairabazar, is planned but the rest of the program for railways focuses on further contraction for greater efficiency by way of the closure of unprofitable tracks, stations and facilities. Several major projects – notably a North-South Mass Rapid Transportation line; an

elevated highway across the capital city connecting the airport in the north of the city with the highway to the port in the south of the city; and a north-south Bus Rapid Transit line – have been planned to ease traffic congestion in the capital. Unfortunately, these have been at planning stage for far too long a period as the problem of congestion has steadily become aggravated.

Energy

Per capita energy use in Bangladesh is one of the lowest in the world (Table 8.3). It is low even by the standards of its South Asian neighbors, the sub-Saharan African region and the average for the low-income countries according to World Bank classification. The low energy use is due to both low demand and unmet demand caused by supply constraints. Shortage of power and fuel is a major cause of the underutilization of capacity in industries and services.

Table 8.3 Per capita energy use in 2011

Country/region	Kilogram of oil equivalent
Bangladesh	205
India	614
Nepal	383
Pakistan	482
Sri Lanka	499
South Asia	555
Sub-Saharan Africa	681
All low-income countries	360
East Asia and the Pacific	1,671
World	1,890

Source: World Bank, *World Development Indicators* (2014, p. 46).

Even as supply lagged behind demand growth, net power generation increased at an annual rate of 7.2 percent between 1989/90 and 1999/2000; 7.1 percent between 1999/2000 and 2009/10; and at 9.3 percent between 2009/10 and 2012/13. During the last of these sub-periods the supply constraint was eased somewhat by resorting to expensive, low-gestation, oil-based rental stations for power generation. It appears that the rate of growth of energy supply has to be at least one and a half times as much as the rate of GDP growth.

In contrast to accelerating demand, the country has very few primary sources of fuel. Excluding biomass, energy needs in recent years have been met by the following primary sources (percent of total):²

Natural gas	72
Oil	24
Hydropower	3
Coal	1

There is no further source of hydropower to exploit inside the country. Oil is almost entirely imported and all the incremental demand for it will have to be met by import. Thus indigenous primary fuels are limited to gas and coal of which the latter is yet to be extracted in significant quantity although the earliest discovery of reserves predates the independence of the country.

Thus natural gas has been the overwhelmingly important primary fuel. Recoverable (proven and probable) reserves are estimated to be 27.04 trillion cubic feet (TCF) of which cumulative extraction until December 2013 was 11.72 TCF, leaving the net recoverable amount at 15.32 TCF.³ At the current (2012/13) rate of extraction (0.8 TCF), this amount will be exhausted by 2032 and, allowing for an 8 percent annual increase in usage, it will be exhausted as early as 2024. Hopefully exploration for new gas field will find new reserves to push back this looming deadline although there is uncertainty about it.

Uncertainty about coal is even greater. The estimated reserve in the five mines discovered to date is 3,200 million tons. Of these mines the one at Boropukuria with the lowest reserve is also the shallowest. Open-cut mining method has been used to start extracting coal at this mine for use in power generation. There is a debate among experts about the appropriate method of extraction in the other, deeper mines. There is a widely held opinion among experts that the rate of extraction in any case is unlikely to be as large as would be required for the coal-based power generation envisaged in the official projections (discussed below).

The most important sets of choices concerning the energy sector are:

1. the fuel composition of power generation, especially resolving the issues concerning the use of coal in power generation; and
2. the allocation of natural gas, the largest primary source of energy, to competing uses.

We shall briefly comment on each of these choices.

Table 8.4 shows the shares of different fuels/supply sources of the existing installed generating capacity and the actual power generation

Table 8.4 Power generation by type of fuel (percent of total)

Fuel type	Generating capacity	Power generation
Natural gas	64.4	74.7
Furnace oil	19.5	15.1
Diesel	6.6	2.5
Hydropower	2.2	1.8
Coal	2.4	2.5
Power import	4.9	3.4

Note: The source of the data is the Bangladesh Power Development Board and quoted in PES (2014, p. 134). "Generating capacity for power import" is a confusing term. It probably means the maximum contracted import or grid capacity to handle imports. The installed capacity refers to mid-2014. Power generation refers to the first seven months of the fiscal year 2013/14.

in Bangladesh. Natural gas is by far the cheapest fuel source for power generation. Liquid fuel – furnace oil and diesel – are the most expensive of the fuel sources. Their rapid growth in recent years has been due to the low gestation lag of the stations which are based on them. These stations are privately owned and the power generated by them is purchased by the public distribution system at a very high contracted price. Strategic shortage of power and urban discontent at frequent power outage were the primary factors driving their rapid expansion.

Options for future expansion in power supply exclude hydropower due to the absence of necessary water resources. Liquid fuels should perhaps also be excluded due to the very high cost of generation from this source. It seems that the phasing out of much of the existing power using this source of fuel would be desirable in the medium term as generating stations using other forms of fuel are completed. There are, however, new options for import: power import from neighboring countries – Nepal, Bhutan and Myanmar – rich in hydropower resources; and the import of liquefied natural gas (LNG) for use as fuel for power generation [e.g., by joining the project of importing LNG from central Asia (Turkmenistan) to India via Afghanistan and Pakistan]. Furthermore, nuclear power and renewable sources of power generation are also available options.

Of all the fuel options gas is by far the cheapest. But the incremental share of gas in power generation must be lower than the average for the reasons that its reserves are limited and it has competing sources of demand. The Power Sector Master Plan (PSMP) adopted in 2010 therefore envisaged a more balanced distribution of fuel source. Indeed it went to the other extreme by opting for a composition of 30 percent domestic

coal, 20 percent imported coal, 25 percent natural gas (including possible import of LNG), 5 percent liquid fuel and the remaining 20 percent from nuclear, renewable and imported power. It is worth considering if by intensifying the exploration effort the rate of new gas discovery can be enhanced and its incremental share in fuel can be increased above the rate planned in the PSMP. It is, however, important to accept that a significantly lower incremental share for gas, than the average share, is inevitable.

Coal has been estimated to be the next cheapest alternative, domestic coal being cheaper than imported coal.⁴ Progress with domestic coal production has been very slow and no firm decision about the method of mining has yet been made. Large investment will be necessary which ever mining method is adopted. It is also certain that power generation by using imported coal will require much investment in creating reliable supply channels even though stable international price and available sources of supply – notably Indonesia, Australia and South Africa – are cited as positive factors.

The issue of coal-based power generation needs to be resolved quickly. Barring the unlikely discovery of major new gas fields in the near future, coal-based power generation is the only indigenous source to be explored. Nothing suggests that imported coal will be a cheaper alternative to domestic extraction. There is the obvious question of the negative environmental externality of coal-based power generation. But the effect is not likely to be large, especially when the location of the coal-based stations, far from major urban centers, is taken into account. Given the country's low income and extremely limited sources of energy, it does not seem unreasonable to use this major potential fuel source.

Nuclear power station at Rooppur has been talked about since before independence. Even if the plant finally gets implemented, it will constitute just 10 percent of the *incremental* capacity. But there are far too many uncertainties about this plant and little sign of its being operational within the time frame of the Master Plan. Added to all the usual uncertainties and difficulties is the great economic crisis faced by Russia which was supposed to provide the technology and funding for the project. Most importantly, little is known about the costs and benefits of this project and there is no serious case in favor of making nuclear power a major component of future power development.

There has been some attempt to develop power from renewable sources, for example, solar panels. But their cost is believed to be very high, and their total contribution to power supply remains negligible.

That leaves the direct import of power as the remaining possible source to explore. At the moment this option is seen as power import from the neighboring countries, by definition the contiguous neighbors, India and Myanmar, as sources of supply. However, major potential surplus in hydropower exists in Nepal and Bhutan and, reportedly, India is initiating joint power development projects in those countries which have limited resources of their own for investment. It is by becoming a part of that joint development and long-term output-sharing agreement that Bangladesh can hope to have an assured source of supply. Unfortunately there is little sign that Bangladesh is considering aggressive participation in multinational funding of investment projects in power development in Nepal and Bhutan. In any case, the record of regional cooperation in South Asia so far has nothing in its history to arouse much hope of success in this endeavor.

As can be seen from the above, the problem of overcoming the shortage of power is enormous. The government plans to expand the generating capacity from 10,341 megawatts in January 2014 to 24,000 megawatts in 2021, approximately 12 percent annual growth; and to expand access to power from 62 percent of the population to 100 percent. These ambitious targets stand in stark contrast to the uncertainty and halting steps that characterize every single path: enhanced gas exploration; quick and rapidly growing output from domestic coal mines; and assuring long-term supply in larger quantities from across the border. Only by committing large investment and clear-headed effort uncharacteristic of public action in Bangladesh can the energy constraint to development be eased if not the ambitious targets for 2021 be fully achieved.

Table 8.5 shows the changing composition since 1990 of the use of natural gas produced in the country. There has been an increase in the proportion of extracted gas used for power generation, industrial use, household use and use as CNG for transportation. There has been a sharp reduction in the use of gas in fertilizer production. The other changes in the composition of gas use are minor: the share of commerce has fallen as has the tiny share of tea gardens while the small amount supplied to brick field has been eliminated.

The decline in gas used by fertilizer industry has been dramatic: the absolute amount used has fallen from the peak of 96 billion cubic feet in 2002/03 to only 60 BCF in 2012/13. There has been an absolute decline in the use of urea fertilizer in agriculture because of greater diversification of fertilizer use away from urea. But the gap between the use of urea in agriculture and its domestic production has increased

Table 8.5 The composition of gas use (percent of total use)

Using activity	1990/91	2000/01	2012/13
Power generation	50.3	50.2	58.2
Grid	50.3	50.2	41.3
Captive	0.0	0.0	16.9
Fertilizer	33.0	25.4	7.5
Industry	8.0	13.8	17.1
Tea garden	0.4	0.2	0.1
Brick fields	0.0	0.1	0.0
Commercial	1.8	1.2	1.1
Households	6.4	9.1	11.3
CNG	0.0	0.0	4.7
Total use (billion CF)	164.1	348.8	795.8

Note: The source is Petro Bangla quoted in BEA (2014, p. 150). Total use has been a little lower than total production due perhaps to loss in transit.

indicating an increase in its import. Whether this has been caused by a change in the cheapening of urea in the international market or a constraint on domestic production due to the limited supply of gas is not known to us.

It is hard to prioritize the allocation of gas to competing uses without a great deal of additional information. One simple step in promoting a more efficient allocation is to ensure uniformity of cost for all users and make that cost reflect the opportunity cost of gas, productivity in the most profitable use and/or the cost of equivalent energy at the margin. At present sale of gas to households is not only seriously underpriced but also completely irrational in that flat rates apply to overwhelming majority of consumers. CNG embodies substantial environment-friendly externality; but it needs to be considered if that entirely justifies its low price. It is possible that wider availability at a more economic price deserves greater emphasis.

The issue is closely related to the urgency of reducing the burden of subsidy on government budget. Energy subsidy in all different forms accounts for most of the subsidies paid by the government. It has been estimated to have reached 1.62 percent of GDP.⁵ These subsidies include the ones on gas as well as petroleum products. Important steps have been taken in recent years to increase energy prices, and reduce transmission and distribution loss. Further progress along these lines and the phasing out of high-cost rental power generation would help mobilize large investment resources that the necessary development of the sector urgently requires.

Skill development

An Asian Development Bank (ADB) study has recently ranked Bangladesh 27th among 28 Asian countries in descending order of knowledge economy index (KEI) scores.⁶ The ADB study argues that in recent decades the developing Asian economies have achieved high rates of growth principally by making use of cheap labor complemented by high rates of capital accumulation. In order to maintain their growth performance in the future, these countries will need to make a transition away from cheap labor and high rates of capital accumulation and move toward a concentration in the production of goods and services that are knowledge based. In that context the study estimated a composite knowledge economy index for 28 Asian countries to evaluate their preparedness for the transition toward knowledge-based products.

ADB's KEI has four components:

1. The quality of economic and institutional regime which is measured by three indicators: tariff and non-tariff barriers; regulatory quality; and rule of law.
2. Education and skill of population which is measured by adult literacy rate, gross secondary enrolment rate and gross tertiary enrolment rate as indicators.
3. Information infrastructure for which the indicators used are: telephones; computers; and internet users per 1,000 people.
4. Innovation system which uses as indicators royalty payments and receipts; technical journal articles; and patents granted by US Patents and Trademark Office, all per million nationals.

Bangladesh ranks 27th among 28 countries in the overall index (absolute value of the index being 1.49 with Taiwan scoring highest at 8.77); 24th in the economic and institutional pillar sub-index (absolute score of 1.51 as compared to 9.66 for Singapore, the highest ranked country); 25th in the education and skill sub-index (absolute score of 1.75 with 9.09 for The Republic of Korea, the highest ranked country); and 27th in the innovation sub-index (absolute score of 1.69 with the top score of 9.49 awarded to Singapore).

The very low KEI and its sub-indices for Bangladesh indicates its lack of preparation for making a transition to higher levels of development incorporating a radical change in the composition of GDP and exports in favor of goods, and especially services, which require high skills and innovative ability. In reality the lack of skills in Bangladesh starts at even

more basic level than the ones considered by the KEI. For example, the KEI excludes primary education. In addition to secondary and tertiary education, Bangladesh, with the preponderance of agriculture, industries and services employing unskilled and semi-skilled workers, is badly in need of endowing much of its work force with the very basic of skills for which good primary level education is important. While Bangladesh has achieved rapid improvement in the rate of enrolment in primary education, it has serious problem of inefficiency in the form of high rates of dropout. While the gross intake at first grade is a staggering 130 percent of the relevant age group for both male and female children, the cohort surviving to the final (fifth) grade is just 62 percent for male and 71 percent of female children.⁷

Of greater importance is the quality of education. Unfortunately no systematic analysis of the quality of education in Bangladesh at any level is available to us. Nor is there any information about how Bangladeshi students at different levels compare with students elsewhere in terms of proficiency in numerical, scientific and linguistic skills. There is, however, widespread skepticism about the quality of education at all levels as with the relevance of curricula in equipping the students with skills which enhance their productivity as members of labor force.

At secondary and tertiary levels the enrolment rates, respectively 48 percent and 13 percent, are significantly lower than the South Asian average rates of 63 percent and 21 percent.⁸ At these levels the quality of education is also believed to be very low, having deteriorated over time with rapid expansion in quantity. A duality has emerged at the primary and secondary levels of education, with the rich opting for private English-medium schools which are the only reliable avenue for university education abroad, the preferred choice for the rich in view of the decline in the quality of tertiary education within the country. With the rich and the powerful opting out of it, the pressure for the improvement of primary and secondary education has become weak. The reduction in the emphasis on English education at the secondary level immediately after independence percolated throughout the educational hierarchy. An average university graduate has far lower proficiency in English today than was the case at the time of independence.⁹

Tertiary education is numerically dominated by the "colleges" which traditionally offered two-year "graduation" degrees, comparable in terms of educational sequence to the associate degrees at the US community colleges. But many of the colleges have now been granted the status of "university colleges" with the authority to grant four-year

degrees, and even masters' degrees, thereby blurring the difference between these colleges and the universities. In the year 2000 there were 228 public colleges with an enrolment of 551 thousand and a student/teacher ratio of 57 and 780 private colleges with an enrolment of 812 thousand and a student/teacher ratio of 32. By 2013 the number of public colleges had increased rather slowly to 250 with total enrolment rising to 1.175 million and a student/teacher ratio sharply deteriorating to 102. The number of private colleges increased rapidly to 1,361 with an enrolment of 1.330 million with the student/teacher ratio improving further to 24. Oddly, public colleges are universally perceived to provide higher-quality education despite their adverse student/teacher ratio. The growth of private colleges, on the demand side, has largely been due to the failure on the part of the students to gain admission to public colleges either due to inadequate credentials or lack of proximity. On the supply side, their growth has been facilitated by the large number of university graduates with inadequate skills to qualify for employment in business, government or more competitive occupations.¹⁰

General universities were a public monopoly until the early 1980s. They numbered 8 in 2000 and increased to 15 in 2013. Enrolment in them grew from 62,321 to 345,624 with student/teacher ratio jumping from 14.5 to 65.4! Private universities began to operate in the 1980s. The number of general private universities grew from 16 in 2000 to 67 in 2013! Enrolment in them in 2013 was 298,202 with a student/teacher ratio of 35.1.¹¹ The public universities, obviously under tremendous pressure due to inadequacy of resources, are still widely perceived to provide better quality of education than the private ones. In addition to inadequate resources, they also suffer from serious student indiscipline, unrest and disruption of schedule due to the political interference in administration by the rival student organizations patronized by the major political parties.

Private universities are almost always very limited operations, providing instruction in a limited number of selected subjects and avoiding fields requiring large investment in the form of laboratories and other overheads. Few of them have their own campuses or adequate student facilities. Most of them deserve to be described as tutorial institutions.

There are a number of public universities of engineering and technology, an agricultural university, public medical colleges, and technical training institutions which have higher quality of education as compared with the rest of the tertiary educational institutions. Private

medical colleges have also proliferated raising the total number of public and private institutions in this category to 75!

The country lacks centers of excellence in education and research. The problem can be highlighted by comparing Bangladesh with India which suffers from most of the problems that characterize primary, secondary and tertiary education in Bangladesh. But India made early investment in the creation of a number of centers of excellence – like the Indian Institutes of Technology, Indian Institutes of Management and a handful of elite universities and private institutes – which have standards comparable with those of the finest international institutions. These institutions were allowed enough autonomy and resources to maintain their high quality. The expertise of their graduates, together with India's retention of competence in English instruction and investment in IT infrastructure, led to the country's remarkable success in breaking into the world export market of IT software and services. By making early investment in the creation of centers of excellence in technology, retaining and developing proficiency in English and investing in IT infrastructure, Bangladesh might also have succeeded in finding a share of the same market.

Skill development in Bangladesh needs to start at the lowest tier of the educational pyramid. The dropout rate at the primary level has to be brought down, the quality of primary education improved and the curricula made more directly relevant for the enhancement of productive skills. In the 2014 budget provision has been made to double the coverage of poor households who receive partial financial compensation for the earnings foregone of children attending primary schools.¹² Focus needs to be on increasing the demand for primary education by improving the quality of curriculum and teaching, thereby creating perception on the part of the students and parents of its usefulness for enhanced productivity.

At the secondary level, involving 12.75 million students and 386,000 teachers – a student/teacher ratio of 33 – in 2013 and mostly consisting of institutions which are either public or publicly supported, the primary task is to increase enrolment over the currently low level. This again is intricately related to improving the quality of training and content of the curriculum. Nothing can move enrolment more powerfully than a widely held perception that secondary education significantly improves the productivity and earning of the school graduates. This task is made difficult by the dual stream of secondary education, the mainstream and the religious madrassahs. The latter accounts for 30 percent of the students and 28 percent of the teachers.¹³

The post-secondary level is dominated by what might be categorized as the equivalents of liberal arts colleges in the West. In the entire educational pyramid, perhaps these institutions constitute the least valuable tier, providing little usable skills to the graduates. Their runaway growth needs to be restricted and attention needs to be concentrated on improving the quality of education that they provide. Private universities have also grown very rapidly with extremely lax regulation. It is urgent to make the provision of the minimum infrastructure a precondition for their operation.

Finally, it is urgent to start investing in centers of excellence in science, technology and research. This would be difficult given the inefficiency and indiscipline that characterizes the field of education and research. But without such institutions it would be impossible to face the challenge of innovation and technological adaptation to begin the necessary transition toward a more diversified structure of production.

Environment

The most serious long-term environmental challenge for Bangladesh is the effect of global climate change. Environmental scientists' models predict these effects for Bangladesh to be among the most catastrophic among countries of the world which are being adversely affected by global warming. The major consequences of global climate change for Bangladesh have been summarized by a scientist as follows:¹⁴

1. A possible change in the sea level of 0.6 to 2 meters by the end of the 21st century would lead to vast land loss and population migration, the lower bound of the estimate for the latter being approximately 10 percent of population.
2. Salinity in the land area, including Sunderbans, will increase leading to loss of farmland and biodiversity.
3. Intensity of cyclones will increase.
4. The frequency of high-intensity flooding, with greater variability in peaking time, will increase.
5. There will be increased river bank erosion due to higher river flow during monsoon.
6. There will be an increased probability of drought and water scarcity during winter months.
7. Variability in the predictability of flooding and drought will increase the uncertainty of crop output.

8. Hotter and more humid weather conditions and more extreme smog and dust prevalence will have increased adverse health consequences.
9. Unpredictable flood conditions will cause frequent transportation failure.

While the consequences of global climate change is the greatest long-term environmental threat for Bangladesh, there are a number of considerations which make it difficult to consider them in the context of policymaking for the foreseeable future. First, while there is little uncertainty about the ultimate inevitability of these consequences, there is a great deal of uncertainty about the distribution of these effects over specific time periods. Note the very first point about the estimated rise in the sea level, ranging between 0.6 meters and 2 meters. Depending on where within this range the actual rise will be, the catastrophic nature of the effects will qualitatively differ. Second, these effects are almost entirely caused by what the rest of the world does. Nothing that Bangladesh has done recently, or can do in the foreseeable future, had or will have significant effect on global climate change and the rise in the sea level. Third, there is great uncertainty about the timeline of the rise in the sea level. Despite such uncertainty, it is highly improbable that significant proportions of the worst of the consequences predicted above will take place during the next two or three decades. This is not an argument for downplaying the danger of global climate change, merely an acceptance of the fact that specific actions cannot be designed to counter a danger whose timing, magnitude and multidimensionality is shrouded behind so much of fundamental uncertainty. Careful monitoring and participation in international action to mitigate the factors contributing to the worsening of the problem must of course be vigorously pursued. Indeed Bangladesh is in an active role in the international forums dealing with issues of climate change and methods of coping with them.

There are, however, specific environmental problems, involving the deterioration of the quality of land, water and air that are the direct outcomes of activities carried out by the population and industries, activities that have not been subjected to significant regulation by the state. They are the areas in which effective public action, including those leading to the modification of private behavior, could produce substantial gain by way of environmental protection.¹⁵

Soil degradation is caused by many natural processes and by economic development itself: intensive farming, cyclones, incursion of saline water in coastal areas, loss of land due to population growth and increase in industrial land use to name some of the important ones. In a

land-scarce country like Bangladesh, these processes need to be offset by countervailing action. Instead many deliberate activities further accentuate these natural/normal processes. Indiscriminate use of pesticide and inappropriate combination of fertilizer use degrade the quality of topsoil. Due to inadequate collection in urban areas, much solid waste is dumped on land with adverse effect on its productivity. Unplanned land use, notably the expansion of brackish water area for the cultivation of shrimp to cropland, makes the latter unusable for cropping. Faulty irrigation – notably the rapid expansion of groundwater irrigation by using shallow and deep tube-wells during the early 1990s resulted in the concentration of the use of such water on relatively impermeable highlands. As a consequence these land remained inundated during most seasons, resulting in prolonged oxygen deprivation in their sub-soil.

Water pollution in Bangladesh has reached dangerous levels. Arsenic in groundwater poses a serious health hazard. Dangerous levels of arsenic contamination affects a large part of the country which depends on groundwater for the supply of much of its drinking water. According to some estimates 75 percent people are exposed to the risk of drinking arsenic contaminated water at some time.¹⁶ The problem has reached such a serious level due to the progressive decline in the level of groundwater caused by the excessive extraction and inadequate recharge of the aquifer. Salinity intrusion is another serious problem which has been mentioned above in connection with soil degradation. Most of the cities in Bangladesh do not have proper sewage treatment plant. Sewage disposal in the cities use septic tanks and pit sanitation. Households in poor areas, especially in rural Bangladesh, use latrines with more rudimentary sewage disposal, often none at all. All these systems leak into canals and rivers while many are directly connected to them. On top of this, most rivers and waterways receive large quantities of untreated industrial waste and effluent; and solid waste of all kinds. These practices widely affect the water supply systems and otherwise affect human water use resulting in high incidence of gastrointestinal diseases, skin ailments and numerous other health problems. Government rules have been in place for some time to regulate the disposal of industrial waste; but their implementation has been lax and beset with corruption and bribery, as is the case with most government regulations. Within the generally dismal overall situation there are occasional bright spots, for example the banning of polythene bags which clogged up urban drainage. This has resulted in large expansion in the production and use of biodegradable packaging materials.

Both indoor and outdoor air pollution are serious problems causing a high and increasing incidence of respiratory and other illnesses. Indoor pollution is mainly caused by the use of biomass fuels for cooking with poor ventilation, a widely prevalent condition associated with poverty. In the last two decades traffic congestion in major cities have grown to one of the worst levels prevalent anywhere in the developing world. Two-stroke engines used in auto-rickshaws have been the worst offenders with trucks and buses, violating the emission regulations, making the next largest contribution. The program of substituting petroleum by natural gas as transportation fuel made a significant positive impact on air pollution from this source for a period; but the problem of inadequate supply network and general shortage in the supply of gas has prevented an expansion of the program. Industrial emission is another major cause of air pollution. This is particularly the case in the three major areas of industrial concentration: Dhaka, Chittagong and Khulna. A somewhat dated study identified five industries as major polluters in the following order: food industries; cement and clay; pulp and paper; textiles; and tobacco.¹⁷ Brick fields have been a major contributor to air pollution. Most of the brick-making kilns use coal and wood as fuel. Gas connections were provided to some of the fields that were close to gas transmission lines and this helped ameliorate the problem locally in those areas. But again the lack of access to transmission lines and the limited supply of gas has led to its elimination (Table 8.5).

All this shows that reversing these immediate adverse trends in land, water and air quality would require a massive effort. At the minimum the country must develop a sewer disposal system covering urban areas and improved sanitary disposal of human waste in rural areas; reduce dependence on the extraction of groundwater and increase storage and distribution of surface water for both irrigation and human use; effectively regulate waste disposal and emission by industries; make large investment in urban transportation to mitigate air pollution; and improve the regulation of land use, to name only some of the areas of high priority. These would not only require vast amounts of resources but also much improved governance in implementing regulations.

9 Income Distribution, Poverty and Living Standard

The statistical basis for the analysis of distributional issues in Bangladesh during this period is provided by the five household surveys – the Household Expenditure Surveys (HES) of 1991/92 and 1995/96 and the Household Income and Expenditure Surveys (HIES) of 2000, 2005 and 2010 – implemented by the Bangladesh Bureau of Statistics using broadly comparable methodology. Indeed the five HES/HIES have been widely used to make estimates of inequality and poverty. The BBS/World Bank poverty estimates and the BBS's own estimates of income inequality are based on the data from these surveys. As we shall see, using the same source does not always result in the convergence of results. This is partly due to different ways of defining a variable from the same survey data. But, perhaps more importantly, this is due to the difference in the method of estimating specific things.

Measuring income

Should inequality and poverty be measured with reference to income or consumption? One can make a case for and against each of them. The usual argument for using consumption in preference over income is that income during a given time period is often subject to many transitional elements while consumption is a better indicator of “permanent income”, the expected long-term income. The argument in favor of using income in preference to consumption is that the consumption of the poor, especially in a developing country, is an unsatisfactory indicator of sustainable standard of living because the poor are often forced to finance current consumption by borrowing or liquidating assets. In this situation current income is a better indicator of sustainable living standard than current consumption. The volatility of income matters far more for the poor than for the rich because, compared to the rich, the poor are far less able to resort to borrowing and, when they can borrow, their cost of doing so is substantially higher than the cost for the rich to borrow. A wealthy person can withstand a temporary loss of income far better than can a poor person.

Whichever of the two indicators is chosen, there will be errors in identifying the poor. For example, assuming that measurements are accurate, a number of rich people with temporary loss of income would be classified as poor if income is chosen while a number of poor people, who have managed to finance consumption by liquidating assets that are crucial for their long-term survival, would be classified as non-poor if consumption is chosen. It thus appears that the use of income would enhance the chance of overcounting the poor by including some non-poor among

Introduction

It has been claimed that the accelerated growth in Bangladesh since 1990 has significantly reduced poverty and improved indicators of living standard. Some of the evidence in favor of these claims is well known. Since 1991/92 the Bangladesh Bureau of Statistics (BBS) and the World Bank have collaborated in measuring the incidence of poverty.¹ They have shown a steady decline in the proportion of population in poverty especially since the year 2000. There has been impressive reduction in infant mortality, increase in life expectancy, improvement in the status of women and increase in educational enrolment, especially at the primary and secondary levels. In many of these indicators Bangladesh has overtaken India, a country with nearly twice the per capita income at comparable purchasing power, inviting bemused admiration from numerous analysts.²

At the same time the official estimates made by the BBS show that the inequality in the distribution of income has increased quite significantly and the Gini ratio of income distribution has reached levels that are high by the standards of the developing Asian countries. Available data also suggest that the distribution of social indicators is rather unequal among income classes.

This chapter is concerned with an analysis of these issues. It first discusses the rising inequality in the distribution of income, a phenomenon about which there is very little disagreement. Next it examines the plausibility of the evidence showing impressive reduction in the incidence of poverty, a claim about which too there seems to be little disagreement. Finally it briefly considers the rather extraordinary performance of Bangladesh in improving social indicators related to health, education and status of women.

the poor, while the use of consumption would increase the chance of undercounting the poor by including some poor among the non-poor. The indices of poverty and inequality would be subject to these errors in a world of perfect measurement of the levels of the indicators chosen.

A priori, it would be hard to make a decisive case for preferring one indicator to the other although it seems to us that the issue of the sustainability of the consumption of those whose current consumption is above the poverty threshold should be a matter of greater concern than the transient nature of the low income of those usually non-poor who have current income below the poverty threshold. Be that as it may, we would take the view that one should use both the indicators unless one can argue that the measurement of one is better than that of the other.

Which of the indicators is easier to measure more accurately and is better measured in a survey like the HIES? Once again, there does not appear to be an a priori reason why it should be easier to estimate the one than the other. The most difficult components to enumerate are the directly consumed items of income that are produced by the households themselves and they are common to both income and consumption estimates.

An important point to note is something that has been known since the time of the earliest designers of household surveys: sample surveys miss out extreme values at both ends. It is doubtful if many of the HIES enumerators succeeded in getting access to the exclusive residential areas where the rich live and, when they did, how much of their incomes they were able to capture. Serious researchers aiming at capturing high incomes of the rich therefore have supplemented sample surveys with information from tax data if reliable estimates of high incomes exist from data on tax records.³ Unfortunately, this is not feasible in Bangladesh. Even if one could obtain access to data from tax returns, it is doubtful if they would have captured very high incomes any better than the household surveys. Later in this chapter we shall provide evidence of missed high incomes by illustrating the ridiculously low levels of top incomes measured by some of the HIES. It is also certain that the HIES missed out a disproportionate share of those at the bottom of the distribution scale. Most of them are simply left out of the sample frame for lack of fixed home or permanent address.

We shall focus on using income in measuring inequality and poverty. Partly this is because of the case we have made earlier for the superiority of income over expenditure as indicator of wellbeing especially for the poor and when all net transfers are included in income. Partly

it is because measurements based on consumption are already widely available for comparison of results: the BBS/World Bank poverty estimates are based on consumption estimates from the HIES as are the Gini ratios reported in World Bank's *World Development Indicators*. Our own past work on estimates of consumption were very close to those of the BBS/World Bank.⁴ Thus by focusing on income-based estimates, we can shed light on how robust or fragile are the estimates of inequality and poverty. In any case, we shall have to interpret our findings subject to the qualification that the HIES measurements missed out a disproportionately high share of the very poor people and an even more disproportionately high share of the *incomes* of the very rich.

The BBS defines personal or household income in ways that do not entirely conform to standard definitions. For example, the BBS includes in its definition of income several kinds of capital receipts such as: revenue from sale of assets and *stock* of livestock (other than the *growth* of livestock which is included in the value of farm output); withdrawal from working capital, saving deposits and provident funds; receipt of loan repayment from those in debt to the household concerned; and borrowing. It is, however, possible to redefine income by excluding all these items if one works with the unit record data, as we did for all the five surveys. Furthermore we classified as rural households those that the HIES identifies as having strictly rural location (location 1) whereas the BBS definition of rural, at times at least (as in the 2005 Survey), includes households that have some categories of semi-rural/semi-urban location. As a result, the growth of the weight of urban areas in total population in the consecutive HIES is much lower than what is usually known and used by the statistical systems, national and international. A final point to note is that the household income and consumption estimates from the HIES, both by the BBS and by us, are not always consistent with what is implied by the GDP accounts. Annex to Chapter 9 discusses these issues and considers questions concerning the appropriateness of the HIES data over time for the measurement of changes in inequality and poverty.

Measuring inequality and its sources

We use the Gini ratio as the principal measure of inequality because of its easy interpretation and wide recognition. In the annex to this chapter we also show some of the other well-known measures of inequality such as the Theil index. But the indicator that we use for the analysis of the change in inequality and the sources of its change over time is the Gini

ratio. Tables 9.1–9.3 show the Gini ratios of income and the “concentration” or “pseudo-Gini” ratios of components of income respectively for rural, urban and all Bangladesh for the five survey years.⁵ The analysis of the relationship between the distribution of the components and the overall distribution is intended to both examine the plausibility of the story that they tell about the evolution of inequality over time and to gain insight into the relationship between inequality and the change in the production structure of the economy. The analysis goes beyond the structural sources of inequality insofar as a part – indeed a growing part, of personal income is derived from transfers, both domestic and international. The concentration ratios of the components of income, on the other hand, provide a causal analysis of the sources of inequality because the Gini ratio is simply the weighted average of the concentration ratios, the weights being the income shares of the components. To combat a rise in inequality the policymakers have useful guidelines insofar as they can consider the desirability and feasibility of changing the incremental structure of GDP growth and other sources of personal income growth.

Note that no such insight could be obtained by decomposing the Gini ratio of consumption into the concentration ratios of the components of consumption. The reason is that the concentration ratios for individual items of consumption are nothing more than the indicators of their expenditure elasticities. They indicate the effect of increased aggregate consumption on the individual items of consumption, the so-called Engel relations. They do not provide insights into the causes of increased inequality in the distribution of aggregate consumption.

The principal findings about income inequality and its sources can be summarized as follows. Inequality has increased in rural, urban and entire Bangladesh steadily over the period under review. By using the Gini ratio as the yardstick for comparison, Bangladesh was a developing country with relatively low inequality in the early 1990s. By the end of the first decade of the 21st century it had become a developing country with relatively high inequality. This increase has been steady, uninterupted and pervasive. There are clearly discernible patterns to the trend increase in inequality whose sources have largely been stable or have undergone transformation in a systematic manner. There is little that is erratic about them. Together they explain the disequalizing nature of the growth that has occurred as well as provide guidelines for policies for a more inequality-averse growth.

Table 9.1 Income shares and inequality indices: rural Bangladesh

	Share of total income (%): 100q _i					Gini/concentration ratio (C _i or G)				
	1991/92	1995/96	2000	2005	2010	1991/92	1995/96	2000	2005	2010
Farm income	40.45	34.56	20.70	20.29	23.77	0.357	0.330	0.357	0.362	0.486
Crop farming	-	-	15.52	14.73	18.33	0.329	-	0.357	0.362	0.486
Livestock	-	-	1.75	2.32	2.20	-	-	0.351	0.358	0.468
Fishing	-	-	1.64	2.18	2.51	-	-	0.254	0.327	0.535
Forestry	-	-	1.78	1.07	0.73	-	-	0.401	0.386	0.575
Wages and salaries	21.08	26.34	29.58	30.85	31.25	0.120	0.170	0.199	0.260	0.494
Agricultural wage	10.41	10.87	10.74	9.00	9.92	0.125	-0.091	0.199	0.260	0.244
Non-agricultural wage	4.35	6.28	7.05	8.52	9.22	-0.114	-0.080	0.101	0.135	-0.010
Non-agricultural "salary"	6.33	9.19	11.79	13.33	12.11	0.073	0.203	0.560	0.101	0.135
Non-farm enterprise	15.52	18.47	19.73	19.57	16.15	0.523	0.317	0.502	0.591	0.536
Property income	0.85	1.26	6.15	4.99	4.48	0.574	0.559	0.502	0.619	0.498
Rent from land	-	-	3.29	2.92	2.51	-	-	0.590	0.582	0.525
Return to other assets	-	-	2.86	2.07	1.97	-	-	0.537	0.522	0.666
Remittances and transfer	10.98	9.36	12.03	13.41	17.09	-	0.619	0.572	0.624	0.679
Domestic remittances	-	-	3.23	3.31	2.78	0.375	-	0.572	0.624	0.679
Foreign remittances	-	-	7.52	8.91	13.37	-	-	0.406	0.433	0.414
Other transfers	-	-	1.27	1.19	0.94	-	-	0.732	0.755	0.772
Rental value of housing	8.13	5.71	4.66	1.58	4.33	-	-	0.308	0.243	0.264
Other income	2.98	4.31	7.15	9.30	2.93	0.527	0.521	0.344	0.497	0.671
Total income	100.00	100.00	100.00	100.00	100.00	0.285	0.320	0.374	0.436	0.446

Note: q_i = the share of the i-th component of total income; C_i = the concentration ratio of the i-th source of income; and G = the Gini ratio of income distribution. Column totals, values shown in the total income row, do not always add exactly up to the amounts shown due to rounding error.

Table 9.2 Income shares and inequality indices: urban Bangladesh

	Share of total income (%): 100q _i				Gini/concentration ratio (C _i or G)			
	1991/92	1995/96	2000	2005	1991/92	1995/96	2000	2005
Farm income	5.38	4.53	2.51	3.03	0.70	0.188	0.279	0.280
Wage/salary	35.41	34.62	35.06	38.10	45.33	0.297	0.270	0.339
Non-agricultural wage	10.45	8.17	7.44	6.09	7.13	0.100	-0.032	-0.149
Non-agricultural "salary"	21.97	23.22	25.98	30.26	36.50	0.434	0.457	0.461
Other wage	2.99	3.24	1.64	1.75	1.70	-0.018	0.022	-0.091
Non-farm enterprise	27.92	36.96	28.48	34.57	25.84	0.299	0.469	0.639
Property income	3.24	3.94	8.59	8.02	7.70	0.632	0.661	0.657
Rent from land	-	-	1.51	1.74	1.60	-	-	0.557
Return to other assets	-	-	7.08	6.27	6.10	-	-	0.705
Remittance and transfer	8.70	7.55	12.02	5.94	7.62	0.426	0.590	0.470
Domestic remittances	-	-	1.69	1.54	1.12	-	-	0.310
Foreign remittances	-	-	4.42	3.69	6.14	-	-	0.629
Other transfer	-	-	5.92	0.70	0.36	-	-	0.901
Rental value of housing	10.48	7.10	6.45	1.64	5.80	0.420	0.415	0.525
Other income	8.87	5.29	6.88	8.71	4.17	0.580	0.458	0.470
Total income	100.00	100.00	100.00	100.00	100.00	0.345	0.400	0.454

Note: See note to Table 9.1 for an explanation of the notation. Due to error in rounding, the sums of the components do not always exactly match the totals.

Table 9.3 Income shares and inequality indices: all Bangladesh

	Share of total income (%): 100q _i				Gini/concentration ratio (C _i or G)			
	1991/92	1995/96	2000	2005	1991/92	1995/96	2000	2005
Farm income	30.36	23.26	13.30	13.08	14.86	0.249	0.222	0.281
Wage/salary	25.21	29.46	31.81	33.88	37.45	0.258	0.307	0.344
Agricultural wage	8.28	8.00	7.04	5.97	6.30	-0.152	-0.165	-0.143
Non-agricultural wage	6.10	6.99	7.21	7.51	8.30	0.242	0.044	0.044
Non-agricultural "salary"	10.83	14.47	17.56	20.40	22.85	0.580	0.597	0.597
Non-farm enterprise	19.09	25.43	23.29	25.84	20.42	0.322	0.494	0.673
Property income	1.54	2.27	7.14	6.26	5.90	0.691	0.709	0.664
Rent from land	-	-	2.56	2.43	2.11	-	-	0.552
Return from other assets	-	-	4.58	3.83	3.79	-	-	0.702
Remittance and transfer	10.33	8.68	12.03	10.29	12.92	0.380	0.613	0.624
Domestic remittances	-	-	2.61	2.57	2.05	-	-	0.395
Foreign remittances	-	-	6.26	6.73	10.18	-	-	0.694
Other transfer	-	-	3.16	0.99	0.68	-	-	0.113
Rental value of housing	8.81	6.23	5.39	1.61	4.98	0.409	0.390	0.359
Other income	4.67	4.68	7.04	9.05	3.48	0.626	0.548	0.557
Total income	100.00	100.00	100.00	100.00	100.00	0.317	0.387	0.472

Note: See note to Table 9.1 for an explanation of the notation. Due to error in rounding, the sums of the components do not always exactly match the totals.

Sources of rural inequality

Let us begin with the rural economy. Income from farming as a proportion of total income fell by a half between the early 1990s and 2005 but has increased a little since then.⁶ It was a disequalizing component of income to start with; but its disequalizing effect steadily moderated during the 1990s until it became a mildly equalizing source of income. The change can largely be explained by the improving access to landholding through share-cropping and other forms of tenancy until 2000 even though the distribution of landownership remained unchanged.⁷ The issue has been discussed in some detail in Chapter 5 (see Table 5.8 and the section on "institutional reform"). In the new century this trend toward greater access to landholding slowed down even though the concentration ratio of land holding (with individuals ranked by per capita *landownership*) consistently remained lower than the Gini ratio of landownership. As we discussed in Chapter 5, the distribution of access to land has moved in the opposite direction of the distribution of rural income; it has become more equalizing while the distribution of rural income has become more unequal. Lack of access to land itself as a source of farm income as defined in Table 9.1 cannot be held responsible for the rising inequality in the distribution of rural income.

The increased access to land through tenancy, however, had an ambiguous effect on income distribution when its other consequences are taken into account: while it made farm income less disequalizing (more equalizing), the higher land rent that it generated came to be very unequally distributed due to the high and, more recently, increasing inequality in the distribution of landownership.⁸ To summarize: farm income had gradually turned from a disequalizing to an equalizing component although its effect on overall distribution was blunted (offset) partly by the declining share of farming in total income and partly by the highly unequal distribution of rental income. This process continued until 2005; by 2010 farm income again became mildly disequalizing.

By 2000 wages and salaries had replaced farming as the largest source of personal income in rural Bangladesh, accounting for close to a third by 2010. Wages and salaries have very different effect on overall income distribution: wages are highly equalizing while salaries are strongly disequalizing. The exact difference between them is hard to establish from the survey. The wage-earners are paid on a daily or weekly basis and they seem to represent relatively unskilled workers whose employment is often casual in nature. Salaried workers, paid monthly, seem to represent those with higher skills often in regular formal employment in non-agricultural activities. Agricultural wages, the most strongly

equalizing component of income, has fallen a little as a proportion of personal income over the two decades while non-agricultural wages, also strongly equalizing, has increased significantly. Together wages from both sources have increased modestly since the mid-1990s. Salaries as a proportion of income have increased steadily and sharply since the early 1990s, almost doubling by 2010. Its growth is likely to have been due to the spread of non-agricultural activities and increased public and NGO operations in rural areas.

The remaining components of rural income are all by and large disequalizing with the exception of two: (imputed) rental value of housing owned by the households and the small proportion of transfer income in the category called "other transfers". The measurement of the rental value of housing is difficult in view of the near-complete absence of a rental market for rural housing. It is questionable if the method of imputation used has been consistent, as is suggested by its inexplicable dip as a proportion of personal income in 2005.⁹ This was initially a disequalizing component; but after 1991/92 it turned into an equalizing component.

Non-farm enterprise has been the third most important source of rural income after farming and labor earnings, until it was exceeded by transfer income in the most recent year. In the early years it was a mildly equalizing source of income. Since 2000 it became a disequalizing component of income, very strongly so by 2005. In the most recent year its strongly disequalizing effect during the preceding decade became moderate. Until its future values are established by new surveys, it would remain uncertain if the softening of its disequalizing effect in 2010 represents a restructuring of rural enterprises in favor of smaller enterprises or a temporary blip or even a statistical mirage. The disequalizing effect of this source of income is a discouraging finding in view of the emphasis that is often placed on this sector as a potential source of poverty reduction and the concentration of micro-credit programs in these activities. This finding is however quite consistent with the distributional effect of these activities in other developing countries.¹⁰

Remittances and transfers have been a growing source of personal income for the rural households and, as noted earlier, have recently replaced non-farm enterprises as the third most important source. These consist of three elements: remittances from abroad; domestic remittances, presumably principally from those who have migrated to urban areas; and other transfers, largely accounting for public social-safety-net programs and private charities. Foreign remittances, by far the largest and rapidly growing of the components, are also the most disequalizing.

Indeed foreign remittances, by 2010 representing nearly a seventh of rural household income, are the most disqualifying of all components of rural income. Domestic remittances have turned from being a moderately disqualifying component in early years for which separate information on them is available to a modestly equalizing source in more recent years. Other transfers are strongly equalizing. The last category can be disaggregated to separate out the public social-safety-net programs, like vulnerable group feeding, which have a very strong equalizing effect, their concentration ratio being negative.¹¹ It is rather reassuring that despite all the inefficiency and corruption that besets public administration, much of these expenditure actually reaches the target groups. The residual category of transfers has been a very small and dwindling proportion of personal income for the rural households.

Income from property was very small in the early years, almost certainly reflecting a failure on the part of the surveys to capture it comprehensively. Its share rose sharply to more than 6 percent of personal income in 2000, thereafter falling to less than 5 percent, perhaps still reflecting significant understatement. Much of it consists of rent from land which is strongly disqualifying. Return from other assets is also very strongly disqualifying.

The feature that stands out is that the few equalizing components of rural income – farming (equalizing in 2000 and 2005 and only mildly disqualifying in 2010), wages, rental value of housing, and public transfer – have together fallen as a proportion of total income. Indeed each one of them has fallen as a proportion of total income with the exception of non-agricultural wages. On the other hand, the disqualifying components – salaries, non-farm enterprise, remittances and property income – have all been growing components of total income, the most disqualifying ones growing most rapidly.

Sources of urban inequality

There is broad similarity between urban and rural areas in terms of the classification of income components into equalizing and disqualifying sources, their differences being very minor. Farm income and non-agricultural wages have an equalizing effect on income distribution.¹² The latter is very strongly equalizing which is reflected in their negative concentration ratios. Both these components have, however, gradually declined as a proportion of income.

Unlike rural areas, domestic remittances received by urban households have been equalizing throughout the period for which information is available. Our tentative hypothesis is that domestic remittances

received by the rural households are largely the remittances made by the migrants from rural to urban areas to the members of households left behind and these exclude the very poor households who are unable to send members who succeed in becoming viably employed in urban areas to be able to make remittances back home. In contrast, domestic remittances received by the urban households are made by the rural households, relatively better off in the rural context, to their members who have migrated to urban areas and are looking for jobs or receiving training and hence are relatively poor in the urban context.

Two other components, “other” transfer (public transfer and private charity) and the rental value of housing, have traditionally been disqualifying (strongly so for the former) but became equalizing (strongly so for the former) since 2005. Note, however, that this metamorphosis has in the case of “other” transfer been accompanied by a drastic decline in the value of income from that source. It could conceivably be explained by a dramatic change in the composition of transfers, for example, by a dramatic fall in the formerly disqualifying public transfers to the urban middle class. Available information does not, however, provide evidence either for or against this conjecture. It is also possible that the seeming reduction in the contribution of this component is illusory; the failure to capture the receipts of the high income groups of this component has simultaneously led to a reduction in its disqualifying effect and its drastically lower level. It is worth noting, however, that a further disaggregation of other transfers shows that social-safety-net outlays by the government, though insignificant at less than one-fifth of 1 percent of income, are extremely equalizing with a negative concentration ratio since 2005.¹³ It is even more likely that the decline in the share of the rental value of housing in 2005 was due to temporary methodological change; its share significantly bounced back in 2010.¹⁴

All other sources of urban income – salaries; non-farm entrepreneurial income; property income both from land rent and other assets; remittances received from abroad; and the aggregate of the unspecified residual sources of income – are disqualifying. They have often become more disqualifying over time while their income shares – with minor exceptions – have increased though not always consistently.

Sources of overall inequality for Bangladesh

For Bangladesh taken together the patterns are again very similar. Farming and wages, both agricultural and non-agricultural, are the two

major sources of income that are equalizing, wages having a very strong equalizing effect.¹⁵ Farm income has dwindled over time as a proportion of total income. Agricultural wages, the most equalizing source of income with a negative concentration ratio, has fallen as a proportion of income while non-agricultural wages have risen. Together wages as a proportion of income have barely changed over the period under review. The remaining equalizing sources of income are domestic remittances; "other" transfers; and the rental value of housing. By 2010 they had all become small in relation to total income. Domestic remittances are moderately and consistently equalizing even though they have fallen as a proportion of income. Other transfers and the rental value of housing have also been losing their shares of income over time.

The remaining sources of income – salaries; non-farm entrepreneurial income; property income from both land and non-land assets; and remittances received from abroad – are all disequalizing. Incomes from all these sources as proportions of total income have generally, though not always consistently, increased over time.¹⁶ An interesting point to note is, as pointed out earlier, that the trend toward increased access to operational landholding, despite an unchanged distribution of land-ownership, was halted after 2000. This is presumably due to some degree of reversal in the increasing incidence of tenancy that characterized the decade until 2000, a fact that is confirmed by a decline in the share of land rent in rural income (see Table 9.1) and a decline in land rent as a proportion of income from farming from 16 percent in 2000 to 11 percent in 2010 in the rural area. Note, however, that the share of land rent in urban income has actually increased over the same period (see Table 9.2). Nominal value of per capita land rent increased between 2000 and 2010 by 73 percent in rural areas as compared to 114 percent in urban areas. This strongly suggests an increase in absentee landownership (i.e., ownership of agricultural land by households resident in urban areas).

How credible are these estimates of income inequality?

Table 9.4 compares our estimates of Gini ratios of income distribution with those estimated by the BBS based on their income definition from the HIES data. We have already indicated why the two should not be exactly the same even if they use the same survey data. We redefined income to exclude certain non-income components that the BBS includes in their definition of income. There is a difference between our definition of rural areas and that of the BBS in some cases. As a result, in arriving at the national sample we assigned increasing weight to the

Table 9.4 A comparison of our estimates with the BBS estimates of Gini ratios of income distribution based on the HIES data

Period	Rural		Urban		National	
	Our	BBS	Our	BBS	Our	BBS
1991/92	0.285	0.364	0.345	0.398	0.317	0.388
1995/96	0.320	0.384	0.400	0.444	0.387	0.432
2000	0.374	0.430	0.437	0.497	0.439	0.472
2005	0.436	0.428	0.503	0.497	0.482	0.467
2010	0.446	0.431	0.454	0.452	0.472	0.458

Note: Our estimates are from Tables 9.1–9.3. The BBS estimates are from various HIES Reports.

urban strata. We are also unsure if the method of ranking individuals by income is the same in the case of the BBS as in ours.¹⁷ It is, therefore, easy for our Gini estimates to differ from the BBS Gini estimates of income.

The difference between the two sets of estimates is indeed no greater than what one would expect from the differences in measurement and method outlined earlier. The main features of the difference can be summarized as follows:

- Rural Gini monotonically rises in both sets of estimates though ours is significantly lower to start with and only slightly higher in the terminal year; thus, our series shows a faster *increase* in inequality over the entire period though insignificantly higher *level* at the end of the period.¹⁸
- Our series of urban Gini monotonically rises until 2005 and then falls in 2010. The BBS series is broadly similar in that it peaks in 2000 and 2005 and then falls. Our estimate in the initial year is lower than that of the BBS, though by less than in the case of rural estimates. For the terminal year, our estimate is about the same as that of the BBS.
- Our estimates of national Gini starts at a lower level than that of the BBS and peaks in 2005 while theirs peaks in 2000. By 2010 the BBS estimates fall lower than our estimate.

The main issues seem to be the decline in urban inequality between 2005 and 2010; and the sharp divergence in the two sets of urban inequality estimates between 2000 and 2005. Let us discuss each of them.

Between 2005 and 2010 per capita urban income for the top 1 percent and the top 5 percent of income recipients were as follows:

	Top 1%	Top 5%
Nominal income in 2005	402,484	166,067
Nominal income in 2010	389,682	243,644
Change in urban CPI (%)	44	44
Change in nominal income (%)	-3.2	24.6
Change in real income (%)	-32.8	-13.5

We have noted that household surveys tend to fail to capture a disproportionate share of top incomes. In 2010 this seems to have reached absurdly high proportions. Between 2005 and 2010 an average urban resident experienced a 64 percent increase in income in nominal terms and a 14 percent increase in real terms according to the HIES data.¹⁹ But the top 1 percent of the income recipients experienced a 3 percent fall in nominal income and a reduction in real income of one-third! The top 5 percent experienced a 25 percent increase in nominal income – less than two-fifths of the rate at which the income of an average person rose – and a 14 percent reduction in real income!

One might want to argue that the process of reversal of inequality precisely entails a slower growth of top incomes as compared to average income. But one with the least bit of familiarity with the process of income generation in Bangladesh over the past decade would know how absurd it is to contemplate that the real incomes of the top 1 percent and the top 5 percent actually fell. All indications are that their income gain exceeded that of the average by a large margin.²⁰ We therefore remain skeptical that the urban inequality has already peaked and is beginning to decline.

We cannot satisfactorily attempt a resolution of the other discrepancy between our result and that of the BBS with respect to the trend in urban inequality, namely, the sharp rise between 2000 and 2005 according to our estimates in contrast to no change according to the BBS estimates. The ostensible difference between the two estimates during that period is that our data show a much faster increase in per capita urban income than the BBS data because our income estimate, relative to that of the BBS is low for 2000. That by itself does not suggest a reason for the difference and we could not determine why our 2000 urban income estimate is more than usually lower than the BBS estimate.

We can summarize our findings about trends in income inequality. Rural inequality has steadily increased during the two decades covered by the five surveys. This robust result is supported by both our estimates and the BBS estimates. Urban and overall national inequalities are also high. The urban Gini ratio increased approximately to 0.5 (higher according to our estimate) before appearing to level off. Indeed the leveling off of urban Gini after 2005 is almost certainly a statistical illusion as suggested by the absolute decline by a third in the real income of the richest 1 percent. These levels of inequality are not only high by the historical standard in Bangladesh but also by the standard of the Asian developing countries. Direct comparison with India and other South Asian countries is problematic because most reliable Indian estimates are based on the distribution of consumption which is typically much lower than the estimates of income inequality. For other Asian neighbors of Bangladesh the estimates suffer from similar uncertainty of whether they are based on the distribution of income or consumption. But best available estimates of income inequality for China and Thailand are lower. Even for Mexico, a country in archetypically unequal Latin America, the reported estimate is lower than for Bangladesh.²¹

We have expressed strong skepticism about the evidence of leveling off of urban inequality in 2010. It is worth pointing out that even if the leveling off were not so blatantly challenged by evidence, it would be no great consolation. The level of income inequality has reached such high proportions that it would be justified to demand public action for its reduction.

The effects of different sources of income on its distribution and the change of these effects over time all make sense. These have been discussed in some detail in the preceding sub-section. There is nothing of significance that stands out as inexplicable or implausible.

Finally, the estimates bring out the essential dilemma in reining in what seems to have been an inexorable rise in inequality in the distribution of income since the beginning of the 1990s. The sources of income that have actually had a high elasticity with respect to overall income and GDP – salaries (earnings of skilled workers), transfers from abroad, non-farm entrepreneurial income to mention the important ones – all have disequalizing effect on the distribution of income. Over time their weight in personal income has increased. The few equalizing sources of income – wages and public transfer in particular – have experienced a reduction in their share of total income. Had the individual sources of income become no more disequalizing over time, the changing composition of income would by itself have pushed up inequality. The

distributional outcome in reality is, however, worse because many of the disqualifying sources of income have tended to become increasingly disqualifying over time. While not particularly encouraging, they provide a reasonable basis for policymaking: attention needs to be focused on making individual components less disqualifying (more equalizing) and, to the extent it is consistent with the criteria of efficiency, shift the incentive structure in a way that equalizing activities grow faster.

The set of policies indicated by the above would include, as leading components, the following elements:

- (a) Broad and vigorous incentives for employment-intensive industrialization to improve the share of wages in personal income, by opting for a whole set of policies indicated in some of the earlier chapters, such as, large public investment to improve infrastructure; and the elimination of the bias against exports to enable industries to overcome the disadvantage of limited domestic market by expanding sales abroad.
- (b) By a combination of public investment and encouragement to private investment, improve basic skills to enable currently unskilled workers to take advantage of expanded opportunity for employment.
- (c) Create incentives for the currently disqualifying components, such as non-farm entrepreneurship and remittances from abroad, to be induced to investment in employment-intensive activities. This is of particular importance for remittances received by rural households which are more disqualifying than the remittances received by urban households and quantitatively more significant as proportion of income.
- (d) Increase the magnitude of targeted public transfer.

These are not easy policies to implement. Together they constitute a comprehensive development strategy whose implementation presupposes the existence of reasonably good and efficient governance and of well-functioning institutions.

Poverty reduction

Indicator of success: BBS/WB consumption poverty index

Bangladesh has been cited by a variety of international agencies as a successful case of poverty reduction, on track to achieve the Millennium Development Goal (MDG) target of reducing poverty rate, defined at the

time as the proportion of population living below PPP\$1 per day at 1993 purchasing power, by a half between 1990 and 2015. The estimates on the basis of which these plaudits have been earned are results of collaborative work between the World Bank and the BBS with the data from the five HIES. The basic estimates made by them are shown in Table 9.5. They show:

- (a) Monotonically declining headcount rate of rural poverty for both the lower and the higher poverty lines throughout the period, extreme poverty (those below the lower poverty line) rate being halved over the two decades while the moderate poverty rate fell by two-fifths.
- (b) Both extreme and moderate urban poverty headcount rate increased in 2000; but thereafter they both fell impressively, the rate of decline being much faster for extreme poverty.

These results derive from using per capita consumption as the yardstick by which to measure wellbeing and the use of a poverty line that represents a minimum cost of basic needs (CBN).²² Since poverty estimates are uniquely determined by two things – the distribution of the indicator by which wellbeing is measured; and the poverty line that selects a level of the indicator of wellbeing below which all are considered poor – it is worth briefly discussing each.

Some issues concerning the estimated reduction in consumption poverty

At the start of the chapter we argued that there is no basis for the argument that consumption is superior to income, the other leading

Table 9.5 BBS/World Bank consumption poverty headcount rates

Year	Rural Bangladesh		Urban Bangladesh	
	Lower PL	Upper PL	Lower PL	Upper PL
1991/92	43.7	58.7	23.6	42.7
1995/96	39.4	54.5	13.7	27.8
2000	37.9	52.3	19.9	35.2
2005	28.6	43.8	14.6	28.4
2010	21.1	35.2	7.7	21.3

Note: PL = poverty line.

Source: BBS, the HIES Report for 1995/96, pp. 54–55 and World Bank, *Bangladesh Poverty Assessment, 2000–2010*, p. xv, June 2013.

indicator of level of living by which inequality and poverty can be measured. In poor countries one common survival technique for the poor is to finance current consumption by borrowing and/or liquidation of assets, neither of which is a sustainable way of overcoming poverty. This disadvantage easily outweighs the advantage that in more advanced economies current consumption might be a better indicator of expected future consumption/income than current income which is subject to transitional fluctuations. In countries like India the National Sample Survey does not provide a reasonable basis for the estimation of household income so that consumption is the only indicator of wellbeing that is used in measuring inequality and poverty. In the case of Bangladesh this reason does not exist. At the very least there is a clear case for the estimation of both income and consumption poverty so that the robustness of the change in poverty is better understood.

The argument derives added weight from the empirical observation that inequality in the distribution of income is not only higher than inequality in the distribution of consumption in Bangladesh – as in most countries – but over time the ratio of inequality in income to inequality in consumption has substantially increased.²³ In identifying the drivers of consumption poverty reduction, the World Bank report attributes a significant role to the equalization of the distribution of consumption, between 2000 and 2010 and between 2005 and 2010, though not between 2000 and 2005.²⁴ As we know the BBS estimates of income inequality show both high and increasing inequality throughout the two decades for rural areas while for urban areas the decline in their estimates after

2005 would almost certainly prove as illusory as ours. No distributional “dividend” would be available for income poverty estimates.

The CBN poverty line used by BBS/World Bank starts with a food poverty line (FPL), the cost of a basket of 11 basic food items supplying 2,122 kilocalories per person per day. A non-food poverty line is calculated by estimating the cost of consuming non-food items by the households close to the FPL. The lower poverty line, persons below which are considered to be in extreme poverty, is the level of total food and non-food expenditure which is the same as FPL. The upper poverty line, persons immediately below which are considered moderately poor, is found by adding the non-food poverty line to FPL.²⁵ In estimating poverty over time, separate poverty lines are used for different rural and urban strata to make allowance for spatial price difference.²⁶ These poverty lines are updated by using prices endogenous in the HIES. Table 9.6 compares the implicit deflator of the weighted average of the BBS/World Bank poverty lines with those of the consumer price indices reported by the BBS.²⁷ A comparison of the two sets of deflators makes it clear that the BBS/WB deflators would tend to understate poverty reduction in the period since 2000 but overstate the rate of poverty reduction prior to 2000 relative to the use of the CPI deflators. This is because the cost of the basic needs bundle increased faster than the CPI after 2000 but slower than the CPI in the decade prior to 2000. Indeed, in principle, the CBN method violates the standard result of the theory of consumer behavior that in a period of relative price change the constant budget to purchase an unchanged bundle of goods does *not* represent an unchanged level of consumer welfare.

Some alternative poverty estimates

We shall introduce two separate sets of poverty estimates using the HIES data. Both will measure *income* poverty, the number and characteristics of those below the poverty line by using income rather than consumption as the yardstick of living standard. We have spelled out the justification for doing so. We would have liked to use the actual BBS distribution of income, even though we know that they include some inappropriate, non-income components. But we cannot do so because we have access only to their income-Gini estimates, not the unit record data of per capita income. So we shall make the first set of alternative estimates by using our own estimates of per capita income together with the actual *strata-specific* BBS/World Bank poverty lines. We are able to do so because we can identify the location of our unit-record data by

Table 9.6 Comparison of poverty line deflators with the CPIs (2000 = 1.000)

Deflator/CPI	1991/92	1995/96	2000	2005	2010
<i>Implicit deflator of the BBS/World Bank poverty lines</i>					
Rural lower	0.758	0.903	1.000	1.269	2.303
Rural upper	0.757	0.901	1.000	1.268	2.322
Urban lower	0.738	0.884	1.000	1.196	2.165
Urban upper	0.739	0.884	1.000	1.197	2.261
<i>CPI</i>					
Rural	0.641	0.795	1.000	1.269	1.859
Urban	0.645	0.783	1.000	1.223	1.761

Note: The stratum-specific poverty lines for different years are shown in BBS, HIES Report (2005, p. 160); and HIES Report (2010, p. 185). Using stratum weights, obtained from unpublished BBS source, we calculated weighted average lower and upper rural and urban poverty lines. The deflators are derived therefrom. The CPIs with 1995/96 base are from BBS (2014, p. 293). Calendar-year values are averages of adjacent fiscal year values.

strata. Thus, our first set of estimates would differ from the BBS/World Bank estimates only insofar as we substitute income for consumption/expenditure as the indicator of wellbeing, with unchanged poverty lines at the same level of details.

We shall make a second set of *income* poverty estimates by replacing the BBS/WB CBN poverty lines by the CPI-deflated poverty lines. We shall use the actual level of the CBN poverty line for 2000 and obtain the line for other years by using the relevant CPI as the deflator. We would like to underline that other things being equal, this would actually make the rate of poverty reduction since 2000 more rapid than would the use of the CBN poverty line.

Income poverty with CBN poverty lines

Table 9.7 shows income poverty trends with the same CBN poverty lines that the BBS/WB estimates use. These results have no correspondence to the BBS/WB consumption poverty trends. If the year 2010 is excluded, there is no trend in rural poverty headcount rate. Between 2005 and 2010 rural income poverty rate increases whereas the rural consumption poverty rate decreases. Reasons behind these disparate changes must be many; but the main reason seems to us to be the disparate change in income inequality and consumption inequality underlying the two estimates. What would be the verdict on the change in the welfare of the poor if one accepts both the measurements to be correct? One would have to conclude that more people were falling below poverty line in terms of currently earned income but at the same time more people were able to keep afloat above the poverty line in terms of current consumption, the survival mechanism being liquidation of assets and/or sinking into debt.

Table 9.7 *Income poverty headcount rates based on our income distribution and the BBS/World Bank poverty lines*

Year	Rural Bangladesh		Urban Bangladesh	
	Lower PL	Upper PL	Lower PL	Upper PL
1991/92	37.8	50.2	21.9	37.2
1995/96	47.2	58.7	17.3	31.8
2000	35.4	47.7	16.8	30.5
2005	39.9	49.4	19.5	31.7
2010	44.7	54.0	22.4	34.6

Note: Author's estimates.

Table 9.8 *Income poverty headcount rates based on our income distribution and the CPI-based updating of the BBS/World Bank poverty line*

Year	Rural Bangladesh		Urban Bangladesh	
	Lower PL	Upper PL	Lower PL	Upper PL
1991/92	25.6	37.4	15.1	28.8
1995/96	37.0	50.0	14.0	26.4
2000	35.9	47.3	18.1	30.1
2005	40.8	49.8	22.1	34.9
2010	32.7	41.7	15.7	25.1

Source: Author's estimates.

For urban Bangladesh, again, there is no clear trend in income poverty. Actually, there is some reduction in the rate of urban income poverty between 1991/92 and 2000, but a reversal thereafter.

Income poverty with CPI-based poverty line

One of the explanations behind the increase in income poverty in the earlier mentioned case between 2005 and 2010 is that the CBN poverty deflator increased much faster during that period than the CPI. Since the poverty line should represent unchanged level of welfare over time, the use of the CBN poverty line during that time period is inappropriate in our view. It is possible that the CPI itself is also an inappropriate indicator for the poor whose basic consumption bundle differs from that of the average consumer. But, as Table 9.6 shows, the deflator for both the rural and urban lower CBN poverty lines increased by 81 percent between 2005 and 2010 as compared to, respectively, 46 percent and 44 percent increase in the CPIs. It is not reasonable to assume that the poor would not readjust their consumption bundle at the face of such a massive rise in the relative cost of the CBN bundle of consumption. In the absence of a more appropriate CPI for the poor, we are using the average CPI, perhaps at the risk of some error, but almost certainly lesser error than would be incurred by using the CBN deflator.²⁸

The income poverty rates for this alternative are shown in Table 9.8. As expected, there is significant reduction in income poverty between 2005 and 2010 in each case, rural and urban, and for both extreme and moderate poverty. But there is nothing like the kind of regularity in poverty reduction over the period as a whole as revealed by the BBS/WB consumption poverty series, even though there is no trend increase in poverty revealed by these latest estimates since 2000.

The conclusion that we would arrive at, on the basis of our alternative exercises, is that over the period as a whole urban poverty has declined somewhat and so has rural poverty since the mid-1990s. There are irregularities in the pattern of change, with occasional spikes and dips.

Some explanation

Why is it that more robust evidence of steady reduction in poverty cannot be found from the HIES? There are two reasons that seem uppermost. The first is the strongly disqualifying nature of growth during the past two decades which we have documented by using the HIES data. Indeed, part of the reason that the income-poverty outcome is so favorable in the last of the alternatives considered earlier is that we have chosen to accept the reduction in urban inequality in that year which, as we have shown, is due to much more than the usual degree of missing out high urban incomes. With less disqualifying growth, it should have been possible to pass a higher proportion of income growth to the lower-income groups, helping them to escape poverty in greater numbers.

The alternative often chosen – by opting for the measurement of consumption poverty, with consumption Gini ratios of 0.32–0.33 that are stable or even declining – does not help an understanding of the magnitude of the problem of poverty reduction which is inextricably linked to the problem of inequality in income. For countries like Bangladesh and India to masquerade as low-inequality societies by highlighting the consumption Gini estimates is one of the worst travesties of reality.

The second reason is more mundane. The quality of the HIES data is not sufficiently good to bear the burden of always providing intertemporally accurate measures of change in poverty. As argued in greater detail in the annex to this chapter, income/consumption measured by successive HIES do not serve as accurate indicators of change in average living standard. The consequences of their use can be starkly illustrated as follows: if one uses income per capita – either according to the BBS definition or according to ours – one has to face the contentious issue that, on any reasonable estimate of the rise in CPI, the level of per capita urban income in 2005 was lower than what it was not only in 2000 but also in 1995/96. Consequently urban poverty would have to be shown as being higher in 2005 than both a decade and a half-decade before, despite all the growth that is claimed for the period. If one uses per capita consumption from the HIES, one would get an increase in urban

living standard between 2000 and 2005 only by accepting that it fell between 1995/96 and 2005, hardly a defensible position given all the growth over the decade.

What conclusion does all the evidence given so far, often conflicting with one another, suggest about poverty trends in Bangladesh over the past two decades? Over this period per capita income of the people of Bangladesh has increased substantially. Sharp increase in inequality has prevented the poor from benefiting from it as much as they would with unchanged inequality or more moderately increasing inequality. Exactly what change in the living standard has occurred for the poor groups is hard to measure with the kind of data that the HIES provides and with the kind of poverty thresholds used in a period of rapid change in the pattern of consumption which has even encompassed the poor. But none of the above sets of poverty estimates, properly interpreted in the context of the uncertainties and inaccuracies that their measurements are subject to, contradicts the hypothesis that living standard has improved even for the lower income groups. Rural poverty in 2010 is lower than at any time since the mid-1990s according to all the alternative measurements; and urban poverty, despite all fluctuations, is lower in 2010 than in the early 1990s except for the income-poverty series that uses the inflated CBN poverty line for 2010.²⁹

Useful supporting evidence for the improvement in the condition of the poor can be had from an examination of the change in the wage rate of the agricultural workers (Table 9.9). For reasons not explained, the BBS kept the base of the index unchanged at 1969/70. For a period after independence, real wages in agriculture fell and until the turn of the century its level never significantly went above that of the base year. It was only after the turn of the century that it started on a clear upward trend which decisively accelerated after 2006/07. In Chapter 5 we conjectured that this kind of increase in real wage – even granting significant error of measurement hidden by the lack of transparency in arriving at the estimates – signifies a tightening of the rural labor market and perhaps the beginning of an absolute decline in agriculture's labor use. Wage rate in agriculture not only determines income for a substantial proportion of rural households but also sets the baseline for wage determination in much of the economy. With anything like the kind of increase in agricultural real wages shown in the table during the last decade, it is inconceivable that the earnings of large categories of workers have failed to experience substantial increase in real wages.

Table 9.9 Index of real agricultural wages (1969/70 = 100)

1990/91	95	2000/01	107	2010/11	180
1991/92	98	2001/02	112	2011/12	188
1992/93	105	2002/03	118	2012/13	215
1993/94	106	2003/04	121	2013/14	223
1994/95	103	2004/05	123		
1995/96	104	2005/06	124		
1996/97	109	2006/07	125		
1997/98	107	2007/08	140		
1998/99	102	2008/09	169		
1999/2000	103	2009/10	177		

Note: The index of real agricultural wages is based on many compromises. It was prepared by the BBS. For the years up to 2001/02 they are from BES (2003, p. 174), and for 2002/03 to 2008/09, from BES (2014, p. 295). For unexplained reason, the BBS stopped publishing the real wage index after 2008/09. Index of money wage and rural CPI continued to be published and has been obtained for years up to 2011/12 from BES (2014, p. 293, 295) and from BBS, *Consumer Price Index (CPI) Bangladesh*, issue No. 241, Dhaka January 2015, p. 9, 11 for year thereafter. The base of the CPI was changed from 1995/96 to 2005/06 starting 2012/13; we spliced the latter into the former, used the CPI to deflate the nominal wage index after 2008/09 and spliced the resultant index into the index of real wages ending in 2008/09.

Indicators of living standard

This section focuses on the non-income indicators of living standard. It tries to answer three sets of questions. First, how good a progress has Bangladesh made in various indicators of living standard during the period since 1990. Special emphasis is assigned to the gender dimension of progress. The second question relates to the evaluation of Bangladesh's performance in indicators of living standard in a comparative perspective relative to the performance of the South Asian neighbors. This specifically focuses on the influential finding by Jean Dreze and Amartya Sen that during the period under review Bangladesh has overtaken India in many important indicators of living standard in spite of having only about half the per capita income of India, a point to which references have been made earlier. Finally, we consider the distribution of the improvement in the indicators of standard of living among different income classes, specifically the relative improvement made by the top quintile and the bottom quintile of income distribution.

Table 9.10 shows some of the leading indicators for the years 1990 (or as close a period to it for which information could be found) and the most recent year for which information is available between 2010 and 2014. The last column of the table shows the average values of the

indicators for the South Asian countries for the same recent years as for Bangladesh in column 2 of the table.³⁰

It is very clear that Bangladesh has achieved very rapid progress in most of the indicators during the two-decade-plus period under review and in most of these indicators its recent performance exceeds the average performance for South Asian region which in 2013 had on the average 58 percent higher income than Bangladesh according to World Bank's PPP\$ estimates.

The most outstanding success has been achieved in reducing infant and child mortality rates. This is no doubt related to rapid expansion in child immunization. Bangladesh has also been a pioneer in the development of oral saline rehydration, a low-cost treatment of diarrheal diseases, which saved the lives of children from a widely prevalent ailment. Improved level of nutrition, due to increased production and

Table 9.10 Selected social indicators of development

	1990	Circa 2012	SA average
Life expectancy at birth	60	70 (2012)	67
Infant mortality per thousand live birth	100	33 (2013)	45
Child (<5) mortality	144	41 (2013)	57
Percent of children immunized: measles	-	93 (2013)	75
DPT	-	97 (2013)	75
Total fertility rate	4.6	2.2 (2013)	2.6
Lifetime risk of maternal death: one per	-	250 (2013)	190
Births attended by skilled personnel (%)	-	32 (2007-12)	50
Access to improved water (%)	68	85 (2012)	92
Access to improved sanitation (%)	33	57 (2012)	39
Population with access to electricity (%)	20.4 (2000)	59.6 (2011)	-
Mobile cellular phone per 100 persons	0.2 (2000)	67.1 (2011)	70.8
Number of female per 1000 male	945 (1991)	998 (2011)	-
Underweight children (% <5)	61.5	36.4 (2010)	-
Male	-	34.3 (2010)	-
Female	-	38.5 (2010)	-
Years of schooling (age 15-24): male	4.1	8.0 (2010)	8.6
Female	3.2	9.2 (2010)	8.3
Gender parity in education: primary	0.84	1.06 (2011)	1.03
Secondary	0.51	1.14 (2011)	0.96
Tertiary	0.20	0.69 (2011)	0.78
Women members of parliament (%)	10.3	19.8 (2014)	17.9

Source: The first six indicators are from WDI (2014). The female/male ratios are from BBS, *Statistical Yearbook* (2012), Dhaka, August 2013, p. 46. The rest are from ADB *database* (www.adb.org/publications/series/framework-inclusive-growth-indicators) accessed on 25 March 2015. - means not shown in the source from which the information for Bangladesh has been obtained.

availability of food grain noted in Chapter 5 and reflected in the large reduction in the incidence of underweight children; and expanded access to improved water and sanitation, together with the measures that dramatically reduced infant and child mortality, are among the factors behind the gain in life expectancy at birth.

Access to education has increased with more than the doubling of the average years of schooling. In Chapter 8 we noted the vastly improved enrolment at the primary level. But that chapter also documented that the efficiency of primary education, measured by the rate of completion, is still relatively low. That chapter further showed that secondary and tertiary enrolment rates are lower than the South Asian average; and the quality of education at all levels is in urgent need of improvement.

Improvement in some indicators has been transformational. The most important one in this category is the spread of mobile cellular phones. Virtually non-existent at the beginning of the period under review, it came to cover two-thirds of the population (or close to it, allowing for the possibility of ownership of multiple devices for some) by 2011, and perhaps quite a bit more by now. This has not only freed the urban population from the injustice and corruption that was characteristic of the publicly managed distribution of land phones, but has opened up distant rural communities to quick access to information and services like easy and quick transfer of funds.

We next look at the indicators related to the status and wellbeing of women. As recently as in 1998, the Sample Vital Registration Survey (SVRS) found that at the national level life expectancy at birth was lower for the female (61.2 years) than for the male (61.7 years).³¹ The 2002 SVRS for the first time recorded a higher life expectancy for the female (65.4) than for the male (64.5). By now women have a decisive advantage over men in life expectancy.³²

In the empirical literature on development demography much discussion has taken place about the “missing women” in many developing countries including India and China, the low ratio of women to men in total population. This suggests low value attached to women by the society, which leads to female feticide and infanticide; and general neglect of women’s health.³³ In their recent book, Dreze and Sen highlight the low ratio of women to men in India (940 per 1,000 men) as compared to 998 in Bangladesh as one of the indicators of higher status of women in Bangladesh than in India.³⁴ The point is that the ratio for Bangladesh for the year 2011 is an outlier in comparison with the same for the two previous population censuses – 945 in 1991 and 940 for 2001.³⁵ The figure for Bangladesh in 2001 is exactly the same as the

one cited by Dreze and Sen for India in 2011. Is it conceivable that the ratio could have changed so dramatically for Bangladesh over the period of just a decade? Or is the apparent change between the censuses of 2001 and 2011 at least partly due to methodological differences and estimation errors? Strong preference for male children is also prevalent in Bangladesh although there has not been allegations of widespread female feticide or infanticide. But note that the table shows that the proportion of underweight children is higher among girls than among boys.

Education has been the area of tremendous progress for women. Female enrolment exceeds male enrolment both at primary and secondary levels, exceeding the South Asian averages. At the tertiary level female enrolment has made much progress over the period though still lagging behind male enrolment by a wide margin. In this indicator Bangladesh also lags behind the South Asian average.

Chapter 6 documented the progress of women as members of the labor force. Thanks largely to the dominance of RMG, where female workers seem to have comparative advantage over male workers, women represent the majority of *production workers* in large- and medium-scale industries. In cottage industries they represent a far smaller proportion of workers and a large majority of them are employed as “unpaid family help”.

The remarkable improvement in another indicator related to the wellbeing of women, the total fertility rate, is difficult to comprehend as argued in Chapter 2. Its sustainability faces uncertainty due to the trend decline in age at marriage for both women and men since the beginning of the new century (Table 2.3).

The higher share of female members in the national Parliament in Bangladesh needs to be seen in the context of a small proportion of them being directly elected; a large majority of them constitute a quota of female members who are *indirectly* elected by the overwhelmingly male, directly elected members of the Parliament. The long-standing demand by the country’s women’s movement to have the quota of female members directly elected has so far remained unheeded by both the parties that have governed the country since the beginning of the 1990s under women heads of government. Rather than allowing a greater representation of women, the quota for female members has allegedly strengthened the party leaders, overwhelmingly male, who were able to pick their preferred candidates.

To summarize: there has been substantial improvement in the indicators of women’s status, especially those relating to their life expectancy;

and access to education and employment. Discrimination persists in many areas: political participation and employment, especially in cottage industries. No attempt has been made to remove discrimination against women in inheritance laws; and, despite undoubted improvement, women continue to be subjected to discrimination in the enforcement of family laws.

The factors behind the improvement in the indicators of standard of living are incompletely understood. It is, however, worth noting that the improvement cannot be attributed to increased public expenditure. These indicators mostly reflect performance in education and health sectors. As percent of government budget, expenditure on these sectors changed as follows over time:³⁶

Year	Education	Health
1995	16.7	7.4
2000	19.7	9.4
2013	12.2	4.9

Proportion of public expenditure in these sectors increased modestly between 1995 and 2000; but precipitously declined thereafter.

The comparison between Bangladesh and its South Asian neighbors is at its most dramatic when the comparator country is India and the comparison is made by such masters as Jean Dreze and Amartya Sen.³⁷ India's per capita GDP in 2011 was more than twice that of Bangladesh, a difference that had grown from just 60 percent higher back in 1990.³⁸ But of the 11 non-income indicators of living standard used by Dreze and Sen, in 10 Bangladesh performs better than India, maternal mortality rate being the only exception, in which Bangladesh has significantly reduced the gap over time. In 6 of the indicators – infant mortality; child mortality; total fertility; average years of schooling; female literacy; and wasting among children – Bangladesh has actually overtaken India in the past two decades, a period during which India's per capita income grew at an annual rate that was a third higher than Bangladesh's.³⁹ Among the six South Asian countries, Bangladesh's per capita income was higher than only Nepal's both in the beginning and at the end of the period. But in 7 of the 11 indicators of living standard its rank unambiguously improved while falling in none.

That Bangladesh's performance in what have variously been described as indicators of living standard, quality of life and social development

has been disproportionate to its level of development and economic growth has been widely noted. In the UNDP's multidimensional development indicator, the Human Development Index (HDI), Bangladesh still trails behind India. Among 185 countries India ranks 136th (with an absolute level of the index of 0.554) while Bangladesh ranks 146th (with the index at 0.515) for 2012. But the HDI incorporates both income and non-income indicators of living standard. The recently published Index of Social Progress, based entirely on non-income indicators and focusing on a large number of elements representing basic human needs, foundations of wellbeing and opportunity, ranks Bangladesh above India: among a total of 132 countries for which the available data permitted the calculation of the Index for 2014, Bangladesh ranks 99th (with a score of 52.04) and India 102nd (with a score of 50.24).⁴⁰

How widely and equally have the people of Bangladesh benefited from the unmistakable improvement in the physical indicators of wellbeing? Might one argue that widely shared improvement in these indicators have to an extent mitigated the effects of inequality in the distribution of income which has reached intolerable levels? Table 9.11 puts together available distributional data on a number of these indicators; it shows these indicators for the richest and the poorest quintiles of population for the year 2011.⁴¹ The evidence summarized in the table reveals a great deal of inequality in the distribution of the physical indicators of wellbeing.

Had the two columns of the table been anonymously displayed, one might easily think of them as belonging to two different countries, one a low-income country and the other a middle-income country:

Table 9.11 Social indicators for the poorest and the richest quintiles of population (%)

	Poorest quintile	Richest quintile
Child malnutrition	50	21
Child (12–23 months) immunization	77	94
Infant mortality	62	30
Child (under 5 years) mortality	78	38
Total fertility rate	3.1	1.9
Teenage mothers (% of women 15–19 years)	42	19
Percent of births attended by skilled health staff	12	64
Percent of women receiving prenatal care	30	87
Primary school completion rate	65	97

Source: WDI (2014).

one with two and a half times the rate of child malnutrition, four times the immunization gap (i.e., the proportion deprived of access to immunization), more than twice the rate of infant and child mortality, only a third of the proportion of pregnant women receiving prenatal care, less than a fifth of births attended by skilled health staff, nearly 12 times the primary education completion gap (i.e., the proportion failing to complete primary education), more than twice the teenage motherhood rate and two-thirds higher total fertility rate as compared to the other. One wonders to what extent the poor have been deprived of life expectancy itself, relative to the rich, not to speak of many other aspects of its quality. There is little doubt that those indicators, if available, would reveal great inequities. With such striking difference in the indicators between the extreme quintiles of income groups and the income distance between the groups steadily and rapidly widening, it is hard not to hypothesize that the inequality in the distribution of these indicators too has increased over time.

Main findings

Inequality in the distribution of income has increased rapidly since the early 1990s. This has deprived the poorer income groups of much of the benefit of accelerating rate of growth in per capita income that has characterized the period. It is difficult to get a clear quantitative measure of the change in the incidence of absolute poverty. But the entirety of available measurements, based on both consumption and income as indicators of wellbeing, and other related evidence, suggests that the benefit of growth was widely shared and poverty declined, though perhaps not with as much regularity as claimed by official estimates. During the period, Bangladesh achieved much progress in terms of the average values of physical indicators of living standard, disproportionate to its level of development. Perhaps the cruelest dimension of inequality is manifested in the greatly unequal distribution of the gains in these indicators, resulting in great relative deprivation of the poor in such basic things as access to immunization, nutrition and schooling.

10 Conclusion: Credits, Constraints and Prospects

We have examined in some depth the catalog of successes and failures which were outlined at the beginning of the book. The subject of this concluding chapter is to identify the principal actors and policies that deserve credit for the success that has been achieved; explore the reasons behind the major blemishes that characterize the performance; and ask what needs to happen to sustain and improve upon the past performance in the future.

Factors behind the achievements

Achievements during the past quarter century have been significant. To recapitulate the major ones: the growth rate has accelerated to the half-decade average of over 6 percent; the demographic transition has continued and reduced the total fertility rate approximately to the replacement level; the dependence on external capital inflow has dramatically declined; significant structural change has occurred with a reduction in agriculture's share of output and employment, and an increase in the share of manufacturing in both output and employment; agricultural productivity has nevertheless grown resulting in much improved availability of food per person; and major improvements in indicators of physical wellbeing – including a dramatic reduction in infant and child mortality; and rapid increase in life expectancy – have taken place.

These are very significant achievements that do not just happen. And yet it is hard to argue that they are the results of a carefully conceived, coherent strategy, encompassing major aspects of development policy, designed and implemented by the government as the central policy-maker. One needs to attribute credit for different parts of the success story to different actors, often acting independently of one another.