

Bangladesh: Selected Issues

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BANGLADESH

Selected Issues

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Approved by the Asia and Pacific Department

August 29, 2008

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I. EXCHANGE RATE ASSESSMENT AND MARKET DEVELOPMENT

I.1. Assessment of the Real Effective Exchange Rate¹

A. Introduction

1. **This section documents the estimation of the equilibrium real effective exchange rate (REER) for Bangladesh.** The three CGER methodologies were employed to assess the Bangladeshi taka: a “macroeconomic balance” approach, a reduced-form “equilibrium real exchange rate” approach, and an “external sustainability” approach.² These assessments were complicated by the lack of long-time series data and the unavailability of suitable panel data to undertake a full dynamic analysis of the equilibrium real exchange rate. Instead, the three methodologies were used with a single country estimation to generate an assessment. The results from the three tests indicate that the taka is close to its estimated equilibrium level.

B. Macroeconomic Balance (MB) Approach

2. **The MB approach calculates the difference between an estimated equilibrium current account balance (norm) and its projected value.** The exchange rate adjustment that would eliminate the difference between this estimated norm and projected current account over the medium term at prevailing exchange rates is then obtained using country-specific elasticities of the current account with respect to the real exchange rate.

3. **The current account norm is estimated using the following fundamental variables for the sample period of 1981–2007.** Annual data are used because of the lack of a long time series of quarterly data. A single-country estimation method is used because of the unavailability of suitable panel data.

- *Fiscal balance:* A higher government budget balance raises national saving and thereby increases the current account balance. The measure of the fiscal balance used was the ratio of the central government budget balance to GDP, relative to the weighted-average budget balance of trading partners.³

¹ Prepared by Joong Shik Kang (APD).

² The IMF Consultative Group on Exchange Rates (CGER) has provided exchange rate assessments for a number of advanced economies from a multilateral perspective since the mid-1990s and expanded the coverage to emerging market economies in the mid-2000s. Bangladesh is not part of the CGER exercise and is not included in the sample of 54 countries on which the models are estimated. More details on the methodology can be found in IMF (2006).

³ The weights used in calculating the REER in the IMF’s IFS database are used for trading partners. The central government budget balance is used because of the lack of data on the general government.

- *Economic Growth*: Economies that are in the early stages of economic development have a greater need for investment and are likely to finance investment through external borrowing. As they develop and their income levels increase, the current account balances should improve. The deviation of the real per-capita GDP growth rate from its trading-partners' weighted average is used to capture relative economic growth.
- *Net Foreign Assets*: Standard literature suggests two opposite effects of net foreign assets (NFA) on the current account. Countries with relatively high NFA can afford to run trade deficits and still remain solvent, potentially leading to an inverse relation between the two variables. On the other hand, higher net foreign income flows from high NFA can create a positive correlation. The previous year's NFA to GDP ratio was used to avoid a reverse link from the current account balance to NFA.⁴
- *Private Transfers*: In addition to official transfers to low income countries, higher private transfers from abroad increases the current account balance of labor-exporting countries. To capture the importance of remittances as a source of foreign exchange and investment in Bangladesh, the ratio of private transfers to GDP was included as an additional fundamental variable.⁵

4. Fiscal balance, economic growth, and private transfers are estimated to be positively associated with the current account while initial NFA is negatively associated. We

employ an ordinary least square method to estimate the model; all variables are statistically significant at the 5 percent or 1 percent confidence level (Table I.1).

	Dependent Variable: CA/GDP			
	Coefficient	Standard Error	T-statistic	P-value
Fiscal balance	0.169	0.072	2.360	0.026
Output growth	0.386	0.074	5.220	0.000
Initial NFA	-0.205	0.036	-5.690	0.000
Private transfer	0.444	0.068	6.580	0.000
Constant	-0.098	0.014	-7.120	0.000
Estimation vis OLS regression is reported.				

- The coefficient on the fiscal balance is 0.169, implying that a 1 percentage point of GDP increase in the government budget balance (relative to trading partners) leads to around a 0.2 percentage-point increase in the current account balance in percent of GDP.
- The coefficient of 0.386 on output growth implies that, *ceteris paribus*, a 1 percentage-point higher growth rate of real GDP per capita (relative to the trading

⁴ The NFA variable in all three approaches uses the net external position series in the revised database on external assets and liabilities of Lane and Milesi-Ferretti (2006).

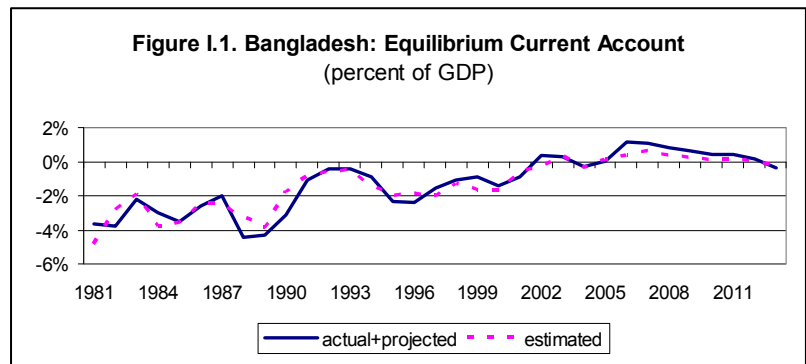
⁵ Workers remittances now constitute the largest source of foreign exchange after exports. See Chapter VI of the Selected Issues paper for the 2007 Article IV consultation (IMF Country Report No. 07/230).

partners) improves the current account balance (relative to GDP) by around 0.4 percentage-points.

- The negative coefficient on initial NFA implies that an improvement in the net external position enables a smaller current account balance to be consistent with solvency.
- The coefficient of 0.444 on private transfer confirms that workers' remittances have contributed significantly in improving the current account balance.

5. Current account norms are calculated by applying the coefficient estimates to the historical values of the regressors for 1981–2007 and the projections for 2008-13.

The medium-term projection values for fiscal balance, output growth, and private transfers are based on the *World Economic Outlook* database, and initial NFA is derived from the recent trend



of Bangladesh's net external position. Figure I.1 illustrates the current account norm together with the projected medium-term current account.

6. The elasticity of the current account to the real exchange rate is calculated using the volume elasticities of exports and imports. This elasticity is required to determine the exchange rate adjustment needed to close the gap between the projected current account and current account norm and is calculated by the following formula:

$$\partial(CA / GDP) / (\partial RER / RER) = \eta_X (XGS / GDP) - (\eta_M - 1)(MGS / GDP)$$

where η_X and η_M are the volume elasticities of exports and imports, respectively, and XGS / GDP and MGS / GDP are the ratios of exports and imports to GDP, respectively. Export and import elasticities of -0.71 and 0.92 , respectively, were used based on the background study summarized in Isard et. al (2001).

7. The equilibrium current account is estimated to remain broadly in balance over the medium term (Figure I.1).

The current account norm is affected by a projected deterioration of the fiscal balance (relative to trading partners) and an improvement in the net external position, as well as higher economic growth and larger expected inflows of private transfers from abroad.

The projected underlying medium-term current account for Bangladesh remains close to its estimated equilibrium level requiring only small movements in the real exchange rate to close the gap between the norm and the projected current account (Table I.2).

Year	CA/GDP Norm	Projected CA/GDP	Elasticity of CA to REER	RER Gap
2008	0.12	0.57	0.1352	3.37
2009	0.40	0.66	0.1352	1.96
2010	0.50	0.81	0.1352	2.33
2011	0.47	0.84	0.1352	2.72
2012	0.53	0.63	0.1352	0.78
2013	0.55	0.57	0.1352	0.16

Source: Staff estimates.

C. Equilibrium Real Exchange Rate (ERER) Approach

8. The reduced-form ERER approach directly estimates an equilibrium real exchange rate for each country as a function of medium-term fundamentals. The exchange rate adjustment needed to restore equilibrium over the medium term is then calculated as the difference between the estimated equilibrium real exchange rate and its current value. The following fundamental variables are considered over the sample period of 1990–2007, with projections based on the *World Economic Outlook* database:

- *Real Effective Exchange Rate*: From the IMF INS database.
- *Net Foreign Assets*: The previous year's NFA scaled by the sum of exports and imports were used to avoid reverse causality from the current account to the contemporaneous NFA.
- *Productivity Differential*: The Balassa-Samuelson effect is captured in the productivity differential series, which is the difference in output per worker in tradables and nontradables production, relative to the weighted-average productivity differentials of trading partners.
- *Commodity Terms of Trade*: Higher commodity terms of trade should appreciate the real exchange rate through real income or wealth effects.
- *Government Consumption*: Higher government consumption is likely to appreciate the real exchange rate to the extent that such consumption falls more on nontradables than tradables, thereby raising the relative price of the former. The variable used here is the ratio of government consumption (purchases of goods and services plus government wages) to GDP.

9. **The ERER was estimated by Vector Error Correction Model (VECM) as:**

$$\Delta x_t = \eta + \sum_{i=1}^p \Phi_i \Delta x_{t-i} + \Pi x_{t-1} + \varepsilon_t$$

where Δ denotes the first difference operator, x_t is a $(n \times 1)$ vector of variables described below at time t , η is a $(n \times 1)$ vector of deterministic variables, Φ_i is a $(n \times n)$ coefficient matrix, Π is a $(n \times n)$ matrix whose rank determines the number of cointegration vectors, and ε_t is a $(n \times 1)$ vector of white noise disturbances at time t .

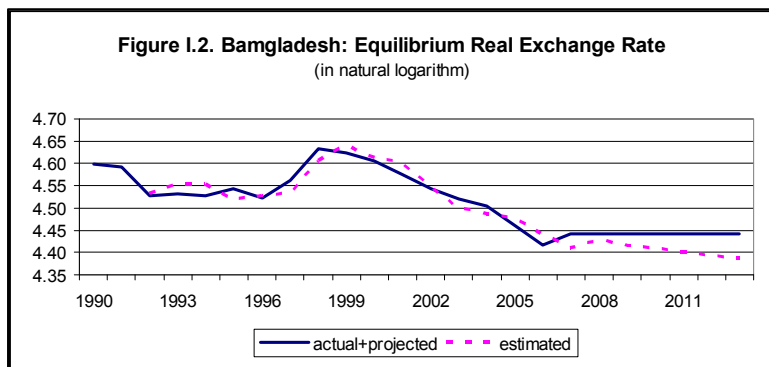
10. **Table I.3 reports the estimated equilibrium long-run (cointegrating) relationship between the real exchange rate and the set of explanatory variables.** The coefficient sign of the productivity differential (long-run equilibrium) in the cointegration equation confirms the Balassa-Samuelson effect. The

results imply that an improvement in the net external position, improvement in the terms of trade, and increases in government consumption are associated with a depreciation of the REER. That the signs of these three variables are different from what we expect in theory or what can be found in advanced countries, underscores the fact that for a country like Bangladesh at an early stage of economic development there are many country-specific factors affecting the movement of the real exchange rate, which may not be well captured in standard economic variables

	Dependent Variable: Real Effective Exchange Rate			
	Coefficient	Standard Error	Z-statistic	P-value
Cointegration equation				
Real effective exchange rate	1.000	.	.	.
Initial NFA	0.120	0.001	119.230	0.000
Productivity differential	-0.772	0.006	-125.400	0.000
Terms of trade	0.322	0.008	39.030	0.000
Government consumption	0.582	0.107	5.460	0.000
Constant	-2.317	.	.	.
Short-run factors				
Error correction term	-0.341	0.334	-1.020	0.306
Δ (REER)	0.158	0.269	0.590	0.556
Δ (Initial NFA)	0.013	0.051	0.250	0.801
Δ (Productivity differential)	0.502	0.194	2.600	0.009
Δ (Terms of trade)	0.171	0.373	0.460	0.647
Δ (Government consumption)	1.989	1.544	1.290	0.198
Constant	0.001	0.016	0.090	0.930

11. **The ERER approach also suggests that the taka is close to its estimated equilibrium level.**

As shown in Figure I.2, as of end-2007, the taka was estimated to be within 3 percent of its equilibrium level. The change in Bangladesh's estimated medium-term ERER is mainly driven by more rapid increases in productivity of nontradable good sectors than trading partners and a projected improvement in the net external position.



D. External Sustainability (ES) Approach

12. **The ES approach calculates the difference between the actual current account balance and the balance that would stabilize the NFA position of the country at some benchmark level.** Using the same elasticities as in the MB approach, this difference is translated into the real exchange rate adjustment that would bring the current account balance in line with its NFA-stabilizing level. Unlike the other two methodologies, this approach requires no econometric estimation and relies on minimal assumptions regarding the economy's potential growth rate and inflation rate.

13. **Given the benchmark NFA/GDP ratio (nfa^s), the NFA-stabilizing current account/GDP ratio (ca^s) is calculated by:**

$$ca^s \approx \frac{g + \pi}{1 + g + \pi} nfa^s$$

where g is the growth rate of real GDP and π is the inflation rate. The end-2006 level of NFA/GDP was used as the benchmark.⁶ Then, the required exchange rate adjustment needed to close the gap between the projected current account and the NFA-stabilizing current account is calculated using the same elasticities as in the MB approach.

14. **For Bangladesh, this approach suggests that a larger current account deficit than currently projected would be consistent with a stable NFA position.** To stabilize net foreign assets at the current level (around -26 percent of GDP), and assuming growth in real GDP of 7 percent and inflation of 4 percent, Bangladesh could run a current account deficit of around 2½ percent of GDP, compared to a projected current account surplus of ½ percent of GDP. By applying a calculated 0.14 elasticity of the current account to the real exchange rate, this would imply that a taka appreciation in real terms by about 16 percent over the medium term would be consistent with meeting the estimated current account deficit that would stabilize NFA at its current level (Table I.4).

Table I.4. Bangladesh: Exchange Rate Assessment based on ES Approach
(all figures in percent, except for elasticity)

	End-2006 NFA/GDP	Nominal GDP Growth Rate	NFA-stabilizing CA/GDP	Projected CA/GDP	Elasticity of CA to REER	RER Gap
Bangladesh	-26.09	11	-2.59	-0.39	0.1352	-16.21

⁶ The end-2006 data are the latest available from the dataset developed by Lane and Milesi-Ferretti in *The External Wealth of Nations* (2006). It is available at: <http://www.imf.org/external/pubs/ft/wp/2006/data/wp0669.zip>.

E. Conclusion

15. **The current account is broadly in balance and the exchange rate level is assessed to be appropriate across a range of measures.** Both the macroeconomic balance approach and the EREER approach imply that the current level of the taka is very close to its estimated equilibrium level. Though the external sustainability approach implies that the projected external current account (and the real exchange rate) are different than the levels that would stabilize NFA, we believe that is because the benchmark level of NFA/GDP ratio is not an appropriate level for Bangladesh to target since the economy is in the midst of a transition toward the next stage of economic development and the net external position is expected to continue to improve.

I.2. Institutional Issues and Experience with Implementation of the Floating Exchange Rate Regime⁷

A. Introduction

16. **Bangladesh's key economic and social indicators had shown steady improvement throughout the 1990s, but the economy became increasingly fragile in the early 2000s** as a result of a prolonged period of political strife that resulted in a slowing of structural reforms and an erosion of financial discipline. Expansive fiscal policy was accompanied by accommodating monetary policy as credit to the government from the banking system grew on the order of 30 percent in 2001.

17. **Under the fixed exchange rate regime at that time, ad hoc adjustments in the taka/dollar rate were implemented** after extensive deliberations amid much public speculation, which resulted in persistent uncertainty.⁸ During 2000 and 2002 the taka was allowed to depreciate by about 12 percent vis-à-vis the dollar with a concurrent depreciation of the real effective exchange rate of only about 7 percent—a relatively modest adjustment given the expansive financial policies.

18. **The resulting control of inflation was achieved at the cost of a steady erosion of international reserves,** thereby exacerbating the country's vulnerability to external shocks. The authorities' reluctance to allow the exchange rate to move more freely resulted in the imposition of a series of administrative measures aimed at restraining foreign exchange demand and encouraging exports. For example, direct export subsidies and subsidized credit facilities for exports were employed and high margin requirements on opening new letters of credit for imports were imposed.

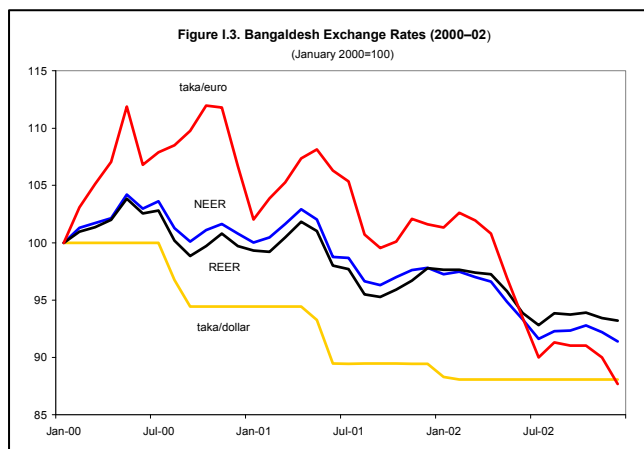
⁷ Prepared by Perry Perone (PDR).

⁸ Selected Issues Paper (IMF Country Report No. 02/114).

19. **The policy discussions at the time, therefore, centered on the merits of moving to a flexible exchange rate system (Figure I.3).** It was argued that such a move would, among other things, depoliticize the determination of the exchange rate, ensure quick adjustments of the exchange rate to market developments (thereby stemming the loss of international reserves), and enhance the authorities' ability to address external shocks in a timely manner (such as the removal of preferential access to industrialized markets for ready-made garment exports, which was planned for end-2004).

20. **The paper reviews institutional developments in the foreign exchange market since 2002.**

The main conclusions of the paper are that the change to a more flexible regime was implemented smoothly and has allowed the exchange rate to adjust to external shocks. Limited short-term movement in the nominal exchange rate, however, and sluggish growth in trading activity point to the need for more to be done to nurture the development of the market.



B. Institutional Changes in the Exchange Rate Regime⁹

21. **In 2002, there were several aspects of the financial system and exchange market in Bangladesh that posed impediments to a floating exchange rate system.** The financial system was dominated by state-owned commercial banks (nationalized commercial banks or NCBs) with assets amounting to about 24 percent of GDP and accounting for some 46 percent of industry net assets. The banking system was also characterized by a high level of nonperforming loans, low capital, inefficiency, weak governance, and poor risk management. Consequently, resolution of financial sector issues was a major element of the government's medium-term reform program. Particular attention was given to reform of the NCBs, which played a dominant role in the foreign exchange market. The two largest NCBs were the main source of foreign exchange at the time and thus the modernization of their foreign exchange operations was a key ingredient in implementing a floating exchange rate system.

22. **The foreign exchange market consisted of a number of tiers.** The taka was pegged to a basket of currencies from which a trading band against the U.S. dollar was determined. The band was adjusted in an ad hoc manner, partly with a view to maintain the value of the

⁹ This section draws from Dalton (2006).

real exchange rate. Banks were required to submit their requests for dollars to Bangladesh Bank (BB) in the morning and were notified in the afternoon if they had been successful. The criteria for deciding on a request were: (i) proper documentation of the underlying commercial transaction; (ii) the lack of surplus liquidity elsewhere in the interbank market; (iii) that the bank not have a long net open dollar position; and (4) that the request be to settle a current payment due. Banks were free to deal at rates outside the band, but there were not significant divergences because BB exerted moral suasion on banks that withheld dollar liquidity from the market. There were also parallel markets, in which BB-authorized money changers exchanged mainly with travelers. Prices were slightly less favorable than in the interbank market. Finally, the hundi market was a major conduit for remittances, although there were no reliable estimates of the magnitude of these flows at the time.

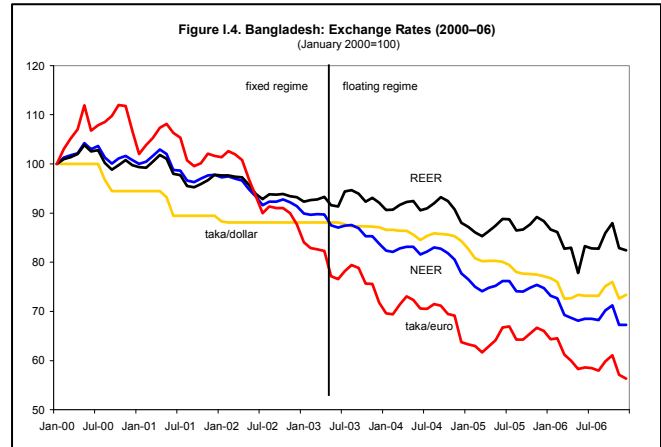
23. In the preparation to move to a floating system, specific measures were targeted to strengthen BB's capacity in foreign exchange and monetary operations, including:

(i) granting BB the authority to intervene in the exchange market; (ii) establishing an effective system of interaction between BB and the interbank market; (iii) improving operational reporting arrangements in BB; (iv) announcing a timetable for the elimination of restrictions on current payments and transfers; (v) liberalizing treasury bill auctions; (vi) strengthening liquidity forecasting; (vii) introducing repurchase operations to strengthen short-term monetary management; and (viii) improving BB's ability to collect and analyze information on banks' exposure to interest rate risk.

24. A number of important actions were also adopted within a few months of floating to deepen and reinforce those taken in the preparatory stage. These actions were aimed at giving BB greater operational independence and refining monetary and foreign exchange management through adjustments in the mix of policy instruments. Revisions were made to the legislative framework and statistical monitoring of foreign exchange operations. Emphasis was also given to strengthening prudential regulations and supervision of the banking system. The measures in this area included: (i) modifying the cash reserve requirement to exclude foreign currency balances; (ii) upgrading accounting arrangements at BB; (iii) modernizing the market code of conduct; (iv) establishing a Lombard facility to assist banks with temporary liquidity problems; and (v) closing the BB window with an open-ended option to purchase banks' treasury bills. A few additional medium-term reforms such as gradually reducing and eventually eliminating the statutory liquidity ratio, and establishing a primary dealer system for government securities were expected to take longer to implement. The primary dealer system was finally established in 2007.

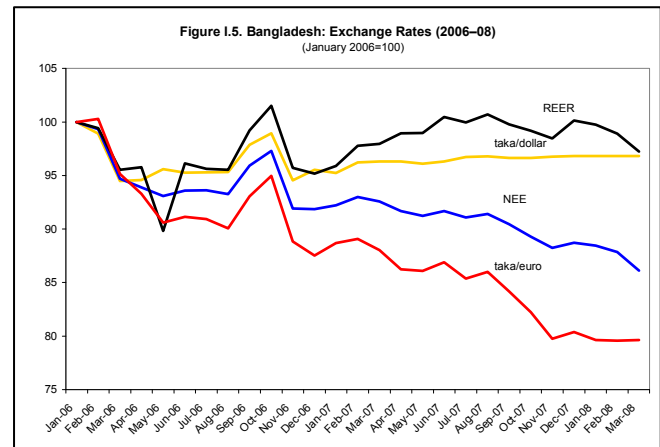
25. The transition to the floating regime in May 2003 was accomplished smoothly.

Nearly all of the planned actions were completed. Favorable market conditions during the first 18 months of the float allowed the external position to strengthen. Market interventions were largely confined to building foreign exchange reserves and to countering rare disorderly market conditions such as a large jump in demand for foreign exchange from importers. The taka/dollar rate, however, was surprisingly stable during this initial period showing only 4 percent depreciation, although there was significantly more depreciation of the nominal effective rate given the depreciation of the dollar vis-à-vis the euro. The result was a real effective depreciation on the order of 10 percent (Figure I.4).

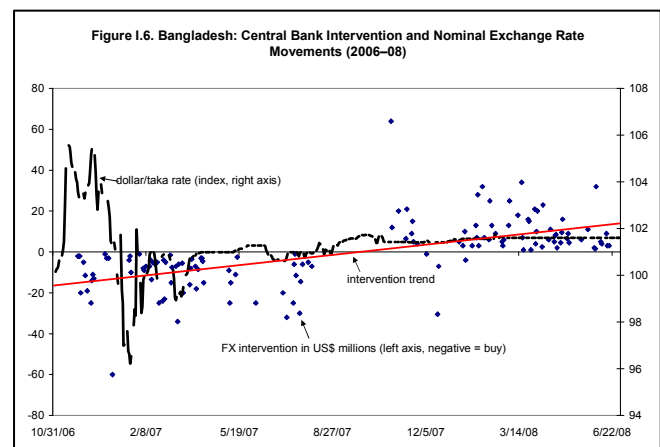


C. Recent Developments

26. While the initial transition to the new institutional structure was generally seen as a success, there is more that needs to be done to improve the functioning of the floating rate system. In general, the system that was put in place in May 2003 needs to be developed further to improve the efficiency of the foreign exchange market and allow for the better integration of exchange rate and monetary policy.

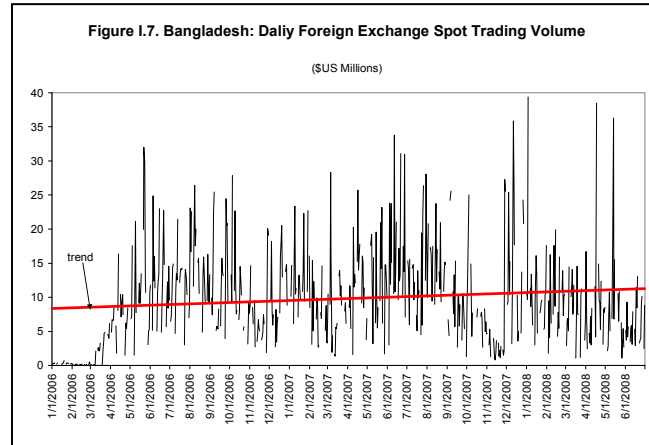


27. The taka/dollar rate depreciated by about 13 percent during 2005–06, but has been virtually constant during 2007 and the first half of 2008 (Figure I.5). During the most recent period, the stability of the dollar rate has coincided with a nominal effective depreciation on the order of 6 percent, but given the increase in prices relative to trading partners, a 2 percent real appreciation. Changes in the underlying market conditions have been reflected more



in changes in central bank net purchases from the market than in changes in the nominal rate. While strong remittances and exports led to significant central bank purchases in late 2006 and early 2007, this situation subsequently reversed with the central bank demonstrating a clear pattern of selling dollars starting in late 2007 (Figure I.6).

28. **In addition, there has been little development of the foreign exchange market as evidenced by the lack of increase in volumes transacted (Figure I.7),** which have only increased from an average of about \$US8 million in 2006 to about \$US11 million in 2008 despite large increases in trade and financial flows.



29. **The limited movement in the nominal exchange rate under such market conditions and the lack of deepening of the foreign exchange market highlight the need for further market development.** In this regard, it appears that even though key elements of a flexible rate system were put in place starting in mid-2003, there is more that needs to be done to complete the reform.

D. Recommendations

30. **Measures that might help make the exchange system more responsive to changing market conditions and deepen the foreign exchange market:**

- Provide more latitude for the dealing room to make transactions without relying on BB management. This would speed up response time to banks' bids and thus reduce uncertainty.
- Further liberalize rules on forward trading to allow banks to manage their foreign exchange more efficiently. Banks are currently limited by the requirement to have 50 percent cover from their own customers' export receipts. Without the ability to trade forward freely, those with excess foreign exchange will be less likely to release it into the market for those with a current need.
- Enforce the net open position limits (NOP). This would encourage banks to satisfy their foreign exchange demand in the interbank market.
- Stop the practice of allowing frequent overdrafts by banks on their foreign clearing accounts held at BB as a way for banks to manage foreign exchange. This diminishes the incentive to deal in the interbank market.

- Allow more movement in the taka/dollar rate from day to day to encourage active interbank trading.
- Allow and encourage banks to make two way quotes and trade currency just like any other asset.
- Establish a joint steering committee for BB treasury staff and banks' treasurers (excluding CEOs, MDs, or BB senior management) so that they can exchange information and discuss issues and challenges arising in the market.

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II. EXPORT DIVERSIFICATION AND EXTERNAL COMPETITIVENESS¹

A. Introduction

1. **Diversification is an important element of the economic development process.** A broader economic base increases the opportunity for inclusive growth and moderates the impact of shocks on growth and living standards. Empirical evidence shows that economies tend to have a long period of diversification before beginning to specialize again at a relatively high level of income—around US\$10,000 GDP per capita in 1985 prices (Imbs and Wacziarg, 2003). Diversification is also part of the process of economic discovery (Hausmann and Rodrik, 2003). Introducing and developing new products allows economic agents to learn about cost structures and comparative advantages. Hausmann and Rodrik show that the rate of introduction of new products is closely aligned with growth performance. The type of products that are introduced is also important—countries that diversify into products more associated with higher-income countries tend to have more rapid growth.

2. **Export diversification is also associated with strong economic performance.** There is little in the underlying theory that suggests that diversification in exports is better than domestic diversification. However, the main economic success stories of recent times (East Asia, China) have been strongly associated with rapid export growth and diversification. Low-income countries with growing import needs, such as Bangladesh, require growth and diversification in their exports to maintain a stable external position. Exports are also often focused on in the literature because of the better quality of trade data.

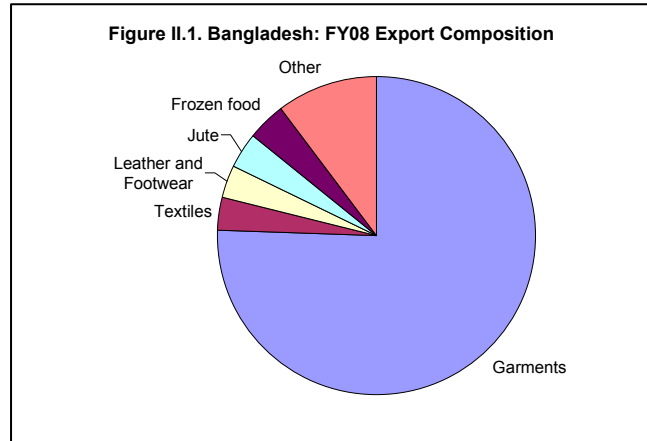
3. **This chapter assesses how Bangladesh has fared in export growth and diversification and assesses its future prospects.** Bangladesh still has lower trade relative to GDP than other countries in the region (Table II.1) and its exports, while growing healthily, have remained highly concentrated in the garments sector (Figure II.1). Given, the

	Exports	Imports	Total
Bangladesh	20	28	48
Low Income Asia	34	39	73
South Asia	25	34	59
East Asia	68	56	124
Pacific Islands	28	47	75
Emerging Asia	52	46	98

Source: IMF Asia Pacific Regional Outlook Data Supplement.

¹ Prepared by Matt Davies and Jonathan Dunn (both APD).

garment sector's importance, the chapter begins by updating previous staff analysis of garment sector competitiveness, with a particular focus on diversification.² It then investigates whether broad sectoral aggregates mask progress in product-level diversification and compares Bangladesh's performance with peers in South and East Asia. The chapter then briefly reviews data on Bangladesh's competitiveness to assess its potential



for improving its export growth and diversification, and finally assesses policy priorities for improving export performance. The main conclusions are that although Bangladesh has not yet been very successful with diversification, it has considerable potential to improve provided that macroeconomic and political stability are maintained and key structural reforms implemented.

B. Growth and Diversification in Garments

4. Bangladesh's garment export performance was mixed in 2007 (Table II.2).

Exports to the European Union (EU)—by far Bangladesh's largest market—fell by 5 percent in 2007, although market share was retained because overall EU garment imports fell at about the same rate. Bangladesh's major competitors for garment exports, on the other hand, managed to increase exports to the EU and capture additional market share. Bangladesh fared somewhat better in the United States (US) market, with positive growth of garment exports and some increase in its market share. Once again, however, some of its major competitors—in particular Cambodia, China, and Vietnam—performed better in a growing U.S. market. Preliminary trade data available for 2008 show that Bangladesh is now losing market share and exports to the EU, while its main competitors continued to increase exports and gain market share. In the U.S. market, which is now shrinking, Bangladesh and Cambodia made modest gains in market share, while China and Vietnam continued to gain at a strong pace.

² For a fuller discussion of the structure and characteristics of the garment industry and of its export performance through 2006 see IMF Country Report No. 07/230.

Table II.2. Bangladesh: Comparator Market Shares in Major Garment Export Markets

	2003	2004	2005	2006	2007
In percent of total EU garment imports					
World	100.0	100.0	100.0	100.0	100.0
Bangladesh	6.6	7.5	6.6	7.1	7.1
Cambodia	0.9	1.0	0.9	0.8	0.8
China	21.7	23.1	31.4	28.8	35.2
India	5.0	5.0	6.0	5.8	6.2
Pakistan	1.7	1.8	1.4	1.4	1.5
Sri Lanka	1.5	1.6	1.5	1.5	1.7
Vietnam	1.1	1.3	1.3	1.6	1.8
In percent of total US garment imports					
World	100.0	100.0	100.0	100.0	100.0
Bangladesh	2.8	2.8	3.2	3.8	4.0
Cambodia	2.0	2.1	2.4	2.9	3.2
China	13.8	16.0	23.7	27.1	31.7
India	3.3	3.4	4.3	4.4	4.3
Pakistan	1.6	1.7	1.8	1.9	2.0
Sri Lanka	2.3	2.3	2.3	2.3	2.1
Vietnam	3.7	3.7	3.8	4.3	5.7
In percent of total Canadian garment imports					
World	100.0	100.0	100.0	100.0	100.0
Bangladesh	5.3	7.3	6.7	7.0	6.4
Cambodia	1.5	2.2	2.0	2.1	2.7
China	29.5	33.0	45.4	49.2	52.8
India	7.3	6.5	6.1	5.5	4.7
Pakistan	1.5	1.3	1.1	1.1	1.0
Sri Lanka	1.1	1.1	0.9	0.8	0.7
Vietnam	1.0	1.1	1.6	2.0	2.2

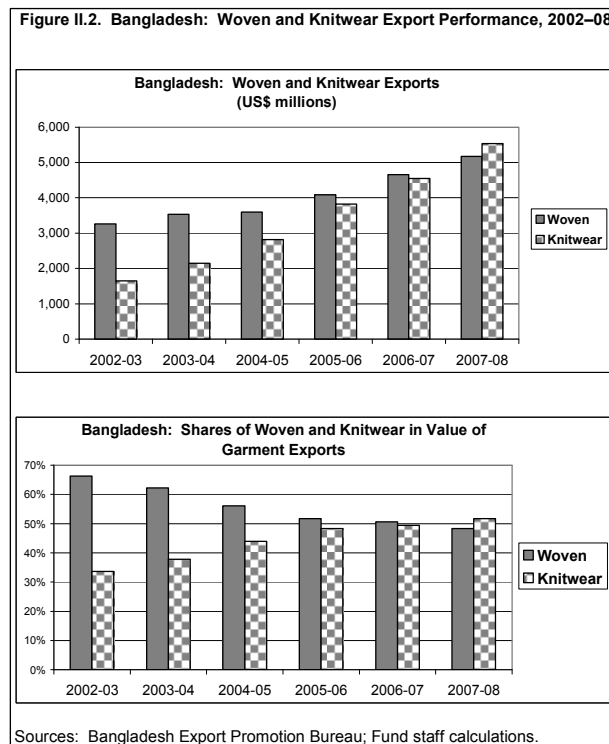
Sources: Eurostat; US Department of Commerce; Statistics Canada; and Fund staff calculations.

5. **The Canadian market provides a cautionary note for Bangladesh.** It is the only significant market for garment exports in which Bangladesh has unrestricted duty free access and in which China does not face any garment export limits. The 2007 Canadian data show Bangladesh's market share was falling while those of Cambodia, China, and Vietnam were steadily rising. Trade data for the 12 months to June 2008 show that in a now shrinking Canadian market, Bangladesh has maintained its market share while those of Cambodia, China, and Vietnam continued to rise.

6. **Diversification has occurred through increased use of domestic inputs.** Strong domestic backward linkages have now developed for knitwear and sweater production, with more than 70 percent of producers procuring most, if not all, of their yarn from spinners

within Bangladesh.³ Woven garment producers, on the other hand, continue to rely on imported cloth due to the small quantity of woven cloth produced domestically, although this domestic supply is gradually increasing. A significant shift in input supply for both knitwear and woven producers over the past several years has resulted from the rapid expansion of domestic production of accessories such as buttons, zippers, and labels that match the quality of imported accessories.

7. **The high domestic content of knitwear has allowed it to overtake the woven sector.** The strong domestic linkages in the input supply chain have promoted knitwear's growth—exports surpassed woven exports for the first time in FY2007/08 (Figure II.2). This reflects EU, and to some extent Canadian, Rules of Origin (ROO) that favor products with high domestic content.⁴ In the minds of retailers, buyers and producers, the strong domestic input supply chain for knitwear means shorter lead times and this enhances knitwear's competitiveness. Within the knitwear sector, sweaters have emerged as a major export product over the past several years with rapid growth in the number of sweater factories.



³ Rahman, Bhattacharya, and Moazzem (2008).

⁴ The substantially higher domestic value added for knitwear and the rapidly rising share of knitwear in total exports is raising Bangladesh's retained export earnings from the garment sector as the cost of imported inputs is falling relative to the value of total garment exports.

C. Export Diversification

8. **This section uses disaggregated trade data to investigate how Bangladesh has fared in export diversification.** Trade data provide highly disaggregated information on exports. Low-income countries, however, often have significant data gaps at lower levels of disaggregation. This paper's analysis therefore takes place at the 4-digit level.⁵ This is sufficient to capture distinctions between final products (for instance fridges and freezers), but will not capture specialization in the manufacture of, for instance, specific types of machinery or electronics components. While these distinctions are an important element of analysis of the growth of regional production networks in East Asia (see, for instance, IMF 2007), they are somewhat less relevant to the labor-intensive operations, in which the comparative advantage of Bangladesh lies.

9. **Bangladesh's performance is compared against competitors in South and East Asia.** The analysis looks at six countries: Bangladesh, Cambodia, Nepal, Pakistan, Sri Lanka, and Vietnam. The countries were chosen due to their regional proximity and the similarity of their export bases. Export similarity indices (Table II.3) show that Bangladesh's exports are most similar to Cambodia and Sri Lanka, due primarily to the dominance of garments in these countries' export portfolios.⁶

	1990	2006
Bangladesh		
Vietnam	19	22
Cambodia	66	60
Sri Lanka	43	42
Pakistan	26	27
Nepal	27	20

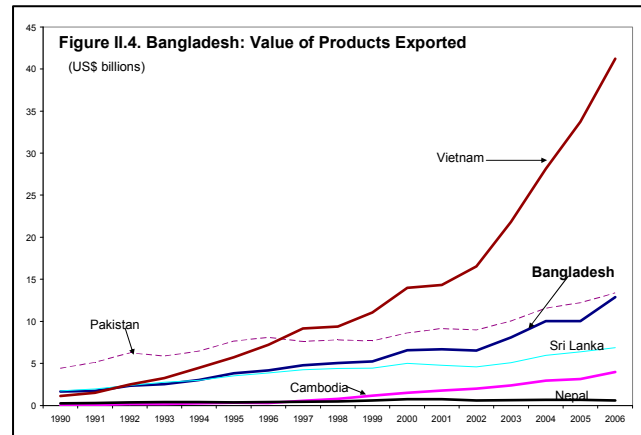
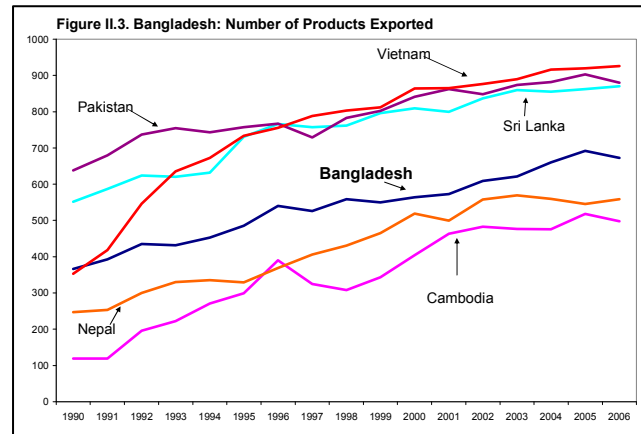
10. **The analysis focuses mainly on the number of products and their life span rather than their value.** The main focus of the analysis is the extent of diversification in the 1990–2006 period—chosen primarily because of data availability. The underlying assumption is that diversification is required to underpin the ultimate objective of sustained growth in the value of exports. Where relevant, however, the analysis does look at the extent to which diversification has contributed to export growth.

⁵ The paper uses SITC (revision 3) data from the UN's World Integrated Trade Statistics Database (WITS).

⁶ Export similarity indices show the extent of overlap of exports. They are defined as $\sum_i \text{MIN}(X_{i1}X_{i2})$ where X is the share of a commodity in exports, i is the four-digit export, and 1 and 2 are the two countries being compared.

11. **Bangladesh expanded its number of export products well by South Asian standards, but less than East Asian competitors.** All the countries in the study expanded their overall export base during the period, on average doubling their number of products (Figure II.3). Bangladesh increased its total number of products from 366 to 673, an increase of around 80 percent. This was a faster rate of increase than Pakistan and Sri Lanka, but slower than Nepal and considerably slower than Cambodia, which quadrupled its number of products (albeit from a very low base). Vietnam, which as a large country starting from a similar export base, is perhaps the most interesting comparator, increased at twice the rate of Bangladesh. The pattern is magnified in terms of value of exports, with Vietnam and Cambodia increasing at much more rapid rates than Bangladesh, which grew at a faster rate than the other South Asian countries (Figure II.4).

12. **Bangladesh's exports have, however, become more concentrated in value terms.** All of the countries in the sample have high concentrations of exports when analyzed by value, and Bangladesh and Cambodia are more concentrated than any of the other countries (Table II.4). For instance, in Bangladesh the top 10 export products (which for Bangladesh represent around 1 percent of total products) account for 70 percent of total export value. Bangladesh, in contrast to all the other countries in the sample, increased its concentration over the period.⁷



⁷ The three measures used were: share in value terms of the top 10 and 20 products and the Hirschmann-Herfindahl index, which is defined as the square root of the sum of the squares of export share of each product—a higher value indicates greater concentration.

Table II.4. Bangladesh: Concentration of Exports

	1990	2000	2006
	Share of top 10 exports		
Bangladesh	65	66	72
Cambodia	87	69	70
Sri Lanka	49	42	44
Nepal	86	61	44
Pakistan	59	56	55
Vietnam	73	57	48
	Share of top 20 exports		
Bangladesh	85	81	84
Cambodia	94	85	86
Sri Lanka	65	58	61
Nepal	91	75	60
Pakistan	75	70	72
Vietnam	84	69	62
	Herfindhal index		
Bangladesh	6.0	5.7	8.4
Cambodia	19.0	9.6	9.0
Sri Lanka	3.3	2.7	2.8
Nepal	36.2	6.3	4.4
Pakistan	5.7	4.7	5.2
Vietnam	14.4	7.8	5.2

13. **The sectoral composition of Bangladesh’s diversification was comparable to that in the other countries.** New products were added in a broad range of sectors by all of the countries in the sample.⁸ Bangladesh was broadly in the middle range of the number of new products in categories that suggest higher-value added—electronics, machinery, and pharmaceuticals—generally performing better than South Asian peers, but behind Vietnam and Cambodia (Table II.5).

14. **Bangladesh’s new products have a relatively poor record of retention.** Table II.6 shows a number of different indicators of the likelihood of a product remaining within the export mix once it has been introduced. The process of economic discovery described in the introduction suggests that the failure of a new product is not necessarily a bad thing—it contributes to the knowledge of comparative advantage. However, the fact that Bangladesh’s new products tend to have a shorter duration in the export portfolio than most of its competitors and that they have a worse record in gaining market share supports the initial hypothesis that, as yet, export diversification in Bangladesh has not been fully successful.

⁸ A new product is defined as a product that was not in the export mix in 1990, but appeared in exports at least once in the following years.

Table II.5. Bangladesh: New Export Products 1991–2006

	Bangladesh	Vietnam	Cambodia	Sri Lanka	Pakistan	Nepal
Garments and footwear	1	7	32	1	1	8
Textiles and fabrics	46	64	77	39	15	71
Vehicles including ships	18	23	19	21	16	18
Electronics	20	36	41	15	12	27
Machinery	83	108	106	62	39	98
Food and beverage	94	85	101	69	75	93
Chemical and Pharmaceuticals	97	105	95	70	57	92
Other manufactures	65	76	89	43	18	74
Other	152	156	153	125	136	157
Total	576	660	713	445	369	638

Table II.6. Bangladesh: New Product Retention

	Bangladesh	Vietnam	Cambodia	Sri Lanka	Pakistan	Nepal
				(percent)		
Probability of 1990 product being in 2006 exports	90	98	79	95	96	85
Probability of new product being in 2006 exports	59	82	57	76	70	55
			(number)			
Products falling out of exports per year	99	53	94	68	65	91
			(years)			
Average duration of products introduced in 1991	9.5	14.5	10.1	12.6	12.3	8.9
Average duration of products introduced in 1995	6.8	9.2	6.1	7.3	7.0	6.1
Average duration of products introduced in 2000	2.6	4.4	3.0	3.4	3.6	3.6

D. Prospects for Export Diversification

15. **Opportunities for export diversification are growing.** Globalization has been closely associated with the “unbundling” of the production process (Baldwin, 2007). Offshoring of the production process has been succeeded by fragmentation of it. Reduced communication costs and better production management have allowed corporations to increasingly separate different aspects of the production process and locate them in different countries, thereby enabling comparative advantage to work at a much finer level of detail. This fragmentation has been instrumental in the establishment of the production networks of East Asia (Ando and Kimura, 2003), many of which have China as the final stage. However, as costs rise in China (and it moves up the value chain), there is a chance for other labor-abundant low-income countries to attract investment in assembly operations.

16. **Improving competitiveness will be crucial in attracting investment in exporting industries.** Bangladesh will be competing for market share and foreign investment with many other countries, including the countries discussed in this study, which have very similar export structures, and also with inland China and India. It is likely that the physical and

cultural remoteness of Bangladesh and the other South Asian economies from the East Asian production networks that predominately currently use coastal China for assembly operations will work against their integration into those East Asian networks.

17. **There are a number of factors that suggest that Bangladesh is well placed to expand its manufacturing exports.** A key factor is its abundant and relatively low-cost labor force, which makes it an attractive destination for investors looking to locate assembly operations. Its success in the garments industry, which was the starting point in the industrialization process for many of the East Asian economies, will make it attractive to investors as will its growing domestic market and good access to the huge Indian market. These factors have already been internationally recognized; Bangladesh often appears in analyses of potential emerging markets—including Goldman Sachs’s Next 11 and JP Morgan’s Frontier Five.

18. **Recent developments have shown tangible signs of this potential.** For instance, Bangladesh has recently become an exporter of small oceangoing ships. This is a niche in the market that is not currently serviced by the major shipbuilding nations of China, Japan, and Korea. Bangladesh shipyards have received over the past year orders totaling \$450 million from Denmark, The Netherlands, Germany, Japan, and Mozambique. Investors have also been looking at locating footwear and textiles factories and some electronics and agricultural machinery assembly operations in Bangladesh. The relocation of footwear production to Bangladesh may be spurred by the recent removal of the US GSP for Vietnam’s footwear manufacturers.

19. **Bangladesh performs well on labor and some nonlabor operating costs (Table II.7).** Attracting investment, particularly in the manufacturing sector, requires not only low labor costs, but also a competitive overall cost environment, including the costs of getting products to their final markets. While Bangladesh competes well on labor costs, it fares less well on access to affordable and reliable power and on transportation costs.

20. **The broader business environment is, however, mixed.** Bangladesh ranks at 107 out of 178 countries on the World Bank’s cost of doing business index—broadly in the middle of the countries considered in this paper’s analysis, and slightly better than India, but worse than China (Table II.8). It performs very well on protecting shareholders—which, however, has not as yet seen the stock market become a major vehicle for financing investment in exports—but very poorly on securing property rights, particularly on enforcing contracts and registering property (Figure II.5).

Table II.7. Bangladesh: Indicators of Competitiveness

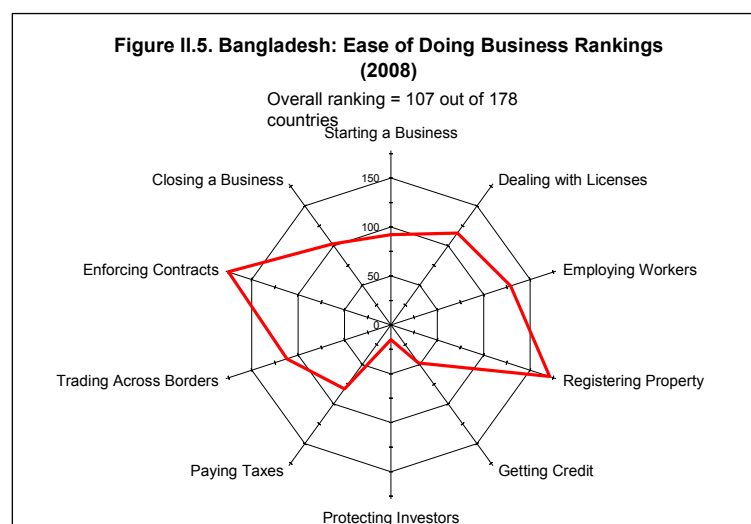
	Bangladesh	Cambodia 1/	Vietnam	China	India	Sri Lanka	Pakistan
	(In U.S. dollars)						
Wages (monthly)							
Workers	56	100	93	154	324	141	204
Engineers	167	170	130	150	384	210	494
Managers	488	300	461	1798	921	539	1146
Rent (per square meter)							
Industrial estate	0.1	1.8	0.2	1.7	5.9	0.1	0.0
Office	12.2	8.0	54.6	14	24.2	9.8	17.1
Electricity (Business use, kWh)	0.08	0.16	0.06	0.1	0.11	0.20	0.11
Gasoline (per liter)	1.0	1.0	0.8	0.7	1.3	1.2	0.9
Transport (per container)							
Japan (Yokohama)	2200	1755	853.5	700	1200	650	700
United States (Los Angeles)	3300	3806	3027	1850	2831	2800	2700
International phone call (per minute)	0.35	0.9	0.45	0.03	0.30	0.2	0.08

1/ 2007 data.

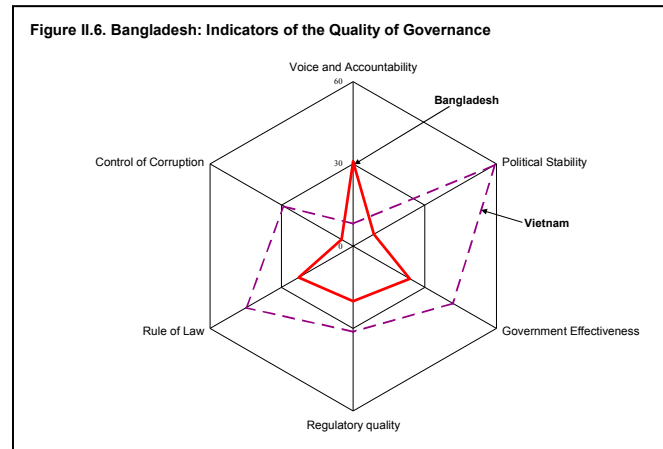
Sources: Japan External Trade Organization, 2008.

Table II.8. Bangladesh: Overall Doing Business Rankings

Pakistan	76
China	83
Vietnam	91
Sri Lanka	102
Bangladesh	107
India	120
Cambodia	145
Nepal	111



21. **The quality of governance is a deterrent to investment.** Bangladesh scores poorly on the World Bank's synthesis of indicators of governance, occupying, with Cambodia, the 18th percentile, below the low-income average of the 25th percentile and well below Vietnam (at the 36th percentile). Bangladesh has historically performed particularly badly on political stability and control of corruption (Figure II.6).



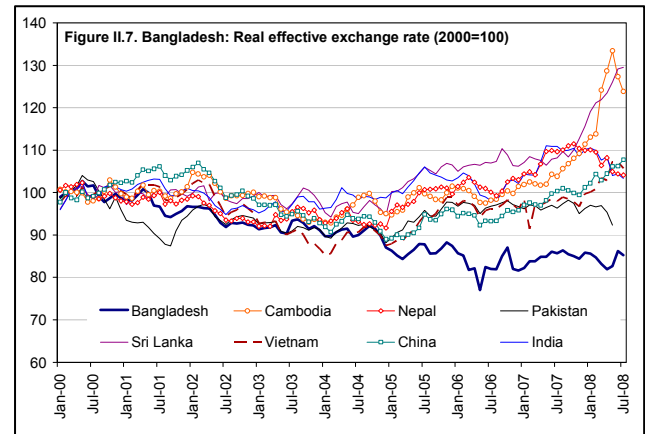
E. Outlook

22. **Bangladesh's export growth is likely to be concentrated in the garments and textiles sector in the short term.** Although competition is becoming more intense, Bangladesh's strong market position does not look likely to diminish in the short term. Despite the recent mixed performance, Bangladesh retained second position after China in global garment trade. There are, though, some risks, particularly related to the changing rules that govern access to the main markets for garments, including the expiry of U.S. and E.U. safeguard measures on China at the end of 2008. Recent years have seen Bangladesh make significant inroads into the closely related footwear and textiles markets that bode well for continued export growth in these areas.

23. **Bangladesh has considerable potential to diversify its export base.** Small-scale export of products across a wide range of sectors including agriculture, food products, and manufactures indicates an ability to diversify and compete in international markets. A considerable store of excess and low-cost labor represents a comparative advantage that can be leveraged to build new industries. Bangladesh's proximity to India and good market access are also advantages. Although the distance from East Asia may inhibit substantive participation in that region's production networks, continued progress in regional integration could see similar networks begin to emerge in South Asia. The authorities recognize the need to diversify their export base—their Export Policy 2006–09 gives the highest priority to expanding exports in six sectors: agro-products, light engineering, footwear and leather, pharmaceuticals, software, and home textiles.

24. **Maintaining macroeconomic stability will be critical to promoting investment in all sectors.** All investment, and particularly foreign direct investment that is likely to play a crucial role in building new export industries, relies primarily on expectations of a stable macroeconomic environment. Bangladesh's sound recent record works in its favor, although many of its main competitors have similarly strong records. Maintaining stability,

particularly with regard to keeping control of inflation, will be important in prolonging the steady increase in investment seen in recent years and opening the doors for much larger volumes of FDI. The maintenance of a flexible exchange rate regime that allows the real exchange rate to remain in line with economic fundamentals will also be key to maintaining competitiveness. Bangladesh's REER has stayed broadly stable since 2006, while the other countries studied in this chapter have appreciated (Figure II.7).



25. **A return to political stability and continued improvements in the quality of governance will also be important.** A clearer political environment, which should hopefully be in place following the December 2008 elections, should assist the business environment. Continued progress on improving the quality of governance, particularly with regard to controlling corruption, will also be an important element in attracting high-quality investment.

26. **Continued progress in structural reforms that reduce the overall cost of doing business will be critical in maintaining competitiveness.** The agenda is huge and is wide-ranging in the Poverty Reduction Strategy Paper (PRSP) and the export policy documents. Special mention should be given, however, to a few key areas:

- **Power and infrastructure:** Access to reliable and affordable power regularly appears at the top of the list of constraints to doing business in Bangladesh. Making improvements in this area is critical to promoting industrial growth and needs to be supported by improvements in other infrastructure, notably roads and port facilities.
- **Trade policy:** Despite substantial progress in liberalization of the trade policy environment in the 1990s, Bangladesh still has one of the most restrictive trade regimes in the world. It ranks at 113 out of 125 countries on the World Bank's trade restrictiveness index. Further effort to liberalize the tariff system is needed, particularly by reducing or eliminating supplementary duties that significantly increase protection on a large range of products.
- **Trade facilitation:** Building on recent progress in port performance, particularly by improving the efficiency of customs, will be important to encourage trade further.
- **Financial sector:** Improving banking sector efficiency and providing the environment for broader use of the stock and bond markets for corporate financing would encourage inward investment and development of the domestic private sector.

- **Labor force productivity:** Labor force skill levels need to be improved to enhance productivity. Continued attention to education and training is an essential part of maintaining long-run competitiveness.

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III. POTENTIAL BENEFITS OF TAX REFORM FOR BANGLADESH¹

A. Introduction

1. **Bangladesh has one of the lowest tax-to-GDP ratios among Asian countries.** Despite recent improvements, tax collection in Bangladesh still stands at around 9 percent of GDP, well below the regional average of more than 12 percent (Table III.1). Studies have shown that the low tax intake is the result of excessive use of tax holidays, basic design flaws in the tax laws, and weak tax administration.² Cross-country analyses and estimates of revenue foregone from tax incentives in Bangladesh find that there is potential to raise revenues by 2 to 4 percentage points of GDP, in broadly equal measure from direct and indirect taxes (IMF, 2007). This would allow Bangladesh to catch up to the regional average, although generating such revenue would require fundamental tax reforms.

Table III.1. Bangladesh: Tax Revenue to GDP—Selected Asian Countries
(In percent)

	2005	2006	2007	2008 Proj.
Bangladesh 1/	8.5	8.5	8.3	9.1
Cambodia	7.6	8.0	9.3	10.0
Indonesia 2/	11.2	11.0	11.4	11.4
Lao PDR 3/	8.8	9.7	9.2	9.2
Nepal	8.9	9.9	10.2	10.3
Pakistan	10.1	10.6	11.0	11.6
Philippines	13.0	14.3	14.3	...
Sri Lanka	14.2	15.3	16.3	16.8
Thailand	16.6	16.1	16.0	...
Vietnam	13.5	13.8	14.2	...
Regional average (excl. Bangladesh)	11.5	12.1	12.4	...

Source: IMF staff reports.

1/ The fiscal year ends on June 30; 2/ Non-oil revenues; 3/ Non-resource revenues.

2. **To improve the revenue intake in Bangladesh, a series of tax reforms have been recommended.** The main thrust of these recommendations is to broaden the tax base to generate more revenue, while lowering marginal tax rates to reduce distortions. In particular, the following measures have been proposed:

¹ Prepared by Serkan Arslanalp (FAD).

² A summary of the current tax system is attached as an annex to this paper.

- Redrafting the value-added tax (VAT) and income tax laws to achieve a much simpler tax system that would broaden the base and reduce reliance on inefficient tax incentives;
- Reforming the current VAT, which is in reality an excise/turnover tax to move towards a modern invoice-based credit system;
- Reducing and unifying the multiple corporate income tax rates at 30 percent while limiting the use of tax holidays and other tax relief that erode the base.

3. **At the same time, Bangladesh suffers from a shortage of public investment, partly due to lack of resources.** At around 4 percent of GDP, Bangladesh has a relatively small annual development budget (ADP), compared with other countries at similar levels of development. Although capacity constraints and governance issues appear to be the primary factors affecting ADP spending, revenue shortfalls prior to FY08 reduced the fiscal space available for higher spending (Table III.2). Tax reforms that generate additional and reliable sources of revenue would increase the ability to finance higher and better quality public investment, with potential positive growth effects.

Table III.2. Bangladesh: Outturn Compared to Original Budget, FY05–08
(in Billions of Taka)

	FY05			FY06			FY07			FY08 (Est.)		
	Budget	Actual	Dev. (%)	Budget	Actual	Dev. (%)	Budget	Actual	Dev. (%)	Budget	Actual	Dev. (%)
Revenues	412	380	-7.6	457	425	-6.9	525	468	-10.8	573	618	7.8
Expenditures	557	529	-5.1	634	544	-14.1	691	592	-14.3	885	873	-1.4
Non-Development	331	335	1.5	381	365	-4.1	426	422	-1.1	620	712	14.8
Development (ADP)	227	194	-14.7	253	179	-29.2	265	171	-35.6	265	161	-39.2

Source: Ministry of Finance, *Monthly Report on Fiscal Position*.

4. **How would a tax reform that generates resources for public investment and reduces tax distortions impact the Bangladesh economy?** This paper tries to answer this question by using a general equilibrium model called the Global Integrated Monetary and Fiscal Model (GIMF) calibrated to Bangladesh's economy. Simulations show that tax reform can enhance growth in Bangladesh by 1 to 1½ percentage points per annum over the medium term both by raising revenues for productive spending and enhancing the efficiency of the tax system. The revenues are best generated through VAT, rather than personal or corporate income taxes. At the same time, if the rate of return on public investment is low, saving the revenue to reduce the deficit would be more beneficial. In the remaining part of the paper, Section B presents the main features of the GIMF model and explains how it was calibrated for Bangladesh. Section C reports the simulation results and Section D concludes.

B. Model, Data, and Calibration

5. **The GIMF model is a general equilibrium model that can be used for analyzing tax policy changes.** It is intended to help policy makers consider the implications of alternative fiscal (and monetary) policies on macroeconomic variables. The main features of the model are explained in Kumhof and Laxton (2007). In particular, the model allows for

(i) liquidity-constrained agents, who cannot smooth their consumption one for one with changes in disposable income; (ii) private investment that responds inversely to changes in the capital tax rate; and (iii) public investment that enhances the productivity of private capital and potentially crowds-in private investment.

6. **The model is calibrated using two countries, Bangladesh and the rest of the world.** To the extent possible, the parameters for Bangladesh are based on historical values and staff projections. Otherwise, they reflect estimates based on other countries with similar levels of development. The rest of the world is proxied by the U.S., for which data are provided by Kumhof and Laxton (2007).

7. **The following assumptions were used to tailor the GIMF model to the Bangladesh economy (Table III.3).**

- **Country size.** With a population of 150 million, Bangladesh represents around 2.5 percent of the world population and 0.3 percent of world GDP (on a PPP basis).
- **Growth, inflation, and interest rates.** Baseline growth is set at 6 percent, in line with the average over the last five years. This implies that output per worker grows at 4 percent, based on a population growth of 2 percent. Inflation is set at 5 percent. The real interest rate is set at 2 percent, based on the historical weighted average cost of borrowing.³
- **Debt and deficit.** The debt-to-GDP ratio is set at 40 percent while the overall fiscal deficit is set at 4 percent of GDP, both close to current levels.
- **The share of labor income** in GDP is set at 80 percent, based on an estimate by Caselli and Feyrer (2007) for India.
- **Share of liquidity-constrained consumers** is assumed to be two-thirds of the population. It is set higher than the typical estimates for emerging market economies (50 percent) and the United States (33 percent).
- **Debt risk premium** is assumed to be 4 basis points. This implies that a 1 percentage point increase in the debt-to-GDP ratio leads to a 4 basis points increase in the real interest rate. Given Bangladesh's low level of financial development and limited integration with capital markets, this risk premium is on the low side of estimates for other developing and emerging countries, which range from 4 to 8 basis points (Rowland and Torres, 2004).
- **Rate of return on public investment** is set at 13 percent (baseline assumption). This is based on the standard GIMF assumption, drawn from Ligthart and Suarez

³ The cost of external borrowing is estimated to be 1½ percent in nominal terms, or -½ percent in real terms based on a U.S. inflation rate of 2 percent. The cost of domestic borrowing is 4½ percent in real terms.

(2005), that the elasticity of output with respect to public investment is 0.14.⁴ Given the difficulty of estimating this value for Bangladesh, we simulate the model also with a higher (17 percent) and lower (10 percent) bound estimate. The depreciation rate of capital is assumed to be 10 percent, both for public and private capital.

Table III.3. Bangladesh: Main Assumptions for the GIMF Model

Macroeconomic parameters		Structural parameters	
Real GDP growth	6 percent	Liquidity constrained	66 percent of
Inflation	5 percent	Share of labor income	80 percent of GDP
Real interest rate	2 percent	Depreciation of capital	10 percent
Debt-to-GDP ratio	40 percent	Debt risk premium	4 basis points
Overall deficit	4 percent of GDP	Population growth	2 percent
Tax revenue	9 percent of GDP	Output per worker growth	4 percent
Current spending	9 percent of GDP		
Capital spending	4 percent of GDP	Rate of return on	10/13/17 percent
Private investment	19 percent of GDP	Public investment	low/baseline/high

C. Simulation Results

8. **This section reports the results of four simulations where the tax-to-GDP ratio is raised permanently by 1 percentage point.** In the first three simulations, public investment is raised in tandem with tax revenue. In the last simulation, the additional revenue is saved to reduce the deficit. In each case, the results are reported in terms of deviations from the steady state.⁵

Scenario 1: Raising Tax Revenue and Public Investment

9. **Theory predicts that raising taxes would reduce growth, at least in the short run, while raising public investment would raise it.** Raising taxes would hurt growth because it would depress aggregate demand. At the same time, public investment can raise the productivity of private capital and even crowd in private investment. The net impact would depend on the particulars of the economy.

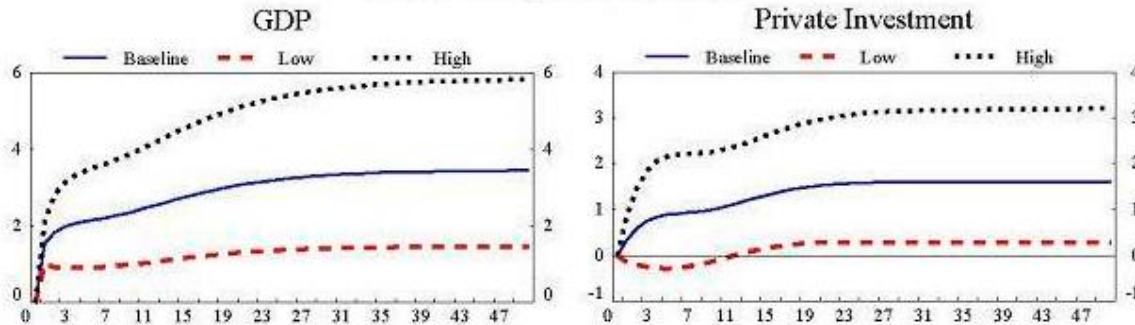
10. **Simulations show that raising taxes and public investment in tandem would likely lead to a significant and positive growth impact in Bangladesh.** The impact is front loaded, with about half of the gains taking place in the first five years. In particular, raising

⁴ The elasticity indicates that a one percent increase in public investment leads to a 0.14 percentage point increase in long-run output. The marginal productivity of public investment would then be 3.5, calculated as the elasticity (0.14) divided by the public investment-to-GDP ratio in Bangladesh (4 percent). It is interpreted as the payoff in dollar terms from a dollar increase in the public investment budget. This would yield a rate of return of 13 percent based on the assumption that the payoff arrives over 10 years.

⁵ Full simulation results are available from the author.

taxes and public investment by 1 percentage point of GDP would boost growth by $\frac{1}{4}$ to $\frac{1}{2}$ percentage points per annum over the next five years, depending on the rate of return on public investment. Over the long run, output would be higher by 2 to 6 percent in real terms, while private investment would be higher by up to 3 percent. Public investment would crowd-in private investment as long as it has a high or medium rate of return.

Figure III.1. Bangladesh: Main Simulation Results for Scenario 1



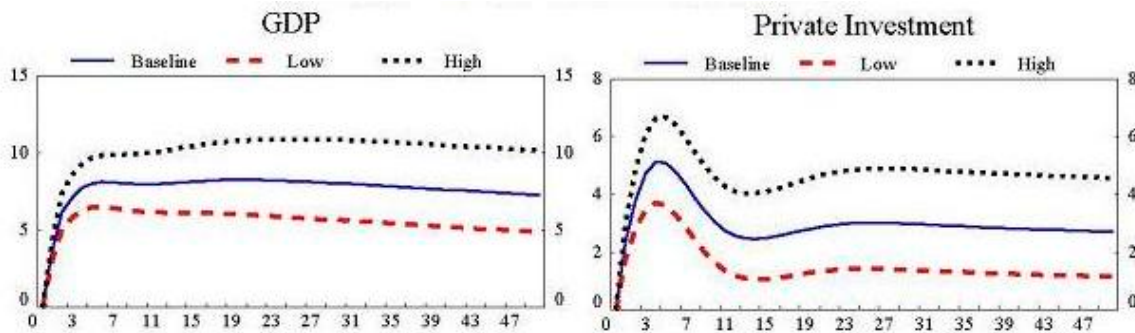
Scenario 2: Raising Tax Revenue and Public Investment (and Improving Tax Efficiency)

11. **This scenario explores the impact of a tax reform that generates efficiency gains, in addition to raising revenues.** The efficiency gains can come from various sources. First, reducing the highest marginal tax rates, while broadening the base, could bring efficiency gains.⁶ Second, reforms that improve the composition of taxes, in particular by reducing payroll and corporate taxes and increasing reliance on consumption taxes (VAT) would improve production and savings incentives. Third, and more specific to Bangladesh, moving away from highly distortive excise/turnover taxes to a truly modern VAT system could improve efficiency. Finally, the simplification of tax laws and tax administration could reduce the cost of compliance for businesses and improve efficiency. We model these efficiency gains as a one-time increase in total factor productivity (TFP) at the time of reform (by 5 percent).

12. **Simulations show that the growth impact would be twice as much as the first scenario, if efficiency gains are also considered (Figure III.2).** The impact would be front loaded again, with about half of the gains taking place in the first five years. In particular, growth would be higher by 1 to $1\frac{1}{2}$ percentage points per annum over the next five years. Over the long run, output would be higher by 5 to 10 percent in real terms, while private investment would be higher by 1 to 4 percent.

⁶ It is a standard proposition in public finance that the deadweight loss of a tax (the Harberger triangle) rises approximately with the square of the tax rate.

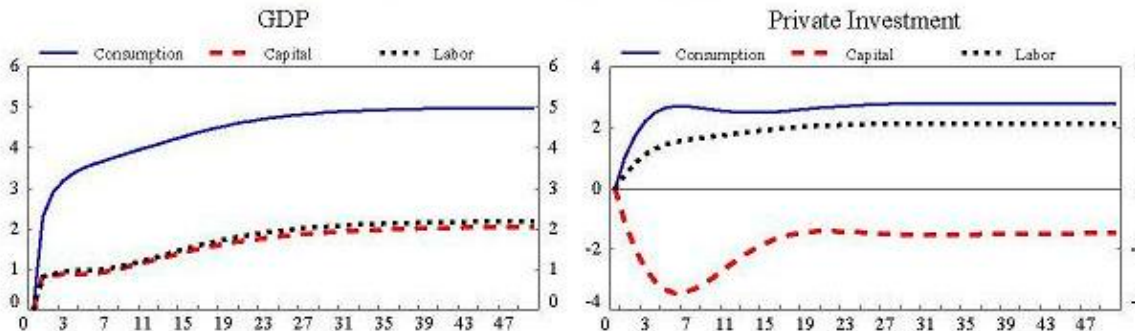
Figure III.2. Bangladesh: Main Simulation Results for Scenario 2



Scenario 3: Raising Tax Revenue and Public Investment (with Different Tax Instruments)

13. **This scenario simulates the impact of raising taxes through three different tax instruments** (Figure III.3). The simulation shows that revenues should be generated through consumption tax (VAT), rather than capital and labor taxes. This is because labor and capital taxes create distortions in employment and investment decisions, while consumption taxes are neutral in these decisions. As a result, the highest gain in output is achieved through the consumption tax, while capital and labor taxes yield much lower benefits because they deter private investment and employment, respectively.

Figure III.3. Bangladesh: Main Simulation Results for Scenario 3

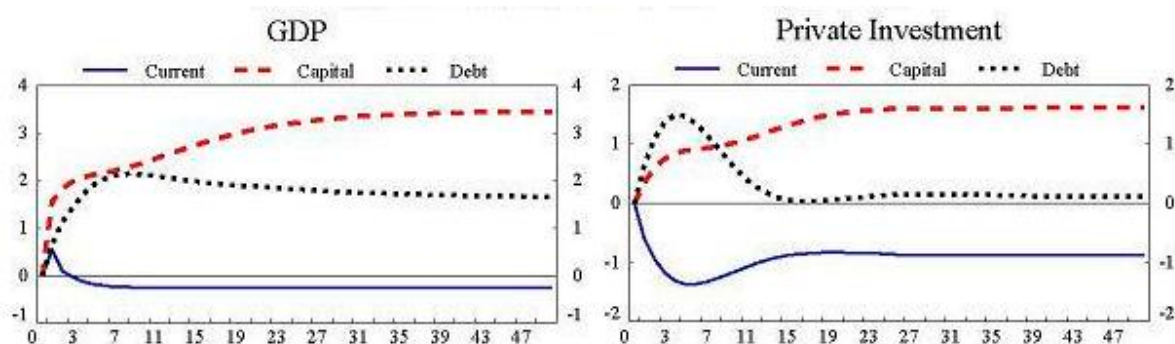


Scenario 4: Deficit Reduction Versus Current Spending

14. **This scenario shows that a reduction in the deficit financed by higher tax revenues (rather than an increase in public investment) would also have a positive impact, whereas an increase in current spending would not** (Figure III.4). In particular, raising taxes by 1 percentage points of GDP, while keeping spending constant, would reduce the deficit by the same amount and public debt by 10 percentage points over the long term. This would lower the real interest rate by 40 basis points, stimulating private investment and growth. In fact, the gains from deficit reduction could be even higher than public investment if the productivity of public investment is sufficiently low (see Table III.4). On the other

hand, current spending is strictly inferior to both options, because it neither adds to public capital nor lowers interest rates.

Figure III.4. Bangladesh: Main Simulation Results for Scenario 4



15. **Table III.4 summarizes the results of the simulations.** In general, tax reform generates positive and significant output gains for Bangladesh. Although raising taxes is usually bad for growth, at least in the short term, simulations shows that raising them in tandem with public investment can generate the opposite effect for Bangladesh. A tax reform that raises revenues and public investment by 1 percentage points of GDP would raise real output by 2 to 6 percent *without assuming efficiency gains from tax reform* (Scenario 1) or 5 to 10 percent *with efficiency gains* (Scenario 2). Consumption taxes present the best option for raising revenue, as opposed to capital and labor taxes (Scenario 3). However, if the rate of return on public investment is low, (less than 10 percent), it would be better to save the additional revenue to reduce the deficit (Scenario 4).

Table III.4. Bangladesh: Summary of Results: Impact of Tax Reform on Output (In Percent)

	Rate of return on public investment		
	Low	Baseline	High
Efficiency Gains			
No	1.5	3.5	5.8
Yes	4.9	7.3	10.1
Tax type			
Consumption tax	2.8	5.0	7.6
Capital tax	0.2	2.0	4.2
Labor tax	0.4	2.2	4.4
Revenue use			
Current spending	-0.2	-0.2	-0.2
Capital spending	1.5	3.5	5.8
Deficit reduction	1.7	1.7	1.7

D. Conclusion

16. **Fundamentally reforming the tax system remains one of the key policy challenges in Bangladesh.** This paper estimates the potential benefits of tax reform for Bangladesh by simulating various reform scenarios in a general equilibrium model calibrated to Bangladesh's economy—the first of its kind to the best of our knowledge. Simulations show that tax reform can enhance growth in Bangladesh by 1 to 1½ percentage points per annum over the medium term, both by raising revenues for productive spending and enhancing the efficiency of the tax system. The revenues are best generated through VAT, rather than personal or corporate income taxes. This suggests that VAT should become the workhorse for revenue generation in Bangladesh, while reforming the income taxes could do wonders in terms of generating efficiency gains. At the same time, if the rate of return on public investment is less than 10 percent, saving the revenue to reduce the deficit would be more beneficial.

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Annex III.1. Bangladesh: Summary of the Tax System as of July 2008

Tax	Nature of Tax	Current Tax Status		
		Exemptions and Deduction	Rates	
A. General Government				
1. Taxes on income				
1.1 Individuals	Annual global income tax.	Exemptions are:	Annual income (resident) (in taka)	Marginal rate of tax
	Taxable income includes employment income; income from interest on securities house property, business, profession, capital gains, agricultural income, and other sources.	* Any person due to, or received by, an assessee in respect of any income year in which the person is in Bangladesh for a period in all amounting to 182 days or more.	0 -165,000	0 percent
		* Some interest; e.g., on certain government securities up to Tk 5,000, and interest from certain debentures up to Tk 20,000.	165,001-440,000	10 percent
		* Dividend income not exceeding Tk. 25,000 in case of unit certificate and mutual fund.	440,001-765,000	15 percent
		* Tk 50,000 additional to threshold of Tk 165,000 for persons whose only source of income is from agriculture, *gratuities, and pensions;	765,001-1140,000	20 percent
	Filing takes place on an individual basis.	* Foreign remittances of resident Bangladeshis and Bangladeshi nationals working abroad sent through banking channel.	1140,001 and above	25 percent
	Taxability is based on the residential status of the taxpayers and not on citizenship or domicile. A nonresident person is liable to income tax on income received or deemed have been received in Bangladesh and all income, which accrued or arose or is to have been accrued or arisen in	Deductions for accomodation and cars for salaried employees of nongovernmental firms and organizations:	exemption limit for female taxpayers, senior taxpayers exceeding 70 years and retarded taxpayer is Tk. 180000 Instead of Tk. 165000	
	Capital gains are taxed under the income law at varying rates depending on the length of time an asset is held. Only capital losses can offset capital gains.	* Rent paid in cash by employer: first Tk 15,000 per month or 50 percent of the basic salary, whichever is less;	Minimum tax payable: Tk 2,000	
		* Rent-free accomodation from employer: rental value or 25 percent of basic salary, whichever is less;	Nonresidents	25 percent
		* Conveyance allowance: if no conveyance provided by employer and allowance is received in cash by employee, allowance up to Tk 24,000 is exempt.		
		Investment Tax Credit at 10 percent is admissible on 25 percent of total income (subject to a maximum of Tk 500,000) for the following items:		
		* Contribution to deferred annuity, contribution to Provident Fund to which the Provident Fund Act 1925 applies;		
		* Self-contribution to approved Superannuation Fund;		
		* Investment in approved debenture or debenture stock, stock and shares of public companies;		
		* Contribution to deposit schemes;		
		* Life insurance premium;		
		* Contribution to Zakat Fund, donation to any socio-economic or cultural development institution established in Bangladesh by Aga Khan Development Network, rural charitable hospital, organization for retarded people, and national savings certificate;		
		* Contribution to Benevolent Fund and Group Insurance.		

Annex III.1. Bangladesh: Summary of the Tax System as of July 2008 (continued)

Tax	Nature of Tax	Exemptions and Deduction	Current Tax Status	Rates
1.2. Companies	<p>Tax is imposed on income of companies under a classical system of taxation. Resident companies are taxed on worldwide income. Nonresident companies are taxed on Bangladeshi income.</p> <p>Loss carry-forward is allowed for a of 6 successive assessment years.</p> <p>Avoidance of double taxation: * In the case of residents in Bangladesh, an ordinary credit (i.e., up to the amount calculated at the Bangladesh tax rate) is with respect to double taxation on income accruing or arising in a foreign country with which there is no reciprocal arrangement for the avoidance of double taxation. The credit is subject to the overall country limitation. No relief is available in respect of income which is deemed to accrue or arise in Bangladesh.</p> <p>* Double tax treaties apply for several countries (Belgium, Canada, China, Denmark, France, Germany, India, Italy, Japan, Malaysia, Netherlands, Pakistan, Poland, Republic of Korea, Romania, Singapore, Sri Lanka, Sweden, Thailand, Great Britain & Northern Ireland, Vietnam, the Philippines, Turkey, and Norway, Switzerland, Oman and USA</p> <p>Inter-corporate dividends between Bangladeshi companies are chargeable a at a concessional rate of 20 percent.</p> <p>Tax holiday facilities available for industrial undertakings, tourist industry, and physical infrastructure facilities up to June 30, 2011.</p>	<p>Exemptions from business income are: * Donation income of religious and charitable institutions certain conditions; * Income of cooperative societies engaged in certain businesses, particularly if derived from agricultural or rural credit, cottage industries, etc.; * Income arising out of poultry, cattle, horticulture, etc., under certain conditions; * Bonus shares.</p> <p>Deductions from business income are inter alia allowed for: * Expenditure incurred wholly and exclusively for the purposes of the business; * Bad debts; * Interest payments (no ceilings); * Depreciations: There are three categories of depreciation: (i) normal depreciation (10 percent for general buildings, 20 percent for factory buildings, 20 percent for machinery); (ii) accelerated depreciation (which can only be claimed if the company is eligible for a tax holiday but chooses to forego the holiday exemptions); (iii) investment allowance (for certain vessels and for plant machinery eligible for accelerated depreciation). * Scientific research expenses.</p> <p>Exporters have a tax rebate of 50 percent of the income from exports. Tax rebates of 5–10 percent is allowed for owners of small and cottage industries located in less developed and developed areas on the basis of production performance.</p> <p>All sources of income of NGOs now subject to taxation except that arising from micro-credit operations.</p> <p>Tax holiday facilities for expansion units have been withdrawn, and only separately incorporated projects will be eligible for such facility, on condition that in Dhaka & Chittagong division excluding three hill districts for the first two years 100% of income is tax exempted for the next two years 50% of income is tax exempted for the fifth year 25% of income is tax exempted</p>	<p>Corporation tax:</p> <p>Type of enterprise</p> <p>Banks, financial institutions, and Mobile phone operator companies (15 percent "excess profits tax" imposed on banks making profit exceeding 50 percent of their capital and reserve, and additional 5 percent tax on listed companies declaring inadequate dividend)</p> <p>Nonpublicly traded companies and local authorities</p> <p>Publicly traded companies</p> <p>Capital gains tax:</p>	<p>Marginal rate in percent</p> <p>45 percent</p> <p>37.5 percent</p> <p>27.5 percent</p> <p>Tax rebate at the rate of 10 percent of tax payable will be allowed to the listed companies, declaring dividend of 20 percent or more.</p> <p>15 percent, regardless of the retention period of assets.</p>

Annex III.1. Bangladesh: Summary of the Tax System as of July 2008 (continued)

Tax	Nature of Tax	Exemptions and Deduction	Current Tax Status	Rates	
1.2. Companies	(continued)	<p>In other area of the country - for the first three years, 100% of income is tax exempted for the next three years, 50% of income is tax exempted for the seventh year, 25% of income is tax exempted</p>	<p>Reinvestment limit for companies to continue enjoying tax holiday facilities is 40 percent of profit.</p>	<p>Newly set up industries, depending on situation, have been given accelerated depreciation allowance in the very first year 50 percent, next year 30 percent and third and last year 20 percent. Newly setup companies (between July 1, 2002 to June 30, 2010) that would not get tax holiday facilities.</p>	<p>English medium schools, colleges, and universities in the private sector are now subject to tax. Tax rate of private universities is 15 percent. However, medical, dental, and engineering colleges, and institutions providing education on information technology, will not be taxed.</p>

Annex III.1. Bangladesh: Summary of the Tax System as of July 2008 (continued)

Tax	Nature of Tax	Exemptions and Deduction	Current Tax Status	
			Income	Rates
1.3 Withholding	Withholding of tax for certain transactions.		Income	Withholding
			Salary	Average rate
			Interest on securities:	10 percent
			Interest on bank deposits	10 percent
			Indenting commission	3.5 percent
			Contractors, suppliers	1-4 percent
			Importers	3 percent
			House property income exceeding Tk 20,000	3-5 percent
			Cigarette/Biri manufactures	6 percent
			Auction sale	5 percent
			Manpower agency commission	10 percent
			Insurance agency commission	3 percent
			Winnings in lotteries	20 percent
			Commission on goods distribution	7.5 percent
			Transfer of immovable property	5 percent
			Professional/technical services	10 percent
			L.C. commission	5 percent
			Service fees of doctors	10 percent
			General insurance survey fees	7.5 percent
			Foreign buyer's commission	4 percent
			Stock exchange brokery	0.015 percent
			Export of knitware & woven garments	0.25 percent
			Interest on saving instruments	10 percent
			Bangladesh Bank bill discounts	Maximum rate applicable
			C&F agency commission	7.5 percent
			Courier business of a nonresident	7.5 percent
			Actors and actresses	7.5 percent
			Export cash subsidy	5 percent
			Commission, discount & fees	7.5 percent
			Interest on saving and fixed deposits	10 percent
Real estate business	Tk 250 per square meters			
Land development business	5 percent of deed value			
Bill of credit cards	3 percent			
Compensation against acquisition of property	6 percent			
Income of nonresident individuals	25 percent			
Income of nonresident companies	Company rate			
Shipping business of a resident	5 percent			
1.4 Winnings of lottery	Tax imposed on lottery winnings and similar income.	No exemption applies.	Tax payable at the rate applicable to total income including lottery income or at the rate of 20 percent, whichever is less.	

Annex III.1. Bangladesh: Summary of the Tax System as of July 2008 (continued)

Tax	Nature of Tax	Current Tax Status		
		Exemptions and Deduction	Rates	
1.5 Gift tax	Tax imposed on the value of gifts made by donor.	<p>Exemptions are:</p> <ul style="list-style-type: none"> * Gifts under Tk 20,000; * Assets situated outside of Bangladesh; * Gifts to the government or local authority; * Gifts made by will; * Gifts to institution established for charitable purposes and recognized by the government (upto Tk 100,000 or total income of donor, whichever is less); * Insurance policies or annuities to any relative (other than a wife) supported by the taxpayer with a value not exceeding Taka 20,000 per year; * Gifts made to son, daughter, father, mother, spouse, own brother, own sister; * Gifts made to any dependent relative on the occasion of marriage; * Gifts made in contemplation of death; * Gifts made to any educational institution recognized by the government, universities, or Educational Board; * Gifts made by government or local authority to any hospital; * Flood or disaster-related fund recognized by the Government; * Gifts made by any statutory institution established under any law of the country; * Gifts made by any religious or charitable institution established under law; * Gifts made by any charitable institution or made out to any tax-exempt fund. 	<p>Value of gift</p> <ul style="list-style-type: none"> Tk 20,001-500,000 Tk 500,001-1,500,000 Tk 1,500,001-3,500,001 Tk 3,500,001 and above 	<p>Marginal rate</p> <ul style="list-style-type: none"> 5 percent 10 percent 15 percent 20 percent

Annex III.1. Bangladesh: Summary of the Tax System as of July 2008 (continued)

Tax	Nature of Tax	Exemptions and Deduction	Current Tax Status	Rates
2. Taxes on goods and services				
2.1 Import duties				
	Ad valorem tax on imported goods.	<p>Special concessional rates apply to import of capital machinery and spare parts, raw-material imported by pharmaceuticals industries, power generation industries, computer, International Gate Way operators, agriculture and pesticide manufacturers, oil gas exploration, poultry and dairy industry, textile industry, and leather industry.</p> <p>Export-oriented industries may import capital machinery on payment of 1% customs duty only. Import of raw material by the export-oriented industries is duty free under bonded warehouse facility.</p> <p>Industries inside Export Processing Zone enjoy duty-free import facility for capital machinery and raw-material.</p> <p>Customs duties on imports used to produced exports can be refunded through the Duty Exemption and Drawback Office (DEDO).</p>	<p>There are 5 tariff bands with a maximum rate of 25% and a minimum rate of 0%</p> <p>0% for life saving drugs, fertilizer, essential food items etc. 3% for capital machinery 7% for basic raw material 12% for intermediate products 25% for finished products</p> <p>On few items there is specific duty: Mobile phone BDT 300/set Scrap Vessel BDT 1000/LDT Melttable scrap BDT 1500/MT MS Billet/ingot BDT 2500/MT Raw sugar BDT 5000/MT Finished sugar BDT 7000/MT</p> <p>Bitumen BDT 3000/MT Bitumen (in drum) BDT 3500/MT Cement clinker BDT 350/MT Cement Clinker BDT 550/MT Gold bullion BDT 150/11.664 gm Silver Bullion BDT 6/11.664 gm</p>	
2.2 Export duties	Effective rates of export duty on all commodities are zero.		0%	
2.3 Infrastructure surcharge			Discontinued from 1 July 2007.	
2.4 VAT				
2.4.1 Value-added tax	Invoice method VAT applied to manufactures, imports and selected services and goods at the domestic wholesale and retail level.	<p>Exempt are: * firms with turnover less than Tk. 2.4 million per annum. 4 percent turnover tax is applicable to them.</p> <p>* education, public administration, housing and charitable health services, cold storage, travel agency, indenting firm, construction faces a reduced tax of 4.5 percent without credit fro invoiced tax.</p>	15 percent	
	Exports are zero-rated		Fixed VAT amounted to Tk. 4200 for small retailers of Dhaka and Chittagong City Corporation areas.	Tk. 3600 for other city corporation

Annex III.1. Bangladesh: Summary of the Tax System as of July 2008 (continued)

Tax	Nature of Tax	Exemptions and Deduction	Current Tax Status
			Rates
	VAT is levied on the base inclusive of customs duties and supplementary duties.	Exempt are the following goods: animals, meat, eggs, hides, fish, vegetables, fruit, grain, flour, cattle and poultry feed, primary milk products, insecticides, jute cuttings, oilseeds, a few chemicals and drugs, fertilizers, domestic textiles, some plastics, metal products, electricity used in the agricultural sector. a wide range of machinery and scientific apparatus.	Tk.2400 for all district level Municipal areas and Tk. 1200 for other areas of the country.
	Wholesalers and retailers may register for VAT		Truncated rates of 1.5 percent, 2.25 percent, 4.5 percent, 5 percent and 9 percent in cases where invoice method in difficult to apply.
			5 percent for electricity.
2.4.2 Supplementary duty	Although denominated as supplemental VAT, these taxes are actually applied like excise taxes. For imports the supplemental tax is levied on value including customs duties and excluding VAT; for domestic goods, it is levied on value excluding VAT.		Supplementary duties leviable on imports of general nature are 20% and 60%.
	Supplementary duties apply to luxury goods imported into BGL, nonessential and socially undesirable and other goods produced and supplied in BGL and similar services rendered in BGL.		However, in consideration of socio-economic realities and the harmful effects of certain items on health and environment, or for any other purpose required by the government higher rates of supplementary duties are imposed on a few items (e.g., imported cigarettes and liquor).
2.5 Turnover tax	Tax on sales of firms with turnover less than Tk. 2.4 million per annum that do not qualify as cottage industries (defined as those firms with capital machineries worth of less than Tk. 15,00,000 and turnover less than Tk. 2.4 million.		4 percent
	The tax is levied on the turnover in respect of goods and services specified by the NBR.		

Annex III.1. Bangladesh: Summary of the Tax System as of July 2008 (continued)

Tax	Nature of Tax	Exemptions and Deduction	Current Tax Status		
			Product/Service	Rates	
2.6 Excise tax	Specific sales tax levied on service rendered by airline and services rendered by bank.		Product/Service Service rendered by Bank	Rate	
				In case where the balance does not exceed Tk. 10,000 at any time during a year.	Nil
				In case where the balance exceed Tk. 10,000 but does not exceed Tk. 1 lakh at any time during a year.	Tk. 120 per Deposit account per year
				In case where the balance exceed Tk. 1 lakh but does not exceed Tk. 10 lakhs at any time during a year.	Tk. 250 per Deposit account per year
				In case where the balance exceed Tk. 10 lakhs but does not exceed Tk. 1 crore at any time during a year.	Tk. 500 per Deposit account per year
				In case where the balance exceed Tk. 1 crore but does not exceed Tk. 5 crore at any time during a year.	Tk. 2500 per Deposit account per year
				In case where the balance exceed Tk. 5 crore at any time during a year.	Tk. 5000 per Deposit account per year
2.7 Foreign travel tax	Imposed on all foreign travel by Bangladesh nationals, persons with a permanent residence or owning property or a business in Bangladesh, and persons enjoying other facilities not available to foreign nationals.		Airline	Tk. 200 per issuance of domestic Airline ticket per seat for single journey.	
				Type and Destination	Rate per person
				Air travel:	
				* America, Europe, Africa, Australia, and Far East	Tk 2,500
				* SAARC countries	Tk 800
				* Other countries	Tk 2,000
				Sea travel	Tk 500
				Land travel	Tk 300
				Foreign flights	Tk 300 per ticket
				Domestic flights	Tk 200 per ticket
2.8 Air ticket tax	Tax collected on all airline tickets.				

Annex III.1. Bangladesh: Summary of the Tax System as of July 2008 (continued)

Tax	Nature of Tax	Exemptions and Deduction	Current Tax Status	
				Rates
2.9 Taxes on insurance	Tax on premiums paid for general insurance policies.			3 percent
2.10 Narcotics duty	Tax on alcoholic beverages administered by the Department of Narcotics and Control.		1. Local liquor (per London Proof Gallon)	
			a. All areas of the country other than tea gardens	Tk 300
			b. Tea garden	Tk 150
			2. Methyl Alcohol	Tk 225
			3. Rectified Spirit	
			a. As per Bangladesh Homeopathic Practitioners Ordinance, 1983. Eight London proof gallon yearly	Tk 50
			b. Others	Tk 225
			4. Foreign Liquor (made in Bangladesh)	Tk 750
			5. Dinchard Spirit	Tk 50 (per bulk gallon)
2.11 Advertisement tax	Tax imposed on expenses on advertisements made through cinema slides and films, radio, and television (except for tenders and employment notices).		10 percent	
2.12 Motor vehicles	Specific tax on taxicabs and buses based on seating capacity.		Type of motor vehicle	Annual Rate
			Taxicabs and buses carrying	
			Up to 4 passengers	Tk 3,000
			4-6 passengers	Tk 3,600
			6-15 passengers	Tk 6,000
			15-30 passengers	Tk 7,200
			Above 30 passengers	Tk 9,000
			Double decker buses	Tk 10,400
2.13 Irrigation tax	The irrigation tax has been abolished. It is now called the Irrigation Service Charge. Funds from this service charge are not deposited in the Government Treasury.			
2.14 Stamp duty	Levied on the registration value of land, flat etc. at time of sale or transfer of property.		5 percent	
B. Local property/government taxes	Property taxes imposed by union parishads on structures and nonagricultural land.	Agricultural land is exempt	Within municipal area - 2 percent	
			Outside of municipal area - Union Parishad - 1 percent Zila (District) Parishad - 1 percent	