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WTO and Bangladesh's Farm Trade

*M. M. Goel**
*Ramphul***

This study seeks to examine the impact of WTO on Bangladesh's farm trade. We find that under the WTO regime, Bangladesh's share in world total agricultural trade has increased. Bangladeshi agriculture has opened in new economic environment. Bangladesh's farm imports have grown faster than that of exports since the AoA, as a result, its agricultural trade deficit has widened rapidly. The importance of agricultural exports in the country's overall exports has worsened. The specialization in agricultural trade and net terms of trade has deteriorated drastically. Further, results indicate that in the emerging farm trade order Bangladesh's competitiveness is much better than leading producers especially in the exports of tea and jute.

Introduction

Agriculture continues to be a fundamental instrument for sustainable development and poverty reduction in Bangladesh. It is an important source of gross domestic product (GDP) with 20 per cent of it originating in this sector in 2006-07. In fact most of the Bangladeshi poor, i.e., to be precise 85 per cent, live and earn their livelihood in the rural areas. The sector alone employees 63.2 per cent of country's total labour force and 80 per cent of the total population depends on agriculture for their livelihood. Agriculture helps to ameliorate the conditions of who belong to the lowest rungs of social and economic strata and it soften the harsh edge of extreme poverty in rural areas. Besides, the sector is vital for food security and acceleration in tempo of economic growth in the country. In the emerging liberalized farm trade order, the sector holds great promise to be a major source of foreign exchange earnings. Moreover, its strong forward and backward linkages within the rural sector and with the other sector of the economy provide added stimulus for more inclusive growth and faster income generation. A robust and vibrant food and agricultural system thus, constitutes an important factor in the strategy of overall economic development of Bangladesh. Any change in agriculture sector has a spill over effect on the entire Bangladeshi economy.

The world agricultural trading system has witnessed profound changes during the second half of the 20th century. The treaty on agriculture signed at the ministerial meet on April

* Dr. Goel is Chairman, Department of Economics, Kurukshetra University.
** Dr. Ramphul is associated with Department of Business Management, KIIT, Gurgaon, India.

15, 1994 by 125 nations including Bangladesh and the agreement on agriculture (AoA) became effective from 1st January 1995, with the establishment of the WTO. The chief aim of WTO setup is raise in the living standard of world poor through optimal utilization of world resources. To meet this objective three chief provisions are made in AoA. These consist: (i) market access, (ii) domestic support, and (iii) exports subsidies. As a least developed country (LDC), Bangladesh was not required to make any reduction commitment in AoA, however, it was required to bind tariff on all agricultural products. It was required to tariffy all non-tariff measures imposed on imports of agricultural products which includes: quantitative restrictions, variable import levies, minimum import prices, discretionary import licensing, non-tariff measures maintained through state-trading enterprises, voluntary export restraints, and similar border measures other than ordinary customs duties. Bangladesh has, unilaterally, significantly reformed both tariff and non-tariff barriers over the years (Ingco and Kandiero 2003). In 1999-00, the un-weighted average tariffs for all agricultural products declined to 20 per cent from 57 per cent in 1991–92. In a similar way, the import weighted average tariff fell to 14 per cent from 57 per cent during the same period (Dowlah 2001). In its first notification to WTO, Bangladesh did not submit any schedule of exports subsidy commitment and did submit a blank schedule of domestic support commitments (WTO 2002). Consequently, as per current AoA Bangladesh is obliged: (a) not to provide support to farmers in excess of 10 per cent of the value of agricultural products in case of both the production related subsidies like market price support, and inputs subsidies for agriculture such as subsidy on irrigation, power, seed, fertilizer and credit, and (b) not to provide any export subsidy to agricultural products, except those exempted for developing countries.

By gradual elimination of imperfections in world agricultural trade, the AoA attempts to open up substantial trading opportunities for leading agricultural producers. The developing countries expected to gain through increase in their share in world farm trade. The AoA in its article 20 incorporates the provision to review the experience of member countries regarding its implementation, and starts fresh negotiations for continuing the process of opening up of world agricultural market and reducing distortions. A new round of multilateral trade negotiations on agriculture has already begun and has reached at a critical stage. This has created a piquant situation for several WTO member countries. Nabil et al. (2006) examines the impact of WTO agreements and unilateral trade policy reforms on production, welfare and poverty in Bangladesh by applying a sequential dynamic computable general equilibrium (CGE) model. They conclude that the greatest beneficiaries of the Doha agreement appear to be rural large farmers who capitalize on rising returns to agricultural capital (primarily land). It is, therefore, pertinent to estimate the impact of AoA on Bangladesh's balance of agricultural trade. Analysis of agricultural trade performance will lead to formulation of appropriate strategies to grab the advantageous opportunity thrown up by AoA of the WTO.

The remaining part of the study is organised as follows. Section II sets out the objectives of the study, tells the sources of data and discusses the methods of analysis. Section III is devoted to assess the performance of agricultural trade, workout Bangladesh's comparative

advantage in farm trade and sources of export growth. Last section summaries the main findings and offers their policy implications.

Objectives

The study is aimed at the following objectives:

(i) To estimate the impact of AoA on Bangladesh's balance of agricultural trade.

(ii) To workout Bangladesh's comparative advantage in the production of different crops.

(iii) To identify the sources of Bangladesh's export growth.

Methodology

For analyzing the information we have used various mathematical, statistical and econometric techniques. A brief discussion of the analytical techniques/ methods used is in order.

Compound Annual Growth Rate (CAGR)

To compute CAGR following semi log-linear regression model is used:

$$\log Y = \log A + \log B\, T \qquad (1)$$

Where,

Y: Dependent variable,

B: 1+g; g = compound growth rate,

T: Time.

The parameters A and B in the model are estimated by using Ordinary Least Squares (OLS) method.

The CAGR is computed by employing following formula:

$$CAGR = [\text{Antilog}(\log B)-1]100 \qquad (2)$$

Nominal Growth Rate

Let's define:

f1 =W1/W0; W1 = World agricultural imports in the current year, W0 = World agricultural imports in the initial year,

f2 = (T1/T0)/(W1/W0); T1= Country's agricultural exports in the current year,

T0 = Country's agricultural exports in the initial year,

f3 = (T0/X0)/(T1/X1); X1= Country's total exports in the current year, X0= Country's total exports in the initial year.

Now, the nominal growth rate is computed by the product of the f1, f2 and f3, i.e.

$$G = f1f2f3 \quad (3)$$

Where,

G :Nominal growth rate.[1]

Net Terms of Trade

The net terms of agricultural trade is estimated by using following measure:

$$NT = \frac{Px}{Pm}100 \quad (4)$$

Where,

NT : Net terms of trade,

Px : Value index of agricultural exports,

Pm: Value index of agricultural imports.

Specialization in Trade

The specialization in trade is a net trade indicator. It is assessed by using following measure:

$$ST = \frac{E-I}{E+I} \quad (5)$$

Where,

ST :Specialization in agricultural trade,

E :Value of agricultural exports,

I :Value of agricultural imports.

The value of this index varies in range -1de ST de1. Negative value means that the country is a net importer and vice versa. [2]

Import Coverage Ratio

The import coverage ratio is defined as the share of exports in imports. Accordingly,

$$ICR = \frac{E}{I}100 \quad (6)$$

Where,

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[1] It may be noted that f_1 measures the growth in exports due to a general expansion (or contraction) of world market for country's agricultural exports, f_2 measures the growth in exports through an increase (or decrease) in market share for its agricultural exports and f_3 captures the growth in export due to diversification into non-agricultural exports (GATT 1966, World Bank 1997).

[2] See Aquila, Conforti, Ford and Khaira (2007) for detail discussion on advantage of specialization in trade measure.

ICR: Import coverage ratio,

E : Value of agricultural exports,

I : Value of agricultural imports.

Export Performance Ratio (EPR)

The EPR is defined as the ratio of the share of a particular commodity in the country's total exports to the share of that commodity in the world total exports.[3] The export performance ratio of ith commodity may be defined as:

$$EPR_i = \frac{E_i / C_e}{W_i / W_e} \qquad (7)$$

Where,

EPR_i: Export Performance Ratio of the i^{th} commodity,

E_i : Export of i^{th} commodity from the country,

C_e :Total exports of the country in reference year,

W_i : World total exports of the i^{th} commodity,

W_e :World total exports in the reference year.

If the value of EPR is greater than unity (EPR > 1), it indicates that country has comparative advantage in the exports of commodity under investigation and vice versa. [4]

Sources of Data

The analysis is carried out for a time span of 20 years, i.e., from 1985-86 to 2004-05. To estimate the impact of AoA on Bangladesh's farm trade the whole period under analysis is divided into two parts including pre (1985-95) and post (1995-2005) WTO phase. For both periods annual average compound growth rate, sources of export growth, net terms of trade (TOT), revealed comparative advantage and specialization in agricultural trade measures are estimated and then compare. In the present study, the terms "agricultural trade" relate to the definition of agricultural products under the AoA, i.e., it excludes forestry and fisheries products. The exports values are taken at free on board (FOB) prices and imports values are based on cost insurance and freight (CIF) prices. It should be cleared from our discussion of the techniques/methods of analysis that we need information on the following variables: world total merchandise and agro trade, Bangladesh's farm and total merchandise trade, and GDP agriculture. Annual data on trade are taken from FAO Trade Yearbook (different volumes). The data on GDP agriculture are estimated from World Development Report, an annual publication of the World Bank.

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[3] See Sharma and Dietrich (2007) for detail discussion on some measures of comparative advantage.

[4] See Balassa (1965) for detail discussion on merits of revealed comparative advantage index.

Results and Interpretation

The analysis of Bangladesh's agricultural trade performance, during pre and post WTO phase, in the light of information generated by various mathematical and statistical tools is as follows.

Performance of Bangladesh's Agricultural Trade

We begin by analyzing the growth in Bangladesh's agricultural trade and examine its place in world farm trade. Table 1 below presents the temporal behavior of Bangladesh's agricultural trade in terms of annual trade series, annual percentage change, and share of agricultural trade in the country's overall merchandise trade and in the world farm trade during the period 1985-86 to 2005-06. The table depicts that Bangladesh's agricultural exports have been continued to decline despite the WTO regime. It plummeted steadily from $ 229 million in 1985-86 to a trough of $ 103.3 million in 1994-95. In the initial year of the implementation of AoA Bangladesh's farm exports have increased to $129.4 million which in next year declined to $106 million.

Table 1 Performance of Bangladesh's Agricultural Trade

(Million $ [5] and percentage)

Year	Banglade sh's agri. exports	Annual % change	Share in Bangladesh's total exports	Share in World agri exports	Banglad esh's agri. imports	Annual % change	Share in Bangladesh's total import	Share in world agri. imports	Agri. Trade deficit*
1985-86	229	-	22.98	0.11	853.3	-	32.90	0.42	624.3
1986-87	184.7	-19.34	20.43	0.08	511.6	-40.04	23.52	0.24	326.9
1987-88	155.9	-15.59	14.03	0.06	591.1	15.54	26.15	0.23	435.2
1988-89	159.7	2.44	12.12	0.06	912.1	54.31	31.12	0.31	752.4
1989-90	163.9	2.63	12.39	0.05	795.1	-12.83	26.98	0.25	631.2
1990-91	160.3	-2.20	10.75	0.05	767.3	-3.50	22.98	0.22	607
1991-92	145.9	-8.98	8.59	0.04	643.5	-16.13	20.54	0.18	497.6
1992-93	139.7	-4.25	7.24	0.04	731.5	13.68	21.19	0.19	591.8
1993-94	123.2	-11.81	5.47	0.04	671.3	-8.23	19.01	0.19	548.1
1994-95	103.3	-16.15	4.18	0.03	586.3	-12.66	17.05	0.15	483
1995-96	129.4	25.27	3.80	0.03	1075.9	83.51	19.79	0.23	946.5
1996-97	106	-18.08	3.00	0.02	1218.2	13.23	19.54	0.25	1112.2
1997-98	148.4	40.00	3.69	0.03	1369.3	12.40	20.15	0.29	1220.9
1998-99	157.8	6.33	3.12	0.04	1324.3	-3.29	18.84	0.29	1166.5
1999-2k	126.7	-19.71	2.46	0.03	2072.6	56.51	28.94	0.47	1945.9
2000-01	99.1	-21.78	1.81	0.02	1659.3	-19.94	20.66	0.38	1560.2
2001-02	93.7	-5.45	1.49	0.02	1400	-15.63	15.39	0.32	1306.3
2002-03	100.3	7.04	1.92	0.02	1403.6	0.26	15.68	0.30	1303.3
2003-04	103.1	2.79	1.77	0.02	1833	30.59	21.05	0.33	1729.9
2004-05	114	10.57	1.73	0.02	1984	8.24	17.56	0.31	1870

Note: * trade deficit = export – import.

Source: Computed on the basis of data available in FAO Trade Yearbook, (relevant issues).

[5] In this study, figure in dollar ($) refers to U.S. currency.

After accelerating during 1997-98 to 1998-99 it further declined to $ 93.7 million in 2001-02. This situation slightly improved from 2002-03 and onward: agricultural exports increased from $ 93.7 million in 2001-02 to $ 114 million in 2004-05. Despite this more recent upward trend, average annual exports during 1995-04, at $ 117.8 million, were much below as during 1985-94, at $ 156.5 million. Thus, while there was no net gain in exports in the post WTO period.

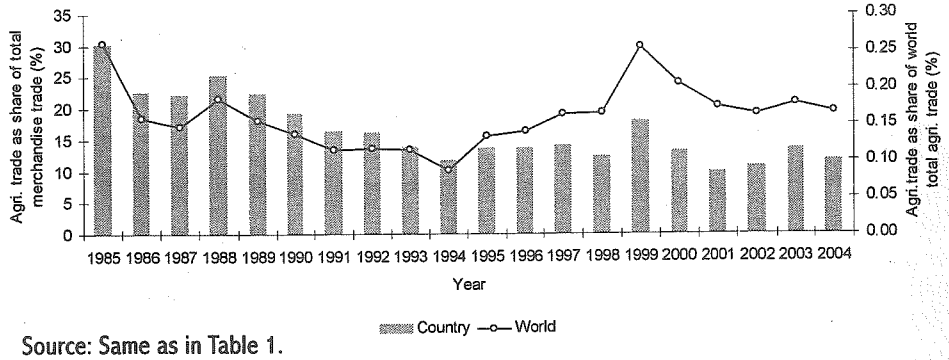
In sharp contrast to exports, agricultural imports which dropped from $ 853 million in 1985-86 to $ 585 million in 1994-95, have turnout to leap with the entry into effect of the WTO. The farm imports have climbed up from $ 586.3 million in 1994-95 to $ 2072.6 million in 1999-00. After shrinking during 2000-02, farm imports have further continued to expand % increased from $ 1400 million in 2001-02 to $ 1984 million in 2004-05. As a result, agricultural trade deficit which fell from $ 624.3 million in 1985-86 to $ 483 million in 1994-95, has jumped up to $ 1870 million in 2004-05.

The expansion in farm trade deficit has contributed to increase in overall trade deficit. Since jute accounts for roughly 60 per cent of total agricultural exports, trade in jute strongly influences the overall agricultural export performance. Jute is not covered by the AoA and faces few tariff and non-tariff barriers in the major importing markets (FAO 2000). In the AoA context, then, a pertinent question to ask is what was the experience with non-jute agricultural exports? As regards the remaining roughly 40 per cent of exports, covered by the AoA, the statistics show that in 1995-98 they were 3 per cent lower than in 1990-94. Thus, export performance was less satisfactory when jute is left out of account.

As seen in Figure 1 that the share of Bangladesh's total agricultural trade (i.e., exports + imports) in world total agricultural trade which dropped in pre AoA phase, was witnessed an upward trend during post WTO period. It has risen from 0.09 per cent in 1994-95 to 0.17 per cent in 2004-05. It indicates the increasing importance of the country in the world farm trade. But this increase has mainly come through a sudden deluge in farm imports rather than through exports % share in world total farm exports has dropped from 0.03 in 1994-95 to 0.02 per cent in 2004-05 while that of import has increased from 0.15 per cent to 0.31 per cent during the same period.

Figure 1 also depicts that the share of Bangladesh's agricultural trade in its overall merchandise trade which declined from 30.14 per cent in 1985-86 to 11.67 per cent in 1994-95, has increased to 17.85 per cent in 1999-00. Thereafter it has been fluctuating in rang of 13 to 9 per cent.

Figure 1 Agricultural Trade as Share of Country Total Merchandise Trade and World Total Agricultural Trade

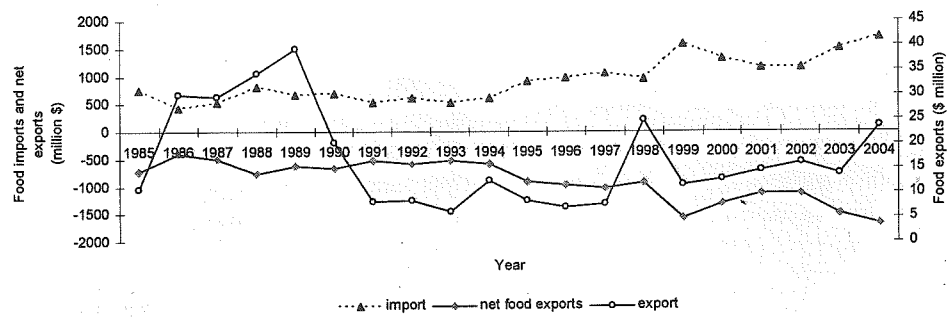


Source: Same as in Table 1.

The contribution of agricultural exports, in the overall exports of the country, has declined from 22.98 per cent in 1985-86 to 4.18 per cent in 1994- 95 which further drooped to 1.73 per cent in 2004-05. In case of agricultural imports, it has climbed from 17.05 per cent in 1994-95 to 28.94 per cent in 1999-00.

Figure 2 exhibits the performance of Bangladesh's food trade. The figure shows that Bangladesh is a net food importer. The food exports have witnessed a downward trend. In contrast, food imports have a sharply rising trend. It has resulted into steady fall in net food exports. The value of food imports in 1995-05 exceeded the 1985-95 level by 100 per cent. In 2004-05, food import bill was more than doubled than that of 1994-95.

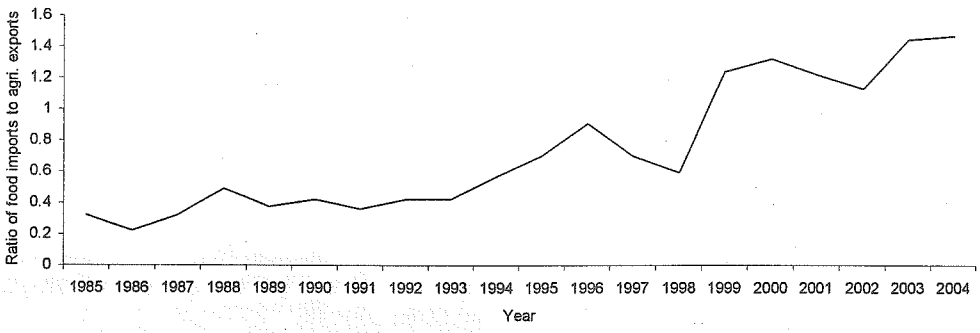
Figure 2 Bangladesh's Food Imports, Exports and Net Exports in Value Term



Source: Same as in Table 1.

Figure 3 displays the evolution of the relationship of food imports to agricultural exports during 1985-05. The ratio has on a rising trend, indicating that food imports have been outpacing agricultural exports.

Figure 3 Ratio of the Value of Total Food Imports to Total Agricultural Exports, 1985-05



Source: Same as in Table 1.

In 1985-94, the ratio averaged 0.39, i.e., food imports were 39 per cent of total agricultural exports. In other words, the ratio of 0.39 indicates that food imports were 61 per cent smaller than agricultural export earnings. During 1995-98 it averaged 0.72, some 58 per cent higher than the value of 0.30 for 1990-94. Form the year 1999-00 onwards it has exceeded unity means that value of farm imports have become higher than that of total farm exports. In other words, there was a clear and marked deterioration in the balance between total food imports and total agricultural exports during 1995-05 compared to the previous 10 years, obviously a negative outcome.

The annual average growth rates of Bangladesh's agricultural exports, imports, food imports and trade deficit are presented in Table 2.

Table 2 Annual Average Compound Growth Rates: Bangladesh's Agricultural Exports, Imports Food Imports and Trade Deficit

(Percentage)

Item	1985-05	1985-95	1995-05
Exports	-3.2	-6.4	-3.0
Imports	6.5	-0.9	5.2
Food imports	6.2	-0.3	5.9
Trade deficit	8.3	1.0	6.0

Source: Same as in Table 1.

In new international trade order, Bangladesh's agricultural exports have declined at a lower pace: declining rate comedown from 6.4 per cent per annum during 1985-95 to 3.0 per cent per annum during 1995-05. The farm imports have grown at a much faster pace which were decelerating during pre WTO phase: annual average compound growth rate of

farm imports has leapt from -0.9 per cent during 1985-95 to 5.2 per cent during 1995-05. As a result, agricultural trade deficit has expanded at a robust and steady annual average pace of 6 per cent during post WTO phase. Under the WTO regime, food imports have grown at faster pace than that of pre WTO phase: growth rate has turned out 5.9 per cent per annum during 1995-05 in relation of -0.3 per cent per annum during 1985-95. This sudden surge in food imports have contributed in expansion of overall agricultural imports.

Net Terms of Agricultural Trade

The performance of agricultural trade in terms of specialization, import coverage ratio and ToT is given in Table 3 and Figure 4. The table indicates that specialization in agricultural trade has worsened from -0.70 in 1994-95 to -0.89 in 2004-05.

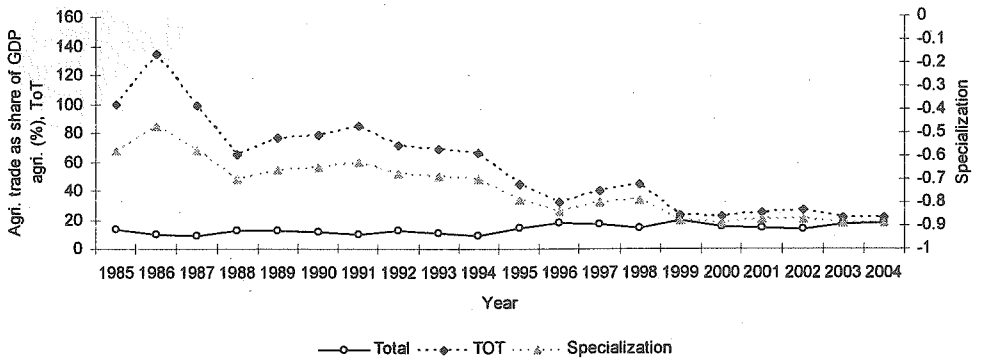
Table 3 Indicators of Bangladesh's Agricultural Trade

Year	Specialization in agriculture	Import coverage ratio (%)	Value index of agri. imports (Pm)	Value index of agri. exports (Px)	Net terms of trade= [(Px/Pm)100]
1985-86	-0.58	26.84	100	100	100
1986-87	-0.47	36.10	59.96	80.66	134.52
1987-88	-0.58	26.37	69.27	68.08	98.28
1988-89	-0.70	17.51	106.89	69.74	65.24
1989-90	-0.66	20.61	93.18	71.57	76.81
1990-91	-0.65	20.89	89.92	70.00	77.85
1991-92	-0.63	22.67	75.41	63.71	84.48
1992-93	-0.68	19.10	85.73	61.00	71.16
1993-94	-0.69	18.35	78.67	53.80	68.38
1994-95	-0.70	17.62	68.71	45.11	65.65
1995-96	-0.79	12.03	126.09	56.51	44.82
1996-97	-0.84	8.70	142.76	46.29	32.42
1997-98	-0.80	10.84	160.47	64.80	40.38
1998-99	-0.79	11.92	155.20	68.91	44.40
1999-2k	-0.88	6.11	242.89	55.33	22.78
2000-01	-0.89	5.97	194.46	43.28	22.25
2001-02	-0.87	6.69	164.07	40.92	24.94
2002-03	-0.87	7.15	164.49	43.80	26.63
2003-04	-0.89	5.62	214.81	45.02	20.96
2004-05	-0.89	5.75	232.51	49.78	21.41

Source: Same as in Table 1.

The ToT for Bangladesh's farm trade has deteriorated drastically: fallen from 65.65 in 1994-95 to 21.41 in 2004-05, as shown in Figure 4. The import coverage ratio has come down under WTO regime. It has declined from 17.62 per cent in 1994-95 to 5.75 per cent in 2004-05. Bangladesh, with the sharpest increases relative to 1990-94, saw their situation worsen significantly also relative to the trend. The ratio of 5.75 per cent for Bangladesh indicates that the food import bill was over 17.4 times as high as agricultural export earnings.

Figure 4 Farm Trade as Share of GDP Agriculture, Terms of Trade and Specialization



Source: Computed on the basis of data available in FAO Trade Yearbook and World Development Report, various issues.

Agricultural Trade Relative to Size of Agriculture

It is clearly and strongly evident from Table 4 that Bangladesh's agricultural trade as share of GDP agriculture has increased substantially after the implementation of AoA. It has improved from 8.5 per cent in 1994-95 to 17.66 per cent in 2004-05.

Table 4 Bangladesh's Agricultural Trade Relative to GDP Agriculture

Year	Agri. exports as percentage of GDP agri.	Agri. imports as percentage of GDP agri.	Trade deficit as percentage of GDP agri.
1985-86	2.84	10.59	7.75
1986-87	2.54	7.04	4.50
1987-88	1.88	7.15	5.26
1988-89	1.80	10.27	8.47
1989-90	2.13	10.34	8.21
1990-91	1.95	9.32	7.37
1991-92	1.83	8.09	6.26
1992-93	1.96	10.25	8.29
1993-94	1.71	9.33	7.62
1994-95	1.27	7.23	5.95
1995-96	1.48	12.32	10.84
1996-97	1.39	15.95	14.56
1997-98	1.63	15.03	13.40
1998-99	1.48	12.41	10.93
1999-2k	1.10	18.04	16.94
2000-01	0.84	14.09	13.25
2001-02	0.87	13.03	12.16
2002-03	0.92	12.83	11.91
2003-04	0.90	16.05	15.15
2004-05	0.96	16.70	15.74

Source: Same as in Figure 4.

It indicates that Bangladeshi agriculture has opened. This increase has mainly come through a sudden deluge in agricultural imports. As a result, agricultural trade deficit as share of GDP has widened markedly from 5.95 per cent in 1994-95 to 15.74 per cent in 2004-05 which was declining in pre WTO phase. The agriculture sector in Bangladesh, in general, is oriented towards the domestic market which is evident from the declining ratio of farm exports to GDP: it falls from 2.84 in 1985-86 to 1.27 in 1994-95 which further declined to 0.96 in 2004-05. Here all these evidences support the hypothesis that AoA of the WTO has failed to improve the Bangladesh's net farm trade.

As is clearly evident from Table 7 that during the post WTO phase, among the agricultural imports the share of milk, butter, pope seed, dates, wheat, soybean oil, cocoanut oil, animal oil, oilseeds cake, tobacco, natural rubber and copra has declined while, onion, pimento, rice, maize, potato, tomatoes, apples, grapes, chocolates, sugar, meat meal and palm oil have emerged as Bangladesh's chief agricultural imports items. Import of pulses has shot up suddenly and alarmingly. Bangladesh is a net food importing country. Its main food import items are: rice, wheat, milk, palm oil, soybean oil, sugar, onion, maize and pluses which together accounted for 49.12 per cent of total agricultural imports during 2002-04. Major sources of imports of farm commodities by Bangladesh are developing countries, India, Argentina, Poland and Russia.

Table 7 List of Major Agricultural Imports Items

Commodity	1993-95	2002-04		
	Value (000, $)	Share in total agricultural imports (percentage)	Value (000, $)	Share in total agricultural imports. (percentage)
Milk	63067	10.03	62703	3.87
Butter	1707	0.27	3155.5	0.19
Wheat	14590.5	2.32	24828.5	1.53
Rice	56808	9.03	182802.5	11.30
Maize	15	0.00	36180	2.24
Potatoes	382	0.06	3231.5	0.20
Pulses	18009.5	2.86	104052	6.43
Tomatoes	37.5	0.01	1822	0.11
Onion	10518	1.67	39377	2.43
Orange	286	0.05	9754	0.60
Apples	3230.5	0.51	8193.5	0.51
Grapes	1145	0.18	3262	0.20
Sugar	2781.5	0.44	9588.5	0.59
Chocolates	69	0.01	1722.5	0.11
Pimento	2263.5	0.36	11190.5	0.69
Oilseeds cake	0.5	0.00	5895	0.36
Meat meal	0	0.00	8430	0.52
Tobacco	14997	2.39	15557.5	0.96
Pope seed	36281.5	5.77	54358.5	3.36
Copra	23166	3.68	10500	0.65
Natural rubber	3652	0.58	2846.5	0.18
Animal oil	11184	1.78	1781	0.11
Soybean oil	106923	17.00	155873.5	9.63
Oil of palm	49693	7.90	179654.5	11.10
Cocoanut oil	4906	0.78	6950	0.43
Dates	1640.5	0.26	327	0.02
Share of these commodities in total agricultural imports (percentage)		68		58.34

Source: Same as in Table 1.

Decomposition of Nominal Export Growth

The nominal growth rate of Bangladesh's overall exports during pre and post WTO period along with its sources is presented in Table 5.

Table 5 Decomposition of Nominal Export Growth

Factor	1987-05*	1987-95	1996-05
f_1	2.872	1.832	1.376
f_2	0.183	0.299	0.678
f_3	12.443	4.538	2.264
G	6.530	2.485	2.112

Note: * = two years averages are used as initial and current points to reduce the influence of a single year outlier.
Source: Same as in Table 1.

The table displays that Bangladesh's exports during the pre WTO period (1987-95) have grown by 148 per cent and during the post WTO period (1996-05) by 112 per cent. The decomposition of growth in exports reveals that the bulk of Bangladesh's overall export growth during both pre and post WTO phase is mainly supported by diversification into non-agricultural exports.

Composition of Agricultural Trade

The share of different commodities in Bangladesh's agricultural exports and imports is presented in Tables 6 and 7. Table 6 exhibits that under the WTO regime, the importance of some commercial crops, namely tobacco and jute in Bangladesh's agricultural exports basket has shot up, in contrast, the share of tea has declined.

Table 6 List of Bangladesh's Major Agricultural Exports Items

Commodity	1993-95		2002-04	
	Value (000, $)	Share in total agricultural exports (percentage)	Value (000, $)	Share in total agricultural exports (percentage)
Tea	37716.5	33.30	6437.5	6.33
Tobacco	1270.5	1.12	5870	5.77
Jute	68707.5	60.67	67532.5	66.4
Share of these commodities in total agricultural exports (percentage)		94.99		78.50

Source: Same as in Table 1.

Bangladesh's agricultural exports has powered by a single commercial crop, namely jute which represented 66.4 per cent of total agricultural exports during 2002-04.[6] Besides, frozen food, leather, and agro products such as vegetables, betel leaves, tortoise, crabs etc. are exported by Bangladesh. UN Com trade database indicates that the major markets for these products are developed countries as well as Middle East and South-East Asian countries, in case of raw jute Pakistan, India and Brazil.

[6] FAO Trade Yearbook indicates that Bangladesh is the world's largest exporter of jute with a share of 88.48 per cent in 2003-04.

Increase in the imports of milk, palm oil, and pulses may be partially due to increase in their demand on account of higher growth rates of population and per capita income. An examination of imports and exports structure suggests that Bangladesh's agricultural imports are widely diversified. In contrast to imports, agricultural exports are concentrated on few items. Less diversified exports and widely diversified imports structure suggests less potential of gain through further liberalization of trade.

Comparative Advantage in Farm Trade

Table 8 exhibits Bangladesh's comparative advantage in the production of different crops in the emerging trade order. The table indicates that Bangladesh's comparative advantage is much better than leading producers especially in the production of tea, and jute with the value of EPR greater than unity. In the WTO regime, EPR for tobacco has been blurred.

Table 8 Export Performance Ratio (EPR) for Major Agricultural Commodities, 1989-04

Item	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2k	2000-01	2001-02	2002-03	2003-04
Tea	35.93	29.57	36.14	41.43	29.06	29.34	22.01	16.63	13.54	14.57	15.77	6.60	2.24	2.28	4.10
Tobacco	1.12	0.57	0.83	1.20	0.14	0.07	0.06	0.09	0.08	0.25	0.16	0.17	0.12	0.19	0.51
Jute	1545.2	1707.6	1545.1	1598.6	1309.1	1348.1	1209.7	1241	1081.2	930	976.6	1016.6	256.8	403.34	368.1

Source: Same as in Table 1.

The EPR for tobacco is less than unity and have been fluctuating over the years. The value of EPR less than unity reveals that Bangladesh has not comparative advantage in exports of this commodity.

Main Findings and Policy Implications

The pattern of Bangladesh's agricultural trade during pre and post WTO phase is analyzed by using the exponential and nominal growth models. Bangladesh's comparative advantage in farm trade is assessed by using Balassa index. It is found that Bangladesh has seen agricultural imports have grown more than three folds after the entry into effect of the AoA which were decelerating in pre WTO phase. While it's agricultural exports have declined. As a result, agricultural trade deficit has gotten widen which have contributed to expansion in overall trade deficit. Bangladesh is a net agricultural and net food importer. In the emerging trade order, most of the growth in overall export has driven by diversification into non-agricultural exports. The net terms of trade for agriculture and specialization in agricultural trade have worsened in new trading regime. The share of Bangladesh's agricultural trade in world total agricultural trade has moved up sharply in new international arena. It is worth noting that agricultural trade has grown faster than growth in GDP agriculture. It indicates the increasing integration of Bangladeshi agriculture with rest of the world. But this has come through a soar in farm imports. It indicates that Bangladesh has failed to avail the advantageous opportunities thrown up by AoA of the WTO. Here all

these evidences support the hypothesis that AoA of the WTO has not boosted Bangladesh's agricultural exports.

An examination of the AoA provisions suggests that in the emerging liberalized farm trade order country having comparative advantage in producing a commodity would dominate export in that commodity. FAO Production Yearbook shows that productivity in Bangladesh's agriculture is below that in other leading crop producing countries. Thus, Bangladesh has an immense potential for improving in agricultural productivity. In this situation there is a need for: (i) increase in productivity and efficiency of all tradable agricultural commodities, (ii) strengthening and modernizing the facilities for pesticide quality testing and plant quarantine, (iii) increase in productivity enhancing investments in market institutions, infrastructure, technology and human capital, and (iv) enhancing the supply of good quality seeds.

As far as comparative advantage is concerned our results indicates that Bangladesh's comparative advantage is much better than leading producers especially in the production of tea and jute. Since between 1995/96 and 2003/04 Bangladesh kept its AMS well below the de minimis level (10 per cent for developing country members), which ranged from 0.18 per cent to 1.57 per cent for product-specific support and 0.29 per cent to 1.45 per cent for non-product specific support, applied tariff rates were remain well below the bound tariff rates stipulated under AoA and it did not provided export subsidy to agricultural products (WTO 2006, FAO 2000) thus, suspension of WTO negotiations was a disappointment for its farmers. The implications from this study suggest that in the next meeting of the WTO, Bangladesh should have opt a strategy which leads to a real and substantial cut in agricultural subsidies and protective measures in order to safeguard employment opportunities for the rural poor and shield low-income and resource-poor farmers from an onslaught of cheap imports.

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