Trade Liberalization and Poverty in Bangladesh

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Introduction

The impact of trade liberalization on growth and employment is a much debated and controversial issue. In theory, trade liberalization results in productivity gains through increased competition, efficiency, innovation and acquisition of new technology. Trade policy works by inducing substitution effects in the production and consumption of goods and services through changes in price. These factors, in turn, influence the level and composition of exports and imports. In particular, the changing relative price induced by trade liberalization causes a more efficient reallocation of resources. Trade liberalization is also seen as expanding economic opportunities by enlarging the market size and enhancing the impact of knowledge spillover. However, empirical evidence to support these propositions is far from conclusive. Both cross-country and country-specific studies have failed to suggest any conclusive evidence to support the claim that trade liberalization promotes economic growth and aids net employment generation.

Trade liberalization has been one of the major policy reforms carried out by Bangladesh. It has been implemented as part of the overall economic reform programme, i.e., the structural adjustment programme (SAP) that was initiated in 1987 and which formed the component of the "structural adjustment facility" (SAF) and "enhanced structural adjustment facility" (ESAF) of the International Monetary Fund and the World Bank. This adjustment programme put forward a wide range of policy reforms including trade, industrial, monetary, fiscal and exchange rate policies, privatization of state-owned enterprises policy and the promotion of foreign direct investment.

After independence in 1971, Bangladesh followed a of a highly-restricted trade regime strategy. This was characterized by high tariffs and non-tariff barriers to trade and an overvalued exchange rate system that was supported by the import-substitution industrialization strategy of the Government. This policy was pursued with the objectives of improving the balance of payment position of the country and creating a protected domestic market for manufacturing industries (Bhuyan and Rashid, 1993). The trade regime registered a major shift in the mid-1980s, when a policy of moderate liberalization was initiated. However, in the early 1990s, large-scale liberalization of trade was implemented. Since then, successive governments have reaffirmed their commitment to the development of a more liberal trade regime.

There are fierce debates among economists and policy makers on the extent of trade liberalization. The World Bank and the International Monetary Fund have claimed that the pace and extent of liberalization in Bangladesh in the 1990s was not as rapid compared to other developing countries (World Bank, 1999). However, this is not endorsed by economists and private industrial entrepreneurs in Bangladesh, who argue that a much slower pace of liberalization is warranted (Mahmud, 1998). Rashid (2000) also pointed out that the views of the stakeholders had not been taken into consideration in the framing and implementation of trade liberalization policies.

In fact, there have been concerns over whether the impact of trade liberalization has been favourable to the domestic economy. In fact, there is a lack of consensus on the issue (World Bank, 1999). There is also continuing debate over the future direction of trade liberalization in Bangladesh. Questions have been raised over whether Bangladesh ought to undertake further drastic wholesale liberalization of trade or adopt a more gradual approach. Against this backdrop, this chapter assesses trade liberalization in Bangladesh and examines its impact on growth and employment in the country.

A. Trade liberalization, growth and employment

There are competing theories on trade and economic performance, while a large number of empirical studies have attempted to test those theories under different contexts. However, both the theoretical and empirical studies related to trade liberalization, growth and employment in the context of developing countries point to the fact that there is no unambiguous conclusion about the role of liberalization in boosting economic growth and employment.

Several standard trade theories have suggested links through which a more open trade regime could have positive impacts on poverty alleviation. The Heckscher-Ohlin-Samuelson theorem, extending the classical comparative advantage theory, points out that countries have different factor endowments and different factor intensities across goods; therefore, the country that has abundant labour will export labour-intensive commodities and the country with abundant capital will export capital-intensive commodities. As the low-income countries have abundant labour, the implication of this theorem is that low-income countries will export labour-intensive commodities.

In addition, the Stolper-Samuelson theorem argues that an increase in the relative price of labour-intensive goods will raise the real income for labour, although it will reduce the real returns to capital. Winters (2000), however, pointed out that the practical relevance of the Stolper-Samuelson theorem was negligible because it depended on many restrictive assumptions. He argued that the theorem was incapable of answering questions on trade and poverty in the real world. For example, it is less powerful in multi-commodity, multi-factor models, and the functional and personal distributions of income are loosely related.

The theoretical framework for linking trade reforms to poverty was probably best developed by Winters (2000) who explained how trade liberalization influenced poverty through three broad groups of institutions – price, enterprise and government.

The first impact of trade liberalization would be on the price of goods and services consumed and produced by the poor. Falling prices benefit consumers while rising prices benefit producers. Where price changes exist, reduction in poverty is dependant not only on the size of those price changes, but also on the products to which they relate, and the distribution of consumption and production. The rate at which poverty is reduced depends on the ability of household members to adjust their consumption and production in the appropriate direction in response to the price change.

The response of enterprises to liberalization is the second channel through which poverty is affected. Price changes due to trade liberalization may alter the production pattern. Rising prices provide incentive to increase production, while falling prices do the

reverse. Where production increases, this may lead to an increase in wages or levels of employment. The extent of poverty reduction thus depends on the level of initial wages and magnitude of increase relative to the poverty line.

The third important link is through changes in government revenue and expenditure as a direct consequence of liberalization. When trade taxation is an important source of revenue, reduced public resources as a result of trade policy reform are most likely to affect households dependent on the provisioning of the public services.

The relationship between trade liberalization and employment has been a contentious issue for many decades. The complexity of establishing the linkage between trade liberalization and employment lies in the fact that there are many channels through which trade liberalization can influence the labour market directly and/or indirectly. In accordance with the traditional Heckscher-Ohlin model, trade liberalization increases demand for the commodity that uses the abundant factor intensively. Therefore, trade increases the demand for the abundant factor and hence creates employment opportunities. In other words, trade liberalization holds the possibility of job creation. This obvious link argues the ability of trade liberalization in reducing poverty, because employment is the ultimate way to fight poverty.

However, the opposite view is also prevalent; this view predicts the possibility of job destruction, relocation and associated adjustment cost due to the opening up of the economy. Analysing the various related literature, a general viewpoint has been derived i.e., trade liberalization is associated both with job destruction and with job creation. In the short term, the resulting net employment effects may be positive or negative, depending on country-specific factors such as the functioning of the labour and product markets. In the long term, however, the efficiency gains created by trade liberalization are expected to lead to positive overall employment effects in terms of the quantity of jobs, wages earned, or a combination of both.

However, the relationship between the opening up of the economy and the impact on employment are inconclusive, although there are noticeable differences in the result of the empirical investigation of the trade liberalization-employment nexus. According to Papageorgiou and others (1990), a comprehensive, retrospective World Bank study of trade reforms conducted in developing countries showed that eight out of nine countries had higher employment in the manufacturing sector during the liberalization period and a year later. The results given by Papageorgiou and others (1990) have been challenged by Collier (1993) on methodological grounds. According to Ernest (2005), the impact of trade liberalization in Argentina and Brazil was disappointing; however, in the case of Mexico, there was growth in productivity and employment in the manufacturing sector during the second half of the 1990s.

Fu and Balasubramanyam (2005) found a positive and significant impact of exports on employment in China. By using a panel data set for Township and Village Enterprises (TVEs) in 29 provinces in China over 1987-1998, they suggested that a 1 per cent increase in export volume would raise employment by 0.17 per cent. However, other studies have found negative relationships between trade reform and employment. For example, Rama (1994) found trade liberalization had a negative effect on employment in Uruguay in the late 1970s and early 1980s. Greenway and others (1998) found that between 1979 and 1991, when industry in the United Kingdom had been integrated into the international

economy through foreign direct investment (FDI) and trade, there were large-scale job losses in the United Kingdom's manufacturing sector. They found that when United Kingdom trade volume increased, demand for labour decreased in the manufacturing sector because trade liberalization generated competition and a requirement for highly-skilled labour in delivering high output. However, this job loss situation was equalized by an increase in financial services as well as primary and extractive employment. Carneiro and Arbache (2003) found trade liberalization had a limited impact on macroeconomic variables and labour market indicators in Brazil.

B. Overview of trade liberalization in Bangladesh

Bangladesh pursued an import-substituting industrialization strategy in the 1970s, the key objectives of which were:

(a) To safeguard the country's infant industries;
(b) To reduce the balance of payments deficit;
(c) To use scarce foreign exchange efficiently;
(d) To ward off international capital market and exchange rate shocks;
(e) To lessen fiscal imbalance; and
(f) To achieve higher economic growth and self-sufficiency.

The basic policy tools used under this policy regime included high import tariffs, quantitative restrictions, foreign exchange rationing and an overvalued exchange rate. However, in the face of the failure of such inward-looking strategies to deliver the desired outcomes, together with rising internal and external imbalances, trade policy reforms were introduced in the early 1980s. Since then, trade liberalization has become an integral part of Bangladesh's trade policy.

Trade policy from 1972 to 1980 consisted of significant import controls. The major administrative instruments employed in implementing the import policy during that period were the foreign exchange allocation system and Import Policy Orders (IPOs). Under IPOs, it was specified whether items could be imported, were prohibited or required special authorization. With the exception of a few cases, licences were required for all other imports. The argument behind the import-licensing system was that it would ensure the allocation of foreign exchange to priority areas as well as protect vulnerable local industries from import competition. However, the system was criticized for not being sufficiently flexible to ensure its smooth functioning under changing circumstances. Moreover, it was characterized by complexity, deficiency in administration, cumbersome foreign exchange budgeting procedures, poor interagency coordination, rigid allocation of licences and time-consuming procedures (Bhuyan and Rashid, 1993).

During the 1980s, moderate import liberalization took place. In 1984, a significant change was made in the import policy regime with the abolition of the import licensing system, and imports were permitted against letters of credit. From 1986, significant changes were made in the import procedures and IPOs with regard to their contents and structure. Whereas, prior to 1986, IPOs contained a lengthy Positive List of importable goods, in 1986 it was replaced by two lists – the Negative List (for banned items) and the Restricted List (for items importable on fulfilment of certain prescribed conditions). Imports of any items outside the lists were allowed. These changes may be considered as significant moves towards import liberalization, since no restrictions were imposed on imports of items that did not appear in IPOs. With the aim of increasing the elements of

stability and certainty of trade policy, IPOs with relatively longer periods replaced the previous practice of framing annual import policies. In 1990, the Negative and Restricted Lists of importable items were consolidated into one list, i.e., the Consolidated List (Ahmed, 2001).

Table 1 suggests that, at the HS-4 digit level, the range of products subject to an import ban or restriction has been curtailed substantially from as high as 752 in 1985-1986 to only 63 in 2003-2006. Import restrictions have been imposed on two grounds – either for trade-related reasons (i.e., to protect domestic industries) or for non-trade reasons (e.g., to protect the environment, public health and safety, and security). Therefore, only the trade-related restrictions should be of interest to policy reforms and liberalization. Table 1 shows that during the past two decades, the number of trade-related banned items has declined from 275 to 5. In a similar fashion, other restricted and mixed (a combination of banned and restricted) import categories fell quite rapidly. In 1987-1988, about 40 per cent of all import lines at the HS-4 digit level was subject to trade-related quantitative restrictions, but these restrictions have been drastically reduced to less than 2 per cent.

Table 1. Removal of quantitative restrictions at the 4-digit HS classification level

		Restricted for trade reasons			Restricted for non-trade
Years	**Total**	**Banned**	**Restricted**	**Mixed**	**reasons**
1985-1986	478	275	138	16	49
1986-1987	550	252	151	86	61
1987-1988	529	257	133	79	60
1988-1989	433	165	89	101	78
1989-1990	315	135	66	52	62
1990-1991	239	93	47	39	60
1991-1992	193	78	34	25	56
1992-1993	93	13	12	14	54
1993-1994	109	7	19	14	69
1994-1995	114	5	6	12	92
1995-1997	120	5	6	16	93
1997-2002	122	5	6	16	95
2003-2006	63	5	8	10	40

Sources: Compiled from Yilmaz and Varma, 1995; Bayes and others, 1995; Taslim, 2004.
Note: Figures for 2003-2006 are derived from Import Policy Orders 2003-06.

Since the late 1980s, the tariff regime has become increasingly liberalized. Between 1991-1992 and 2004-2005 the unweighted average tariff rate fell from 70 per cent to 13.5 per cent (table 2). Much of this reduced protection was achieved through the reduction in the maximum rate. Table 2 suggests that in 1991-1992 the maximum tariff rate was 350 per cent, which came down to only 25 per cent in 2004-2005. The number of tariff bands was 24 in the 1980s, 18 in the early 1990s and only 4 at present. The percentage of duty-free tariff lines more than doubled between 1992-1993 and 1999-2000 (from 3.4 per cent to 8.4 per cent). Bangladesh has no tariff quotas, seasonal tariffs and variable import levies (WTO, 2000). All these measures have greatly simplified the tariff regime and helped streamline customs administration procedures.

Table 2. Tariff structure in Bangladesh

Fiscal year	Number of tariff bands	Maximum rate (%)	Unweighted Tariff rate (%)
1991/92	18	350.0	70.0
1992/93	15	300.0	47.4
1993/94	12	300.0	36.0
1994/95	6	60.0	25.9
1995/96	7	50.0	22.3
1996/97	7	45.0	21.5
1997/98	7	42.5	20.7
1998/99	7	40.0	20.3
1999/00	5	37.5	19.5
2000/01	5	37.5	18.6
2001/02	5	37.5	17.1
2002/03	5	32.5	16.5
2003/04	5	30.0	15.6
2004/05	4	25.0	13.5

Source: Bangladesh Economic Review, 2004.

A drastic reduction in unweighted tariff rates during the 1990s also resulted in a fall in import-weighted tariff rates. Table 3 shows that the import-weighted average tariff rate declined from 42.1 per cent in 1990/91 to 13.8 per cent in 1999/2000, and 11.48 per cent in 2003/04.

Table 3. Trend in the import-weighted average tariff

	1990/91	1991/92	1994/95	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04
Import-weighted tariff	42.1	24.1	20.9	14.7	13.8	15.1	9.73	12.45	11.48

Sources: WTO, 2000 and *Bangladesh Economic Review*, 2004.

One important aspect of the tariff structure in Bangladesh is related to the use of import taxes that have a protective impact (also known as para-tariffs) over and above the protection provided by customs duty (World Bank, 2004). These taxes include the infrastructure development surcharge, supplementary duties and regulatory duties. Although these taxes have been primarily imposed for generating additional revenues, in the absence of equivalent taxes on domestic production, they have provided extra protection to local industries. Similarly, while the value added tax is supposed to be trade-neutral, exemptions for specified domestic products have also resulted in it having some protective content.

Some of these para-tariffs, such as the infrastructure development surcharge, are applied across-the-board to all or practically all imports, and can be considered as general or normally applied protective taxes that affect all or nearly all tariff lines. Others are selective protective taxes in that they are only applied to selected products (e.g., the "supplementary" duties). The para-tariffs employed during the 1990s and early 2000s in Bangladesh are summarized in table 4. It appears that despite the lowering of customs duties, the presence of para-tariffs did not significantly lower the total protection rate.

Table 4. Average customs duties and para-tariffs in Bangladesh

Year	All tariff lines			Industrial tariff lines			Agriculture tariff lines		
	Customs duties	Para-tariffs	Total protection rate	Customs duties	Para-tariffs	Total protection rate	Customs Duties	Para-tariffs	Total protection rate
1991-92	70.64	2.98	73.62	69.72	3.44	73.16	76.64	-0.01	76.63
1992-93	57.93	2.59	60.52	57.34	2.99	60.33	61.83	-0.03	61.80
1993-94	43.47	2.43	45.90	43.13	2.84	45.97	45.58	-0.17	45.41
1994-95	34.24	3.30	37.55	33.52	3.54	37.06	37.49	2.23	39.72
1995-96	28.70	3.26	31.96	28.40	3.47	31.87	30.07	2.28	32.36
1996-97	28.24	3.38	31.61	27.79	3.58	31.37	30.25	2.48	32.73
1997-98	27.27	5.88	33.15	26.80	5.98	32.78	29.42	5.42	34.83
1998-99	26.59	5.82	32.41	26.23	5.92	32.15	28.19	5.37	33.56
1999-00	22.40	6.99	29.39	21.86	7.33	29.19	24.87	5.41	30.28
2000-01	21.10	7.43	28.54	20.39	7.84	28.23	24.53	5.46	30.00
2001-02	21.02	8.41	29.43	20.28	8.47	28.75	24.60	8.15	32.74
2002-03	19.91	6.51	26.42	19.08	6.74	25.82	23.85	5.44	29.29
2003-04	18.82	10.29	29.11	18.02	8.81	26.82	22.56	17.22	39.77

Source: World Bank, 2004.

Until the mid-1980s, Bangladesh followed a strategy of import-substitution. The regime was also characterized by a high degree of anti-export bias. However, since 1985, export policy reforms have been implemented that have included trade, exchange rate, and monetary and fiscal policy incentives, aimed at increasing effective assistance to exports. A few sectors, especially ready-made garments, have been among the beneficiaries of these reforms. The reforms have also provided exporters with unrestricted and duty-free access to imported inputs, financial incentives in the form of easy access to credit and credit subsidies, and fiscal incentives such as rebates on income taxes and concessionary duties on imported capital machinery. They have also been aimed at strengthening the institutional framework for export promotion (Rahman, 2001).

C. Impact of trade liberalization in Bangladesh

1. Impacts on economic growth in Bangladesh

Following the rapid liberalization programme of the past few decades, the economy grew at a commendable rate. Above all, the fall in the incidence of poverty has also been impressive. Therefore, the impact of trade liberalization on poverty is a very interesting area of research. However, no ex post econometric study of Bangladesh has analysed the link between trade policy and poverty. The main constraint is the unavailability of data, as poverty estimates only become available intermittently. Apart from the scarcity of detailed household data, measuring the direct impact of trade liberalization on poverty is very complicated. In other words, it is often difficult to disentangle the impact of trade reform from the impacts of other reforms, events and shocks that affect household poverty dynamics. All these constraints have prevented economists from undertaking sophisticated econometric exercises to investigate the relationship between openness and poverty. However, there have been a number of studies, based on time series data, that have tested the relationship between trade and economic growth in the context of Bangladesh.

A study by Begum and Shamsuddin (1998) investigated the effect of export growth in Bangladesh from 1961 to 1992. The authors concluded that the growth of exports had a significant and positive impact on economic growth through an increase in the total factor productivity of the economy. However, the study can be criticized for its weak

methodology, as it considered only the short-term impact of export growth. On the other hand, using updated and revised data for 1980-2000, and by examining the long-term impact of exports on economic growth, Razzaque and others (2003) found no evidence of a long-term relationship between exports and economic growth in the context of the Bangladesh economy.

Ahmed and Sattar (2004) demonstrated that the higher average growth experienced by Bangladesh in the 1990s than in the 1980s should be attributed to the success of trade liberalization. This simple approach is, however, seriously flawed as it does not take into account various other events that occurred simultaneously during that period. Therefore, it is not clear whether, after controlling for traditional sources of growth, liberalization would have any distinct impact on growth. In the absence of such analysis, sceptics, taking an extreme view, could argue that the increased rate of growth in the post-liberalization period arose "despite" rather than "because of liberalization".

To overcome the above problems, Razzaque and others (2003) and Raihan (2007) employed regression methods to explain the output/growth performance, using time-varying indicators of trade liberalization measures and controlling for factors of production. In the first study, Razzaque and others (2003) extended the traditional neo-classical and endogenous growth models by incorporating three widely accepted trade liberalization measures, i.e., trade-GDP ratio, ratio of consumers' goods imports to GDP and the implicit nominal tariff rate. While the estimated model turned out to be satisfactory, none of the indicators of trade liberalization, quite surprisingly, achieved statistical significance in any of the regression results (table 5). The same study also found no significant effects of trade liberalization on the export-growth relationship.

Table 5. Trade liberalization measure in growth models

Explanatory variables	Coeff. (standard error)	Coeff. (standard error)	Coeff. (standard error)	Coeff. (standard error)	Coeff. (standard error)	Coeff. (standard error)
Constant	6.08***	6.35***	6.23***	3.53***	3.40***	3.31***
	(1.61)	(0.61)	(0.69)	(0.43)	(0.28)	(0.39)
Ln (capital stock)	0.23**	0.22**	0.23**	0.50***	0.53***	0.53***
	(0.08)	(0.09)	(0.09)	(0.07)	(0.05)	(0.08)
Ln (labour)	1.13**	1.15***	1.12***			
	(0.15)	(0.18)	(0.18)			
Ln (human capital)				0.90***	0.80***	0.84***
				(0.19)	(0.19)	(0.22)
Ln (trade-GDP ratio)	-0.014			0.008		
	(0.012)			(0.02)		
Ln (consumers' goods-GDP ratio)		0.008			0.005	
		(0.01)			(0.01)	
Ln (import duties/imports)			0.006			-0.001
			(0.01)			(0.02)

Note : ***, ** and * indicate statistical significance at the 1, 5 and 10 percent levels respectively.
Source: Razzaque and others, 2003..

On the other hand, Raihan (2007) contributed to the empirical understanding of the "trade liberalization – growth nexus" in the context of the manufacturing industries in Bangladesh. He used a panel database for the manufacturing sector at the 3-digit ISIC code level for 27 sectors, with a time span of 22 years (1977-1998). Five indicators of trade liberalization were used: (a) the import penetration of consumer goods; (b) the implicit nominal tariff rate; (c) the sectoral import penetration ratio; (d) the sectoral export-

orientation ratio; (e) and a year dummy variable. The study employed a production function framework for the analysis and used a variety of the panel regression analysis. The regression results found no evidence of any statistically significant positive "trade liberalization – growth nexus" in the context of manufacturing industries in Bangladesh (table 6).

Table 6. Trade liberalization measures in panel data models of manufacturing output

Explanatory variables	Coeff. (standard error)	Coeff. (standard error)	Coeff. (standard error)	Coeff. (standard error)	Coeff. (standard error)
Ln (capital)	0.356*** (0.074)	0.339*** (0.07)	0.286*** (0.06)	0.362*** (0.074)	0.359*** (0.07)
Ln (labour)	0.492*** (0.05)	0.493*** (0.05)	0.498*** (0.04)	0.488*** (0.05)	0.491*** (0.05)
Ln (import penetration ratio of consumer goods)	-0.041* (0.015)				
Ln (implicit nominal tariff rate)		-0.1465 (0.28)			
Ln (sectoral import penetration ratio)			-0.129*** (0.04)		
Ln (sectoral export-orientation ratio)				0.086 (-0.124)	
Liberalization year dummy					-0.105** (-0.05)
R^2	0.64	0.74	0.77	0.75	0.63
Observations	594	594	594	594	594

Note: ***, ** and * indicate statistical significance at the 1, 5 and 10 percent levels respectively.
Source: Raihan, 2007.

It appears from the aforementioned analysis that the econometric investigations using historical data fail to depict a conclusive relationship between trade liberalization and growth in the context of the Bangladesh economy. There are studies that have undertaken simulation exercises based on applied general equilibrium models to find out, ex ante, the positive effects of further liberalization. Khondker and Raihan (2004), in a static CGE framework, examined the impact of different policy reforms in Bangladesh in a general equilibrium framework, and found that full trade liberalization would generate negative consequences for the macro-economy as well as for the welfare and poverty status of households. The most influential study in this regard was the one carried out by Annabi and others (2006). Working with a dynamic sequential CGE model, the authors found that if all tariffs of Bangladesh were set to zero (i.e., the case when all policy-induced ex ante bias is removed), the effect on GDP is actually negative in the short term, (defined as 1-2 years), but positive for a long-term horizon of 15 years. Interestingly however, the long-term positive impact was found to be just 1.4 per cent higher than the base scenario. This suggests that the growth dividend from further liberalization of tariffs is very low.

2. Trade liberalization and employment: An econometric investigation

In order to investigate the impact of trade liberalization on employment, a sectoral analysis was undertaken in this study, using disaggregated data on output, employment, total wage, and sectoral exports and imports. Labour demand functions for each industry were estimated and trade liberalization measures were then augmented into the function to study the impact of trade liberalization on demand for labour in each sector. Before running the formal regressions, the time series properties of the variable were checked to avoid the

problem of spurious regression. All variables were found to be integrated in their levels and stationary with their first difference. The summary of the regression results are provided in tables 7 and 8, and the detailed regression results are given in the annex.

It is, however, important to note that trade openness is difficult to measure and the outcome variables such as export-output ratio and import ratio are not without flaws. In this analysis, the sectoral export-output ratio and sectoral import-output ratio have been used as the imperfect proxy of trade liberalization.

At first, industries can be categorized into two groups: (a) industries in which the labour demand functions are co-integrated when the labour demand function is augmented with the sectoral export-output ratio; and (b) industries in which the labour demand functions are co-integrated when the import-output ratio is added.

The labour demand functions are co-integrated when export-output ratio is added as the explanatory variable for the industries listed in table 7. Among these industries, trade openness (as defined by the sectoral export-output ratio) proved to be helpful in boosting employment for the following: beverages, wearing apparel, petroleum refining, miscellaneous petroleum products, plastic products, footwear except rubber, and wood and cork products. On the other hand, there was decreased demand for labour in the textile and paper industries when the export-output ratio is taken as the proxy of trade openness. In the remaining industries, there was no significant impact on employment due to trade liberalization.

Table 7. Summary result from estimated labour demand function – industries co-integrated with sectoral export-output ratio as the explanatory variable

2-digit ISIC Code	Industry co-integrated with export-output ratio	Impact on employment
02	Beverage industry	Positive significant
05	Wearing apparel	Positive significant
14	Petroleum refining	Positive significant
15	Miscellaneous petroleum products	Positive significant
17	Plastic products	Positive significant
07	Footwear except rubber	Positive significant
10	Paper and its products	Negative significant
04	Textile industry	Negative significant
03	Tobacco manufacturing	Negative insignificant
11	Printing and publishing	Negative insignificant
21	Iron and steel basic industries	Negative insignificant
24	Non-electrical machinery	Negative insignificant
26	Transport machinery	Negative insignificant
06	Leather and its products	Positive insignificant
09	Furniture manufacturing	Positive insignificant
12	Drugs and pharmaceuticals, and other chemical products	Positive insignificant
13	Industrial chemicals	Positive insignificant
16	Rubber products	Positive insignificant
18	Pottery and chinaware	Positive insignificant
19	Glass and its products	Positive insignificant
20	Non-metallic mineral products	Positive insignificant
23	Fabricated metal products	Positive insignificant
08	Wood and cork products	Positive insignificant
27	Scientific, precision etc. plus photographic/optical goods	Positive Insignificant

Note: Data are derived from the Census of Manufacturing Industries (1978 to 2000).

The labour demand functions are co-integrated when the import-output ratio is augmented into the labour demand function for the industries listed in table 8. In this category, leather and its products appear to be the only industry in which trade openness has a positive and significant impact on labour demand. However, trade liberalization has a negative impact on the labour demand for a number of industries including drugs and pharmaceuticals and other chemicals, miscellaneous petroleum products, non-electrical machinery and electrical machinery manufacturing. The remainder do not exhibit any significant impact on employment due to trade liberalization.

Table 8. Summary results from estimated labour demand function – industries co-integrated with sectoral import-output ratio as the explanatory variable

2-digit ISIC Code	Industries co-integrated with import-output ratio	Long-term impact
06	Leather and its products	Positive significant
12	Drugs and pharmaceuticals and other chemical products	Negative significant
15	Miscellaneous petroleum products	Negative significant
24	Non-electrical machinery	Negative significant
25	Electrical machinery	Negative significant
02	Beverage industry	Negative insignificant
01	Food manufacturing	Negative insignificant
10	Paper and its products	Negative insignificant
11	Printing and publishing	Negative insignificant
14	Petroleum refining	Negative insignificant
19	Glass and its products	Negative insignificant
20	Non-metallic mineral products	Negative insignificant
22	Non-ferrous metal industry	Negative insignificant
23	Fabricated metal products	Negative insignificant
05	Wearing apparel	Negative insignificant
13	Industrial chemicals	Positive insignificant
16	Rubber products	Positive insignificant
17	Plastic products	Positive insignificant
18	Pottery and chinaware	Positive insignificant
21	Iron and steel basic industries	Positive insignificant
03	Tobacco manufacturing	Positive insignificant
09	Furniture manufacturing	Positive insignificant

Note: Data are derived from the Census of Manufacturing Industries (1978 to 2000).

D. Conclusion

Bangladesh has, by now, liberalized its economy quite considerably; during the 1990s, in particular, the pace of liberalization was very rapid. The liberalization measured contributed to reducing policy-induced anti-export bias at a moderate level. Currently, the price incentive structure, as measured by average effective exchange rates, is between 10 per cent and 13 per cent skewed in favour of (against) the import-competing (export) sector. More liberalization and rationalization of the tariff regime could be another way of further reducing the anti-export bias. However, the evidence provided in this study calls for undertaking a more careful approach to future liberalization.

Although liberalization should encompass many factors affecting trade and business practices, in Bangladesh overwhelming attention has been given to trade-related instruments. In fact, policy makers are so inclined towards measures related to tariffs and

quantitative restrictions that most of the time reform measures are used interchangeably with trade liberalization measures. Reform of institutions has largely been overlooked. Embarking on such trade reforms as tariff cuts and elimination of quantitative restrictions is relatively easy. However, significant growth-enhancing effects perhaps require reforms in other difficult areas. In this regard, there are suggestions that institutional reforms should be considered the key to Bangladesh's growth-supporting strategy. Perhaps it is high time for trade policy reform to be considered as institutional reform, as emphasized by Rodrik (2002).

There is no denying the need for further liberalization and the removal of anti-export bias. However, this will have to be supported by other, more difficult reform measures. It is understood that, since the 1990s, Bangladesh has embarked on a fast-paced tariff reform programme, and that it may not be possible to continue further liberalization at a comparable rate. Nevertheless, it would be unwise to reverse the process of liberalization and, thus, the progress achieved in that decade.

Finally, the estimated labour demand functions in the context of the manufacturing industries suggests that, in general, trade liberalization in Bangladesh has generated employment in the major export-oriented industries whereas major import-substituting industries such as textile and paper products have suffered. However, for most of the sectors, there are insignificant associations between trade liberalization and employment generation.

Annex
Estimates of the labour demand function

	Constant (standard error)	LY (standard error)	LW (standard error)	LXO (standard error)	LMO (standard error)
Food manufacturing	2.06	0.78***	-0.73***	-0.11	
	(1.48)	(0.17)	(0.12)	(0.15)	
	1.48*	0.65***	-0.74***		0.08
	(0.51)	(0.06)	(0.11)		(0.15)
Beverage industry	1.22	0.74***	-0.59* (0.21)	0.15	
	(1.62)	(0.13)		(0.09)	
	-1.22	0.80***	-.85***		-0.02
	(0.85)	(0.12)	(0.14)		(0.02)
Tobacco m	0.68	0.31** (0.13)	-1.21***	-0.09	
	(1.08)		(0.11)	(0.06)	
	1.02	0.40***	-1.12		0.009
	(1.16)	(0.13)	(0.09)		(0.03)
Textile manufacturing	3.25*	0.63***	-0.69***	0.31*	
	(1.57)	(0.16)	(0.07)	(0.09)	
	3.19	0.65** (0.21)	-0.72***		-0.001 (0.01)
	(2.11)		(0.09)		
Wearing apparel	-1.21***	0.99***	-0.82***	0.03***	
	(0.45)	(0.02)	(0.08)	(0.01)	
	1.61**	0.99***	-0.87***		-0.002 (0.02)
	(0.51)	(0.02)	(0.11)		
Leather and leather products	-7.85***	0.91***	-1.96***	0.08	
	(1.64)	(0.18)	(0.21)	(0.18)	
	-6.71***	0.83***	-1.90***		0.04*
	(1.05)	(0.14)	(0.16)		(0.02)
Footwear except rubber	0.22	0.85***	-0.79***	0.16***	
	(0.49)	(0.06)	(0.11)	(0.02)	
	-1.88***	1.03***	-0.82***		0.004
	(0.61)	(0.08)	(0.18)		(0.03)
Wood and cork products	-2.46***	0.75***	-1.41***	0.03	
	(1.09)	(0.18)	(0.31)	(0.07)	
	-2.51***	0.88***	-1.29***		0.07** (0.03)
	(0.83)	(0.17)	(0.24)		
Furniture manufacturing	1.31**	0.36***	-0.94***	0.005	
	(0.70)	(0.08)	(0.16)	(0.03)	
	1.29*	0.36***	-0.95***		0.01
	(0.68)	(0.07)	(0.16)		(0.02)
Paper and its product	2.58**	0.74***	-0.25**	-0.03**	
	(1.25)	(0.14)	(0.10)	(0.01)	
	1.69	0.83***	-0.34***		-0.006
	(1.38)	(0.15)	(0.11)		(0.016)
Printing and publishing	-0.50	0.90***	-0.86***	-0.02	
	(0.59)	(0.06)	(0.11)	(0.03)	
	-0.42	0.93***	-0.82***		-0.007 (0.01)
	(0.59)	(0.04)	(0.11)		
Drugs and pharmaceuticals and other chemical products	-1.29	1.08***	-0.46**	0.006	
	(1.01)	(0.09)	(0.19)	(0.01)	
	0.85	0.74***	-0.49**		-0.72***
	(0.93)	(0.12)	(0.14)		(0.18)
Industrial chemicals	1.58	0.69***	-0.77***	0.07	
	(1.05)	(0.13)	(0.21)	(0.06)	
	2.26*	0.52***	-0.87***		0.02
	(1.12)	(0.12)	(0.19)		(0.016)
Petroleum refining	7.17***	-0.08***	0.03	0.02*	
	(0.23)	(0.02)	(0.04)	(0.01)	
	7.34***	-0.12***	0.02		-0.015 (0.02)
	(0.23)	(0.02)	(0.03)		

	Constant (standard error)	LY (standard error)	LW (standard error)	LXO (standard error)	LMO (standard error)
Miscellaneous petroleum products	-5.36***	0.47*	-1.81***	0.09	
	(1.85)	(0.26)	(0.21)	(0.06)	
	-4.39**	0.23	-1.66		-0.10**
	(1.83)	(0.26)	(0.20)		(0.04)
Rubber products	0.53	0.79***	-0.69***	0.03	
	(0.59)	(0.08)	(0.06)	(0.02)	
	0.79	0.73***	-0.67***		0.02
	(0.61)	(0.08)	(0.07)		(0.01)
Plastic products	0.99	0.58***	-0.78***	0.06** (0.03)	
	(1.34)	(0.05)	(0.25)		
	-1.26*	0.59***	-1.16***		0.02
	(0.73)	(0.05)	(0.17)		(0.02)
Pottery and chinaware	2.98**	1.01***	0.048	0.0003 (0.03)	
	(1.22)	(0.12)	(0.21)		
	2.86**	1.02***	0.02		0.02
	(1.03)	(0.07)	(0.22)		(0.03)
Glass and its products	2.78**	0.64***	-0.40**	0.04	
	(1.12)	(0.13)	(0.14)	(0.03)	
	2.35**	0.64***	-0.43**		-0.007 (0.02)
	(1.14)	(0.14)	(0.15)		
Non-metallic mineral products	-2.77**	0.99***	-1.05***	0.027	
	(1.20)	(0.19)	(0.17)	(0.07)	
	-3.05**	0.99***	-1.07***		-0.02
	(1.23)	(0.18)	(0.17)		(0.04)
Iron and steel basic industries	5.71***	0.17	-0.50***	-0.01 (0.027)	
	(0.94)	(0.12)	(0.09)		
	5.63***	0.21	-0.49***		0.03
	(0.97)	(0.13)	(0.09)		(0.19)
Non-ferrous metal industry	4.34***	0.52***	-0.49	0.05	
	(1.12)	(0.12)	(0.23)	(0.06)	
	3.59***	0.49***	-0.63***		-0.002 (0.02)
	(0.72)	(0.12)	(0.16)		
Fabricated metal products	9.69***	-0.25* (0.14)	-0.15	0.02	
	(1.14)		(0.11)	(0.03)	
	8.89***	-0.18	-0.19		-0.014*
	(0.99)	(0.14)	(0.10)		(0.02)
Non-electrical machinery	5.88***	-0.21	-0.99***	-0.03	
	(1.99)	(0.22)	(0.21)	(0.08)	
	5.17***	-0.11	-0.88***		-1.18***
	(1.58)	(0.17)	(0.17)		(0.358)
Electrical machinery	0.28	0.41** (0.17)	-1.27***	-0.04	
	(1.04)		(0.19)	(0.05)	
	1.96	0.50***	-0.65***		-0.92***
	(0.74)	(0.11)	(0.18)		(0.18)
Transport equipment	1.11	0.44	-0.31**	-0.03	
	(1.92)	(0.31)	(0.17)	(0.04)	
	0.82	0.51	-0.26**		-0.005 (0.04)
	(2.08)	(0.33)	(0.13)		
Scientific, precision etc. plus photographic and optical goods	2.52	0.15	-1.02***	0.053 (0.035)	
	(2.34)	(0.36)	(0.06)		
	2.31	0.14	-1.03***		0.02
	(2.44)	(0.38)	(0.06)		(0.02)

Note: LY, LW, LXO and LMO are the natural logs of output, wage, export-output ratio and import-output ratio, respectively. The depended variable is the log of employment. ***, ** and * indicate statistical significance at the 1, 5 and 10 percent levels respectively.

Data source: Census of Manufacturing Industries in Bangladesh, 1978-2000.

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