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Draft

Trade Liberalisation, Growth Employment and Poverty in Bangladesh

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Trade Liberalisation, Growth and Poverty in Bangladesh

Selim Raihan

I. Introduction

The impact of trade liberalisation on growth and poverty is a much debated and controversial issue. In theory, trade liberalisation 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 export and import. In particular, the changing relative price induced by trade liberalisation causes a more efficient re-allocation of resources. Trade liberalisation is also considered to expand economic opportunities by enlarging the market size and enhancing the impact of knowledge spill over. These are the key theoretical components of the effects of trade liberalisation, which together induce growth of output and consequent poverty alleviation. However, empirical evidence to support these propositions are far from conclusive. Both cross-country and country specific studies have failed to suggest any conclusive evidence to support the claim that trade liberalisation promotes economic growth and aids poverty alleviation.

In the context of Bangladesh, there are disagreements among economists and policymakers on the issue. Though international financial institutions such as the World Bank and IMF have been consistently pursuing the claim that trade liberalisation in Bangladesh is conducive to achieving high economic growth and alleviating poverty, all economists in the country do not endorse it. The sceptics have raised questions about the design, pace, extent and method of trade liberalisation in the country.

Trade liberalisation has been one of the major policy reforms in Bangladesh. It has been implemented as part of the overall economic reform programme, namely the structural adjustment programme (SAP) which was initiated in 1987 and formed the component of the 'structural adjustment facility' (SAF) and 'enhanced structural adjustment facility' (ESAF) of the IMF and World Bank. This adjustment programme put forward a wide range of policy reforms including trade policy, industrial policy, monetary policy, fiscal policy and exchange rate policy, privatisation of state-owned enterprises and promotion of foreign direct investment.

After Independence in 1971, Bangladesh followed a strategy of a highly restricted trade regime. This was characterised by high tariffs and non-tariff barriers to trade and an overvalued exchange rate system which was supported by the import-substitution industrialisation strategy of the government. This policy was pursued with the aim 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 liberalisation was initiated. However, in the early 1990s, large-scale liberalisation 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 policymakers onthe extent of trade liberalisation.. The World Bank and IMF have claimed that the pace and extent of liberalisation in Bangladesh in the 1990s has not been 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 liberalisation is warranted (Mahmud, 1998). It has also been pointed out that the views of the stakeholders have not been taken into consideration in the framing and implementation of trade liberalisation policies (Rashid, 2001).

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

II. Trade Liberalisation, Growth and Poverty Nexus

There are competing theories on trade and economic performance and a large number of empirical studies, which have tried to test those theories under different contexts. However, both the theoretical and empirical studies relating to trade liberalisation, growth and poverty in the context of developing countries appear to be inconclusive.

2.1. Trade Liberalisation and Growth: Theoretical Links

There are four major schools of thought concerning the debate over the relationship between trade and economic growth. These are the static gains from trade theories, the structural pessimist theories, the new-orthodox theories on trade liberalisation, and the new-trade and endogenous growth theories.

The static *gains from trade* theories see trade as beneficial for the trading countries. It brings benefits to both capital and labour. Three variants of these theories are dominant in trade literature. These include the theory of comparative advantage, the Heckscher-Ohlin-Samuelson theorem and the theory of vent for surplus. The policy prescriptions of the aforementioned theories are to remove the impediments to international trade (tariff and non-tariff barriers), and follow outward-oriented commercial polices in pursuit of gains from specialising, according to comparative advantage, in labour-intensive (primary) products. However, it is important to note here that as far as the gains from trade theories are concerned, benefits from trade are rather static, not dynamic. This suggests there are only one-time payoffs as countries trade with each other and no further implications for higher economic growth or investment in the process of trade.

The *Structuralist* theories on trade developed during the 1950s and 1960s. There are many variants of these theories (Prebisch, 1950; Singer, 1950; Nurkse, 1962; Vernon, 1966). The basic argument is that the world is divided into two parts – the centre and periphery. The industrialised countries are at the centre while at the periphery are the developing countries. The structuralists see trade as a source of impoverishment in the periphery countries and as a

source of enrichment in the industrialised countries. Four critical propositions are at the heart of the structuralist theories: terms of trade, export instability, pervasive infant industries and maldistribution of gains from trade (Greenaway and Milner, 1993). They also believe that free trade inhibits the growth of domestic industries in developing countries (Chenery, 1961; Krueger, 1984).

The *new-orthodoxy* of trade liberalisation emerged during the late 1970s and early 1980s. Several factors contributed to this upsurge of reconsidering trade as an engine of growth:

- the emergence of the so-called neo-classical counter-revolution in the mid-1970s at both the academic and policy levels;
- the increasing dissatisfaction about inward-looking trade regimes among developing countries ;
- the conditionalities attached to aid and loans under the structural adjustment programmes of the IMF and World Bank; and
- the remarkable export and growth performance of East Asian economies (Love, 2001).

The new-orthodoxy of trade liberalisation has emphasised the importance of comparative advantage and free trade for the attainment of overall efficiency, at both the national and global levels (Bhagwati, 1978, 1987; Balassa, 1990). The policy recommendations that have emerged consist of shifting from direct controls to market instruments and uniformity of inter-industry incentives. The new-orthodoxy policy recommendations are claimed to be simple and universally applicable. It is also argued that the promotion of exports would generate several benefits for the liberalised economy. These include higher export productivity as a result of international competitive pressures, the benefits of operating in enlarged markets and exploiting different forms of externalities. On the other hand, the move to a free market economy is accompanied by reducing the 'activist' role of the state. For the proponents of the new orthodoxy of trade liberalisation, the question of wisdom of an outward-oriented (export promoting) strategy is considered to be settled (Bhagwati, 1987). The new-orthodoxy of trade liberalisation labels import substituting trade regimes in developing countries as inefficient and growth-inhibiting. Any form of import control, according to the new-orthodoxy, creates inefficient allocation of resources and encourages unproductive activities.

The literature on *new trade theories* has emphasised issues such as learning, scale, market structure, externalities and institutional influences on trade performance. It has been argued that these theories are more relevant to the developing countries because of their small and imperfect markets (Brander and Spencer, 1985; Krugman, 1986; Rodrik, 1988). It has also been highlighted that the arguments based on imperfect competition, external economies and factor market distortions are long standing and have substantial empirical support against arguments for free trade. It is further argued that market imperfections are the rule rather than the exception in international trade (Helpman and Krugman, 1989; Krugman 1990). The literature on new-trade theories also highlights the importance of some 'strategic' sectors in the economy. In contrast to the new-orthodoxy, the new trade theories suggest that because of the important roles of economies of scale, advantages of experience and innovation, it seems more likely that labour and capital will earn significantly higher returns in some industries than in others.[2] The endogenous growth theories (Lucas, 1988; Romer, 1990; Azariadis and

[2] The new-orthodoxy of trade liberalisation views market competition as elimination of any large deviation between what equivalent qualities of labour or capital can earn in different sectors.

Drazen, 1990; Becker, Murphy and Tamura 1990; Grossman and Helpman, 1991; Rebelo, 1991; Howitt, 1992; Mankiw, Romer and Weil, 1992; Romer, 1994) share many of the views of the new trade theories. With respect to their policy implications, both the new-trade theories and the endogenous growth theories give support to selective protection. Nonetheless, both point out that in addition to governmental policies towards facilitating technology and human development, technological progress necessitates openness to new ideas, imported capital and intermediate goods, foreign direct investment and international markets. It is further argued that institutional arrangements and policy framework are likely to exert intense pressures on the growth rate.

The upshot of the aforementioned analysis points to the fact that there is no unambiguous conclusion about the role of liberalisation in boosting economic growth. However, even if we assume that trade liberalisation is desirable for economic growth, it is important to identify the mechanism through which trade liberalisation promotes growth (Berg and Krueger, 2003). In sum, a number of mechanisms have been suggested:

- an increased efficiency of investment, particularly given the importance of imported capital goods in developing countries;
- access to larger market would enable the firms to expand at constant rather than diminishing returns for a longer period (Ventura, 1997);
- a higher real return to capital in unskilled labour-abundant countries that exploit their comparative advantage;
- the high rate of domestic saving and/or foreign capital inflow that may be attracted by the first two mechanisms;
- the reduction in rent seeking activities inspired by trade restrictions;
- the spur to innovation and entrepreneurial activities resulting from competition and access to larger market, and
- openness to ideas and innovations that may be generated by openness to trade.

2.2 Trade Liberalisation and Poverty: Theoretical Links

Several standard trade theories have suggested links through which a more open trade regime can 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, and therefore, the country that is abundant in labour will export labour intensive commodities and the country abundant in capital will export capital-intensive commodities. As the low-income countries are abundant in labour, implication of this theorem is that low-income countries would export labour-intensive commodities, which can have important positive implications for poverty reduction through employment generation in labour-intensive export-oriented sectors. Also the Stolper-Samuelson theorem argues that an increase in the relative price of labour-intensive goods would raise the real income for labour, though it would reduce the real returns to capital. Winters (2000), however, points out that the practical relevance of the Stolper-Samuelson theorem is negligible because it depends on many restrictive assumptions. He argues that the theorem is incapable of answering questions of 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 is probably best developed by Winters (2000) where he explains how trade liberalisation influences poverty through three

broad group of institutions: price, enterprise and government. The first impact of trade liberalisation would be on the price of goods and services consumed and produced by the poor. Falling prices benefit consumers and rising prices benefit producers. Where price changes exist, reduction in poverty is dependant not only on the size of these 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 appropriate direction in response to the price change. The response of enterprises to liberalisation is the second channel through which poverty is affected. Price changes due to trade liberalisation may alter the production pattern. Rising prices give incentives to increase production, whilst 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 the changes in government revenue and expenditure as a direct consequence of liberalisation. When trade taxation is an important source of revenue, reduced public resources as a result of trade policy reform is most likely to affect households dependent on the provisioning of the public services.

2.3 Empirical Evidence on Trade, Growth and Poverty Nexus

Theoretical advances in trade and growth literature has been complemented by a growing body of empirical literature that focuses on the question of whether or not more open economies tend to grow faster. A widely cited paper in favour of the proposition that trade liberalisation affects growth positively was conducted by Dollar (1992). This study constructed two separate indices to capture the degree of outward-orientation, an index of real exchange rate *distortion* and an index of real exchange rate *variability*. The study regressed these two indices on per capita GDP growth for the period 1976-85 for 95 developing countries. Based on the cross-country regression results, the author argued that statistically, there was a significant relationship between growth and outward orientation, suggesting that the outward-oriented developing economies grew more rapidly than inward-oriented economies. However, this study has been seriously criticised for important conceptual and methodological problems (Rodriguez and Rodrik, 2001). Another widely cited paper by Sachs and Warner (1995), uses a zero-one dummy variable to capture the ‘openness’ of any country. The dummy takes the value zero if the economy is closed according to any of the following criteria:

- it has average tariff rates higher than 40 percent,
- its non-tariff barriers covers on average, more than 40 percent of imports,
- it has a socialist economic system,
- it has a state monopoly of major exports, and finally,
- its black market premium exceeds 20 percent during either the decade of the 1970s or 1980s.

On the other hand, to qualify as ‘open’, a country must pass the five criteria. The authors run a cross-country regression model and their ‘openness’ dummy has a high robust coefficient in the growth regression, implying a high degree of impact of openness on economic growth. They argue that the direct effects of trade liberalisation are increased competition, specialisation and reduced rent-seeking which are important contributory factors for economic growth. Rodriguez and Rodrik (2001), however, point to the several methodological flaws in the Sachs and Warner (1995) paper. They argue that the strength of

the Sachs-Warner dummy is derived mainly from two explanatory variables, namely the 'black market premium' and the 'state monopoly of exports' and tariff and non-tariff barriers, the most direct measures of trade policy has very little contributions in the dummy's statistical power.

A highly influential study by Dollar and Kraay (2001) looks at the trade-growth relationship in two different ways. Firstly, by examining a group of 24 developing countries and labelling them as 'post-1980 globalisers', the authors argue that these countries perform better than their 'non-globaliser' counterparts in terms of achieving higher growth rates. Secondly, they use decade-over-decade changes in the volume of trade as an imperfect proxy for changes in trade policy. In a data set for 100 countries, they found that changes in growth rates were highly correlated with changes in trade volumes, controlling for lagged growth and addressing a variety of econometric difficulties. Dollar and Kraay's (2001) study can, however, be criticised on some critical methodological grounds. Firstly, their category of 'post-1980 globaliser' countries suffers from selection bias - the grouping of China, India and few other East Asian countries as 'globalised' countries is misleading. These states are non-conventional in terms of liberalising their external sector. In fact, in all these states, the phase of export promotion coincides with an intensive stage of protectionist strategies to support their domestic industry and diversify the export base. Secondly, the positive association between trade volume and growth cannot automatically be interpreted as a positive association between liberal trade policy and growth. The cross-country variation in trade volume is influenced by factors other than trade restrictions, such as geographical location and size of the domestic economy (Dollar and Krray, 2001; Rodriguez and Rodrik, 2001).

There is little influential cross-country literature which deals with the effect of trade liberalisation on poverty in particular. Even in this case, the evidence is somewhat mixed, it leans towards the conclusion that there is no systematic relationship between trade openness and income of the poorest. Dollar and Kraay (2001) provides the clearest evidence. Using a large panel consisting 137 countries from 1950 to 1999, they regressed the income share going to the lowest quintile on mean per capita income in their sample. They found that the income of the poorest quintile grew one-for-one with average incomes. They also found that, given growth, openness had an insignificant effect on the income of the poor. Dollar and Kraay also tried to determine the statistical relationship between trade volume and inequality measures such as the Gini coefficient. Based on the analysis, they ague that trade volume is not correlated with inequality measures, but positively correlated with economic growth. Rodrik (2000) offers a cogent critique of Dollar and Kraay's study. In general, his remarks relate issues with data, to the difficulty of distinguishing between correlation and causation in cross-country regression analysis, and to the challenge of obtaining results that are robust to specification.

Other studies using panel and cross section data provide similar conclusion: no significant links between trade openness and changes in the relative well-being of the poor. For example, Cashin et al. (2001) analysed a cross section of countries between 1975 and 1998. They estimated the relationship between economic policies and improvements in human development index, which is highly correlated with poverty given the rate of growth of GDP per capita. They did not find any significant or robust evidence that openness variable (the ratio of foreign trade to GDP or black market premium) was associated with pro-poor or anti-poor growth. Lundberg and Squire (1999), in contrast in a panel of countries, find that the Gini coefficient is positively and significantly related to Sachs-Warner openness dummy. It can therefore be said that cross-country econometric models do not provide any conclusive

evidence in favour of the proposition that the countries with higher levels of trade liberalisation are more successful in ameliorating poverty.

Cross-country studies cannot take into account the diverse nature of the economies in terms of their socio-economic characteristics, institutions and policies. Hence, such studies are unable to identify country-specific parameters in the trade liberalisation, growth and poverty nexus. Therefore, country specific time series analysis is perhaps the most appealing tool in studying the relationship between growth and liberalisation. Consequently, a number of studies have focussed on individual country experiences. Edwards et al. (1998) attempted to show how trade liberalisation contributed to growth and poverty reduction in Chile which liberalised its trade regime unilaterally over the 1974-2000 period. They found that Chile suffered from adjustment costs in terms of loss in employment in protected sectors. However, it grew by almost 7 percent per annum and was able to cut poverty by more than half between 1987 and 1998.

Bhagwati and Srinivasan (2001) provided another example of how economic liberalisation, including trade liberalisation, spurred economic growth and contributed to poverty reduction in India. Compared with 3 percent per annum, the so-called Hindu growth rate over the 1950-80 period, India's GDP expanded at almost double the pace between 1980and 2000, fuelled by economic deregulation and trade liberalisation. Trade GDP ratio grew from only 10 percent in 1980 to 25 percent in 2000. Poverty declined substantially from 45 percent in 1980 to 26 percent in 2000.

Other than studies that establish a direct link between trade reform and changes in the level of poverty, there are those which infer the effect of openness indirectly through the likely implications on employment and wages of the poor. For example, Winters (2000) presents two contrasting case studies to illustrate the effects of trade liberalisation on the poor. First,, he shows that trade liberalisation in the cotton market in Zimbabwe had been beneficial to the poor farmers as it provided increased market opportunities, higher prices and the availability of extension and input services. As a result, agricultural employment rose considerably (by 40 percent from 1988 to 1997), with an increased production of both traditional and non-traditional agricultural products. Second, Winters provides a completely opposite picture where liberalisation of the maize market in Zambia resulted in the disappearance of markets for poor farmers.

Winters (2000) also studied the effect of trade liberalisation on labour markets in India. He concluded that in the formal manufacturing sector, there is acceleration in the rate of growth of employment and deceleration in the rate of growth of real wages (though not a decline). However, in the informal manufacturing sector, there is a significant decline in employment. Winters argues that because of the fact that formal wages are well above the poverty line, the increase in formal sector employment is likely to have a greater effect on reducing poverty in India.

III. Overview of Trade Liberalisation in Bangladesh

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

- safeguard the country's infant industries,
- reduce the balance of payments (BOP) deficit,

- use the scarce foreign exchange efficiently,
- ward off international capital market and exchange rate shocks,
- lessen fiscal imbalance, and
- achieve higher economic growth and self-sufficiency of the nation.

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

3.1. A Review of Import Policies and Regimes in Bangladesh

3.1.1. Evolution of Import Policies and Quantitative Restrictions

Trade policy during 1972-80 consisted of significant import controls. The major administrative instruments employed to implement the import policy during this period were the foreign exchange allocation system and the Import Policy Orders (IPOs). Under the IPOs, it was specified whether items could be imported, prohibited or required special authorisation. 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 and protect vulnerable local industries from import competition. However, the system was criticised for not being sufficiently flexible to ensure its smooth functioning under changing circumstances. Moreover, it was characterised by complexity, deficiency in administration, cumbersome foreign exchange budgeting procedures, poor inter-agency coordination, rigid allocation of licences and time-consuming procedures (Bhuyan and Rashid, 1993).

During the 1980s, a moderate import liberalisation 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 (L/C). Since 1986, there were significant changes in the import procedures and IPOs with respect to their contents and structure. Whereas, prior to 1986, the IPOs contained a lengthy *Positive List* of importables, in 1986 it was replaced by two lists, namely the *Negative List* (for banned items) and the *Restricted List* (for items importable on fulfilment of certain prescribed conditions). Import of any items outside the lists were allowed. These changes may be considered as significant moves towards import liberalisation, since no restrictions were imposed on the import of items that did not appear in the IPOs. With the aim to increase the elements of stability and certainty of trade policy, IPOs with relatively longer periods replaced the previous practise of framing annual import policies. Since 1990, the Negative and Restricted Lists of importables were consolidated into one list, namely the 'Consolidated List' (Ahmed, 2001).

Table 1 suggests that at the HS-4 digit level, the range of products subject to import ban or restriction has been curtailed substantially from as high as 752 in 1985-86 to only 63 in 2003-06. Import restrictions have been imposed on two grounds: either for trade-related reasons (i.e., to provide protection to domestic industries) or for non-trade reasons (eg. to protect environment, public health and safety, and security). Therefore, only the trade-related restrictions should be of interest to policy reforms and liberalisation. Table 1 shows that over the past two decades, the number of trade-related banned items has declined from 275 to 5. In

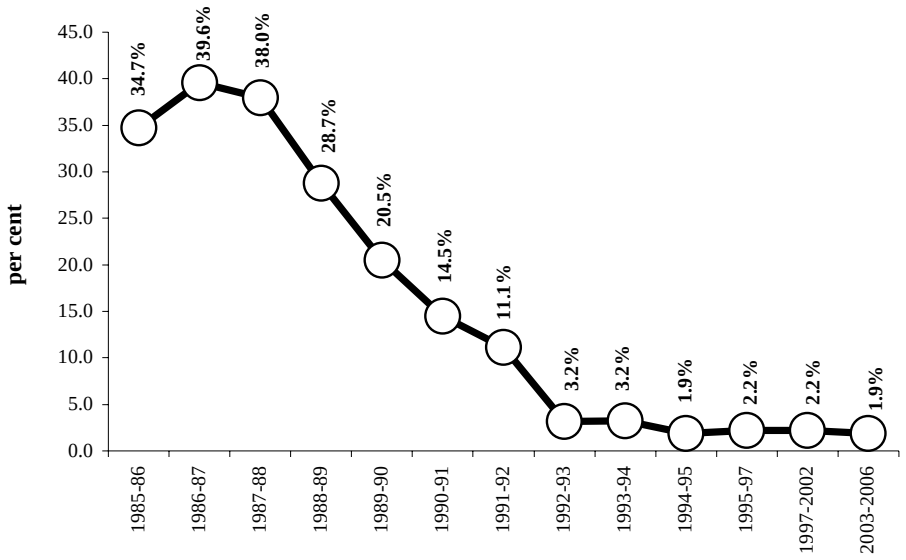
a similar fashion, other restricted and mixed (a combination of ban and restriction) import categories fell quite rapidly. In 1987-88 about 40 percent of all import lines at the HS-4 digit level was subject to trade-related quantitative restrictions (QRs), but these restrictions had drastically been reduced to less than 2 percent (Figure 1).

Table 1: Removal of QRs at the 4-digit HS Classification Level

Year	Total	Restricted for trade reasons			Restricted for non-trade reasons
		Banned	Restricted	Mixed	
1985-86	478	275	138	16	49
1986-87	550	252	151	86	61
1987-88	529	257	133	79	60
1988-89	433	165	89	101	78
1989-90	315	135	66	52	62
1990-91	239	93	47	39	60
1991-92	193	78	34	25	56
1992-93	93	13	12	14	54
1993-94	109	7	19	14	69
1994-95	114	5	6	12	92
1995-97	120	5	6	16	93
1997-2002	122	5	6	16	95
2003-2006	63	5	8	10	40

Source: Compiled from different sources (Yilmaz and Varma, 1995; Bayes et al., 1995; Taslim, 2004) Figures for 2003-06 are derived from the Import Policy Orders 2003-06.

Figure 1: Trade-Related Restrictions as Proportion of Total HS 4-digit Import Lines



The latest import policy, the Import Policy Order 2006-09, reiterates the government's commitment to continued liberalisation of the import regime in Bangladesh. These commitments are manifested in the stated objectives which are to:

- make the Import Policy Order further liberalised to keep pace with the gradual development of globalisation and free market economy under the WTO;

- provide facility for import of technology for the widespread expansion of modern technology;
- provide facility for easy import for the export support industries for the purpose of placing export industries on a sound base, and with this end in view, co-ordinate the import policy of the country with the industrial policy, export policy and other development programmes;
- take easier the availability of industrial raw materials for increasing competition and efficiency by gradual removal of restrictions on import of finished goods;
- ensure the supply of quality and hygienic goods; and
- procure the import of goods on an emergency basis, in times of crisis, with the aim of ensuring the supply of basic staple goods while fulfilling the interests of the people of the country.

3.1.2. Reforms in the Tariff Structure

From the late 1980s, the tariff regime has become increasingly liberalised. Between 1991-92 and 2004-05 the un-weighted average rate of tariff fell from 70 percent to 13.5 percent (Table 2). Much of this reduced protection was achieved through the reduction in the maximum rate. Table 2 suggests that in 1991-92 the maximum tariff rate was 350 percent, which came down to only 25 percent in 2004-05. 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 has more than doubled between 1992-93 and 1999-2000 (from 3.4 percent to 8.4 percent). 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 the fall in import-weighted tariff rates. Table 3 shows that the import-weighted average tariff rate declined from 42.1 percent in 1990-91 to 13.8 percent in 1999-2000, and further to 11.48 percent 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

Source: WTO (2000) and Bangladesh Economic Review (2004)

One important aspect of the tariff structure in Bangladesh relates to the use of import taxes which 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 (IDSC), supplementary duties (SD), 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 (VAT) 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 IDSC, are applied across-the-board to all or practically all imports, and can be considered as general or normally applied protective tax which affect all or nearly all tariff lines. Others are selective protective taxes in that they are only applied to selected products, for example the 'supplementary' duties. The para-tariffs employed during the 1990s and early 2000s in Bangladesh are summarised in Table 4. It appears that despite the lowering of customs duty, the presence of para-tariffs did not significantly lower the total protection rate.

Table 4: Average Customs Duties and Para-tariffs in Bangladesh

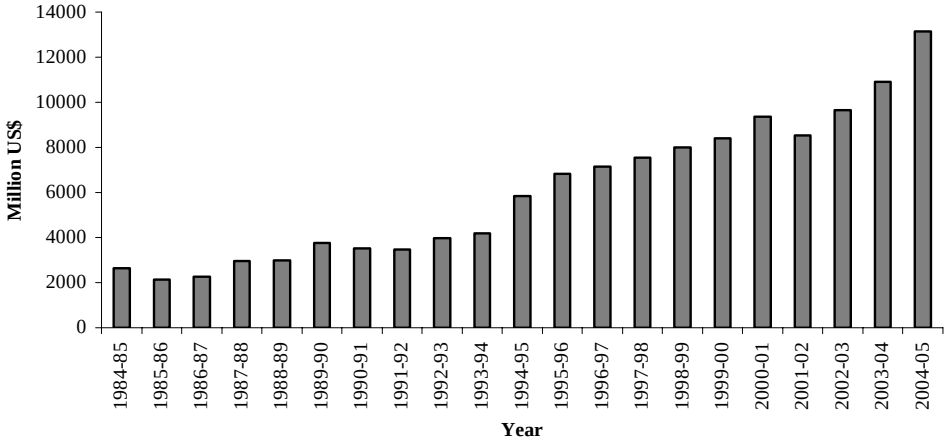
Year	All tariff lines			Industrial tariff lines			Agriculture tariff lines		
	Customs Duties	Para-tariffs	Total Protection Rate	Customs Duties	Para-tariffs	Total Protection Rate	Customs Duties	Para-tariffs	Total Protection Rate
1991-92	70.64	2.98	73.62	69.72	3.44	73.16	76.64	-0.01	76.63
1992-93	57.93	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)

3.1.3. Imports into Bangladesh

The liberal import policies led to surges in imports into Bangladesh as shown in Figure 2. In 1984-85, the total imports stood at US$ 2,640 million, which rose to US$ 5,834 million in 1995-96, and increased further rapidly to US$ 13,147 million in 2004-05.

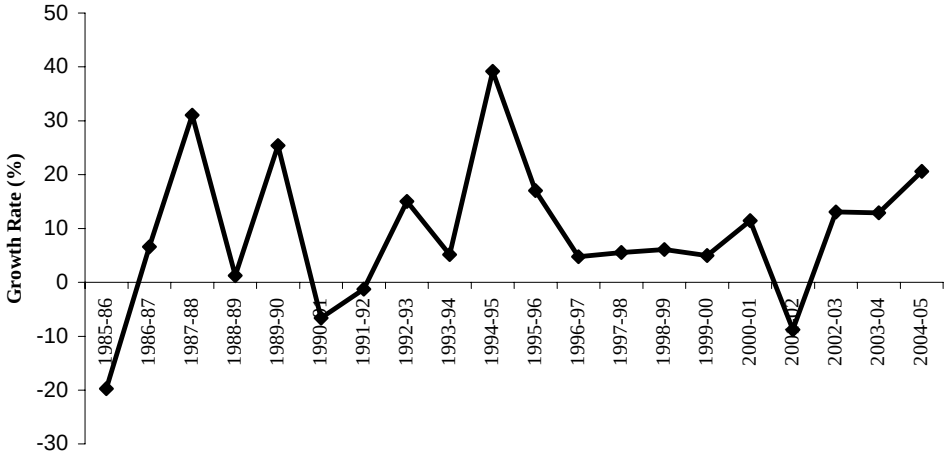
Figure 2: Import Trends in Bangladesh (million US$)



Source: Bangladesh Economic Review (various years)

Figure 3 plots the annual growth rates in imports between 1985-86 and 2004-05. During the 1990s, imports touched an annual average rate of 13 percent with 1994-95 recording a maximum of 39 percent. Since the early 1990s, imports fell absolutely only once in 2001-02, in the aftermath of 9/11 that slowed down global trade and investment flows. Annual average growth of imports during the past five years has been more than 15 percent.

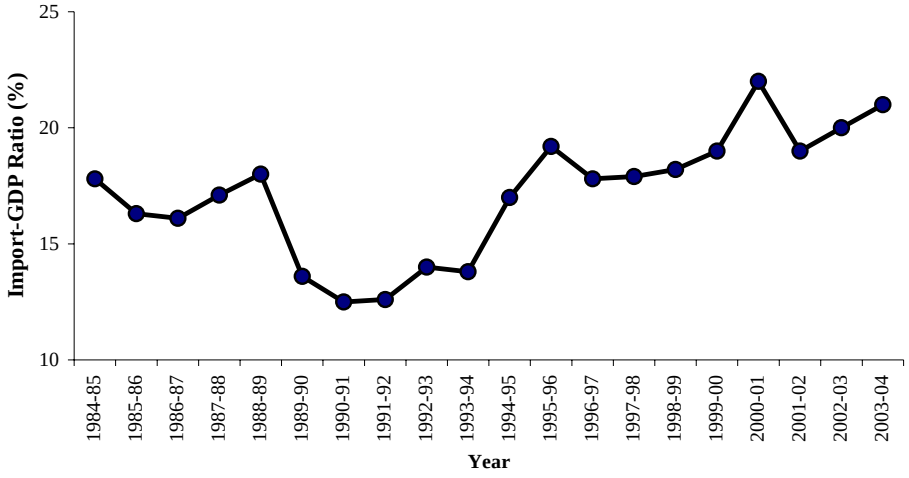
Figure 3: Import Growth



Source: Bangladesh Economic Review (various years)

The surge in imports also resulted in the rising import penetration ratio, defined as the share of total imports in GDP. Figure 4 shows the import penetration ratio was only about 12 percent during the early 1990s, which increased to more than 20 percent in more recent periods.

Figure 4: Trends in the Import-GDP Ratio in Bangladesh



Source: World Bank (2006)

3.2. A Review of the Export Regime and Export Policy

3.2.1. Evolution of Export Policies

Until the mid-1980s, Bangladesh followed a strategy of import-substitution. The regime was also characterised by a high degree of anti-export bias. However, since 1985 export policy reforms have been implemented, which have included trade, exchange rate, and monetary and fiscal policy incentives, aimed at increasing effective assistance to exports. A few sectors, especially the ready-made garments (RMG), 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 were also aimed at strengthening the institutional framework for export promotion (Rahman, 2001). Major export promotion policies in Bangladesh have included the following:

- *Export Performance Licensing (XPL)/Export Performance Benefit (XPB) Scheme*: Until 1986, under the XPL scheme, exporters of non-traditional products had been allocated import-licences for specific products over and above their normal allotment. In 1986, the XPL scheme was replaced by the XPB scheme which gave exporters an added benefit by allowing them to cash it in the secondary exchange market. However, the XPB scheme became redundant in 1992 as the dual exchange rate system was abolished that year.
- *Special Bonded Warehouse Scheme*: This system was first introduced in 1978 for the RMG industry. This scheme exempts exporters from import tax.
- *Duty Drawback System*: This system, introduced in 1983, targeted the RMG sector. It has enabled exporters to clear imported inputs without actually paying any duty or sales tax.
- *Back-to-Back L/C System*: Introduced in 1987, it allowed exporters to import raw materials on a deferred payment basis, payments being effected out of the proceeds of exports.

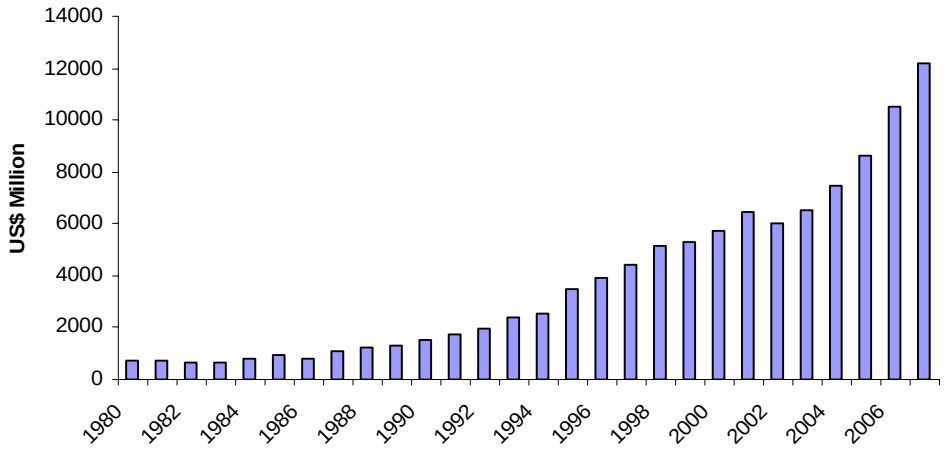
- *Cash Compensatory Scheme*: Introduced in 1986, this was aimed at promoting the backward linkages in export sectors. It has allowed exporters a cash assistance of certain percentage of their f.o.b. export value.
- *Export Credit Guarantee Scheme*: Introduced in 1978 this has provided exporters credits at concessionary rates.
- *Export Promotion Fund*: This scheme has targeted exporters of new and non-traditional items by providing them venture capital on easy terms and lower interest rates.
- *Fiscal incentives*: Various fiscal incentives, such as rebates on income taxes and concessionary duties on imported raw materials and capital machinery have been given to exporters.
- *Institutional development for export promotion*: Established in 1977, the Export Promotion Bureau (EPB) has been a leading institution with the aim of promoting exports and designing plans and policies conducive to the private sector.

According to the government, the aforementioned export promotion measures have been put in place with the aim of diversifying the export basket, improving the quality of exports, stimulating higher value added exports and developing industries for backward linkages in Bangladesh. However, there are debates whether these steps are consistent with other measures of trade liberalisation undertaken in the economy. For example, Panagariya (1999) argues that export subsidies are not efficient and create distortions in the economy.

3.2.2. Export ***Trends in Bangladesh***

Extensive export-promotion measures and favourable market access in the EU and US has enabled Bangladesh's exports to rise remarkably in the last 20 years. Figure 5 shows that in 1984-85 total exports stood at US$ 934 million, which increased to US$ 3,472 million in 1994-95, and further to US$ 8,654 million in 2004-05. The latest figure for 2006-07 reveals export earnings for 2006-07 to have exceeded US$ 12,000.

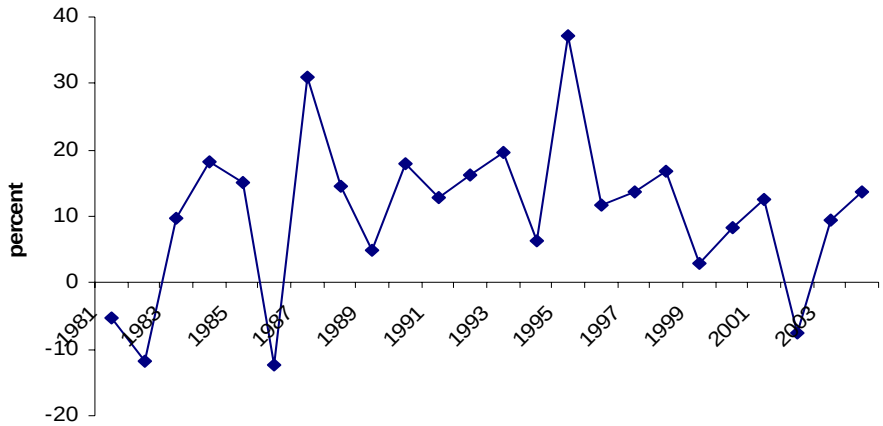
Figure 5: Trends in Exports (million US$)



Source: EPB (various years)

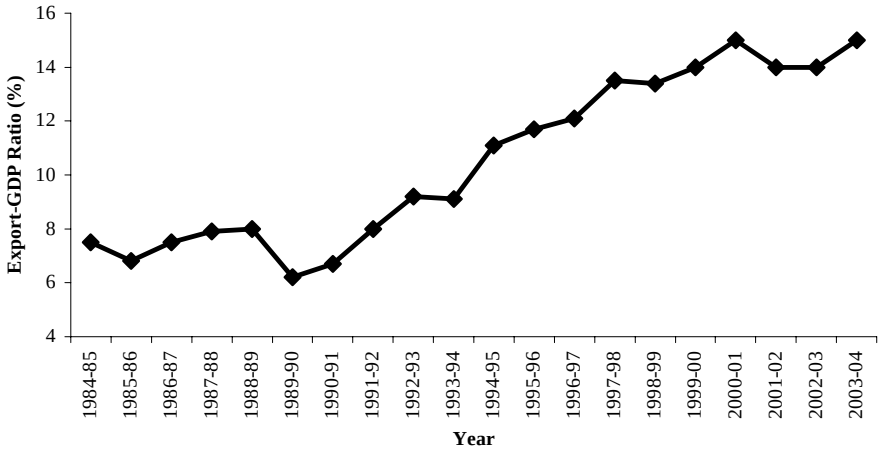
Figure 6 provides the annual export growth rates since 1981. During the 1990s, exports grew at 15 percent per annum with 1994-95 recording the highest growth rate of 37 percent. If 2001-02 can be excluded (for being an atypical year, in which year exports fell absolutely mainly due to a sudden slump in global trade flows as a direct consequence of 9/11) , the annual average growth rate of exports in the 2000s is estimated to be 14 percent.

Figure 6: Export Growth



Source: EPB (various years)

Figure 7: Trend in the Export-GDP Ratio in Bangladesh



Source: World Bank (2006)

With the considerable rise in export earnings at a rapid pace, the export-orientation ratio, i.e. the ratio of exports to GDP, also rose significantly from around 7 percent in the mid-1980s to more than 15 percent in 2003-04. Therefore, if one juxtaposes the trade policy regimes and export performance, liberalisation programmes may be considered successful in energising exports. However, the export growth is overwhelmingly dominated by the dynamism in the ready-made garment sector alone. The growth of Bangladesh's RMG exports is largely attributable to international trade regime in textiles and clothing, which, until recently, was governed by the Multi Fibre Arrangement (MFA) quotas. The quota restricted competition in the global market by providing reserved markets for a number of developing countries

including Bangladesh, where textiles and clothing items have not been the traditional export. Duty-free access to Bangladesh's RMG products in the EU has also greatly supported the growth of the sector. Because of these factors, many analysts do not consider the policy of trade liberalisation as a reason for export success. This view is also backed by the fact that apart from RMG, export response of all other major commodities such as raw jute, jute goods, tea, leather and leather products, and frozen food and shrimps has been very weak. Therefore, while on the one hand, there are other more dominant reasons than liberalisation for Bangladesh's export success in RMG, export performance of other sectors despite the considerable policy reforms has been disappointing on the other. In this context, it is argued that mere liberalisation of the trade regime does not necessarily guarantee export success.

3.3 Liberalising the Exchange Rate Regime

Reform of the exchange rate regime is central to any trade liberalisation policy. A country's exchange rate is usually overvalued under an import-substituting industrialisation policy. This has a debilitating effect on exports and necessitates the imposition of QRs and high tariffs to maintain the overvalued rate and balance of payments equilibrium. Until the early 1980s, Bangladesh maintained an 'overvalued' and fixed exchange rate system in order to facilitate the inward-looking development strategy. The taka was pegged to the pound sterling and the exchange rates with other currencies were determined by the rates between the pound and respective currencies in London. In 1980, the fixed exchange rate regime was replaced by a 'managed' system of floating exchange rates, when the taka was pegged to a basket of currencies of the country's major trade partners.[3] The intervention currency was changed from the pound to the US dollar and the exchange rate with other currencies was to be determined on the basis of the US dollar closing rates in New York vis-à-vis different currencies.

Bangladesh had also maintained a dual exchange rate system by administering the Wage Earners' Scheme (WES) in order to attract remittances of Bangladeshis working abroad. The WES, which came into operation in 1978, offered the overseas Bangladeshis a rate (in terms of the taka value of the US dollar) higher than the official exchange rate for sending their remittances through the official channel. Later in 1986, under the Export Performance Benefit (XPB) scheme, exporters of non-traditional items were given some opportunities to derive benefits from the dual exchange rate system. Exporters covered by XPB received certificates that indicated specific entitlement rates applicable to the commodities in question, i.e., the proportion of export earnings in foreign currency that could be converted into local currency by using the WES exchange rate.[4] With the initiation of the third phase of trade liberalisation and policy reforms, the WES and XPB came to an end with the unification of the two exchange rates in 1992.

In 1994, accepting the IMF's Article VIII obligations, Bangladesh committed to allow convertibility of the taka in the current account, thus indicating a comprehensive liberalisation of the foreign exchange control regime. The step was aimed at linking the

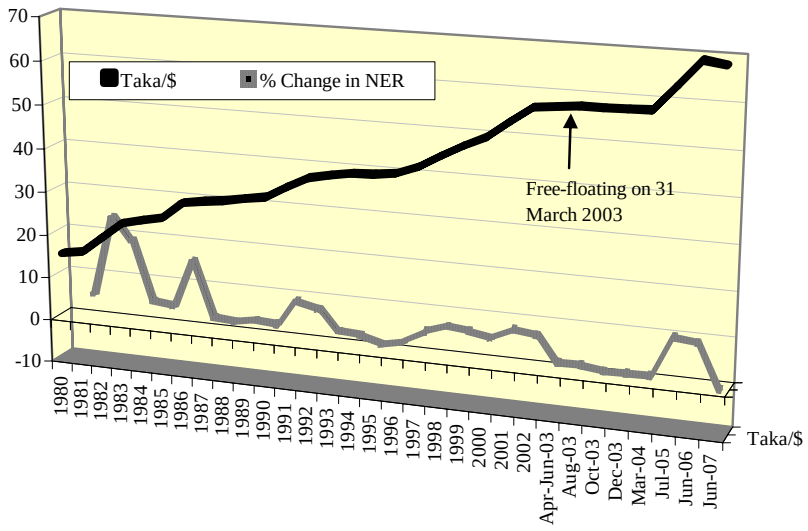
[3] The partner's weights for the pegged system were based on the bilateral foreign exchange transactions with Bangladesh.

[4] The entitlement rate varied according to the domestic content (value added) of export items. Thus the total premium from a non-traditional export was determined by the entitlement rate, the difference between the official and WES rate and the value of exports (Stern et al., 1988). The system of XPB was the single most important export incentive available to exporters during the late 1980s.

economy with international financial market and thereby facilitating international trade. Other important measures include, inter alia, withdrawal of prior approval from the central bank for sale of foreign currency by commercial banks, allowing exporters to retain a portion of their earned foreign exchange, withdrawal of restrictions on the borrowing capacity of foreign firms from the domestic banks and on non-resident's portfolio investment, establishment of dealer's control over fixing the selling and buying rates which were previously fixed by the Bangladesh Bank (Bayes et al., 1995, and Hossain, et al., 1997).

Since the early 1980s, regular adjustment of the nominal value of the taka (i.e., devaluation of the nominal exchange rate) in small amounts has been undertaken until its free floating rate in 2003. Figure 8 shows that the nominal exchange rate in terms of taka per US dollar has increased steadily from 15 in 1980 to 57.4 in 2002. On the other hand, the rate of nominal devaluations for most years has been less than 10 percent. This policy of slow but frequent adjustment of the nominal exchange rate is believed to have provided additional incentive to exporters and exerted a downward pressure on the protection enjoyed by the domestic import competing industries. On March 31, 2003, Bangladesh embarked on free floating exchange rate with a nominal exchange rate of Tk 57.9 per US dollar and after a year, the corresponding exchange rate stood at Tk 58.7 – i.e. a depreciation of 1.38 percent only. This suggests the policy of frequent but small dosages of devaluation prior to switching to market system managed to keep the nominal exchange rate close to its equilibrium value. The taka depreciated sharply during 2005 and 2006, though by the end of 2006 the nominal exchange rate achieved some stability.

Figure 8: Nominal Exchange Rate (NER) and Changes in the Rate



Source: Bangladesh Bank (various issues)
Note: The rates of nominal devaluations are calculated using Bangladesh Bank data on the "end period official rate". NER implies nominal exchange rate vis-à-vis US dollar.

A review of these measures suggests that the policy environment in Bangladesh has undergone significant changes over the last two decades. Trade and other macro and sectoral

policies in Bangladesh have been evolved with the aim of developing a more open, market-oriented and private-sector-oriented economy.

3.4. Changes in Policy-Induced Anti-Export Bias[5]

From an applied policy analysis perspective, anti-export bias can be defined as a ratio of the real effective exchange rate for exports to the real effective exchange rate for imports.[6] The basic idea is that the higher the effective exchange rate for imports relative to that for exports, the bigger the incentive for investing in domestic import-competing sectors. A policy regime that ensures the ratio to be one is considered neutral. This is a situation when no additional policy-induced incentives are provided to import-substitution sectors. If the ratio is greater than one, the regime is considered to be harbouring an 'ultra pro-export bias', and conversely, when it is smaller than one, the policy setting is 'anti-export bias'.

Being a measure of relative incentives, the ratio of effective exchange rates should consider all available instruments aiming at influencing price. Clearly, anti-export bias in policy will arise when tariffs are imposed or increased on imported goods as they allow the domestic producers of import-competing sectors to raise product prices in the protected market above world prices, given that such a scope does not exist for exporters. Quantitative restrictions for trade reasons will also have similar effects. When imposed only on imports but not on domestic production, trade-neutral tariffs and taxes also increase incentives for import competing sectors. Apart from tariffs and taxes, subsidies and other financial incentives also influence incentive structures. For example, other things remaining constant, providing subsidies to exporters will tend to raise the ratio of the real effective exchange rate for exports to imports. An evaluation of the policy bias will therefore require identification of all instruments that tend to alter price from an ideal competitive scenario. Since it is very difficult to influence export prices, while quite regular to observe interventions affecting price of imported goods in the domestic market, the import policy regime is generally the most important determinant of policy-induced bias. Developing countries embarking on liberalisation programmes from a closed economy can reduce anti-export bias considerably by reducing their import tariff.[7]

The liberalisation measures undertaken by Bangladesh are likely to have reduced trade policy bias. Liberalisation and rationalisation of tariff structures have caused the fall in both unweighted and weighted customs duty (CD) rates. It has led to a considerable fall in protection for domestic industries. This must have had some debilitating effect on the price of importables relative to those of exportables, as a result of which the degree of anti-export bias is likely to have fallen. Along with liberalisation of the import regime, Bangladesh has also provided various incentives to exporters. In this regard, certain incentives (e.g., subsidies) that are given to exporters only will tend to improve their price incentives relative to others (i.e., import-competing producers) causing anti-export bias to fall further.[8]Therefore, in

[5] This section has benefited from Razzaque and Raihan (2007).
[6] This follows from Bhagwati (1978). Bhagwati (1988) forwarded a more formal definition of anti export bias: a situation where the effective rate of protection for importable exceeds the effective rate of subsidy for exportables.
[7] This is particularly true when quantitative restrictions are not widespread. If high tariffs are actually redundant because of the existence of smuggled goods or informal imports, tariff reduction may also not be ineffective in reducing the actual anti-export bias. In other words, the existence of such… (Incomplete)
[8] Subsidies comprise both cash subsidy and subsidies given on the on special interest rates for exporters.

evaluating the anti-export bias of the trade regime, both the discriminatory import protection and export support will have to be taken into account.

Using the concept of previously introduced incentive-relative definition based on relative average effective exchange rate for exports (EERX) (i.e., nominal exchange rate adjusted for such export incentives as subsidies) and for imports (EERM) (i.e., nominal exchange rate adjusted with protective trade interventions), a 'bias against export' or anti-export bias will occur when EERX<EERM. The neutrality of trade regime will be reflected in the two effective exchange rates being approximately equal (EERX $\cong$ EERM). Finally, if EERX is exceeding EERM, we will have ultra pro-export promotion strategy.

Table 5 gives the estimate of the effective exchange rate for exports (EERX). In calculating EERX, the nominal exchange rate is adjusted for cash subsidies and interest rate subsidies on export credit. Between 1991-92 to 2002-03, cash subsidies increased from a mere Tk 2.5 crore to Tk 702 crore, while the interest rate subsidies increased from Tk 73 crore to about Tk 285 crore (Table 5). As percentage of exports, these two subsidy elements together stood at 1 percent in 1991-92, which had steadily increased to about 3 percent. Given the nominal exchange rate (Tk per US $), the effective exchange rate for exports is estimated to have increased by 55 percent during the same period as against a 52 percent rise in the nominal exchange rate.

The effective exchange rate for imports is calculated either as unweighted (Table 6) or as import-weighted (Table 7). For this, all the protective effects in trade taxes are considered. Most of customs duty (CD), infrastructure development surcharge (DS), regulatory duty (RD), and licence fee (LF) are in effect protective instruments. While supplementary duties and VAT are supposed to be trade neutral, in practice they have often been used to discriminate against imports. As a result, only the protective components of these trade taxes are captured in Tables 6 and 7.[8] Table 6 shows that unweighted protective effects of all trade taxes have fallen from 60.4 percent in 1991-92 to about 22 percent in 2002-03. However, given the depreciation in nominal exchange rate, EERM registers a rise of 15 per cent during the same period. In the case of import weighted figures, the reduction in all protective taxes appear to be much less dramatic: only a fall of 6 percentage points from 23.2 to 16.8 per cent. On the whole, EERM rose quite substantially from Tk 47 in 1991-92 to Tk 67.6 in 2002-03 – i.e., a rise of 44 percent.

In the left panel in Figure 9, all effective exchange rates are plotted. It is seen that EERX lying below both unweighted (EERUN) and import weighted (EERW) effective exchange rates for import substitutes. Until the mid-1990s, the EERUN fell but rose strongly as the rate of depreciation in the nominal exchange rate outweighed the rate of decline in the protective effects of trade tax. The middle panel in Figure 9 depicts the ratio of EERMUN/EERX, which fell from 1.58 in 1991-92 to 1.18 in 2002-03; however, the ratio has more or less remained unchanged since the mid-1990s. The far right panel in Figure 9 plots the EERX relative to import weighted effective exchange rate for import substitutes, and as evident, the ratio fell from 1.22 to 1.13 – i.e., about 7 percent fall over the sample period. Although the magnitude of the decline is small, the trend is quite steady with some occasional breaks. It is observed that between 1991-92 and 1993-94 the anti-export bias actually increased because of the rise in import weighted CD+DS+RD+LF and protective effects of supplementary

[8] The protective components of these taxes have been estimated using the information obtained from the Tariff Commission of Bangladesh.

duties and then started falling with the reduction in the former. The ratio has never experienced a rise over the preceding year until the last year in the sample when largely because of a somewhat big rise in CD+DS+RD+LF it increased from 1.12 to 1.13.

Table 5: Effective Exchange Rate for Exports

Year	Exports (in crore Tk)	Cash Subsidy (in crore Tk)	Export Credit (in crore Tk)	Interest rates (percent) (Export)	Interest rate for General (percent)	Difference: general and export int. rate (% pts)	Interest subsidy (crore Tk)	Cash+int Subsidy (crore Tk)	cash+int subsidy as proportion of export	Nominal Exchange Rate (TK/$)	EERX
1991-92	7522	2.5	1180	9.6	15.8	6.2	73.16	75.66	0.01006	38.15	38.53
1992-93	8800	2.2	1580	9.0	17.2	8.2	129.56	131.76	0.01497	39.14	39.73
1993-94	9800	7.8	1800	9.0	15.1	6.1	109.80	117.60	0.01200	40.00	40.48
1994-95	13131	28.9	1960	9.0	13.1	4.1	80.36	109.26	0.00832	40.20	40.53
1995-96	13846	44.9	1930	9.0	13.9	4.9	94.57	139.47	0.01007	40.84	41.25
1996-97	16571	80	2260	9.0	14.3	5.3	119.78	199.78	0.01206	42.70	43.21
1997-98	20397	200	2756	9.0	13.5	4.5	124.02	324.02	0.01589	45.46	46.18
1998-99	20851	320	3242	9.0	13.5	4.5	145.89	465.89	0.02234	48.06	49.13
1999-00	24923	500	3865	9.0	13.5	4.5	173.93	673.93	0.02704	50.31	51.67
2000-01	32419	700	4096	8.0	13.5	5.5	225.28	925.28	0.02854	53.96	55.50
2001-02	30934	600	3983	7.0	13.5	6.5	258.90	858.90	0.02777	57.43	59.02
2002-03	33242	702	4381	7.0	13.5	6.5	284.77	986.77	0.02968	57.90	59.62

Table 6: Effective Exchange Rate for Import Substitutes (Unweighted)

Year	Imports (crore Tk) (excl EPZ and for exports)	CD+DS+RD+LF	Supplementary duty (SD)	VAT	Total Protective Rate	Nominal Exchange Rate	EERMUN	EERX	EERMUN/EERX
1991-92	10081.24	59.45	0.25	0.74	60.44	38.15	61.21	38.53	1.59
1992-93	10723.13	49.33	1.16	0.62	51.11	39.14	59.14	39.73	1.49
1993-94	11267.53	37.98	1.37	0.58	39.93	40.00	55.97	40.48	1.38
1994-95	16123.62	27.89	0.36	0.51	28.76	40.20	51.76	40.53	1.28
1995-96	19925.88	24.44	0.55	0.51	25.50	40.84	51.25	41.25	1.24
1996-97	20484.83	23.86	0.61	0.51	24.98	42.70	53.37	43.21	1.23
1997-98	23275.25	25.35	1.06	0.51	26.92	45.46	57.70	46.18	1.25
1998-99	26070.05	24.78	1.58	0.51	26.87	48.06	60.97	49.13	1.24
1999-00	26263.36	21.11	2.27	0.51	23.89	50.31	62.33	51.67	1.21
2000-01	29586.40	21.38	3.77	0.56	25.71	53.96	67.83	55.50	1.22
2001-02	38633.52	22.03	3.75	0.65	26.43	57.43	72.61	59.02	1.23
2002-03	38691.33	19.52	1.78	0.58	21.88	57.90	70.57	59.62	1.18

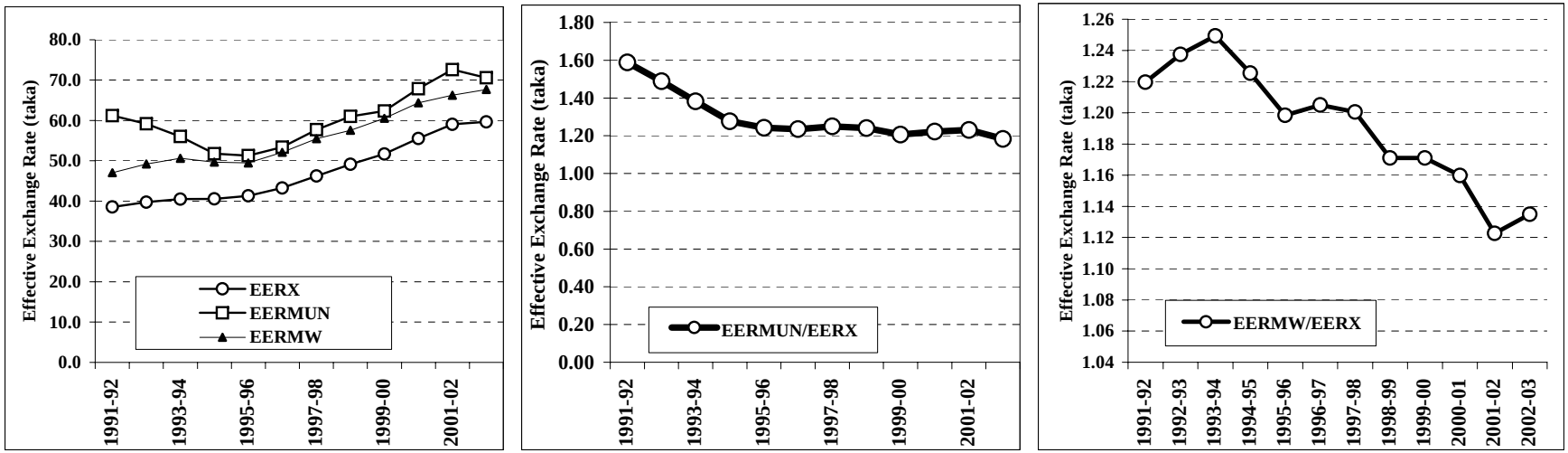
Notes: Imports does not include imports in the EPZ.

Table 7: Effective Exchange Rate for Import Substitutes (Weighted)

Year	Imports (in crore Tk) (excl EPZ and for exports)	CD+DS+ RD+LF	Supplementary duty (SD)	VAT	Total Protective Rate (%)	Nominal Exchange Rate	EERM	EERX	EERM/EERX
1991-92	10081.24	25.34	-2.99	0.84	23.19	38.15	47.00	38.53	1.22
1992-93	10723.13	25.00	0.19	0.41	25.60	39.14	49.16	39.73	1.24
1993-94	11267.53	25.57	0.38	0.49	26.44	40.00	50.58	40.48	1.25
1994-95	16123.62	22.25	1.00	0.31	23.56	40.20	49.67	40.53	1.23
1995-96	19925.88	18.24	2.46	0.35	21.05	40.84	49.44	41.25	1.20
1996-97	20484.83	19.32	2.07	0.56	21.95	42.70	52.07	43.21	1.20
1997-98	23275.25	19.34	2.21	0.41	21.96	45.46	55.44	46.18	1.20
1998-99	26070.05	17.14	2.27	0.31	19.72	48.06	57.54	49.13	1.17
1999-00	26263.36	16.89	3.03	0.34	20.26	50.31	60.50	51.67	1.17
2000-01	29586.40	15.03	3.94	0.32	19.29	53.96	64.37	55.50	1.16
2001-02	38633.52	11.98	3.04	0.36	15.38	57.43	66.26	59.02	1.12
2002-03	38691.33	14.50	1.78	0.58	16.86	57.90	67.66	59.62	1.13

Source: Data on customs duty (CD), development surcharge (DS), regulatory duty (RD) license fees (LF), supplementary duty, VAT are from Taslim (2004).

Figure 9: Effective Exchange Rates and Anti-export Bias

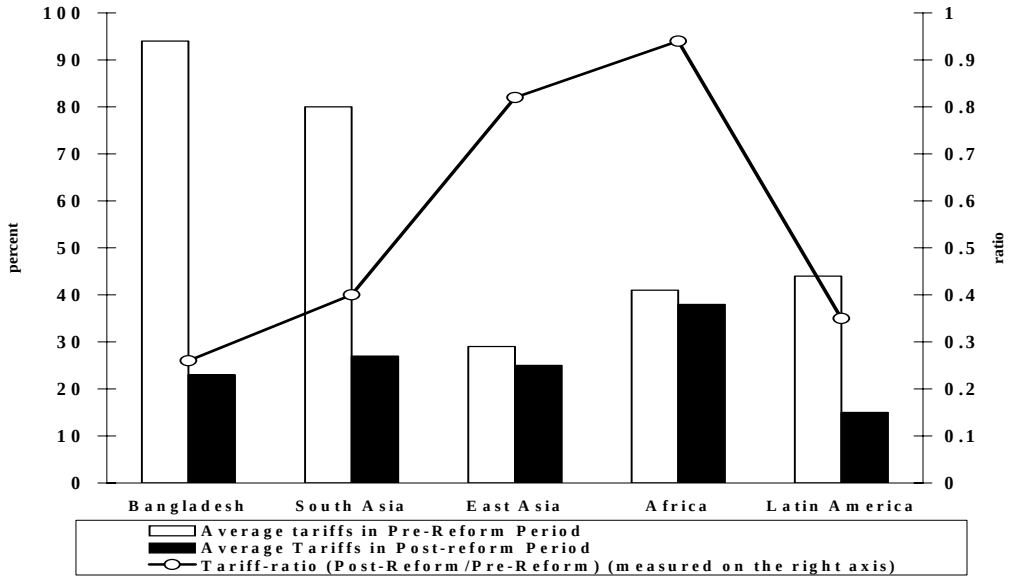


The above estimates of anti-export bias are solely based on the information on formal trade excluding the possibility of illegal or informal trade that would tend to reduce the level of protection enjoyed by the domestic import-competing industry. Bangladesh has a long and porous border with India and there are widespread informal border trading activities between the two neighbouring countries. A survey of all border check-posts by Bakht (1996) found that the informal border trade with India in 1994 was about US$ 628.0 million as compared to US$550.0 for official trade. Unofficial trade was thus found to be 1.14 times the official trade for that year. Again, based on a study by Rahman and Razzaque (1998), it has been suggested that the value of informal trade with India could be at least as high as the official trade (World Bank, 1999). Under such circumstance, the ratio of import-weighted anti-export bias would fall to about 10 per cent.[9]

3.5. Bangladesh's Trade Regime in a Global Context: A Comparative Picture

In the 1990s, Bangladesh implemented a liberalisation programme at a very fast pace. In fact, it experienced one of the most rapid reductions in tariffs (until the late 1990s) as measured by the ratio of post-reform average tariffs to pre-reform rates amongst a set of world economies that had undertaken trade liberalisation measures (World Bank, 1999). This is reflected in Figure 10, where the tariff rates in the pre- and post-reform periods of up to the late 1990s are measured on the left vertical axis while the ratio of post-reform to pre-reform tariffs are scaled on the right vertical axis. It is found that only the Latin American countries had lower average post-reform tariff rates, but Bangladesh witnessed the sharpest rate of reduction, as reflected in its lowest tariff ratio in Figure 10. This led many observers to suggest that further liberalisation measures should be halted.

Figure 10: A Comparison of Tariff Liberalisation in the 1990s



Note: South Asia includes Bangladesh, India, Nepal, Pakistan and Sri Lanka. China, Indonesia, Malaysia, and South Korea are included in the East Asia sample. Latin America comprises Argentina, Brazil, Colombia, Chile, Costa Rica, Mexico, Peru, Uruguay, and Venezuela. Africa consists of Egypt, Ghana, Kenya, Madagascar, Nigeria and Tunisia.
Source: Data for this figure are from World Bank (1999).

[9] There are, however, other suggestions of informal cross border trade with India being much higher than this.

Since the late 1990s, however, the pace of tariff liberalisation has somewhat slowed down. A comparison of the early-2000s identified Bangladesh to be the most closed economy in South Asia (World Bank, 2004). Similarly, estimation of a trade barrier index (TBI) based on the MFN tariffs on the products at the 6-digit HS classification level using the UNCTAD Trade Analysis & Information System (TRAINS) data reveals that out of 119 countries, Bangladesh is the 8th most closed economy (see Box 1 and Table 8).[10] Based on these findings, further opening up of the economy has been recommended to stimulate export response and to enhance growth performance (World Bank, 2006 and 2004).

Box 1: Construction of Trade Barrier Index (TBI)

Raihan (2003) proposes a modified import-weighted tariff rate for constructing a cross-country Tariff Barrier Index (TBI_j), which is represented by: $TBI_j = \frac{1}{n}[\sum(1+\frac{M_{ij}}{Mj})\ln(1+T_{ij})]\times 100$ (1)

where, TBI_j is the Trade Barrier Index of the jth country, M_j is the value of total imports of the jth country, M_{ij} is the value of imports of ith commodity in jth country, T_{ij} is the tariff rate for ith commodity in jth country, n is the number of commodities and *ln* is the natural logarithm. Clearly, TBI captures import-weights ($\frac{M_{ij}}{M_j}$) in its formulation.

TBI possesses an advantage over the simple import-weighted version. The simple import-weighted rate may conceal the level of protection for a sector for which import is zero (e.g., if prohibitive tariffs are imposed), which TBI tries to overcome. According to (1), commodities for which import is zero, import-weight will naturally be also zero. But, if for any ith commodity $T_{ij} > 0$ and $M_{ij} = 0$, then $\frac{M_{ij}}{M_j} = 0$, but the term $(1+\frac{M_{ij}}{Mj})\ln(1+T_{ij})$ will not be equal to zero rather will take into account the full T_{ij} value. The term $(1+\frac{M_{ij}}{Mj})\ln(1+T_{ij})$ will only be equal to zero when $T_{ij} = 0$. A relatively high value of TBI indicates a relatively high trade (tariff) barrier. The calculated TBI values as presented in Table 3.6 consider those 119 countries for which information was available in the UNCTAD TRAINS database. The estimation was carried out at the 6-digit level of the HS classification of goods.

[10] It has been shown that while the unweighted average MFN duty in Bangladesh is lower than that of India and Pakistan, because of other protective import taxes, total protective import duty in Bangladesh is the highest in South Asia (World Bank, 2004).

Table 8: Aggregate Trade Barrier Indices and Ranking for 119 Countries

Countries	TBI Index	Rank	Countries	TBI index	Rank
Albania	9.11	63	Korea	7.91	75
Algeria	17.81	7	Lao PDR	8.01	74
Antigua	8.15	72	Latvia	2.95	113
Armenia	2.59	114	Lebanon	5.04	99
Australia	3.59	109	Libya	14.12	26
Bahamas	0.47	118	Lithuania	2.97	112
Bahrain	6.61	87	Madagascar	5.87	96
Bangladesh	17.48	8	Malawi	11.01	40
Barbados	9.89	56	Malaysia	7.57	79
Belarus	10.65	42	Maldives	16.69	9
Belize	8.80	66	Mali	10.24	50
Bermuda	10.24	46	Malta	6.38	90
Benin	14.58	25	Mauritania	9.28	59
Bhutan	12.72	31	Mauritius	21.15	5
Bolivia	8.53	68	Mexico	14.64	24
Bosnia and Herzegovina	5.31	98	Moldova	4.31	102
Brunei	1.83	117	Morocco	23.43	3
Bulgaria	10.43	45	Mozambique	11.4	39
Burkina Faso	10.24	47	New Zealand	2.30	115
Cameroon	14.95	16	Nicaragua	4.11	105
Canada	3.85	107	Niger	10.24	51
Central African Rep	14.95	17	Norway	2.1	116
Chad	14.95	18	Oman	4.23	104
Chile	7.08	83	Pakistan	16.56	11
China	6.72	84	Panama	6.70	86
Taiwan, China	13.16	29	Papua New Guinea	15.53	14
Colombia	10.47	44	Paraguay	10.91	41
Congo Rep.	14.95	19	Peru	11.76	36
Costa Rica	4.75	101	Philippines	6.29	92
Cote d'Ivoire	10.24	48	Poland	10.16	55
Croatia	9.07	65	Romania	13.99	27
Cuba	9.13	61	Russia	9.71	57
Czech Rep	4.87	100	Rwanda	8.44	69
Dominica	8.13	73	Saudi Arabia	10.22	54
Dominican Rep	14.65	23	Senegal	10.24	52
Ecuador	11.74	37	Seychelles	20.88	6
Egypt	16.59	10	Slovenia	8.31	71
El Salvador	6.10	93	Solomon Islands	24.73	2
Equatorial Guinea	14.95	20	South Africa	6.72	85
Estonia	0.06	119	Sri Lanka	7.88	76
Ethiopia	15.33	15	St. Kitts Nevis	7.78	78
EU	3.91	106	St. Lucia	7.37	80
Macedonia	11.94	34	St. Vincent & Grenadines	8.33	70
Gabon	14.95	21	Sudan	4.24	103
Georgia	9.22	60	Thailand	14.92	22
Ghana	12.01	33	Togo	10.24	53
Guatemala	5.78	97	Trinidad & Tobago	6.46	88
Guinea-Bissau	10.24	49	Tunisia	23.15	4
Guyana	9.13	62	Turkey	8.61	67
Honduras	5.94	94	U. Rep. Of Tanzania	13.65	28
Hungary	9.37	58	Uganda	7.85	77
Iceland	2.99	111	Ukrainian	7.34	81
India	25.42	1	Uruguay	11.74	38
Indonesia	7.13	82	USA	3.35	110
Iran	6.36	91	Uzbekistan	9.10	64
Israel	6.40	89	Venezuela	10.63	43
Jamaica	5.93	95	Vietnam	12.93	30
Japan	3.84	108	Zambia	11.9	35
Jordan	12.27	32	Zimbabwe	15.62	12
Kenya	15.57	13			

Note: The higher the value of TBI, the higher is the tariff barrier.
Source: Raihan (2003) (see Box 1 for methodology).

While the cross-country comparisons of average tariff rates or trade barrier indices are appealing, they alone can hardly justify the decision of further liberalisation. Notwithstanding the inherent problems associated with their construction, the comparative assessment of trade barriers fail to depict the widely varying characteristics of countries that can influence trade

policy and openness.[11] For example, small countries, in terms of the size of the population, tend to be more open compared to their large counterparts, as the latter has relatively greater dependence on their domestic economy for growth. Therefore, while Bangladesh appears to be quite a closed economy as per Table 8, controlling various structural characteristics can actually make it a typical country given the cross-country experiences (see Box 2).

Box 2: Explaining Cross-Country Trade Openness

There may be a number of structural factors that can influence trade openness. Structural factors are those, which are difficult to influence through policy. Since these factors vary across countries, for inter-country comparison of openness, it may be useful to control these structural characteristics. Raihan (2007) explains the cross-country trade openness using some structural factors. He uses the same TBI (in Table 8) as a measure of openness and per capita income (PCY), Export-GDP ratio (XY), Population (POP), and the literacy rate (LIT) (as a proxy for human capital) as structural characteristics. He hypothesises that as PCY rises, TBI falls; countries with low XY ratio will have relatively low TBI value; and countries with bigger populations will have a natural tendency to be more domestic market-oriented, an argument discussed in Amsden (2000) and Gylfason (1999), and thus a negative correlation between population and TBI; and finally, following Mayda and Rodrik (2001), countries with higher levels of human capital are thought to be less protectionist. Raihan includes a dummy variable for Bangladesh in his Ordinary Least Squares regression to examine if whether controlling these characteristics, Bangladesh's openness comes out to be statistically significantly different from the average global level. The regression results, reported below, show that apart from XY, all other structural variables significantly influence openness as expected. However, the Bangladesh dummy fails to register statistical significance.

Results of the Cross-Country Regression

	Dependent Variable is TBI index in table 3.6	
Explanatory Variables	Coefficient (Standard Error)	t-ratio
Constant	13.44*** (1.94)	6.90
Per capita income (PCY)	-0.02*** (0.005)	-3.59
Export-GDP ratio (per cent) (XY)	-0.006 (0.02)	-0.33
Population (POP)	0.000074*** (0.000022)	3.38
Human Capital (LIT)	-0.05*** (0.02)	-2.48
D (1 for Bangladesh; 0 otherwise)	0.11 (0.15)	0.73
S.E of Regressions	3.49	
Adjusted R^2	0.48	

Notes: The regression is based on 97 countries for which all data are available. *** represents statistical significance at less than one percent level.

$$TBI = 9.71^{***} - 0.0000072^{***}\ POP + 6.85\ D \qquad (2)$$
$$(s.e.) \quad (0.48) \quad (0.0000029) \quad (4.9)$$

In fact, as shown in (2), Bangladesh also does not turn out to be significant when the cross-variation is explained by population alone. This implies that controlling for country size, Bangladesh is not statistically significantly different from the world average trade barrier.

[11] Note that indicators like average tariff rate may be problematic as there are widespread non-tariff barriers in many countries. Also, it is not adequately possible to take into account selective tariff protection measures employed by countries that hurt different suppliers disproportionately.

IV. Impact of Trade Liberalisation in Bangladesh

4.1. Impacts on Economic Growth and Poverty in Bangladesh

Following the rapid liberalisation programme during the past few decades, the rate at which the economy grew was commendable. Above all, the fall in the incidence of poverty is also impressive. Therefore, poverty impact of trade liberalisation is a very interesting area of research. But there is no *ex-post* econometric study on Bangladesh that analyses the link between trade policy and poverty. The main bar is the unavailability of data as poverty estimates are only available intermittently. Apart from the scarcity of detailed household data, it is indeed very tricky to measure the direct impact of trade liberalisation on poverty. In other words, it is often difficult to disentangle the impact of trade reform from those of other reforms, events, and shocks that affect household poverty dynamics. All these have prevented economists from undertaking sophisticated econometric exercises to investigate the relationship openness and poverty. However, there have been a number of studies, based on time series data, testing 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 for the period 1961-92. The author concluded that the growth of exports has a significant and positive impact on economic growth through an increase in the total factor productivity of the economy. However, the study can be criticised for its weak methodology, as it considered only the short-run impact of export growth. On the other hand, using updated and revised data for the period 1980-2000 and examining the long-run impact of export on economic growth, Razzaque et al. (2003a) 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 of Bangladesh in the 1990s over that of the 1980s should be attributed to the success of trade liberalisation. 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, liberalisation would have any distinct impact on growth. In the absence of such analysis, sceptics, taking as extreme view, could argue that the increased rate of growth in the post liberalisation period arose ‘despite’ rather than ‘because of liberalisation’.

To overcome the above problems, Razzaque et al. (2003b) and Raihan (2007) have employed regression methods to explain the output/growth performance using time-varying indicators of trade liberalisation measures and controlling for factors of production. In the first study, Razzaque et al. (2003b) extended the traditional neo-classical and endogenous growth models by incorporating three widely accepted trade liberalisation measures, viz. trade-GDP ratio, ratio of consumers’ goods import to GDP and the implicit nominal tariff rate. While the estimated model turned out to be satisfactory, none of the indicators of trade liberalisation, quite surprisingly, achieved statistical significance in any of the regression results (Table 9). The same study also did not find any significant effect of trade liberalisation on the export-growth relationship.

Table 9: Trade Liberalisation Measure in Growth Models

Explanatory Variable	Coeff (s.e.)	Coeff (s.e.)	Coeff (s.e.)	Coeff (s.e.)	Coeff (s.e.)	Coeff (s.e.)
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)

Source: Razzaque et al. (2003b)

On the other hand, Raihan (2007) contributed to the empirical understanding of the 'trade liberalisation – growth nexus' in the context of the manufacturing industries in Bangladesh. The study 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 (1977-98). Five indicators of trade liberalisation were used: the import penetration of consumer goods, the implicit nominal tariff rate, the sectoral import penetration ratio, the sectoral export-orientation ratio, and a year dummy variable. The study employed a production function framework for the analysis and used a variety of panel regression analysis. The regression results found no evidence of any statistically significant positive 'trade liberalisation – growth nexus' in the context of manufacturing industries in Bangladesh (Table 10).

Table 10: Trade Liberalisation Measures in Panel Data Models of Manufacturing Output

Explanatory Variables	Coeff (s.e.)	Coeff (s.e.)	Coeff (s.e.)	Coeff (s.e.)	Coeff (s.e.)
Ln(Capital)	0.356***	0.339***	0.286***	0.362***	0.359***
	(0.074)	(0.07)	(0.06)	(0.074)	(0.07)
Ln(labour)	0.492***	0.493***	0.498***	0.488***	0.491***
	(0.05)	(0.05)	(0.04)	(0.05)	(0.05)
Ln(Import penetration ratio of Consumers' 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)	
Liberalisation Year Dummy					-0.105** (-0.05)
R^2	0.64	0.74	0.77	0.75	0.63
Observations	594	594	594	594	594

Source: Raihan (2007)

Mamun and Nath (2004) examined the time series evidence to establish a link between trade, economic growth and income inequality in Bangladesh. Using quarterly data for a period from 1976 to 2003, they found that industrial production and exports were co-integrated. The results from a Vector Autoregression (VAR) model suggested there was some evidence of trade liberalisation accelerating growth in Bangladesh. Trade openness promoted investment and there was little evidence of trade affecting income distribution. The study can be criticised for the use of poor quality data on income inequality in the country.

It appears from the aforementioned analysis that the econometric investigations using historical data fail to depict a conclusive relationship between trade liberalisation 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* positive effects of further liberalisation. Khondoker 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 liberalisation would generate negative consequences for the macro-economy as well as for the welfare and poverty status of the households. The most influential study in this regard is the one by Annabi et al. (2006). Working with a dynamic sequential CGE model, the authors found that if all tariffs of Bangladesh are set to zero (i.e. the case when all policy-induced ex-anti bias is removed), the effect on GDP is actually negative in the short-run, which is defined to be 1-2 years, but positive over a long-run horizon of 15 years. Interestingly however, the long-run positive impact is found to be just 1.4 percent higher than the base scenario. This suggests that the growth dividend from further liberalisation of tariffs is very low.

Although the poverty impact analysis using a comprehensive framework is unavailable, the aforementioned review of studies on Bangladesh suggests there is no conclusive impact of trade liberalisation on growth and poverty. It also discloses the utmost need for study using sophisticated framework and technique. Against this backdrop, in the following subsections we explore the channels through which trade liberalisation can impact poverty – mainly through price and employment.

4.2. Trade Liberalisation and Inflation

The literature in economics on inflation and trade liberalisation is relatively scant. The earliest papers by Triffin and Grudel (1962), while studying the economic performance of EEC, observed that more open economies tend to experience lower price inflation. Bowlder (2003) provided evidence that if a country increased its aggregate trade share by one standard deviation of the global distribution of trade shares, inflation volatility would decrease by up to five percentage points. The impact of trade openness on inflation volatility is much more pronounced in developing countries than high-income countries, which tend already to have more stable inflation.

Romer (1993) proposed a hypothesis of a negative relation between inflation and trade openness and he further tested it using cross-section data of 114 non-centrally planned countries listed by Summers and Heston 1988, and concluded strong and robust negative link between inflation and trade openness. Lane (1997) provided a useful framework to link the role of openness in determining inflation. He argued that the conventional explanation provided by Romer (1993) holds true for countries which are sufficiently big to influence international price. Lane's framework showed that the relationship is still valid for the small

countries. Bowlder (2003) developed two explanations for the negative effect of trade openness on inflation volatility. First, openness creates incentives for policymakers to adopt stable macroeconomic policies as a more disciplined approach to macroeconomic policymaking will help ensure that such problems are avoided, and will support lower inflation volatility. The other argument is that openness to trade leads to greater diversity in consumption and this can reduce aggregate inflation volatility through reducing exposure to sector-specific price shocks.

This study, in line with Romer (1993), has estimated a 'trade liberalisation–inflation' model for the Bangladesh economy. However, the model has been extended by adding control variables. The results of the model regressions are reported in Table 11. The first model is a simple bivariate one with Consumer Price Index (CPI) as the dependent variable and trade liberalisation (the ratio of imports to GDP) and trend variable as the explanatory variable. The next model is an extension of the first with a log of M2 variable. The final model has one more control variable which is log of per capita GDP. In all the models, though the trade liberalisation variable has expected negative signs, they are statistically insignificant. Interestingly enough, the standard control variables also do not have any significant impact on the inflation rate. Only the trend variable appears to be statistically significant in every model.

Table 11: Regression Results of Openness and Inflation

	Coeff (s.e.)	Coeff (s.e.)	Coeff (s.e.)
Constant	30.41***	-48.21	53.04
	(10.07)	(81.97)	(157.94)
Log of Import-GDP Ratio	-1.08	-0.63	-0.76
	(4.38)	(4.76)	(4.89)
Log of M2		7.16	7.39
		(7.09)	(7.27)
Log of per capita GDP			-19.11
			(23.45)
Trend	4.26***	3.28***	3.71***
	(0.24)	(1.01)	(1.21)

Notes: The dependent variable is the Consumer Price Index. The data used from 1980 to 2005 was retrieved from World Development Indicator 2007 CD Rom. All the variables are tested for their stochastic distribution. They were found to be trended. Therefore, the model is augmented with a trend variable. The initial model suffered from autocorrelation problem. The final model is done by Cochrane-Orcutt iterative method with the assumption of first order autoregressive procedure.

4.3. Impact on Employment

The relationship between trade liberalisation and employment has been a contentious issue for many decades. The complexity of establishing the linkage between trade liberalisation and employment lies in the fact that there are many channels through which trade liberalisation can influence the labour market, directly and/or indirectly. Before going into empirical justification in the context of Bangladesh, it is worthwhile to review the existing literature on trade liberalisation and its impact on employment, both theoretical and empirical.

In accordance with the traditional Heckscher-Ohlin (H-O) model, trade liberalisation increases demand for the commodity which uses the abundant factor intensively. Therefore, trade increases the demand for the abundant factor and hence creates employment opportunities. In other words, trade liberalisation holds the possibility of job creation. This obvious link argues the ability of trade liberalisation in reducing poverty, because employment is the ultimate way to fight poverty. But the opposite view is also prevalent which predicts the possibility of job destruction, relocation and associated adjustment cost due to opening up of the economy. Analysing various literature, a general viewpoint has been derived i.e., trade liberalisation is associated with both job destruction and job creation. In the short run, 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 run, however, the efficiency gains caused by trade liberalisation are expected to lead to positive overall employment effects, in terms of quantity of jobs, wages earned or a combination of both.

However, the relationship between opening up of the economy and impact of employment are inconclusive, there are noticeable differences in the result of the empirical investigation on trade liberalisation-employment nexus. According to Papageorgiou et al. (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 liberalisation period and a year later. The results of the Papageorgiou et al., (1990) have been challenged by Collier (1993) on the methodological ground. According to Ernest (2005), impact of trade liberalisation in Argentina and Brazil were disappointing, however in the case of Mexico, there had been growth in productivity and employment in the manufacturing sector during the second half of the 1990s. Fu and Balasubramanyam (2005) however found a positive and significant impact of exports on employment in China. By using panel data set for TVEs (Township and Village Enterprises) in 29 provinces in China over 1987-98, they suggested that a one percent increase in export volume would raise employment by 0.17 percent. On the other hand, there are studies which have found negative relationships between trade reform and employment. For example, Rama (1994) found a negative effect of trade liberalisation on employment in Uruguay in the late 1970s and early 1980s. Greenway et al. (1998) investigated that between 1979 and 1991, when UK industry had integrated into the international economy through FDI and trade, there were large-scale job losses in the UK manufacturing sector. This paper found that in UK when trade volume increased, demand of labour decreased in the manufacturing sector as trade liberalisation generated competition and requirement for high skilled labour for delivering high output. However, this job loss had been equalised by an increase in financial services and primary and extractive employment. Carneiro and Arbache (2003) found limited impact of trade liberalisation on macroeconomic variables and labour market indicators in Brazil.

In order to investigate the employment impact of trade liberalisation, a sectoral analysis has been undertaken in this study. We had disaggregated data on output, employment, total wage and sectoral export and import. We have estimated labour demand functions for each industry and augmented the trade liberalisation measure into the function to study the impact of trade liberalisation on demand for labour in each sector. Before running the formal regressions, the time series properties of the variable have been 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 12 and 13, and the detailed regression results are reported in Annex 1.

One of the objectives of this study was to investigate the impact of trade liberalisation on sectoral employment. But trade openness is difficult to measure and the outcome variables like export-output ratio, import ratio are not without flaws. In this analysis, we have used the sectoral export-output ratio and sectoral import-output ratio as the imperfect proxy of trade liberalisation.

Firstly, industries can be categorised into two groups: Industries in which the labour demand functions are cointegrated when the labour demand function is augmented with the sectoral export-output ratio and industries in which the labour demand functions are cointegrated when the import-output ratio is added.

The labour demand function is cointegrated when export-output ratio is added as the explanatory variable for the following industries (Table 12): beverage industry, tobacco manufacturing, wearing apparel, leather and its products, furniture manufacturing, paper and its products, printing and publishing, drugs and pharmaceuticals and other chemical products, industrial chemical products, petroleum refining, miscellaneous petroleum products, rubber products, plastic products, pottery and Chinaware, glass and its products, non-metallic mineral products, iron and steel basic industries, fabricated metal products, non-electrical machinery, textile industry, footwear except rubber, wood and cork industry, transport machinery, and scientific, precision etc and photographic, optical goods. Among these industries, trade openness (as defined by sectoral export-output ratio) has proved to be helpful in boosting employment for the following industries: beverage industry, wearing apparel, petroleum refining, miscellaneous petroleum products, plastic products, footwear except rubber. On the other hand, there was decreased demand for labour in the textile and paper industry when export-output ratio is taken as the proxy of trade openness. For the rest of the industries, there is no significant impact on employment due to trade liberalisation.

Table 12: Summary Result from Estimated Labour Demand Function –Industries which are Cointegrated with Sectoral Export-Output Ratio as the Explanatory Variable

2-digit ISIC Code	Industry which are Cointegrated with Export-Output Ratio	Impact On the 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 product	**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 product	Positive Insignificant
09	Furniture Manufacturing	Positive Insignificant
12	Drugs and Pharmaceuticals and other Chemicals	Positive Insignificant
13	Industrial Chemicals	Positive Insignificant

2-digit ISIC Code	Industry which are Cointegrated with Export-Output Ratio	Impact On the Employment
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+ Photographic, Optical Goods	Positive Insignificant

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

The labour demand function is cointegrated when the import-output ratio is augmented into the labour demand function for the following industries (Table 13): beverage industry, tobacco manufacturing, wearing apparel, leather and its products, furniture manufacturing, paper and its products, printing and publishing, drugs and pharmaceuticals and other chemical products, industrial chemical products, petroleum refining, miscellaneous petroleum products, rubber products, plastic products, pottery and Chinaware, glass and its products, non-metallic mineral products, iron and steel Basic Industries, fabricated metal products, non-electrical machinery, food manufacturing, non-ferrous metal industry, electrical machinery. In this category, leather and its products manufacturing appear to be the only industry in which trade openness has a positive and significant impact on labour demand. But trade liberalisation has a negative impact on the labour demand for a number of industries. They are: drugs and pharmaceuticals and other chemicals, miscellaneous petroleum products, non-electrical machinery, electrical machinery manufacturing industries. The rest do not exhibit any significant impact on employment due to trade liberalisation.

Table 13: Summary Result from Estimated Labour Demand Function –Industries which are Cointegrated with Sectoral Import-Output Ratio as the Explanatory Variable

2-digit ISIC Code	Industry which are Cointegrated with Import-Output Ratio	Long Run Impact
06	Leather and its Products	**Positive Significant**
12	Drugs and Pharmaceuticals and other Chemicals	**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 Product	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

2-digit ISIC Code	Industry which are Cointegrated with Import-Output Ratio	Long Run Impact
09	Furniture Manufacturing	Positive Insignificant

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

V. Trade Liberalisation and Sectoral Labour Demand in Bangladesh: A Computable General Equilibrium Analysis

In this section an *ex ante* analysis of the impact of different trade liberalisations scenarios on the allocation of labour across different sectors is presented using a computable general equilibrium (CGE) model for Bangladesh.

The CGE analysis is the dominant methodology for the *ex ante* analysis of the economic consequences of comprehensive trade agreements whether multilateral or bilateral in nature (Francois and Shiells, 1994). This is the dominant methodology because no other approach offers the same flexibility for looking at prospective changes in trade policy while respecting the fundamental economy-wide consistency requirements such as balance of payments equilibrium and labour and capital market constraints that are so important in determining the consequences of comprehensive trade reforms.

5.1. Methodology

The general methodology has been to use a framework of analysis, which allows to examine the consequences of policy changes at sectoral, and at macro level and to estimate their poverty and distribution impacts at the representative households level. To examine the above issues a computable general equilibrium technique has been employed. A Social Accounting Matrix (SAM) prepared for the year 2005 serves as the consistent and comprehensive database for the above-mentioned exercises. In the present exercises the 2005 SAM for Bangladesh has been treated as the base year data on the basis of which different simulation exercise have been carried out.

5.1.1. The Bangladesh Social Accounting Matrix 2005

As mentioned above the model is numerically calibrated to a 2005 Social Accounting Matrix (SAM). The main sources of information for the SAM are (a) 2000 SAM prepared by the International Food Policy Research Institute (IFPRI), Washington (Arndt et. al., 2002); (b) Bangladesh Economic Review (Ministry of Finance, 2006); (c) Export Receipts and Import Payments (Bangladesh Bank 2006); and (d) National Income Estimates by Bangladesh Bureau of Statistics (May 2005).

Accounts

The 2005 SAM identifies the economic relations through *four types of accounts*: (i) production activity and commodity accounts for 26 sectors; (ii) 9 factors of productions with 4 different types of labour and 5 types of capital; (iii) current account transactions between 4 main institutional agents; household-members and unincorporated capital, corporation, government and the rest of the world; and (iv) two consolidated capital accounts to capture the flows of savings and investment by private and public institutions.

Activity and Commodity
The activity account is represented by 26 producing activities. A distinction is made between activity and commodity and the commodity account is denoted by 26 sectors.

Institutions Accounts
Current account transactions are captured between 4 institutional agents; households and unincorporated capital, corporate enterprise, government and the rest of the world. Household account includes 7 representative groups (e.g. 5 rural and 4 urban). Two consolidated capital accounts (domestic and rest of the world) distinguished by public and private sector origin are defined to capture the flows of savings and investment by institutions and the rest of the world respectively.

Household-members
The 2005 SAM distinguishes seven household types, classified according to land holding size and occupation of the household's head in rural areas, and to level of education of the household's head in urban areas.

Labour Factor
The SAM includes 9 factors of production: land, ponds, non-agricultural capital, agricultural capital (further disaggregated into livestock and poultry) and 4 labour categories disaggregated by education levels and types of activity (agriculture and non-farm). The factor classification is based on the 21 factor classification used in the 1999-2000 IFPRI SAM for Bangladesh.

The disaggregation of factors, individuals, activities and institutions in the SAM and model is given in Table 14.

Table 14: Disaggregation and description of factors, institutions and households

Set	Description of Elements
Activities	
Agriculture (7)	Paddy, Grains, Other Crops, Livestock, Poultry, Fish and Shrimp
Industries (9)	Rice Milling, Grain Milling, Other Food, Mill Clothing, Woven RMG, Knit RMG, Textiles, Petroleum Products, and Other Industries.
Services (10)	Urban Construction, Rural Construction, Public Construction, Utility, Trade, Transport, Housing, Education-Health, Public Administration and Private Services.
Institutions	
Households (6)	Rural: Agricultural marginal, Agricultural small, Agricultural large, Non-agricultural Urban: Urban low educated, Urban highly educated
Others (2)	Government, Corporation and Rest of the World
Factors of production	
Labour (4)	Agriculture Labour Unskilled, Agriculture Labour Skilled, Non-Farm Labour Unskilled, Non-Farm Labour Skilled
Capital (5)	Non Agriculture Capital, Land, Ponds, Agriculture Capital Poultry, Agriculture Capital Cattle

5.1.2. The CGE Model for Bangladesh Economy

Computable general equilibrium models capture detailed accounts of the circular flows of receipts and outlays in an economy. It satisfies general equilibrium conditions in market simultaneously. Such models are useful to analyse associations between various agents of the economy.

In line with most of CGE models, the model has been solved in comparative static mode and provides an instrument for controlled policy simulations and experiments. Solution of each simulation presents complete sets of socio-economic, meso and macro level indicators such as activity/commodity prices, household incomes and expenditures, factor demand and supplies, gross domestic products, exports and imports, and household poverty situation. The model is calibrated to the SAM to exactly reproduce the base year values[12].

Activities

On the production side it is assumed that in each sector there is a representative firm that generates value added by combining labour and capital. A nested structure for production is adopted. Sectoral output is a Leontief function of value added and total intermediate consumption. Value added is in turn represented by a CES function of capital and composite labour. The latter is also represented by a CES function of two labour categories: skilled labour and unskilled labour. Both labour categories are assumed to be fully mobile in the model. In the different production activities we assume that a representative firm remunerates factors of production and pays dividends to households.

Household-members

They earn their income from production factors: labour, land and capital. They also receive dividends, intra-household transfers, government transfers and remittances. They pay direct income tax to the government. Household savings are a fixed proportion of total disposable income. Household demand is derived from a C-D utility function. The model includes 4932 household-members from the household survey.

Firms

There is one representative firm which earns capital income, pays dividends to households and foreigners and pays direct income taxes to the government.

Foreign Trade

It is assumed that foreign and domestic goods are imperfect substitutes. This geographical differentiation is introduced by the standard Armington assumption with a constant elasticity of substitution function (CES) between imports and domestic goods. On the supply side, producers make an optimal distribution of their production between exports and domestic sales according to a constant elasticity of transformation (CET) function. Furthermore, a finite elasticity export demand function is assumed. Even if it is assumed that the international terms of trade are given, the small country assumption for Bangladesh is

[12] In calibration procedure, most of the model parameters are estimated endogenously keeping the various elasticity values fixed.

rejected, and assumed that foreign demand for Senegalese exports is less than infinite. In order to increase their exports, local producers must decrease their free on board (FOB) prices.

Government

The government receives direct tax revenue from households and firms and indirect tax revenue on domestic and imported goods. Its expenditure is allocated between the consumption of goods and services (including public wages) and transfers. The model accounts for indirect or direct tax compensation in the case of a tariff cut.

System Constraints and Equilibrium Conditions

There are four constraints in the system. The real constraint refers to domestic commodity and factor market; the nominal constraint represents two macro balances: the current account balance of the rest of the world and the savings-investment balance.

Sectoral supply is a composite of imports and output sold in the domestic market. Composite demand, on the other hand, includes final demands (i.e. private and public consumption expenditure and investment) and intermediate input demand. Variations in the sectoral prices assure equilibrium between sectoral supply and demand.

In the case of factor market, we consider two variants of the model. In the 'full employment' model it is assumed that total quantities of factors supply are fixed and factors are fully employed. This specification also implies full mobility of labour factors across producing activities and variations in their returns (e.g. wages) assures equilibrium in the factor market. On the other hand, the 'unemployment' specification of the model assumes that certain proportion of the labour force remain unemployed in the economy. In the 'unemployment' specification, no distinction is, however, made with respect to the percentage of labour factors unemployed for all labour categories.

The inflows (transfers to and from domestic institutions) are fixed but imports and exports are determined endogenously in the model. Foreign savings is fixed in this model and exchange rate acts as numeraire.

Finally, for the savings-investment equilibrium, the model treats the investment decision as given and hence savings has to adjust to ensure the equality to the fixed value of investment. The basic approach is to allow the savings propensity of one of the domestic institution to vary.

5.2. Simulation Set Ups

In the simulation set ups, two variations of the model are taken into consideration. Under both the 'full employment' and 'unemployment' models three simulations are considered. The simulation set-ups are discussed below. It is important to note that, in CGE models there are concerns regarding the choice of the method to compensate the loss of revenue from a tariff reduction. Results of the simulation may vary considerably due to different compensation methods. Enhancing the production or income taxes in this regard can affect the relative prices, and thus can create further distortions in the economy. In the present

exercise the resulting loss in government revenue due to tariff elimination is compensated by a 'neutral tax adjustment'. This neutral tax is imposed on both the domestic goods and imported final goods, and thus it does not distort the relative prices in the import demand function.

5.2.1. Setting up the Full Liberalisation Scenario

Under this scenario, tariffs on all imports are reduced to zero. The base values of all other parameters are retained.

5.2.2. Setting up the Partial Liberalisation Scenario

Under this simulation, tariffs on all imports are reduced by 50 percent. The base values of all other parameters are retained.

5.2.3. Setting up the Rationalised Liberalisation Scenario

In the third simulation, tariff rates are rationalized in a way that conform to the tariff reforms steps undertaken in the country. The base year tariff rates, as specified in the SAM 2005 of Bangladesh, are Other Crops (12.18 percent), Milled Rice (9.42 percent), Other Grains (27.98 percent), Food (40.18 percent), Other Textile (3.53 percent) and Other Industry (20.85 percent). In this simulation tariff rates on 'Other Crops' and 'Other Grains' are reduced by 50 percent, tariff rate on 'Milled Rice' is reduced to zero, tariff rate on 'Food' is reduced by 25 percent, tariff rate on 'Other Textile' is left unaffected, and finally, the tariff rate on 'Other Industry' is reduced down to 15 percent. The base values of all other parameters are retained.

5.3. Simulation Outcomes

In this section results of the simulations are presented. The major determinants of the simulation results are the values of trade elasticities, the share of imports and exports, the cost of inputs, and the general equilibrium effects of supply and demand. In all these cases, a decline in tariff rates leads to a decline in the production of the tariff protected sectors. The resources will then move from this sector to other expanding sectors. The changes in export and import prices influence the domestic and composite good prices, the value added price and determine factors reallocation.

5.3.1. Macroeconomic effects

The macroeconomic impacts are reported in Table 15.

Table 15: Macroeconomic Effects (% change from the base year value)

Variable	"Full employment" Model			"Unemployment" Model		
	Simulation 1	Simulation 2	Simulation 3	Simulation 1 (a)	Simulation 2 (a)	Simulation 3 (a)
Real GDP	1.65	0.77	0.29	1.15	0.59	0.19
Agriculture	0.03	0.01	0.01	0.02	0.01	0.01
Manufacturing	5.01	2.12	1.09	3.65	1.61	0.89
Service	-1.45	-0.62	-0.31	-1.10	-0.47	-0.24
Traded	3.54	1.52	0.77	2.69	1.16	0.59
Non-traded	-1.58	-0.68	-0.31	-1.20	-0.52	-0.24
Consumption	1.35	0.65	0.34	1.03	0.39	0.26
Imports	14.87	6.75	3.07	11.30	5.80	2.33
Exports	27.46	12.42	5.64	18.87	9.44	4.29
Consumer Price Index	-0.12	-0.05	-0.03	-0.091	-0.038	-0.023
Wage rate of agri. unskilled labour	-0.068	-0.032	-0.019	-0.052	-0.024	-0.014
Wage rate of agri. Skilled labour	-0.066	-0.032	-0.018	-0.053	-0.024	-0.013
Wage rate of non-agri. unskilled labour	-0.053	-0.025	-0.014	-0.044	-0.019	-0.011
Wage rate of non-agri. skilled labour	-0.055	-0.026	-0.015	-0.042	-0.020	-0.012

Note: 1. Real GDP is equal to the sum of consumption, investment, government consumption plus exports less imports in real terms for all sectors in the economy.
2. 2005 is the base year. Simulation outcomes are compared to base values.

Source: Authors' calculations, based on simulation results.

"Full Employment Model":

Under Simulation 1, a full trade liberalisation will lead to a rise in real GDP by 1.65 percent. The aggregate real GDP declines are analysed further by three wide-sectors such as agriculture, manufacturing and services. It appears that agriculture registers a very low growth, whereas manufacturing sector experience a high positive growth and the growth in manufacturing sector is much higher than that of real GDP. However, the service sector suffers from negative growth. The traded sector in the economy experiences a positive growth at the expense of the non-traded sector. There is a positive growth in real consumption. Exports experience a growth rate of 27.5 percent, and also imports increases by around 15 percent. This pattern is consistent with the structure of exports and imports in Bangladesh, where the major export items woven and knit RMG output relies largely on imported raw materials. There is a fall in consumer price index by 12 percent. Wage rate for all the labour categories declines, though the fall in wage rates is more pronounced in the agricultural sector compared to the non-agricultural sector. In simulation 2, under a partial liberalisation scenario when all tariffs are reduced by 50 percent, the pattern of macroeconomic impacts is much similar to those under simulation 1. However, the impacts are less pronounced than those under simulation 1. Also, under simulation 3, the pattern of macroeconomic impacts is similar to those under simulation 1 and simulation 2. But, the impacts under simulation 3 are the least among the three simulations under consideration.

"Unemployment Model":

When labour factors are not fully employed in the economy, then labour released from the shrinking sectors can't be fully absorbed in the expanding sectors. And, as a result, the potentials of trade liberalisation can't be fully realised. In the context of the Bangladesh

economy, where unemployment is a common phenomenon, it is more likely that the assumption of unemployment in the model will lead to different simulation outcomes compared to those under a 'full employment' model.

All three simulations are carried out under the 'unemployment' model and the macro results are reported in Table 15. It appears that though the patterns of the macro impacts are similar to those under the 'full employment' model, the presence of unemployment in the economy will likely to trim down the impacts. More specifically, the growths in imports and exports are less pronounced under this specification for all three simulations.

5.3.2. Impact on Sectoral Prices and Output

"Full employment" Model:

The impacts on sectoral prices and sectoral outputs are reported in Tables 16 and 17 respectively. Under simulation 1, because of full elimination of tariff rates the import prices of the import-competing sectors decline significantly. It is anticipated that the sectors with higher tariff rates are likely to experience higher fall in import prices. In fact, the sector with the highest tariff rate is the 'food' sector, and this sector experiences the fall in import prices by 28.7 percent. Import price in the 'other industry' sector declines by 17.3 percent. Because of the fall in import prices the domestic sales prices as well as the composite prices in the import competing sectors decline. Also, domestic sales prices and the composite prices in all other sectors decline. It is interesting to observe that though the output prices and the value added prices in all sectors decline, the import-competing and the non-tradable sectors (both in agriculture and service sectors) experience larger fall than the export-oriented sectors. This suggests that this liberalisation scenario is likely to help the manufacturing and agricultural sectors which are export-oriented. The fall in the FOB export prices of the export-oriented sectors also indicate the possibility of expansion of these sectors. The fall in FOB export prices are the highest for the Woven RMG and Knit RMG sectors, which suggest that these two sectors are likely to experience significant expansion during the full liberalised regime.

It appears from Table 16 that due the full elimination of tariffs on the import-competing sectors there is a surge in imports into these sectors. For example, the 'food' sector experiences the rise in imports by as high as 45 percent. Domestic production in most of the import-competing and non-tradable sectors declines. On the other hand, domestic production as well as exports from the export-oriented sectors increases significantly. Especially, the expansion of the 'woven RMG' and 'knit RMG' is noteworthy. Since these two sectors constitute bulk to the export earnings of the country, such high growth rates in these sectors helps the country achieve high growth in overall exports. The 'other textile' sector also expands because of increased demand of input from woven and knit RMG sectors, as well as the increase in exports from this sector.

The sectoral impacts on prices and volumes under simulations 2 and 3 are similar to those under simulation 1. However, the impacts are less pronounced than those under simulation 1. Under both simulations 2 and 3 the largest expanding sectors are 'woven RMG', 'knit RMG' and 'other textiles'.

“Unemployment Model”:

Results of the simulation exercises under the ‘unemployment’ version for the impacts on sectoral prices and volumes are reported in Tables 18 and 19 respectively. Like the macro impacts, the patterns of sectoral impacts are also similar to those under the ‘full employment’ version of the model. However, the expansion of the export oriented sectors, especially that of ‘woven RMG’ and ‘knit RMG’ sectors appears to be less pronounced. On the other hand, the import competing sectors also contract by lesser magnitudes.

Table 16: Percentage Changes in Prices from the Base-run ("full employment" model)

	Simulation 1						Simulation 2						Simulation 3					
	PM	**PD**	**PV**	**PX**	**PQ**	**PE_FOB**	**PM**	**PD**	**PV**	**PX**	**PQ**	**PE_FOB**	**PM**	**PD**	**PV**	**PX**	**PQ**	**PE_FOB**
Paddy		-6.56	-6.27	-6.56	-6.56			-3.14	-2.95	-3.14	-3.14			-1.84	-1.83	-1.84	-1.84	
Grains		-6.28	-6.53	-6.28	-1.86			-3.02	-3.08	-3.02	-0.93			-1.74	-1.87	-1.74	-0.63	
Other Crops	-10.85	-6.04	-6.07	-5.99	-4.33	-1.13	-5.43	-2.88	-2.86	-2.86	-2.11	-0.54	-5.43	-1.75	-1.79	-1.73	-1.53	-0.30
Livestock		-6.74	-7.04	-6.74	-4.71			-3.20	-3.30	-3.20	-2.26			-1.89	-1.96	-1.89	-1.43	
Poultry		-6.63	-7.13	-6.63	-6.63			-3.19	-3.37	-3.19	-3.19			-1.81	-1.91	-1.81	-1.81	
Shrimp		-10.86	-6.06	-7.52	-10.86	-1.61		-5.17	-2.88	-3.62	-5.17	-0.76		-2.81	-1.66	-1.99	-2.81	-0.43
Other Fish		-6.28	-6.43	-6.22	-4.26	-0.92		-3.00	-3.05	-2.97	-2.08	-0.44		-1.69	-1.71	-1.67	-1.24	-0.25
Rice Mill	-8.61	-6.34	-5.39	-6.34	-4.41		-4.31	-3.04	-2.54	-3.04	-2.17		-8.61	-1.77	-1.49	-1.77	-1.59	
Grain Mill	-21.87	-3.39	-5.39	-3.39	-1.65		-10.93	-1.65	-2.54	-1.65	-0.87		-10.93	-1.00	-1.49	-1.00	-0.72	
Food	-28.67	-7.65	-5.33	-6.72	-10.84	-0.73	-14.33	-3.68	-2.56	-3.25	-5.14	-0.36	-7.17	-2.13	-1.50	-1.89	-2.77	-0.24
Mill Cloth		-4.04	-5.35	-4.04	-4.04			-2.01	-2.57	-2.01	-2.01			-0.98	-1.50	-0.98	-0.98	
Woven RMG		-13.17	-5.31	-4.37	-11.19	-2.39		-6.50	-2.55	-2.16	-5.55	-1.13		-3.23	-1.49	-1.06	-2.76	-0.53
Knit RMG		-16.13	-5.31	-3.43	0.89	-3.35		-8.28	-2.55	-1.72	0.35	-1.68		-3.95	-1.49	-0.78	0.17	-0.76
Other Textile	-3.41	-4.74	-5.37	-4.69	-2.10	-2.36	-1.71	-2.32	-2.57	-2.30	-1.12	-1.16		-1.36	-1.50	-1.35	-0.32	-0.60
Other Industry	-17.25	-7.77	-5.32	-7.30	-10.34	-0.62	-8.63	-3.79	-2.56	-3.57	-5.12	-0.31	-4.14	-2.05	-1.49	-1.93	-2.56	-0.19
Urban Construc		-7.07	-5.30	-7.07	-7.07			-3.45	-2.55	-3.45	-3.45			-1.88	-1.49	-1.88	-1.88	
Rurral Construc		-5.87	-5.28	-5.87	-5.87			-2.85	-2.54	-2.85	-2.85			-1.66	-1.49	-1.66	-1.66	
Public Construc		-7.76	-5.29	-7.76	-7.76			-3.79	-2.54	-3.79	-3.79			-2.01	-1.49	-2.01	-2.01	
Utility		-5.86	-5.33	-5.86	-5.86			-2.83	-2.56	-2.83	-2.83			-1.61	-1.50	-1.61	-1.61	
Trade		-5.80	-5.36	-5.80	-5.80			-2.79	-2.57	-2.79	-2.79			-1.60	-1.50	-1.60	-1.60	
Transport		-6.18	-5.33	-6.18	-6.18			-2.98	-2.55	-2.98	-2.98			-1.67	-1.49	-1.67	-1.67	
Housing		-5.48	-5.28	-5.48	-5.48			-2.64	-2.54	-2.64	-2.64			-1.53	-1.49	-1.53	-1.53	
Edu & Health		-5.92	-5.40	-5.92	-5.92			-2.85	-2.59	-2.85	-2.85			-1.62	-1.51	-1.62	-1.62	
Pub Admin		-6.05	-5.42	-6.05	-6.05			-2.92	-2.60	-2.92	-2.92			-1.65	-1.51	-1.65	-1.65	
Pri Service		-5.80	-5.39	-5.80	-5.80			-2.79	-2.58	-2.79	-2.79			-1.60	-1.51	-1.60	-1.60	

Note: 1. PD = Domestic goods price, PV=Value-added price, PX=Aggregate output price, PQ=Price of composite goods, PE_FOB=FOB export price.
2. 2005 is the base year

Source: Authors' calculations, based on simulation results.

Table 17: Percentage Changes in Volumes from the Base-run ("full employment" model)

	Simulation 1					Simulation 2					Simulation 3				
	M	X	E	Q	D	M	X	E	Q	D	M	X	E	Q	D
Paddy		-2.67		-0.58	-2.67		-1.15		-0.20	-1.15		-0.65		-0.20	-0.65
Grains	-10.06	1.09		-3.34	1.09	-4.75	0.65		-1.47	0.65	-2.71	0.42		-0.81	0.42
Other Crops	12.37	2.34	12.05	2.80	2.22	6.02	1.12	5.52	1.36	1.07	7.49	0.39	3.04	0.77	0.36
Livestock	-12.77	-1.09		-1.14	-1.09	-6.06	-0.40		-0.42	-0.40	-3.59	-0.23		-0.24	-0.23
Poultry		-0.92		1.22	-0.92		-0.35		0.60	-0.35		-0.15		0.30	-0.15
Shrimp		5.26	17.67	0.63	-1.49		2.36	7.91	0.38	-0.57		1.50	4.43	0.42	-0.03
Other Fish	-11.67	-0.62	9.71	-0.74	-0.74	-5.63	-0.25	4.49	-0.30	-0.30	-3.17	-0.12	2.50	-0.15	-0.15
Rice Mill	3.24	-0.74		-0.59	-0.74	1.82	-0.29		-0.22	-0.29	11.97	-0.25		0.18	-0.25
Grain Mill	35.76	-3.33		-2.80	-3.33	15.48	-1.45		-1.21	-1.45	17.46	-0.82		-0.56	-0.82
Food	44.96	-2.87	7.65	4.98	-4.10	18.52	-1.19	3.71	2.23	-1.75	8.08	-0.36	2.42	1.09	-0.68
Mill Cloth		-3.36		-1.28	-3.36		-1.46		-0.52	-1.46		-0.95		-0.50	-0.95
Woven RMG	-9.32	23.53	26.92	8.77	8.95	-4.50	10.54	12.06	4.14	4.22	-2.47	4.76	5.48	1.74	1.78
Knit RMG	-6.96	40.48	40.63	-5.45	16.95	-3.31	18.35	18.42	-2.55	8.19	-1.85	7.88	7.91	-1.50	3.42
Other Textile	21.17	23.45	27.35	22.40	23.37	9.70	10.63	12.31	10.20	10.60	3.29	5.17	6.20	4.33	5.15
Other Industry	11.59	-3.51	6.42	2.74	-4.14	5.45	-1.61	3.11	1.37	-1.90	2.26	-0.62	1.88	0.59	-0.78
Urban Construc		1.42		3.60	1.42		0.76		1.73	0.76		0.31		0.76	0.31
Rurral Construc		0.26		2.42	0.26		0.23		1.19	0.23		0.08		0.53	0.08
Public Construc		1.82		4.01	1.82		0.98		1.95	0.98		0.38		0.83	0.38
Utility		0.17		2.32	0.17		0.18		1.14	0.18		0.07		0.53	0.07
Trade		-0.98		1.16	-0.98		-0.33		0.62	-0.33		-0.25		0.20	-0.25
Transport		-0.54		1.60	-0.54		-0.16		0.80	-0.16		-0.12		0.33	-0.12
Housing		-1.53		0.59	-1.53		-0.64		0.31	-0.64		-0.31		0.14	-0.31
Edu & Health		0.14		2.29	0.14		0.03		0.98	0.03		0.01		0.46	0.01
Pub Admin		1.50		3.69	1.50		0.61		1.57	0.61		0.26		0.71	0.26
Pri Service		-1.14		0.99	-1.14		-0.45		0.50	-0.45		-0.23		0.22	-0.23

Note: 1. M =Imports, X=Domestic Output, E=Exports, Q= composite goods, D=Domestic Sales.
2. 2005 is the base year

Source: Authors' calculations, based on simulation results.

Table 18: Percentage Changes in Prices from the Base-run ("unemployment" model)

	Simulation 1 (a)						Simulation 2 (a)						Simulation 3 (a)					
	PM	**PD**	**PV**	**PX**	**PQ**	**PE_FOB**	**PM**	**PD**	**PV**	**PX**	**PQ**	**PE_FOB**	**PM**	**PD**	**PV**	**PX**	**PQ**	**PE_FOB**
Paddy		-5.90	-5.64	-5.90	-5.90			-2.83	-2.66	-2.83	-2.83			-1.66	-1.65	-1.66	-1.66	
Grains		-5.15	-5.35	-5.15	-1.53			-2.48	-2.53	-2.48	-0.76			-1.43	-1.53	-1.43	-0.52	
Other Crops	-9.22	-5.44	-5.46	-5.39	-3.90	-1.02	-4.21	-2.59	-2.57	-2.57	-1.90	-0.49	-4.44	-1.58	-1.61	-1.56	-1.38	-0.27
Livestock		-5.53	-5.77	-5.53	-3.86			-2.62	-2.71	-2.62	-1.85			-1.55	-1.61	-1.55	-1.17	
Poultry		-5.97	-6.42	-5.97	-5.97			-2.87	-3.03	-2.87	-2.87			-1.63	-1.72	-1.63	-1.63	
Shrimp		-8.91	-4.97	-6.17	-8.91	-1.32		-4.24	-2.36	-2.97	-4.24	-0.62		-2.30	-1.36	-1.63	-2.30	-0.35
Other Fish		-5.65	-5.79	-5.60	-3.83	-0.83		-2.70	-2.75	-2.67	-1.87	-0.40		-1.52	-1.54	-1.50	-1.12	-0.23
Rice Mill	-7.32	-5.20	-4.42	-5.20	-3.62		-3.93	-2.49	-2.08	-2.49	-1.78		-7.53	-1.45	-1.22	-1.45	-1.30	
Grain Mill	-18.59	-3.05	-4.85	-3.05	-1.49		-8.53	-1.49	-2.29	-1.49	-0.78		-8.75	-0.90	-1.34	-0.90	-0.65	
Food	-24.37	-6.27	-4.37	-5.51	-8.89	-0.60	-11.43	-3.02	-2.10	-2.67	-4.21	-0.30	-6.93	-1.75	-1.23	-1.55	-2.27	-0.20
Mill Cloth		-3.64	-4.82	-3.64	-3.64			-1.81	-2.31	-1.81	-1.81			-0.88	-1.35	-0.88	-0.88	
Woven RMG		-10.80	-4.35	-3.58	-9.18	-1.96		-5.33	-2.09	-1.77	-4.55	-0.93		-2.65	-1.22	-0.87	-2.26	-0.43
Knit RMG		-14.52	-4.78	-3.09	0.80	-3.02		-7.45	-2.30	-1.55	0.32	-1.51		-3.56	-1.34	-0.70	0.15	-0.68
Other Textile	-2.90	-3.89	-4.40	-3.85	-1.72	-1.94	-1.28	-1.90	-2.11	-1.89	-0.92	-0.95		-1.12	-1.23	-1.11	-0.26	-0.49
Other Industry	-14.66	-6.99	-4.79	-6.57	-9.31	-0.56	-7.54	-3.41	-2.30	-3.21	-4.61	-0.28	-3.11	-1.85	-1.34	-1.74	-2.30	-0.17
Urban Construc		-5.80	-4.35	-5.80	-5.80			-2.83	-2.09	-2.83	-2.83			-1.54	-1.22	-1.54	-1.54	
Rurral Construc		-5.28	-4.75	-5.28	-5.28			-2.57	-2.29	-2.57	-2.57			-1.49	-1.34	-1.49	-1.49	
Public Construc		-6.36	-4.34	-6.36	-6.36			-3.11	-2.08	-3.11	-3.11			-1.65	-1.22	-1.65	-1.65	
Utility		-5.27	-4.80	-5.27	-5.27			-2.55	-2.30	-2.55	-2.55			-1.45	-1.35	-1.45	-1.45	
Trade		-4.76	-4.40	-4.76	-4.76			-2.29	-2.11	-2.29	-2.29			-1.31	-1.23	-1.31	-1.31	
Transport		-5.56	-4.80	-5.56	-5.56			-2.68	-2.30	-2.68	-2.68			-1.50	-1.34	-1.50	-1.50	
Housing		-4.49	-4.33	-4.49	-4.49			-2.16	-2.08	-2.16	-2.16			-1.25	-1.22	-1.25	-1.25	
Edu & Health		-5.33	-4.86	-5.33	-5.33			-2.57	-2.33	-2.57	-2.57			-1.46	-1.36	-1.46	-1.46	
Pub Admin		-4.96	-4.44	-4.96	-4.96			-2.39	-2.13	-2.39	-2.39			-1.35	-1.24	-1.35	-1.35	
Pri Service		-4.76	-4.42	-4.76	-4.76			-2.29	-2.12	-2.29	-2.29			-1.31	-1.24	-1.31	-1.31	

Note: 1. PD = Domestic goods price, PV=Value-added price, PX=Aggregate output price, PQ=Price of composite goods, PE_FOB=FOB export price.
2. 2005 is the base year

Source: Authors' calculations, based on simulation results.

Table 19: Percentage Changes in Volumes from the Base-run ("unemployment" model)

	Simulation 1 (a)					Simulation 2 (a)					Simulation 3 (a)				
	M	X	E	Q	D	M	X	E	Q	D	M	X	E	Q	D
Paddy		-2.32	0.00	-0.50	-2.32		-1.00	0.00	-0.17	-1.00		-0.57	0.00	-0.17	-0.57
Grains	-8.75	0.95	0.00	-2.91	0.95	-4.13	0.57	0.00	-1.28	0.57	-2.36	0.37	0.00	-0.70	0.37
Other Crops	10.14	1.92	9.88	2.30	1.82	4.94	0.92	4.53	1.12	0.88	6.14	0.32	2.49	0.63	0.30
Livestock	-10.47	-0.89	0.00	-0.93	-0.89	-4.97	-0.33	0.00	-0.34	-0.33	-2.94	-0.19	0.00	-0.20	-0.19
Poultry		-0.80	0.00	1.06	-0.80		-0.30	0.00	0.52	-0.30		-0.13	0.00	0.26	-0.13
Shrimp		4.58	15.37	0.55	-1.30		2.05	6.88	0.33	-0.50		1.31	3.85	0.37	-0.03
Other Fish	-9.57	-0.51	7.96	-0.61	-0.61	-4.62	-0.21	3.68	-0.25	-0.25	-2.60	-0.10	2.05	-0.12	-0.12
Rice Mill	2.66	-0.61	0.00	-0.48	-0.61	1.49	-0.24	0.00	-0.18	-0.24	9.82	-0.21	0.00	0.15	-0.21
Grain Mill	31.11	-2.90	0.00	-2.44	-2.90	13.47	-1.26	0.00	-1.05	-1.26	15.19	-0.71	0.00	-0.49	-0.71
Food	39.12	-2.50	6.66	4.33	-3.57	16.11	-1.04	3.23	1.94	-1.52	7.03	-0.31	2.11	0.95	-0.59
Mill Cloth		-2.76	0.00	-1.05	-2.76		-1.20	0.00	-0.43	-1.20		-0.78	0.00	-0.41	-0.78
Woven RMG	-7.64	19.29	22.07	7.19	7.34	-3.69	8.64	9.89	3.39	3.46	-2.03	3.90	4.49	1.43	1.46
Knit RMG	-6.06	35.22	35.35	-4.74	14.75	-2.88	15.96	16.03	-2.22	7.13	-1.61	6.86	6.88	-1.31	2.98
Other Textile	18.42	20.40	23.79	19.49	20.33	8.44	9.25	10.71	8.87	9.22	2.86	4.50	5.39	3.77	4.48
Other Industry	9.50	-2.88	5.26	2.25	-3.39	4.47	-1.32	2.55	1.12	-1.56	1.85	-0.51	1.54	0.48	-0.64
Urban Construc		1.16	0.00	2.95	1.16		0.62	0.00	1.42	0.62		0.25	0.00	0.62	0.25
Rurral Construc		0.23	0.00	2.11	0.23		0.20	0.00	1.04	0.20		0.07	0.00	0.46	0.07
Public Construc		1.58	0.00	3.49	1.58		0.85	0.00	1.70	0.85		0.33	0.00	0.72	0.33
Utility		0.14	0.00	1.90	0.14		0.15	0.00	0.93	0.15		0.06	0.00	0.43	0.06
Trade		-0.80	0.00	0.95	-0.80		-0.27	0.00	0.51	-0.27		-0.21	0.00	0.16	-0.21
Transport		-0.47	0.00	1.39	-0.47		-0.14	0.00	0.70	-0.14		-0.10	0.00	0.29	-0.10
Housing		-1.33	0.00	0.51	-1.33		-0.56	0.00	0.27	-0.56		-0.27	0.00	0.12	-0.27
Edu & Health		0.11	0.00	1.88	0.11		0.02	0.00	0.80	0.02		0.01	0.00	0.38	0.01
Pub Admin		1.23	0.00	3.03	1.23		0.50	0.00	1.29	0.50		0.21	0.00	0.58	0.21
Pri Service		-0.93	0.00	0.81	-0.93		-0.37	0.00	0.41	-0.37		-0.19	0.00	0.18	-0.19

Note: 1. M =Imports, X=Domestic Output, E=Exports, Q= composite goods, D=Domestic Sales.
2. 2005 is the base year

Source: Authors' calculations, based on simulation results.

5.3.3. Impact on Sectoral Labour Demand

"Full Employment Model":

As has been mentioned before, labour factor has been disaggregated into four categories: agricultural unskilled labour, agricultural skilled labour, non-agricultural skilled labour and non-agricultural unskilled labour. It is anticipated that due to trade liberalisation labour in contracting sectors are likely to release labour, and because of the assumption of 'full employment', the released labour will be absorbed in the expanding sectors. We assume that there is a full mobility of agricultural labour factors across the production sub-sectors within the agricultural sector. Similarly, there is a full mobility of non-agricultural labour factors across the production sub-sectors within the non-agricultural sector.

It appears from Table 20 that as under simulation 1, among the agricultural sectors, as 'paddy', 'livestock' and 'poultry' sectors contract, demand for both skilled and unskilled agricultural labour decline in these sectors. On the other hand, demand for skilled and unskilled agricultural labour increases in all other agricultural sectors. The 'shrimp' and 'other crops' sectors experience the largest increase in demand for both skilled and unskilled agricultural labour. In the case of manufacturing sector, as a result of the contraction of the sectors like 'rice milling', 'grain milling', 'food', 'mill cloth' and 'other industries', both skilled and unskilled non-agricultural labour from these sectors are released. The largest fall in growth in labour demand is experienced by the 'other industries' sector followed by the 'food' sector. On the other hand, three manufacturing sectors, i.e., 'woven RMG', 'knit RMG' and 'other textiles', experience high rise in demand for skilled and unskilled labour. The growth in labour demand in the 'knit RMG' sector is the highest. Finally, all the services sectors experience fall in demand for both skilled and unskilled labour.

The pattern of the results for simulation 2 and 3 are similar to those under simulation 1. However, as discussed before, the magnitudes of the impacts are smaller in these two simulations.

"Unemployment" Model:

The simulation results for the changes in sectoral labour demand under the 'unemployment' version of the model are reported in Table 21. As the export-oriented sectors expand less prominently than those under the 'full employment' model, the growth in demand for labour also appears to be less pronounced.

This section has investigated the impacts of different trade liberalisation scenarios on the macroeconomy as well as on sectoral prices, outputs, trade and labour demand. It appears that any further trade liberalisation in Bangladesh, in general, will favour the expansion of the export-oriented sectors at the cost of import-competing sectors. Such results hold under both the 'full employment' and 'unemployment' specifications of the CGE model.

Table 20: Percentage Changes in Labour Demand from the Base-run ("full employment" model)

	Simulation 1				Simulation 2				Simulation 3			
	LAgUnsk	LAgSk	LNAgUnsk	LNAgSk	LAgUnsk	LAgSk	LNAgUnsk	LNAgSk	LAgUnsk	LAgSk	LNAgUnsk	LNAgSk
Paddy	-2.24	-2.55			-1.03	-1.15			-0.52	-0.65		
Grains	1.98	1.66			0.95	0.83			0.70	0.56		
Other Crops	3.73	3.41			1.68	1.55			0.69	0.55		
Livestock	-0.95	-1.25			-0.37	-0.50			-0.16	-0.30		
Poultry	-0.60	-0.90			-0.31	-0.44			0.02	-0.11		
Shrimp	4.09	3.77			1.71	1.59			1.40	1.27		
Other Fish	0.37	0.06			0.12	0.00			0.27	0.13		
Rice Mill			-2.38	-2.11			-1.08	-0.94			-0.68	-0.62
Grain Mill			-0.41	-0.14			-0.12	0.02			-0.10	-0.03
Food			-5.06	-4.80			-2.27	-2.14			-0.98	-0.91
Mill Cloth			-1.44	-1.17			-0.66	-0.52			-0.20	-0.13
Woven RMG			25.35	25.69			11.17	11.33			5.44	5.51
Knit RMG			44.64	45.04			19.83	20.00			9.03	9.11
Other Textile			24.62	24.96			11.03	11.18			5.38	5.46
Other Industry			-6.56	-6.31			-3.17	-3.03			-1.31	-1.24
Urban Construc			-1.43	-1.16			-0.65	-0.52			-0.30	-0.23
Rurral Construc			-0.65	-0.38			-0.26	-0.12			-0.19	-0.12
Public Construc			-2.13	-1.87			-0.97	-0.83			-0.44	-0.37
Utility			-0.73	-0.46			-0.28	-0.14			-0.12	-0.05
Trade			-1.78	-1.51			-0.72	-0.58			-0.43	-0.36
Transport			-1.93	-1.66			-0.85	-0.71			-0.41	-0.35
Housing												
Edu & Health			-0.85	-0.58			-0.47	-0.33			-0.21	-0.14
Pub Admin			0.28	0.56				0.14				0.07
Pri Service			-1.93	-1.67			-0.85	-0.71			-0.41	-0.34

Note: 1. LAgUnsk =Agricultural unskilled labour, LAgSK=Agricultural Skilled labour, LNAgUnsk=Non-agricultural unskilled labour, LNAgSk= Non-agricultural skilled labour.

2. 2005 is the base year

Source: Authors' calculations, based on simulation results.

Table 21: Percentage Changes in Labour Demand from the Base-run ("unemployment" model)

	Simulation 1				Simulation 2				Simulation 3			
	LAgUnsk	LAgSk	LNAgUnsk	LNAgSk	LAgUnsk	LAgSk	LNAgUnsk	LNAgSk	LAgUnsk	LAgSk	LNAgUnsk	LNAgSk
Paddy	-1.84	-2.09			-0.84	-0.94			-0.43	-0.53		
Grains	1.72	1.44			0.83	0.72			0.61	0.49		
Other Crops	3.39	3.10			1.53	1.41			0.63	0.50		
Livestock	-0.78	-1.03			-0.30	-0.41			-0.13	-0.25		
Poultry	-0.52	-0.78			-0.27	-0.38			0.02	-0.10		
Shrimp	3.72	3.43			1.56	1.45			1.27	1.16		
Other Fish	0.34	0.05			0.11	0.00			0.25	0.12		
Rice Mill			-1.95	-1.73			-0.89	-0.77			-0.56	-0.51
Grain Mill			-0.36	-0.12			-0.10	0.02			-0.09	-0.03
Food			-4.60	-4.37			-2.07	-1.95			-0.89	-0.83
Mill Cloth			-1.18	-0.96			-0.54	-0.43			-0.16	-0.11
Woven RMG			22.05	22.35			9.72	9.86			4.73	4.79
Knit RMG			40.62	40.99			18.05	18.20			8.22	8.29
Other Textile			22.40	22.71			10.04	10.17			4.90	4.97
Other Industry			-5.38	-5.17			-2.60	-2.48			-1.07	-1.02
Urban Construc			-1.24	-1.01			-0.57	-0.45			-0.26	-0.20
Rurral Construc			-0.59	-0.35			-0.24	-0.11			-0.17	-0.11
Public Construc			-1.75	-1.53			-0.80	-0.68			-0.36	-0.30
Utility			-0.64	-0.40			-0.24	-0.12			-0.10	-0.04
Trade			-1.62	-1.37			-0.66	-0.53			-0.39	-0.33
Transport			-1.76	-1.51			-0.77	-0.65			-0.37	-0.32
Housing			0.00	0.00			0.00	0.00			0.00	0.00
Edu & Health			-0.74	-0.50			-0.41	-0.29			-0.18	-0.12
Pub Admin			0.25	0.51			0.00	0.13			0.00	0.06
Pri Service			-1.76	-1.52			-0.77	-0.65			-0.37	-0.31

Note: 1. LAgUnsk =Agricultural unskilled labour, LAgSK=Agricultural Skilled labour, LNAgUnsk=Non-agricultural unskilled labour, LNAgSk= Non-agricultural skilled labour.

2. 2005 is the base year

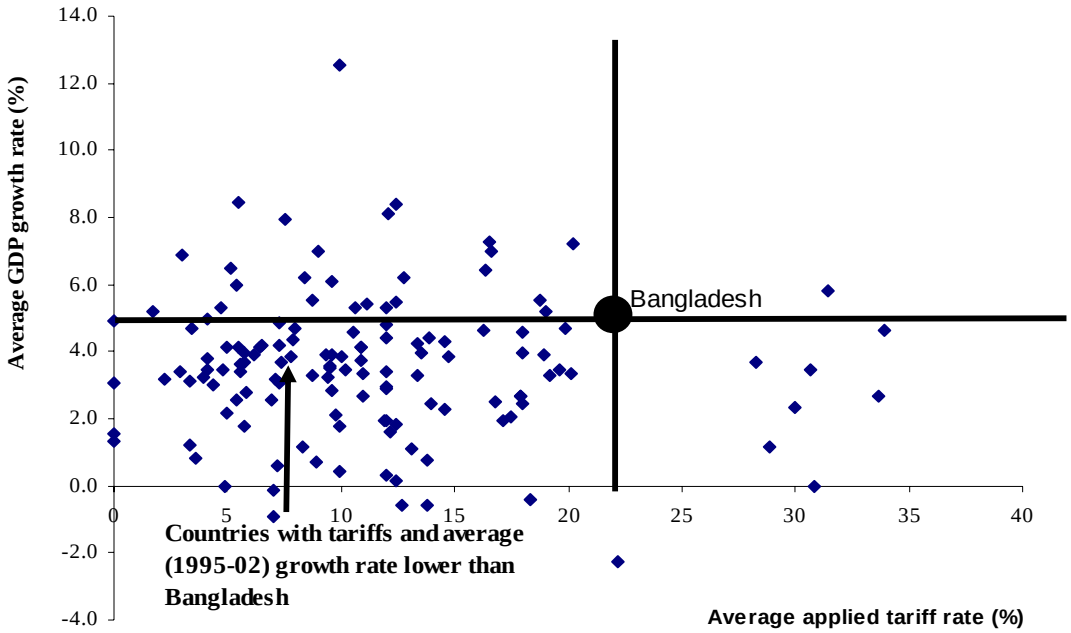
Source: Authors' calculations, based on simulation results.

VI. Liberalisation as a Trade Policy Option

The above data seems to suggest that the existing level of anti-export bias may not be very serious. There are probably only a few countries that have neutral trade regimes, whilst amongst the low-income countries, finding such an example may not be possible. Notwithstanding, it is an option for Bangladesh to carry out further liberalisation measures to reduce the existing policy bias. However, the main question policymakers now need to deal with is: to what extent further liberalisation will stimulate export response, particularly from the non-RMG sectors and overall growth performance of the country.

Placing recommendations about the need for further liberalisation on the basis of a simple and casual inter-country comparison between trade barriers and growth performance can be problematic as inferences drawn are sensitive to the choice of countries used. For example, Figure 11 scatter plots the average GDP growth and applied tariffs for a number of 135 countries from which it can be deduced that there are only 25 countries that have lower tariffs but higher GDP growth than Bangladesh. In comparison to these countries, Bangladesh could be advised to reduce tariffs. But, as against the 102 countries with tariffs and growth rates lower than those of Bangladesh, such a suggestion is unlikely to make much sense.

Figure 11: Economic Growth and Average Tariff Rates: Bangladesh and Other Countries



Note: (1) GDP growth rates are annual averages for 1995-2002, data for which come from the World Bank World Development Indicators CD-ROM 2004.
(2) Average applied tariff rates are from WTO (2003). They correspond to average tariff for all goods (both agriculture and non-agricultural goods).

Against this backdrop, Raihan (2007) has explored alternative options for future direction of trade policy reforms in Bangladesh with the help of an inter-temporal dynamic Computable

General Equilibrium (CGE) model. The model has been simulated for three alternative trade liberalisation scenarios depicting 'full-instantaneous-indiscriminating'[13] liberalisation, 'partial and rationalised'[14] liberalisation, and 'gradual liberalisation of final goods imports'[15]. The findings of the simulations are as follows:

- 'Full-instantaneous-indiscriminating' tariff liberalisation leads to a lower growth of investment both in the short and long-run compared to the other two simulations. Export growth in the short and long-run is lower compared to the two other simulations. There is negative growth in consumption in the short-run, though in the long-run growth is positive. The increase in overall welfare is significantly lower than those under the two other simulations. The reason behind such an impact lies in the fact that this kind of trade liberalisation shock may produce a negative impact on the domestic economy as domestic producers are faced with sudden and unequal competition from foreign competitors. In the short-run, this may result in the closing down of many of the once highly protected import-competing industries and a loss of employment, which are likely to have a depressing effect on the domestic economy. If the losses in production and employment are not compensated by the growth in other industries (i.e., the export-oriented sectors), then the net impact of trade liberalisation on the economy is likely to be negative. However, in the long run, due to the reallocation of resources towards more productive sectors, the economy can be on the path of positive growth.

- 'Partial-rationalised' tariff liberalisation, i.e. reducing tariffs on the import of capital and intermediate goods, while maintaining some tariff protection on the final goods sector appears to be able to realise the beneficial impacts of trade liberalisation. This simulation generates higher export and investment growth. The growth in consumption and overall welfare are also higher under this simulation. The reason behind such outcomes is that a 'partial and rationalised' liberalisation of trade does not expose domestic firms fully to intense foreign competition. It provides a protective net. Furthermore, domestic firms are benefited because of a higher level of liberalisation of imports of intermediate and capital goods compared to the final goods. This occurs in two ways: firstly, it ensures the supply of imported intermediate and capital goods at lower prices; and secondly, it provides some protection to the domestic import-competing firms.

- The gradual tariff elimination on the import of final goods (with some partial and instantaneous tariff eliminations on the import of capital and intermediate goods) generates a better outcome compared to the 'full-instantaneous-indiscriminating' tariff liberalisation. This type of tariff liberalisation helps the domestic firms in two ways: firstly, as in the 'partial-rationalised' scenario, it provides the domestic firms with cheaper intermediate and capital goods, which lowers the cost of production; and

[13] 'Full' liberalisation occurs when all existing tariffs are fully eliminated. It is 'instantaneous' when all tariffs are eliminated in the first year. Finally, it is also 'indiscriminating' when no distinction is made between the tariff elimination on the import of final goods and that of intermediate and capital goods.

[14] This is a 'partial' liberalisation when tariffs on the import of final goods are reduced by 25 percent, and tariffs on both capital and intermediate goods imports are reduced by 50 percent. On the other hand, this scenario is deemed 'rational' as the intermediate and import of capital goods are more liberalised than the final goods imports, i.e., keeping some protection for the final goods sectors.

[15] This is 'gradual' as tariffs on the import of final goods are reduced by 5 percent annually over the next 10 years, while tariffs on both capital and intermediate imports are reduced by 50 percent in the first year.

secondly, it gives the import-competing domestic firms the necessary breathing space to cope with the more intense foreign competition. Box 3 summarises the macro results of the simulations in Raihan (2007).

Box 3: Macroeconomic Effects of Three Simulations
(% change from the base-run)

	Period	Full, Instantaneous, Indiscriminating Liberalisation	Partial and Rationalised Liberalisation	Gradual Liberalisation of Final Goods Import
Imports	**Short run**	10.0	9.7	9.1
	Long run	4.9	7.8	5.6
Exports	**Short run**	3.9	7.9	8.2
	Long run	7.5	11.5	13.4
Domestic Goods	**Short run**	-4.1	-2.2	-0.6
	Long run	-7.4	4.5	3.5
Investment	**Short run**	1.4	5.3	10.8
	Long run	3.5	11.8	13.5
Capital Stock	**Short run**	0.5	0.4	1.4
	Long run	2.3	4.8	5.4
Consumption	**Short run**	-2.2	-2.1	2.3
	Long run	2.1	8.5	9.6
Overall Welfare Effects (%)		+1.3%	+3.6%	+4.1%

Source: Raihan (2007).

VI. Conclusion

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

The existence of anti-export bias attracts policy suggestions for withdrawing the remaining quantitative restrictions for trade reasons, to bring down the top customs duty rate and to eliminate all other import taxes such as the infrastructural development surcharges and supplementary duties. However, as Bangladesh's most trade-related QRs are almost extinct now, removal of the few existing QRs do not appear to be a significant constraining factor for future openness of the trade regime.

As regards the suggestion of further tariff reduction, the main problem is the ensuing revenue shortfall. Various estimates suggest a further reduction in the maximum rate may result in a substantial reduction in government revenues.[16] In theory, revenue losses could be made up either by expanding the domestic tax base or increasing the VAT rate or by a combination of

[16] Various revenue loss estimates under alternative tariff structure can be found in the report titled "Review of Relative protection", prepared for the Bangladesh Tariff Commission, under the Protection Analysis and Trade Cooperation Project, February 2002.

both. However, it must be stressed that the tax administration in a poor country like Bangladesh is not as flexible as in developed countries that the revenue loss as a result of import liberalisation can easily be compensated by increased revenue mobilisation efforts in the domestic economy.

In addition to above, available evidence seems to suggest that growth performance of Bangladesh has not been significantly influenced by liberalisation measures. The potential growth dividend arising from further tariff cuts also appears to be very small. Furthermore, that in the past, liberalisation has failed to energise export response is quite obvious. These findings would imply that liberalisation of the tariff regime alone is likely to be insufficient for promoting export and economic growth.

Although liberalisation should encompass many factors affecting trade and business practices, in Bangladesh overwhelming attention has been given to trade-related instruments. In fact, policymakers are so inclined to measures related to tariffs and QRs that most of the time reform measures are used interchangeably with trade liberalisation measures. Reform of institutions has largely been overlooked. Embarking on such trade reforms as tariff cuts and elimination of QRs, are 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. May be it is high time we considered trade policy reform as institutional reform, as strongly pointed out by Rodrik (2002).

The above arguments should not be interpreted in such a way to have indicated that there is no need for further liberalisation thus removing anti-export bias. There can definitely be need for such action, but it will have to be supported by other more difficult reform measures. It is understood that since the 1990s, Bangladesh embarked on a fast paced tariff reform programme, it may not be possible to continue further liberalisation on a comparable tempo. Nevertheless, it would be unwise to reverse the process of liberalisation and thus the progress achieved in the previous decade. Increasing protection through supposed trade neutral instruments such as supplementary tariffs and VAT appears to be incompatible with the liberalisation measures that have already been undertaken. Moreover, ensuring the neutrality of supplementary duty and VAT by applying them to domestic industries in a non-discriminatory fashion would have contributed to increased government revenue on the one hand and reduced anti-export bias on the other.

As already pointed out, the increasingly discriminatory use of supplementary duty largely reflects revenue concerns of the government. In fact, despite all reforms, the tax base of the government remains narrow. In a sense, it points towards the weakness of the previous reform programmes that Bangladesh undertook. An effective reform programme is the one that allows the government to expand the tax base to reduce dependence on tariff revenues. Bangladesh failed to reduce dependence on import revenues as the reforms of the 1980s and 1990s mostly concentrated on easy measures like removal of QRs and tariff cuts as mentioned above. This essentially suggests that trade liberalisation is just one component of overall reform measures.

It is also important to recognise the difference between trade policy and policy of trade liberalisation. The distinction is very important for protecting some policy space that is required to promote development priorities. An overall pro-liberalisation policy does not exclude the possibility of policy support for certain specific sectors. In fact, across the board

drastic tariff reduction may not be desirable not only because of the revenue concern of the government but also because of the need for providing some support to domestic industries with high growth and poverty alleviation potentials. By adopting a pro-active and analytical policy regime effective support to the growth of small and informal sector activities with significant poverty alleviation effects can be provided, but many such opportunities seem to have been missed in the absence of a clear-cut trade policy philosophy and lack of manoeuvrability.

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Annex Table 1: Estimates of the Labour Demand Function

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

	Constant	LY	LW	LXO	LMO
Miscellaneous petroleum Products	-5.36*** (1.85)	0.47* (0.26)	-1.81*** (0.21)	0.09 (0.06)	
	-4.39** (1.83)	0.23 (0.26)	-1.66 (0.20)		**-0.10** (0.04)**
Rubber Products	0.53 (0.59)	0.79*** (0.08)	-0.69*** (0.06)	0.03 (0.02)	
	0.79 (0.61)	0.73*** (0.08)	-0.67*** (0.07)		0.02 (0.01)
Plastic Products	0.99 (1.34)	0.58*** (0.05)	-0.78*** (0.25)	**0.06** (0.03)**	
	-1.26* (0.73)	0.59*** (0.05)	-1.16*** (0.17)		0.02 (0.02)
Pottery and Chinaware	2.98** (1.22)	1.01*** (0.12)	0.048 (0.21)	0.0003 (0.03)	
	2.86** (1.03)	1.02*** (0.07)	0.02 (0.22)		0.02 (0.03)
Glass and its Products	2.78** (1.12)	0.64*** (0.13)	-0.40** (0.14)	0.04 (0.03)	
	2.35** (1.14)	0.64*** (0.14)	-0.43** (0.15)		-0.007 (0.02)
Non Metallic Mineral Products	-2.77** (1.20)	0.99*** (0.19)	-1.05*** (0.17)	0.027 (0.07)	
	-3.05** (1.23)	0.99*** (0.18)	-1.07*** (0.17)		-0.02 (0.04)
Iron and Steel Basic Industries	5.71*** (0.94)	0.17 (0.12)	-0.50*** (0.09)	-0.01 (0.027)	
	5.63*** (0.97)	0.21 (0.13)	-0.49*** (0.09)		0.03 (0.19)
Non-Ferrous Metal Industry	4.34*** (1.12)	0.52*** (0.12)	-0.49 (0.23)	0.05 (0.06)	
	3.59*** (0.72)	0.49*** (0.12)	-0.63*** (0.16)		-0.002 (0.02)
Fabricated Metal Products	9.69*** (1.14)	-0.25* (0.14)	-0.15 (0.11)	0.02 (0.03)	
	8.89*** (0.99)	-0.18 (0.14)	-0.19 (0.10)		**-0.014* (0.02)**
Non-Electrical Machinery	5.88*** (1.99)	-0.21 (0.22)	-0.99*** (0.21)	-0.03 (0.08)	
	5.17*** (1.58)	-0.11 (0.17)	-0.88*** (0.17)		**-1.18*** (0.358)**
Electrical Machinery	0.28 (1.04)	0.41** (0.17)	-1.27*** (0.19)	-0.04 (0.05)	
	1.96(0.74)	0.50*** (0.11)	-0.65*** (0.18)		**-0.92*** (0.18)**
Transport Equipment	1.11 (1.92)	0.44 (0.31)	-0.31** (0.17)	-0.03 (0.04)	
	0.82 (2.08)	0.51 (0.33)	-0.26** (0.13)		-0.005 (0.04)
Scientific, Precision etc + Photographic, Optical Goods	2.52 (2.34)	0.15 (0.36)	-1.02*** (0.06)	0.053 (0.035)	
	2.31 (2.44)	0.14 (0.38)	-1.03*** (0.06)		0.02 (0.02)

Data Source: Census of Manufacturing Industries in Bangladesh (1978-2000)
Note: Y, W, XO and MO are the output, wage, export-output ratio and import-output ratio respectively. The depended variable is the employment.