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## **Bangladesh: Selected Issues**

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BANGLADESH

**Selected Issues**

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Approved by the Asia and Pacific Department

June 1, 2007

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**LIST OF ACRONYMS**

ADP	Annual Development Program
BB	Bangladesh Bank
BOP	Balance of Payments
CBI	Caribbean Basin Initiative
CBW	Central Bonded Warehouse
CPI	Consumer Price Index
DAC	Development Assistance Committee
DSA	Debt Sustainability Analysis
EBA	Everything But Arms Initiative
EPZs	Export Processing Zones
FBs	Foreign Banks
FDI	Foreign Direct Investment
LIC	Low-Income Countries
MAI	Market Access Initiative
MDGs	Millennium Development Goals
MFA	Multi-fiber Agreement
NCB	Nationalized Commercial Banks
NFPCs	Nonfinancial Public Corporations
ODA	Official Development Assistance
PCB	Private Commercial Bank
PDB	Power Development Board
PFM	Public Financial Management
PRGF	Poverty Reduction and Growth Facility
PRSP	Poverty Reduction Strategy Paper
RMG	Ready-Made Garments
ROO	Rules of Origin
SDB	Specialized Development Banks

## I. THE READY-MADE GARMENT INDUSTRY IN BANGLADESH: AN UPDATE<sup>1</sup>

### A. Introduction

1. **Bangladesh's RMG industry grew out of the quota system associated with the MFA of 1974–94.** The industry was established by foreign investors who set up garment and accessories factories in Bangladesh's EPZs during the mid-1980s to access Bangladesh's abundant supply of low-cost labor and take advantage of its quota share under the MFA. The RMG sector has grown tremendously over the past 20 years, generating associated increases in employment that contribute greatly to poverty reduction and a rise in export earnings. The RMG industry's share in export earnings rose from just over 10 percent in 1984 to almost 76 percent in 2006. Moreover, RMG exports accounted for more than 81 percent of the growth in the value of exports during that period.

2. **The RMG sector itself in Bangladesh accounts for a small proportion of GDP yet serves as an engine of growth.** Taking into account the high import content of garment manufacturing, it is estimated that the RMG industry directly contributes only about 25 percent of value added in manufacturing, which itself now accounts for approximately 17 percent of GDP.<sup>2</sup> The sector, however, generates substantial demand for transportation, distribution, other services, and construction. Moreover, RMG factories account for 40 percent of industrial employment and provide the largest single source of formal employment and wage earnings in the economy. RMG factories and associated businesses (spinning, dyeing, finishing, etc.) are estimated to provide employment for a total of 10 to 12 million people.

3. **While FDI played a major role in establishing the RMG industry in Bangladesh, the industry is now dominated by domestically-owned firms.** Of an estimated 4,330 firms at the end of 2006, just 83 were wholly or partially foreign owned (Table 1). Aggregate FDI in the sector since the industry's inception is estimated at \$370 million (Table 2). All FDI was restricted to the EPZs by law until 2005 and there is no evidence of any significant FDI outside of the EPZs since the removal of that restriction. The

Fiscal Year	Domestically-Owned Factories	Employees	Average Employees per Factory
1996/97	2,503	1,300,000	519
2001/02	3,618	1,800,000	498
2005/06	4,220	2,200,000	521
Memorandum items (end-2006):			
Total employment in EPZ garment factories			122,098
Of which: In wholly and partially foreign-owned firms			95,559
Number of wholly and partially foreign-owned firms in EPZs			83
Sources: Bangladesh Garment Manufacturers and Exporters Association; Bangladesh Export Processing Zones Authority; and Fund staff calculations.			

<sup>1</sup> Prepared by Jonathan Dunn (APD).

<sup>2</sup> Osmani, Mahmud, Sen, Dagdeviren, and Seth (2003).

vast majority of employment in the RMG sector is in domestically-owned firms located outside of the EPZs and the average number of employees in these factories has consistently been around 500. Key differences between firms with FDI and those that are domestically owned are that productivity in the firms with FDI is estimated to be 20 percent greater than in domestic RMG firms and the average number of employees in firms with FDI is substantially higher.<sup>3</sup>

Investor	Woven Garments and Accessories	Knitwear	Textiles	Total
100% Foreign Owned	247.2	65.6	168.6	481.5
Joint Venture	50.5	5.9	18.6	75.0
100% Domestically Owned	54.1	12.0	42.0	108.1
<b>Total</b>	<b>351.8</b>	<b>83.6</b>	<b>229.2</b>	<b>664.6</b>

Sources: Bangladesh Export Processing Zones Authority; and Fund staff calculations.  
1/ For all firms operational as of December 31, 2006.

4. **The remainder of this chapter reviews and analyzes the performance of the RMG industry in Bangladesh since the abolition of quotas at the expiration of the WTO Agreement on Textiles and Clothing on December 31, 2004.**<sup>4</sup> Section B examines RMG export performance in recent years, looks at the changing composition of Bangladesh's garment exports, and puts the recent performance of Bangladesh's garment industry in an international context; Section C discusses various factors that affect the competitiveness of the sector, and opportunities and constraints facing the sector; Section D concludes.

## B. RMG Export Performance

5. **Despite expectations to the contrary, Bangladesh's garment industry has exhibited robust growth since the expiration of the ATC and the corresponding elimination of quotas on January 1, 2005.** Following a slowdown in garment export growth early this decade, total garment export value (and volume) growth has recovered in the past three years to annual rates in excess of 20 percent (Table 3).

	Woven Garments		Knitwear		Total	
	Value	Volume	Value	Volume	Value	Volume
2000/01	9.1%	7.4%	17.8%	15.9%	11.7%	10.8%
2001/02	-7.1%	7.8%	-2.5%	20.8%	-5.7%	13.3%
2002/03	4.3%	7.4%	13.3%	9.1%	7.2%	8.2%
2003/04	8.6%	9.3%	29.9%	32.4%	15.8%	19.8%
2004/05	1.7%	2.0%	31.3%	31.1%	12.9%	16.6%
2005/06	13.5%	17.9%	35.4%	37.4%	23.1%	28.9%
2006/07 H1	24.1%	25.7%	32.00%	31.87%	27.9%	29.4%

Sources: Export Promotion Bureau; and Fund staff calculations.  
1/ Fiscal year ending June 30.

<sup>3</sup> World Bank (2005), p. 24.

<sup>4</sup> The ATC replaced the MFA on January 1, 1995 and textile and clothing quotas were phased out in four steps under the ATC over the following ten years.

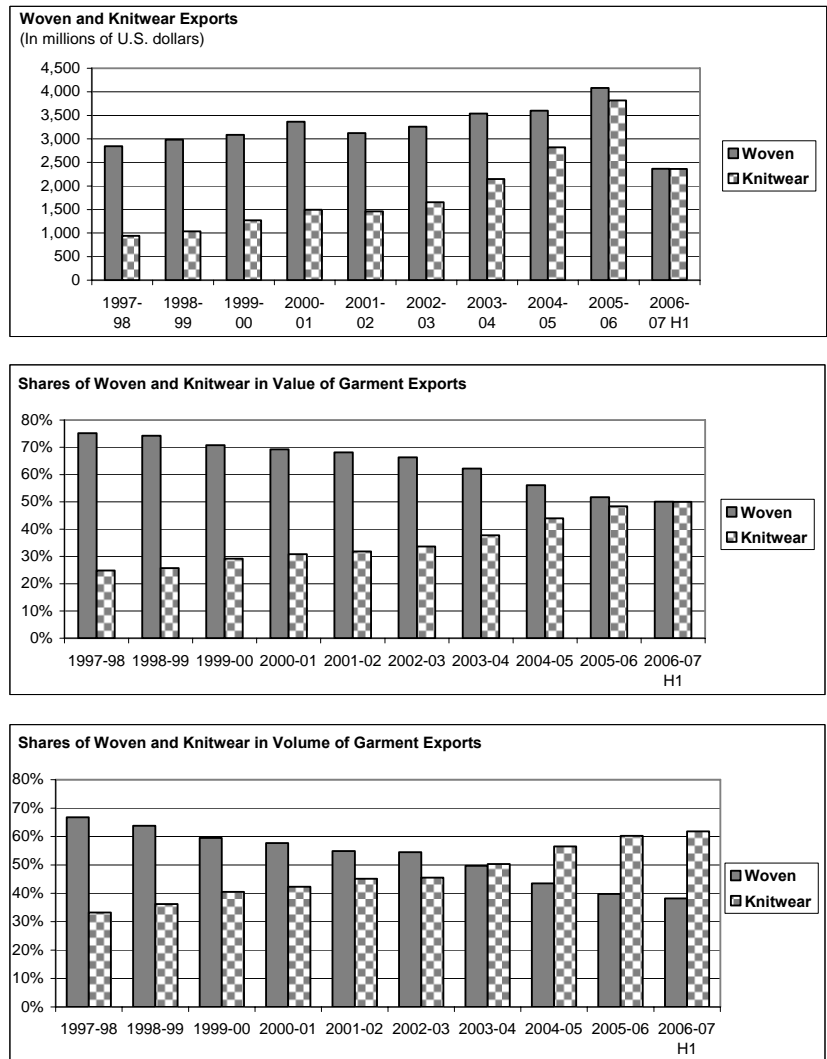


Significantly, the growth of exports of woven garments is showing signs of a recovery in the past two years following a deterioration that began in 2001.

6. **The overall export figures for garments mask a significant change in the structure of Bangladesh's RMG industry** that is the result of the very rapid growth of knitwear production and exports.<sup>5</sup> From a total share in garment export earnings of 25 percent in 1997 knitwear exports rose to half of exports in the six months ending in December 2006 (Figure 1). In volume terms, knitwear now accounts for more than 60 percent of Bangladesh's garment exports.

7. **Bangladesh has had a mixed experience relative to other Asian LIC garment producers in capturing additional total market share in the world's largest garment markets since the removal of quotas.** In the EU market, which was the largest market in the world for imported garments in 2006, India and Vietnam have outpaced Bangladesh in capturing market share in the past two years (Table 4). In the U.S. market, Bangladesh has captured an additional 1 percent of market share, on par with India and well ahead of other Asian LICs.

Figure 1. Bangladesh: Changes in the Structure of the RMG Industry



Sources: Export Promotion Bureau; and Fund staff calculations.

<sup>5</sup> Knitwear includes all garments sewn from knitted fabric (e.g., t-shirts, undergarments) and garments, such as sweaters, that are knit from yarn. Woven garments refers to all garments sewn from woven fabric (e.g., dress shirts, shorts, trousers), including all denim products.

	EU				US			
	2003	2004	2005	2006	2003	2004	2005	2006
Bangladesh	6.6	7.5	6.6	7.7	2.8	2.8	3.2	3.8
Cambodia	0.9	1	0.9	0.9	2	2.1	2.4	2.9
India	5	5	6	6.3	3.3	3.4	4.3	4.4
Pakistan	1.7	1.8	1.4	1.5	1.6	1.7	1.8	1.9
Sri Lanka	1.5	1.6	1.5	1.6	2.3	2.3	2.3	2.3
Vietnam	1.1	1.3	1.3	1.7	3.7	3.7	3.8	4.3

Sources: Eurostat; U.S. Department of Commerce; and Fund staff calculations.

8. **Among Asian countries other than China, Bangladesh and other major Asian LIC garment producers are in aggregate capturing an increasing share of Asia's total exports to the EU and U.S. markets.** Detailed data for all major producers of garments show that the aggregate shares of major Asian LIC producers (Bangladesh, Cambodia, India, Pakistan, Sri Lanka, Vietnam) in total Asian garment exports (excluding those of the People's Republic of China) to the EU and U.S. markets have risen from between 34 and 57 percent in 2003 to between 45 and 68 percent in 2006, depending on product and destination. This is evidence that production outside of China but within Asia is shifting rapidly to Asian LIC producers, and indeed the market shares of Malaysia, Philippines, South Korea, Taiwan Province of China and Thailand are eroding across markets and across products (Tables 5–8).

	2001	2002	2003	2004	2005	2006
	(In percent of total EU25 imports)					
World	100.0	100.0	100.0	100.0	100.0	100.0
Bangladesh	7.5	7.6	8.6	9.8	9.1	10.6
Cambodia	1.4	1.5	1.5	1.7	1.6	1.7
China	17.5	17.8	17.8	19.2	27.6	26.1
Hong Kong Special Administrative Region	5.1	4.7	4.4	3.6	3.8	5.1
India	5.1	5.1	5.2	5.5	6.3	6.6
Indonesia	3.8	3.4	3.1	3.1	2.5	2.8
Macau Special Administrative Region	1.6	1.2	1.2	1.0	0.7	0.8
Malaysia	1.0	1.0	0.8	0.8	0.7	0.7
Mexico	0.1	0.1	0.1	0.1	0.1	0.1
Pakistan	1.3	1.5	1.7	2.0	1.4	1.4
Philippines	0.8	0.8	0.7	0.8	0.4	0.4
South Korea	2.6	2.2	2.1	2.0	1.0	1.1
Sri Lanka	1.9	1.9	1.8	1.9	1.8	1.8
Taiwan POC	1.6	1.5	1.4	1.1	0.6	0.6
Thailand	2.6	2.6	2.5	2.5	2.0	2.0
Turkey	17.8	20.5	22.0	21.0	20.1	18.5
Vietnam	0.6	0.6	0.5	0.6	0.7	1.1
Morocco	3.9	3.7	3.5	3.0	2.5	2.3
Romania	4.4	4.9	5.2	4.5	3.9	3.3
Tunisia	3.3	3.7	3.5	3.1	2.7	2.6

Sources: Eurostat; and Fund staff calculations.

**Table 6. Bangladesh: EU25 Imports of Woven Garments, 2001–06**

	2001	2002	2003	2004	2005	2006
	(In percent of EU25 imports)					
World	100.0	100.0	100.0	100.0	100.0	100.0
Bangladesh	5.2	4.6	5.1	5.6	4.5	5.2
Cambodia	0.4	0.5	0.4	0.5	0.3	0.3
China	18.9	21.7	24.6	26.3	34.5	35.8
Hong Kong Special Administrative Region	6.2	5.3	4.6	4.2	2.6	3.5
India	4.6	4.9	4.9	4.5	5.8	6.1
Indonesia	4.0	3.0	2.7	2.3	2.0	2.1
Macau Special Administrative Region	1.1	0.9	0.8	0.7	0.5	0.5
Malaysia	0.7	0.7	0.5	0.3	0.3	0.3
Mexico	0.1	0.1	0.1	0.1	0.0	0.1
Pakistan	1.5	1.7	1.8	1.7	1.5	1.6
Philippines	0.5	0.6	0.6	0.6	0.4	0.4
South Korea	1.0	0.8	0.7	0.6	0.2	0.2
Sri Lanka	1.5	1.4	1.3	1.4	1.3	1.4
Taiwan Province of China	0.6	0.4	0.4	0.3	0.2	0.2
Thailand	1.4	1.3	1.3	1.2	1.0	1.0
Turkey	9.2	10.7	10.8	10.9	10.6	9.5
Vietnam	2.5	2.2	1.6	1.8	1.7	2.2
Morocco	7.2	7.0	6.6	6.4	5.6	5.3
Romania	9.7	10.4	10.4	10.3	9.0	8.0
Tunisia	8.6	8.2	7.6	7.0	6.1	5.4

Sources: Eurostat; and Fund staff calculations.

**Table 7. Bangladesh: U.S. Imports of Knitwear, 2001–06**

	2001	2002	2003	2004	2005	2006
	(In percent of total U.S. imports)					
World	100.0	100.0	100.0	100.0	100.0	100.0
Bangladesh	1.8	1.8	1.7	1.6	1.8	2.1
Cambodia	1.5	1.6	1.7	2.0	2.6	3.7
China	8.5	9.4	10.8	13.0	19.8	22.5
Hong Kong Special Administrative Region	8.2	7.0	6.1	5.9	5.9	4.2
India	1.9	2.1	1.9	2.2	2.8	3.3
Indonesia	3.8	3.2	3.2	3.5	4.0	4.3
Macau Special Administrative Region	2.4	2.6	2.5	2.6	2.2	2.0
Malaysia	1.5	1.5	1.4	1.4	1.3	1.2
Mexico	12.5	11.3	9.9	8.6	7.2	6.2
Pakistan	2.4	2.3	2.6	2.7	2.8	2.9
Philippines	2.6	2.8	2.5	2.1	2.5	2.9
South Korea	3.9	4.1	3.4	3.1	2.2	1.8
Sri Lanka	1.6	1.4	1.4	1.4	1.8	2.0
Taiwan Province of China	4.0	3.6	3.5	3.1	2.2	2.0
Thailand	3.7	3.4	3.0	3.0	2.9	2.9
Turkey	2.1	2.5	2.5	1.9	1.3	1.0
Vietnam	0.1	1.6	3.7	3.4	3.4	3.9
CBI	19.8	20.2	20.0	20.2	19.4	17.6
Sub-Saharan Africa	1.6	1.9	2.5	3.0	2.3	1.8

Sources: U.S. Department of Commerce; and Fund staff calculations.

**Table 8. Bangladesh: U.S. Imports of Woven Garments, 2001–06**

	2001	2002	2003	2004	2005	2006
	(In percent of total U.S. imports)					
World	100.0	100.0	100.0	100.0	100.0	100.0
Bangladesh	4.6	4.1	3.8	3.9	4.5	5.5
Cambodia	1.6	1.9	2.2	2.2	2.2	2.2
China	13.1	14.5	16.5	18.8	27.3	31.3
Hong Kong Special Administrative Region	6.3	6.3	5.8	5.7	4.2	3.5
India	4.0	4.5	4.5	4.5	5.7	5.5
Indonesia	5.0	4.7	4.7	5.0	5.4	6.0
Macau Special Administrative Region	1.4	1.3	1.6	1.7	1.2	1.2
Malaysia	1.2	1.0	0.9	0.8	0.7	0.7
Mexico	14.7	14.6	12.6	11.7	10.2	8.5
Pakistan	0.9	0.8	0.7	0.8	0.9	1.0
Philippines	3.7	3.4	3.4	3.1	2.6	2.5
South Korea	3.5	3.0	2.3	2.3	1.2	0.7
Sri Lanka	3.4	3.3	3.1	3.1	2.8	2.6
Taiwan Province of Chjina	2.0	1.6	1.5	1.4	0.9	0.7
Thailand	2.7	2.6	2.5	2.5	2.3	2.2
Turkey	1.5	1.6	1.6	1.6	1.4	1.0
Vietnam	0.1	1.4	3.7	4.0	4.1	4.7
CBI	13.0	12.6	11.1	10.3	8.5	7.3
Sub-Saharan Africa	1.6	1.8	2.3	2.3	1.9	1.7

Sources: U.S. Department of Commerce; and Fund staff calculations.

9. **Cambodia and Vietnam are considered by garment manufacturers and buyers in Bangladesh to be Bangladesh's most direct competitors.** Bangladesh has increased substantially its share of the knitwear market in the EU and the woven market in the United States, but its other market shares have been fairly constant in recent years. Cambodia has managed to capture a much greater share of the U.S. knitwear market but its other market shares are either constant or falling. Vietnam's exports, on the other hand, are rising across the board.

10. **A very significant development is that some major garment-producing countries with duty free access to the U.S. are still losing shares in that rapidly growing market.** A number of countries currently benefit from duty-free access to the U.S. market under the NAFTA, the CBI, and the African Growth and Opportunities Act. Notwithstanding this fact, CBI and sub-Saharan African countries have lost substantial market share in both knitwear and woven garments in the U.S. since the expiration of the ATC. In addition, Mexico's share in the U.S. market has fallen over the past five years by more than 40 percent for woven garments and by over 50 percent for knitwear, and it is experiencing stagnation in the Canadian market. Similarly, the largest exporters, excluding China, of woven garments to the EU five years ago—namely Turkey, Morocco, Romania and Tunisia—have experienced very significant declines in their shares in that market over the past several years.

### C. Competitiveness, Opportunities, and Constraints

11. **The competitiveness of Bangladesh's garment sector in the post-MFA era has been guarded in part by the flexible exchange rate regime.** Competitiveness also continues to be shored up by Bangladesh's labor cost advantage. Even after adjusting for productivity differences across countries, Bangladesh's garment industry retains a significant per unit labor cost advantage.<sup>6</sup> Buyers with representation in dozens of countries consistently rank Bangladesh as their lowest-cost source of supply.<sup>7</sup>

12. **The trade preferences and rules that Bangladesh faces in its major garment export markets have not changed since the expiration of the ATC.** In the EU, Bangladesh continues to benefit from the EBA initiative adopted in 2001. In principle, this means that Bangladesh's exports to the EU benefit from duty free access, but in fact there are strict ROO and value-addition rules.<sup>8</sup> In the U.S., Bangladesh benefits generally from GSP privileges but since 2001 the U.S. has excluded a list of 20 apparel items from the GSP and this list covers most of Bangladesh's garment exports. As a result, Bangladesh faces an average tariff rate of 13 percent on woven garments and tariffs of 14–18 percent on knitwear in the U.S. rather than the more preferential GSP tariffs that typically apply to these goods. In Canada, the MAI for LICs came into effect on December 31, 2002 and Bangladesh benefits from this initiative. The MAI has liberal ROO and value-addition requirements and provides for duty-free access for those LICs that meet them.

13. **Bangladesh's export pattern is evolving based on the mix of ROO and value-addition requirements.** Since Bangladesh's knitwear production has very high domestic content and value added (around 80 percent) it is estimated that 95 percent of its knitwear exports to the EU enter free of duty under the EBA initiative, thereby contributing to the very rapid growth of Bangladesh's exports of knitwear to the EU. Bangladesh's woven garment exports to the EU, which do not meet ROO and value-addition requirements under the EBA initiative, have fared less well. Bangladesh's production cost advantage is allowing its exports to the U.S. to increase rapidly despite the high tariffs it faces.<sup>9</sup> Due to the very liberal ROO and value-addition rules under Canada's MAI, virtually all of Bangladesh's

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<sup>6</sup> World Bank (2005), p. 45. Cross-country survey results from 2002 (latest available) show that productivity-adjusted per unit labor costs for dress shirts and jeans in Bangladesh were \$0.23 and \$0.24, respectively. Analogous per-unit labor costs were between \$0.29 and \$0.77 in other major Asian garment producing countries. It should be noted that the contribution of productivity-adjusted costs for overhead, transport, etc. are not included and these data therefore do not necessarily indicate that Bangladesh has the lowest total overall production costs.

<sup>7</sup> The knitwear sector in Bangladesh is generating large efficiencies through the operation of groupings of spinning, fabric knitting, dyeing, finishing, and knitwear firms that are effectively operating as conglomerates, thereby reaping many of the efficiencies of vertical integration in a sector where individual capital shares and firm size remain relatively small.

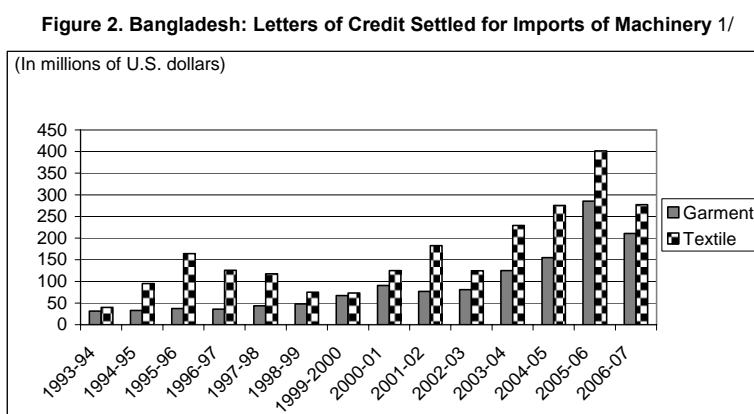
<sup>8</sup> World Trade Organization (2006).

<sup>9</sup> Woven garments account for almost 74 percent of Bangladesh's garment exports to the U.S., a market in which Bangladesh's denim products are highly competitive.

garment exports benefit from duty-free access to the Canadian market. Bangladesh was, after China, the second largest garment exporter to Canada in 2006 and though the Canadian market accounts for under 10 percent of Bangladesh's garment exports it is a rapidly growing market.

14. **Safeguard measures imposed on China through 2008 by the EU and the U.S. have provided opportunities for all garment-producing countries to maintain a larger portion of the global market than they would have otherwise.**<sup>10</sup> Bangladesh is among only six countries other than China that have managed to capture significant market share in one or both markets.<sup>11</sup> This is an indication that the global industry views Bangladesh as a serious contender to remain a major garment producer. The evidence from Canada, however, provides a cautionary note for Bangladesh (and other producers). Despite rapid growth in exports to Canada and its rise to the number two position in the Canadian garment market in 2006, Bangladesh's share of the overall Canadian market has declined from 7.4 to 6.9 percent over the past two years. Canada is Bangladesh's only major market that has not imposed interim safeguard measures on China.

15. **Investment in the garment industry in Bangladesh has risen rapidly over the past several years, as indicated by imports of machinery by the sector (Figure 2) and investment by newly-established firms in the EPZs (Table 9).** The figures also suggest that the primary textile sector in Bangladesh is expanding rapidly in response to the strong growth of the RMG industry. This demonstrates that Bangladesh-based producers believe that they will continue to be competitive. Woven garment factories are primarily investing in new technologies to produce somewhat higher value added garments. Knitwear factories, on the other hand, are investing mostly to expand capacity. Producers and buyers report that investment is also directed toward raising safety and environmental standards, factors that now must be taken into account when gauging overall competitiveness.<sup>12</sup> Several important recent developments are



Sources: Bangladesh Bank; and Fund staff calculations.

1/ Data for 2006-07 for July through January.

<sup>10</sup> Rahman and Anwar (2005).

<sup>11</sup> The others are Cambodia (U.S.), India (EU and U.S.), Indonesia (U.S.), Philippines (U.S.), and Vietnam (EU and U.S.).

<sup>12</sup> Producers and buyers say that the garment industry in Bangladesh is improving compliance with respect to labor and safety standards but is making less rapid progress with regard to environmental concerns. Producers express concern about the erosion of their cost advantage if they raise environmental standards more quickly than their major competitors. This should not, though, be a major factor so long as buyers insist on equal compliance improvements across major LIC garment producing countries.

the establishment by major international buyers of a permanent presence in Bangladesh, the opening of Bangladesh's first "brand wear" factories that produce garments exclusively for a single label, and the rapid expansion of the knitwear industry into sweaters. These developments show that major buyers are bolstering already strong long-term relationships with producers and are increasingly prepared to invest their own time and funds in technology and knowledge transfer to Bangladesh's garment industry, and that Bangladesh's knitwear manufacturers are prepared and able to invest quickly in new market opportunities.

**Table 9. Bangladesh: Garment and Textile Investment by Newly-Established Firms in the EPZs**  
(In millions of U.S. dollars)

Investor	Woven Garments and Accessories	Knitwear	Textiles	Total
<b>100% Foreign Owned</b>				
2001–03	14.6	5.5	23.0	43.1
2004–06	13.3	13.8	0.0	27.1
<b>Joint Venture</b>				
2001–03	3.3	1.2	13.2	17.8
2004–06	26.8	2.3	0.0	29.1
<b>100% Locally Owned</b>				
2001–03	5.8	0.0	2.4	8.3
2004–06	6.4	1.7	6.3	14.5
<b>Total</b>				
2001–03	23.7	6.7	38.6	69.1
2004–06	46.6	17.8	6.3	70.7

Sources: Bangladesh Export Processing Zones Authority; and Fund staff calculations.

16. **A number of studies conducted prior to the expiration of textile and clothing quotas identified factors that would likely negatively affect Bangladesh's competitiveness in the post-ATC world.**<sup>13</sup> First among these was the long lead time for Bangladesh's woven garment exports—arising from Bangladesh's location relative to its major markets; restrictions on imports of inputs for RMG that were designed to protect the domestic textile industry; generally inadequate infrastructure and a poorly functioning Chittagong port; and the failure to approve a CBW system. The other major constraints identified were the failure of Bangladesh to take advantage of regional accumulation (South Asian Association for Regional Cooperation accumulation) opportunities to benefit more from duty-free access to the EU woven-garment market and the inadequate standard of training of labor in the garment industry.

17. **There has been limited progress on measures that would reduce the lead time for Bangladesh's garment producers.** The main policy change since the expiration of the ATC has been to allow the import of yarn and raw cotton from India through land ports since December 2005, a policy that primarily benefits the integrated knitwear industry. The market

<sup>13</sup> Centre for Policy Dialogue (2004); Mlachila and Yang (2004); World Bank (2005).

segments that Bangladesh currently serves still allow for relatively long lead times. Buyers also report satisfaction that garment producers in Bangladesh consistently work to produce quality garments on time and exhibit great flexibility in accepting orders. Producers and buyers warn, however, that lead time will become much more critical as Bangladesh moves into higher value-added garments and fashion wear and that this will require ready availability of high-quality fabrics and accessories at competitive prices.

18. **There is general consensus that the major constraint on the garment industry in Bangladesh is the low level of labor skills, followed by generally poor infrastructure, especially as related to moving goods through the ports.** Some initiatives are underway by the manufacturers' associations to provide training for garment workers and to attract general university graduates as management trainees. In addition, buying houses are assisting in some cases with labor training and are maintaining pressure for better working environments. These remain, however, fairly marginal contributions to improving overall labor productivity. More importantly, as some of Bangladesh's main current competitors move further up the value-added chain, or even out of garment production altogether, the labor force constraint will make it more difficult for Bangladesh to capture more market share in the low-end to medium garment market and will prevent the industry from easily moving itself up the value-added chain.

#### D. Conclusion

19. **Bangladesh has demonstrated that it is highly competitive in the world's major garment markets since the expiration of the ATC.** Its strong performance to date is attributable to significant competitive advantages emanating from its abundant low-cost labor, the flexible exchange rate, and increasingly close ties with major international buyers that are allowing the industry to benefit from the transfer of knowledge and technology. The industry's success has, however, been supported by the transitional safeguards on exports from China. These safeguards are due to expire in 2008 and the erosion of Bangladesh's market share in Canada—its only major market in which there are no safeguard restrictions on China—over the past two years suggests that Bangladesh will face much greater competition in its two largest garment export markets in the relatively near future. Vietnam's accession to the WTO in January 2007 poses a challenge for Bangladesh since Vietnam now has quota-free access to the large markets in which these two countries compete head-to-head. Recent labor unrest in Bangladesh's garment sector is a potential risk to the industry and highlights the need for continued efforts to raise safety standards, to improve general working conditions, and to implement wage agreements.

20. **To maximize the likelihood that Bangladesh's garment industry will continue to thrive the industry and government will need to address a number of issues.** Foremost among these is the development of vocational and other educational programs that will support the industry's need for more highly-skilled domestic labor, including line and production managers. Given the clear constraints imposed on the RMG and other industries by the poor condition of the country's infrastructure, it is critical that the government moves to improve the roads, railways and ports, and to streamline further the customs procedures applied at all points of entry. A general change for the better in the business climate—from better infrastructure and improved governance—may attract more FDI into the garment



sector, including outside the EPZs. This could be particularly important since there is strong evidence that productivity (and employment) is higher in FDI firms and more FDI in the sector would create additional competition, thereby helping to improve the competitiveness of all RMG firms. Aside from addressing these constraints to growth, Bangladesh's garment industry should more actively explore new markets. Even though firms report that they are constantly running at maximum capacity and prefer to deal with known buyers and customers, efforts should be made to develop new business, at least in large Asian countries such as Japan, China and India.<sup>14</sup> This may help Bangladesh to sustain its growth in the increasingly competitive global market, particularly since it is well placed to absorb business in the low-end and medium garment market as other major producers move up the value-added chain.

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<sup>14</sup> In January 2006 China granted Bangladesh duty free access for 84 items, including some RMG and textile products. Some Bangladesh-based producers believe that their products are already competitive within China, especially for low-end garments. India has recently agreed to allow Bangladesh to export 6 million pieces of garments duty-free to India, though details on the composition of goods and ROO for the inputs are still being discussed.

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## II. INFLATION DYNAMICS IN BANGLADESH<sup>1</sup>

### A. Introduction

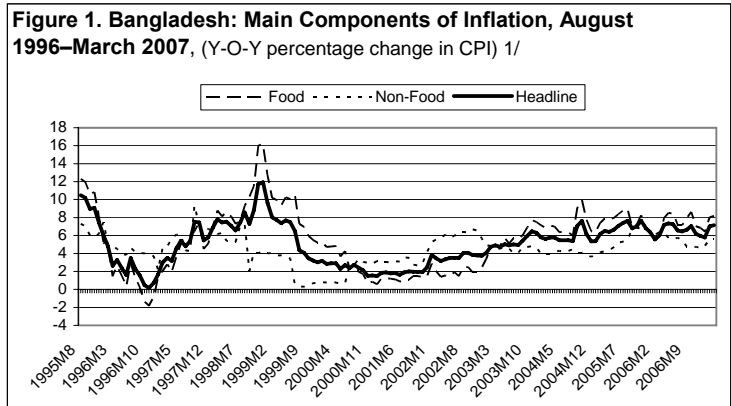
1. **Inflation in Bangladesh has been contained at moderate levels during the past eight years, but has been on an increasing trend since 2001.** From the late-1990s, the

inflation rate (as defined by y-o-y percentage change in the CPI) has been at single digit levels, reaching a low of 1.5 percent in January 2001. Since then, Bangladesh has experienced an increase in inflationary pressures. The inflation rate increased from 1.9 percent in 2001 to 5.4 percent in 2003 and was 7.2 percent as of March 2007. Since abandoning the peg of the taka to the U.S. dollar and adopting a

managed float exchange rate regime in 2003, food prices (which are heavily influenced by international prices and have a weight of 54 percent in the overall CPI in Bangladesh) have increased moderately, and nonfood price inflation has been consistently lower than food price inflation (Figure 1).

2. **Inflation inertia and monetary factors, as well as the exchange rate, are important determinants of inflation in Bangladesh.** Some observers have emphasized supply-side shocks, such as shortages of domestic food production, and global external shocks (mainly higher oil prices) as the major causes of inflation in Bangladesh. However, this paper will show that monetary factors and inflation inertia have also played important roles. Among supply-side factors, only the exchange rate is found to be significant in explaining inflation in Bangladesh.

3. **Inflation causes unfavorable effects on poverty and growth.** Inflation is a regressive tax with an adverse impact on the poor since they do not have access to financial assets to hedge against inflation risks. Inflation can also hurt growth once it exceeds a certain threshold. Khan and Senhadji (2001) estimate this threshold to be 7–11 percent for developing countries. This is noteworthy for Bangladesh, where inflation has recently surpassed 7 percent.



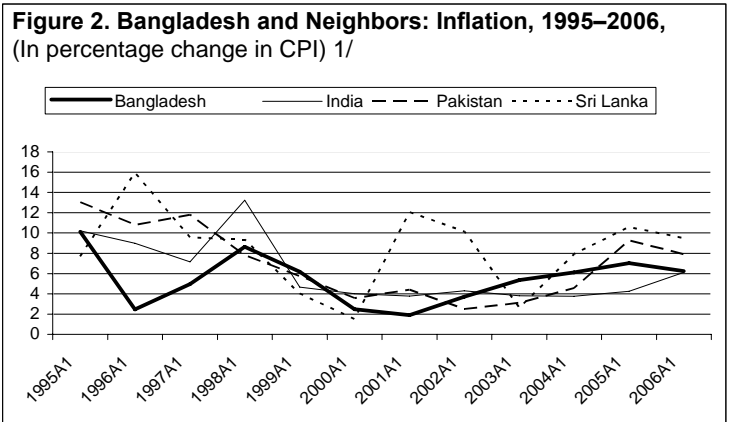
Source: Fund staff estimates.  
1/ Monthly data

<sup>1</sup> Prepared by Ali Alich (FIN). Definitions and sources of the data are not reported, but are available upon request from the author.

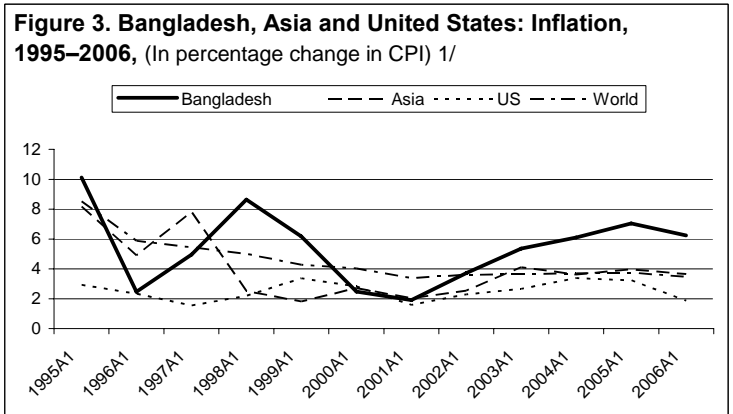
## B. Regional/Global Comparisons

4. **Inflation in Bangladesh in recent years has been higher than its main trading partners (India and the United States), but not so high by overall regional standards (Figures 2, 3, and Table 1). The average (y-o-y) monthly inflation rate in Bangladesh during 2003–06 has been 5.3 percent. This is higher than inflation rates in India and the United States, almost the same as in Pakistan, but smaller than in Sri Lanka for the same period. Looking more broadly, inflation in Bangladesh has been more than 2 percentage points higher than the averages for the Asian region and the world.**

5. **Volatility and persistence of inflation in Bangladesh have been higher than in India, but lower than in Sri Lanka, while Bangladesh and Pakistan on average have similar inflation dynamics (Table 1). This is consistent with findings in the literature that as inflation increases, its volatility (standard deviation) also increases.**



Source: WEO.  
1/ Annual data.



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1/ Annual data.

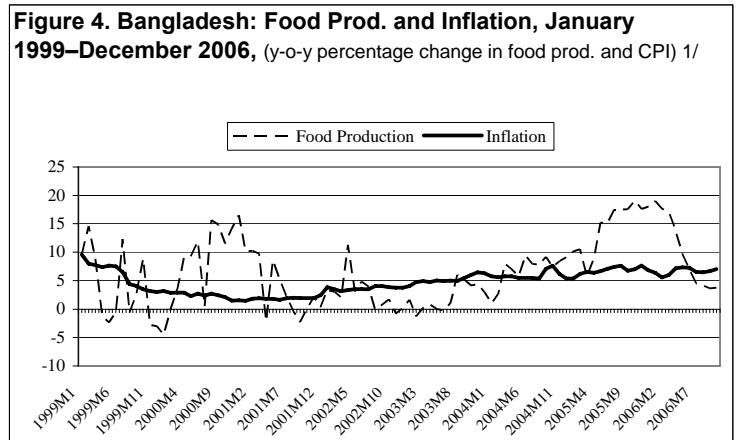
**Table 1. Bangladesh and Neighbors: Inflation Statistics, January 2003–February 2007 1/**

Country	Mean	Median	Maximum	Minimum	Standard Deviation
Bangladesh	5.3	5.6	10.1	1.1	2.5
India	4.4	4.2	7.3	2.2	1.1
Pakistan	5.3	4.7	11.1	1.4	2.8
Sri Lanka	9.5	10.7	19.8	0.5	4.3

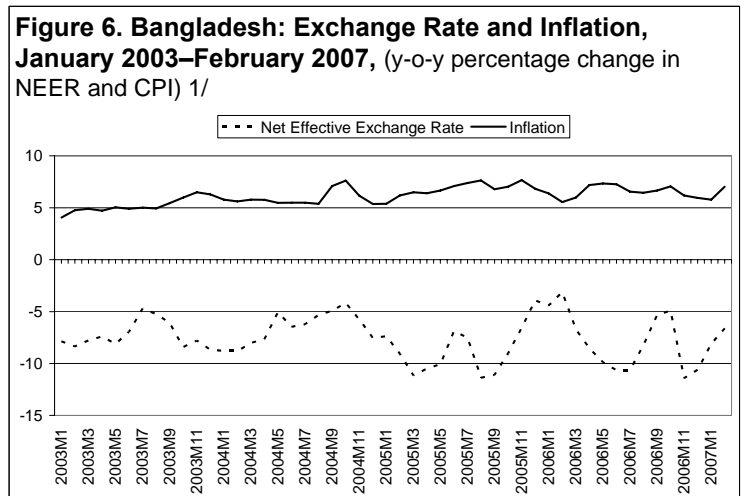
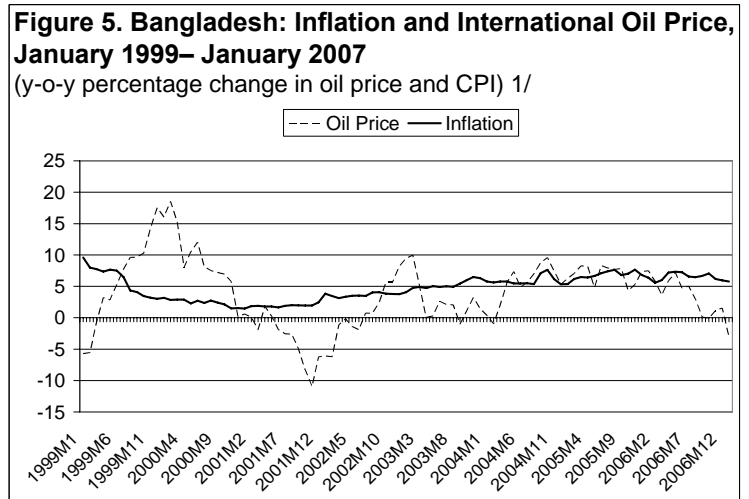
Source: *IFS*.  
1/ Inflation is calculated as y-o-y monthly percentage change in CPI.

### C. Supply Shocks and Inflation

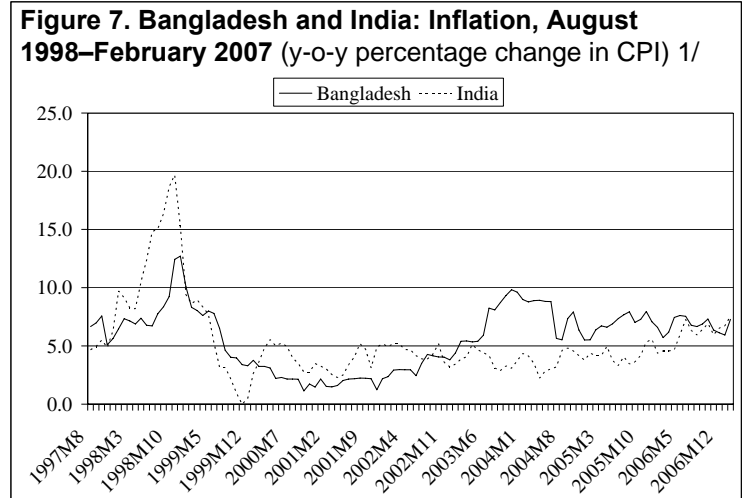
6. **Fluctuations in food production, including those due to natural disasters, have not heavily influenced inflation in Bangladesh** (Figure 4). A likely explanation for this finding is that domestic food production always falls considerably short of demand in Bangladesh. Therefore, food prices are determined mostly by international prices, rather than domestic production.



7. **There is a close association between exchange rate fluctuations and inflation, but little short-term impact of changes in oil prices on inflation** (Figures 5–6). Since the adoption of a managed float exchange rate regime in 2003, any depreciation (appreciation) of the exchange rate has been associated with a pickup (decrease) in inflation. However, inflation has changed in line with oil price changes only over the medium term presumably because the government has not always passed through international oil price changes to the domestic economy in a timely fashion, as was the case over the last two years.



8. **India's inflation can influence Bangladesh's inflation through trade and financial transactions.** The past episodes of rising inflation in India have usually been followed by periods of rising inflation in Bangladesh with a lag of one–two months (Figure 7). India had a stable inflation rate of around 4 percent during much of the past few years. However, inflation in India has increased, with the current rate above 6 percent.



#### D. Data, Model, and Estimation Methodology

9. **Table 2 shows the correlation matrix for the Bangladesh data used in this paper.** Monthly data are used to capture variations of inflation more accurately. As expected, private sector credit and the oil price are positively, and NEER negatively, correlated with the CPI. However, inflation and broad money growth (surprisingly) appear to be negatively correlated. This negative correlation only occurs prior to 2001 during the fixed exchange rate regime. The January 2001 to December 2006 subsample of inflation and broad money are positively correlated.

	Inflation (CPI)	Private Sector Credit 1/	Broad Money 1/	NEER	Food Production	Oil Price
Inflation (CPI)	1					
Private sector credit 2/	0.32	1				
Broad money 2/	-0.27	0.12	1			
Broad money 2/ 3/	0.32	0.57	1	-0.11	0.27	0.19
NEER	-0.75	-0.23	0.28	1		
Food production	0.41	-0.22	-0.33	-0.12	1	
Oil price	0.29	-0.11	-0.68	-0.12	0.43	1

Sources: Data sources are explained in the appendix.  
 1/ All variables are in y-o-y monthly percentage change.  
 2/ Lagged 12 months.  
 3/ January 2001–December 2006.

10. **The model estimated is, essentially, the quantity equation of money in differences, assuming constant velocity**, as follows:

$$\dot{P} = \dot{M} - \dot{Y}$$

Where,  $\dot{P}$  is the inflation rate,  $\dot{M}$  is the growth rate of money, and  $\dot{Y}$  is the output growth.<sup>2</sup> Assume output growth is only due to supply and demand shocks in the short run:

$$\dot{Y} = \alpha_1 \dot{M} + \alpha_2 \dot{S}$$

Where,  $\dot{S}$  is the growth rate of supply-side factors (including the exchange rate), and  $\alpha_1$  and  $\alpha_2$  are the (vector) coefficients. The model will be derived by plugging output growth into the quantity equation above, and taking lagged-inflation to the right hand side:

$$\dot{P}_t = \beta_1 \dot{M} + \beta_2 \dot{S} + \beta_3 \dot{P}_{t-1}$$

Where,  $\dot{P}_{t-1}$  is lagged inflation and  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  are the coefficients to be estimated.

The estimation method is Ordinary Least Squares (OLS) in differences. The dependent variable is the inflation rate (percentage change in CPI), and explanatory variables include growth rates of monetary factors (broad money and private sector credit), the exchange rate, domestic food production, and international oil prices.

## E. Results

11. **Regression results (Table 3) suggest that inertia, demand shocks, and exchange rate changes are determinants of inflation in Bangladesh.**<sup>3</sup> Similar to other countries, inflation inertia is found to be a significant component. Regression coefficients for the other factors (e.g., 0.02 for private sector credit in Model 1) are smaller than those of inertia. However, they have compounded effects on inflation by influencing expectations.

- **Models 1 and 3 represent the best specification.** They show that the current month's inflation rate is the most powerful determinant of the next month's (coefficient = 0.87). A month's inflation contains the influence of all previous months' shocks, which form inertia for the following month. They also show that a depreciation of the exchange rate increases the inflation rate, and that money and credit aggregates are found to be a significant determinant of inflation.

<sup>2</sup> A variable without time index is a vector, which includes a scalar variable, as well as its relevant lags—for example,  $\dot{P}$  is the vector of inflation that includes inflation ( $\dot{P}$ ) and lagged inflation ( $\dot{P}_{t-1}$ ).

<sup>3</sup> In the previous section, Pakistan was found to be a close inflation comparator for Bangladesh. Recently, Khan and Schimmelpfennig (2006) have found that monetary factors have been the dominant driving force of inflation in Pakistan.

**Table 3. Bangladesh: Inflation Determinants 1/**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Inflation 2/	0.87 *		0.87 *		0.87 *	0.85 *	0.86 *
	-0.04		-0.04		-0.04	-0.04	-0.04
Private sector credit 2/	0.02 *				0.02 *	0.02 *	0.016
	-0.01				-0.01	-0.01	-0.011
Private sector credit 3/		0.15 *					
		-0.02					
Broad money 2/			0.02 *				
			-0.01				
Broad money 3/				0.11 *			
				-0.02			
NEER	-0.06 *	-0.46 *	-0.07 *	-0.53 *	-0.06 *	-0.06 *	-0.06 *
	-0.03	-0.05	-0.03	-0.05	-0.03	-0.03	-0.03
Food production /2						0.02 *	0.02 *
						-0.01	-0.01
Oil price					-0.001		-0.002
					-0.002		-0.002
Adjusted R-squared	0.99	0.94	0.99	0.93	0.99	0.99	0.99
Durbin-Watson Statistic	1.49	0.41	1.49	0.44	1.49	1.52	1.54
Observations	93	82	93	82	93	93	93

1/ The dependent variable is inflation. All variables are in y-o-y monthly percentage change for January 1999 to December 2006. Values under each coefficient are standard deviations. Significance at 95 percent confidence interval is indicated with \*.

2/ Lagged one month.

3/ Lagged 12 months.

- **Models 2 and 4 are provided for comparison with some other contributions in the literature.** Specification of these models has two differences with Models 1 and 3. First, the inflation lag is among the explanatory variables in Models 1 and 3, but not in Models 2 and 4. Second, monetary factors are with a lag of one month in Models 1 and 3, but with a lag of 12 months in Models 1 and 4. As evidenced by the Durbin-Watson statistics, Models 2 and 4 suffer from nonstationarity, and are, therefore, mis-specified.
- **Models 5, 6, and 7 add domestic food production and international oil price shocks to the list of explanatory variables.** However, none of these variables turn out to be explaining inflation. Food production coefficients have the wrong sign (positive). This is perhaps because Bangladesh is an open economy that relies on food imports, which implies food prices in Bangladesh are determined internationally, rather than by domestic demand and supply. Oil price coefficients are not significant.

## F. Conclusion

12. **The empirical results presented in this paper show that inflation inertia, monetary factors, and exchange rate fluctuations are the main determinants of inflation in Bangladesh.** Broad money growth and private sector credit growth explain inflation with a lag of up to 12 months. Exchange rate changes also impact inflation. In contrast, domestic food production and international oil price changes are not shown to have a significant impact.



13. **Given that inflation has increased already to above 7 percent, these results point to the need for the central bank to employ a more contractionary monetary policy.**

Broad money and private sector credit have grown by more than 16 percent, annually, since 2006. The model's results indicate that tightening broad money or private credit in one month will cause lower inflation starting the next month, and up to 12 months later.





































































































































