BANGLADESH
COUNTRY ECONOMIC MEMORANDUM

CHANGE OF FABRIC

WORLD BANK GROUP

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Executive Summary

Bangladesh's development progress has been remarkable. Bangladesh has recently been among the fastest growing economies in the world, resulting in higher living standards and improved social and health outcomes. The COVID-19 pandemic interrupted growth, but the country navigated the economic impact relatively well. The country is expected to graduate from the United Nations' Least Developed Country category in 2026 and to become an upper-middle-income country within the next decade. These milestones serve as a reminder that further transformation will be required for a prosperous future. As Bangladesh approaches upper-middle-income status, several emerging megatrends, such as advances in technology and climate change, challenge its growth model.

Current growth is driven by structural reforms in the past and macroeconomic stability. In the mid-1980s, markets and public investment were strengthened, including for infrastructure. Further reforms in the early 1990s allowed for more private sector participation in trade, finance, and land ownership. These reforms were accompanied by complementary reforms in agriculture ((e.g., liberalization of agricultural input markets, seed sector reforms), and in social sectors (e.g., mandatory primary school, a female stipend program for secondary schools, and family planning programs). The rise of Ready-made garments exports during that period evolved from a combination of private investment and public policy support. Structural improvements provided strong impetus to inclusive growth especially between the early 1990s and mid-2000s but major reforms have not been sustained since then. Bangladesh has yet to move to the next phase of economic transformation.

The current growth rates are no reason for complacency. First, Bangladesh still has significant unrealized potential for growth and development. Despite similar conditions in the 1970s, the pace of poverty reduction and economic growth was slower than in its peer countries. Second, economic booms are difficult to sustain, and few economies remain among global growth leaders over longer periods. Third, persistent rapid growth without additional structural improvements is rather unusual and may imply that the pace of growth could slow. Bangladesh's Gross Domestic Product (GDP) growth is increasingly difficult to explain with fundamentals, exacerbating concerns that the current pace of growth will be difficult to sustain without major structural adjustments. In addition, higher GDP growth in the last decade has not translated to faster poverty reduction as in the preceding past two decades, indicating the current episode of high growth has not been as inclusive as before.

Sustaining rapid growth and addressing current global challenges will require overcoming three critical growth constraints. First, exports remain highly concentrated. While RMG exports boosted development in the past, a protective trade regime has constrained export diversification. As a result, the share of exports in GDP has been declining in recent years, falling from 16.7 percent in fiscal year (FY) 2011 to 10.7 percent in FY2021. With the impending end of preferential access to markets due to LDC graduation, Bangladesh will need to find new drivers of exports and growth. Second, banking sector vulnerabilities are growing. The COVID-19 crisis intensified longstanding financial sector vulnerabilities, further impeding efficient channeling of savings to productive investments. A nascent domestic capital market is also

constraining longer term financing for infrastructure, housing, and climate change mitigation. Third, the benefits of urbanization have slowed. While the growth of Dhaka had positive agglomeration effects in the past, it now faces high congestion and poor environmental conditions. Secondary cities are underdeveloped and do not yet provide a conducive environment for more spatially balanced development. Infrastructure bottlenecks and slow human capital development are additional constraints to growth.

Addressing these three growth constraints can sustain a high rate of growth. GDP growth under a business-as-usual scenario is declining over time amid headwinds from capital deepening and declining population growth. Strong reforms, on the other hand, could sustain rapid growth.

Boosting trade competitiveness

Bangladesh's Eroding Competitiveness

With trade competitiveness based on low wages and trade preferences eroding, the overreliance on Ready-Made Garments (RMG) exports and the perpetuation of a protective tariff regime challenge the sustainability of Bangladesh's growth model. At less than 15 percent of GDP in 2019 (and only 9 percent in 2020 and 2021), exports are low compared with the average export-to-GDP ratio of low- and middle-income countries (at 25 percent in 2018) and comparators such as Vietnam (at 95 percent). The current export basket is as heavily dependent on RMGs (at 83 percent of total exports in 2020) as it has been over the past two decades. The lack of export diversification can be at least partly attributed to the country's protective trade regime.

Average tariffs in Bangladesh are higher than its comparators. The average tariff rate on intermediate goods in Bangladesh is 18.8 percent, which is more than double the rate in China (7.4 percent) and almost double the rate in Thailand and Vietnam (9.6 percent). Average tariffs, or nominal protection rate, more than double (29 percent) if para-tariffs are included, making Bangladesh an outlier among countries with a similar income level. MFN tariffs would need to be cut by almost 50 percent (from 14.7 percent to 9.6 percent) and all other import taxes eliminated (14.1 percent to zero) for Bangladesh to reach similar levels of taxation on intermediate goods as those prevalent in East Asian comparators. Additionally, with an almost 30 percentage point difference in tariffs (including other import taxes) between consumer and intermediate goods, Bangladesh has the highest tariff escalation among the Southeast Asian comparators by a wide margin. Competitiveness will erode further with the expected graduation from Least Developed Country (LDC) status in 2026.

A protective tariff regime increases the export challenges. The export dynamics analysis clearly highlights how such high protection levels reduce the export survival probabilities of exporters and GVC participants. The effect is more pronounced for GVC firms than for non-GVCs.

Non-Tariff Barriers (NTBs) and inefficient border processes are much more significant that tariff barriers. Although tariffs remain important obstacles, the restrictiveness of NTBs, at an average ad valorem equivalent close to 200 percent, towers over that of tariffs. Burdensome sanitary and phytosanitary requirements, technical barriers to trade, pre-shipment inspection, nonautomatic licensing requirements, and price control measures are a significant deterrent to trade and an impediment to firms' competitiveness. Border and documentary compliance requirements lead to major delays for exporting firms in Bangladesh and, at a total of more than 300 hours required to comply, such delays are among the highest in South Asia. Conversely, the implementation of Bangladesh's commitments under the WTO Trade Facilitation Agreement has been lagging and stands at about 36 percent, which in turn shows up in Bangladesh's performance on trade facilitation indicators, which are, for instance, only half those of India.

Significant barriers hamper trade in services. Ad Valorem Equivalents (AVEs) of services barriers are high relative to tariff rates for goods, in excess of 16 to 41 percent in the examined sectors. AVEs are highest in telecom, followed by distribution, transport and finance.

Policy Recommendations

Reducing the level of protection by rationalizing the tariff regime is a first crucial step to support export diversification. Tariff rationalization could include moving toward low and uniform tariffs and adopting a single rate for similar goods, irrespective of origin. Para-tariffs need to be eliminated gradually, making the tariff structure consistent with that of an upper-middle-income country. Tariff rationalization has been included in the Eighth Five Year Plan, which states the need to reduce the nominal protection rate by 3-5 percent every year until 2025. To achieve this the target by the Eighth Five Year Plan, it is important to accelerate the preparation and the implementation of the National Tariff Policy, led by the Ministry of Commerce, in collaboration with other government offices including the National Board of Revenue.

Tariff rationalization must be accompanied by simultaneous revenue efforts to compensate for the expected revenue loss. Concerns over revenue loss are legitimate. Reductions of customs duties and other taxes to the level of other middle-income countries, such as China, India, or Vietnam, result in tariff revenue losses between 18 and 41 percent. Higher revenue from other taxes would compensate for the loss of revenue from rationalizing existing tariffs and para-tariffs (Bangladesh Public Expenditure Review 2022).

The Government could consider several policies beyond tariff modernization to diversify exports and increase GVC participation:

- NTB liberalization and trade facilitation reforms covering sanitary and phytosanitary (SPS) requirements, technical barriers to trade, pre-shipment inspection, nonautomatic licensing requirements, and price control measures need to complement the tariff modernization currently pursued by the Government.
- Services reforms need to feature on the policy agenda. Reforming key strategic sectors, such as digital services or key services inputs such as telecom or business services that accelerate spillovers for development and productivity, could be a good entry point into the world of services reforms.
- To increase the export survival of firms and GVC participation, the government needs to facilitate the adoption of modern technologies such as digital platforms and applications.

As part of its export-led growth vision, the country needs to address multiple policy issues to unleash private sector growth and investment. Tariff modernization, increased trade facilitation, services and investment reforms, as well regional integration and regulatory cooperation can help Bangladesh expand and diversify its exports and adapt to technological and climate change disruptions.

Reducing the cost of adjustment from trade liberalization is of utmost importance. To gain social and political support and make the liberalization sustainable, the adjustment cost for vulnerable groups need to be minimized. Strengthening safety nets and training for those workers whose jobs are affected and improving links between education, training, and the job market should be part of any trade reform agenda.

Financing the next phase of growth

Bangladesh needs a deeper and more resilient financial sector

Scaling up of private sector financing is essential for Bangladesh to be able to reach upper-middle-income status. Private domestic and external financing will be needed for closing large financing gaps in infrastructure (estimated at 1.8 percent of GDP per year) and MSME sector (estimated at 20 percent of GDP), as well as for supporting the transition to a greener economy. Deeper, more efficient and accessible financial institutions and markets should support private sector–led growth by mobilizing and channeling resources for productive investments.

Despite major progress over the past four decades, Bangladesh financial sector still lags behind its structural and aspirational peers. Financial sector reforms started in the mid-1980s and accelerated in 1990s brought rapid increase in bank credit and emergence of the capital market. However, the process of financial sector deepening has stalled in recent years. According to the IMF's global Financial Development Index, Bangladesh ranks 95 out of 184 countries in terms of the financial development. While most of the peer countries (China, Vietnam, Cambodia, and Thailand) have

bank credit-to-GDP ratios that are substantially above 100 percent, in Bangladesh this ratio has stabilized at around 45 percent since 2016. Similarly, stock market capitalization to GDP has been declining since 2015, being far below all its peers (with exception of Cambodia), signaling limited ability of Bangladeshi companies to raise long term capital.

Long-standing banking sector vulnerabilities, magnified by COVID-19, impede efficient channeling of savings to productive investments. Chronic asset quality problems, low levels of capital, and weak governance constrain bank lending and present substantial stability risks. Most banks are controlled by owners of large business groups and politicians, and are heavily engaged in related-party lending, diverting scarce financial resources from the most productive use. Strong presence of the state in the financial sector, both through the ownership of underperforming state-owned banks and the interventions such as interest rate caps, further contributes to crowding out of scarce resources from the private sector. Meantime, the existing regulatory and supervisory framework for banking sector still needs to be aligned with international good practice in order to address the existing vulnerabilities and promote bank financing of underserved market segments such as MSMEs.

The domestic capital market remains small and underdeveloped, hindering longer term financing for infrastructure, housing, and climate adaptation. Due to lack of investors' confidence as well as the poor market infrastructure, the growth of equity and debt market instruments has been very limited. Small size of domestic institutional investors such as insurance and pension companies, and undue competition from the National Saving Certificate (NSC) program pose further challenges for capital market development.

Policy Recommendations

To promote financial deepening as well as to ensure a more efficient allocation of capital by banking sector and capital market, the following reforms could be considered by authorities:

- *Ensure the Stability of the Banking Sector.* Decisive steps to improve asset quality and increase capitalization of banks (particularly, but not exclusively of SOBs), and to address weak corporate governance are urgently needed to maintain financial stability and avoid costly bank failures as well as to revive and accelerate credit growth. In addition, the supervisory authorities and financial institutions need to be prepared to address emerging climate risks and support green investment.
- *Optimize Financial Sector Efficiency to Support Better Allocation and Lower Costs of Credit.* Administrative measures such as interest rate caps are not efficient ways to reduce borrowing costs, nor will the issuance of licenses help improve competition in an already overcrowded banking sector. Rather, improving banks' operational efficiency and reducing financial market distortions will help decrease costs of financial intermediation and support channeling of credit to more productive sectors and firms.
- *Support Credit Infrastructure and Promote Further Digitalization of Financial Services.* Strengthening credit infrastructure and promoting further digitalization of financial services will be important to reach the most underserved segments. Lending to MSMEs and other sectors perceived as risky could be promoted through risk-sharing facilities and movable asset–based financing, while the private equity and venture capital instruments could finance innovation and scale-up of successful businesses.
- *Optimize the Role of the State as User and Provider of Financial Services.* Reform of state-owned banks, including improving their corporate governance, risk management, and institutional capacity, is necessary to ensure that they efficiently address markets underserved by private lenders. Furthermore, reform of the NSCs, focusing on rationalizing interest rates and market instruments and abandoning the use of open tap issues, is critical to eliminate distortions hindering credit and capital market development.
- *Support Capital Market Development.* Deeper capital markets would allow for raising much needed long-term finance, including from external sources, particularly for infrastructure and climate adaptation projects. For that corporate debt securities and equity markets can be boosted by streamlining issuance procedures while ensuring sound disclosure and market conduct practices. Pension and insurance market deepening is crucial for strengthening the institutional investor base for the capital market and more effective mobilization of domestic savings. Finally, rationalizing the tax regime and foreign exchange regulations could help unlock alternative sources of finance for start-ups and innovative firms.

Getting urbanization right

As it strives to become a high-income country, Bangladesh is expected to face a major surge in urbanization. The urban population in Bangladesh currently stands at about 64 million and its share is about 38 percent of the population. The United Nations Department of Economic and Social Affairs (UNDESA) predicts that Bangladesh's population will reach a peak of 185 million in 2041 and the urbanization rate will reach about 60 percent (111 million) in 2050. If Greater Dhaka city maintains its current share of the total urban population (about 37 percent), its size will exceed 41 million in 2050.

The urbanization process in Bangladesh faces the challenge of enhancing and maintaining the productivity growth and structural transformation in the largest cities – particularly Dhaka city. Dhaka city occupies a central place not just in Bangladesh's urban hierarchy, but also as the focus of urbanization policy dialogue. Greater Dhaka alone generates one-fifth of the country's GDP and almost half of its formal employment and creates over 30 percent of its formal manufacturing jobs. While Dhaka's economy displays dynamism and strong agglomeration externalities, severe congestion diseconomies threaten its continued strength.

Equally important is the challenge of making the next tier of cities attractive to formal firms and skilled workers to incubate and nurture agglomeration externalities. For the expected surge in urban population to generate economic growth and lift Bangladesh to high-income country status, cities outside of Dhaka will have to absorb more than 50 million people, provide them gainful employment, and generate productivity growth. Though there is some evidence of growth starting to pick up in some of these cities, they are in general not able to attract skilled workers or more productive activities. The urban transition is ongoing in Dhaka and to some extent Chittagong where some of the manufacturing activities are moving out of city centers due to high living costs and congestion diseconomies. This transition process provides an important opportunity to spread economic activities to the next tier of cities with the right policies and investments in place. Bangladesh's emphasis on major improvement in transport connectivity presents another opportunity for these cities to integrate better into the domestic and international trade network.

Cities will have to deal with migration induced by sea level rise, frequent flooding, and loss of land due to increased salinity and river erosion. By 2150, the coastal areas in Bangladesh could see a rise in sea level of about 1.5-2 meters, leading to loss of land, intrusion of saline water, and increased incidence of flooding. The coastal zone comprises 19 districts with a population of 41 million people, and it is predicted that up to 12 million of them could become internal climate migrants by 2050. Even if the most optimistic climate scenario materializes, internal migration will be a pressing issue not only in places like Dhaka and Chittagong but also in towns and cities in northern areas where elevation is relatively higher. The climate-induced changes will affect not only the process of urbanization, but also economic activities undertaken in urban spaces.

Policy Recommendations

Because of the central role of Dhaka city in Bangladesh's urban hierarchy, policy options for the development of Dhaka have been discussed widely. The development of Dhaka city has been the focus of a number of studies over the past decade. The following key policy recommendations emerge from these studies:

- Develop intracity as well as intercity transport infrastructure to transform Dhaka into a globally competitive metropolitan city. A reduction in commuting time will relieve urban congestion and increase productivity and welfare significantly. The development of transport corridors linking Asia's major cities will also help Dhaka to become a major trade hub in South Asia.
- Reform urban housing policies (e.g. zoning) to increase housing supply elasticities. Such reform will generate large welfare and productivity gains and allow buildings to become taller—almost doubling heights in the city center—and accommodate more people.
- Low-lying areas in and around Dhaka and Chittagong are vulnerable to sea level rise. As the poor are more likely to be located in those vulnerable areas, both cities will have to plan for combating the potential impacts of climate change and this should be a priority for further studies.

Attracting tradable activities to small and medium-sized cities may require interventions that are spatially differentiated, targeted and promote inclusive development. The specific interventions include the following:

- *Improving intercity transport connectivity.* The policy simulations conducted for this report suggest an important principle in selecting potential transport routes. The returns to investments in intercity transport routes are higher for small and medium-sized cities that are located close to larger cities. The returns are lower in areas that are vulnerable to climate shocks, such as sea level rise or flooding.
- *Improving digital connectivity.* This has the potential to increase the population and productivity growth in small and medium-sized cities. The principle for targeting transport investment applies in this case as well.
- *Improving access to basic services.* The quality and quantity of city services for firms and residents in small and medium-sized cities are most likely not as good as in metropolitan cities such as Dhaka and Chittagong. Small and medium-sized cities—particularly those located near larger cities—would need to invest in these services to attract firms in tradable activities.

At the national level, coordination of urban and regional planning is required. This is particularly in light of sea level rise and concomitant increase in flooding as places are interlinked, and a shock in one place spills over to other places through trade and migration networks.

Urban governance and accountability are additional areas that will require attention. Cities will have to raise their own revenues to finance their infrastructure investments and provision of services. Increasingly, metropolitan cities are relying on public-private partnerships and borrowing from capital markets to finance their budgets. However, tapping into these sources requires cities to have solid reputations with respect to governance and accountability to their residents.

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CHAPTER 1

Introduction

Bangladesh's development progress over the past decades has been remarkable. Bangladesh has been among the fastest growing economies in the world. Average annual economic growth has been 4 percent over the past three decades in real per capita terms, which puts it in the top decile of countries during this period.[1] Despite political crises and frequent natural disasters, growth has accelerated since the country's independence in 1971. Bangladesh celebrated its 50-year Golden Jubilee in 2021 with two crucial milestones. It is expected to graduate from the United Nations' least developed country category in 2026 and to become an upper-middle-income country within the next decade.

Economic development has translated into higher living standards and improved social and health outcomes. Most Bangladeshis lived in poverty at the time of independence; today, only around 10 percent live below the international poverty line of $1.90 a day (in 2011 purchasing power parity). By 2019, life expectancy reached 72.6 years, and primary school enrollment was nearly universal. The infant mortality rate per 1,000 births declined from 63.1 in 2000 to 24.3 in 2020, and the prevalence of undernourishment declined from 15.9 to 9.7 percent of the population over the same period.

The next years will determine Bangladesh's longer term development trajectory. The milestones ahead reflect the deep structural transformation of Bangladesh's economy over the past decades, but also serve as a reminder that further transformation will be required for a prosperous future. As Bangladesh approaches upper-middle-income status, several emerging megatrends, such as shifts in production, advances in technology, and climate change, challenge its growth model:

- *Trade competitiveness in the middle-income lane.* Bangladesh's expected graduation from least developed country status in 2026 entails changes in its preferential market access and special and differential treatment benefits under the World Trade Organization. Bangladesh will need to upgrade its international competitiveness and diversify its exports. This will include a shift from reliance on trade taxes toward establishing a more effective domestic tax system. This in turn means that trade facilitation aspects (rather than trade taxes) will play a more central role in the customs administration. Building international competitiveness and diversifying exports requires higher productivity not only in manufacturing but also in agriculture and services. Strengthening linkages across all sectors is essential.
- *Lasting scars from COVID-19.* The pandemic profoundly impacted Bangladesh and aggravated structural weaknesses. It had a severe impact on human capital accumulation, with long school closures causing a learning crisis (Azevedo et al. 2021; Rahman and Sharma 2021). Many women who dropped out of the labor force during

1 Growth was twice as high as the historical average that Pritchett and Summers (2014) find for all countries since 1950.

the pandemic have not yet returned. While regulatory forbearance measures, new refinancing facilities, and monetary accommodation mitigated the immediate impact on the financial sector, the pandemic is likely to have weakened bank capacity to intermediate investment. The pandemic may result in shortening global supply chains and reshoring by multinationals, which could complicate trade diversification.

- *Rising impacts of climate change.* The Global Climate Risk Index ranks Bangladesh as the world's seventh most affected country by climate change. Environmental degradation and losses of natural capital are already increasing. Bangladesh's high vulnerability necessitates aggressive investment in adaptation and resilience, which will require substantial public and private financing (World Bank 2022).[2] In addition, climate change is expected to lead to policy adjustments in other parts of the world. New carbon border adjustment taxes could have large spillover effects in Bangladesh, for example. Climate change is increasingly at the forefront of domestic and international policy priorities, affecting the location and scale of production, including the need for climate adaptation in agriculture, options for energy, consumption decisions, urbanization, and trade and transport, among others.
- *Enabling digitalization.* Development of the global digital economy accelerated during the COVID-19 pandemic, presenting opportunities that Bangladesh has not yet fully leveraged. The diffusion of digital technologies can improve productivity and create new and better jobs, especially in services. Digital connectivity offers new opportunities in remote areas, and investments in digital infrastructure can contribute to spatially balanced and inclusive economic growth, especially when accompanied by greater digital literacy.[3]
- *Uncertain external conditions.* The global environment is likely to remain uncertain in the years to come. The war in Ukraine points to heightened geopolitical turmoil. A recent global surge in inflation amid pent-up demand and lasting supply disruptions from COVID-19, as well as surging commodity prices stemming from the war in Ukraine, may contribute to domestic inflationary pressure and challenge the balance of payments. With continued trade tensions between the United States and China and ongoing weakening of the multilateral trading system, Bangladesh may need to reposition some of its policies and consider new bilateral and regional cooperation opportunities.

Sustaining fast growth and addressing these global challenges will require overcoming three critical growth constraints.[4] Past reforms have created huge development gains, but reform progress has slowed. First, exports remain highly concentrated. While ready-made garment (RMG) exports boosted development in the past, a protective trade regime has constrained export diversification. The share of exports in gross domestic product (GDP) has been declining in recent years, falling from 16.7 percent in fiscal year (FY) 2011 to 10.7 percent in FY2021. Second, banking sector vulnerabilities are growing. The COVID-19 crisis intensified longstanding financial sector vulnerabilities, further impeding efficient channeling of savings to productive investments. A nascent domestic capital market is also constraining longer term financing for infrastructure, housing, and climate change mitigation. Third, the benefits of urbanization have slowed. While the growth of Dhaka has historically yielded positive agglomeration effects, it now faces high congestion and poor environmental conditions. Secondary cities are underdeveloped and do not yet provide a conducive environment for more spatially balanced development.[5]

This report explores these constraints and proposes actionable reforms to sustain development. It is expected to inform the public and help the authorities design policies to achieve the goals set out in the Eighth Five Year Plan and Bangladesh Vision 2041 (also known as the Second Perspective Plan 2021–41). The report focuses on three growth constraints: (i) diversifying exports and increasing competitiveness to reach the next development stage through export-led growth; (ii) mobilizing domestic and international savings to channel them toward productive investment; and (iii) upgrading urban areas, unleashing secondary cities, and improving connectivity to sustain structural transformation and increase productivity. In addition, the implications of digital development and climate change are explored as cross-cutting themes across the three topics. The subsequent chapters cover the following areas:

2 This report is supplemented by a Country Climate and Development Report that comprehensively addresses the challenges from climate change (World Bank 2022a). It argues that Bangladesh is highly vulnerable to climate change, necessitating significant adaptation, but also that Bangladesh can build on a positive track record in some areas.

3 This is through (i) enhanced economic opportunities in remote areas and among women and vulnerable groups and (ii) through enhanced service delivery by the public sector.

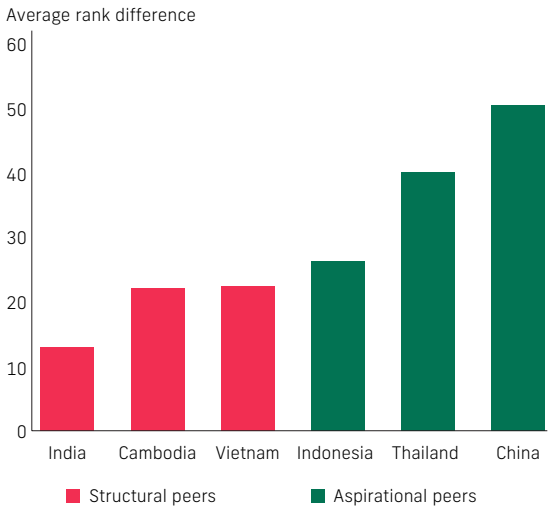
4 The top three growth constraints have been endorsed by key local stakeholders as part of the Country Economic Memorandum consultations carried out in December 2021.

5 Infrastructure bottlenecks and slow human capital development are additional constraints to growth, which are covered in other ongoing studies carried out by the World Bank and other institutions.

- **Chapter 2 explains Bangladesh's past success, introduces the three growth constraints, and simulates reform packages related to trade, finance, and urbanization.** These scenarios are based on the detailed analyses in the other chapters and approximate the growth implications of their policy recommendations.
- **Chapter 3 focuses on boosting Bangladesh's trade competitiveness to reach the next development stage through export-led growth.** It covers key issues related to export diversification, increased participation in global value chains, competitiveness in services, and greener trade.
- **Chapter 4 analyzes structural factors that prevent the financial sector from playing a more prominent role in financing the next phase of growth.** It evaluates the capacity of financial institutions and financial markets to support economic growth while preserving financial sector stability.
- **Chapter 5 discusses how urbanization evolved in the past and is expected to evolve in response to the twin challenges of climate-induced migration and urban population surge.** It evaluates whether more geographically balanced urbanization can be promoted by improving transport and digital connectivity.

Throughout the report, Bangladesh is compared with its structural and aspirational peers. The peer countries were selected based on a data-driven approach that determines similarity between different countries. The following demographic and socioeconomic variables were considered to identify appropriate structural peers: total population, age dependency ratio, share of rural population, level of GDP per capita, share of manufacturing, and the Human Capital Index. The similarity of countries is defined as the average distance between Bangladesh and all other countries in those variables based on their relative position in the global distribution.[6] The four countries that are most like Bangladesh are India, Cambodia, and Vietnam (figure 1.1).[7] While this approach is data driven, the emerging structural peer countries share important features with Bangladesh that were not targeted explicitly. To select the aspirational peers, the same procedure is applied to countries with GDP per capita greater than US$4,000 (constant 2020 US$) in 2019. Based on this approach, Indonesia, Thailand, and China were identified as aspirational peers.[8]

Figure 1.1: Bangladesh's Average Distance to Peer Countries



Source: Calculations using data from the World Development Indicators.
Note: The countries in light blue were chosen as structural peers; those in dark blue are aspirational peers.

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6 Similarity with other countries is measured in four steps: first, the simple average of each indicator is calculated for each country from 2009 to 2019; second, all countries are ranked per indicator; third, the absolute difference between the rank of Bangladesh and the rank of all other countries is calculated; fourth, the mean of the absolute differences is calculated for all five indicators for each country.

7 Myanmar is most similar but excluded from the peer countries due to data limitations.

8 A few countries have a smaller distance than China (these are Tunisia, Algeria, South Africa, and Romania), but they play a less important role in discussions of comparative economics, so China is included instead.

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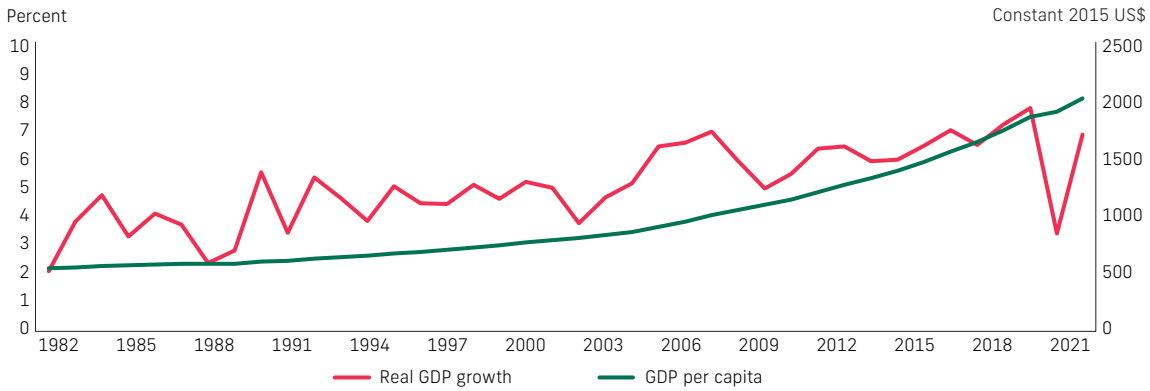
CHAPTER 2

Structural Improvements to Sustain High Growth

Bangladesh's Economy Is Growing Rapidly

Bangladesh has been among the fastest growing economies in the world. Officially reported real gross domestic product (GDP) growth has accelerated over time, averaging 3.8 percent in the 1980s, 4.7 percent in the 1990s, 5.6 percent in the 2000s, and 6.4 percent in the 2010s (figure 2.1). Growth has been led by manufacturing, which grew faster than the other sectors throughout. Over the past decade, manufacturing grew on average by nearly 10 percent per year (figure 2.2). While exports contributed to manufacturing growth, especially in the early 2000s, recent manufacturing growth has largely been driven by the domestic market. Growth of services has also accelerated over time and reached 6.0 percent on average over the past decade. In the 2000s, growth in the agricultural sector peaked (on average 4.4 percent) and has been an important contributor to inclusive GDP growth.[9] However, agricultural growth has declined to

Figure 2.1: Real GDP Growth and GDP per Capita



Sources: Bangladesh Bureau of Statistics; World Development Indicators.
Note: GDP = gross domestic product.

9 The agriculture sector has accounting for nearly one-fifth of the higher output per worker in 2010 vs. 2000 (Systemic Country Diagnostic 2015).

an average of 3.6 percent in the past decade. As a result of its fast growth, Bangladesh reached lower-middle-income status in the last decade and gross national income per capita (Atlas method) increased from US$519 in FY2000 to US$2,619 in FY2021.[10]

Over the past decade, Bangladesh grew faster than all its peers except China. Economic growth in the structural peers exceeded growth in Bangladesh between 2000 and 2010 but dropped below it in the past decade (figure 2.3). While growth in the structural peers declined, it accelerated in Bangladesh. Apart from China, growth in higher income aspirational peers was slower than in Bangladesh and its structural peers, in line with economic convergence.

Figure 2.2: Sectoral Growth over Time

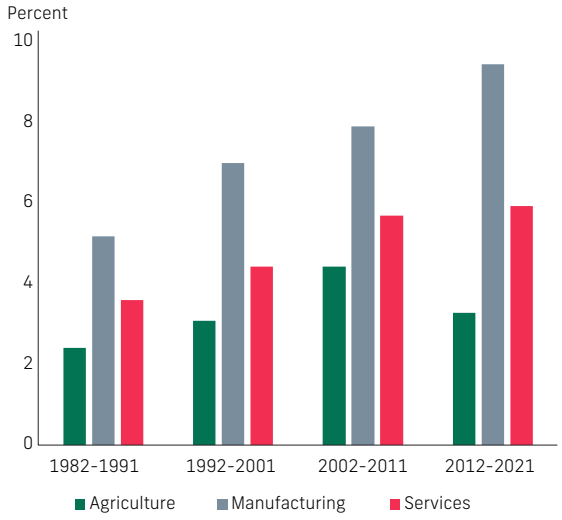
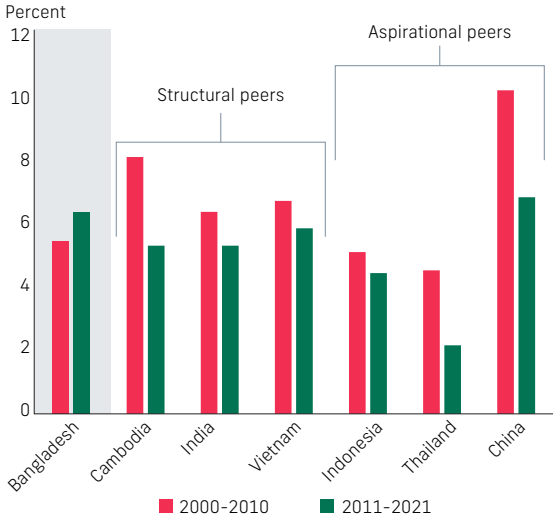


Figure 2.3: GDP Growth Compared with Peers Countries

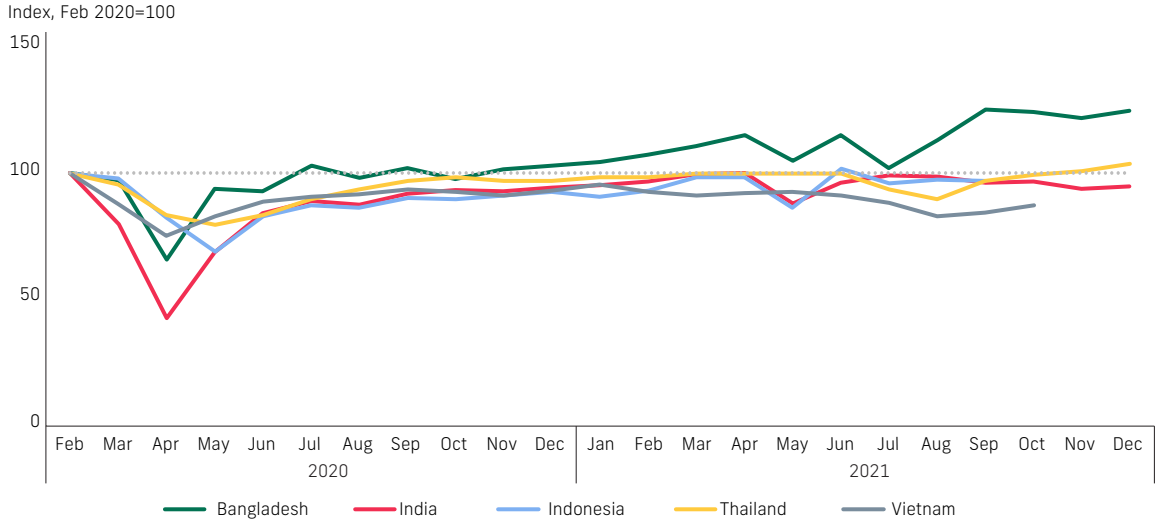


Sources: Bangladesh Bureau of Statistics; World Development Indicators; World Bank Macro Poverty Outlook.

The COVID-19 pandemic interrupted growth, but Bangladesh navigated the economic impact relatively well. Bangladesh faced waves of infections from March 2020 to the end of 2021 and a fourth wave early in 2022. The third and fourth wave had the highest increases in daily cases, hovering around 12,000 registered infections per day in July 2021 and early 2022. The government introduced various containment measures, including national lockdowns. The first lockdown in April 2020 severely disrupted economic activity[11]. A high-frequency activity indicator using monthly information on mobility, tax revenue, and trade suggests that Bangladesh was initially hit harder than most of its peers, although much less so than India (figure 2.4). Activity recovered faster than in the peer countries and exceeded the pre-COVID-19 baseline by January 2021, despite additional waves of infections and ongoing containment measures. These results are confirmed by a model that explains over 90 percent of the variation in Bangladesh's daily electricity consumption.[12] During the first COVID-19 lockdown, electricity consumption in Dhaka fell over 40 percent compared with normal levels (that is, compared with the prediction of the consumption model) and remained below normal levels until early 2021. However, subsequent waves and containment measures had much smaller impacts. There are four reasons: first, in contrast to the first lockdown, factories remained open during the other waves; second, mobility data suggest that the first lockdown was enforced more strictly than the others; third, Bangladesh entered the crisis with sufficient fiscal and monetary buffers to mitigate the impact; and fourth, as in other countries, over time economic agents adapted to the containment measures.

10 The Bangladesh Bureau of Statistics rebased the National Accounts from 2005–06 to 2015–16 prices in December 2021. The rebasing has implications on the year in which Bangladesh surpassed the World Bank's GNI per capita threshold for middle-income country status. Based on 2005–06 prices, Bangladesh reached lower-middle-income status in FY2015, based on the 2015–16 prices likely already in FY2011 (based on some assumptions).
11 Sectoral growth rates of industry and services fell sharply in 2020, compared to 2019; while the agricultural sector has demonstrated strong resilience against the pandemic-related disruption as its growth in 2020 was highest among the sectors and increased from 2019. (World Development Indicators, World Bank)
12 The consumption model accounts for a trend, seasonality, within-week variation, holidays, Ramadan, and the temperature (Arshad and Beyer 2022).

Figure 2.4: Activity Indicator during the COVID-19 Pandemic



Sources: Calculations using data from CEIC; Google Mobility Report; Global Entrepreneurship Monitor; National Board of Revenue; Bangladesh Bank; Export Promotion Bureau.
Note: The activity indicator aggregates the Google mobility indexes for workforce and retail and recreation, industrial production, government tax revenue, merchandise exports/non-oil exports, and merchandise imports/non-oil imports data for all countries. Electricity generation data are used for all countries except Indonesia. Non-oil exports is added for Vietnam and India, while merchandise exports is used for Bangladesh, Thailand, and Indonesia. Import data are used for all countries except Vietnam. Merchandise imports data are used for Thailand, Bangladesh, and Indonesia, and non-oil imports data are used for India.

The structural transition from agriculture to manufacturing and services has been sustained since 2000. Agricultural employment declined as a share of the total population and in absolute numbers although still keep a substantial share at 38 percent (figure 2.5). While some moved to manufacturing, a much larger number of jobs moved to the service sector, which now employs twice as many Bangladeshis as manufacturing. The creation of service sector jobs was supported by fast urbanization, with the share of urban population increasing from 23.6 percent in 2000 to 37.4 percent in 2019. Employment generation in manufacturing has been much slower. Employment in the RMG industry peaked in 2013 and declined by nearly 10 percent through 2017 (the last year for which data are available).

Value added per worker has been increasing across sectors (figure 2.6). It remains modest in agriculture relative to the other sectors. Between 2000 and 2009, growth in the value added per worker in agriculture was highest (on average 6.1 %) and was the main driver of inclusive economic growth and poverty reduction in the decade. This has slowed downs considerably in the following decade (2010-19) to about (3.4%), while the industrial value added per work has increased sharply (from 0.2 % to 5.2% over the corresponding two decades). With sustained structural transformation, the fortunes of much of the rural nonfarm economy, which employs more people than the urban economy, depend on the performance of agriculture, reflecting the changing role of agriculture from being a direct contributor to GDP to a more leveraged contributor through its backward and forward linkages with the rest of the economy[13]. With slow industrial employment growth in recent years, value added in industry grew fastest and now surpasses value added in services. However, despite the large increase in service sector employment, value added per worker in services is nearly as high as that in industry. This is partly due to some services with very high value-added activity, for example in finance, real estate, and utilities.

Wages in services increased, especially in urban areas. Nominal wages in financial intermediation, for example, doubled from 2010 to FY2017 in rural areas but increased by 150 percent in urban areas. Similarly, nominal wages in public administration and defense increased by 130 percent in rural areas but by 180 percent in urban areas. The trend is the same for nearly all services, suggesting higher productivity gains in cities compared with rural areas. In contrast, wages in manufacturing declined slightly over this period, with losses in urban areas even exceeding losses in rural areas, potentially indicating productivity losses from congestion in Dhaka (chapter 5). In fact, nominal wages of agricultural workers grew faster than the industrial workers in the last decade[14]. As expected, employment growth and wage growth are positively correlated.

13 Every 10 percent of agricultural growth catalyzes another 6 percent of nonfarm growth (World Bank. 2016. Dynamics of Rural Growth in Bangladesh 2016)
14 Ministry of Finance. 2022. Bangladesh Economic Review 2022

Figure 2.5: Sectoral Employment Levels

Millions

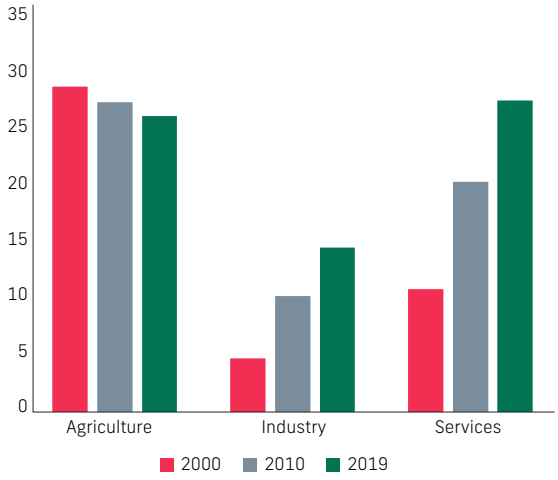
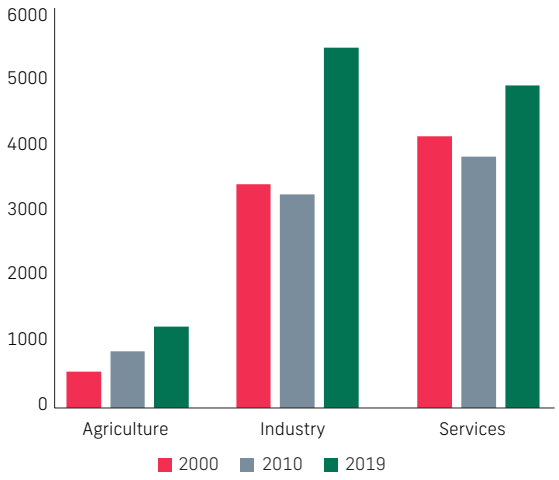


Figure 2.6: Sectoral Value Added per Worker

Constant 2015 US$



Sources: World Bank Macro Poverty Outlook; World Development Indicators.

Note: Figure 2.5 is based on data from the World Bank Macro Poverty Outlook; value added is measured as gross domestic product in constant 2015 US$. In figure 2.6, total employment is sourced from the World Bank Macro Poverty Outlook; employment shares are from the World Development Indicators based on ILO estimates. The working age population is assumed to be ages 15-64.

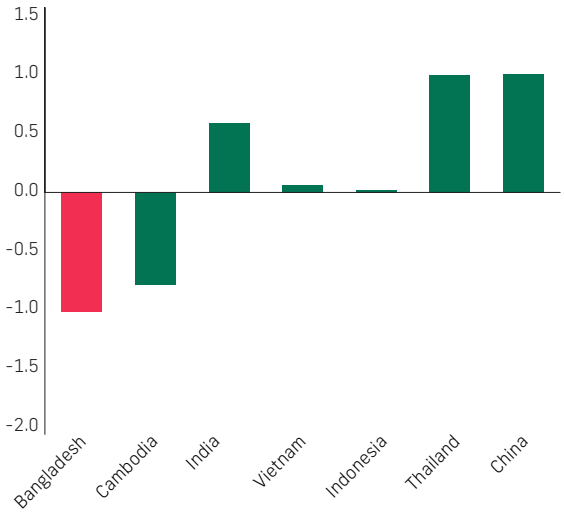
The Success Is Based on Past Reforms and Stability

Bangladesh performs poorly in some structural indicators highlighted by leading macroeconomic explanations of development.

- While sustained export-led growth tends to be accompanied by export diversification and complexity,[15] Bangladesh's exports have grown rapidly without diversification. Exports remained concentrated in RMGs, which are labor-intensive products with low value addition. As a result, Bangladesh's economic complexity is lower than that of any of its peers (figure 2.7).
- Human capital has been an important driver of growth in many countries,[16] but it has been low throughout Bangladesh's development. For example, only one in three children finished primary school in the 1980s. Even in 2020, after considerable improvements, the country's Human Capital Index suggests that a child born today can expect to be less than half as productive as a future worker as he or she would have been with complete education and full health (figure 2.8). This is less than in all of Bangladesh's peers and less than in Myanmar and Zimbabwe.[17]
- Bangladesh has weak governance indicators. It ranked only 151st in the world for rule of law (similar

Figure 2.7: Economic Complexity Index

Index

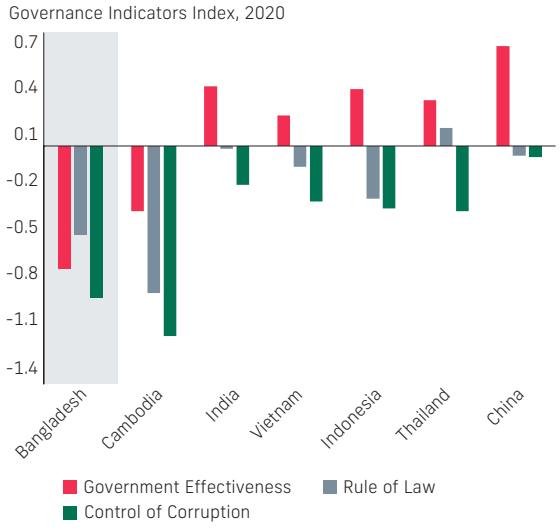


Sources: The Observatory of Economic Complexity; World Development Indicators, Human Capital Project.

Note: Economic complexity is constructed using export data at the product-country level and the data are for 2019. The data for the Human Capital Index are for 2017.

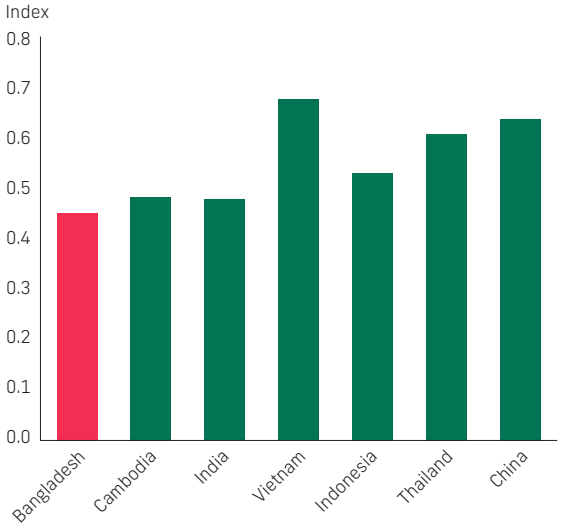
15 On export diversification see, for example, Imbs and Wacziarg (2003) and Cadot, Carrère, and Strauss-Kahn (2013). For export complexity see, for example, Hausman, Hwang, and Rodrik (2007) and Hidalgo (2021).
16 See Mankiw, Romer, and Weil (1992), Glaeser et al. (2004), and Hanushek and Woessmann (2015), among others.
17 See Kraay (2019) and World Bank (2021b).

Figure 2.8: Governance Indicators Index, 2020



Sources: Worldwide Governance Indicators.

Figure 2.9: Human Capital Index



Sources: The Observatory of Economic Complexity; World Development Indicators, Human Capital Project.

Note: Economic complexity is constructed using export data at the product-country level and the data are for 2019. The data for the Human Capital Index are for 2017.

Box 2.0: Summary of growth models

The quantitative analysis in Chapter 2 uses several models that complement each other in examining the varied aspects of Bangladesh's growth performance. Table 2.0.1 summarizes the basics of the models and their specific uses.

Table 2.0.1: Growth models

Model	Features	Use
Cross-country model of structural growth drivers (see Box 2.1 for details)	Panel regression study using a comprehensive data set (~150 countries, ranging from 1970 to 2019)	Identifies the historical growth contribution of a rich set of policy innovations (trade, FDI, infrastructure, etc.) Estimates the future growth impact of specific policy measures
GDP measurement (validation) model (see Box 2.2 for details)	Time-series regression analysis incorporating nighttime light intensity as an alternative measure of economic activity	Examines the concern of GDP mismeasurement during the pre-COVID-19 boom; also sheds light on sectors driving the potential discrepancy in output measurement
Long-term growth model (see Box 2.3 for details)	Structural neo-classical model featuring standard growth drivers (capital accumulation, productivity growth, demographics, etc.) as well as some Bangladesh-specific issues (female LFP, remittances, etc.)	Aggregates the future growth impact of several policy measures by consolidating them into broad reform packages/scenarios

to Togo and Benin), 165th for government effectiveness (similar to Malawi and Djibouti), and 175th for control of corruption (similar to Gabon and Madagascar) in the Worldwide Governance Indicators of 2019. Consequently, Bangladesh's governance scores are below all the peers except Cambodia, which faces similar issues (figure 2.9). The combination of rapid growth and weak governance performance in Bangladesh contrasts with evidence that conventional measures of institutional quality correlate strongly with income level and development.[18]

18 The argument is presented most prominently in Acemoglu, Johnson, and Robinson (2001).

Box 2.1: A Cross-Country Model of Structural Growth Drivers

Several studies have investigated specific factors that may have contributed to Bangladesh's success. They point to success of the garment sector and its successful expansion despite governance challenges.[19] Others highlight the important role played by infrastructure, remittances, and foreign direct investment (FDI).[20] Female empowerment as well as broader social progress are also considered crucial.[21] Finally, some studies also underscore the importance of nongovernmental organizations in Bangladesh's development journey.[22] None of them is providing a comprehensive analysis aggregating the different elements and comparing them with other countries.

To do so, Beyer and Wacker (2022) estimate the following standard panel growth regression:

$$\ln(\text{GDP p.c})^{ct} = \theta \ln(\text{GDP p.c.})^{c,t-1} + \beta^1 x^{1,ct} + \ldots + \beta^k x^{k,ct} + a^c + b^t + u^{ct},$$

where t indexes (nonoverlapping) five-year averages, $x^1,\ldots, x^k$ capture (policy) innovations, and the lagged dependent variable captures persistence (echo from the previous periods). Country fixed effects are captured by a^c, a common time trend by b^t, and the residual by u^{ct}. Since log changes approximate percent changes, first differencing of the estimated equation allows deriving growth components. Beyer and Wacker construct a comprehensive data set covering 149 countries and ranging from 1970 to 2019 and estimate the model with fixed effects ordinary least squares (and provide robustness checks with the generalized method of moments). In the baseline specification, they use real gross domestic product per capita as the dependent variable and include 12 variables capturing trade and globalization, finance, infrastructure, macro factors, and political violence (see table B2.1.1). An extension of the baseline model also includes demographic variables related to human capital, the employment rate, and inequality. These variables contributed to growth in Bangladesh particularly in the early 2010s, when the employment rate rose, and inequality declined. Consequently, the gap of unexplained growth declines somewhat in this period. However, including these variables has a negligible impact on the gap from 2015 to 2019.

Table B2.1.1: Stylized Estimation Results of the Cross-Country Growth Regression Model

Group	Specific variables	Baseline	No growth outliers
Trade and Globalization	Trade Openness	+**	+***
	FDI	+**	+**
	Export diversification	-	-
	Export diversification squared	+	+*
	Terms of Trade changes	-	-
Finance	Private Credit	+	+**
	Financial crisis	-***	-***
Infrastructure	Infrastructure	+***	+***
Macro	Government consumption	-	-**
	Inflation	-**	-***
	Real Effective Exchange Rate	+**	+
Other	Political stability	-**	-*
	Persistence	+***	+***

$^{*}p < .10, ^{**}p < .05, ^{***}p < .01.$

19 See Hausmann and Rodrik (2003) and Mottaleb and Sonobe (2011) on the garment sector and Ahmed, Greenleaf, and Sacks (2014) on the relationship between the sector and weak governance.
20 See Khandker, Bakht, and Koolwal (2009) on infrastructure, Siddique and Billah (2012) on remittances, and Rhee (1990) and Kee (2015) on FDI.
21 See, for example, Asadullah, Savoia, and Mahmud (2014) and Ahmed and McGillivray (2015).
22 See Barai and Moral (2002) and Islam (2016), among others.

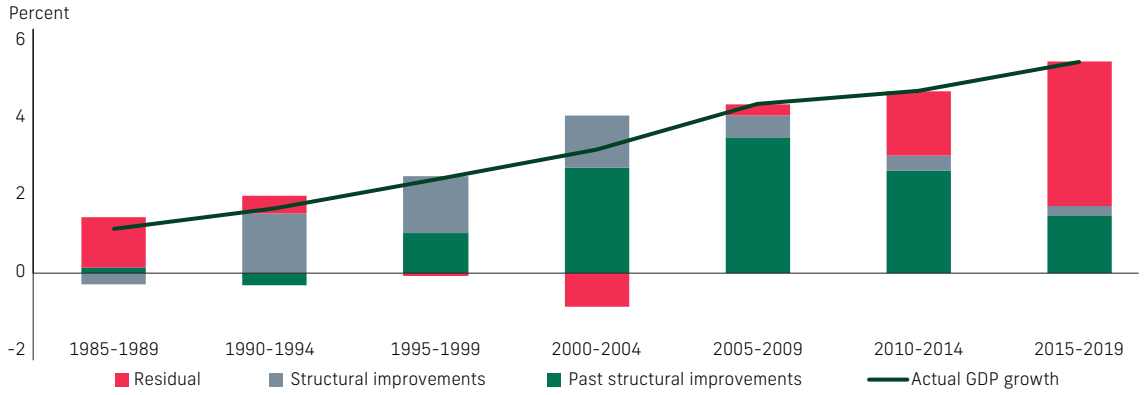
(Box continues on next page)

Box 2.1: A Cross-Country Model of Structural Growth Drivers (continued)

The results are mostly in line with expectations (table B2.1.1). The autoregressive coefficient is in the vicinity of 0.8. Government consumption, inflation, political violence, and financial crises exhibit a negative correlation with income level. Trade openness, financial development, infrastructure, and foreign direct investment correlate positively with income level. Export diversification shows the expected nonlinear relationship. The only surprising results concern the real exchange rate and terms of trade shocks, although their estimated magnitudes are negligible for differences in income level and growth performance. While those two estimates conflict with the bulk of the previous empirical literature, they are not worrisome: an appreciation of the real exchange rate may improve access to foreign inputs and capital goods, and a drop in the terms of trade may boost international competitiveness, both of which can be beneficial to output. When outliers are removed, the persistence increases. At the same time, the relationship with many variables strengthens and becomes more statistically significant.

However, standard growth correlates based on international experience also explain Bangladesh's economic growth reasonably well until the 2010s. Based on a novel data set of correlates of economic growth of 135 countries from 1970 to 2019 and a cross-country growth regression, the growth experience of Bangladesh can be contrasted with that of other countries (see box 2.1 for more details). The growth regression can be used to decompose the drivers of Bangladesh's growth. Figure 2.10 shows a very broad decomposition of growth driven by past structural improvements, new structural improvements, and unexplained growth. It shows that structural growth drivers predict growth in Bangladesh reasonably well for most of the time. However, the gap started widening in the 2010s and 3.7 percentage points of growth remain unexplained between 2015 and 2019, making this period rather unusual. While there are some indications that a construction boom may have contributed to the fast growth during these years, the growth rates over this period remain surprisingly high (box 2.1).

Figure 2.10: Broad Decomposition of Growth in Bangladesh

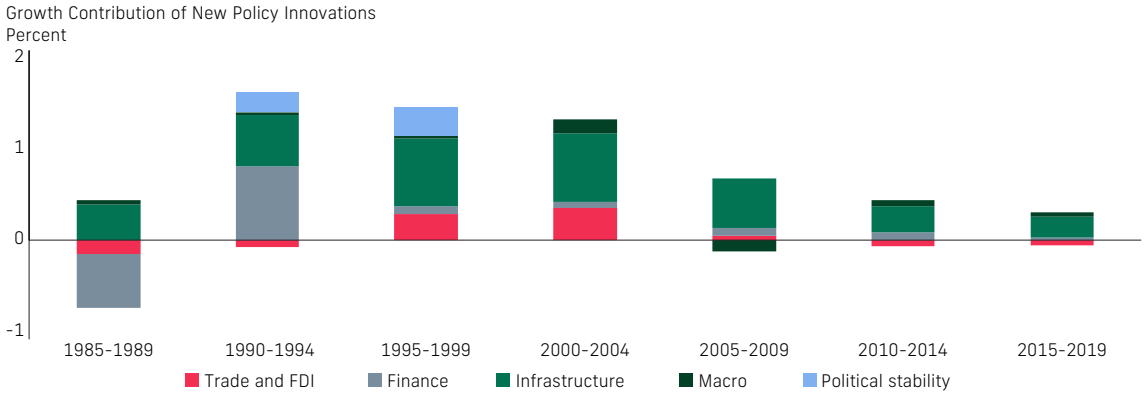


Source: Calculations based on Beyer and Wacker (2022).

Typical correlates of economic growth provided strong impetus between the early 1990s and mid-2000s. Few countries improved growth drivers as substantially as Bangladesh did from 1990 to 2004.[23] Performance was driven by fast improvements in infrastructure, overcoming financial sector weaknesses, trade opening, and macroeconomic stability. These improvements can be traced to economic reforms in previous periods. In the mid-1980s, markets and public investment were strengthened, including for infrastructure. The post-1990 reforms allowed for more private sector participation in trade, finance, and land ownership. In addition, these reforms were accompanied by complementary agricultural reforms (e.g. liberalization of agricultural input markets in the 1980s and early 1990s) and social reforms, such as mandatory primary school, a female stipend program for secondary schools, and family planning programs.[24]

23 Bangladesh's performance in this period is in the top percentile of all new growth contributions of all countries over any 15-year episode since 1970.
24 The fertility rate (births per woman) declined from 6.9 in the 1970s to 2.0 in 2020.

Figure 2.11: Growth Contribution of New Policy Innovations



Source: Calculations based on Beyer and Wacker (2022).

Structural improvements can be disaggregated into five main categories that all contributed to growth in Bangladesh (figure 2.11):[25]

- First, more openness to trade and FDI played a fundamental role in supporting growth starting from the late 1990s. Trade openness contributed to surging RMG exports. Overall, exports doubled from 10 percent of GDP in the mid-1990s to over 20 percent of GDP in 2012, when exports as a share of GDP peaked. While the government had a skeptical view of foreign investment in the 1970s and 1980s, it started encouraging FDI through policy changes and investment incentives in the 1990s. Among others, these included tax holidays, a duty-free facility for imports of capital machinery, investments in special economic zones, as well as allowing full foreign ownership and profit repatriation. As a result, FDI inflows increased from negligible amounts to 0.4 percent of GDP at the end of the 1990s. Most of the structural improvements date to the late 1990s and early 2000s, with slower reform progress in recent years.
- Second, recovery from financial sector turmoil contributed to structural improvements in the early 1990s. Bangladesh's banking system was technically insolvent by the late 1980s.[26] In response, a national commission proposed far-reaching structural changes in 1987, many of which were implemented as part of a three-year International Monetary Fund financing facility that was signed that year. These included the privatization of two major public banks (Uttara Bank and Pubali Bank), the licensing of private commercial banks, and the introduction of back-to-back letters of credit that catalyzed RMG exports. Further reforms supported by the World Bank focused on interest rate deregulation, partial restructuring of the banks' operational procedures, the introduction of capital adequacy standards, and the removal of the lending interest rate band and deposit ceiling (chapter 4).
- Third, infrastructure contributed consistently to growth, but these contributions declined in the most recent periods, though it turned into the largest contributor to growth over the past two decades. Infrastructure investment tends to contribute to growth during construction and after completion due to the services they provide. In line with this, ongoing megaprojects like the Padma Bridge are supporting economic growth and will raise economic activity permanently, but they are not captured in the model.[27]
- Fourth, restrained government consumption and moderate inflation supported growth. Deep macroeconomic imbalances in the 1980s resulted in a strong government focus on macroeconomic stability, which has been maintained since then. Inflation and fiscal deficits remained contained, the debt level low, and external borrowing mostly concessional. In addition, the central bank has successfully smoothed exchange rate volatility.
- Fifth, increasing political stability gave an additional boost to growth in the 1990s. Following prolonged strikes and siege on the issue of a caretaker government in the first half of 1996 and subsequent elections, political

25 Figure 2.11 shows only new growth contributions, which also impact growth in future periods.
26 Laeven and Valencia (2013) classify this period as a financial crisis.
27 Infrastructure strongly correlates with income level but is difficult to measure, particularly over longer periods. In line with the literature, Beyer and Wacker (2022) consider an index combining information on phone lines, mobile phones, internet connections, and electricity access. Infrastructure improvements related to the most recent mega projects in Bangladesh are hence not captured.

stability increased. The Chittagong Hill Tracts conflict also reached a resolution with the peace negotiations started in the early 1990s leading to the signing of a peace accord in 1997.

The rise of RMG exports evolved from a combination of private investment and public policy support. It started with a collaboration between a Korean company and Bangladeshi company, in which knowledge and skills were transferred to Bangladesh. The easing of FDI regulations and introduction of back-to-back letters of credit were complemented by the creation of new export processing zones. Moreover, the government encouraged and directed investments in RMG. It also adjusted its trade policy, so that low wages and the absence of import quotas allowed for a rapid expansion of the sector. The specialization in labor-intensive RMG exports created new and productive manufacturing jobs, many of which were taken up by women. At Bangladesh's income level, the female employment rate usually declines with rising incomes, but it remained stable in Bangladesh.[28] The RMG sector in Bangladesh is an example of how FDI and trade can have a transformational impact through knowledge spillovers.

Bangladesh was able to sustain growth over a long period. Although structural improvements slowed after the mid-2000s, economic growth kept increasing, partly because of the prevailing macroeconomic and institutional stability that allowed the long-term benefits from previous structural improvements to materialize. Apart from the last period, observed growth rates are well-explained by the estimated persistence effect suggested by neoclassical growth models.[29] However, many developing countries have been unable to realize persistent growth. There is broad evidence that their growth experiences tend to be mostly episodic,[30] making Bangladesh an outlier in this respect.[31] Summarizing, Bangladesh's success can be explained by opening to trade and foreign investment, piecemeal institutional reforms – including in the financial sector – that provided sufficient support for strong growth (though without changing weak governance fundamentally), and macroeconomic stability. At the same time, the rise of unexplained growth in recent years introduces uncertainty and deserves further scrutiny (box 2.2).

Bangladesh's success has broader development implications for other countries. First, it implies that large structural issues—including weak governance and low human capital—do not need to be a hurdle to move from low-income to middle-income country status. Second, it suggests that a growth model based on exports and light manufacturing continues to provide an avenue to economic development, at least to Bangladesh's current income level.[32] Third, while the government was fundamental in creating a growth-enabling environment and macroeconomic stability, growth was led by the private sector, suggesting that responsiveness to market forces is crucial.[33] Fourth, opportunities for structural transformation are often limited by political economy constraints. However, Bangladesh's experience illustrates how rapid reforms during periods of crisis can yield persistent growth benefits—but only if political and macroeconomic stability can be maintained.

New Challenges Demand New Policy Innovations

Compared to the structural and aspirational peers, Bangladesh still has a lot of unrealized potential. Despite similar conditions in the 1970s, the pace of poverty reduction and economic growth was slower in Bangladesh relative to its peers. GDP per capita today is four times as large as in 1972 in Bangladesh, but more than five times as large in India, and more than six times as large in Indonesia, and over 30 times as large in China. GDP per capita in Vietnam is now more than five times as large as in 1984, while it is only 3.4 times as large in Bangladesh.[34] Bangladesh also lags in many socio-economic characteristics, for example in human capital, governance, and export complexity (see evidence above). These shortfalls put Bangladesh's development gains over the past two decades into perspective and imply that Bangladesh will need to sustain fast growth to realize its potential.

28 See Beyer, Chocce, and Rama (2019) for changes in employment rates in Bangladesh.
29 The models suggest growth persistence but not growth acceleration.
30 See, for example, Easterly et al. (1993); Hausmann, Pritchett, and Rodrik (2005); Koren and Tenreyro (2007); Aguiar and Gopinath (2007); and Pritchett and Summers (2014).
31 A few countries show some similarities to Bangladesh, including Cambodia, the Lao People's Democratic Republic, and Vietnam.
32 However, Bangladesh's exports started accelerating in the mid-1990s and countries entering this path today will face additional challenges. Some researchers suggest that countries should aim at leapfrogging into service-led growth amid progressing automation (Nayyar, Hallward-Driemeier, and Davies 2021).
33 This can also involve stepping out of the way. Ahmed, Greenleaf, and Sacks (2014) describe how the government's commitment to nonintervention has contributed to the strong RMG sector and export performance in Bangladesh.
34 Data for GDP per capita in Vietnam before 1984 is missing, as is data to add Cambodia.

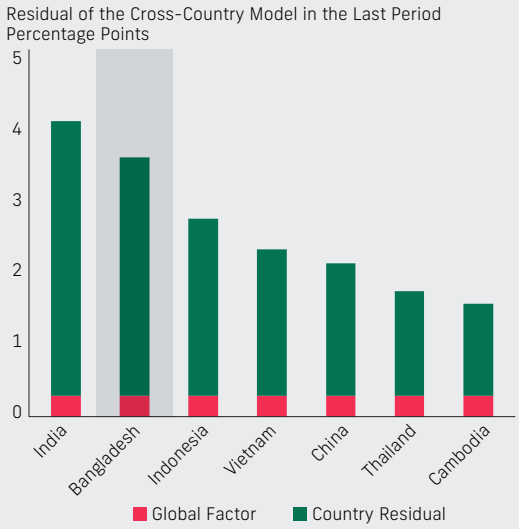
Box 2.2: The Pre-COVID-19 Boom and GDP Measurement

The cross-country model of growth drivers is unable to explain Bangladesh's growth in the most recent period. While the average gap between predicted and actual growth across countries is not larger than in the other periods (the global time dummy is 0.3 percentage point during that period), it is positive and above a percentage point for all of Bangladesh's peers as well (figure B2.1.1). However, it is considerably larger in India and Bangladesh than it is in the other peers. Interestingly, this is the period for which Subramanian (2019a, 2019b) alleges some overestimation of GDP growth in India.

Beyer and Hussain (2021) build on the work of Subramanian (2019a, 2019b) and employ the same approach to explain gross domestic product (GDP) growth based on crucial growth drivers like private credit growth, exports, and imports (which usually correlate strongly with infrastructure construction). To improve the fit of the model, they add nighttime light intensity from a new global data set (Ma et al. 2020). Nighttime light intensity is strongly correlated with economic activity and has been used frequently to assess GDP measurement (Henderson, Storeygard, and Weil 2012; Pinkovskiy and Sala-i-Martin 2016; Morris and Zhang 2019; Beyer, Hu, and Yao 2022). Large changes in prediction error across different periods highlight potential measurement issues.

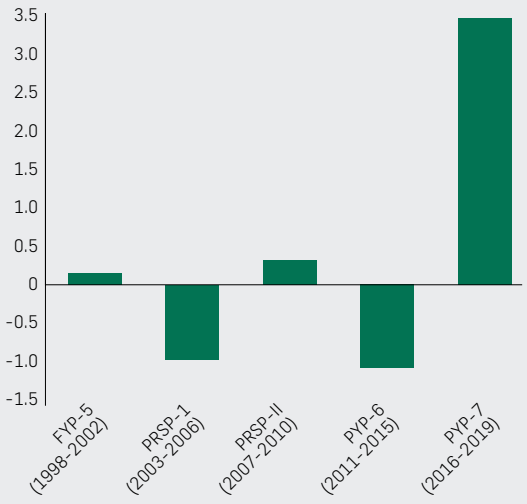
They focus on Bangladesh's Seventh Five Year Plan (FYP) period (fiscal year (FY) 2015 to FY2020) but exclude the last year due to the COVID-19 pandemic. During the first four years of the Seventh FYP period, growth accelerated from 6.6 percent in FY2015 to 8.2 percent in FY2019. On average, growth in these years was 7.6 percent, compared with 6.3 percent in the previous five years. Growth even exceeded the targets specified in the Seventh FYP, which stands in stark contrast to the Fifth and Sixth FYP periods when growth was considerably lower than targeted.

Figure B2.1.1: Residual of the Cross-Country Model in the Last Period



Source: Calculations based on Beyer and Wacker (2022).

Figure B2.1.2: Bangladesh Country Dummy, by Period



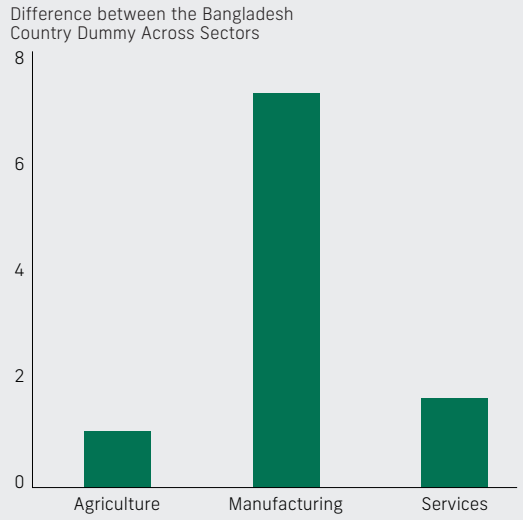
Source: Beyer and Hussain (2022).

In line with the cross-country model of growth drivers, Beyer and Hussain's (2021) analysis identifies an vunexplained gap in the official estimates of GDP growth in Bangladesh during the first four years of the Seventh FYP period. The model explains official GDP growth relatively well before the Seventh FYP but predicts slower growth from FY2015 to FY2019 (figure B2.1.2). This sudden change in the ability of the model to predict growth is unusual compared with the other 62 middle-income countries included in their analysis, including for Bangladesh's peer countries. They then repeat the exercise at the sectoral level, showing that the gap is nearly entirely attributable to the manufacturing sector (figure B.2.1.3). It remains an open task to resolve this puzzle by attributing the gap to a structural break in the relationship with the explanatory variables, an overestimation of GDP growth, or other factors. Future analytical work should attempt explaining the gap, so that mismeasurement can be ruled out.

(Box continues on next page)

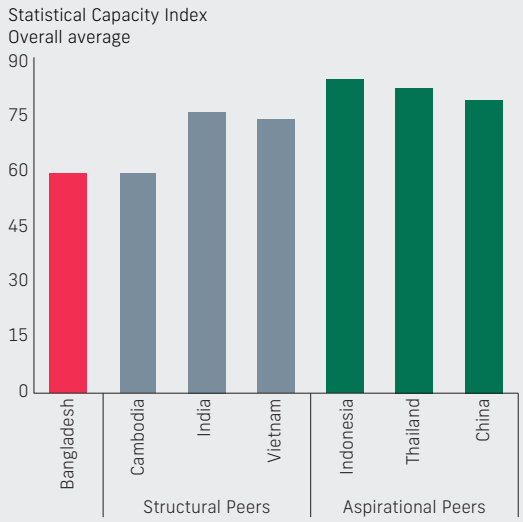
Box 2.2: The Pre-COVID-19 Boom and GDP Measurement (continued)

Figure B2.1.3: Difference between the Bangladesh Country Dummy across Sectors



Source: Beyer and Hussain (2022).

Figure B2.1.4: Statistical Capacity Index



Source: World Development Indicators.

If growth over the most recent period was overestimated, it would have implications for estimated productivity levels. For example, total factor productivity (TFP) is estimated as a residual and hence mismeasurement of GDP results in mismeasurement of TFP. Similarly, the value added per worker would be lower and the differences across sectors could be biased if mismeasurement is larger in some sectors compared with others. It would also impact the growth decomposition, which suggests that growth has been broad-based, originating from an efficient reallocation between sectors, as well as rising sectoral productivity.

The unexplained gap points to a larger concern about economic measurement in Bangladesh. When the rebased national accounts were published in December 2021, the publication was accompanied by neither technical notes on new data sources nor revised use and supply tables. As a result of the upward revision, many macroeconomic indicators expressed in percent of GDP have become implausibly low (for example, domestic revenue generation). Moreover, the impact on per capita GDP raises doubts about comparability with other countries. Similarly, a recent upward revision of GDP growth in FY2021 was not well substantiated by data. Economic monitoring is challenging given the infrequent labor force surveys and absence of quarterly national accounts. Bangladesh lags all the peers except Cambodia in statistical capacity (figure B2.1.4). In general, quarterly labor force surveys and national accounts can strengthen economic measurement, and technical independence of the statistical authorities can build trust in reliable and precise official statistics.

Bangladesh was among the 10 fastest growing economies over the past decade, but this is no reason for complacency. It is an empirical fact that economic booms do not tend to be permanent and that growth in fast-developing countries is highly volatile. Few economies persist as the fastest growing in the world over longer periods. Only a third of those among the top 10 growth performers in one decade manage to remain in the top 10 during the next decade. Among the 10 fastest growing economies from 2010 to 2019, no country was among the top 10 in the previous decade.

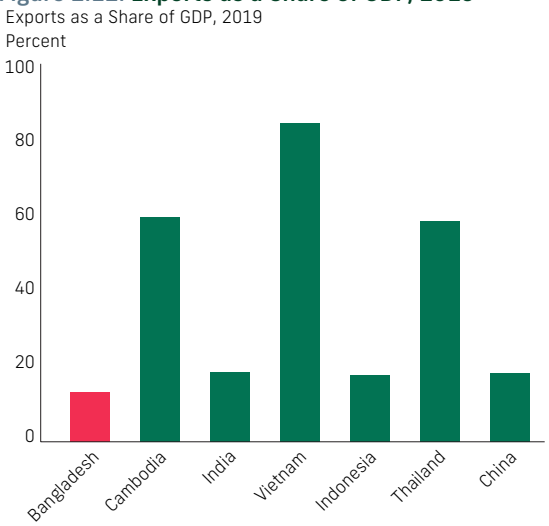
There are signs that growth may be losing steam soon. The model of global growth drivers shows a strong decline in structural improvements in Bangladesh (figure 2.10). There was a period from the late 1980s to the mid-2000s when Bangladesh harvested the low hanging fruits, but it has yet to move to the next phase of economic transformation. The country's growth experience shows that a few years of major structural improvements can carry growth for a long

period. At the same time, growing so fast for so long without new structural improvements is rather unusual,[35] and it may imply that the pace of growth could slow. Moreover, the large gaps of unexplained growth in recent years (figure 2.10 and box 2.2) – implying that growth is increasingly difficult to explain with fundamentals – aggravates these concerns and should caution against rejecting the need for structural adjustments based on high current growth.[36]

Without a new round of structural improvements, growth will likely decline. The cross-country model of growth drivers suggests that growth would decline without additional structural improvements. In that case, the model predicts growth to decline to below 4 percent on average between 2035 and 2039, less than half the growth envisioned by the government. Bangladesh will need to adjust its growth model to remain among the top global performers. This report identifies three main growth constraints: declining trade competitiveness, the weak and vulnerable financial sector, and unbalanced and inefficient urbanization. Addressing these constraints could secure faster development and sustain high growth in the future.[37]

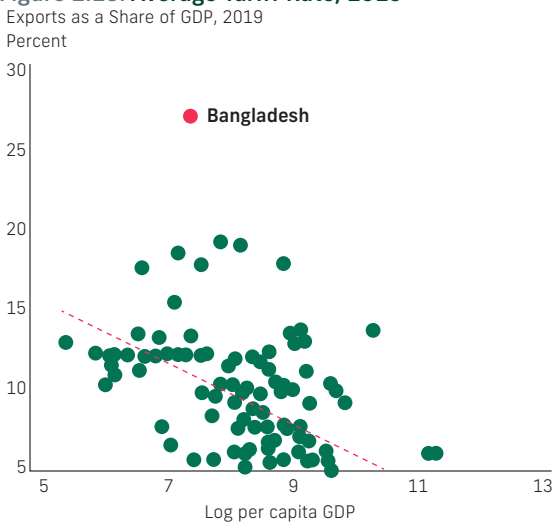
With trade competitiveness based on low wages and trade preferences eroding, the overreliance on RMG exports and the perpetuation of a protective tariff regime challenge the sustainability of Bangladesh's growth model. At less than 15 percent of GDP in 2019, exports are low compared with the country's peers (figure 2.12). The current export basket is as heavily dependent on RMGs (at 86 percent of total exports in 2018) as it has been over the past two decades. The lack of export diversification can be at least partly attributed to the country's protective trade regime. Average tariffs more than double if para-tariffs are included, making Bangladesh an outlier among countries with a similar income level (figure 2.13).

Figure 2.12: Exports as a Share of GDP, 2019



Source: Macro Poverty Outlook 2021.
Note: GDP = gross domestic product.

Figure 2.13: Average Tariff Rate, 2019



Sources: World Trade Organization; World Development Indicators 2020.
Note: GDP = gross domestic product.

To accelerate and sustain export growth, Bangladesh needs to diversify its export basket. A diversified export portfolio could reduce the risk of export volatility, create new sources of export growth, and increase export earnings in the long term. Diversification of exports will require adequate trade infrastructure, improved logistics performance, access to services inputs and technology, and a trade policy regime that fosters competitive and dynamic export-oriented sectors.

Going beyond tariffs, Bangladesh also needs to prioritize services, trade facilitation, and green trade to help companies in all sectors adapt to the rapidly evolving technological and climate change disruptions (chapter 3).

35 When the model of global growth drivers is estimated with a Bangladesh-specific persistence term, it is positive (0.18) and highly statistically significant. This is not the case for any of the peers.
36 In addition, some economic indicators seem inconsistent with high growth. For example, private investment rates are stagnant, trade openness is declining, and the female labor participation rate has plateaued.
37 The identification of these constraints benefited from extensive consultations with local stakeholders.

An ambitious trade policy agenda needs to include goods, services, and investment to boost gains for Bangladesh. An agenda that covers tariff modernization, services and investment reforms, and improvements in trade facilitation produces the largest benefits for the country. Furthermore, green trade is critical for Bangladesh to scale up climate change mitigation and adaptation efforts to maintain its export competitiveness and diversify its export basket. Finally, regional integration can help speed up market diversification and economic growth in a post-pandemic world.

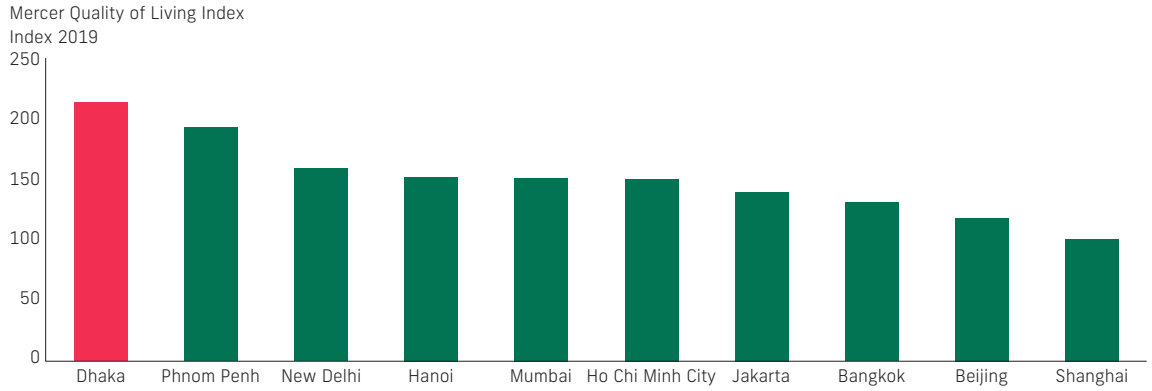
Bangladesh's financial sector performance will be a key determinant of its future economic development. As in most economies at similar level of development, the financial sector is dominated by banks, which account for about 90 percent of total financial assets. Bank-led financial deepening has made notable progress in the past four decades, with the M2 money supply/GDP ratio surging from 12 percent in the late 1970s to over 60 percent in 2020. There has also been a steady upward trend in private credit, from 5.8 percent of GDP in 1980 to 47.6 percent in 2017, but it started stagnating thereafter (45.2 percent in 2020). Deposit mobilization contributed to the rapid expansion of private credit that accompanied the growth of private investment, foreign trade, remittances, and GDP per capita. The average private investment rate increased from 6.1 percent of GDP in the late 1970s to 23 percent in 2019. In the absence of a well-functioning capital market, bank financing has remained the main source of financing for investment and trade.

The formal financial sector is not deep enough (chapter 4). Vision 2041 aims to increase national savings significantly but raising the level of savings and efficiently channeling them to productive investment will require major restructuring and greater efficiency of the financial system. Credit to the private sector remains low in Bangladesh compared with most of its structural and aspirational peers. IMF (2019) notes the increasing decoupling of credit and business cycles with deteriorating credit efficiency in recent years. The correlation between the credit impulse, defined as change in the private credit-to-GDP ratio, and real activity has been diminishing as has the degree of co-movement of financial and real variables. Bangladesh needs to continue to build better financial sector infrastructure, improve its legal and regulatory frameworks, and phase out the existing distortions to enable a larger and more efficient flow of financing to the private sector, including to underserved segments. Developing capital markets should be among the top policy priorities to unlock long-term finance for infrastructure and green investments.

Preserving financial sector stability will become more challenging in the future. Bangladesh was not affected much by the Asian Financial Crisis and the Global Financial Crisis given the relatively small and isolated nature of the country's financial system. However, the financial system will be more exposed to external shocks going forward, as high investment needs must be partially financed by external borrowing and the financial sector will become more integrated into the global financial system. At the same time, the domestic financial sector (primarily banks) faces long-standing vulnerabilities that have been magnified by the COVID-19 shock. Weaknesses in the regulatory and supervisory framework do not properly equip the authorities to deal with potential internal and external shocks in a timely and cost-effective manner.

Successful urbanization will be crucial for Bangladesh to reach the next level of development. Experiences of economic development around the world show that the level of urbanization and the economic status of a country go hand in hand. This is not surprising as urban areas are more productive and generate various agglomeration externalities to create self-sustaining dynamics of innovation and growth. Thus, massive urbanization will be necessary to sustain and enhance the momentum of economic growth. Urbanization during the past decades has been unstructured and unbalanced. Dhaka city is at the center of Bangladesh's urban hierarchy, with an outsized influence on the country's economy. Greater Dhaka generates one-fifth of the country's GDP and almost half of its formal employment. It also creates over 30 percent of the country's formal manufacturing jobs (Bird, Li, Rahman, and Rama 2018). The marginal cost of combating the climate and congestion impacts of such population concentration can quickly become prohibitive. Dhaka is indeed highly congested and polluted and ranks far below cities in the peer countries on the Mercer Quality of Living Index (figure 2.14). In the future, changing climate conditions may profoundly impact which areas and cities will bsorb internal migrants.

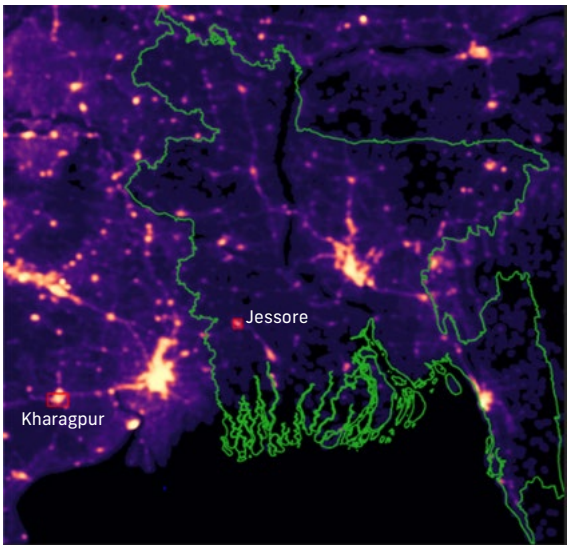
Figure 2.14: Mercer Quality of Living Index



Source: Mercer Worldwide Quality of Living Survey 2019.
Note: A higher score indicates a lower quality of living.

Beyond transport corridors and intercity connectivity, Bangladesh will need to develop digital connectivity. Sea level rise and increased flooding will induce migration from the vulnerable southern part of Bangladesh to the north. To ensure that these migrants do not crowd only in Dhaka or Chittagong city, smaller and medium-size cities will have to expand their economic base by attracting more firms in tradable goods and services. For tradable activities to locate in these cities, they need to be well connected to domestic and global trade networks. A policy simulation based on the spatial general equilibrium model presented in chapter 5 suggests that the returns to digital connectivity are as large as those for transport connectivity, and even higher in small and medium-size cities.

Map 2.1: Nighttime Luminosity in Bangladesh



Source:

To attract human capital, small and medium-size cities will need to have affordable housing, urban amenities, and access to basic city services. While housing is more affordable in small and medium-size cities, they lag behind in urban amenities and access to basic services. These are two areas that will require strategic public investment and public-private partnerships.

The experiences of Bangladesh's peers suggest clear opportunities for future development. The cross-country model presented above can also be used to understand what structural improvements are most likely to yield large growth effects. To do so, the likely growth impetus from catching up with peers in different areas can be quantified. The growth impact is determined by the regression coefficient (box 2.1) and the average gap between Bangladesh and its peers. The underlying logic is that structural improvements are likely to have a similar impact in Bangladesh as in other countries, and that a larger gap with peers implies that catching up is easier. This analysis affirms the growth constraints described above, as it suggests large improvements from increasing the number of women in employment, further trade opening, more FDI, and deeper financial development. In addition, the analysis suggests that there would be clear gains from more and better infrastructure, which is analyzed in a recent World Bank report.[38]

38 A recent Infrastructure Assessment Program (World Bank 2020) argues that to meet growing infrastructure needs, Bangladesh will need substantial investments beyond public sector capacity. It is estimated that $608 billion in infrastructure investment will be needed by 2040.

Strong Reforms Can Help Sustain Fast Growth

Economic growth in Bangladesh is expected to decline over time. The World Bank's Long-Term Growth Model (LTGM) can be used to examine Bangladesh's long-term development prospects.[39] Table 2.1 shows the averages of some key variables from a well-defined baseline projection of long-term growth based on reasonable model parameters and the paths of crucial growth drivers.[40] GDP growth is expected to recover from the pandemic-induced slowdown to 6.4 percent in 2022 and to strengthen further to peak at 6.9 percent in 2024.[41] Overall, growth is expected to average 6.8 percent during the Eighth Five Year Plan period. Projected growth falls in a tight range (6.4-6.7 percent) in the following five years. Driven by a few factors, a marginal slowdown arises after 2030. First, investment growth is slower as the national savings rate is expected to grow more gradually after 2030. Second, investment-led growth in the previous years results in capital deepening and reduces the marginal productivity of incremental capital in the later years. Third, annual population growth falls from 0.8 percent during 2026–30 to around 0.4 percent during 2036–41.

Table 2.1: Summary of Baseline Projections and Selected Model Components

Variable	2021–25 (1)	2026–30 (2)	2031–35 (3)	2036–41 (4)
Average real GDP growth (%)	6.8	6.5	6.2	5.9
Average GNI per capita (2020 US$)	2,769	3,671	4,833	6,506
GNI per capita, last year of period (2020 US$)	3,093	4,088	5,372	7,400
Model components				
Savings rate (%)	32.0	34.0	35.4	36.5
Investment rate (%)	33.5	35.5	36.9	38.0
TFP growth (%)	1.0	1.0	1.0	1.0
Population growth (%)	0.9	0.8	0.6	0.4

Source: Beyer and Sinha (2022).
Note: GDP = gross domestic product; GNI = gross national income; TFP = total factor productivity.

These baseline projections are considerably lower than the government envisions. They are much lower than growth as envisioned in Vision 2041, which may not be surprising as government growth targets tend to be aspirational and usually describe a very optimistic scenario. Consequently, the implied growth targets are rarely achieved.[42] While this is true even for annual projections and medium-term plans, it may be even more the case for very long-term plans like Vision 2041. Aspirational growth targets can be a motivational policy tool and provide guiding objectives. Ideally, they offer an opportunity to focus on the key constraints to economic development and direct attention to the necessary reforms to achieve higher growth.

Addressing the growth constraints described in this report can sustain a higher pace of growth.

- As part of its export-led growth vision, the country needs to address multiple policy issues to unleash the private sector growth and investment goals. Tariff modernization, increased trade facilitation, services and investment reforms, as well regional integration and regulatory cooperation can help firms adapt to middle-income status and technological and climate change disruptions and speed up market diversification.
- Vulnerabilities in the financial sector need to be addressed to preserve financial stability and foster credit growth. The costs of financial intermediation should decline, and investment should be channeled to more productive sectors and firms. Supporting credit infrastructure and promoting further digitalization of financial

39 The model at the core of this paper, developed by Loayza and Pennings (2018), builds on the neoclassical growth model (Solow 1956; Swan 1956) and features the same major building blocks, including savings-led capital accumulation, labor growth, and technological change. In addition, the LTGM links economic growth to changes in human capital, demographics, and labor force participation, which play a quantitatively significant role in some economies. The LTGM has been used for several country analyses, for example to evaluate the long-term growth impacts of macroeconomic policy reforms (Jeong 2017; Jeon and Cho 2021; among others).
40 See Beyer and Sinha (2022) for details. They build on Sinha (2017), who analyzes different long-term growth scenarios for Bangladesh.
41 These numbers are aligned with the projections in World Bank (2022b) that focuses on projections for the next few years and includes a discussion on how scaring effects of COVID-19 and global uncertainties from rising inflation are impacting Bangladesh.
42 See Frankel (2011) for evidence.

services will be important to reach the most underserved segments. Deeper capital markets would allow for raising much needed long-term finance, including for infrastructure and climate adaptation.

- Better urbanization and connectivity could contribute to sustaining fast productivity growth and help absorb climate migrants. Successful transition to higher productivity in Dhaka would imply movement of low-value manufacturing to next tier cities.[43]

The LTGM can be used to estimate the likely growth impacts of different reform packages. Based on the analytics and policy recommendations developed in the remaining chapters, reform scenarios of different magnitudes are characterized. Three such scenarios are considered: business as usual, moderate reforms aligned with the baseline projections, and strong reforms aligned with the recommendations of this report (table 2.2). To simulate the aggregate growth impacts of these reform packages with the LTGM, they need to be translated into different paths for investment, total factor productivity, and female labor force participation rates (box 2.3).[44] The links of these scenarios to changes in the structural model variables are necessarily based on simplifying and very strong assumptions. The simulation results hence offer only a rough assessment of the likely impacts, but they help to provide a sense of how important the reforms outlined in this report are likely to be.

Table 2.2: Reform Scenarios to Address Bangladesh's Main Growth Constraints

Scenario	Trade competitiveness (chapter 3)	Financial sector (chapter 4)	Urbanization (chapter 5)
Business as usual	• No tariff modernization • No further trade liberalization (NTBs, trade facilitation, services) • No further trade integration • Could be worsened by the sustained US-China trade war and other global disruptions	• Piecewise support of credit infrastructure and digitalization • No change in financial sector efficiency (and the role of the state) • No reforms in other areas • Could be impacted negatively by asset quality deterioration and decrease in banks' capital as COVID-19-related forbearance measures are phased out	• Dhaka-centric investments • Uncoordinated place-based incentive programs • Could be adversely affected by climate change
Moderate reforms	• Tariff modernization	• Piecewise implementation of financial stability and capital market reforms • Support for credit infrastructure and promotion of digitalization of financial services	• Investment in transport and digital connectivity • Better services provision
Strong reforms	• Tariff modernization and liberalization • NTM liberalization and streamlining • Trade facilitation • Services and FDI liberalization • Could be strengthened by regional/multilateral integration	• Addressing asset quality (stock and flow of NPLs) and improving capitalization and governance of banks • Optimizing financial sector efficiency, including reducing the role of the state • Capital market reforms to enhance market practices and strengthen the institutional investor base	• Strategic investment in connectivity and climate mitigation/adaptation infrastructure based on sound economic analysis • Investment in intracity connectivity to relieve congestion • Reform of housing and land markets • Provision of services based on a strategic plan • Coordination of regional and urban planning to guide strategic investment

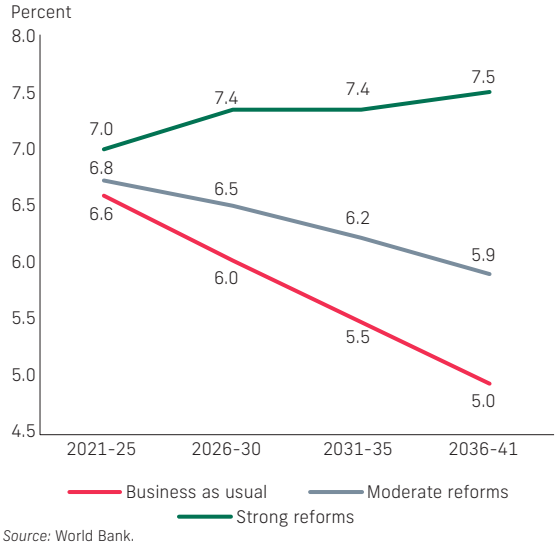
Source: World Bank.
Note: FDI = foreign direct investment; NPLs = nonperforming loans; NTM = non-tariff measures.

43 The presented reform options for better urbanization focus on long-term growth. There are other reform priorities related to equity and inclusion as well as to environmental sustainability that are not captured here.
44 The analyses provided in the remaining chapters quantifies the impact of some individual reforms but aggregating them is not straightforward.

A strong reform package can help sustain high growth rates over the longer term. GDP growth under the business-as-usual scenario averages 6.6 percent during the Eighth Five Year Plan period. Reform progress in this scenario is too slow to offset headwinds from capital deepening and declining population growth, so growth starts declining strongly, to only 5.0 percent on average between 2036 and 2041. The moderate reform package is aligned with the baseline presented in table 2.1 and suggests declining growth over time as well, although the decline is less than in the business-as-usual scenario. The simulation of strong reforms (that are stipulated to result in higher investment and female labor force participation as well as stronger productivity gains) suggests that a strong set of reforms could generate sustained growth acceleration (figures 2.15) and result in significant economic gains (figure 2.16). With strong reforms, growth picks up to 7.5 percent on average between 2036 and 2041. While this is still below the target in Vision 2041, it would continue Bangladesh's success story.

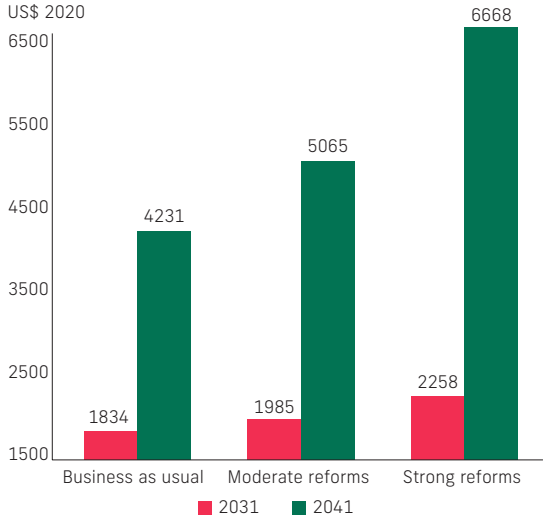
Building constituencies for reforms is critical. Bangladesh needs to build quality institutions of the kind associated with high income economies. This in turn requires focusing on creating constituencies and coalitions for institutional reform. While groups that benefit directly from the existing economic arrangements will resist reforms (and even those not benefitting may favor the status-quo rather than risking disorder), institutional reforms can happen without fundamentally changing the way the existing economic and social order operates. Doing so could help the economy to push along the necessary reforms. It would also help the country to mature by improving political accountability and moving more decisively to rule-based frameworks rather than centralized authority. A detailed political economy analysis is beyond the scope of the CEM, but there is no doubt that domestic ownership of institutional reforms is fundamental.

Figure 2.15: Real GDP Growth under Different Reform Scenarios



Source: World Bank.
Note: GDP = gross domestic product.

Figure 2.16: Gains in GNI per Capita under Different Reform Scenarios

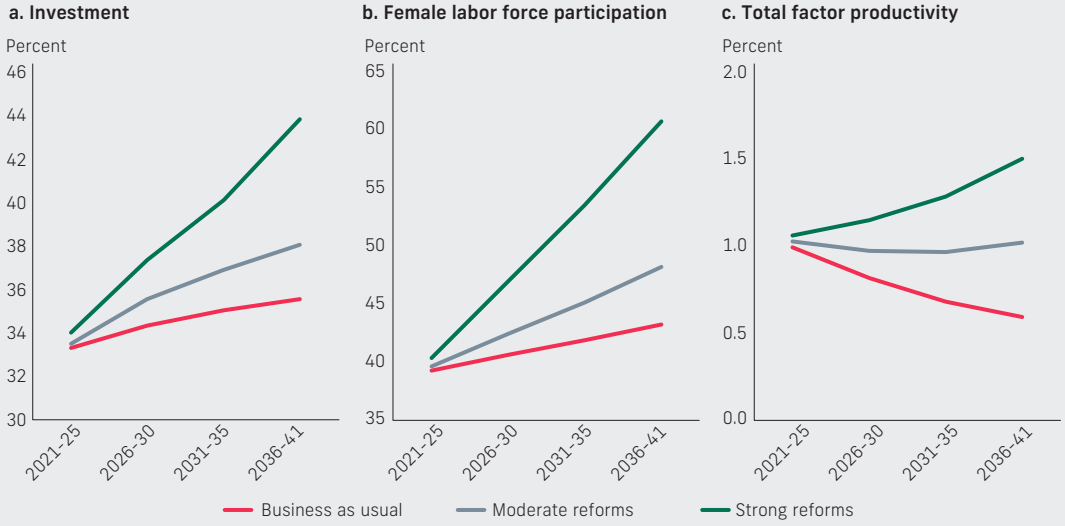


Source: World Bank.
Note: GNI = gross national income. The gains are relative to 2022.

Box 2.3: Estimating the Growth Impacts of Reforms

The remaining chapters on trade competitiveness, the financial sector, and urbanization propose several concrete policy recommendations, which are consolidated into three reform scenarios of varying magnitudes (figure B2.3.1). The Long-Term Growth Model (LTGM) can be used to approximate the likely growth impacts of these scenarios, which requires two steps. First, the reform scenarios need to be linked to the three key growth drivers of the LTGM—the investment rate, the female labor force participation (FLFP) rate, and total factor productivity (TFP) growth. Second, the growth impact needs to be simulated by feeding the reform-induced variation in the projected time paths of the three growth drivers into the LTGM. This approach condenses the impact of several policies into a few macroeconomic drivers. This allows for simple simulations but at the cost of missing some critical channels through which the reforms might propagate. Therefore, the estimated growth impacts should be treated with necessary caution.

Figure B2.3.1: Key Growth Drivers: Different Reform Scenarios



Theoretical and empirical studies have documented several pathways through which the policy recommendations affect the three growth drivers. Trade reforms can directly affect investment by attracting more foreign direct investment. These foreign investment flows might lead to productivity and labor market spillovers, supporting TFP growth and an expansion in the FLFP rate (Harrison and Rodríguez-Clare 2010). Financial sector reforms can generate a savings-led investment push by eliminating distortions that depress the real rate of return on savings (Fowowe 2013). At the same time, they can aid productivity growth by reducing allocative inefficiencies through which scarce credit flows to unproductive firms (Levine 2005). Like trade reforms, financial sector reforms have also been associated with employment growth (Levchenko, Ranciere, and Thoenig 2009). The success of urbanization reforms critically hinges on substantial investments in transport and communications infrastructure. The policy will pay dividends by boosting productivity growth through agglomeration effects (Henderson 2005). Urbanization is also likely to expand service sector activity, leading to more women joining the labor force (Goldin 2006).

The baseline projections in Beyer and Sinha (2022) assume that Bangladesh will continue to make progress on each of the three key growth drivers. The projected investment rate rises from 32.7 percent in 2021 to 38.5 percent by 2041, based on expansion of the savings rate in line with historical trends (figure B2.3.1, panel a). The projected FLFP rate reaches nearly 50 percent by 2041, based on annual increases of 0.5 percentage point, representing the midpoint of short- and long-term average annual increases (figure B2.3.1, panel b). After experiencing declining productivity for much of the latter half of the twentieth century, Bangladesh has had positive TFP growth in the recent decades. This has moved Bangladesh from a below-median position in the global distribution to the median. The baseline assumes that the catchup will continue, and Bangladesh will reach the 75th percentile by 2041 (figure B2.3.1, panel c). These projected paths of the growth drivers implicitly assume that the country accelerates its reform progress and therefore maps well to the *moderate reform* scenario.

(Box continues on next page)

Box 2.3: Estimating the Growth Impacts of Reforms (continued)

The moderate scenario serves as a benchmark for designing the more (*strong reforms*) and less (*business-as-usual*) optimistic reform scenarios. A stronger reform path provides the upside for a further expansion in all three key growth drivers. It is assumed that both the savings and FLFP rates can attain the Vision 2041 targets. Bangladesh is also assumed to transition to the 90th percentile of the global TFP growth distribution. It is unusual for economies to achieve rising productivity growth over long periods. The TFP path under the strong reform scenario hence represents a very optimistic case in which substantial progress is made on several key determinants of productivity growth.

However, the reform process loses steam under the business-as-usual scenario, creating lower gains. Annual expansion in the investment and FLFP rates is assumed to be only half that in the moderate case. Instead of catching up with the 75th percentile of the global distribution, TFP growth slowly reverts to the long-term average of 0.55 percent.

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CHAPTER 3

Boosting Bangladesh's Trade Competitiveness

Trade remains vital to Bangladesh's economic development. Trade has registered a growth rate of about 11 percent on average over the past two decades in the pre-pandemic era. Driven mainly by ready-made garments (RMGs), exports created jobs and reduced poverty. Trade in non-RMG goods is picking up, mostly driven by export in agricultural products, jute, and leather, but remains at a low base. Many SMEs are concentrated in agricultural trade and provide many back- and forward linkages to the rural economy. Trade slowed during the pandemic but started to recover in 2022. As Bangladesh approaches upper middle-income status, increasing trade competitiveness is likely to be more pressing, especially in the context of emerging megatrends, such advances in technology and climate change.

This chapter examines Bangladesh's eroding trade competitiveness, assesses the impact from trade policy reforms, and proposes policy options for an export-led strategy. The first section explores Bangladesh's goods and services trade performance and GVC integration. Drawing on multivariate models of survival probabilities and transaction-level trade data sets, the second section identifies the key factors that explain Bangladesh's limited export diversification and declining trade competitiveness. Machine learning, gravity models, and partial and general equilibrium modelling tools are used to shed light on policy interventions for increased goods and services trade as well as deeper regional and global trade integration. The role of climate change and technological innovation is considered throughout these analyses. The final section concludes with policy options to sustain an export-led strategy adequate for an upper middle-income country.

Eroding Trade Competitiveness

Trade performance has declined since 2011 relative both to Bangladesh's strong historical performance and to overall economic growth. Low labor costs and preferential access to advanced economies' markets contributed to Bangladesh's strong manufacturing export growth and job creation over the past two decades. However, the contribution to growth from manufacturing exports has been declining over the past five years, starting years before the COVID-19 shock, with growth of manufacturing coming more from domestic market-oriented industries. Bangladesh's goods and services trade as a percentage of gross domestic product (GDP) has been declining since 2011, remaining well below the ratios registered by countries at similar levels of development (figure 3.1 panel A and panel B). The lag in trade in services is more pronounced, highlighting the urgency of services reforms. Bangladesh's trade could be further impacted as external demand is subject to uncertainty following the war in Ukraine and rising global commodity prices. A slowdown in growth in major export markets, particularly the European Union, could disrupt export growth, while the payments for imports of many goods (petroleum products, cotton, yarn, fertilizer, cooking oil, and wheat) may rise further.

Figure 3.1: Bangladesh's Trade Openness in Goods and Services Trade

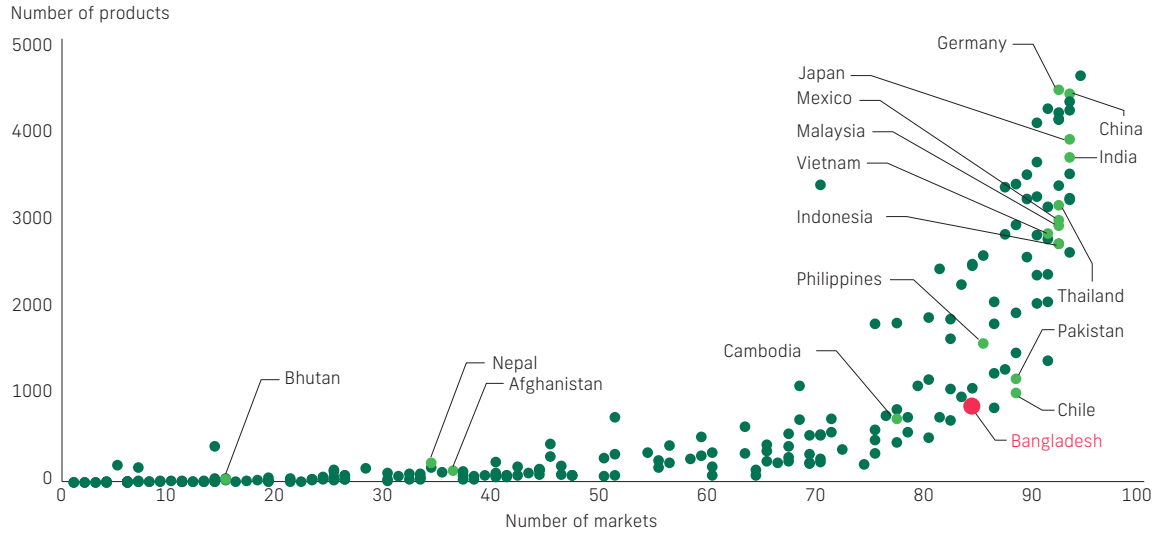
Source: WITS 2022

Note: Log of openness to trade (goods and services) plotted against log of GDP per capita, controlling for the effect of population size. The sample contains all countries with available data in WITS for 2011–20 (the graph shows period averages for 2011/15 and 2016/20). GDP = gross domestic product; WITS = World Integrated Trade Solution.

Limited diversification partly explains Bangladesh's relatively low goods exports. At less than 15 percent of GDP in 2018 (and only 9 percent in 2020 and 2021), goods exports are low compared with the average export-to-GDP ratio of low- and middle-income countries (at 25 percent in 2018) and comparators such as Vietnam (at 95 percent). Bangladeshi exports are less diversified compared with Vietnam, Thailand, Malaysia, Indonesia, or the Philippines (figure 3.2). Razzaque (2017) shows that Bangladesh's export basket is four times more concentrated than the developing country average and less diversified even compared with low-income countries. The export structure is highly concentrated in terms of both products and markets.

The current export basket is heavily dependent on RMGs. RMG exports comprised 83 percent of Bangladesh's total merchandise exports in fiscal year (FY) 2020, making exports about five times more concentrated than in China, Thailand, and Vietnam. In 2018, of the top 20 export products (at the Harmonized System 6-digit level), all but one belonged to the RMG sector. Exports remained concentrated in RMGs during the pandemic (figure 3.3). Imports are more diversified, including capital goods and machinery, and contribute to Bangladesh's better integration into global value chains (figure 3.4). The overreliance on RMG exports raises questions about the sustainability of Bangladesh's growth model, which is being challenged by the erosion of competitiveness based on low wages, and impending erosion of trade preferences. Shifts in production, advances in technology, climate change, and trade tensions between the United States and China present both opportunities and challenges.

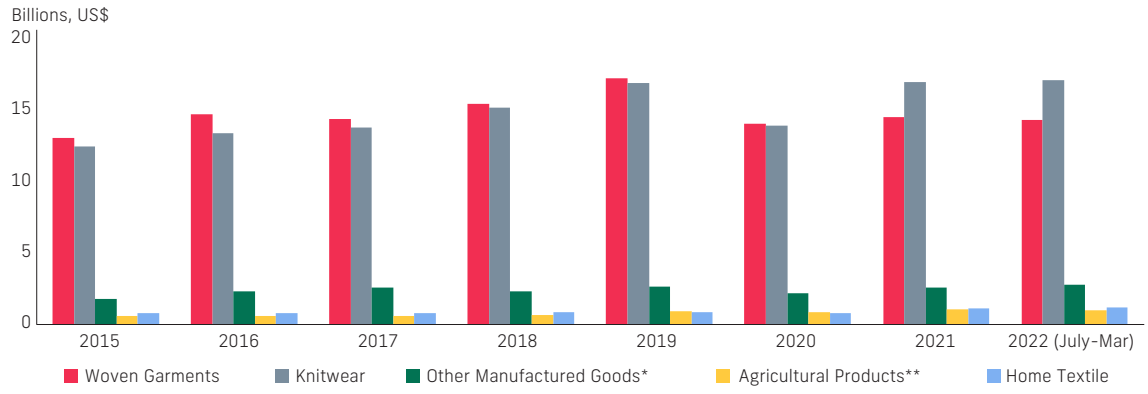
Figure 3.2: Bangladesh's Export Diversification in a Comparative Perspective, 2020



Source: World Development Indicators 2022.

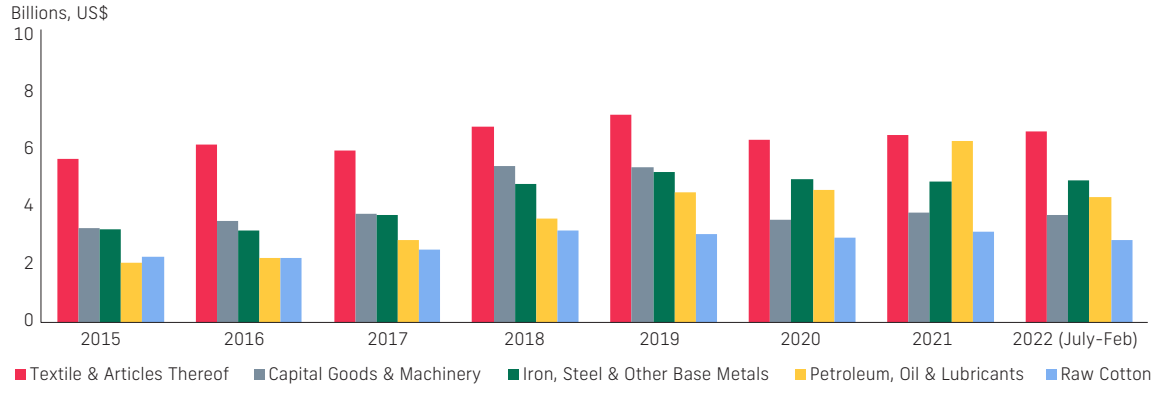
Note: Log of openness to trade (services) plotted against log of gross domestic product per capita, controlling for the effect of population size. The sample contains all countries with available data in the World Development Indicators for 2011–20 (the graph shows period averages for 2011/15 and 2016/20).

Figure 3.3: Bangladesh's Top Five Merchandise Exports, 2015–22 (July-March) (US$, billions)



Source: Export Promotion Bureau 2022.

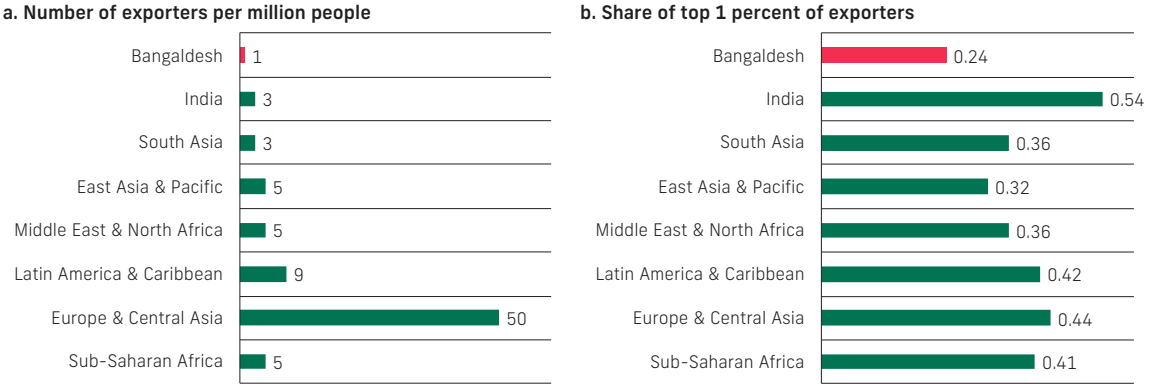
Figure 3.4: Bangladesh's Top Five Merchandise Imports, 2015–22 (July-February) (US$, billions)



Source: Bangladesh Bank 2022.

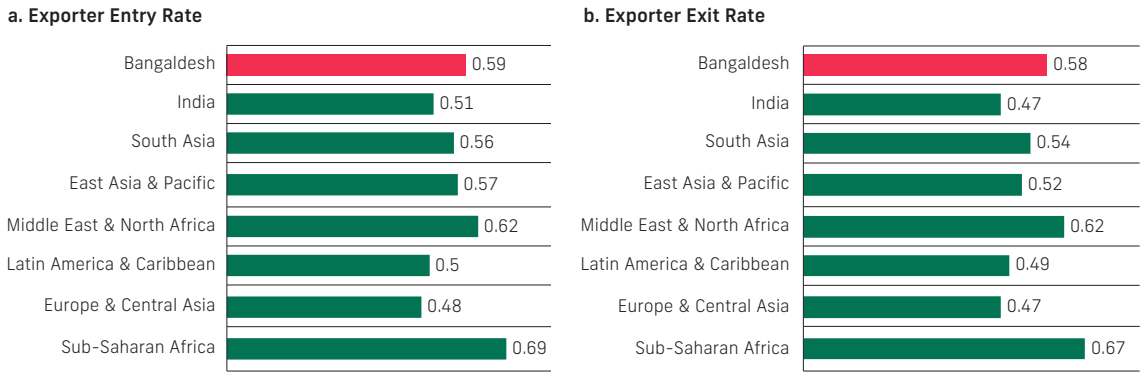
Policies that help exporting firms access imported intermediates will promote exporters' performance. Firm-level data[45] confirm that Bangladesh has fewer exporters than the country's comparators and lacks superstars (figure 3.5). Turnover in export markets is high (figure 3.6), while survival of new entrants is low (figure 3.7). Empirical evidence for Bangladesh, India, and China suggests that access to imported inputs helps promote product scope and the productivity of domestic firms (Kee, Forero, and Fernandes 2021). Such policies include tariff/value-added tax reductions or duty drawbacks on imported materials, improvements in financing, and reduction in credit constraints for small exporting firms. Customs reforms to enhance efficiency at the borders may also encourage firms to rely more on imported inputs that are necessary for them to compete in export markets.

Figure 3.5: Bangladesh's Exporters in a Comparative Perspective, 2000–20



Source: Calculations using Updates to Exporter Dynamics Database (described in Fernandes, Freund, and Pierola 2016).

Figure 3.6: Exporter Entry and Exit Rates in Bangladesh and Comparators, 2000–22



Source: Calculations using Updates to Exporter Dynamics Database (described in Fernandes, Freund, and Pierola 2016).

The report analyzes Bangladeshi export dynamics based on transaction-level customs data for 2005–16. Multivariate models of survival probabilities can provide useful insights into Bangladesh's firm-level export dynamics and the determinants of export survival. Building on Besedes and Prusa (2006) and Brenton et al. (2012), the export survival analysis is based on Kaplan-Meier survival functions and Cox regressions to understand not only the factors driving entry into exporting, but also the processes that sustain new exports and expand export volume (see annex 3B). The analysis

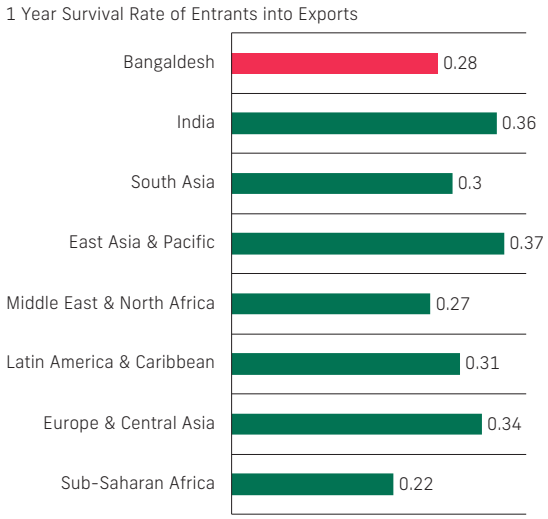
45 Our basic analytical unit is an "export link". This is defined either as an exporting firm, a firm-export-product combination, or a firm-export-product-destination combination. When an export link is defined over a time interval, we also speak of an "export spell". We apply the following definitions to compute entry and exit statistics:

- Entry at time t: an export link that does not exist in year t-1 but exists in year t
- Exit: an export link that exists in year t-1 but does not exist in year t
- Incumbent: an export link that exist in both years t-1 and t
- Re-entry: an export link that reappears after initial failure (reappears at time t, does not exist at time t-1, but existed before t-1)
- New entry: an export link that does not exist before time t but appears in year t
- Temporary exit: an export link that disappears at time t but reappears again
- Failure: an export link that disappears after a first year of exporting and never reappears
- Survivor: an export link that exists at time t and t+1 but did not exist at time t-1
- Export superstar: top 1 percent of exporters.

uses a data set from the National Board of Revenue that contains transaction-level customs export and import data for 2005–16. Access to data for 2016–20 would provide more refined insights into potential policy interventions that affect the survival of exporters or export flows.

GVC participation, research and development (R&D) intensity, and regional linkages matter for export survival[46]**.** The firm-level analysis shows that participation in GVCs increases the probability of survival for exporters. This is true for all types of GVCs[47] (backward, forward, and technology intensive GVCs). As expected, firms that rely on R&D exhibit higher survival rates than companies that do not adopt modern technologies. Finally, firms that import from and export to the same region tend to have longer export spells than exporters without such regional linkages (table 3.1). To increase the export survival of firms, the government needs to facilitate participation in GVCs and adoption of modern technologies, and deepen regional linkages with Asia, Europe and North America.

Figure 3.7: Survival Rates of New Entrants in Bangladesh and Comparators, 2000–20



Source: Calculations using Updates to Exporter Dynamics Database (described in Fernandes, Freund, and Pierola 2016).

Table 3.1: Determinants of Export Survival: Key Results from the Cox Proportional Hazards Model

Group	Specific Variables	+ Increase Exports Survival - Reduce Exports Survival
Spell characteristics	Exports at the beginning of spell	+***
	Number of destinations at the begining of spell	+***
Product characteristics	R&D intensity	+***
Tariffs	Weighted average imports tariff (at firm level)	-***
Firm characteristics	Firm exports to and imports from the same region	+***
	Firm exports to the same region	+
	R&D intensity of exports	+
	R&D intensity of imports	+***
Firm type	GVC (exporter-imnporter)	+***
	Backward GVC	+***
	Forward GVC	+***
	GVC x weighted average import tariff	-***

Source: Dihel and Kukenova 2022., *Note:* GVC = global value chain; R&D = research and development.

Bangladesh's participation in global value chains (GVCs) is mixed. Although Bangladesh seems to be less integrated into GVCs than its comparators in both downstream and upstream economic activities (table 3.2), a more in-depth analysis of the domestic value added of Bangladesh's exports, based on the customs transactions data of the World Bank Exporter Dynamics Database for 2005–16, shows that exports from Bangladesh have high import content (Kee and Forero Rojas 2022). This suggests that Bangladesh is relatively well integrated into selected GVCs, particularly in the textiles/apparel, footwear, and transport sectors.

46 We examine the impact of GVC participation, R&D intensity of imports and regional linkage on exports survival using a Cox Proportional Hazard Model. A Cox Proportional Hazard model is widely used in international trade to analyze long term survival of trade relationships. We rely on highly disaggregated firm level data (export and import) from Bangladeshi custom authorities for the period 2005-2016. A trade relationship is defined as a firm- product-destination triplet, and the duration of a trade relationship is defined as the time (in years) a triplet has been in existence without interruption. In addition to the standard determinants of export survival listed in the table, we include destination, product category and time fixed effects.

47 A GVC is a firm that exports and imports goods. A backward GVC is a firm that imports intermediate goods, raw materials and capital products and exports any goods. A forward GVC is a firm that exports domestic inputs. A technology intensive GVC is a firm that imports intermediate inputs as well as capital machinery imports to account for technology transfer.

Table 3.2: Participation in Global Value Chains by Bangladesh and Comparators

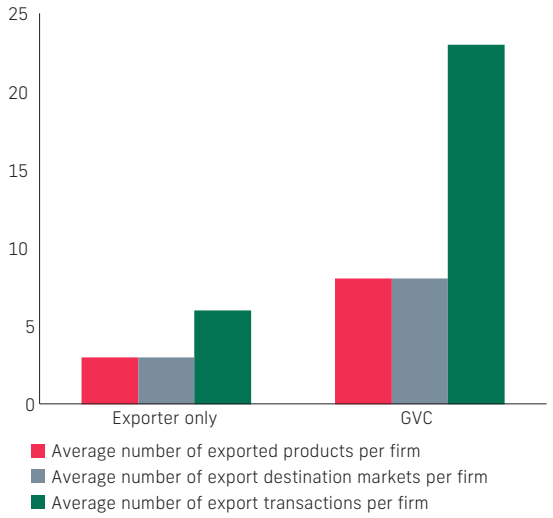
	Trade based (% of gross exports)			Production based (% of domestic value added)		
	2000	2010	2020	2000	2010	2020
Bangladesh	22.2	25.6	24.0	2.5	4.6	1.5
India	30.9	38.6	33.4	6.4	9.7	9.0
Nepal	28.7	31.6	38.3	9.6	3.7	3.8
Pakistan	26.2	28.6	23.3	6.6	6.2	3.5
Cambodia	37.2	38.1	50.0	8.6	10.8	23.3
China	30.8	35.1	32.2	8.2	10.7	7.0
Indonesia	37.1	40.0	35.0	21.5	16.2	10.9
Thailand	43.7	48.7	41.7	19.7	20.1	19.8
Vietnam	36.6	54.5	56.7	19.6	21.7	22.5

Source: ADB 2021.
Note: For the methodology, see ADB (2021)[48].

GVC participants are better exporters.[49] A further assessment of Bangladesh's firm-level customs transactions data reveals that GVC participants perform better than non-GVC exporters in terms of the number of exported products, export transactions, and destination markets (figure 3.8). Participation in value chains provides opportunities to boost growth through adaptive policies, deeper reforms, and expansion of digital infrastructure. By deepening regional and global ties, Bangladesh can improve linkages with GVCs, acquire knowledge, and grow.

The role of trade in services remains largely unexplored. Services account for more than 50 percent of total economic activity and 40 percent of total employment, similar to most comparators (figure 3.9). Except for Singapore, however, services trade relative to GDP is much smaller—at 5 percent for Bangladesh and at less than 20 percent in most countries. By comparison, the ratio of merchandise trade to GDP is significantly higher, a multiple of five or six in many cases. While output and employment have large roles in services relative to goods, including manufacturing, the same is not true of trade. Export activity still tends to skew heavily toward goods, although the measurement of services trade faces numerous challenges (box 3.1).

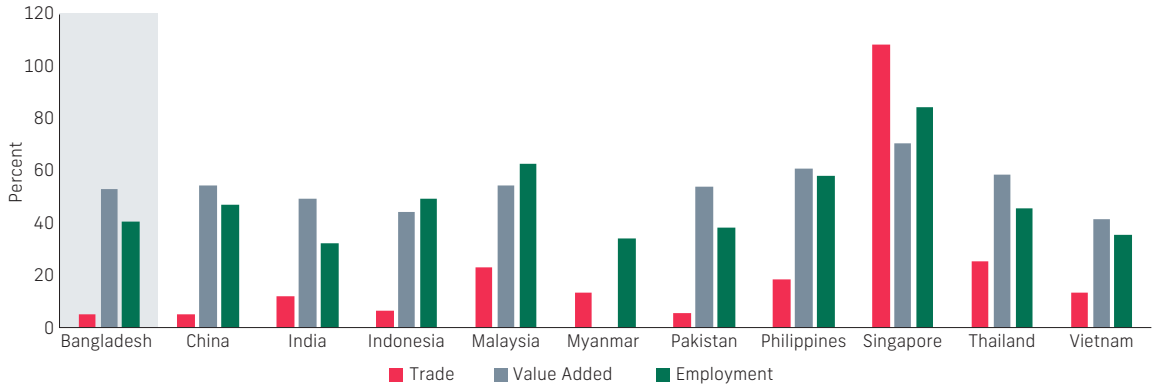
Figure 3.8: Performance of Bangladeshi Exporters and GVC Participants, 2005–16



Source: Bangladesh Customs data, 2005–16.
Note: GVC = global value chain.

48 Gross exports mask several distinct quantities that each provide information on the exporting economy's global value chain (GVC) engagement. Gross exports may be divided into five main categories: (1) DAVAX. Domestic value-added (DVA) exported to, and directly absorbed by, the importer; (2) REX. DVA exported to and re-exported by the importer, to eventually be absorbed abroad; (3) REF. DVA exported to and re-exported by the importer, to eventually be absorbed back home; (4) FVA. Foreign value-added. Imported inputs of goods and services in the overall exports of an economy; and (5) PDC. Pure double-counting. In a GVC, some goods or services may cross the same border on two or more occasions. DAVAX is direct trading, where value-added solely from the exporter is sent to, and absorbed solely by, the importer. The rest involve multiple border crossings before final consumption. Such indirect trading is what is understood in this analysis as GVC participation. The share of indirect trading in gross exports is the trade-based GVC participation rate. Production-based GVC participation rate is computed as the share of DAVAX, REF and REX in domestic value added, and represents the share of domestic value added sent abroad in an unfinished state (ADB, 2021).
49 We define a GVC participant as a firm that imports and exports products in the firm-level customs transaction data.

Figure 3.9: Core Services Indicators, Bangladesh and Selected Asian Countries, 2019



Source: World Development Indicators 2022.

Note: Trade is total services trade relative to gross domestic product (GDP); value added is service sector value added as a percentage of GDP; and employment is service sector employment as a percentage of total employment.

What Explains the Eroding Trade Competitiveness?

The lack of export diversification may be at least partly attributed to the country's protective trade regime. The high level of protection, provided through high tariffs and complex and nontransparent para-tariffs, such as regulatory and supplementary duties, is a key reason for the static export basket. Bangladesh's average tariffs doubled from 14.7 percent without para-tariffs to 28.8 percent with para-tariffs in FY2021 (table 3.3). This high degree of protection has created an enclave for domestic industries, incentivizing them to focus on the domestic market rather than exports, due to relatively higher profitability—and creating an anti-export bias (Kathuria and Rizwan 2020).

Table 3.3: MFN Tariffs and Nominal Protection Rates, FY2021

Industry	Number of tariff lines	MFN tariffs		Nominal protection	
		Average	S.D.	Average	S.D.
Animal (HS 1-5)	675	22.7	6.7	36.5	16.6
Vegetable (HS 6-15)	625	17.2	9.8	25.4	18.9
Foodstuffs (HS 16-24)	242	20.0	9.0	70.8	120.8
Mineral (HS 25-27)	206	9.3	7.1	13.1	15.3
Chemicals (HS 28-38)	1,020	9.5	7.0	11.7	13.6
Plastic and rubber (HS 39-40)	287	14.2	9.3	20.3	19.9
Hides and skins (HS 41-43)	77	11.6	9.2	17.2	18.9
Wood (HS 44-49)	299	14.0	9.5	20.0	21.7
Textiles and clothing (HS 50-63)	833	20.4	7.9	45.6	29.0
Footwear (HS 64-67)	49	25.0	0.0	53.5	27.1
Stone and glass (HS 68-71)	228	16.6	9.2	33.7	33.3
Metals (HS 72-83)	691	13.5	8.4	18.2	14.2
Machinery and electrical equipment (HS 84-85)	1,019	8.6	9.7	12.5	20.4
Transportation (HS 86-89)	524	16.7	9.5	75.0	126.8
Miscellaneous (HS 90-97)	438	12.3	9.9	21.0	32.4
Total	7,213	14.7	9.8	28.8	49.3

Source: Calculations using data from Bangladesh Customs 2022.

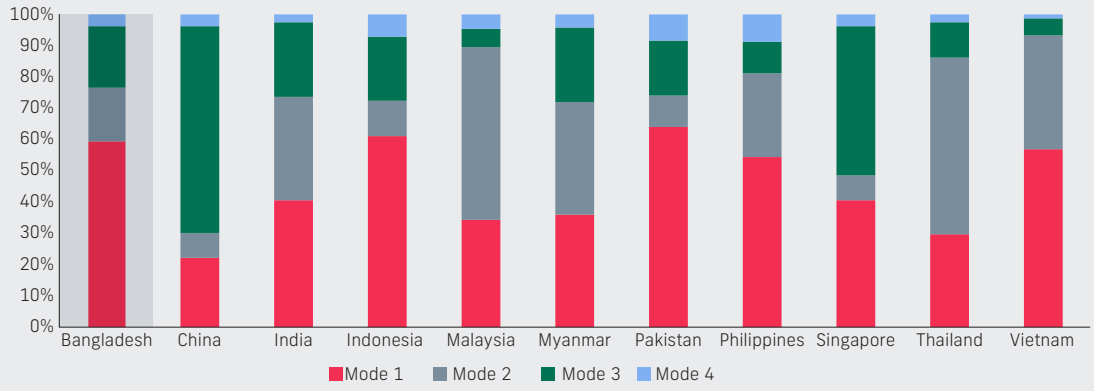
Note: FY = fiscal year; HS = Harmonized System; MFN = most favored nation; S.D. = standard deviation.

Box 3.1: Measuring Trade in Services: Challenges, Recent Developments, and Implications for Bangladesh

The data used to compute trade in services in figure 3.9 were drawn from the balance of payments, but the General Agreement on Trade in Services (GATS) recognizes four modes of supply for international services trade that do not correspond to the statistical concepts in standard balance of payments data. GATS Mode 1 is pure cross-border services trade, for instance when a lawyer in Bangladesh advises a client in India without either party moving. Mode 2 involves movement of the consumer, such as when a Bangladeshi tourist visits Thailand. Mode 3 is sales by foreign affiliates, for instance when a Chinese distributor sets up a subsidiary in Bangladesh and uses it to sell services there. Finally, Mode 4 involves temporary movements by service providers, such as when a Bangladeshi accountant works temporarily in Indonesia and then returns to Bangladesh.

Figure B3.1.1 shows total services exports for the countries of interest in 2017, the latest year for which data are available, broken down by GATS mode of supply. A clear finding is that Mode 1 accounts for no more than 60 percent of total services exports once the calculations account for all modes of supply, while other modes that are only imperfectly captured by the balance of payments are also significant. As a result, the data on trade relative to gross domestic product (GDP) in figure 3.9 tend to understate the true level of services trade.

Figure B3.1.1: Services Exports, by Mode of Supply, Selected Asian Countries, 2017 (percent)



Source: Trade in Services data by mode of supply 2022.

Table B3.1.1 presents dollar figures for total merchandise trade as a point of comparison, then total services trade (the sum of exports and imports) based on Trade in Services data by mode of supply (TISMOS) and the balance of payments. The comparison makes the point clearly that services trade is more widespread than standard data sources would suggest, often substantially so: Bangladesh's services trade in TISMOS is double what is recorded in the balance of payments, with several other countries recording differences of 50 percent or more. Although services trade relative to GDP is still lower than for goods in Bangladesh and all the countries considered here, the difference is less pronounced once the calculation accounts for all modes of supply.

Why does this disjuncture exist between goods and services trade, given the rapid development of information and communications technologies over recent years? An important part of the answer is likely related to trade policy: while tariffs have fallen to historically low levels in goods sectors through successive rounds of World Trade Organization negotiations, as well as regional initiatives, the same is generally not true of services. The GATS, like the General Agreement on Tariffs and Trade, established bindings for most favored nation trade policies in services, but those bindings were for many countries restrictive compared with applied policies when the agreement was signed. Since then, multilateral services negotiations have faltered, with the result that large-scale liberalization has not taken place through multilateral agreements.

(Box continues on next page)

Box 3.1: Measuring Trade in Services: Challenges, Recent Developments, and Implications for Bangladesh (continued)

Table B3.1.1: Total Services Trade from Different Sources, 2017 (US$, billions)

	Goods	Services BOP	Services TISMOS
Bangladesh	88.790	12.382	24.519
China	4003.572	667.784	1957.469
India	762.510	299.913	405.423
Indonesia	320.727	57.142	103.272
Malaysia	414.698	79.780	121.509
Myanmar	33.158	6.705	10.431
Pakistan	78.126	17.799	26.963
Philippines	171.403	61.252	87.232
Singapore	697.547	348.024	659.877
Thailand	461.872	118.588	159.883
Vietnam	420.704	29.660	61.402

Sources: World Development Indicators and TISMOS.
Note: BOP = balance of payments; TISMOS = Trade in Services data by mode of supply.

Source: Shepherd (2020).

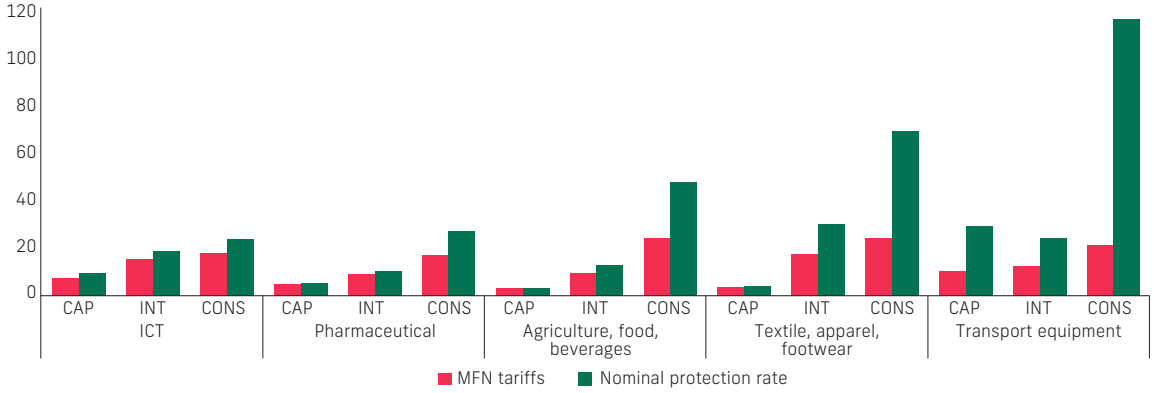
Bangladesh's tariff regime remains complex despite reform efforts in recent years. Bangladesh's tariffs are relatively straightforward in principle, with only six ad valorem tariff rates (0, 1, 5, 10, 15, and 25 percent). Over 95 percent of the tariff lines are ad valorem and therefore transparent. However, additional taxes on imports (10 specific duties) reduce the transparency of the tariff regime and increase the complexity of trade policy. For example, a regulatory duty is charged exclusively on imports—mainly at the rate of 3 percent—and affects about half of the tariff lines. Furthermore, exemptions to the value-added tax and supplementary duty for domestic production (but not for imports) result in additional charges on imports that affect about a quarter of the tariff lines. If these additional import taxes (para-tariffs) are considered, the number of tariff rates in Bangladesh increases from six to 50.

Para-tariff taxes double the average tariff rate and increase tariff dispersion. Ad valorem tariff rates range from zero to 25 percent, with almost 53 percent of the tariff lines subject to rates of 10 percent or less. Rates of 25 percent apply to about 45 percent of the tariff items. The average most favored nation (MFN) tariff of 14.7 percent recorded in FY2021 doubles if all import taxes, such as regulatory or supplementary duties, are considered. The average nominal protection rate on imports is equivalent to 28.8 percent at rates ranging from zero to 668 percent (vehicles with more than 4,000 cylinder capacity). Additional import taxes have a disproportionate effect on nominal protection rates in sectors like transportation, foodstuffs, textiles and clothing, and footwear (table 3.2).

High para-tariffs deepen anti-export bias. Varied levels of protection provided to different industries distort competition by favoring some activities and encouraging production for domestic markets to the detriment of exports. Over time, the difference between tariffs on inputs and outputs has increased, leading to a high degree of protection, mostly for domestically produced consumer goods. Additional import taxes substantially increase tariff escalation in some sectors, like transport equipment and textiles, where average nominal protection for final goods is five and to ten times higher, respectively, than for intermediate goods (figure 3.10). Sector-specific studies at the firm level confirm that this high effective protection provides incentives for import substitution over exports, creating anti-export bias.[50] With the exception of a free trade regime in the RMG sector with a special bonded warehouse facility enabling duty free access

50 A background paper prepared by the Policy Research Institute of Bangladesh "Case Studies of Protection and Export Competitiveness of Selected Industries," estimates the effective protection rate from a survey of 15 leather goods and footwear manufacturers and finds that profitability from domestic sales is 2.5 times higher than that from exports (although the low export prices in the leather sector may also be explained by the lack of access to markets in the European Union and the United States due to nonconformity with industry environmental and social standards).

Figure 3.10: Tariff Escalation by Sector, Fiscal Year 2019/20

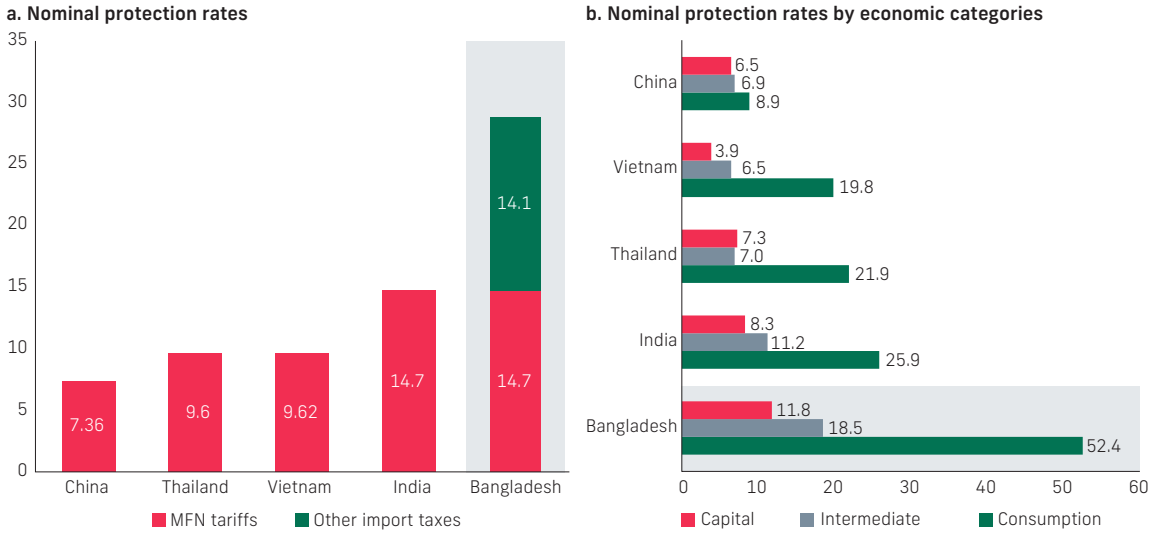


Source: Calculations using data from Bangladesh Customs.
Note: CAP = capital goods; CONS = consumption goods; ICT = information and communications technology; INT = intermediate goods; MFN = most favored nation.

to imported raw materials and components, the trade policy stance perpetuates a high degree of protection of domestic (import substituting) industries at the expense of emerging and potential export industries.

Average tariffs in Bangladesh are higher than its comparators. The average tariff rate on intermediate goods in Bangladesh is 18.8 percent, which is more than double the rate in China (7.4 percent) and almost double the rate in Thailand and Vietnam (9.6 percent) but closer to the rate in India (14.7 percent). MFN tariffs would need to be cut by almost 50 percent (from 14.7 percent to 9.6 percent) and all other import taxes eliminated (14.1 percent to zero) for Bangladesh to reach similar levels of taxation on intermediate goods as those prevalent in East Asian comparators. Additionally, with an almost 30 percentage point difference in tariffs (including other import taxes) for consumer and intermediate goods, Bangladesh shows the highest tariff escalation among the comparators by a wide margin (figure 3.11). The export dynamics analysis clearly highlights how such high protection levels reduce the export survival probabilities of exporters and GVC participants. The effect is more pronounced for GVC firms than for non-GVCs, negating the positive impact of participation in GVCs on the probability of survival for exporters (Table 3.1).

Figure 3.11: Bangladesh's Tariffs in Comparative Perspective, 2021



Sources: Calculations using data from Bangladesh Customs and WTO 2022.
Note: MFN = most favored nation; Other import taxes include regulatory and supplementary duties.

Competitiveness will erode further with expected graduation from least developed country (LDC) status in 2026. LDC graduation will trigger a three-year transition period after which Bangladesh will graduate from the Everything but Arms initiative and face changes in its preferential market access to the European Union and the United Kingdom, including changes in the rules of origin for apparel exports. Bangladesh is currently negotiating with the European Union on a special incentive arrangement for sustainable development and good governance (Generalized Scheme of Preferences Plus (GSP+)), which will allow the country to retain generous tariff preferences to access the EU market conditional on committing to strong sustainability standards.[51] Bangladesh will face changes related to LDC graduation in additional markets such as Canada, Japan, and China (table 3.4).

Table 3.4: Bangladesh's LDC Graduation

Country	LDC tariffs	Graduation tariffs	LDC ROOs	Graduation ROOs
European Union	EBA, duty free for all products except arms	Standard GSP, possibly GSP+	70% value-added can be imported Single transformation for apparel	50% value-added can be imported Double transformation for apparel
United States	GSP+, no preferences currently apply due to suspension in 2013	Standard GSP	35% domestic content requirement + other LDCs	35% domestic content requirement only
Canada	LDC GSP, duty free for all products except dairy, poultry, and egg products	Standard GSP	60% value-added can be imported	40% value-added can be imported
Japan	Special preferential treatment for LDCs	Standard GSP	No specific rules of origin	No specific rules of origin
China	LDC GSP, duty free for 61% of tariff lines	APTA or MFN	Specific criteria for substantial transformation	N.A.

Source: World Bank.

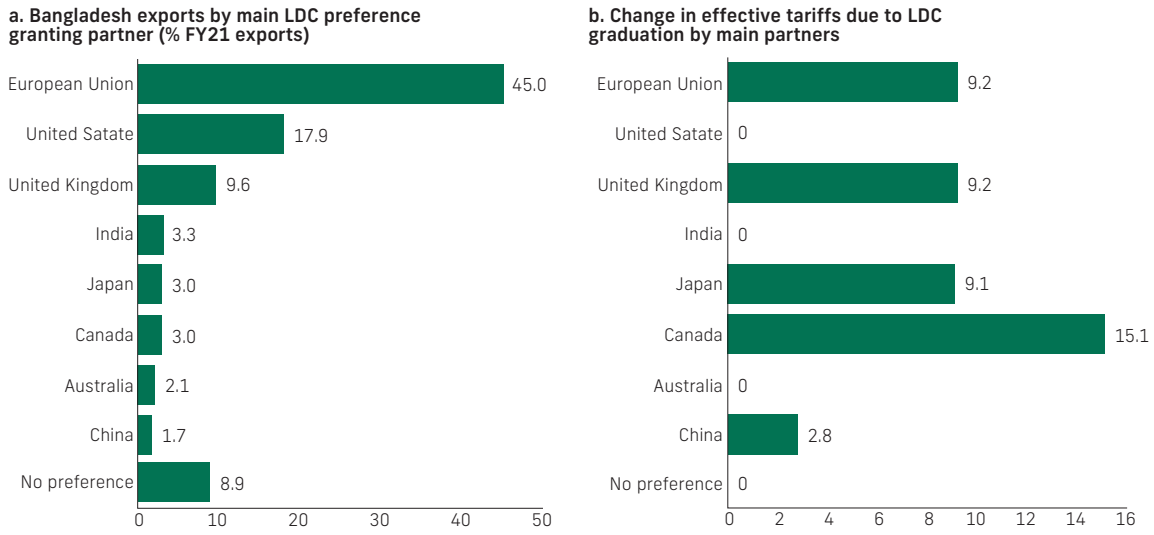
Note: APTA = Asia-Pacific Trade Agreement; EBA = Everything but Arms; GSP = Generalized System of Preferences; LDC = least developed country; MFN = most favored nation; N.A. = not available; ROOs = rules of origin.

The LDC graduation will trigger different changes depending on the destination market. In the European Union, the main destination market, Bangladesh will face a tariff increase of about 10 percent for most clothing products if it moves from Everything but Arms to GSP preferences. However, under the new GSP+ scheme, the tariffs are expected to remain largely unchanged. Graduation will not lead to a tariff increase in the United States, since Bangladesh is currently not eligible for preferences and already exports under the MFN regime. The shift to the Canadian GSP will entail substantial tariff increases—between 16 and 18 percent for 10 of the top 12 export products. Tariff increases in the Japanese market will be around 8 to 11 percent. Bangladesh will continue to benefit from preferential market access in China under the Asia-Pacific Trade Agreement (APTA) (figure 3.12).

The LDC graduation impacts on exports could be significant. Simulations project that exports from Bangladesh are expected to be substantially impacted by the phasing-out of preferences. According to the World Trade Organization (WTO), total exports are projected to fall by US$5.37 billion or 14.3 percent of initial exports. Most of the reduction is expected in exports to the European Union, a fall of US$5.3 billion or 26.3 percent of initial exports. However, under the new GSP+ scheme, the losses are expected to be minimal. As a share of initial exports, exports to Canada (42.8 percent), Japan (32.3 percent), and the Republic of Korea (32.3 percent) are also significantly affected. The bulk of the reduction in exports is projected to take place in clothing (WTO 2020).

51 On September 22, 2021, the European Commission adopted the legislative proposal for the new EU Generalized Scheme of Preferences (GSP) for 2024–34. The Commission is proposing to improve some of the key features of the scheme to respond to the evolving needs and challenges of GSP countries as well as reinforce the scheme's social, labor, environmental, and climate dimensions. The new proposal further improves the current scheme by ensuring a smooth transition for all countries set to graduate from LDC status in the next decade. They will be able to apply for GSP+ if they commit to strong sustainability standards related to human rights, labor rights, protection of the environment and climate, and good governance to strengthen enforcement and make withdrawal and suspensions easier.

Figure 3.12: Bangladesh's Exports and Changes in Tariffs, by Main LDC Preference Granting Partner



Sources: Panel a: Export Promotion Bureau 2022; panel b: WTO 2020.
Note: LDC = least developed country.

A protective tariff regime increases the export challenges. Even if tariff preference losses in the European Union are minimal, Bangladesh needs to make a gradual strategic shift from reliance on export subsidies and trade taxes, with trade facilitation taking on a central role in a future customs administration. Additionally, adjusting tariff policies may help Bangladesh respond to the medium- and long-term impact of COVID-19 while embarking on an export-led growth strategy as an upper middle-income country.

Non-tariff barriers (NTBs) are even stronger. Although tariffs remain important obstacles to regional integration, the restrictiveness of NTBs, at an average interregional ad valorem equivalent close to 200 percent, towers over that of tariffs (figure 3.13, panel a). Non-tariff measures (NTMs) cover a wide range of measures, such as sanitary and phytosanitary (SPS) requirements, technical barriers to trade, pre-shipment inspection, nonautomatic licensing requirements, and price control measures. While some NTMs are justified and aim to protect human health and safety or plant or animal life, there are many that are a significant deterrent to trade and an impediment to firms' competitiveness (see box 3.2 for examples of SPS challenges in Bangladesh).

Inefficiencies in border processes, red tape, and high trade and logistics costs discourage trade further. Border and documentary compliance requirements lead to major delays for exporting firms in Bangladesh and, at a total of more than 300 hours required to comply, such delays are among the highest in South Asia. Conversely, the implementation of Bangladesh's commitments under the WTO Trade Facilitation Agreement has been lagging and stands at about 36 percent, which in turn shows up in Bangladesh's performance on trade facilitation indicators, which are, for instance, only half those of India (figure 3.13, panels b and c).

Significant barriers hamper trade in services. Ad valorem equivalents (AVEs) of services barriers are high relative to tariff rates for goods, in excess of 10 percent in all cases, including Bangladesh, and as high as 70 percent in some sectors in most of the comparators (figure 3.14). The AVEs were quantified using machine learning techniques and a gravity model estimation (annex 3A). AVEs are highest in the telecom sector, at 52 percent on average. In the other sectors, the averages are lower: 18 percent in finance, 22 percent in transport, and 26 percent in distribution. Among the examined countries, Bangladesh, Malaysia, Pakistan, Singapore, Thailand, and Vietnam have less restrictive policies. The main horizontal restrictions in Bangladesh are visa processing restrictions. Bangladesh also has policy restrictions related to land acquisition and some data transfer restrictions.

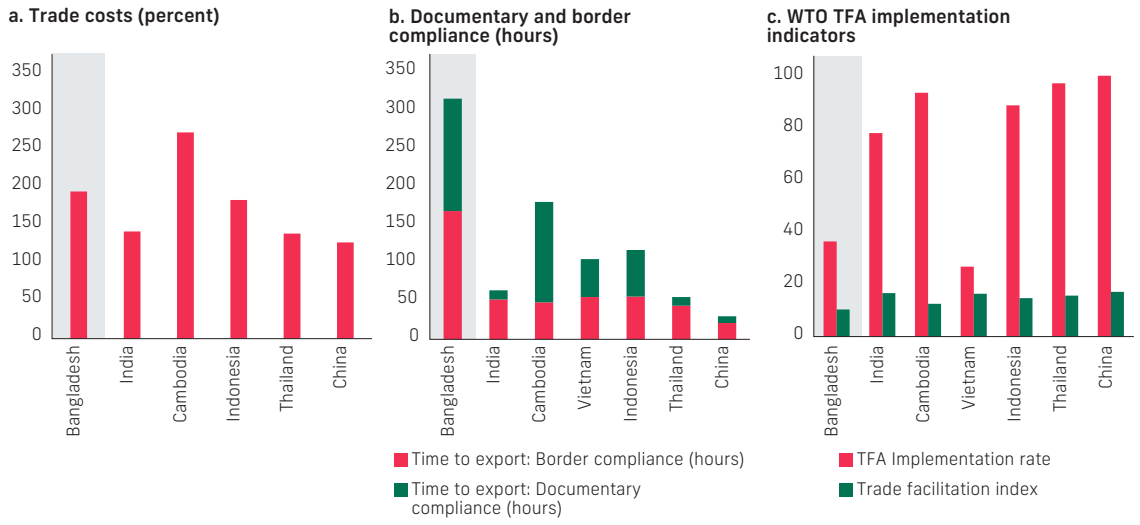
Box 3.2: Sanitary and Phytosanitary Challenges and Solutions: Examples from Bangladesh

In some cases, countries implement non-tariff measures as protectionist measures restricting trade. More often the procedures related to both protectionist and legitimate sanitary and phytosanitary (SPS) measures and the application of the measures are the real impediments to trade. In many cases, geographical access to certification services, lack of capacity to provide required services, or inefficient, redundant, or duplicative procedures and processes hamper trade, increasing time and costs and particularly impacting perishable agricultural products.

Bangladesh relies on many different government agencies to address SPS issues. Lack of coordination among agencies has been identified as a challenge and contributes to customs and border inefficiencies. Evaluations of Bangladesh's SPS capacity have led to training programs, advice, and technical assistance from countries and international aid agencies. SPS capacity reviews (Suman et al. 2021) highlight deficiencies, including lack of risk management and risk assessment expertise, inadequately trained personnel, poor communication with producers, inadequate equipment and training for analytical technicians, and outdated SPS policies and regulations. Opportunities for improvements in SPS-related infrastructure have been suggested, including private sector accredited laboratories, review of mandatory standards, and use of trade facilitation tools such as harmonization, equivalence, and mutual recognition, particularly with India (Kathuria and Malouche 2016).

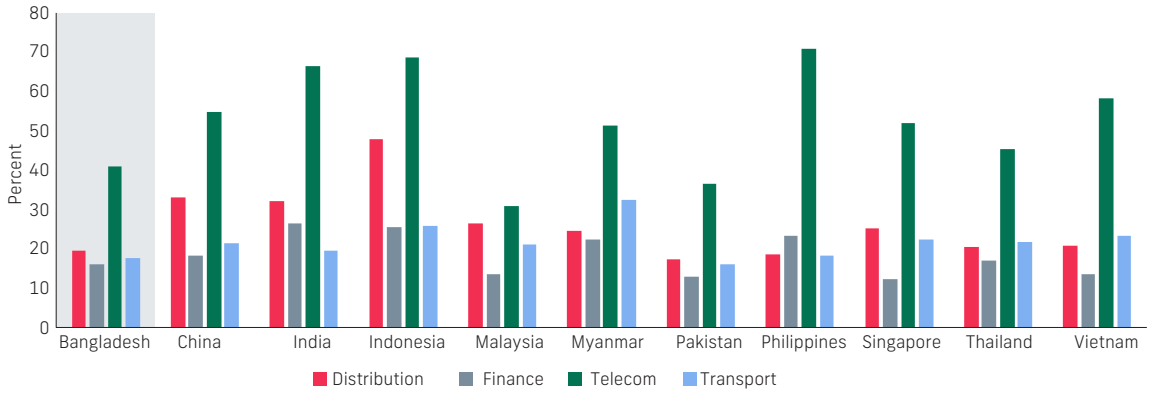
Bangladesh has taken steps to respond to SPS trade constraints. Following EU bans on fishery products, hazard analysis and critical control points management of prawn processing was implemented, and accredited testing laboratories were established to ensure that the products could meet EU SPS standards (Naureen et al. 2006). Advancements have been documented; a US report states that "Bangladesh is a role model of acceptance and advancement of modern agricultural biotechnology" (Hossain 2020). Improvements in the laboratory system in Bangladesh have resulted from internal evaluations (Hossain 2020) and evaluations by external agencies. A Purdue University assessment of the food safety system in Bangladesh notes that although shrimp processing is a well-developed export-oriented sector, there were limitations in lab accreditation for some testing parameters and underutilization of testing equipment due to shortages in human resources and lack of leadership (Suman et al. 2021). The prawn experience in Bangladesh has demonstrated that making the necessary changes to meet stringent SPS requirements results in net economic gain (Yunus 2009).

Figure 3.13: Trade Facilitation Commitments and Indicators



Sources: World Bank; World Bank–UNESCAP trade costs database.
Note: TFA = Trade Facilitation Agreement; WTO = World Trade Organization.

Figure 3.14: Ad Valorem Tariff Equivalents of the Services Trade Policies Index, Selected Asian Countries (percent)



Source: Estimates using on data from Hoekman and Shepherd 2021.

Note: The ad valorem tariff equivalent is the equivalent ad valorem tariff that would restrict trade to the same degree as the bundle of regulatory measures captured by the Services Trade Restrictiveness Index. The figure combines estimates for horizontal measures with sector-specific ones, which are numerous in the database and so cannot be presented individually.

Greening trade in Bangladesh. Tariff and non-tariff barriers to trade, lack of environmental goods and services friendly customs arrangement and quality assurance services are obstructing progress on the greening agenda on trade. The latter could be given added momentum through deep trade agreements with environmental provisions. A case study on key constraints ranging from tariffs to NTBs, border processes and regulatory hurdles affecting environmental goods and services[52] is provided in Box 3.3. It is based on a broader analysis on trade and climate change and opportunities to trade green as part of an export diversification strategy in Bangladesh.

Expected Impact of Trade Policy Reforms in Bangladesh

Modernizing Bangladesh's Tariff Regime

There is significant room for improvement in Bangladesh's tariff regime. A high degree of protection to domestically produced consumer and intermediate goods has created an imbalance of incentives in favor of production for domestic markets over exports. Tariff reforms need to consider tariffs on both inputs and outputs. Reducing tariffs on industrial inputs while maintaining high tariffs on final industrial products would increase the levels of effective protection of final goods and reduce the incentives toward exporting relative to producing for the domestic market.

The report ran several tariff modernization scenarios. To provide guidance on possible tariff reforms, simulations were run on various tariff adjustments on imports of outputs and inputs to the levels of selected comparators (China, India, and Vietnam) as well as strategic tariff adjustments of customs duties and para-tariffs, in line with the tariff profile formulated in Bangladesh Vision 2041. Table 3.5 summarizes the simulation scenarios.

52 To date, there is no single list defining *environmental goods*, which has hindered trade liberalization as countries have struggled to agree on a list. The combined WTO list, consisting of 411 HS products, is a mixture of several rounds of submissions by WTO Members between 2002 and 2005. In addition to the combined WTO list, there is also the OECD list of 132 individual products at HS-6 digits and the APEC list with 54 individual products. Both lists capture different aspects of trade in environmental goods. The OECD list helps us estimate the size of the environmental industry, which is broadly categorized as (1) pollution management, (2) clean technologies and products, and (3) resource management. The APEC list gives us a more accurate idea of trade in EGs, since it is the list that most countries have liberalized trade and accepted. Nevertheless, none of these lists are part of the lists proposed at the WTO, but they remain building blocks for the ongoing negotiations at the WTO. *Environmental services* are often provided in conjunction with environmental goods, as the provision of these services is often based on the use of related goods. The market for environmental services is mainly focused on infrastructure environmental services (e.g., generation of energy from renewable sources, water and wastewater treatment, wastewater management and treatment, sewage disposal and related services, and waste collection and disposal, etc.) and non-infrastructural environmental services (e.g., hazardous waste/particle management, air pollution prevention and abatement, noise abatement, remediation of contaminated sites, heat/energy conservation, etc.). The services include installation, maintenance and monitoring in accordance with the warranty for the environmental goods supplied and the service contract. Part of the ES are provided domestically, while other require engineers and technicians from aboard.

Box 3.3: Barriers to Greener Trade in Bangladesh

There are opaque and complex tariff and non-tariff barriers to trade in environmental goods and services. The barriers are not limited to tariffs and duties, but also include customs and border procedures, valuation, licensing, banking, certification, and standards that restrict trade. The private sector in Bangladesh reports that many tariff and non-tariff barriers make trade in environmental goods and services difficult by driving up costs, causing delays, and hindering companies' ability to operate in the sector. Barriers also make it difficult for new environmental goods and services importers and service providers to enter the sector. The following are the key barriers.

First, there are tariff peaks for parts and components related to environmental goods and some have been reintroduced recently. Although Bangladesh's tariffs on some environmental goods are generally negligible, there are important exceptions, as exemplified by high tariffs on parts used to maintain and repair solar panels, electrical transformers, and even photosensitive semiconductors. Such tariffs tend to be more expensive than the revenue they generate and should therefore be reduced to zero. Of even greater concern is that the government has reintroduced some tariffs on parts and components related to environmental goods, such as inverters, with an increase from 11.0 to 37.5 percent in 2021. The reimposition of full tariffs on inverters is hitting Bangladesh's renewable energy sector and driving up the cost of implementing the country's renewable energy targets.

Second, lack of deep trade agreements, including the absence of environmental provisions and trade facilitation measures in Bangladesh's trade agreements, is a major trade barrier. Unlike its peers, Bangladesh has only one free trade agreement (FTA), which also lacks environmental provisions and is rather shallow. Looking at the depth of the FTAs of its comparator countries, such as India, Vietnam, Indonesia, and Malaysia, they are all well integrated in regional trade and have signed deep FTAs , some of which include environmental, energy, and trade facilitation provisions. Malaysia has six FTAs covering environmental provisions, while Indonesia and Vietnam have three FTAs each.

Third, the lack of specific customs measures for environmental goods and misclassification increase trade costs and reduce incentives for the private sector to shift to greener production and exports. The lack of specific procedures for environmental goods at the border prolongs inspections and increases the risk of misclassification, resulting in higher costs for the private sector.

Fourth, the lack of quality assurance services, especially testing facilities, is a major problem for the solar sector. Although the Bangladesh Standards and Testing Institution (BSTI) standards for the solar sector are aligned with international standards and will be reviewed under the 2021–24 import policy, the lack of accredited testing facilities is a major problem for imports and exports. By contrast, some regional peers, such as Vietnam, have comprehensive quality assurance services covering several sectors and regions, which has helped improve trade in environmental goods and services. To date, none of the BSTI-owned testing laboratories has international accreditation, which prevents Bangladesh from building its industrial capacity to join regional value chains in the production of environmental goods and increasing its exports.

Finally, a weak market for environmental services limits the potential of importing environmental technologies. As a net importer of environmental goods, Bangladesh is also highly dependent on importing environmental services associated with the use of environmental goods. Environmental services are often provided in conjunction with environmental goods, as the provision of these services is often based on the use of related goods. The lack of quality environmental services is forcing the private sector to opt for more energy-intensive means and methods of production.

Source: Stojanov (2022).

Table 3.5: Tariff Modernization Scenarios

1. Scenarios to adjust tariffs to the levels of selected comparators	
1.1	Set CD to minimum CD of India, China, Vietnam
1.2	Set CD to India levels (only if India CD is lower)
1.3	Set CD to China levels (only if China CD is lower)
1.4	Set CD to Vietnam levels (only if Vietnam CD is lower)
Scenarios to inform national tariff policy adjustment consistent with Bangladesh's Vision 2021–41	
2.1 Reduce CD from 25 to 17.5 percent	
2.2	Reduce CD from 25 to 17.5; remove RD and reduce SD to 20 percent (except autos and demerit goods)
2.3	25 percent cut in CD to compensate for hypothetical currency depreciation

Source: World Bank.
Note: CD = customs duty; RD = regulatory duty; SD = supplementary duty.

The simulation scenarios were carried out using the World Bank Tariff Reform Impact Simulation Tool (TRIST). TRIST is a partial equilibrium spreadsheet tool that can be used to analyze the adjustment implications of trade reform. The tool provides estimates of the impacts of changes in tariffs on government revenues, imports, protection, and prices. It uses detailed data on actual revenues collected from trade, including all taxes levied on trade, not just tariffs, and so shows the change in trade tax revenues, which is more relevant than the change in tariff revenues alone. The objective of the model is to assist policy makers in assessing the fiscal implications of tariff modernization and identifying issues related to adjustment to trade reform (Brenton et al. 2009). A more sophisticated economywide model is used in the next step to provide an assessment of whether a particular policy change is beneficial.

Concerns over revenue loss are legitimate. Reductions of customs duties and other taxes to the level of other middle-income countries, such as China, India, or Vietnam, result in significantly higher tariff revenue losses of between 18 and 41.2 percent. The changes in imports remain smaller in all cases (table 3.6). Although the import changes seem small, the overall impact of the tariff rationalization needs to consider broader effects such as increased export survival and participation in GVCs (see table 3.1) as well as the economy-wide gains discussed in the next section (see figures 3.20 and 3.21). To foster a globally competitive export industry, Bangladesh needs to remove the anti-export bias present in its tariff regime. Scaling down tariffs along with rationalization would be an appropriate strategy to pursue. Bangladesh should initiate a process of gradual reduction of para-tariffs, with the goal of eventually eliminating them. However, as Bangladesh remains overly reliant on trade taxes, the possible loss of revenue may be a concern in contemplating tariff rationalization.

Higher revenue from other taxes could support rationalizing existing tariffs and para-tariffs (Bangladesh Public Expenditure Review 2022). As envisioned in the 8th Five-Year Plan, the current VAT law should be aligned with the original version that had single VAT rate. Unjustified exceptions and truncated VAT rates could be removed. The reliance should shift from indirect to direct tax taxes. The new direct tax laws should be finalized quickly, in line with internationally accepted good practices. A tax structure more aligned with its competitors, coupled with an improved business climate, can gradually reduce the necessity of maintaining large tax expenditures to attract investment. A modern tax administration characterized by greater integration, technical capabilities, and automation can expedite the domestic resource mobilization efforts. It needs to move away from the existing system that is largely manual and characterized by high levels of discretion.

Estimating Potential Gains from Services Trade Liberalization in Bangladesh

The cost of restrictive services policies is much higher than the applied rates of tariff protection in goods. Bangladesh's gains from preferential liberalization with South Asia and Southeast Asia would dwarf the gains from a modest multilateral liberalization because of the strong impact exerted by the change in regional policies, starting from a baseline of very low integration. Using a structural gravity model to estimate the gains from a policy reform involving Bangladesh and selected South Asian and Southeast Asian countries (annex 3C), simulations were run of a reduction of the selected Asian countries' Services Policy Index scores by 10 percent on a multilateral basis, with all other countries maintaining their baseline policies. This simulation is equivalent to coordinated unilateral liberalization among the

Table 3.6: Tariff Modernization Scenario Results

IMPACTS	SCENARIOS						
	1.1 MIN	1.2 India	1.3 China	1.4 Vietnam	2.1 CD 25% to 22.5%	2.2 CD 25% to 22.5%, SD cap 20%	2.3 25% cut CD
Impact on imports							
Imports pre	4,668,160	4,668,160	4,668,160	4,668,160	4,668,160	4,668,160	4,668,160
Imports post	4,863,123	4,727,998	4,826,210	4,794,115	4,678,499	4,699,105	4,755,687
Change in imports	194,963	59,838	158,050	125,955	10,339	30,945	87,528
Change in imports (%)	4.2	1.3	3.4	2.7	0.2	0.7	1.9
Impact on tariff revenue							
Tariff revenue pre	252,174	252,174	252,174	252,174	252,174	252,174	252,174
Tariff revenue post	115,652	206,754	148,380	153,898	245,146	248,688	198,428
Change in tariff revenue	-136,522	-45,420	-103,794	-98,276	-7,028	-3,487	-53,746
Change in tariff revenue (%)	-54.1	-18.0	-41.2	-39.0	-2.8	-1.4	-21.3
Impact on total tax revenues on imports							
Import tax revenue pre	980,234	980,234	980,234	980,234	980,234	980,234	980,234
Import tax revenue post	860,827	940,757	891,907	890,398	974,852	962,680	936,392
Change in import tax revenue	-119,407	-39,477	-88,327	-89,835	-5,381	-17,554	-43,842
Change in import tax revenue (%)	-12.2	-4.0	-9.0	-9.2	-0.5	-1.8	-4.5

Sources: World Bank calculations with TRIST using data from Bangladesh Customs.
Note: TRIST = Tariff Reform Impact Simulation Tool.

South Asian and Southeast Asian countries. An additional simulation assumes that the countries also sign a complete network of preferential trade agreements among themselves but keep their multilateral Services Policy Index scores constant. It therefore equates to a preferential liberalization scenario, whereby the countries under study liberalize their services policies only vis-à-vis each other, through a network of regional agreements. The scenario accounts for the preferential liberalization that has already taken place in this country group, including through Association of Southeast Asian Nations (ASEAN) agreements with its partners. In terms of scale, the effects of policy liberalization are largest in the telecom sector: multilateral liberalization has an average services export gain of 12.6 percent. Next come exports of financial (5.5 percent), distribution (3.6 percent), and transport services (3.0 percent).

It is striking that for Bangladesh the gains from preferential liberalization are huge relative to the other changes recorded in the figures for distribution, finance, and transport (figures 3.15 to 3.18 show the results from these simulations, expressed as counterfactual percentage changes in exports relative to the model baseline). The reason for this result is that the complete network of trade agreements considered in the preferential liberalization scenario includes preferential liberalization between Bangladesh and Asian countries such as India, the regional neighbor with a large internal market. It is important to keep this result in context. It is not observed in general for other countries, where the gains from both scenarios are smaller, but the changes in exports due to multilateral liberalization are typically stronger than from further preferential integration. Of course, the other countries in the group already have a relatively dense network of regional agreements among themselves, which means that the preferential scenario does not involve large-scale additional liberalization.

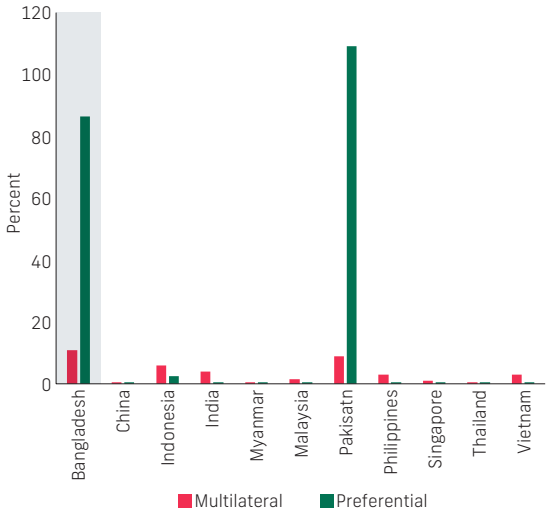
The analysis undertaken here shows that liberalizing services policies between Bangladesh and South Asian and Southeast Asian countries can help boost the services economy. But as noted in the first section of this chapter, there is more to international trade in services than is captured in standard data from the balance of payments, which are used for the simulations here. The simulations do not account for trade under the General Agreement on Trade in Services Mode 3 (sales by foreign affiliates), and they only capture the other modes of supply imperfectly. The figures reported should therefore be considered as lower bounds of the likely true effects of policy liberalization. Another limitation is

that the models used are single sector, so they do not capture the input-output relationships at the core of the concept of embodied services trade. As such, regional integration of services markets can promote greater sourcing of services inputs from abroad in other sectors, including manufacturing, with consequent trade and income gains. This dynamic is important and again suggests that the figures produced by the simulations are on the low end.

Trade policy formulation needs to deal with the goods and services markets together. Taking the simulation results set against these limitations highlights the importance of moving forward on services policy reforms in Bangladesh. This point is all the more salient in light of the COVID-19 pandemic, which has had major implications for services activities, in particular those requiring international travel or personal interactions. As such, policy makers will be called upon to pay renewed attention to measures that can help support services production, trade, and employment, following the severe shocks to which they have been subjected over the past year.

Figure 3.15: Export Impacts of Multilateral and Preferential Liberalization: Distribution Services

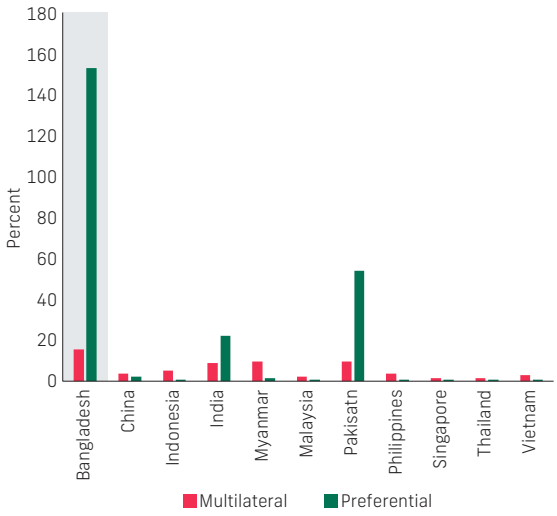
(percent over baseline)



Source: Calculations based on Hoekman and Shepherd 2021.

Figure 3.16: Export Impacts of Multilateral and Preferential Liberalization: Financial Services

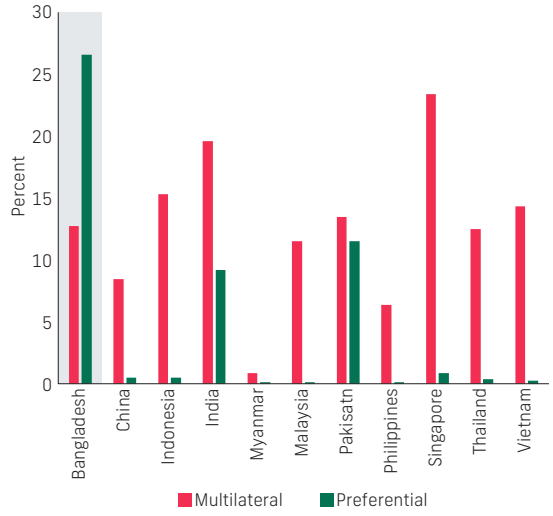
(percent over baseline)



Source: Calculations based on Hoekman and Shepherd 2021.

Figure 3.17: Export Impacts of Multilateral and Preferential Liberalization: Telecom Services

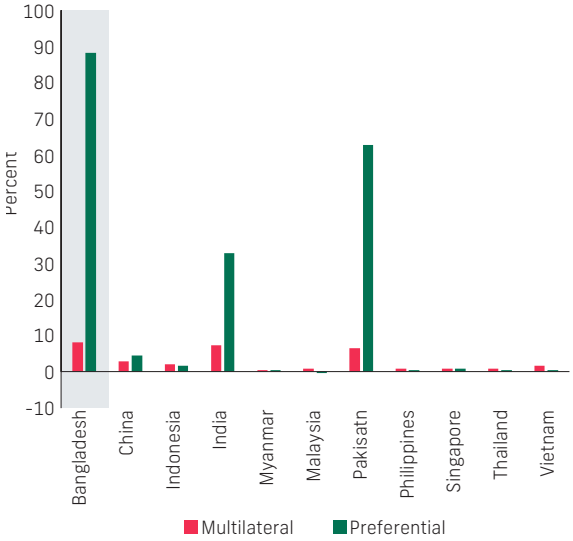
(percent over baseline)



Source: Calculations based on Hoekman and Shepherd 2021.

Figure 3.18: Export Impacts of Multilateral and Preferential Liberalization: Transport Services

(percent over baseline)



Sources: Shepherd 2021, based on Hoekman and Shepherd 2021.

Economywide Impacts of Trade Reforms in Bangladesh

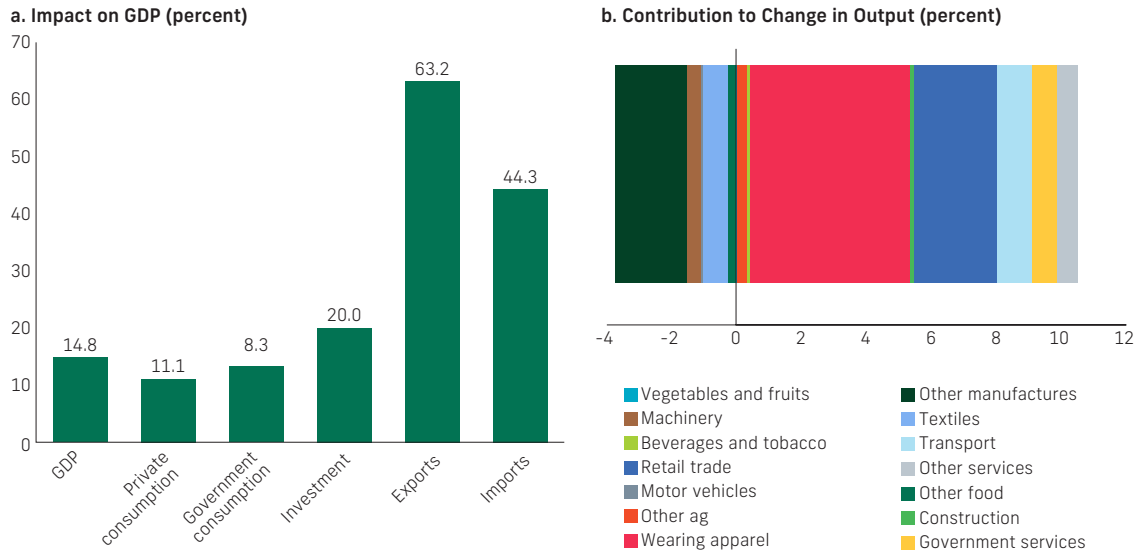
The scenarios aim to highlight the impact of alternative trade reforms, considering a progressively more ambitious reform of trade and investment barriers through unilateral, bilateral, regional, and multilateral integration. The analysis is based on the outcomes of 10 simulation scenarios relative to the business-as-usual baseline using a computable general equilibrium model. The first scenario estimates the impacts of unilateral liberalization of trade and investment barriers in Bangladesh. The two subsequent scenarios aim to estimate the impact of two potential bilateral preferential trade agreements, namely, between Bangladesh and the European Union and Bangladesh and India. The following four scenarios capture the impacts of Bangladesh's integration with South Asian and Southeast Asian countries through a set of reforms, starting with the reduction of intraregional tariffs, then complemented with the liberalization of NTMs, improvements in trade facilitation, and liberalization of barriers to foreign direct investment (FDI). The next three scenarios aim to estimate the impacts of integration in a multilateral context and assume sustained and prolonged trade tensions between the United States and China, an "open regionalism" scenario, and a non-integration scenario (see annex 3D for details).

The model underlying the simulations is the Global Trade Analysis Project (GTAP) FDI model—a multi-region, multi-sector, and multi-factor computable general equilibrium model (Lakatos and Fukui 2014; Hertel 1997). The model is calibrated using the GTAP 11 database representing the global economy in 2017 (Aguiar et al. 2019) and endogenously updated to 2021 to capture the latest macroeconomic developments. To capture the FDI and multinational linkages of the GTAP-FDI model, the GTAP database has been complemented with an explicit breakdown of FDI stocks and cross-border operations of multinational companies. The model is ideal for measuring the impacts of policies that have wide-ranging effects as it takes into consideration general equilibrium linkages. These include interactions between consumers, producers, and governments; inter- and intra-industry links; interactions between domestic and foreign markets; investment decisions; and resource constraints (see annex 3E for details).

Comprehensive Unilateral Liberalization

The gains from unilateral liberalization of barriers to trade and investment are substantive. Unilateral trade and investment liberalization could boost Bangladesh's GDP, investment, and exports by 14.8, 20, and 63.2 percent, respectively (figure 3.19, panel a). While such unilateral reforms would not translate into improvements in market access for Bangladesh's exports, there are important gains from the associated reduction in trade costs and access to cheaper and better-quality imported inputs, which in turn boost domestic firms' competitiveness, output, and exports. Such reforms would benefit domestic industries such as wearing apparel, retail trade, and transportation services, accounting for most of the expansion in output (figure 3.19, panel b).

Figure 3.19: Impacts of Unilateral Liberalization



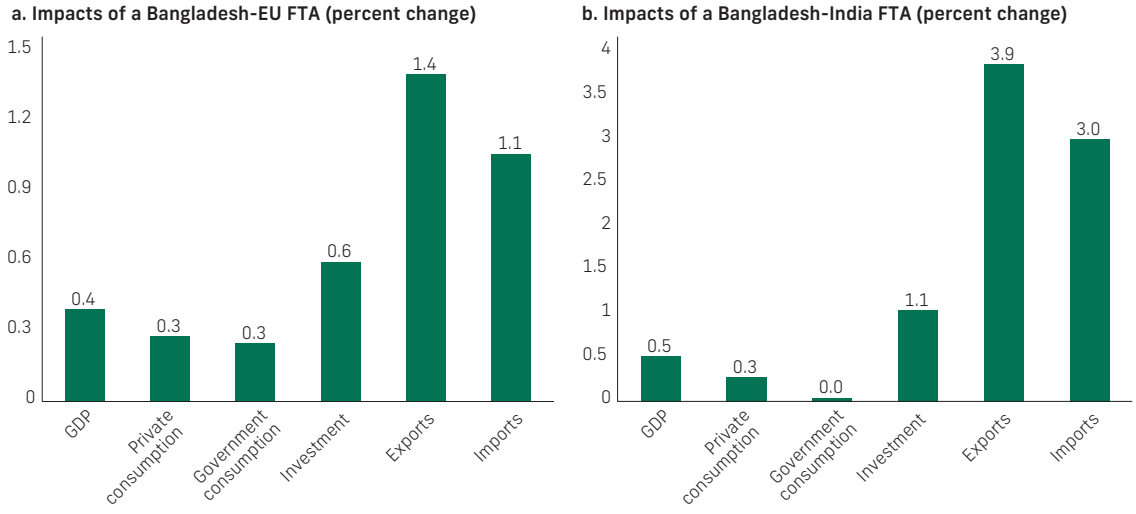
Source: World Bank simulations.

Note: The results reflect the medium- to long-term effects of policy changes on gross domestic product (GDP), private consumption (C), government consumption (G), investment (I), exports (X), and imports (M) expressed in constant 2021 terms relative to the baseline.

Bilateral Integration with India and the European Union

Deep and comprehensive trade agreements with the European Union and India could boost Bangladesh's GDP by 0.4 and 0.5 percent, respectively, and exports by 1.4 and 3.9 percent, respectively (figure 3.20). Pursuing bilateral integration through trade reforms such as the liberalization of tariffs, NTBs, trade facilitation, and FDI would enable improved access to these important markets for Bangladesh. It would also boost domestic firms' competitiveness, output, and exports by reducing the costs of imported inputs. In terms of exports, the impact of a preferential trade agreement between Bangladesh and India is estimated to be higher, with export gains more than double the benefits of an agreement with the European Union. This is partially due to existing preferences on exports to EU markets. With a few sectoral exceptions, the bilateral agreements are shown to boost exports nearly across the board and contribute to diversification into higher value-added manufacturing and service sectors.

Figure 3.20: Bilateral Integration



Sources: World Bank simulations; World Bank–UNESCAP trade costs database.

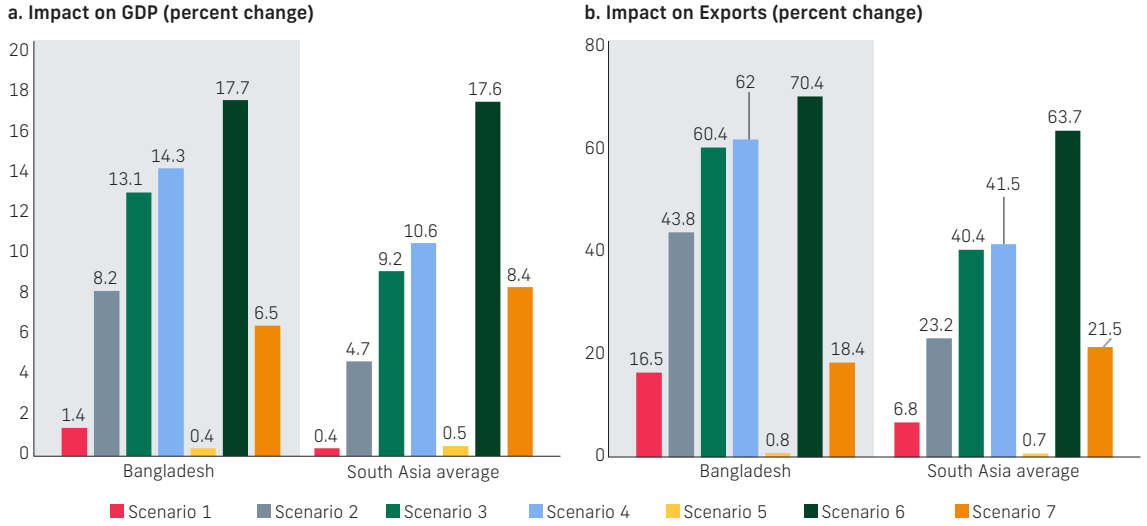
Note: The results reflect the medium- to long-term effects of policy changes on gross domestic product (GDP), private consumption (C), government consumption (G), investment (I), exports (X), and imports (M) expressed in constant 2021 terms relative to the baseline. FTA = free trade agreement.

Regional Integration

Bangladesh could reap significant benefits from participating in regional integration with South Asian and Southeast Asian countries, with an estimated increase in GDP between 1.4 and 14.3 percent, depending on the level of ambition. Gains from regional integration would be multifold. Tariff liberalization would translate into "trade creation" effects between Bangladesh and other participating trading partners. Improved access to South Asian and Southeast Asian markets would not only provide Bangladeshi exporters new trading opportunities but also catalyze their participation in GVCs. Access to cheaper imported intermediates would reduce input costs and translate into efficiency gains.

Bangladesh's gains from a deep regional integration scenario are estimated to be more than 10 times higher compared with shallow regional integration relying on tariff cuts only. The GDP gains would increase from 1.4 percent in the shallow regional integration scenario to 14.3 percent in a deep regional integration setting. The increase in exports would also increase from 6.8 to 41.5 percent. Bangladesh would benefit significantly from a regional integration scenario that covers reforms of tariff barriers and NTBs, trade facilitation, and liberalization of barriers to FDI. Bangladesh's gains are estimated to be higher than the South Asia average.

Figure 3.21: Impacts of Regional and Multilateral Liberalization



Source: World Bank simulations.

Note: The results reflect the medium- to long-term effects of policy changes on GDP and exports expressed in constant 2021 terms relative to the baseline. GDP = gross domestic product.

Multilateral Liberalization

Bangladesh could benefit in the short term from trade diversion if the United States and China were to engage in sustained trade tensions and keep retaliatory tariffs in place. Even in the absence of any additional reform measures, GDP in Bangladesh is estimated to increase by 0.4 percent (figure 3.21, panel a). Assuming that Bangladesh can capitalize on the opportunities provided by US-China trade diversion and expand exports to respond to these new sources of demand in the United States and China, exports could expand by 0.7 percent.

The benefits to Bangladesh of a multilateral integration track would be significant, on average boosting GDP by 17.7 percent and exports by 70.4 percent. If the reforms considered in the ambitious interregional South Asia–East Asia liberalization are extended and replicated not only by third countries, but also intra-regionally within South Asia and East Asia, the gains to Bangladesh would be substantive. Conversely, Bangladesh has a lot to lose from missing out on intraregional Southeast Asia integration, with GDP gains cut to about a third and export gains at less than a fifth compared with the open regionalism scenario. The GDP gains would decline from 17.7 percent in the open regionalism scenario to 6.5 percent. The impact on exports would be even more pronounced, declining from 70.4 to 18.4 percent (figure 3.21, panel b).

The expected impact of tariff reforms. To sum up, the results show that reductions of customs duties and other taxes to the level of other middle-income economies generate tariff revenue losses of between 18 and 41.2 percent. Although the concerns over revenue loss are legitimate, the overall impact of the tariff rationalization needs to consider how high tariffs reduce the export survival of firms and participation in GVCs (see the results of the export survival analysis in table 3.1) and positive impact on GDP and exports resulting from tariff liberalization (see the economy-wide gains of tariff liberalization – scenario 1 - in Figure 3.21).

The expected impact of broader trade policy reforms. The economy-wide simulations further show that bilateral and regional integration strategies that combine the liberalization of tariffs, NTBs, trade facilitation and FDI barriers could boost GDP by 0.4-14.3 percent. If the trade and investment reforms pursued within the bilateral and regional integration are extended in a multilateral integration track, the gains for Bangladesh would be significant, increasing GDP by 17.7 percent. The structural gravity model simulations show that preferential and multilateral liberalization of services could boost Bangladesh's exports in financial, financial, telecom and transport services (figures 3.15 to 3.18). It is striking that for Bangladesh the gains from preferential liberalization are higher than those from multilateral liberalization. This result is generally not observed for other countries, where the gains from both scenarios are smaller, and the changes in exports due to multilateral liberalization and typically stronger than from preferential integrations. A possible explanation is that the other examined countries already have a relatively dense network of regional agreements among themselves, which means that the preferential scenario does not involve large-scale additional liberalization.

Policy Recommendations to Boost Bangladesh's Trade Competitiveness

Bangladesh needs to diversify its export basket. Bangladesh's exports remain highly concentrated. A diversified export portfolio could reduce the risk of export volatility, create new sources of export growth, and increase export earnings in the long term. The analysis above shows that diversification of exports will require a trade policy regime that fosters competitive and dynamic export-oriented goods and services sectors.

Tariff Modernization

Modernization of Bangladesh's tariff regime is a first crucial step to support export diversification. Tariff rationalization could include moving toward low and uniform tariffs and adopting a single rate for similar goods, irrespective of origin. Para-tariffs need to be eliminated gradually, making the tariff structure consistent with that of an upper-middle-income country. Tariff rationalization has been included in the Eighth Five Year Plan, which states the need to reduce the nominal protection rate by 3-5 percent every year until 2025. It will be important to accelerate the preparation and the implementation of the National Tariff Policy in line with the Eighth Five Year Plan.

Maintaining a trade policy stance that perpetuates the high degree of protection of the import substituting industries at the expense of emerging and potential export industries will amplify the negative impact on trade and efficiency growth. There is an inherent contradiction between protecting domestic markets and export promotion. Counteracting exports through second best instruments such as the suspended bond licenses and duty drawbacks is limited by the institutional capacity to manage them and the associated revenue losses. A policy focused on import protection (domestic industrialization) could be a path towards middle-income trap. LDC graduation in 2026 will tighten the compliance with WTO rules on import tariffs and subsidies. Interestingly, some trade bodies have suggested raising protective tariffs and subsidies now because they will have to be phased out after 2026. This will be a step in the wrong direction because then Bangladesh will lose precious time needed to adjust to the new trade regime as a developing nation. The National Tariff Policy should lay out a time path of import tariff and export subsidy reduction now so that the markets know the prospective evolution of the regime and adjust accordingly.

Tariff rationalization must be accompanied by simultaneous revenue efforts to compensate for the expected revenue loss. Careful analysis of the adjustment impacts of trade reform is essential to inform policy makers as they restructure incentives towards an outward-looking trade and competitiveness strategy. An immediate concern for the Government is the impact on tax revenues. The current importance of tariff ad source of tax revenues reflects the weakness of the domestic tax base and other tax instruments.[53] In addition, changes in output in different sectors and associated impacts on employment are likely to be an important aspect of the political economy driving support and opposition to trade reform. Further, trade reform entails changes in prices, and an important consideration is how these will affect households, especially the poorest. A good understanding of the potential adjustment implications of trade reform can contribute to the design of better trade reform strategies and the discussion and implementation of policies that can reduce the impact of adjustment, especially when the costs are concentrated on certain groups in society. The latter is of particular importance in countries that lack social safety nets with broad coverage.

Beyond Tariffs

The Government may consider several policies beyond tariff modernization to diversify exports and increase GVC participation. Bangladesh's export diversification is further constraint by high trade costs and inefficient services. Although a wholesale trade reform that covers goods and services in Bangladesh's current environment does not seem feasible, several steps could usefully be taken to increase economic efficiency and support the country's development objectives:

- NTB liberalization and trade facilitation reforms need to complement the tariff modernization currently pursued by the Government. High trade costs are generated by the costs of complying with numerous *behind the border*

53 The ongoing Public Expenditure Review will provide additional guidance on possible tax adjustments to compensate for fiscal losses due to trade taxes.

measures. These include non-tariff regulatory measures, documentation requirements, and lengthy administrative procedures that impose delays *at border crossings*. The costs of compliance with these regulatory measures can be high for the exporter, increasing their fixed costs as they are usually independent of subsequent export flows. High fixed costs can lead to lower entry rates. Also, a lack of transparency and predictability about the behind the border measures can exacerbate these fixed costs if there is rent seeking by officials who apply the regulations and can further undermine survival rates if firms may find that they have to pay higher fixed costs than expected. For Bangladesh to successfully diversify exports and play a central role value chains reducing trade costs is rightly a high priority.

- Many services are now tradable and can be a source of export-led growth. Imports of services can drive competitiveness, while services sectors – including modern services such as digital and professional services – provide new opportunities for export diversification. Countries throughout the region are moving toward integrating their services markets. There may be long-term costs to Bangladesh if it is left behind in services, but also manufacturing and processed agricultural products. Reforming key strategic sectors, such as digital services or key services inputs that accelerate spillovers for development and productivity, could be a good entry point into the world of services reforms. Furthermore, to increase the export survival of firms and GVC participation, the government needs to facilitate the adoption of modern technologies, and deepen regional linkages with Asia, Europe and North America.

An example of a comprehensive trade policy reform agenda that covers both goods and services for a concrete sector is provided in box 3.4 for trade and climate change.

How to Liberalize – Unilaterally, Bilaterally, Regionally, or Multilaterally?

Unilateral liberalization generates the highest gains that could be complemented with bilateral, regional or multilateral trade liberalization options. Based on the evidence from the computable general equilibrium and gravity simulations in this report, the policy implications to consider are as follows:

- First, as a general proposition, the largest economic gains for Bangladesh come from nondiscriminatory policy reforms. While these reforms—covering goods, services, and investment—are consistent with the aims of the multilateral trading system, they do not strictly require multilateral negotiations to be feasible: individual countries are always free to liberalize autonomously, on a de facto most favored nation basis. This path forward allows countries to appropriate significant economic gains but does not require complex coordination with policy makers in other countries. Given the difficulty of moving forward on multilateral negotiations, this path is appealing for Bangladeshi policy makers, especially in the area of investment in services, with their growing importance in the regional trading landscape.
- The second implication comes in the form of a partial exception to this finding: South Asia. Given historical political tensions, the degree of regional integration is very low compared with other world regions. The gains from regional integration in South Asia are therefore very high in relative terms, that is, starting from a baseline of low intraregional trade. Despite growth over the past 20 years, trade and investment linkages between Bangladesh and South Asia are still constrained by high tariffs and NTBs, and burdensome and costly customs procedures. Bangladesh can focus on regional integration strategies that go beyond South Asia to include a broader group of countries in Southeast Asia and beyond. Regional integration can be pursued through free trade agreements. Bangladeshi policy makers may consider joining existing regional groupings such as ASEAN or the Regional Comprehensive Economic Partnership. Deeper regulatory cooperation can be pursued as part of FTAs or other regional mechanisms. Of course, regional integration is not straightforward given the political landscape at home and abroad. The size of the gains from preferential integration should not overshadow the more general finding that multilateral liberalization, including when undertaken autonomously, can bring significant economic gains to Bangladesh.

Political economy considerations. An important question to consider is what domestic constituencies are likely to effectively support unilateral and multilateral trade reforms in the prevailing and perhaps changing world trading system? This is not clear since the potential exporters are outsiders while the insiders, including current exporters are very comfortably placed in the status quo. Participation in bilateral, regional and multilateral economic cooperation of higher degrees can make reforms more likely because of the extra benefits in terms of access to markets, investment and finance. The LDC graduation is an opportunity in this context.

Box 3.4: Act Now, There Is No Time to Wait for Greening Trade!

Opportunities to trade green

Bangladesh can take advantage of several opportunities to green its trade. Access to environmental goods and services will play a key role in the transition and export competitiveness. There are three main channels through which Bangladesh can benefit from greener trade.

First, access to imports of environmental goods and services can promote transition to low-carbon production and export competitiveness in general. Imports of environmental goods and services, which consist of technologies developed in more advanced economies. While the export of these goods are not currently of primary interest to developing countries like Bangladesh, they can be important in maintaining export competitiveness as access to new environmental technologies can increase productivity, reduce the greenhouse gases intensity and increase the domestic value added of exports. Access to environmental goods and products will also improve Bangladesh's access to renewable energy supplies as the southeastern part of the country has a solar power irradiation in the southeast.

Second, access to environmental goods and services supports exports of environmentally preferable products which have lesser or reduce effect on human health and climate. Exports of environmentally preferable goods and services (which have lower or reduce impact on the environment) such as jute, textiles, RMG, leather, organic seafood and agriculture products present an important and immediate opportunity for Bangladesh to diversify their exports.

Third, potential opportunities to export as part of environmental goods and services global value chains. Most of environmental goods and services are mainly exported by developed countries, but the value chains include developing countries to produce parts and components of such goods, such as China, India, and Vietnam. Bangladesh is particularly well positioned thanks to its existing experience in parts and components related to some environmental goods and services such as turbines and invertors. This creates a potential base for Bangladesh to integrate in global value chains related to environmental goods and services. For services, exports are likely to come at a later stage.

To address trade and climate challenges, the Government of Bangladesh should implement a series of **policy reforms** in five areas:

Reduce tariffs

- Reduce tariffs for all environmental goods, including parts and components, to zero and remove nuisance tariffs of 1 percent for industrial imports.

Reduce behind-the-border barriers

- Review customs legislation and improve the implementation of World Trade Organization Trade Facilitation Agreement measures, in particular by making information on the classification of environmental goods publicly available and ensuring easy access to advance rulings to confirm the classification of certain environmental goods "ex-outs" (subcategories) to avoid tariff changes due to misclassification.
- Develop a comprehensive quality assurance strategy through standards for domestic suppliers/distributors of imported environmental goods in line with international standards and by streamlining access to quality assurance from abroad.
- Review the overall energy strategy to include different types of energy sources and remove potential distortions from fossil fuel subsidies or import barriers that may hinder the transition to renewable energy.

(Box continues on next page)

Box 3.4: Act Now, There Is No Time to Wait for Greening Trade! (continued)

Develop a comprehensive institutional environment

- Establish a National Committee on Climate Change to ensure coordination among the various ministries and institutions and to follow up the implementation of the designed measures through a solid framework for monitoring and evaluation.
- Pivot trade-climate and environmental commitments in international agreements as a tool for driving domestic reforms toward a green transition.

Foster private sector integration in regional value chains

- Ensure that trade and climate policies are designed to help the private sector (including micro, small, and medium-size enterprises) transition to greener exports, integrate into regional value chains of environmental goods production, and diversify exports of environmentally preferable goods.

Liberalize environmental services

- Trade in services will be crucial for the conservation and monitoring of environmental assets and knowledge transfer. The liberalization of trade in services can help promote the free movement of environmental experts and services. Trade in services and environmental provisions should become a priority for existing trade agreements, particularly so for trade agreements between Bangladesh and its Asian partners. Work in this area is still in its infancy in South Asia, while it is relatively advanced in Southeast Asia, where most trade agreements cover environmental provisions and trade in services. Policy makers in Bangladesh should take steps to deepen their trade agreements with provisions that can facilitate trade in environmental goods and services. *Source:* Stojanov (2022).

Conclusion. The central point of the paper is that Bangladesh's trade intensity is lower than predicted for countries at similar level of per capita income. The country is missing out on gains from trade due to an inward-looking trade regime. While tariff modernization is an important step to support export diversification, an ambitious trade agenda that covers goods, services, and investment can boost the gains for Bangladesh. An agenda that covers services and investment reforms and improvements in trade facilitation, in addition to the liberalization of tariffs and NTBs, produces the largest benefits for the country. The response to trade liberalization is conditional on domestic supply and market constraints. Reducing the cost of adjustment from liberalization is of utmost importance. To gain social and political support and make the liberalization sustainable, the adjustment cost for correctly identified vulnerable groups needs to be minimized. Adequate compensation measures can be put in place, making the process of transition as smooth as possible. Strengthening safety nets and training for those workers whose jobs are affected and improving links between education, training, and the job market should be part of any trade reform agenda.

Annex 3A: Quantifying Barriers to Trade in Services Using Machine Learning and Gravity Model Analysis

The first major effort to look systematically at applied services policies was undertaken by the Australian Productivity Commission (APC) in the early 2000s. The APC's framework is still the reference point for work in this area. The exercise itself was more in the nature of a proof of concept, as the project undertook exploratory work for a variety of countries and sectors but was not developed into an ongoing project to track services trade restrictiveness. The APC coined the "Services Trade Restrictiveness Index" (STRI) as the name for its summary index of policy restrictiveness in each sector. The term has been used extensively by subsequent researchers.

The APC's basic framework still informs STRI projects today. The first stage is to produce regulatory questionnaires for the sectors of interest. Once the regulatory questionnaires have been designed, they need to be filled in, one sector in one country at a time. Once the responses to the individual questions in the regulatory questionnaire have been systematically coded by country-sector pair, the next step is to use that coded database to produce summary measures of restrictiveness, or STRIs. From a technical perspective, the problem is one of weighting and aggregation: analysts need to choose a set of weights applied to individual policy measures in producing summaries and must select a mathematical function by which the weighted methods are aggregated into a single number.

The construction of STRIs is extremely labor intensive and therefore costly. It also requires considerable analytical capacity. There is a clear interest in standardizing approaches across countries, so that results can easily be compared. These considerations favor the production of STRIs by international agencies, and two major initiatives are currently in operation. The Organisation for Economic Co-operation and Development (OECD) publishes STRIs for 22 sectors for its member countries, which are mostly in the high-income group, along with major emerging markets. In all, the OECD data cover 45 countries from 2014 to 2019, with data updated annually. The second effort was launched by the World Bank. It has resulted in STRIs for 105 countries for 2008 (released in 2012), and jointly with the World Trade Organization (WTO), a database covering 68 countries for 2016 (STRIs released in 2020). The current WTO–World Bank database and World Bank STRIs cover 68 countries, of which 45 use data taken directly, with permission, from the OECD database. The WTO–World Bank database has expanded country coverage by 23 countries.

While similar in overall structure, the OECD and WTO STRIs have important differences in the ways in which the indexes are constructed. But it is also important to address the quantification of impacts. OECD work has used a standard economic model to show that a country's STRI score is negatively associated with both its imports and exports of services, and that differences in regulations within the STRI database, referred to as regulatory heterogeneity, have a negative association with observed bilateral trade (Nordas and Rouzet 2017). Subsequent work has looked at estimation of ad valorem equivalents (AVEs) based on observed STRI scores (Benz 2017). There is thus an important body of evidence showing that the OECD STRI is correlated with bilateral trade flows, and that it can be used to produce estimates of economic impact in standard AVE form. For the World Bank STRI, Jafari and Tarr (2017) produced estimated AVEs from the original (2008) STRI data; there are no such estimates for the 2016 data, nor for the revised version of the 2008 data using the 2016 methodology. The World Bank itself has never produced a model of the economic impact of its STRIs, but van der Marel and Shepherd (2013) use the 2008 version to show that the measures are indeed associated with observed bilateral trade in services, although the results are only statistically significant in some sectors.

Hoekman and Shepherd (2021) use a machine learning procedure to produce a Services Policies Index (SPI). It can be understood as a good approximation of the OECD STRI—for which the aggregation algorithm has not been made public—based on the policy data available in the WTO–World Bank data set for 2016. It covers 68 countries and eight sectors, including the countries identified above as of particular interest in the South Asian and Southeast Asian context, in addition to China as a comparator. The SPI correlates with the OECD STRIs for those countries in both data sets at just under 0.9, where a correlation coefficient of one indicates a perfect fit.[a] The index therefore offers a good approximation of the OECD data. The authors consider it to be effectively an extension of the methodology developed by the OECD, with the variation that new countries are added to the data even without observing the weighting and aggregation algorithm used by the OECD in the original exercise.

Subsequently, the SPIs were converted to AVEs using a gravity model.[b] While the SPI covers eight sectors, lack of availability of trade data means that AVEs can only be calculated for four more aggregated sectors. Nonetheless, the results cover an important part of the services economy from a policy perspective.

Source: Shepherd (2021).

a. The World Bank issued its STRI after the working paper version of Hoekman and Shepherd (2021) was first circulated. The published version of that paper shows that the SPI is also correlated with the World Bank STRI with a coefficient of 0.8, which is similarly very high.

b. Conversion to AVE terms is standard for non-tariff measures in the goods literature. However, it involves the simplifying assumption that policies can accurately be summarized through their impacts on trade costs in percentage of value terms. Services policies also have effects on the fixed costs of foreign market entry, which means that the true restrictiveness of the measures captured in the SPI may be higher than figure 3.14 suggests.

Annex 3B: Determinants of Export Survival: An Econometric Analysis

The survival of trade relationships is modeled using a Cox proportional hazard model. The dependent variable is a hazard function of an export spell, expressed as a multiplicative function of an unspecified time-dependent baseline hazard function and an exponential function of firm, spell, destination, and product characteristics:

$$h(t|X) = h_0(t)\exp(X\beta),$$

where $h^0(t)$ represents how the baseline hazard changes as a function of time, the covariates X affect the hazard rate independently of time, and β is a vector of parameters. A positive coefficient, that is, a positive element of β, implies that the relevant variable is associated with higher hazard rates. In other words, a positive regression coefficient implies that the associated variable contributes to making exports more unstable, all else equal.

The analysis controls for gravity variables, various spell characteristics such as initial value and size of transaction, a dummy for multiple spells, and various product and firm characteristics. Estimation results are reported in terms of coefficients (in contrast to hazard ratios) with clustered standard statistics in parentheses.

Source: Dihel and Kukenova (2022).

Annex 3C: A Structural Gravity Model to Undertake Simple General Equilibrium Simulations of Services Policy Reforms

In addition to constructing Services Policy Indexes (SPIs) using World Trade Organization–World Bank data, Hoekman and Shepherd (2021) use a structural gravity model to undertake simple general equilibrium simulations of policy reforms. Arkolakis, Costinot, and Rodriguez-Clare (2012) and Costinot and Rodriguez-Clare (2014) show that standard single-sector gravity models like the Armington model of Anderson and Van Wincoop (2003) or the Ricardian model of Eaton and Kortum (2002) have the same relationship between changes in trade costs—such as policy reforms—and counterfactual changes in trade flows. Baier, Yotov, and Zylkin (2019) provide a simple algorithm for solving the system while respecting general equilibrium constraints.

The Hoekman and Shepherd (2021) structural gravity model distinguishes between multilateral and preferential policies. As of this writing, no data are available on preferential services policies for most countries. So the expedient is to interact the SPI with a dummy variable for countries that are members of the same regional agreement. The authors find that the interaction term usually has a positive and statistically significant coefficient, which is consistent with the degree of trade liberalization within regional agreements. The question deserves further research using directly collected data from agreements; however, as previous work such as Miroudot and Shepherd (2014) indicates, most services policy reforms are de facto nondiscriminatory, even when they are associated temporally with entry into a regional agreement.

To formalize the above statements, the standard gravity model takes the following form, considering a single year and single sector cross-section only:

$$(1)\ X_{ij} = F_i F_j t_{ij}^{-\theta} e_{ij}$$

where *Xij* is exports from country *i* to country *j*; the *F* terms are exporter and importer fixed effects; *tij* is bilateral trade costs; θ is a parameter capturing the sensitivity of demand to cost; and *eij* is an error term satisfying standard assumptions. Trade costs *t* are specified in the usual iceberg form. These costs are unobserved but can be specified in terms of observable proxies. For the present purposes, the model includes standard gravity model controls based on geography and history, along with tariffs, a preferential trade agreement (PTA) dummy, and an indicator of service sector restrictiveness (the Services Trade Restrictiveness Index (STRI), for presentational purposes), as well as the interaction between the STRI and a dummy for countries that are members of an economic integration agreement (EIA), the services equivalent of a PTA for goods. Formally:

$$\begin{aligned}(2)\ -\theta log\, t_{ij} = {} & b_1 STRI_j * intl_{ij} + b_2 STRI_j * intl_{ij} * EIA_{ij} \\ & + b_3 \log(1 + tariff_{ij}) + b_4 PTA_{ij} + b_5 \log(distanc\, e_{ij}) + b_6 contiguous_{ij} \\ & + b_7 colony_{ij} + b_8 common\ languag\, e_{ij} + b_9 common\ colonize\, r_{ij} \\ & + b_{10} same\ countr\, y_{ij} + intl_{ij}\end{aligned}$$

Standard international trade data are not well-suited to structural gravity modeling because they do not include internal flows. Hoekman and Shepherd (2021) therefore use the Eora multi-region input-output table. Eora covers 183 countries and 26 sectors through a single harmonized input-output table. They use data for 2015 only, the latest available year, corresponding most closely to the year of the SPI data (2016). Estimation is by Poisson pseudo-maximum likelihood, and counterfactual simulations are solved using the approach of Baier, Yotov, and Zylkin (2019).

Source: Shepherd (2021).

Annex 3D: General Equilibrium Modeling Scenarios

Scenarios

The scenarios and the assumptions are:

- *Unilateral Liberalization Scenario.* A uniform 90 percent cut in tariffs, a 50 percent reduction in NTBs, improvement in trade facilitation implying a 15.5 percent reduction in trade costs, and FDI liberalization.
- *Bilateral PTA between Bangladesh and the European Union and India, respectively.* A uniform 90 percent cut in bilateral tariffs, a 50 percent reduction in bilateral NTBs, improvement in trade facilitation implying a 15.5 percent reduction in bilateral trade costs, and FDI liberalization, closing half the gap in bilateral FDI.
- *Regional Integration between Bangladesh and South Asia and Southeast Asia*

    - *Scenario 1 (Shallow Integration). A uniform 90 percent cut in bilateral tariffs between Bangladesh and South Asian and Southeast Asian countries across all sectors.*
    - *Scenario 2. Scenario 1 plus a 50 percent reduction in bilateral NTBs between Bangladesh and South Asian and Southeast Asian countries. It is assumed that 50 percent of the total non-tariff trade costs are actionable (possible to be affected by policy measures), and 50 percent of these actionable barriers are liberalized – a conservative assumption for potential integration scenarios. The assumption of 50 percent liberalization is aligned with Wignaraja et al. (2014) and others in the literature who assume that only about half of the NTMs are actionable.*
    - *Scenario 3. Scenario 2 plus improvement in trade facilitation implying a 15.5 percent reduction in trade costs between South Asia and Southeast Asia. According to Moïsé and Sorescu (2013), implementing the WTO TFA could reduce trade costs by up to 15.5 percent. Bilateral trade costs come from the United Nations Economic and Social Commission for Asia and the Pacific–World Bank trade costs database.*
    - *Scenario 4 (Deep Integration) Scenario 3 plus South Asia–Southeast Asia FDI liberalization, closing half the gap in bilateral FDI.*

Multilateral Liberalization

- *Scenario 5. Sustained US-China trade tensions – as specified in Petri and Plummer (2020), this scenario assumes an increase in US-China tariffs in place by December 2019, 10 percent increase in agricultural and manufacturing US-China NTBs, 50 percent increase in US-China services NTBs, and US-China FDI barriers double.*
- *Scenario 6 Open regionalism – Bangladesh integrates with an open South Asia and Southeast Asia region that extends the same liberalization to the rest of the world and regionally within South Asia and Southeast Asia.*
- *Scenario 7. Bangladesh integrates with South Asia and Southeast Asia region without intraregional South-Southeast Asia integration.*

Source: Lakatos (2021).

Annex 3E: General Equilibrium Modeling Framework and Data

Model

The model underlying the simulations is the Global Trade Analysis Project–Foreign Direct Investment (GTAP-FDI) model—a multi-region, multi-sector, and multi-factor computable general equilibrium model (Lakatos and Fukui 2014; Hertel 1997). The model is calibrated using the GTAP 11 database representing the global economy in 2017 (Aguiar et al 2019) and endogenously updated to 2021 to capture the latest macroeconomic developments. To capture the FDI and multinational linkages of the GTAP-FDI model, the GTAP database has been complemented with an explicit breakdown of FDI stocks and cross-border operations of multinational companies. The model is ideal for measuring the impact of policies that have wide-ranging effects as it takes into consideration general equilibrium linkages. These include interactions between consumers, producers, and governments; inter- and intra-industry links; interactions between domestic and foreign markets; investment decisions; and resource constraints.

For simulations, the GTAP database has been aggregated into 17 sectors and 31 economies/regions. The 17 sectors are: vegetables and fruits, other agriculture, energy, meat, other food, beverages and tobacco, textiles, wearing apparel, motor vehicles, machinery, other manufactures, construction, trade, transportation, public administration, business services, and other services. The 31 economies/regions are: Australia; New Zealand; China; Hong Kong SAR, China; Japan; the Republic of Korea; Mongolia; Taiwan, China; Brunei; Cambodia; Indonesia; the Lao People's Democratic Republic; Malaysia; the Philippines; Singapore; Thailand; Vietnam; the rest of East Asia and Pacific; Bangladesh; India; Nepal; Pakistan; Sri Lanka; the rest of South Asia; the United States; the rest of North America; Latin America and the Caribbean; the European Union; Europe and Central Asia; the Middle East and North Africa; and Sub-Saharan Africa.

The important innovation in the GTAP-FDI model concerns the explicit treatment of FDI. In the model, FDI is associated with the international mobility of capital and firms operating across national borders. As in the pioneering work of Petri (1997), the GTAP-FDI model employs the Armington assumption of national product differentiation to distinguish between product varieties differentiated not only by firm location, but also by firm ownership. In comparison, the standard GTAP model distinguishes product varieties by firm location only. In addition, as in Petri (1997), the model defines investor preferences as a nested imperfect transformation function that allocates a given investment budget across sectors and regions. On the supply side, compared with the standard GTAP model where in a given region and sector there is one representative firm that produces goods and services, the GTAP-FDI model differentiates between domestic firms and foreign-owned affiliates of multinational companies that also produce goods and services. Further, each of these firms combines value added and intermediate inputs using a Leontief production technology. The specification implies that intermediate inputs (just as final demand) are differentiated not only by the region of firm location, but also by the region of firm ownership.

Although the model is not a dynamic one, the closure has been adapted to capture the medium- to long-term effects of the considered policy reforms. In simple terms, this implies that investment adds to the existing capital stock and is available for production (Walmsley 1998).

Data

The modeling of FDI and foreign affiliates requires the following data: capital stocks disaggregated by region of ownership/location and sector, and cost and sales structure of domestic firms and foreign affiliates. The global FDI stock data documented in Bekkers et al. (2021) are used to disaggregate capital stocks by industry, host, and source country in the GTAP database. Using the foreign affiliates sales data described in Bekkers et al. (2021), the production side of the GTAP database is disaggregated.

As in World Bank (2021), this analysis makes use of the World Bank–UNESCAP trade costs database (Arvis et al. 2016). This database is the only one available that provides estimates of non-tariff trade costs at the bilateral level, which is essential for the analysis of deeper South Asia–Southeast Asia regional integration described in this report. In the scenarios, it is assumed that 50 percent of the total non-tariff trade costs are actionable (possible to be affected by policy measures), and 50 percent of these actionable barriers are liberalized—a conservative assumption for potential integration scenarios.

Source: Lakatos (2021).

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CHAPTER 4

Financing the Next Phase of Growth

Introduction

As Bangladesh aspires to reach upper-middle-income status by 2031, substantial efforts to scale up investment will be needed. This ambition cannot be achieved through financing sourced from the public sector alone. Private sector financing, from both domestic and foreign sources, will play a critical role in increasing the per capital GDP, according to the analysis summarized in box 4.1. A more efficient and resilient banking sector and deeper capital markets are therefore needed to support private sector–led growth by mobilizing and channeling resources for productive investments.

Long-standing domestic financial sector vulnerabilities, magnified by the COVID-19, impede efficient channeling of savings to productive investments. The ability of financial institutions and markets in Bangladesh to deliver both long-term and short-term financing has been constrained by a variety of structural and regulatory factors. The financial sector remains relatively volatile, with undercapitalization of some banks and a buildup of nonperforming loans (NPLs) posing risks to financial stability and constraining the allocation of credit to productive uses, especially on the side of state-owned banks (SOBs). Private sector banks, in turn, are heavily involved in related-party lending and face other operational inefficiencies, constraining their ability to allocate credit efficiently to the private sector. Remaining weaknesses in the regulatory and supervisory framework mean that the authorities are not properly equipped to deal with potential internal and external shocks in a timely and cost-effective manner. The strong presence of the state in the financial sector both as regulator and consumer of financial resources crowds out resources from the private sector, inhibiting development and economic growth. Operational inefficiencies in the banking sector as well as competition for deposits between bank accounts and National Savings Certificates (NSCs) drive the cost of credit, especially for micro, small, and medium-size enterprises (MSMEs). The domestic capital market remains small and underdeveloped, impeding longer term financing for infrastructure, housing, and climate adaptation.

Comprehensive reforms are required to enhance financial sector intermediation capacity to support economic growth while preserving financial sector stability. Major restructuring and deepening of the financial system, including increasing the efficiency and sophistication of the banking sector, and developing a long-term capital market should be the top policy priorities. Going forward, unlocking private sector financing for green investments and climate risk financing will become increasingly important, while expanding access to finance in underserved segments, such as women and MSMEs, remains relevant for job creation and diversification. The country also needs to source external resources proactively, including through international capital markets, by promoting local currency financing, easing external borrowing constraints, and attracting foreign direct investment.

Box 4.1: Finance and Income in Bangladesh: Findings from Econometric Analysis

The analysis conducted by the Country Economic Memorandum team suggests that there is a stable long-run relationship between real gross domestic product (GDP) per capita, the stock of credit to the private sector relative to GDP, and the investment rate in Bangladesh. The stock of private credit to GDP and the investment rate have causal effects on GDP per capita in the long run: a 1 percentage point (pp) increase in the stock of credit to the private sector increases per capita GDP growth by 0.13 pp and per capita GDP by 3.8 pp. An increase in the investment-to-GDP ratio of 1 percent raises per capita real GDP by 1.8 pp. Although there is no evidence of any significant effect of openness, as measured by the ratio of trade to GDP, on per capita GDP, the analysis finds that growth in trade increases economic growth (a 1 percent increase in trade growth increases economic activity growth by 0.2 pp). Policy efforts seeking to strengthen and expand Bangladesh's financial system so that it can generate more private sector credit should therefore yield long-run dividends in terms of GDP per capita.

Following an overview of the evolution of the financial sector in Bangladesh in recent decades and the sector's level of development compared with the country's structural and aspirational peers, this chapter analyzes structural factors that prevent the financial sector from playing a more prominent role in financing the next phase of growth. The chapter identifies the following impediments to efficient intermediation of resources by the financial system: (i) long-standing banking sector vulnerabilities that pose a threat to financial stability and drag down credit growth; (ii) widespread related-party lending and the large, not always conducive role of the state, which affect the efficiency of credit allocation; (iii) costs of financial intermediation that are driven by structural inefficiencies and high NPLs rather than profit-seeking behavior; (iv) the regulatory and supervisory environment that creates barriers to development of the credit market and genuine competition and does not fully address risks to financial stability; (v) low financial inclusion, despite advances in the use of digital services; and (vi) shallow capital markets, with a lack of secure investment opportunities and underdeveloped nonbank institutional investors. The last section in the chapter presents a set of policy recommendations on how to deepen and diversify financial intermediation channels while preserving financial sector stability.

Despite Progress in Recent Decades, Bangladesh's Financial System Lags behind Those of Its Peers

Various reforms over the past four decades have shaped the transformation of Bangladesh's financial sector. Financial sector reforms started in the mid-1980s through the work of the Money, Banking and Credit Commission, including the denationalization of banks, licensing of private commercial banks, use of back-to-back letters of credit, and introduction of micro-credit for the poor. The reforms accelerated in the early 1990s with interest rate deregulation, restructuring of the banks' operational procedures, and introduction of a loan classification system and provisioning framework as well as capital adequacy standards. In the late 1990s, the reforms continued with improvements in the regulatory and supervisory framework of banks, assigning greater powers to Bangladesh Bank. Bangladesh also progressed in adopting the Basel regulations, with the introduction of risk-weighted capital adequacy minimum requirements in 2007 as well as other prudential norms.[54] Further, to improve financial inclusion, the Credit Information Bureau (CIB), which was established in 1992, was automated in 2009. More recently, transformational advances have been made in the areas of digitization and payment system infrastructure (such as the introduction of an automated clearinghouse, national payment switch, real-time gross settlement system, and mobile financial services). Box 4.2 describes the structure of the financial sector in Bangladesh.

54 Some key regulations still need to be fully aligned with international best practices, including the Bank Company Act (1991), Financial Institutions Act (1993), Bankruptcy Act (1997), Secured Transaction Act, and Bangladesh Asset Management Company Act, among others.

Despite this remarkable progress, in the development of financial institutions and financial markets, Bangladesh still lags behind its structural and aspirational peers.[55] According to the global Financial Development Index,[56] Bangladesh was 95th of 184 countries in terms of financial development (2021 ranking based on 2019 country data), slightly above lower-middle-income economies, but below upper-middle-income economies. All Bangladesh's structural and aspirational peers have better developed financial institutions, especially in terms of financial depth and access. In addition, all the peers except Cambodia have better developed financial markets (figure 4.1). Moreover, Bangladesh's performance in the overall index and its two main subindexes has not improved much over the past 10 years (figure 4.2).

Figure 4.1: Financial Development Indexes: Bangladesh versus Peers

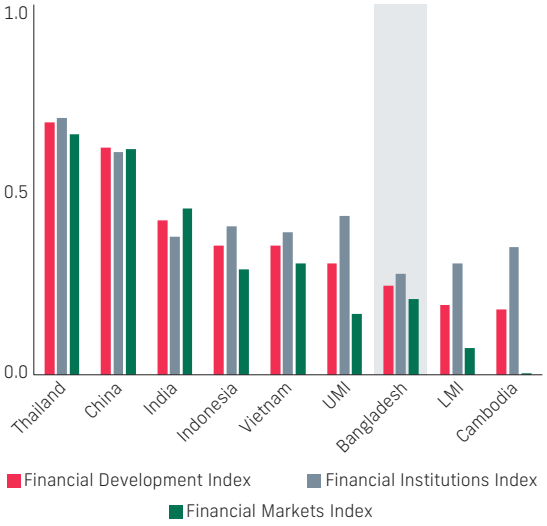
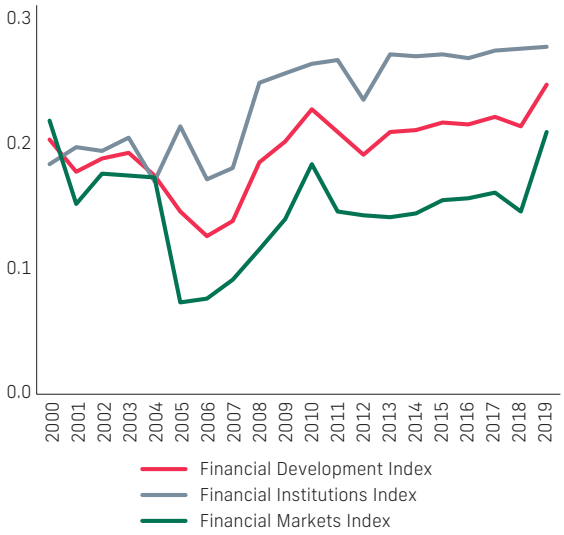


Figure 4.2: Financial Development Indexes in Bangladesh, 2000–19



Sources: World Bank, IMF Financial Development Index database.
Note: All data are as of 2019. IMF = International Monetary Fund; LMI = lower-middle-income countries; UMI = upper-middle-income countries.

Long-Standing Sector Vulnerabilities Pose a Threat to Financial Stability and Drag Down Credit Growth

Banks in Bangladesh have the lowest regulatory capital among the country's peers, driven by undercapitalization of SOBs. Well-capitalized banks can generate more credit and absorb losses in case risks materialize, and therefore sufficient capital is a key ingredient for a growing and sound banking system. In 2019, Bangladeshi banks had a capital-to-risk-weighted assets ratio (CAR) of 11.6 percent, substantially below all the peers (figure 4.3). Private banks' aggregate CAR increased from 11.4 percent in 2012 to 14 percent in 2020 and foreign banks' CAR was 28.2 percent in 2020 (figure 4.4). At the same time, SOBs, both specialized development banks (SDBs) and state-owned commercial banks (SCBs), are severely undercapitalized. In particular, the CAR for SCBs was 4.3 percent in 2020 (down from 8.1 percent in 2012), which was below the regulatory minimum requirement of 10 percent. SDBs are deeply insolvent, with a negative CAR of -32.9 percent in 2020 down from -7.8 percent in 2012 (figure 4.4). As of December 2021, five SCBs, two SDBs, and three private-owned banks had insufficient regulatory capital.

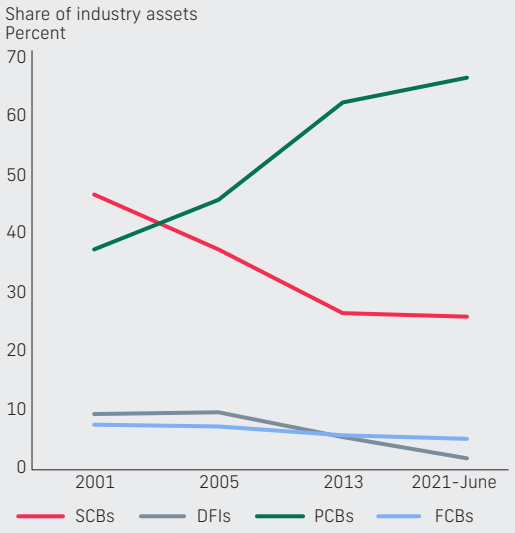
55 For the purposes of the Country Economic Memorandum analysis, Cambodia, India, and Vietnam are identified as structural peers, and Indonesia, Thailand, and China as aspirational peers.
56 The index was developed by the International Monetary Fund and summarizes how developed financial institutions and financial markets are in terms of their depth (size and liquidity), access (ability of individuals and companies to access financial services), and efficiency (ability of institutions to provide financial services at low costs and with sustainable revenues, and the level of activity of capital markets). The index compares data for more than 180 countries with annual frequency, starting in 1980. *Source:* https://data.imf.org/?sk=F8032E80-B36C-43B1-AC26-493C5B1CD33B.

Box 4.2: Structure of the Financial Sector in Bangladesh

The financial system can be broadly categorized into three segments, namely, the formal, semi-formal, and informal sectors. The formal sector includes all regulated institutions, such as banks, nonbank financial institutions (NBFIs), insurance companies, capital market intermediaries, and microfinance institutions. The semi-formal sector includes financial institutions that are regulated by their own acts under different ministries of the government, such as specialized financial institutions, cooperatives and credit unions, pension schemes, and discrete government programs. The informal sector is comprised of private intermediaries that are not regulated.

Bangladesh's financial sector is dominated by the banking sector, which represents around 90 percent of total financial sector assets. As of end-2021, there are six state-owned commercial banks, three specialized development banks, 43 domestic private commercial banks (including 10 Islamic banks), and nine foreign commercial banks, with total assets of 67 percent of gross domestic product. State-owned banks (state-owned commercial banks and specialized development banks) account for about 27 percent of total banking assets, and foreign banks account for a small share of 5.5 percent (mostly, due to limited business opportunities and Bangladesh Bank regulations relating to branch expansion). Nearly 31.4 percent of banking sector assets are concentrated in the five largest banks, four of which are state-owned. The Herfindahl-Hirschman Index (HHI) is 346.2, suggesting that Bangladesh's banking sector is operating as a competitive marketplace, with no dominant players in the market in terms of assets.

Figure B4.2.1: Share of Industry Assets across Bank Groups



Source: Bangladesh Bank.
Note: FCBs = foreign commercial banks; PCBs = private commercial banks; SCBs = state-owned commercial banks; SDBs = specialized development banks.

Following liberalization of the banking sector in the late 1980s, the number and share of private banks grew considerably, often backed by political regimes (figure B4.2.1). The entry of four distinct generations of private banks was driven by both economic and sociopolitical reasons (see annex 4A). Economic reasons of fostering competition and the spirit of de-nationalization drove entry of the first-generation banks (10 banks) during the 1980s. Entrance of the second-generation banks (20 banks) was also largely driven by market forces, although many sponsors had political affiliations. The third- and fourth-generation banks (nine and four banks, respectively) entered an already clearly overbanked market, with HHI and concentration ratios being small and decreasing and customer base not expanding. Although the entrance of new banks into an already overcrowded banking sector has only marginal impact on competition and concentration in the sector, it might produce some negative externalities.

The nonbank financial sector in Bangladesh is diverse, but it is relatively small in terms of assets. There are 34 NBFIs (4.3 percent of financial sector assets). The microfinance sector (4.8 percent of financial sector assets) is represented by 746 microfinance institutions that cover more than 33.3 million members, mostly in rural areas. The insurance sector (2.7 percent of financial sector assets) consists of 79 insurance companies, of which 32 are life insurance companies and 46 are general insurance companies. Finally, the formal financial sector includes capital market intermediaries, such as merchant banks, stockbrokers, dealers, security custodians, credit rating agencies, and asset management companies.

Figure 4.3: Financial Stability Indicators, Bangladesh versus Peers, 2019

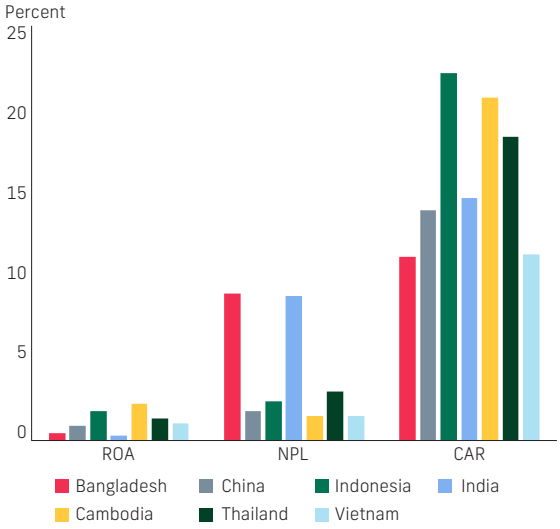


Figure 4.4: Capital-to-Risk-Weighted Assets Ratio

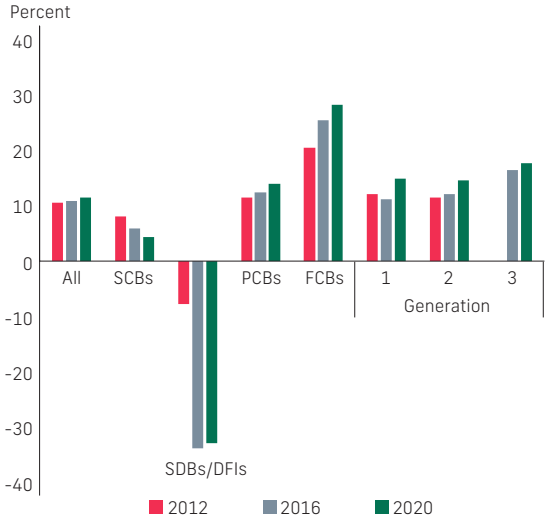


Figure 4.5: Gross NPL Ratio

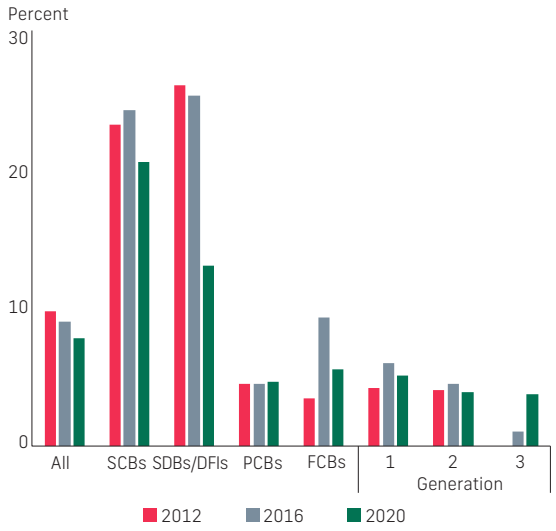
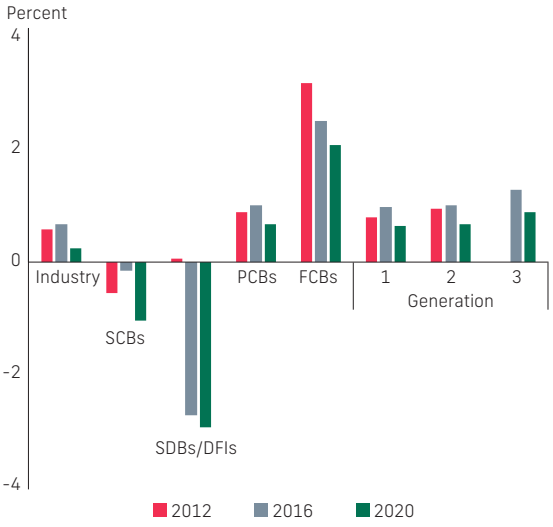


Figure 4.6: ROA



Sources: Bangladesh Bank, Annual Report 2020; Fitch Connect; CEM team calculations; World Bank FinStats2021.

Note: Indicators for banks based on generation are estimated based on a reduced sample of banks for which data are available in Fitch Connect. Figure 4.3 uses national definitions of NPLs and CAR that might differ across countries. CAR = capital-to-risk-weighted assets ratio; CEM = Country Economic Memorandum; DFIs = development finance institutions; FCBs = foreign commercial banks; NPL = nonperforming loans; PCBs = private commercial banks; ROA = return on assets; SCBs = state-owned commercial banks; SDBs = specialized development banks.

The quality of bank assets in Bangladesh is weak and profitability is low, especially for SOBs. NPL levels are underreported due to the lax legal definition of default (>180 days overdue versus 90 days overdue, as per international best practice) and long-standing generous rescheduling and restructuring policies. Regulatory forbearance provided to borrowers and banks during the COVID-19 pandemic further masks the true size of NPLs. Even with NPLs being underestimated, Bangladeshi banks have the highest levels of official NPLs among the country's peers (comparable only to India[57]), coupled with very low profitability (figure 4.5). SCBs and SDBs had the highest level of NPL ratios, 21 percent (down from 23.9 percent in 2012) and 13.3 percent (down from 26.8 percent in 2012) in 2020, respectively. Both private and foreign banks saw an increase in NPLs, bringing the ratios to 4.8 and 5.7 percent in 2020, respectively (figure 4.5). Given the low quality of assets and high operating costs, bank profitability has been decreasing. The return on assets

57 However, a large portion of India's current official NPLs only came to the surface as a result of an extensive Bank Asset Quality Review exercise conducted in 2015–16. A similar exercise should be considered in Bangladesh as part of a broader NPL resolution strategy.

(ROA) of SCBs and SDBs was negative for six and eight of the past 10 years, respectively. The ROA of foreign commercial banks (FCBs) and private commercial banks (PCBs) has decreased over the past decade, although it has stayed positive (figure 4.6). While different generations of private banks have similar profitability indicators as well as quality of assets, the rapid increase in NPLs of third-generation banks in recent years may be a sign of weak credit underwriting practices.

The weaknesses of Bangladeshi banks, and especially the high load of NPLs, limit their ability to supply credit to the private sector. The literature suggests that higher NPLs are associated with lower levels of private credit to gross domestic product (GDP).[58] At the same time, the effect of bank capitalization on lending is less straightforward. On the one hand, a well-capitalized bank should be able to accommodate capital losses without reducing its assets (and hence its lending). On the other hand, banks that must actively manage capital without raising equity might need to divert some parts of their assets from lending. To analyze the determinants of the growth of deposits and loans for Bangladeshi banks, the Country Economic Memorandum (CEM) team applied an econometric panel data model to 59 banks, using data for 2011–20 (table 4B.1, in annex 4B). First, the results suggest that banks with higher NPL ratios supply fewer loans and attract fewer deposits. Second, bigger banks, as defined by their market share, have higher deposit growth but lower lending growth, suggesting inefficiencies on the side of bigger banks, which are mostly represented by SOBs. Third, banks' profitability and capitalization seem not to be correlated with growth of loans and deposits. Finally, after accounting for bank performance indicators, only third-generation banks seem to have faster growth of deposits and loans compared with SOBs, reflecting the expansive strategy of third-generation banks during their first years of operation.

In the longer run, the high exposure of Bangladesh's economy to climate change risk is expected to generate additional financial stability risks. The impact of climate change on Bangladesh's financial system is yet to be fully assessed under various scenarios, but the preliminary assessment of physical and transition risks suggests that financial institutions may face large-scale losses unless they undergo timely adjustment to the new reality. The World Bank's preliminary estimates suggest that a one in 100-year flood event would lead to a potential loss of US$3 billion to US$5 billion in outstanding loans due to direct damage to urban assets as well as trade and production disruptions, weakening corporate and household balance sheets. Banks would also be exposed to transition impacts related to their exposure to the country's manufacturing sector (including the garment industry), which will need to undergo green transition in coming years to maintain access to export markets.

Growth of Credit to the Private Sector Is Slowing Down, and the Efficiency of Credit Allocation Is Affected by Related-Party Lending and the Large Role of the State

Bangladesh's ratio of private credit to GDP is one of the lowest among its structural and aspirational peers. Only Indonesia has a private credit-to-GDP ratio that is lower than the one in Bangladesh, and India's ratio is comparable that of Bangladesh. Other peer countries (China, Vietnam, Cambodia, and Thailand) have bank credit-to-GDP ratios that are substantially higher, above 100 percent (figure 4.7).

Moreover, the pace of private sector credit growth has slowed down in recent years, leading to a widening credit-to-GDP gap. Since 1980, the private credit-to-GDP ratio has increased by almost eight times, from 5.8 percent in 1980 to 45.2 percent in 2020. However, after a long period of almost uninterrupted growth, the private credit-to-GDP ratio has stabilized at around 45 percent since 2016. Since 2019, the credit-to-GDP gap has been negative, and it widened to 2.2 percent in 2020, which might be partially explained by the COVID-19 crisis (figure 4.9). This contrasts with the performance of the country's peers, which have demonstrated a positive or, in the case of India, a negative but shrinking credit-to-GDP gap in recent years, despite the impact of COVID-19 (figure 4.8). A negative credit-to-GDP gap implies that lending capacity is underutilized and there is potential for additional borrowing for investment or consumption purposes.

Bank lending portfolios differ depending on bank ownership, with large financing gaps in critical segments of the economy. SCBs in Bangladesh largely serve big companies, providing loans at on average below-market rate, while private and foreign banks have portfolios in the mid-size segment of the market. The lending portfolio of state

58 Obstfeld (2017); Huljak et al. (2020).

Figure 4.7: Private Credit to GDP

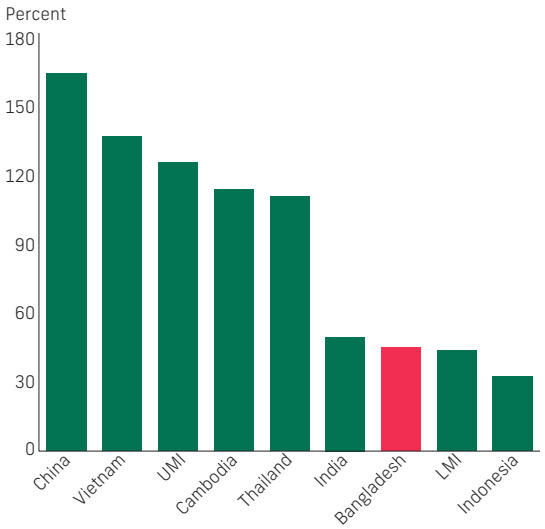


Figure 4.8: Credit-to-GDP Gap, by Country

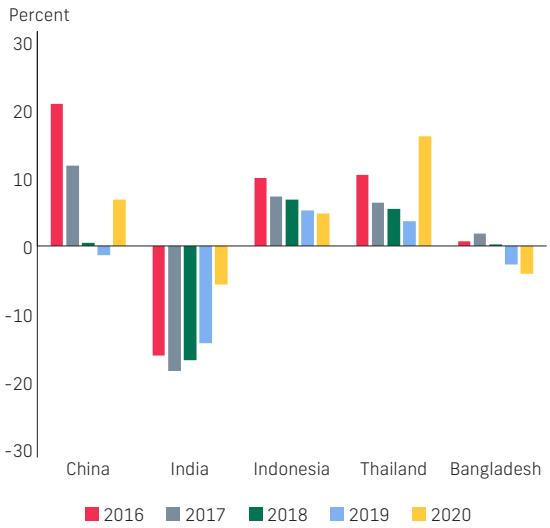


Figure 4.9: Private Credit-to-GDP Gap

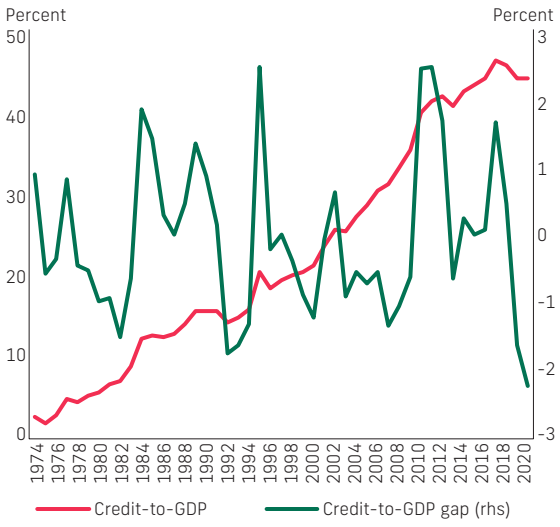
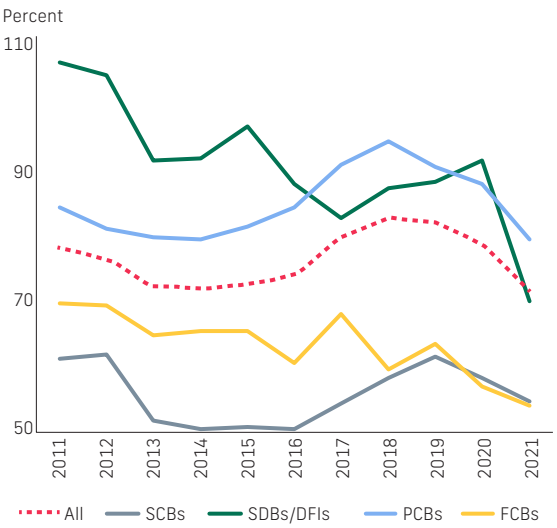


Figure 4.10: Loan-to-Deposit Ratio



Sources: World Bank CEM team calculations; Bank for International Settlements; World Bank FinStats 2021; Bangladesh Bank; Scheduled Banks Statistics.

Note: The credit-to-GDP gap is estimated using the Hodrick-Prescott filter with smoothing parameter λ = 100 for yearly data. Data for peer countries are from the Bank for International Settlements, with the definition of the credit-to-GDP gap similar to the one used for the analysis of Bangladesh. CEM = Country Economic Memorandum; DFIs = development finance institutions; FCBs = foreign commercial banks; GDP = gross domestic product; LMI = lower-middle-income countries; PCBs = private commercial banks; SCBs = state-owned commercial banks; SDBs = specialized development banks; UMI = upper-middle-income countries.

development banks mostly consists of agricultural loans, reflecting the special development status of the institutions. At the same time, the lending portfolios of PCBs and SCBs have similar sector compositions, mostly in industry, trade, and consumer finance (figure 4.11). Further, the biggest share of loans to small and medium-size enterprises (SMEs) is supplied by PCBs, accounting for 80 percent of total SME lending in 2020, compared with 18.2 percent by SCBs. To support the country's long-term growth goals, the large financing gaps in infrastructure (estimated at 1.8 percent of GDP per year)[59] as well as in the MSME (estimated at 20 percent of GDP; see box 4.3 for more detail)[60] and housing markets will need to be closed, requiring stronger capabilities of the financial system, including deeper capital markets. Export financing accounted for 5.2 percent and import financing – for 9.7 percent of the overall bank portfolio that might be not sufficient to promote export-led growth as discussed in chapter 3.

59 https://www.adb.org/sites/default/files/linked-documents/51311-001-ssa.pdf.
60 https://www.smefinanceforum.org/data-sites/msme-finance-gap.

Box 4.3: Access to finance for MSMEs

MSMEs constitute a sizable share of Bangladesh's economy and are a major source of employment and exports. According to the Economic Census and Enterprise Survey, there are more than 6 million individual entrepreneurs and micro and cottage enterprises, and nearly 80,000 small and medium enterprises (of which 93.6 percent are small firms). MSMEs accounted for 25 percent of the country's GDP and about 25 percent of the labor force.[61] Their total contribution to export earnings varies between 75 and 80 percent.

Limited access to finance for MSMEs was one of the main obstacles to their operation and growth, even prior to the onset of the COVID-19 pandemic. According to the Bangladesh Firm-level Adoption of Technology Survey[62], over a half of SMEs identified lack of access to finance as the most important constraint to the adoption of new technologies. On the demand side, key constraints to obtain formal financing are limited collateral and no established creditworthiness or financial statements. On the supply side, higher administrative costs associated with MSME lending incentivize banks to focus on larger customers. Many banks in Bangladesh also lack the technical specialization to expand MSME lending, such as tailored credit appraisal practices.

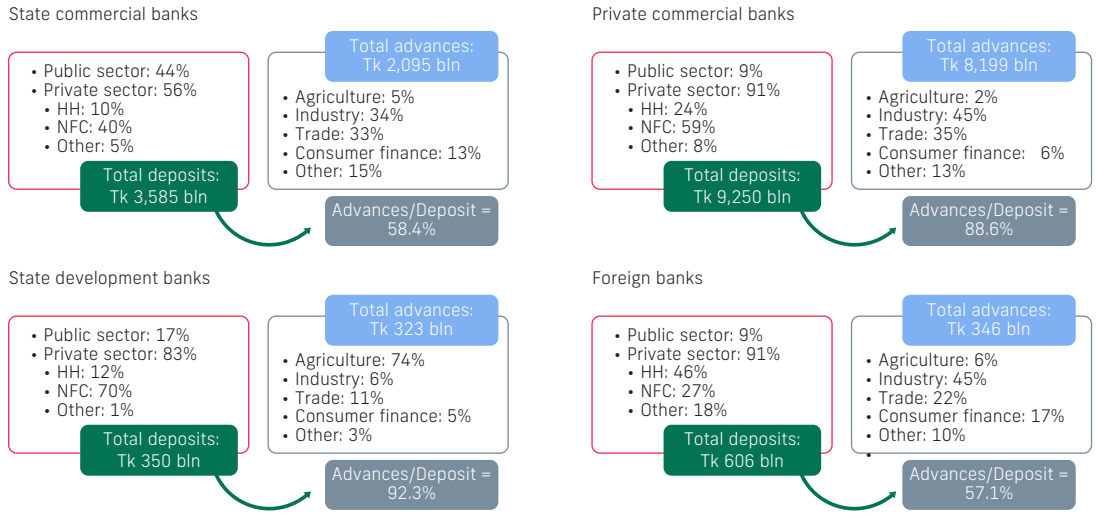
Pandemic further worsened ability of MSMEs to access formal finance. According to the Business Pulse Survey[63] conducted in July 2020, 94 percent of businesses in Bangladesh experienced sharp drops in sales, 83 percent of firms made losses and 33 percent of firms were not able to pay installments on existing loans. A staggering 37 percent of Bangladesh's workers lost their jobs, temporarily or permanently. MSMEs' debt servicing burden grew as cash constrained firms had to borrow to pay salaries and cover business losses, while and at the same time the increased risk aversion by lenders further reduced their appetite for lending to MSMEs. Fourty-nine percent of micro firms reported that they do not have sufficient liquidity to sustain their businesses for the next three months, compared to 40 percent and 33 percent of small and medium firms, respectively.[64] Even though the situation improved since the onset of the pandemic, 55.6 percent of establishments still reported being in arrears or expected to fall in the next six months (according to July 2021 data).

While state commercial banks absorb a large share of deposits, they do not lend enough of the resources. SCBs absorb the majority of the deposits from government and state-owned enterprises, 66 and 62 percent, respectively, partly due to regulation requiring that up to 50 percent of certain government funds must be deposited with SCBs. In addition, SCBs have a higher share of deposits coming from rural areas than private banks do, thanks to the SCBs' larger branch networks in rural areas. At the same time, both PCBs and FCBs rely on deposits from the private sector, with the share of private deposits being above 90 percent (figure 4.11). Across the banking sector, the loan-to-deposit ratio has fluctuated between 72 and 83 percent over the past 10 years (figure 4.10). While PCBs and SDBs have loan-to-deposit ratios of above the banking sector average, for SCBs and FCBs, this ratio is below the average. In 2021, SCBs and FCBs had loan-to-deposit ratios of 54.8 and 54 percent, respectively, suggesting that only slightly more than half of the collected deposits were loaned for productive use.

Both SCBs and FCBs invest heavily in government securities, which may have a crowding out effect on credit to the private sector. While credit to the private sector represents the largest part of banks' loan portfolios, credit to the public sector has grown rapidly in recent years. In 2019 and 2020, investment in government securities accelerated, especially by SOBs, which increased their holdings of government securities by 118 percent in 2020, compared with 28 and 40 percent increases by PCBs and FCBs, respectively (figure 4.12). As of end-2020, government securities represented 25 and 35 percent of SCB and FCB assets (loans and investment), respectively, while only 13 percent of PCB assets were in government securities. Apart from serving government needs, the shift of SCB assets into investment in government securities rather than loans is partially driven by SCBs' high NPLs and weak loan recovery, which discourage new loan origination.

61 Government of Bangladesh Planning Division, 2013.
62 https://documents1.worldbank.org/curated/en/702731624306432211/pdf/Gearing-Up-for-the-Future-of-Manufacturing-in-Bangladesh.pdf
63 World Bank, "COVID-19 Business Pulse Surveys Dashboard". The World Bank Group, Washington DC, 2020. https://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard
64 Kader,Ananya Wahid Pattanayak, Manoranjan. Business Pulse Survey: Impact of COVID-19 on MSMEs in Bangladesh (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/172841613718788462/Business-Pulse-Survey-Impact-of-COVID-19-on-MSMEs-in-Bangladesh

Figure 4.11: Flow of Funds, End-2020



Sources: Bangladesh Bank, Scheduled Banks Statistics; CEM team calculations.
Note: CEM = Country Economic Memorandum; HH = households; NFC = nonfinancial corporations (firms).

Investments in NSCs absorb a large share of the country's savings, diverting these resources from financial intermediation. While total deposits in the financial system accounted for Tk 15,107.2 billion in 2021, investment in NSCs was Tk 3,536.8 billion.[65] In 2020, outstanding NSCs accounted for around 19.6 percent of total available resources, defined as the sum of deposits and investment in NSCs, or 53.5 percent of household savings. Investment in NSCs increased by more than 5 times over the past 10 years (figure 4.13), driven by very high, risk-free returns offered by NSC products (11.28 percent in 2020, compared with the average return of 4.56 percent for bank deposits).

Figure 4.12: Growth in Investment in Government Securities (%)

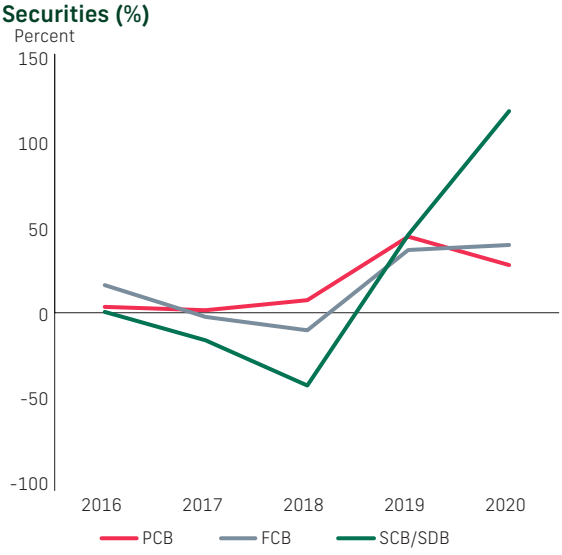
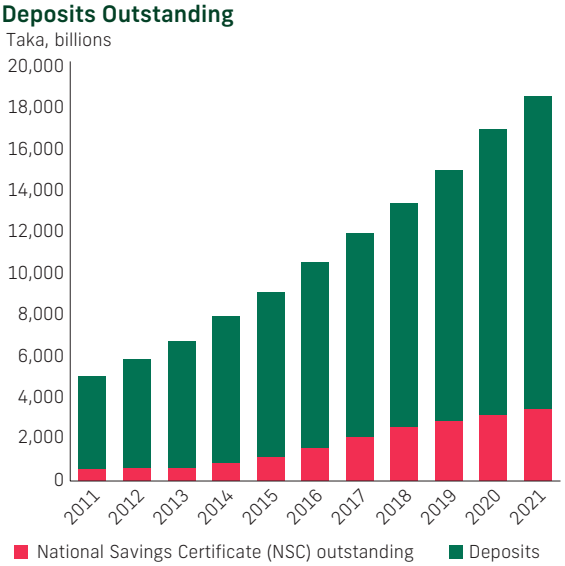


Figure 4.13: National Savings Certificates and Deposits Outstanding



Source: Bangladesh Bank.
Note: FCB = foreign commercial banks; PCB = private commercial banks; SCB = state-owned commercial banks; SDB = specialized development banks.

65 Part of government borrowing through NSCs returns to the banking system through public sector deposits, mostly in SOBs, which face credit allocation issues.

Related-party lending seems to be widespread among PCBs, diverting scarce financial resources from the most productive use. Banks in Bangladesh are often controlled by persons or entities with a substantial interest in nonfinancial firms. In addition, prominent political figures and owners of large business groups currently sit on the boards of many banks, with the independent director function being rather weak.[66] Although some restrictions on related-party transactions exist on paper, the regulations are not consistent with international best practices and, in practice, there are few barriers to self-dealing. For example, to circumvent Bangladesh Bank's prior approval of loans to directors exceeding a certain amount, directors can borrow from banks other than the one for which they are directors, so as not to be classified as related parties. This phenomenon has reached an alarming size, with at least 20 percent of the total loans in the banking system being granted to directors, based on World Bank estimates. When facing financial difficulties, directors are incentivized to borrow from other banks, directly or through family members, to regularize their position, to avoid termination of office, causing evergreening of loans. Various fraudulent schemes reported in the public domain provide anecdotal evidence of this practice. Over the past decade, large losses occurred due to fraudulent schemes with the involvement of members of the board of directors in Sonali Bank (more than Tk 30 billion in losses, 2010–12), BASIC Bank of Bangladesh (Tk 45 billion, 2009–13), and Padma Bank, formerly Farmers Bank (Tk 30.7 billion, 2017–18). Several related-party transactions are currently under investigation according to the banks' annual reports.

The Costs of Financial Intermediation Are Driven by Structural Inefficiencies and High Nonperforming Loans Rather Than Profit-Seeking Behavior

The net interest margin (NIM) in Bangladesh is below the South Asian average (figure 4.14), which, however, is not a confirmation of the greater efficiency and resilience of Bangladeshi banks.[67] The level of loan loss provisions (LLPs) in Bangladesh stood at only 42.7 percent of NPLs in 2019, against the South Asian average of 61.8 percent. However, LLP costs would have been much higher if Bangladeshi banks were subject to more robust, internationally accepted norms for NPL classification and loan loss provisioning. In addition, the share of overhead cost in NIM in Bangladesh is higher (2 percent in 2019) than the South Asian average (1.9 percent) but below the income group average (3.2 percent) (figure 4.15).

Figure 4.14: Net Interest Margin: Bangladesh and Peer Groups

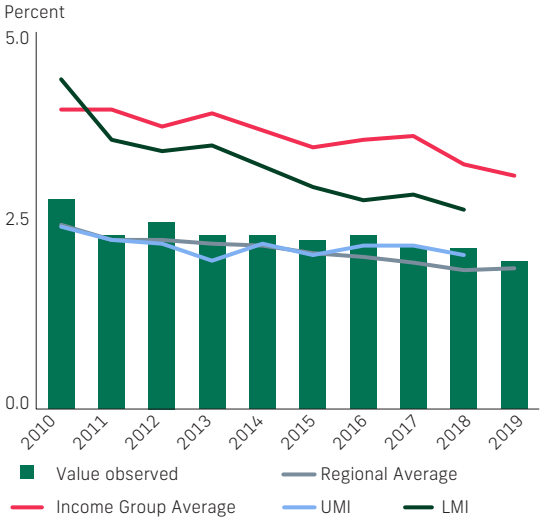
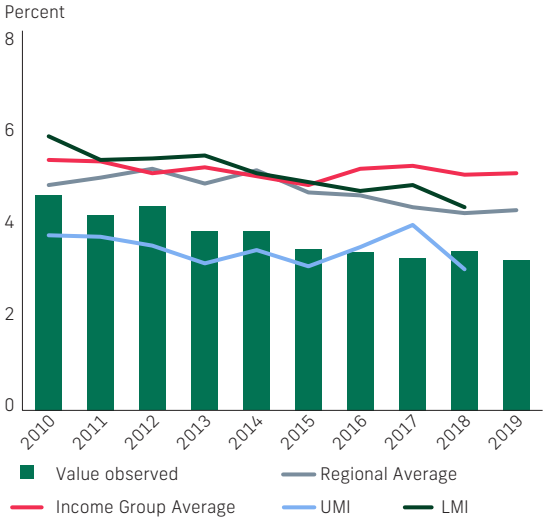


Figure 4.15: Overhead Costs/Total Assets: Bangladesh and Peer Groups



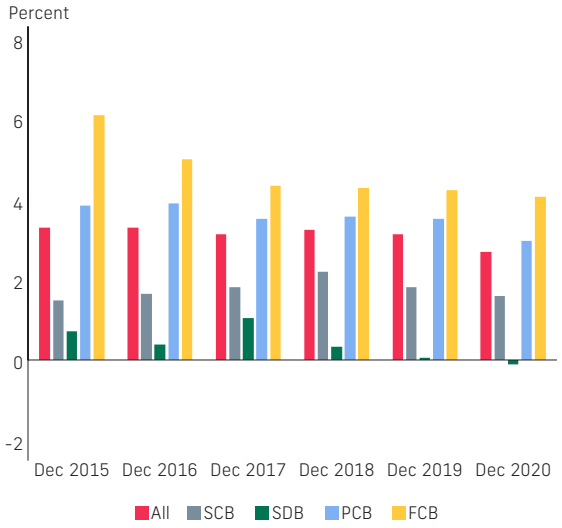
Source: World Bank FinStats 2021.
Note: LMI = lower-middle-income countries; UMI = upper-middle-income countries.

66 The current corporate governance guidelines in Bangladesh mandate appointment of at least 10 percent or at least one independent director on the board of the commercial bank, which is quite low by international standards.
67 Banks with better management and production technologies often have lower costs and subsequently can offer more competitive interest rates on loans and/or deposits, leading to a negative relationship between operational efficiency and interest margins. For details, see Claeys and Vander Vennet (2008).

The average banking sector NIM was 3.2 percent during 2015–19 and had a downward trend over the observed period (figure 4.16). Decomposition analysis of the NIM[68] conducted by the CEM team suggests that operating expense is the largest component (1.1. percent on average) even after netting out noninterest income (NII) (figure 4.17). Operating expense includes, among others, costs for branches, equipment, and personnel to serve and monitor clients, which are exacerbated by low levels of automation and inefficient organizational structure. Loan loss provisioning is the second largest component (0.83 percent), followed by corporate income tax (0.65 percent) and net profit (0.65 percent). That LLP is the second largest component, despite inadequate maintenance, is attributable to the high level of NPLs, particularly in the SOBs. This component would be larger if asset quality issues were properly recognized and adequate provisions were created/maintained. Net profit is the smallest contributor to the NIM as profitability of the overall bank sector appears moderate and has decreased over time. As determined by the econometric analysis, overhead costs; risk aversion; banks' ability to diversify income; and macro variables, such as inflation, have important impacts on the NIM (table 4C.3, in annex 4C).

More granular analysis based on bank ownership and mandate suggests that the NIM is falling across all bank groups, except SCBs, and the variations among groups are substantial. SDBs have the lowest NIM (0.49 percent), followed by SCBs (1.77 percent), PCBs (3.67 percent), and FCBs (4.79 percent) (figures 4.18 to 4.21). The economic crisis due to the COVID-19 pandemic pushed the industry-level NIM further down to 2.7 percent in December 2020. Operating costs are very high across all bank groups, except FCBs. The high operating costs arise from factors such as nonautomated business operations and managerial inefficiency. LLP is also a substantial part of intermediation costs due to high NPL stock, especially for SCBs, which have a significantly higher LLP share in NIM than that of the other groups. The sector's net profit appears moderate (except for FCBs), with SCBs and SDBs having a negative after-tax profit margin

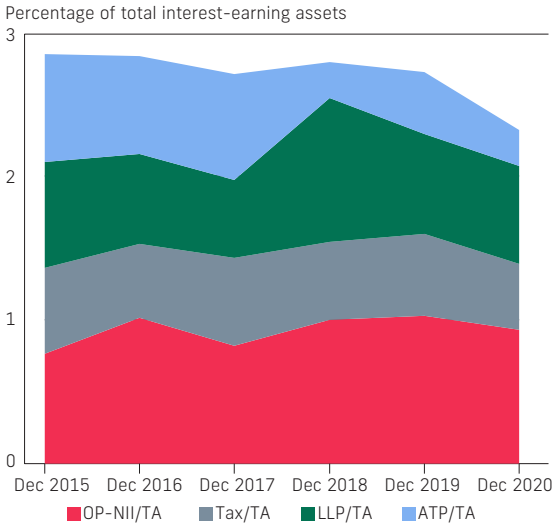
Figure 4.16: Net Interest Margin: Net Interest Income over Total Interest-Earning Assets



Source: Calculations using data from Bangladesh Bank.

Note: FCB = foreign commercial banks; PCB = private commercial banks; SCB = state-owned commercial banks; SDB = specialized development banks.

Figure 4.17: Components of NIM: All Banks



Source: Calculations using data from Bangladesh Bank.

Note: ATP = profits net of tax and provisions; LLP = loan loss provision; NII = non-interest income; NIM = net interest margin; OP = operating expense; TA = total interest-earning assets.

68 The NIM is decomposed into its constituent parts as percentages of total interest-earning assets (TA): operating expenses (OP) minus noninterest income (NII) plus tax (TX), loan loss provisions (LLP), and profits net of tax and provisions (ATP). The balance sheet implies that before-tax profit (BTP) is $\frac{BTP}{TA} = \frac{ATP}{TA} + \frac{TX}{TA}$. The identity for BTP from the income statement is $\frac{BTP}{TA} = \frac{NI}{TA} + \frac{NII}{TA} - \frac{OP}{TA} - \frac{LLP}{TA}$, where NI is net interest income and NII is noninterest income. Thus, $\frac{NI}{TA} = \frac{ATP}{TA} + \frac{TX}{TA} + \frac{OP}{TA} - \frac{NII}{TA} + \frac{LLP}{TA}$. The accounting decomposition of NIM implies that $NIM = \frac{\text{Interest revenue} - \text{interest expenses}}{\text{Total assets}} = \frac{\text{Net interest income}}{\text{Total assets}} = \frac{NI}{TA}$. Therefore: $NIM = \frac{ATP}{TA} + \frac{TX}{TA} + \frac{OP}{TA} - \frac{NII}{TA} + \frac{LLP}{TA}$. The baseline analysis is conducted for 2015–19 and then compared with 2020 to reflect the impacts of the COVID-19 pandemic (table 4C.1, in annex 4C).

Driving the overall sectoral profit margin down. Banks are doing business with lower profit margins, and the fierce competition and regulatory restraints (including the lending rate cap) in an overbanked industry contribute to the declining profit margin. The NII of SCBs and SDBs is lower than that of other banks due to the development roles of SCBs and SDBs and the unaccounted fees for government services. In FCBs, the profit margin is the largest component. Fee-based noninterest income is used mainly by FCBs to circumvent the regulatory pressure of the lending rate cap. The absence of transparency and disclosure requirements in the schedule of fees allows banks to charge higher fees.

Figure 4.18: Components of NIM: State-Owned Commercial Banks

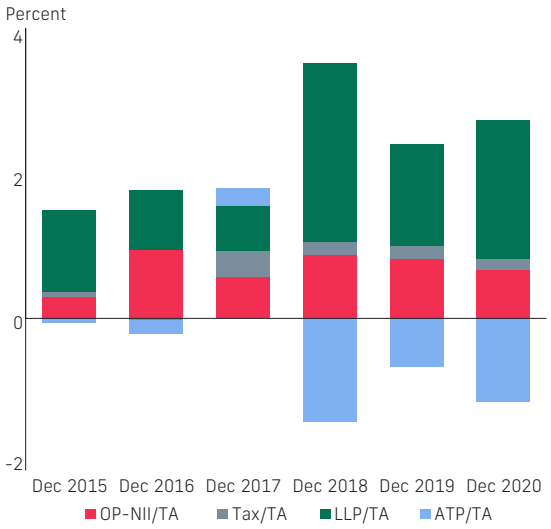


Figure 4.19: Components of NIM: State-Owned Development Banks

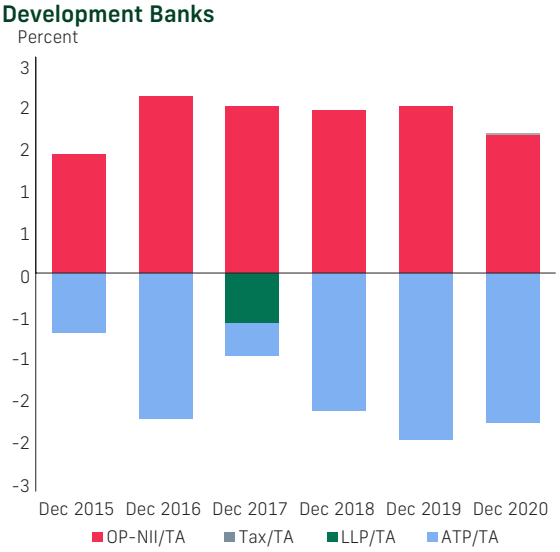


Figure 4.20: Components of NIM: Private Commercial Banks

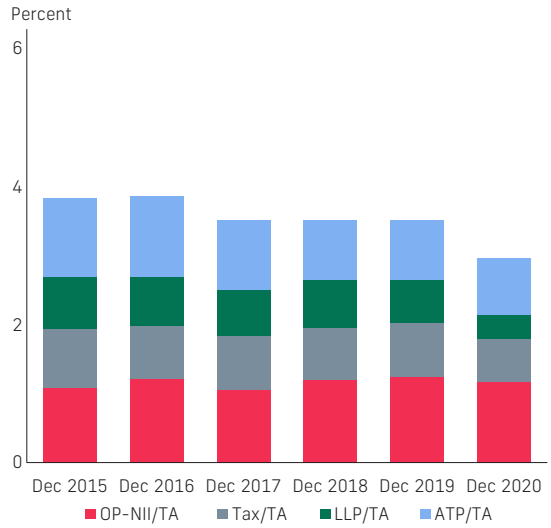
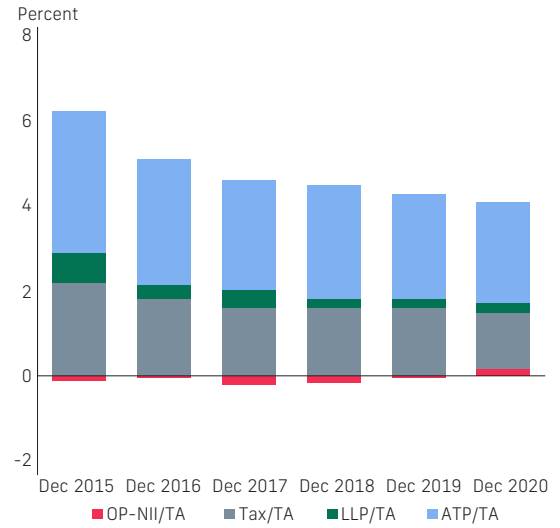


Figure 4.21: Components of NIM: Foreign Commercial Banks



Source: Calculations using data from Bangladesh Bank.

Note: ATP = profits net of tax and provisions; LLP = loan loss provision; NII = noninterest income; NIM = net interest margin; OP = operating expense; TA = total interest-earning assets.

First- and second-generation banks had higher NIMs than the third- and fourth-generation banks, on average. Banks of older generations—first and second—have higher NIMs with higher net profit margins and better LLPs compared with third- and fourth-generation banks (table 4C.2, in annex 4C). The higher NPLs and lower profit margins of the newer banks are often attributable to poor credit discipline due to related-party lending and undue influence of the board on bank management, with the LLP component not being commensurate with the level of NPLs. In addition, the lower profit margins of third- and fourth-generation banks imply that they have limited capacity to boost their capital position and resilience against unexpected losses.

The CEM analysis thus found no evidence of excessive profit-seeking behavior by banks,[69] which suggests that an interest rate cap policy is unlikely to reduce the cost of borrowing without unintended negative consequences. Moderate after-tax profit margins may not sustain the effects of an interest rate cap without impacting banks' capital position and financial stability, with further negative spillovers to trade and commerce. In this context, the lending interest rate cap of 9 percent imposed since April 2020 risks exacerbating the already existing vulnerabilities of the financial sector. Reducing operating expenses and managing both the stock and flow of NPLs could be a more effective way to reduce the NIM. A fixed schedule of fees[70] would be more impactful for PCBs and FCBs that rely on noninterest fee income to circumvent the negative consequences of the interest rate cap.

The Regulatory and Supervisory Environment Is Not Conducive to Development of the Credit Market and Genuine Competition, and It Does Not Fully Address the Risks to Financial Stability

While Bangladesh strives to implement Basel III, important gaps remain in the regulatory and supervisory framework, potentially heightening financial stability risks and constraining the flow of credit to the real sector. Bangladesh Bank has made a lot of progress over the past decade in aligning its regulatory and supervisory requirements with Basel III, such as leverage ratio and prudential liquidity requirements. However, some crucial gaps remain, related to capital adequacy, the definition of NPLs, and provisioning rules, among others. Capital requirements reflect neither banks' risk profiles nor their systemic importance, and some banks are chronically undercapitalized, posing risk to financial stability. The true level of NPLs is masked by widespread regulatory forbearance and weak enforcement, which were in place long before the onset of COVID-19.[71] According to the Bangladesh Bank regulations, loans are considered nonperforming if they are 180 days past due, compared with 90 days past due required by Basel standards. In addition, a number of exceptions to the general rule exist, for example, short-term agricultural and MSME loans benefit from more relaxed NPL recognition criteria, and the performance status of rescheduled NPLs can be reclassified without a minimum "cure period." In addition, Bangladesh Bank repeatedly provided ad hoc regulatory forbearance for certain loan categories prior to the COVID-19 pandemic (for example, the One Time Exit Circular of May 16, 2019). As such, provisioning needs are underestimated due to masked NPLs as well as preferential treatment of certain types of loans.

During the COVID-19 pandemic, the authorities announced a gamut of regulatory and supervisory measures, including, among others, declaring a credit repayment moratorium, freezing the asset classification for existing loans, and relaxing provisioning requirements and applicants' documentation for credit due diligence. These measures were meant to allow the private sector to maintain cashflow and incentivize banks to provide their committed credit to the real sector. However, the measures could rapidly entail serious risks for banks and their customers alike, in addition to making supervisory responses even more challenging unless these are temporary and closely monitored. Although Bangladesh Bank lifted the loan repayment moratoria on December 31, 2020, it was extended until December 2021 for repayment of all loans with 25 percent down payment without any downward classification. Currently, the regulator has not communicated a clear plan for gradually withdrawing the permanent and COVID-19-related forbearance measures.

Weak corporate governance, poor regulatory enforcement, and lack of transparency expose banks to significant risks and abuse, as evidenced by numerous fraud investigations and high NPLs in some PCBs and SOBs. Involvement of politically exposed persons as well as owners of large conglomerates in the ownership and management of the banks is a key structural factor not only in SOBs, but also in PCBs. In the absence of definitions of "controlling interest" and "ultimate beneficial ownership" as well as deficiencies in the definition of "related parties" that excludes complex interfamilial relationships, among others, the real size of related-party lending can be masked.

69 SOBs, with over 28 percent market share, have negative net profit margins; PCBs, with a 66.3 percent share, have net profit margins below 1 percent. By contrast, FCBs, holding just 5.4 percent market share, have profit margins above 2.5 percent. For comparison, the net profit margins among regional peers in 2018 were as follows: India, 0.89 percent; Pakistan, 1.31 percent; Nepal, 1.75 percent; and Sri Lanka, 1.1 percent. In other Asian countries, the net profit margins were as follows: Malaysia, 1.15 percent, and Thailand, 1.04 percent (Calice and Zhou 2018).

70 A Bangladesh Bank directive issued on June 10, 2021, fixed the schedule of charges to be lower than the prevailing rate, which will be reflected in future data.

71 For a discussion of pre-COVID-19 forbearance in Bangladesh, see 2019 Article IV, https://www.imf.org/en/Publications/CR/Issues/2019/09/17/Bangladesh-2019-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-48682.

The corporate governance and risk management frameworks do not provide necessary safeguards. First, the common practice of having large, overpopulated boards does not facilitate effective oversight of business lines and control functions. The number of independent directors is not sufficient, and often independent directors are selected purely for compliance requirements and they do not exert meaningful influence. Second, the application of "fit and proper" criteria for boards does not ensure that skills and experience in relevant financial operations are commensurate with the activities of the bank. Third, internal auditors do not always have sufficient technical skills and impact, leaving gaps in banks' risk management. Finally, weak regulatory enforcement on the Bangladesh Bank side related to related-party lending and continuous NPL restructuring creates a culture of tolerance of regulatory breaches.

Due to the limited powers of Bangladesh Bank, the regulatory playing field for public and private banks is uneven, creating barriers to fair competition in the banking sector and posing further risks to financial stability. Under the current framework, Bangladesh Bank does not have full discretion to take supervisory actions against SOBs. For example, the Bank Company Act 1991 (amended in 2013 and 2018) prevents Bangladesh Bank from removing government-appointed chairpersons and directors of SOBs. In addition, Bangladesh Bank fails to enforce SOB prudential requirements, allowing for chronic undercapitalization and under-provisioning. Despite having agreed to corrective actions under memorandums of understanding with Bangladesh Bank, SOBs still do not fulfill prudential requirements for years, but they do not face sanctions for noncompliance. Apart from risk to the financial stability of the banking system, this creates an uneven playing field and distorts competition between PCBs and SOBs.

Bangladesh Bank's insufficient operational independence and weak crisis management and bank resolution framework constrain the regulator's ability to deal with bank distress in a timely and cost-effective manner. Operational independence of Bangladesh Bank is not prescribed in the law, and it is compromised by interference stemming from the Ministry of Finance's broad mandate for financial sector issues. For example, acquisition of a banking company and a moratorium against the commencement or continuation of all actions and legal proceedings against a bank are within the purview of the government. In case of bank failure, Bangladesh Bank is expected to recommend specific actions to the Financial Institutions Division (FID) of the Ministry of Finance for further decision, with bailout using public funds being the most common resolution strategy.

The framework for licensing banks appears overly lax for an already overcrowded banking sector. Considering the over-crowdedness of the banking sector, applicants' business plans might need to go through stricter scrutiny, especially on the rationale for establishing new banks and their growth projections. In addition, the current regulations have shortcomings in establishing a proper corporate governance framework, including in determining the suitability of major shareholders in the context of a wider business group and "fit and proper" criteria for board members as well as disclosure of the ultimate beneficial owner.[72]

Although interest rates were largely liberalized to be determined by market forces in the 1990s, financially repressive policies have recently returned in Bangladesh. Perceiving the interest rate as too high and a constraining factor for credit expansion, the authorities have imposed a lending interest rate cap of9 percent since April 2020. As the literature suggests,[73] such measures can limit banks' ability to price risk accurately during credit assessment and can harm depositors by putting downward pressure on the deposit interest rate. The real return from deposits has turned negative in some cases. Consequently, the authorities have imposed a floor for the deposit rate since September 2021, by pegging the interest rate to the Consumer Price Index inflation rate. This will exacerbate pressures on banks' profitability and capacity to strengthen their capital position.

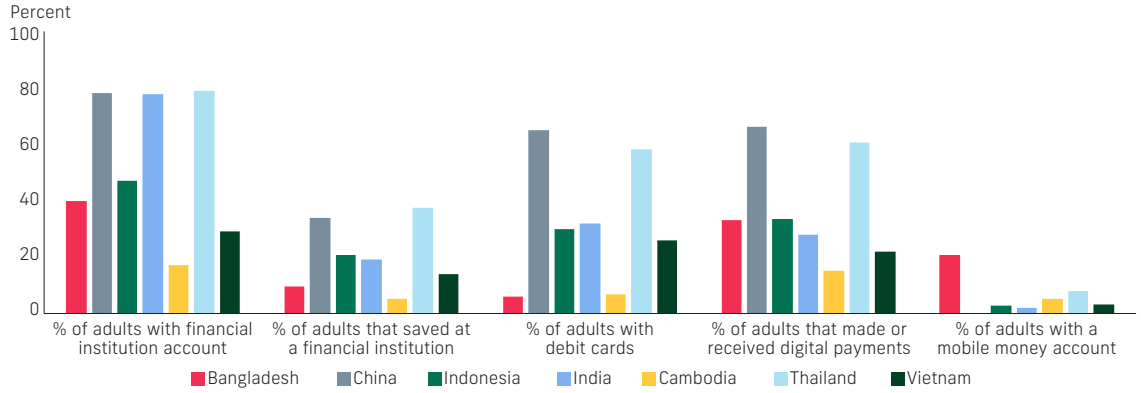
Remaining weaknesses in credit infrastructure also constrain financial intermediation. For example, the current legal system does not enable the use of movable property as collateral. Lending is thus predominantly based on the use of immovables (for example, land) as a security interest, which is particularly constraining for MSMEs, which often have only unregistered movable property to offer as collateral. The outdated and incomplete insolvency framework increases the lender's costs in dealing with problem loans.

72 The recently proposed amendments to the Bank Company Act include some improvements to the licensing procedures, and Bangladesh Bank recently drafted a new licensing guide, but those are still to be approved and operationalized.
73 Ferrari, Masetti, and Ren (2018); Maimbo, Gallegos, and Alejandra (2014).

Financial Inclusion in Bangladesh Is Still Low, Despite the Recent Progress in Digitalization of Financial Services

Use of traditional banking services in Bangladesh is relatively low compared with the country's structural and aspirational peers. According to the World Bank's Global Findex survey, the percentage of adults with a financial institution account increased from 32 percent in 2011 to 41 percent in 2017. Still, this indicator remains one of the lowest across the peer countries, with only Vietnam and Cambodia having a lower percentage of adults linked to a financial institution (figure 4.22). The percentage of adults who saved at a financial institution actually decreased from 17 percent in 2011 to 10 percent in 2017, with savings bypassing the formal financial sector (figure 4.23), with only Cambodia having a lower rank. Similarly, the use of debit cards is the lowest among the peers, and growth in debit card usage has been slow, from 2 percent of adults having debit cards in 2011 to 6 percent in 2017. Further, the gender gap in financial inclusion is high and widening. In 2011, 37 percent of men had a financial account, compared with 26 percent of women. In 2017, 50 percent of men and only 32 percent of women had an account at a financial institution.

Figure 4.22: Usage of Financial Services, by Country, 2017



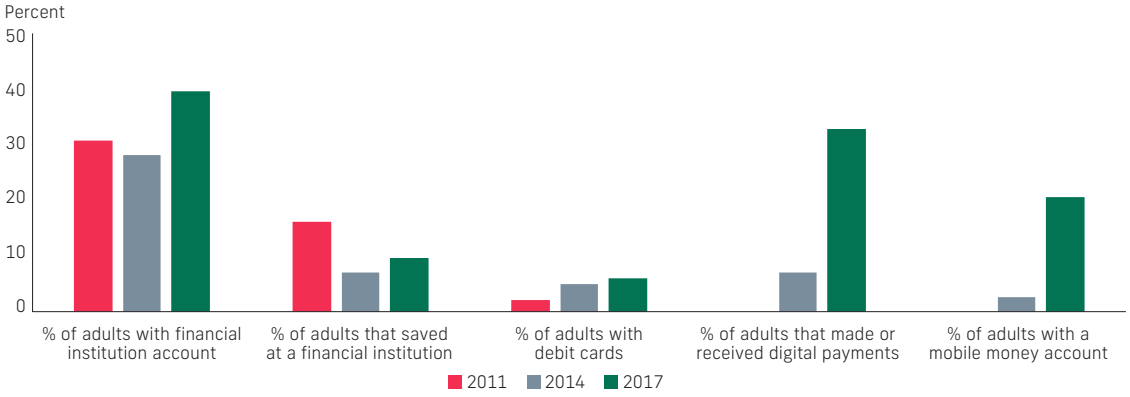
Source: World Bank Findex 2017.

Insufficient funds are the main reason for low financial inclusion. Around 40 percent of adults do not have a financial account due to low income and inability to save. In addition, 12 percent of adults do not have a financial account as someone in the family already has an account, which might partially explain the wide gender gap in financial inclusion. The costs of financial services, distance to financial institutions, and lack of necessary documentation are also indicated as impediments to financial inclusion, although they appear to be less important. Overall, access to financial services has been improving; the number of branches per 100,000 adults grew from 7.9 in 2011 to 9.0 in 2020, and the number of automated teller machines (ATMs) per 100,000 adults grew from 3.7 in 2011 to 10.2 in 2020. Still, the number of access points to traditional banking remains low in Bangladesh compared with its peers.[74]

Mobile money and digitalization of financial services have high potential to close the financial inclusion gap. The percentage of adults using digital payments in Bangladesh increased rapidly, from 7 percent in 2014 to 34 percent in 2017 (figure 4.23). Only China and Thailand surpassed Bangladesh in this indicator, while the other peers are on par or below in the usage of digital payments. Bangladesh also made a substantial leap in the use of mobile money, with the percentage of adults who have a mobile money account increasing from 3 percent in 2014 to 21 percent in 2017 (figure 4.23), the highest share among the peer countries. While the volume of both mobile money and debit card transactions increased by around 66 percent over the past 2.5 years (December 2018 to June 2021), the volume and number of mobile money transactions are, respectively, 3 and 12.6 times higher than those of debit card transactions.[75] However, digitalization of financial services does not help address the gender divide in access to finance: in 2017, only 10 percent

74 In 2020, the number of branches per 100,000 adults was 11.6 in Cambodia, 8.9 in China, 14.8 in India, 15.2 in Indonesia, 10.6 in Thailand, and 4 in Vietnam; the number of ATMs per 100,000 adults was 26.3 in Cambodia, 87.9 in China, 21.5 in India, 51.7 in Indonesia, 111.8 in Thailand, and 26.3 in Vietnam (International Monetary Fund Financial Access Survey).
75 Bangladesh Bank, Statistics Department, e-Banking and e-Commerce Statistics Unit.

Figure 4.23: Usage of Financial Services in Bangladesh



Source: World Bank Findex 2017.

of women had a mobile bank account compared with 32 percent of men. Mobile money access points are booming in Bangladesh. The number of mobile money agent outlets increased from 2.5 per 100,000 adults in 2011 to 334.1 in 2020, with the number being among the highest across the peer countries.

Over the past decade, the authorities took steps to promote digitalization of financial services, particularly the development of mobile money market financial services (MFS). In 2009, the Government of Bangladesh launched the long-term plan Digital Bangladesh–Vision 2021 to promote the digitization of services, including banking and payment services. Since early 2010, the banking and payment systems modernization drive has been underway, including the Automated Cheque Clearing System, Card Payment Switch, and Real Time Gross Settlement System, among others. In 2020, policy makers started preparing for the implementation of an interoperable system of digital payments where customers can access all digital services under one application programming interface. Bangladesh Bank also provided guidelines (2011, 2015, 2017) and regulations (2018) for MFS providers. To help increase the number of people with financial accounts, the digitization of government-to-person programs and digital payroll were introduced. During the COVID-19 pandemic, the government disbursed cash aid through mobile financial services, bringing more users into the ecosystem and demonstrating large-scale trust in the system. As of 2016, the smart National Identity Card (NID) was introduced. In 2020, Bangladesh Bank initiated the electronic know your customer guideline, allowing for easier and faster verification of the NID. Despite progress over the past years, some impediments to digital financial inclusion are still present, such as a high preference for cash, low financial literacy and digital skills gap, and high incidence of MFS scams and frauds.[76]

The remaining gaps in the legal and institutional framework for getting credit dampen banks' willingness to provide credit to small firms and individuals. Credit bureaus and registries are essential elements of the financial infrastructure that, by sharing credit information, help to address and reduce information asymmetries and increase access to credit for small firms and other underserved borrowers. Despite major reforms, such as the establishment of an online platform for sharing such credit information in 2011 and expansion of coverage of the CIB in 2018, credit coverage in Bangladesh remains the lowest among its peers. Only 5.2 percent of adults were covered by a credit registry in 2020, a slow pace of improvement from 0.8 percent in 2014. The credibility of the information provided by the CIB is jeopardized by the power of the High Court to require Bangladesh Bank to exclude information on certain defaulted borrowers from the CIB ("stay order"). Further, courts are overburdened and there exists a severe backlog of files, allowing sophisticated debtors to delay litigation cases of defaulted borrowers for years.

76 https://www.afi-global.org/wp-content/uploads/2020/12/AFI_DFS_Bangladesh_AW3_digital.pdf.

Nonbank and Capital Markets Are Shallow, with a Lack of Secure Investment Opportunities and a Weak Domestic Institutional Investor Base

Nonbank financial institutions (NBFIs) represent a potentially important but currently underdeveloped part of the financial system. The formal NBFIs are allowed to accept term deposits and conduct business operations with diversified financing modes. Potentially, the NBFIs could play an important niche role in providing financial products to sectors with elevated risk profiles that are underserved by banks (for example, the role of the nonbanking financial companies sector in India). Falling profitability and increasing classified loans and leases indicate the increasing fragility of the NBFI sector in Bangladesh. NBFIs' cost of funds is significantly higher than that of banks, and NBFIs largely depend on banks for funds. The history of poor governance and weak supervision also negatively affects development of the sector.

The insurance sector remains underdeveloped, hampered by the weak regulatory and supervisory capacity of the Insurance Development and Regulatory Authority. In 2019, the life and non-life insurance penetration ratios were 0.38 and 0.18 percent, respectively, compared with South Asia's averages of 0.6 and 0.4 percent. The downward trend of both penetration ratios was caused by the slow growth of insurance premiums compared with GDP growth. The insurance density ratio, which measures insurance coverage on a per capita basis, was US$10.2 in 2019, which is also low compared with other South Asian countries. In Bangladesh, the majority of people remain outside insurance coverage due to the underdeveloped product market and inadequate claims management.

The provident funds in Bangladesh operate under a highly fragmented legislative framework, and there is no dedicated regulatory body for this market segment. Different laws[77] apply to provident funds sponsored by different types of employers (for example, the public sector, private sector, and banks). The funded provident funds are generally those of the listed companies, which are governed according to the applicable laws and rules. The funded provident funds use a limited range of investment options, mostly investing in NSCs and bank term deposits. The unfunded provident funds do not invest their contributions; rather, they use the contributions as operating capital and individual account balances of employees are a liability of the company. The World Bank estimate[78] in 2019 suggests that total funded provident fund assets in Bangladesh are around US$6 billion, with the unfunded government provident funds potentially worth a further US$25 billion.

The depth of capital markets is low in Bangladesh compared with its structural and aspirational peers (figure 4.24). As banks are constrained by the short-term funding structure, high NPLs, and poor governance, they cannot fully meet the demand for long-term capital from the real sector. However, the financing available through capital market instruments remains limited, and it is declining relative to the size of the economy. The ratio of stock market capitalization to GDP has fallen over the past decade, from 25 percent in fiscal year (FY) 2013 to 9.4 percent in FY2020 (figure 4.25). The sectoral decomposition of market capitalization reveals that the manufacturing sector dominates the stock market (42.6 percent), followed by the service sector (33.9 percent). The corporate debt securities segment of the capital market is almost nonexistent (0.014 percent of GDP in FY2018).

Equity market growth is held back by a lack of investors' confidence, as well as the poor market infrastructure and cumbersome processing cycle for initial public offerings (IPOs). Public perception of the stock market continues to be impacted by the memories of alleged manipulators that artificially made the stock market overheat, ending in a crash in 2009–10 (and previously in 1996), causing losses for millions of small investors. However, there was no legal action taken based on the reports produced by the investigating committee. Further, current market systems are not supportive of new issuance. Anomalies in IPO valuations (mostly underpricing) give the sponsors an upper hand over the general investors in the secondary market. Although there is a central depository, the settlement of securities transactions is done on a T+2 days basis. The settlement delay raises the investors' interest rate and price fluctuation risks, reducing the market liquidity and the volume of daily turnover. Liquidity is also affected by the lengthy IPO cycle, as money stays locked in IPO process. Absence of central counterparty clearing is another infrastructure bottleneck that results in lack of confidence in terms of risk management and cross-border transactions. Lack of interoperable information technology

77 The government plans to enact the Universal Pension Management Act, 2022 soon to launch the universal pension scheme from FY 2022-23. However, the contour of the scheme is not clear, e.g., whether existing unregulated provident funds will get to register into the scheme or, public service scheme will be linked to it, and who will be the regulator.
78 Based on the survey conducted by the World Bank in 2019 among the companies/firms that are recognized by the National Board of Revenue.

Figure 4.24: Stock Market Capitalization to GDP

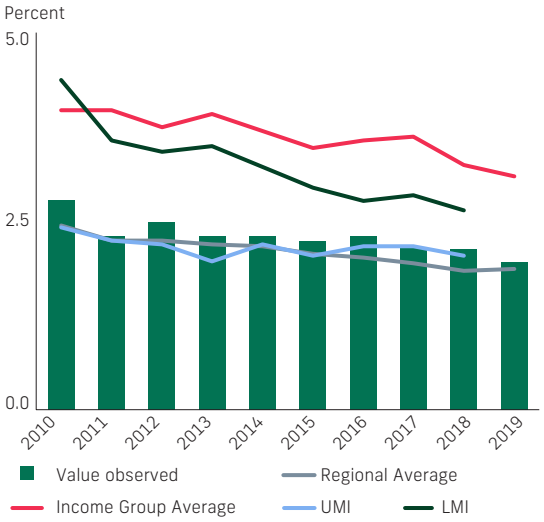
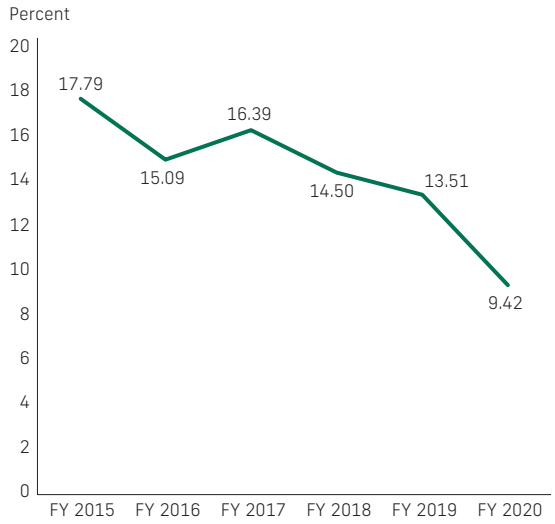


Figure 4.25: Market Capitalization to GDP



Sources: Bangladesh Bank Quarterly; Dhaka Stock Exchange; World Bank FinStats 2021.
Note: Data are as of 2019. FY = fiscal year; GDP = gross domestic product; UMI = upper-middle-income countries.

infrastructure and inadequate trading platforms also constrain brokers and clearinghouses from operating efficiently. There is also a lack of a supportive environment for private equity and/or venture capital funds as they lack exit routes.

There is no enabling environment for corporate debt security issues and trading. From the issuers' side, the impediments include, among others, the lengthy and cumbersome approval process, non-conducive tax regime, lack of coordination between the regulators, absence of benchmark yield, and general lack of awareness about the benefits of these instruments. From the investors' side, the obstacles include the lack of reliable investment information from credit rating agencies, insufficient transparency of rules and issue process, inadequate investors' rights protection, disincentives from the legal structure for institutional investors, absence of credit enhancement mechanisms (for example, guarantee instruments), and weak monitoring capacity of the regulators. While there is a strong demand for sukuk products[79], the regulations for private sukuk, Bangladesh Securities and Exchange Commission (Investment Sukuk) Rules 2019, need to be further aligned with international best practices and regional standards.

Bringing institutional investors into the capital market is another outstanding challenge. Currently, commercial banks and, to a limited extent, insurance companies are the only institutional investors in Bangladesh. The regulatory and supervisory framework has yet to be developed to enable the insurance sector to function adequately and emerge as an institutional investor with the required level of knowledge on risks and opportunities in the capital market. Pension and provident funds are almost completely missing from the capital market landscape due to fragmented and restrictive regulation, availability of high risk-free return of government instruments, high risk perception of the capital market, and lack of knowledge on provident fund asset management. Mutual funds exist, but they mainly invest in equity, while life insurance funds invest only in bank deposits and government instruments.

Private Equity and Venture Capital (PEVC) sector can be an important additional source of financing for startups and innovation as banks are often reluctant to finance these activities. Bangladesh's current ranking in Global Startup Ecosystem Index[80] is 93 out of 100 countries and 4th within South Asia. Bangladesh's PEVC ecosystem remains nascent[81] and dominated by the offshore funds. Capacity, regulatory, and taxation factors are impeding the growth of PEVC industry. Fund managers struggle with managing deal flow as potential PE targets often do not have the financial knowledge to successfully navigate the due diligence process with potential investors. On the regulatory side, the current regulation

79 Sukuk a bond-like financial product that complies with Islamic finance (sharia) rules.
80 Produced by StartupBlink. https://lp.startupblink.com/report/#:~:text=The%20StartupBlink%20annual%20Global%20Startup,decision%20makers%20around%20the%20world.
81 PE first emerged as an asset class in Bangladesh in 2007. The Asset Under Management (AUM) for the industry as of early 2018 were approximately US$250 million.

(BSEC's Alternative Investment Rule (AIR) from 2015) does not provide fully conducive and differentiated operating environment for PE, VC and impact funds. Parameters such as fund manager's minimum investment requirements, management fees, and fund life are fixed in the regulation rather than allowed to be determined by the market. Additionally, the distortionary tax regimes (e.g., higher tax on PEVC compared to mutual funds) and BB's foreign exchange policies (e.g., fair value requirement on exit) constrain the growth of PEVC sector.

The government securities yield curve, which should serve as a benchmark for corporate bond issuance, is one of the key missing fundamentals in the capital market landscape. Despite efforts to build the benchmark yield curve, the government bond portfolio remains fragmented, and the average bond size (Tk 10.7 billion) remains well below the benchmark target size (Tk 30 billion in 2019). Currently, secondary trading is limited due to structural problems. For example, the Central Securities Depository in Bangladesh Bank's Market Infrastructure module is not linked to the Central Depository of Bangladesh Limited at Dhaka Stock Exchange, and therefore trading through the Dhaka Stock Exchange platform is not possible. The market-making role of primary dealers (currently 21 banks) is also muted as evidenced by frequent devolvement to Bangladesh Bank of primary issues instead of allocating them among primary dealers.

The risk-free, generous return offered by non-tradable NSCs creates distortions in the capital markets. For capital markets, the distortions mainly affect the pricing and diversification of financial products, as the high return on these perceived "risk-free" assets crowds out other investments. The use of NSCs to meet the government's financing needs limits the supply of marketable government securities and exacerbates the issuance irregularity. The NSC regulation imposes limits for individual borrowers but allows institutions such as provident funds to invest without limit. Although originally intended to serve socially disadvantaged people, NSCs are disincentivizing institutional investors from exploring opportunities in the capital market.[82]

Key Policy Recommendations83

Ensure the Stability of the Financial Sector

Decisive steps to improve asset quality and increase capitalization of banks, especially of SOBs, are urgently needed to maintain financial stability and avoid costly bank failures. The timetable for the gradual phase-out of existing forbearance measures should be prepared by the regulator and clearly communicated to the banking system. In parallel, the accumulated systemic and institution-specific risks should be assessed by BB through a robust asset quality review exercise, and time-bound remedial action plans should be agreed between the regulator and the banks. The overhaul of primary legislation such as the Bank Company Act (1991) and the Financial Institutions Act (1993) should be completed to bring it in line with international best practice, including the provisions on resolution of problem institutions with minimum cost to the budget. Importantly, BB's operational independence should be enhanced so that it has adequate powers for dealing with potential bank distress in a timely and cost-effective manner.

Maintaining financial sector stability is also important to revive and accelerate credit growth. Lenders should be incentivized to recognize NPLs in a timely manner and offered a full range of effective in-court and out-of-court resolution instruments for various NPL classes. Dealing with problem loans in a resolute manner will improve banks' profitability and interest income from existing and new borrowers, while freeing up additional resources to accelerate lending to the real sector. This would require introducing new, faster, and less cumbersome insolvency procedures. The potential merits of using a publicly funded asset management company for NPL resolution should be carefully weighed against corporate governance and moral hazard challenges encountered by such entities in other developing countries.

Addressing weak corporate governance is critical for ensuring banking sector stability as well as a more efficient allocation of credit. Fit and proper criteria for banks' board members should be tightened and enforced at the time of

82 The latest change in the returns on NSCs was announced in September 2021, after a long pause since 2015. In the latest directive, the interest rates are revised downward and progressively across investment size, as the rate decrease is greater for larger investors. However, the return is still significantly higher than those of other savings instruments in the market.

83 The reforms listed in this section are already being supported by the WBG through policy-based and investment lending, as well as WB and IFC technical assistance.

bank licensing and throughout the life of the bank. Disclosure of ultimate beneficial owners and controlling interests is critical for preventing excessive related-party and insider lending. The requirements for governance of SOBs should be particularly strengthened and the enforcement powers of Bangladesh Bank enhanced to remove distortions and moral hazard.

New risks stemming from climate-related natural disasters may lead to significant losses for Bangladesh's financial sector. In addition, banks could be exposed to transition risks that emerge as their clients must adjust to a more sustainable and carbon neutral economy. The supervisory authorities should urgently work with financial institutions to assess climate-related risks and come up with adequate mitigation strategies.[84]

Optimize Financial Sector Efficiency to Support Better Allocation and Lower Costs of Credit

Administrative measures such as interest rate caps are not efficient ways to reduce borrowing costs. The interest rate ceiling limits banks' capacity to price risks and profitability, which will not only have negative effects on profit and capital position, but also negative spillover effects on trade financing. At the same time, the deposit rate floor affects profitability and access to loanable funds, with potentially negative implications for the supply of credit to the private sector.

As Bangladeshi domestic banks do not exhibit excessive profit-seeking behavior, solving structural problems such as operational inefficiency and NPL overhang is a more sustainable strategy for reducing intermediation costs in the long run. As operating expenses are the biggest component in intermediation costs, particularly in SOBs, further automation in business processes will lead to significant cost savings. This could involve reducing the emphasis on branch-based services, especially in urban areas, and digitalization and automation of tasks such as documentation for approval of loans, which will allow banks to deploy staff to more profitable tasks. Banks could leverage the increasing use of digital banking to reduce overhead costs and improve profitability.

Since Bangladesh's banking sector is already overcrowded, there is an urgent need to strengthen the licensing framework and encourage consolidation. The high expenditure-to-income ratio and lower after-tax profits of new generations of domestic private banks indicate that the sector may be overcrowded enough to reach the diseconomies of scale stage. Tightening of the licensing criteria should be considered to ensure that only banks with strong corporate governance frameworks and relevant business mandates can enter the market. At the same time, consolidation of the banking sector should be encouraged, allowing banks to gain from scaling up operations and reducing redundancies.

Support Credit Infrastructure and Promote Further Digitalization of Financial Services

Lending to MSMEs and other sectors perceived as risky could be promoted through risk-sharing facilities and introducing movable asset–based financing. While several public credit guarantee schemes exist in Bangladesh, the small size and inefficient operating models prevent them from meeting the funding needs of the MSME sector. Market-based risk-sharing facilities led by the private sector could help in de-risking lending to sectors perceived as being risky and unlocking much-needed long-term bank funding, including in support of green growth objectives. A new secured transactions framework can potentially significantly improve movable asset–based financing.

Improving the coverage of the CIB will help expand access to credit among underserved borrowers and help accurately price risk. While important reforms related to the establishment of an online credit information platform and expansion of coverage of the CIB were implemented over the past decade, further steps are needed to enhance the use and scope of the credit information. Relevant Bangladesh Bank regulations should be amended to mandate microfinance institutions, NBFIs, and other financial market participants to report information on borrowers as well as to use the information provided by the CIB.

While the financial sector has played a critical role in enabling trade integration of Bangladesh with the rest of the world, further reforms are needed to support export growth and diversification agenda. Despite the improved enforcement of online reporting and monitoring of trade transactions in recent years, Bangladeshi banks often face

84 See the upcoming WBG CCDR for additional details.

credibility issues in exercising trade financing, which could be addressed by publishing status report on correspondent banking relationships every year by BB. The guidelines on trade-based money laundering and regulations on cross border guarantee practices by Bangladeshi banks are other outstanding regulations in the area of trade finance. The development of specialized insurance products by domestic financial institutions could help exporters better manage their risks.

Increased investment in digital infrastructure is needed to maintain the recent progress in financial inclusion. Bangladesh has made substantial progress in the use of mobile money and digital financial technologies. Further improvement of digital financial services regulation, expansion of financial infrastructure, and use of the national ID system will allow financial services providers to expand their product offerings and lower the costs of services. As use of digital solutions is often subject to increased risks of fraud and flawless functioning of digital infrastructure is necessary to maintain the level of services, it is important for banks to increase investment in digital infrastructure, address privacy and data security issues, and improve grievance redressal processes for digital transactions.

Optimize the Role of the State as User and Provider of Financial Services

Reform of SOBs is necessary to ensure that they operate in an efficient and undistorted manner. It is important to restructure and consolidate SOBs, improving their corporate governance, risk management, and institutional capacity so that they keep up with increasing competition from private and foreign banks and NBFIs. Divestiture of the state's stake in some of the public banks could be considered, which would, among others, help reduce the need for the use of public resources to support their operations. At the same time, it is essential to ensure a level playing field between SOBs and private banks as robust competition is one of the main drivers of credit growth.

Reform of the NSCs should focus on rationalizing interest rates and market instruments and abandoning the use of open tap issues. This will help direct savings to both the money and capital markets and eliminate distortions hindering credit and capital market development. It is crucial to remove the flat interest rate subsidies provided to NSCs to improve the level playing field and allow banks to compete for individuals' savings. Gradually delinking the NSC issuance from budget financing and reducing dependency on it will reduce issue uncertainty and increase trade in Treasury bonds, thus strengthening the benchmark yield curve, which is essential for the corporate bond market. It is also important to restrict institutional investors, such as provident funds, from purchasing NSCs, to incentivize them to explore investment opportunities in the capital market.

Support Capital Market Development

Corporate debt securities and equity markets can be boosted by enhancement of market practices. For the corporate debt market, the BSEC needs to shorten the review time and simplify the approval process for bond applications, introduce a shelf prospectus system for qualified borrowers, expand the list of definitions, and refrain from enforcing the depletion of the previously raised capital before applying for new capital. In addition to regulatory changes, the market would benefit from a long-term strategy from the regulator as well as rationalization of the tax regime. In addition, regular issuance of government securities and their secondary market trading need to be promoted to develop the benchmark yield curve for the private sector to follow. To support the green growth agenda, national guidelines on green bonds need to be developed to classify eligible green project activities for using the proceeds of corporate green bonds. For the equity market, a thorough review of IPO pricing and closer monitoring of post-trading activities by BSEC are needed to reduce volatility and enhance confidence. The market information and communications technology infrastructure needs to be upgraded to facilitate more efficient interactions between the exchange, brokers, and clearinghouses, and to enable access for smaller brokers.

To produce reliable investment information, the credit rating industry needs to be more disciplined. This can be achieved through regulatory reforms and stronger oversight by the BSEC to ensure the quality of the ratings produced and encourage consolidation of the industry. Entry conditions should be more stringent so that only high net worth professional institutions enter the rating business.

Pension and insurance market deepening is crucial for strengthening the institutional investor base for the capital market and more effective mobilization of domestic savings. A new umbrella law can be considered to cover all the provident funds in the country, replacing the existing "patchwork" of regulations and designating a single regulatory

authority. Further steps should be taken to strengthen regulation and supervision of the insurance sector, including establishing risk-based offsite and onsite monitoring frameworks and improved solvency, corporate governance, and consumer protection regulations. A concerted effort should be made to improve penetration by developing new products and improving financial literacy.

Rationalizing the tax regime and foreign exchange regulations affecting could help unlock alternative sources of finance for enterprise sector, particularly for start-ups and innovative firms. Specifically, modernizing legal regime for PE, VC and impact funds, allowing structures other than trust for AIF, removing the mandatory two-year ban on listing, and allowing foreign funds from reputable jurisdictions to invest in Bangladesh could be considered.

Annex 4A: List of Private Banks, by Generation

First generation (1982–87)		Second generation (1992–2001)		Third generation (2013)		Fourth generation (2016–21)	
Military regime 1975–85. Since 1986, Jatiyo Party (nondemocratic) regime.		Bangladesh Nationalist Party (BNP) regime since 1991 (parliamentary democracy started). Awami League (AL) regime since 1996, then, BNP regime since 2001.		AL regime since 2008, then AL regime again since 2014.		Al regime since 2018 to present (continuing in three consecutive terms).	
Bank	**Year**	**Bank**	**Year**	**Bank**	**Year**	**Bank**	**Year**
AB Bank	1982	Eastern Bank	1992	NRB Global Bank	2013	Shimanto	2016
IFIC Bank	1983	Al-Arafa Bank	1995	Farmers/Padma Bank	2013	Community Bank	2019
Islami Bank	1983	Dhaka Bank	1995	Meghna Bank	2013	Bengal Commercial Bank	2021
National Bank	1983	Dutch Bangla Bank	1995	Midland Bank	2013	Citizen Bank	2021
Pubali Bank	1983	Prime Bank	1995	Modhumoti Bank	2013		
The City Bank	1983	Social Islami Bank	1995	NRB Bank	2013		
Unite Commercial Bank	1983	Southeast Bank	1995	NRB Comm. Bank	2013		
Uttara Bank	1983	Bangladesh Commerce Bank	1998	SBAC Bank	2013		
NCCBL	1985	Bank Asia	1999	Union Bank	2013		
ICB Islamic Bank	1987	EXIM Bank	1999				
		First Security Bank	1999				
		Mercantile Bank	1999				
		Mutual Trust	1999				
		One Bank	1999				
		Standard Bank	1999				
		The Premier Bank	1999				
		Trust Bank	1999				
		BRAC Bank	2001				
		Jamuna Bank	2001				
		Shahjalal Bank	2001				

Source: World Bank.

Note: AL = Awami League; BNP = Bangladesh Nationalist Party; ICB Islamic Bank = Islamic Bank Limited; IFIC Bank = International Finance Investment and Commerce Bank Limited; NCCBL = National Credit and Commerce Bank Limited; SBAC = South Bangla Agriculture and Commerce Bank Limited.

Annex 4B: Determinants of the Growth of Loans and Deposits of Banks in Bangladesh

To estimate the determinants of the growth of loans and deposits in the banking industry in Bangladesh, we estimate the following models:

$$Var\_gr_{it} = \alpha_i + \delta_t + \beta_1 NPL_{it} + \beta_2 ROA_{it} + \beta_3 CAR_{it} + \beta_4 ExptoIncome_{it} + \beta_5 Marketshare_{it} + \varepsilon_{it} \quad (1)$$

$$Var\_gr_{it} = \alpha_0 + \delta_t + \beta_1 NPL_{it} + \beta_2 ROA_{it} + \beta_3 CAR_{it} + \beta_4 ExptoIncome_{it} + \beta_5 Marketshare_{it} + \gamma_k Ownership_i + \varepsilon_{it} \quad (2)$$

where Var_gr_{it} is the yearly growth of loans or deposits; NPL_{it} is the ratio of nonperforming loans to total loans; *ROAit* is return on assets; *CARit* is the total regulatory capital ratio; *ExptoIncomeit* is the ratio of operating expenses to total income; and *Marketshareit* is market share based on total assets. *Ownershipi* is a dummy variable indicating ownership (foreign, state-owned, and private banks—generations 1, 2, and 3, as described in box 4.2). The subscript *i* denotes bank; subscript *t* denotes year. Fixed effects for each bank and year are included in the model for rows (1) and (3). The model is estimated using data for 59 Bangladeshi banks from 2011 to 2020. The estimation results are presented in table 4B.1.

Table 4B.1: Determinants of the Growth of Loans and Deposits of Banks in Bangladesh

Variable	Loans_growth		Deposits_growth	
	(1)	(2)	(3)	(4)
NPL ratio (%)	-0.384***	-0.235***	-0.417***	-0.150***
	(0.125)	(0.046)	(0.132)	(0.041)
ROA (%)	0.229	-0.2	0.427	-0.124
	(0.640)	(0.474)	(0.834)	(0.523)
CAR (%)	-0.077	-0.053	-0.068*	-0.046
	(0.051)	(0.038)	(0.040)	(0.036)
Expenditure/Total Income (%)	0.129	-0.115**	0.068	-0.081**
	(0.145)	(0.044)	(0.137)	(0.041)
Market share	-4.950**	-0.637	4.752*	-0.152
	(2.054)	(0.396)	(2.539)	(0.375)
FCB		-5.236		-2.372
		(3.430)		(3.615)
PCB (Generation 1)		-3.312		-1.92
		(2.269)		(2.243)
PCB (Generation 2)		-2.426		-0.563
		(2.418)		(2.544)
PCB (Generation 3)		15.151***		13.071***
		(4.538)		(4.018)
R-squared	0.094	0.354	0.131	0.272
Observations	365	365	364	364

Source: World Bank estimates.

Note: All models include year dummies (not reported). Columns (1) and (3) are estimated using bank fixed effects, and columns (2) and (4) are estimated using pooled ordinary least squares. The dependent variables are trimmed at the top and bottom 5 percent to exclude outliers. Robust standards errors are in parentheses. Generations of private banks are defined as specified in table 4A. Generation 4 banks are not represented in the sample due to data limitations. CAR = capital-to-risk-weighted assets ratio; FCB = foreign commercial banks; NPL = nonperforming loans; PCB = private commercial banks; ROA = return on assets.

* p<0.1, ** p<0.05, *** p<0.01.

Annex 4C: Determinants of the Net Interest Margin

Table 4C.1: Accounting Decomposition of NIM over 2015–20: Industry- and Ownership-Wise Analysis

	Components as a percentage of total interest earning assets					Components as a percentage of net interest income			
	NI/TA	Oper exp - Non int inc	Tax	Provision	After-tax profit	Oper exp - non int inc	Tax	Provision	After-tax profit
All banks	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Dec-15	3.28	0.89	0.68	0.86	0.86	26.97	20.61	26.11	26.31
Dec-16	3.27	1.17	0.60	0.72	0.78	35.83	18.36	21.88	23.93
Dec-17	3.13	0.94	0.70	0.63	0.85	30.25	22.48	20.12	27.15
Dec-18	3.23	1.16	0.63	1.16	0.28	35.86	19.54	35.80	8.79
Dec-19	3.12	1.16	0.66	0.80	0.49	37.38	21.09	25.77	15.76
Dec-20	2.67	1.07	0.52	0.79	0.29	40.07	19.53	29.47	10.93
State-owned commercial banks									
Dec-15	1.48	0.31	0.05	1.16	-0.05	20.91	3.52	78.68	-3.10
Dec-16	1.61	0.95	-0.03	0.85	-0.17	59.36	-1.89	52.86	-10.34
Dec-17	1.82	0.58	0.38	0.63	0.22	31.86	21.07	34.75	12.32
Dec-18	2.16	0.90	0.17	2.52	-1.44	41.78	8.04	116.62	-66.44
Dec-19	1.78	0.83	0.20	1.41	-0.67	46.84	11.30	79.22	-37.36
Dec-20	1.61	0.69	0.15	1.94	-1.18	43.02	9.34	120.80	-73.16
State-owned development banks									
Dec-15	0.71	1.42	0.00	0.00	-0.71	199.24	0.00	0.00	-99.24
Dec-16	0.38	2.11	0.00	0.00	-1.73	552.47	0.00	0.00	-452.47
Dec-17	1.03	2.01	0.00	-0.60	-0.39	195.82	0.00	-58.18	-37.64
Dec-18	0.31	1.96	0.00	0.00	-1.65	633.29	0.00	0.00	-533.29
Dec-19	0.005	1.99	0.00	0.00	-1.99	42009.21	0.00	0.00	-41909.21
Dec-20	-0.10	1.65	0.02	0.00	-1.78	-1601.28	-22.06	0.00	1723.34
Private commercial banks									
Dec-15	3.85	1.12	0.85	0.73	1.15	29.13	22.10	18.85	29.91
Dec-16	3.89	1.21	0.81	0.68	1.19	31.05	20.81	17.42	30.72
Dec-17	3.52	1.05	0.78	0.68	1.02	29.67	22.10	19.34	28.89
Dec-18	3.55	1.23	0.74	0.69	0.89	34.63	20.92	19.46	24.99
Dec-19	3.52	1.27	0.75	0.63	0.87	36.08	21.35	17.84	24.74
Dec-20	2.97	1.19	0.60	0.39	0.80	40.03	20.11	13.08	26.78
Foreign commercial banks									
Dec-15	6.08	-0.13	2.17	0.68	3.34	-2.02	35.76	11.26	55.00
Dec-16	4.99	-0.08	1.77	0.35	2.95	-1.66	35.42	7.02	59.21
Dec-17	4.35	-0.23	1.56	0.44	2.59	-5.31	35.74	10.01	59.56
Dec-18	4.30	-0.19	1.57	0.20	2.71	-4.31	36.61	4.56	63.14
Dec-19	4.21	-0.06	1.55	0.22	2.50	-1.43	36.83	5.20	59.40
Dec-20	4.05	0.14	1.31	0.21	2.38	3.48	32.48	5.20	58.84

Source: World Bank estimates.

Table 4C.2: Accounting Decomposition of NIM over 2018–20: Generation-Wise PCBs

	Generation	Components as a percentage of total interest earning assets						Components as a percentage of net interest income		
		NI/TA	(OP-NII)/ TA	Tax/TA	LLP/TA	ATP/TA	(OP-NII)/ NI	Tax/NI	LLP/NI	ATP/NI
Dec 2018	First (10 banks)	3.52	1.26	0.77	0.61	0.88	35.78	21.81	17.31	25.10
	Second (20 banks)	3.59	1.16	0.72	0.79	0.91	32.45	20.18	21.88	25.50
	Third (9 banks)	3.36	1.59	0.76	0.34	0.67	47.06	22.70	10.22	20.03
	Fourth (1 banks)	4.91	3.10	0.65	0.44	0.71	63.18	13.30	9.01	14.50
Dec 2019	First (10 banks)	3.62	1.43	0.75	0.61	0.83	39.66	20.64	16.90	22.81
	Second (20 banks)	3.50	1.13	0.79	0.60	0.98	32.20	22.44	17.25	28.12
	Third (9 banks)	3.10	1.50	0.50	0.92	0.18	48.28	16.04	29.80	5.87
	Fourth (2 banks)	5.41	3.56	0.75	0.10	1.01	65.65	13.79	1.86	18.71
Dec 2020	First (10 banks)	3.00	1.33	0.56	0.35	0.77	44.20	18.56	11.55	25.70
	Second (20 banks)	2.96	1.10	0.62	0.45	0.79	37.33	20.96	15.06	26.65
	Third (9 banks)	2.87	1.04	0.64	0.15	1.04	36.46	22.28	5.06	36.20
	Fourth (2 banks)	3.41	2.77	0.36	0.54	-0.27	81.38	10.53	15.87	-7.78

Source: World Bank estimates.

The study uses annual data for 2015–19 at the bank level for the econometric analysis. Following the literature (for example, Angbazo (1997) and Maudos and Fernandez de Guevara (2004))[85] and data structure, a fixed effect panel data model is estimated as follows. In addition, pooled regression models are estimated to compare the results and see the impacts of the bank ownership and generation categories.

$$nim_{i,t} = \beta_0 + \beta_1 B_{i,t} + \beta_2 M_{i,t} + \varepsilon_{i,t} \quad (3)$$

Here, $nim_{i,t}$ is the net interest margin (NIM) of bank i at time t measured as the net interest income scaled by total interest-earning assets. $B_{i,t}$ is a vector of bank level variables that includes transaction size, proxied by log of gross loans (*Log*(*gloans*)); risk aversion (*riskav*), measured by banks' equity over assets; overhead costs (*ovhd*), measured by total operating costs over interest-earning assets; credit risk (*crisk*), measured by provision over gross loans; and income diversification (*incdiv*), measured by noninterest income over operating income. M_t is a vector of macroeconomic variables, including export growth (y-o-y) and the Consumer Price Index inflation rate (end-of-year 12-month average), and $\varepsilon_{i,t}$ is the error term. The estimation results are presented in table 4C.3. The model in column 2 in table 4C.3 is estimated only with financial variables; column 3 includes both financial and macroeconomic variables. Columns 4 and 5 present these two versions of the model, including 2020, which is a crisis period.

Overhead costs, risk aversion, banks' ability to diversify income, and macro variables such as inflation appear to have important impacts on NIM determination. The results of the baseline model for 2015–19 in table 4C.3 show that the coefficients of risk aversion (*riskav*) have positive impacts, validating the fact that banks require higher margins to undertake more risky investments. The size of operation, measured by the log of gross loans (Log (*gloans*)), appears positive but insignificant. The positive coefficient of *ovhd* implies that banks incurring higher operating costs charge higher margins to cover the costs. As expected, the coefficient of income diversification (*incdiv*) is negative but small in magnitude. Macro variables also have important influence on NIM. Inflation brings uncertainty for both borrowers and lenders that needs to be compensated by charging a higher spread. The coefficient of inflation (*inf*), which represents macroeconomic volatility, is positive but significant at the 10 percent level. The results including data for 2020 (columns 4 and 5 in table 4C.3) are consistent with the baseline models, but now exports (*exp*) have significant impacts on NIM. In favorable macro conditions, banks tend to lend more to exporters and therefore earn more net interest revenue as long as the volume effect dominates the price effect on lending rates. The determinants of NIM based on pooled regression are presented in table 4C.4 for the sake of comparison.

85 See, for example, Angbazo (1997) and Maudos and Fernandez de Guevara (2004).

Table 4C.3: Panel Fixed Effect Estimation Results: Determinants of NIM

Dependent variable: *nim*		**Panel (bank) fixed effect coefficients**		
(1)	**(2)**	**(3)**	**(4)**	**(5)**
Log(gloans)	0.41	0.41	0.32	0.32
	(0.28)	(0.28)	(0.23)	(0.23)
riskav	0.048***	0.048***	0.044***	0.044***
	(0.006)	(0.006)	(0.006)	(0.006)
ovhd	1.03***	1.03***	0.90***	0.90***
	(0.28)	(0.28)	(0.23)	(0.23)
crisk	-0.04	-0.04	-0.0093	-0.0093
	(0.39)	(0.39)	(0.032)	(0.032)
incdiv	-0.00017***	-0.00017***	-0.0002***	-0.00016***
	(0.00004)	(0.00004)	(0.00004)	(0.00004)
exp		0.011		0.024***
		(0.008)		(0.006)
inf		0.55*		0.38
		(0.31)		(0.31)
cons	-1.16	-4.66	-0.42	-2.9
	(1.78)	(3.47)	(1.51)	(3.08)
Observations	286	286	345	345
Adj R-squared	0.38	0.38	0.42	0.42

Source: World Bank estimates.

Note: Columns 2 and 3 present models estimated for 2015–19 without and with macroeconomic variables, respectively. Columns 4 and 5 present the same exercise including data for 2020. Robust standard errors are in parentheses. NIM = net interest margin.

*p<0.1, **p<0.05, ***p<0.01.

Table 4C.4: Estimation Results of Pooled Regression: Determinants of NIM

Dependent variable: *nim*	Pooled OLS					
	(1)	(2)	(3)	(4)	(5)	(6)
Log(loans)	0.44***	0.56***	0.55***	0.39***	0.49***	0.49***
	(0.06)	(0.11)	(0.11)	(0.05)	(0.1)	(0.09)
riskav	0.06***	0.058***	0.058***	0.06***	0.057***	0.057***
	(0.004)	(0.01)	(0.01)	(0.004)	(0.006)	(0.01)
ovhd	1.22***	1.19***	1.19***	1.16***	1.10***	1.10***
	(0.09)	(0.11)	(0.11)	(0.08)	(0.09)	(0.1)
crisk	-0.10**	-0.02	-0.021	-0.082*	0.008	0.007
	(0.05)	(0.07)	(0.08)	(0.045)	(0.06)	(0.06)
incdiv	-0.00**	-0.000***	-0.000***	-0.000**	-0.00***	-0.0003***
	(0.00)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
FCB		0.51	1.60***		0.33	1.68***
		(0.80)	(0.41)		(0.69)	(0.36)
PCB		-1.24*	-0.12		-1.32**	0.062
		(0.64)	(0.36)		(0.56)	(0.32)
SCB		-1.12*			-1.37**	
		(0.59)			(0.55)	
SDB			1.12*			1.37**
			(0.59)			(0.55)
First generation_PCB		1.4***	1.39***		1.34**	1.33***
		(0.36)	(0.33)		(0.31)	(0.28)
Second generation_PCB		1.35***	1.35***		1.25**	1.25***
		(0.36)	(0.32)		(0.3)	(0.28)
Third generation_PCB		2.28***	2.27***		2.03***	2.02***
		(0.40)	(0.37)		(0.3)	(0.3)
Fourth generation_PCB		1.35	1.29		1.25	1.21
		(0.91)	(0.87)		(0.75)	(0.72)
exp			0.015			0.019**
			(0.02)			(0.008)
inf			0.42			0.41
			(0.26)			(0.25)
cons	-2.06***	-2.51**	-6.3***	-1.77***	-1.82**	-5.82**
	(0.414)	(0.97)	(1.86)	(0.38)	(0.85)	(1.67)
R-squared	0.51	0.63	0.63	0.49	0.61	0.61
Observations	286	286	286	345	345	345

Source: World Bank estimates.

Note: Models 1 to 3 are for 2015–19, and models 4 to 6 are for 2015–20. Robust standard errors are in parentheses. Time dummies were included in all the models except models 3 and 6. FCB = foreign commercial banks; OLS = ordinary least squares; PCB = private commercial banks; SCB = state-owned commercial banks; SDB = specialized development banks.

* p<0.1, ** p<0.05, *** p<0.01.

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CHAPTER 5

Getting Urbanization Right

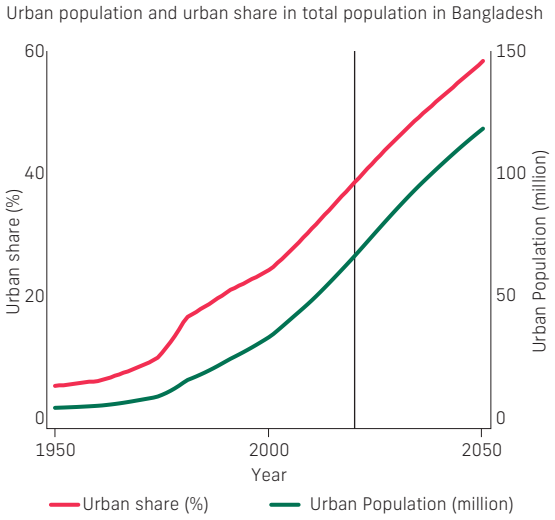
Introduction

Urbanization plays a central role in job creation, productivity and income growth, and poverty reduction. Economic development historically has been driven by productivity growth. Productivity growth in turn involves two fundamental processes of transformation: structural transformation from agriculture to non-agricultural activities, and spatial transformation from rural to urban areas. Non-agricultural activities, which are often concentrated in urban areas, are associated with higher productivity. Thus, there is an association between non-agricultural activities and urbanization on the one hand, and productivity and living standards on the other hand. This association arises because urban areas offer various agglomeration benefits, and tradable non-agricultural activities allow countries to take advantage of their comparative advantages and grow beyond the constraints imposed by the small size of the domestic market, at least at the beginning of the development process. *No country has reached high-income status without a substantial share of its population and economy concentrating in urban areas.*[86] Currently, more than 50 percent of developing countries' population lives in urban areas, and more than 80 percent of global gross domestic product (GDP) is produced in cities, underlining the importance of urban agglomeration economies in supporting productivity and job growth and ultimately poverty reduction.

As it strives to become a high-income country, Bangladesh is expected to face a major surge in urbanization. The urban population in Bangladesh currently stands at about 64 million and its share is about 38 percent of the population. The United Nations Department of Economic and Social Affairs (UNDESA) predicts that Bangladesh's population will reach a peak of 185 million in 2041 and the urbanization rate will reach about 60 percent in 2050 (figure 5.1). The projected urban population of 104 million (53 percent urban share) in 2041 represents an increase of more than 62 percent of the urban population. If Greater Dhaka city maintains its current share of the total urban population (about 37 percent), its size will exceed 38 million in 2041 by the UNDESA estimate. The other cities in the country will have to absorb a disproportionate share of the urban population, exceeding 50 million. For this massive urbanization to generate economic growth and lift Bangladesh to high-income country status, the process of urbanization must solve two critical challenges: (i) how to enhance and maintain the productivity advantage of Dhaka city in the face of this massive population surge, and (ii) how to make cities other than Dhaka and Chittagong attractive to formal firms and skilled workers to create productivity advantages.[87]

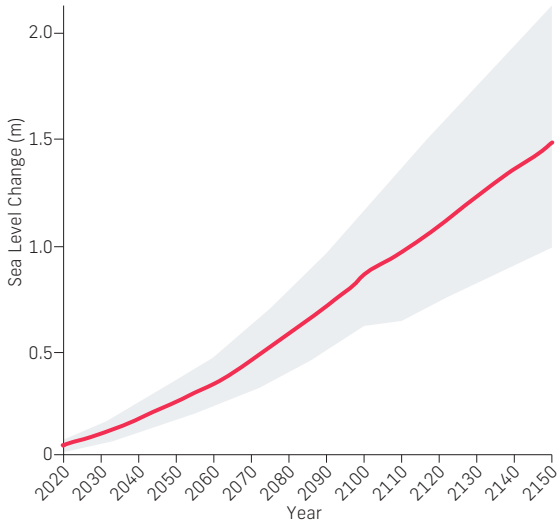
86 World Bank (2009).
87 The population census 2011 identifies 20 cities and a number of municipalities. By medium-sized cities, this chapter means 18 cities other than Dhaka and Chittagong. Small cities are what the census calls municipalities.

Figure 5.1: Projected Urban Population in Bangladesh



Source: Authors calculation based on United Nations Department of Economic and Social Affairs projection

Figure 5.2: Expected rise in Sea level at Hiron Point, Bangladesh, SSP 5-8.5 Scenario



Source: Sea Level Projection Tool – NASA Sea Level Change Portal

Climate change-induced migration along with population growth could lead to urbanization without associated structural transformation and economic growth. High temperatures, sea level rise, and increased flooding due to human-driven global warming will affect many developing countries, including Bangladesh. The sea level is expected to rise by 1.5 meters by 2150 (figure 5.2). The effect of climate change will be heterogeneous across geographical space, creating migration flows from adversely affected areas to many cities. The pressures from climate-induced migration combined with projected population growth could lead to urbanization without productivity growth. Recent evidence suggests that a pattern of premature urbanization is already underway in many developing countries, where cities are crowded in terms of population but lag in economic density and productivity due to the predominance of non-tradable and often informal activities.[88] More importantly, the structural transformation in developing countries has lagged behind the fall in trade and transport costs, leading to an increasing concentration of activities in larger cities and higher regional inequality.[89] The rising inequality is causing serious social and political unrest. The COVID-19 pandemic also highlighted the economic fragility of larger cities, particularly when the informal sector is the predominant employer and the provision of basic services, as well as coverage of social safety nets, are inadequate.

The prognosis for Bangladesh's ability to meet these urbanization challenges is encouraging if the country makes the necessary policy adjustments. The economy had been growing at a robust pace before the pandemic, and it has shown considerable resilience even during the pandemic. Several recent developments provide hope that with the right policies and investments in place, the urbanization process can be managed to boost productivity and growth and reduce poverty.

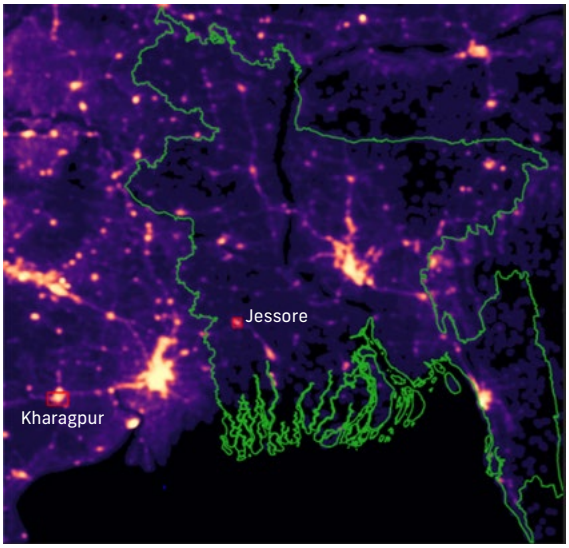
Bangladesh expects to achieve a major improvement in transport connectivity—a key determinant of structural change and productive urbanization. Map 5.1 plots the night lights in Bangladesh and clearly attests to the importance of connectivity. The night lights closely trace the main highway network connecting cities in the country. The map also shows how urban areas around Dhaka city are spreading following the highways. Map 5.1 also suggests the implications of trade barriers for city development. Kharagpur in West Bengal and Jessore in Bangladesh are only 68 kilometers (km) from Kolkata (lower-left corner of map 5.1) and the levels of night light luminosity of these two cities clearly differ significantly. The southwest region of Bangladesh remains isolated from Dhaka because of the lack of a bridge over the Padma River and from Kolkata because of the border. The nearly completed Padma Bridge will allow the establishment of an active link between Dhaka and Kolkata, which is expected to be extended over time toward Myanmar and Southeast Asia more broadly. The envisioned Sylhet-Chittagong Highway offers prospects for connectivity to India's northeast and global markets. The Bangladesh-Bhutan-India-Nepal

88 Lall et al. (2021).
89 Henderson et al. (2018).

Motor Vehicles Agreement allows signatory countries to use each other's road networks for the transportation of goods and passengers. Cargoes can be passed without the need for transshipment, reducing time and costs. Combining the development of this transport corridor with investment in digital connectivity has the potential to reduce the costs of doing business significantly, allowing Bangladesh to take advantage of its hitherto unutilized comparative advantages in large and smaller cities alike.

The opportunity for more balanced urbanization also comes from the urban transition process in larger cities, such as Dhaka and Chittagong. As urban productivity grows and the cost of living increases, low-productivity manufacturing and services move out of larger cities and into small and medium-sized cities that are well connected to the larger cities and trade networks. This transition has been in progress in Dhaka, which has seen many garment factories move to nearby locations. The transition process provides an important opportunity to spread economic activities to the next tier of cities, again with the right policies and investments in place.

Map 5.1: Night Light Luminosity in Bangladesh



Source: Constructed by authors based on harmonized VIIRS nighttime lights data.

In the context of these broader challenges and opportunities for urbanization, the next section provides evidence on the evolution of the pattern of urbanization in the past, focusing on differences between the mega-city of Dhaka and other cities. In light of the past urbanization pattern, the next section lays out the challenges of urbanization in Bangladesh. This chapter develops a structural economic geography model to study the potential impacts of climate-induced migration due to sea level rise. In addition, it explores the potential effects of improved connectivity for large versus smaller cities. The chapter concludes with policy lessons.

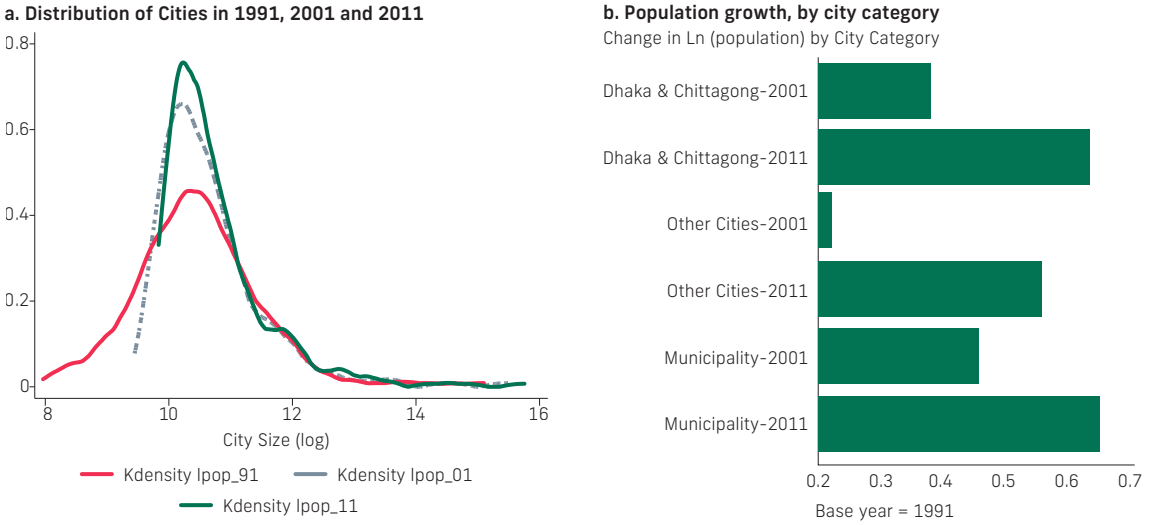
Patterns of Urbanization during the Past Decades

To see how urbanization might evolve in the coming decades, it is important to examine its pattern during the past couple of decades. This section utilizes various data sources (censuses and Global Human Settlement Layer (GHSL) data on built-up density) to discern this trend.

Bangladesh witnessed robust growth in the number of cities and towns over the past decades. The number of towns and cities are the areas that the censuses classify as cities or municipalities. According to census data from 1991, 2001, and 2011, the total number of cities and towns increased from 133 in 1991 to 194 in 2001 and 262 in 2011. As a result, the population share in urban areas grew from 20 percent (21 million) in 1991 to 31 percent (31 million) in 2011 and 38 percent (63 million) by 2020. As is clear from the distribution of cities in terms of their population in figure 5.3, panel a, the cut-off for what is considered a city or town has changed over time.

The population growth in cities other than Dhaka and Chittagong has been modest. The census divides urban areas into 20 cities and the rest as municipalities. Restricting the analysis to cities and towns that are common in all three censuses, figure 5.3, panel b, plots the growth rates in population in Dhaka and Chittagong, 18 other cities, and municipalities. The average population in cities other than Dhaka was about 181 thousand, and in municipalities about 33 thousand, whereas Dhaka and Chittagong had an average population of 2.5 million in 1991. The evidence in figure 5.3, panel b suggests that relative to their respective sizes in 1991, municipalities, and Dhaka and Chittagong experienced robust growth in population compared with other medium-sized cities. Census data lack information on the land area of cities and towns, precluding further analysis of population density, which is sometimes taken as a measure of agglomeration. However, the average population density is very high in Bangladesh (1,300/square km) and the density in Dhaka city exceeds 29,000/square km. It is safe to conclude that by international standards, cities and towns are already crowded in Bangladesh.

Figure 5.3: Distribution of City Size and Population Growth



Source: Authors calculation based on population census data.

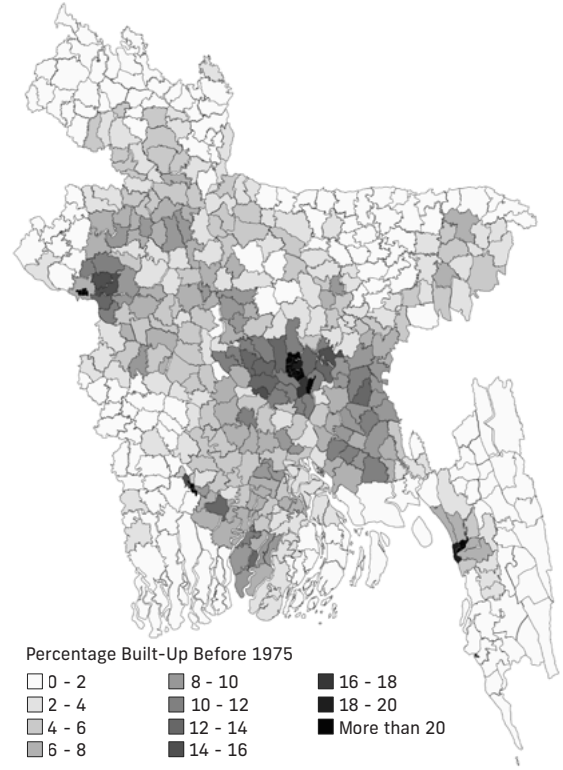
Dhaka and Chittagong have been the center of the urbanization process in Bangladesh. In the absence of census data to track changes in density in and around urban areas, data on built-up density from the GHSL data are used to define geographical units that have consistent boundaries over time. The GHSL data provide information on whether a 30 x 30 meter pixel is built or not. Using upazila (subdistrict) boundaries from the 1991 census, an upazila-level panel data set is constructed to indicate the proportion of pixels built-up in each upazila. The four rounds of GHSL data (1975, 1990, 2000, and 2014) are then used to track changes in built-up density over time. Urban areas tend to have higher built-up density. Using the data on built-up density in 1975, the upazilas were divided into 20 quantiles in terms of their built-up density. The topmost quantile (20th) includes 15 thanas (administrative subdistricts) in Dhaka, five in Chittagong, two each in Rajshahi and Khulna, and one in Narayanganj. Given that 90 percent of Bangladesh's population was rural in 1975, urban areas are represented in the top two quantiles in figure 5.4. This is also evident from map 5.2, where darker shaded areas show higher built-up density. More than 40 percent of the land area was covered with buildings in the topmost quantile. The proportion of built-up area in the 19th quantile was less than half that of the topmost quantile. This means that even in mostly urban upazilas, a large part was unbuilt as having a mixture of urban and rural areas within the same upazila was not uncommon in 1975 or even now.

Urban growth, as measured by built-up density, has largely been concentrated in and around Dhaka. In map 5.3, panels a and b show the growth in the proportion of built-up area at the upazila/thana level in 1990–2000 and 2000–14, respectively. Growth in the proportion of built-up area was concentrated in and around Dhaka city in both periods. However, between 2000 and 2014, there was a southeast to northwest gradient in the growth of built-up areas, presumably as a result of the opening of the Jamuna Bridge and consequent improvement in connectivity.

The growth of built-up density in larger cities has slowed down in recent decades, displaying a tendency toward convergence. The growth of built-up density was highest during 1975–1990 in the topmost quantile, reflecting perhaps the reconstruction boom following the devastating damage during the Bangladesh War of Independence in 1971 (figure 5.5). By the next decade, the annualized growth rate was still high, but it eventually slowed down significantly during 2000–14. The penultimate quantile also experienced considerable growth compared with the other bottom quantiles, but its growth was much lower than that of the top quantile, particularly during 1975–90 and 1990–2000. Recalling that the thanas in the topmost quantile are mostly located in Dhaka and the next three major cities in Bangladesh, the evidence in figure 5.5 indicates some convergence in recent years. Part of this convergence is mechanical: by 2014, about 70 percent of the area in the topmost quantile was already built-up, leaving few unbuilt plots.[90] This was partly because the built-up area does not capture the increase in building heights. Dhaka city has witnessed a substantial increase in building heights as well. The convergence of built-up density, therefore, does not automatically imply convergence of economic growth.

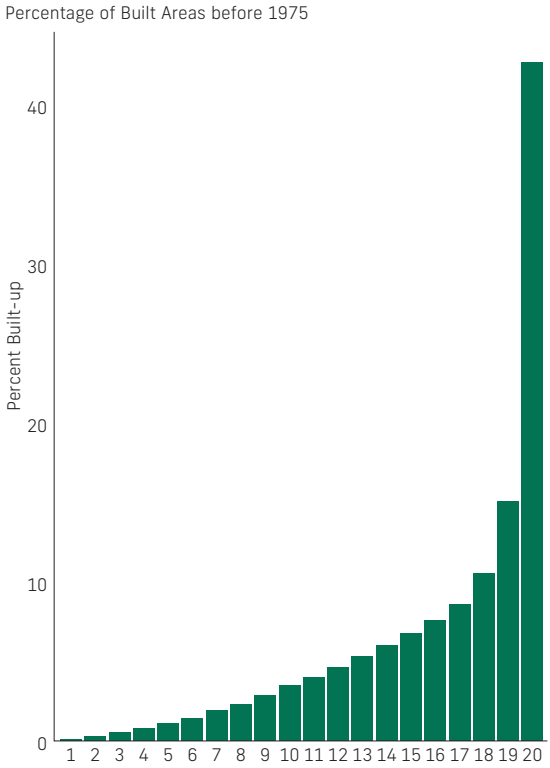
90 Another 2.75 percent of the area of these upazilas is bodies of water.

Map 5.2: Proportion of Built-Up Area, by Upazila Quantile



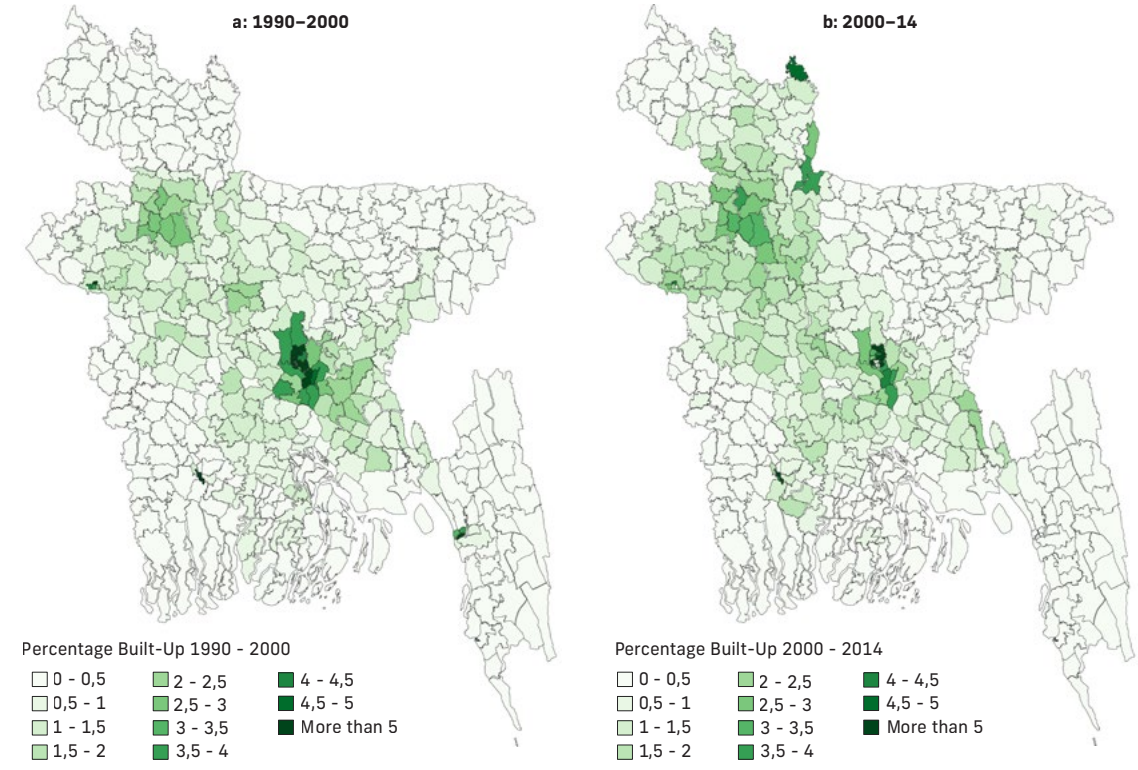
Source: Authors' estimates based on GHSL data.

Figure 5.4: Percent of Built-Up Area before 1975



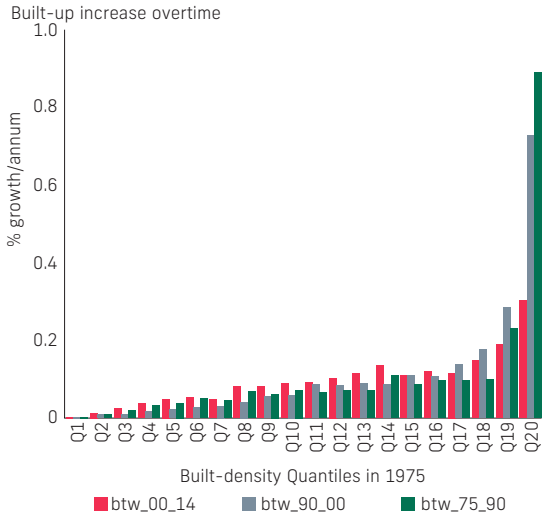
Source: Authors' estimates based on GHSL data

Map 5.3: Growth of the Share of Built-Up Area, 1990–2000 and 2000–14



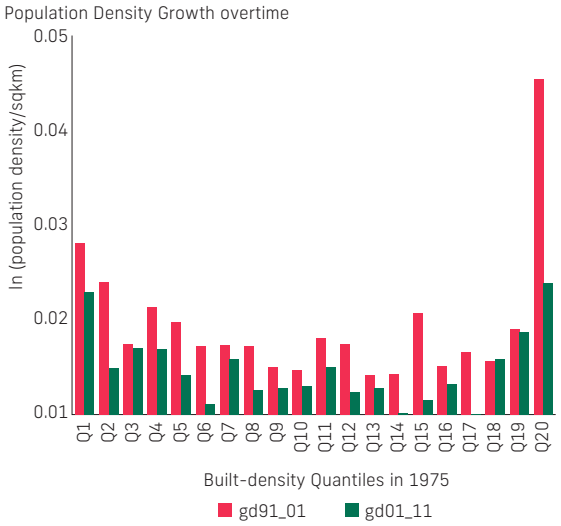
Source: Authors' estimates based on GHSL data.

Figure 5.5: Growth of Built-Up Density Over Time



Source: Authors' estimates based on GHSL data.

Figure 5.6: Growth of Population Density over Time

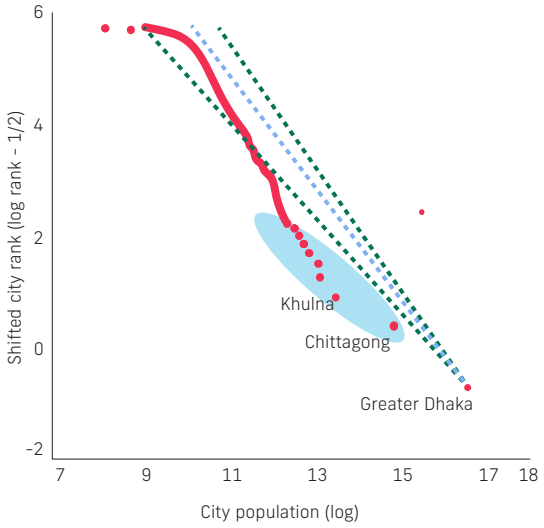


Source: Authors' estimates based on population census data.

The growth in population density displays a U-shaped pattern, with growth being more robust in larger cities and remoter rural areas (figure 5.6). The slowdown in the growth of built-up areas for the topmost quantile in figure 5.5 does not automatically imply a slowing down of the growth of population density since building heights have grown in all the major cities as well. Figure 5.6 plots the growth of population density over the 1990s and 2000s. The slowdown in the growth of density in Dhaka and the three other major cities are confirmed in the figure. Consistent with figure 5.6, growth in population density was high during the 1990s, and it was less than half that rate during the 2000s for the top quantile. The growth of population density also shows a U-shaped pattern: population density growth has been lowest for the middle quantiles (Q8-Q14), which mostly represent smaller towns and cities. Population density growth has been robust in remoter rural areas, presumably because of their higher fertility rate. The slower growth in smaller towns and cities suggests that they are not able to attract the population. This somewhat unbalanced growth of cities and towns remains a major policy concern for Bangladesh.

The city size distribution (figure 5.7) shows that medium-sized cities in Bangladesh have a much lower population than what is observed in developed countries.[91] Across developed countries, the distribution of the urban population among cities of different sizes exhibits a common pattern. The distribution of the largest cities by size approximately follows what is called Zipf's law: the population of a city is inversely proportional to its rank. In other words, this law maintains that the second largest city in a country should have half the population of the largest city, the third-largest city should have one-third that population, and so on. The dotted blue line in figure 5.7 represents the city size distribution if Zipf's law holds, and the dotted brown lines show the 95 percent confidence intervals. It is clear from the figure that a large number of medium-sized cities lie below the blue line and outside the confidence interval.

Figure 5.7: Few Medium-sized Cities in Bangladesh



Source: Bird et al. 2018, based on 2011 census data.

91 Bird et al. (2018).

Urbanization Challenges for Bangladesh

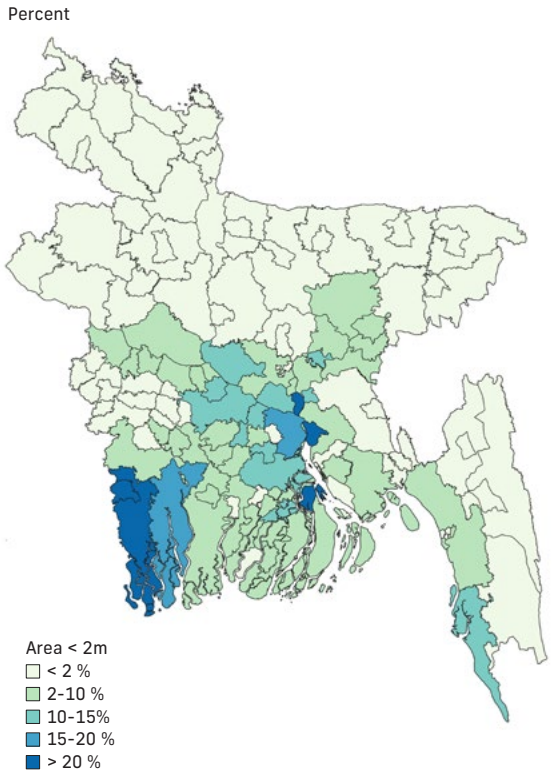
The pattern of urbanization over the past couple of decades confirms that it concentrated mostly in and around Dhaka city. A key challenge for future urbanization is how to sustain the momentum of productivity growth in Dhaka and other larger cities. As larger cities develop, low-skill activities tend to move to the next tier of cities in response to higher costs of living and congestion. However, as a low-lying delta, Bangladesh faces another impending source of great population movement due to climate change.

Dhaka city occupies a central place not just in Bangladesh's urban hierarchy, but also as the focus of urbanization policy dialogue. Dhaka city has an outsized influence on the country's economy. Greater Dhaka generates one-fifth of the country's GDP and almost half of its formal employment and creates over 30 percent of its formal manufacturing jobs (Bird et al. 2018). Productivity and agglomeration externalities are found to be strong in Dhaka city, comparable to what is observed in major cities in developed countries (Bird et al. 2018; Lall et al. 2021). Congestion diseconomies are also large in Dhaka: the average traffic speed within the city is less than 7 km per hour.[92] Not surprisingly, the development of Dhaka city has been the focus of a number of studies during the past decade, including World Bank (2012),[93] the Greater Dhaka report,[94] and Lall et al. (2021).

As opposed to Dhaka and to some extent Chittagong, not much is known about why other cities – particularly medium-sized ones -- are falling behind and what policy options are available. Apart from the evidence that these cities and towns are undersized and growing at a slower pace, there is little granular evidence on these places. It is reasonable to presume that housing costs are much lower and traffic congestion is much less severe in these places. Yet, the inability to attract people and activities suggests that better paid jobs as well as access to better services may be lacking. The policy question is whether place-based policies of providing better services or having special economic zones could be relied upon to kickstart job creation.[95]

Cities will have to deal with migration induced by sea level rise, frequent flooding, and loss of land due to increased salinity and river erosion. By 2150, the coastal areas in Bangladesh could see a rise in sea level of about 1.5-2 meters, leading to loss of land, intrusion of saline water, and increased incidence of flooding.[96] The entire southern part of Bangladesh as well as Dhaka and Chittagong cities will be affected by sea level rise (map 5.4). Floods and riverbank erosion affect about one million people annually in Bangladesh,[97] and normal precipitation during the monsoon season every year causes 20-30 percent of the country to become inundated.[98] The coastal zone comprises 19 districts with a population of 41 million

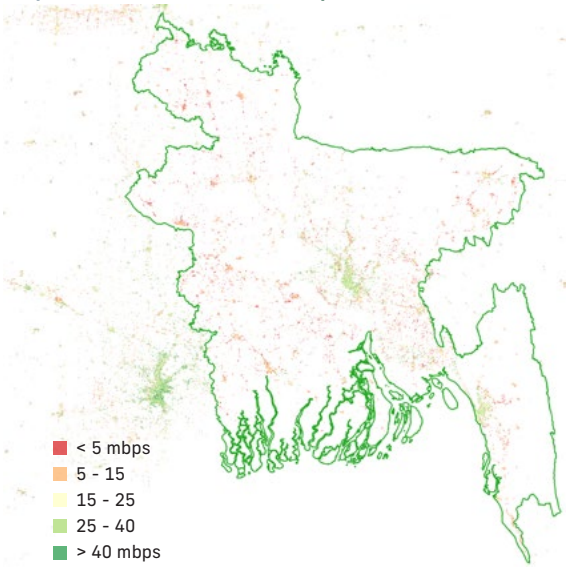
Map 5.4: Area below 2 Meters Elevation



Source: Authors' estimates based on elevation data.

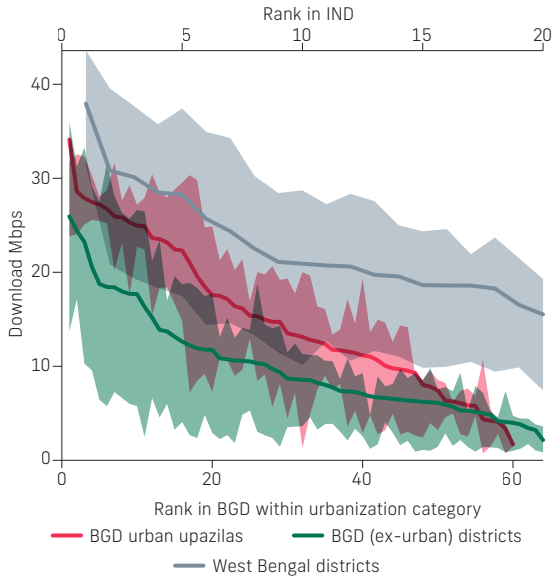
92 In Dhaka, the average driving speed declined from 21 km per hour 10 years ago to 7 km per hour in 2018 (Bird et al. 2018). People spend an average of 2.4 hours a day in traffic, of which 1.3 hours is in traffic jams. Continuation of the current trends would result in a further slowdown to 4 km per hour, or slower than the average walking speed. Congestion currently consumes 3.2 million working hours each day and costs the economy billions of dollars every year.
93 World Bank (2012).
94 Bird et al. (2018).
95 The number of economic zones approved by the Bangladesh Economic Zone Authority increased from two in 2015 to 88 at the end of 2018. The total value of the expected investment in just three of Bangladesh's economic zones amounts to nearly $17 billion—more than two-thirds of the country's GDP in 2017 (Grover, Lall, and Maloney 2022).
96 The Intergovernmental Panel on Climate Change AR6 Sea Level Projection Tool, Sea Level Projection Tool, NASA Sea Level Change Portal.
97 World Bank Climate Change Knowledge Portal.
98 Younus (2014).

Map 5.5: Internet Download Speed across Areas



Source: Authors' estimates based on Ookla data.
Note: km = kilometers; mbps = megabits per second.

Figure 5.8: Internet Download Speed



Source: Authors' estimates based on Ookla data.
Note: BGD = Bangladesh; IND = India; mbps = megabits per second.

people, and it is predicted that up to 12 million of them could become internal climate migrants by 2050.[99] Even if the most optimistic climate scenario materializes, internal migration will be a pressing issue in places like Dhaka and Chittagong, where urban services and infrastructure are already overwhelmed.

The climate-induced changes will affect not only the process of urbanization but also economic activities undertaken in urban spaces. Global Projection studies estimate a loss of about 5.37 percent in real per capita GDP due to flooding caused by sea level rise in Bangladesh.[100] The loss is much lower than the loss that would occur if the population were not allowed to migrate from the coastal areas. The movement of population along with temperature change is expected to change the sectoral mix of activities, with agriculture moving to the north globally.[101] The direct effects of climate change on local endowments and productivity will be heterogeneous across space, leading to the reallocation of activities within the country. The policy interventions to spur productivity growth outside Dhaka will require investments, for instance, in connectivity. Climate change will have a direct bearing on the sustainability and returns to these investments. In the next section, we develop a spatial general equilibrium model to explore the anticipated impacts of sea level rise and investment in connectivity on urbanization in Bangladesh.

Bangladesh lags behind its neighbor in access to broadband infrastructure. Map 5.5 plots the download speed for the internet in Bangladesh and the part of West Bengal bordering Bangladesh, using Ookla data for the first quarter of 2020. The internet download speed is more than 40 megabits per second in much of West Bengal. In contrast, only residents of Dhaka city and its surrounding areas see similar speed. Figure 5.8 plots the download speeds for urban upazilas (pink) and rural districts (green) in Bangladesh and across districts in West Bengal (orange). The bottom horizontal axis shows the rank of a place in terms of internet speed in Bangladesh, and the top axis shows the rank for West Bengal (19 districts). The solid line represents the average download speed, and the shaded region shows the interval between the 25th and 75th percentiles. As is clear from figure 5.8, the internet download speed is higher in West Bengal for the entire range, and the speeds in urban areas are faster than those in rural areas for the same rank. However, in many urban areas, the speed is lower than that in rural areas. The average download speed in two-thirds of the urban areas in Bangladesh is lower than the lowest average speed in West Bengal. The structural model developed in the next section will be used to examine how urbanization would respond to improving digital connectivity.

99 World Bank Group (2018, 156).
100 Desmet et al. (2021).
101 Conte et al. (2021).

How Would Urbanization Evolve in Bangladesh in Response to Improved Connectivity and Climate Shocks?

Urbanization and structural transformation across geographical space are determined by complex interactions of decisions by made individuals given the natural endowment, amenity, and policies and institutions. Firms decide where to locate their business given the connectivity and business environment of a location. People decide where to reside and work given the job opportunities, housing costs, and local amenities. Each location is endowed with natural geography embodied in the land, which could be subject to congestion externality in its residential use—as more people congregate in one place, it could drive up the cost of the land rental. Firms are especially likely to benefit from agglomeration economies, so they cluster together in larger cities. The costs of trading and migration in conjunction with the strength of agglomeration economies affect how systems of cities are spread out over geographical space. For instance, higher transport costs would create a system of cities that are smaller, more numerous, and dispersed in close intervals. By contrast, lower transport costs would allow agglomeration forces to outweigh dispersion forces, leading to larger city sizes and fewer cities spread out in longer intervals.[102] Transportation costs themselves are influenced by public infrastructure investment. Land supply elasticities are functions of land market institutions, which are in turn shaped by government policies regulating land transactions and use (for example, zoning restrictions).

A structural spatial general equilibrium model is developed to capture these complex interactions (box 5.1). The impacts of connectivity and sea level rise on urbanization are analyzed by developing a standard spatial general equilibrium model.[103] The following are the key features of the model:

- Each location is endowed with productivity (subject to agglomeration economies) and amenities (subject to congestion) and land, which is used for residential purposes.
- Both agglomeration economies and congestion diseconomies depend on economic and population density and are endogenously determined in equilibrium.
- Consumers' preference for differentiated products is a determinant of demand for goods across locations.
- A transport network connects locations at varying costs. Transportation costs and consumer demand predict internal trade flows.
- Production is subject to increasing returns, firms use labor as the only input, and there is monopolistic competition.
- Workers with heterogeneous preferences for migration move freely across locations.

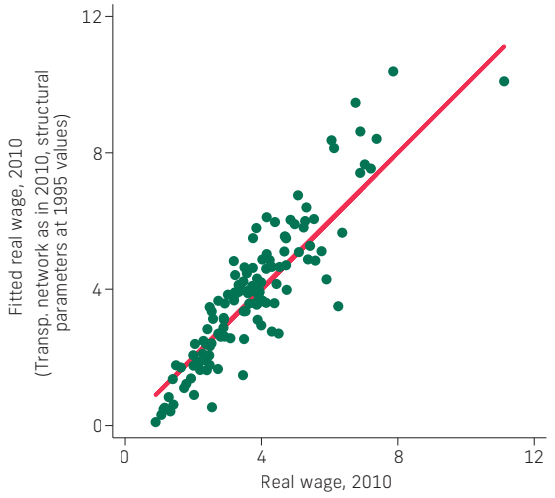
Box 5.1: Why Structural Spatial Equilibrium Models Are Useful for Policy Makers

The distribution of economic activities and people over geographical space is the result of interactions of individual decisions with natural endowments and policies and institutions. Because of this rich structure embedded in the structural spatial equilibrium models, these models capture both direct and indirect effects of shocks (policy or natural). For instance, the construction of a bridge has the direct effect of reducing travel time and the cost of trade and of increasing income and welfare. First, because it can also increase the density of economic activities in connected areas, the bridge can have positive productivity effects through stronger agglomeration economies. Second, large shocks, such as roads or bridges, often lead to reallocation of activities from one area to another. A reduction in the cost of trade can result in high-end manufacturing leaving smaller cities or towns and moving to larger cities, which tend to have stronger agglomeration benefits. The structural model developed here accounts for such general equilibrium effects. Third, in the context of climate change, these models allow for an important adaptation response: migration of people and firms in response to shocks. Finally, the benefits of a policy sometimes depend on whether complementary policies or institutional reforms are in place. Counterfactual simulations using these models can pin down the extent of this complementarity.

102 Allen and Arkolakis (2014).
103 Redding and Rossi-Hansberg (2017) and Redding (2016) provide an exposition of this class of model.

- Given the distributions of productivities and amenities, equilibrium in the factor and product markets pins down the product prices and wages, which in turn provide equilibrium trade and migration flows across locations, along with population density.

Figure 5.9: Goodness of Fit



Source: Authors' estimates based on the spatial equilibrium model

The spatial general equilibrium model used in this chapter has two distinctive features: (i) the transportation network is adapted for the role of bridges and ferries in local connectivity, and (ii) key parameters are estimated in a local context. In particular, the elasticity of trade to transport costs, and the incremental transport cost of a ferry over a bridge crossing are estimated from the degree to which the spatial structure of the economy evolved from 1995 to 2010 in response to such changes in the transportation network. The data sources for the model estimation include population censuses and Household Income and Expenditure Surveys. A dynamic transport model using OpenStreetMap data has been developed for the estimation of travel times under different transport connectivity scenarios. Figure 5.9 plots 2010 real wages in the model against predicted real wages when these are solved using 1995 economic fundamentals and the 2010 transportation network. The correlation between the two is about 0.84, indicating that the model fit is reasonably good. Having estimated the key parameters of the model and recovered the productivity and amenity values for each spatial unit, the model is then used to conduct four policy simulations: the opening of the Padma Bridge, a two-meter rise in sea level, the interaction of these two, and implications of improving the connectivity of small cities.

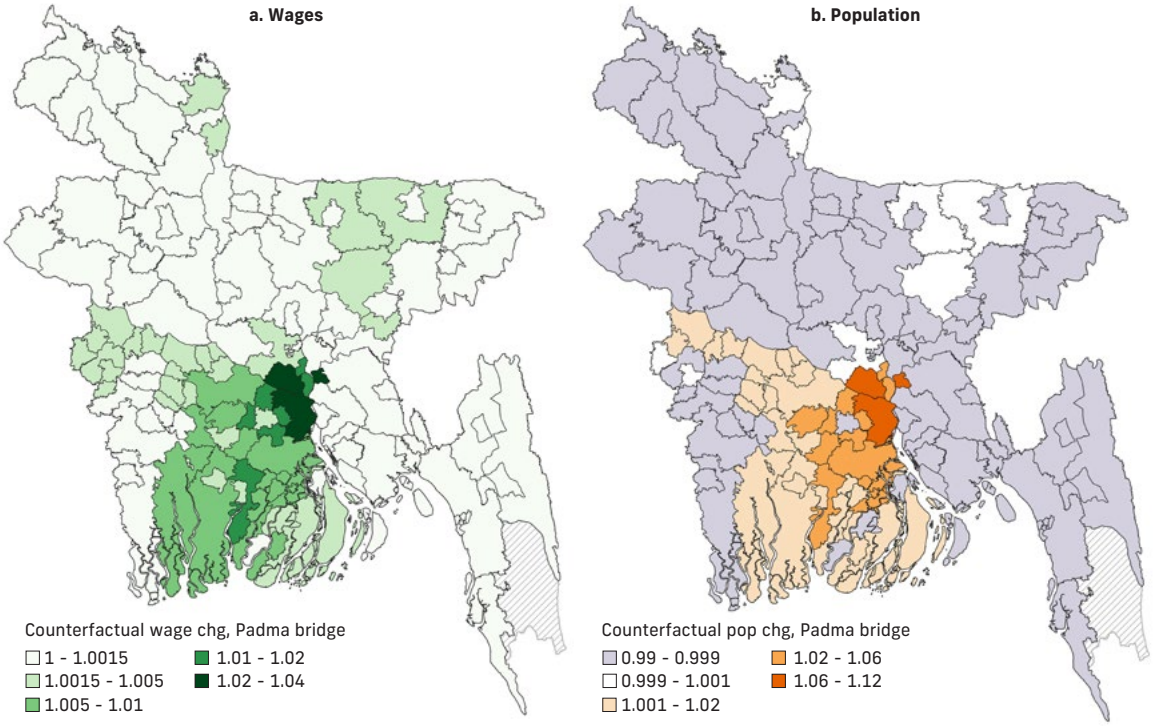
Counterfactual 1: Improving Connectivity to the South: The Opening of Padma Bridge

The southwest region of Bangladesh remains isolated from the northern and eastern parts of the country because of the lack of a bridge over the Padma River. The nearly completed Padma Bridge will allow the establishment of an active transport link between Dhaka and Kolkata, which is expected to be extended over time toward Myanmar and Southeast Asia more broadly. The 6.1 km bridge is thus expected to reduce travel time and transport costs significantly, particularly for the southwest region of Bangladesh. This chapter utilizes the structural spatial model described above to estimate the impacts of the opening of Padma Bridge on the spatial distribution of population and welfare.

Population density and wages in the southern districts (upazilas) connected by the bridge to Dhaka city will increase significantly. In map 5.6, panels a and b show the impact of the bridge on wages and population, respectively. The simulation exercise takes the structure of the economy in 2010 as given and recomputes the changes in travel time due to the Padma Bridge and the resulting distribution of population and wages. The model captures the large impact on connectivity expected from the bridge. For example, a trip from Dhanmondi to Faridpur Sadar currently requires crossing the Padma River by ferry. The cost of travel between these two locations is at the national median (over all pairs in the model), although these urban areas are only 60 km away as the crow flies. With the opening of the Padma Bridge, the time cost of connecting these two urban areas will be lower than the cost of travel in 90 percent of the country. The model predicts that wages in the directly connected areas will increase by as much as 2 to 4 percent and the population by 6-12 percent (dark shaded areas in the maps). The districts of Barisal and Faridpur on the south side of the river and Munshiganj on the north side will be the main beneficiaries of the bridge. Interestingly, the gains are predicted to be larger for rural parts of the districts, which is consistent with the findings of the impacts of the Jamuna Bridge. Jamuna Bridge is found to have increased agricultural productivity and services employment in the northwest region while manufacturing is concentrated in Dhaka and its surrounding areas.[104] In other words, the reallocation of population and activities matched the comparative advantage of each region. Indeed, the highest benefits of the bridge will be concentrated around Dhaka city. Although the model did not explicitly analyze the structural transformation of

104 Blankespoor et al. (2018).

Map 5.6: Expected Impacts of the Padma Bridge on Wages and Population



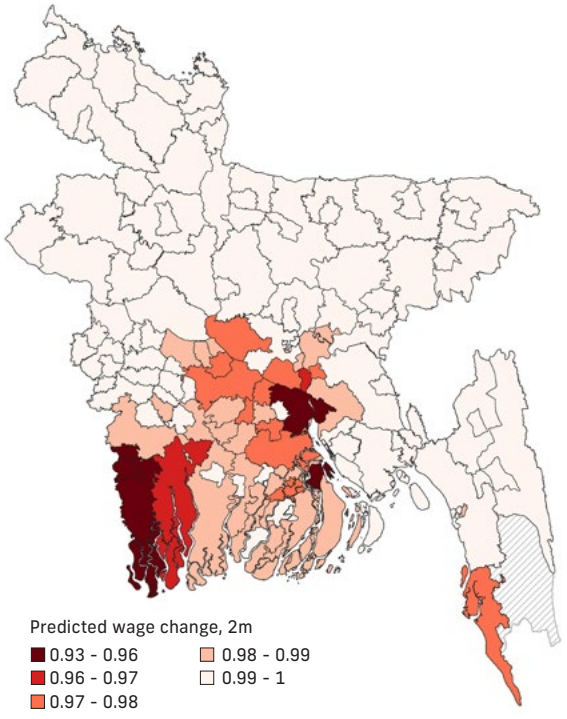
Source: Authors' estimates based on the spatial equilibrium model

employment, higher population density is associated with more jobs in non-agricultural activities, particularly in the tradable sector, which responds more to agglomeration externalities. Map 5.6 suggests that areas near Dhaka city may benefit the most in terms of structural transformation.

Counterfactual 2: Expected Pattern of Urbanization in Response to Sea Level Rise

Bangladesh is expected to witness the movement of people from the south to relatively higher lands in the north, reshaping the entire economic geography of urbanization. Sea level rise and associated loss of land, flooding, and salinity will affect the southern part of Bangladesh disproportionately. The structural model developed for this chapter has been utilized to simulate the effects of these losses on the geographical distribution of the population and activities. Map 5.7 plots the change in wages in response to sea level rise. The estimates suggest a decline of 4 to 7 percent in wages in the most adversely affected areas (dark shade on the map). Map 5.8 plots population density in 2010 in panel a and the impact of sea level rise on population density in panel b. The main adaptation mechanism in the model is movement of people in response to climate shock. The results show that districts in the southern part of Bangladesh will lose population. Contrary to popular belief, the simulation shows that the population in Dhaka and

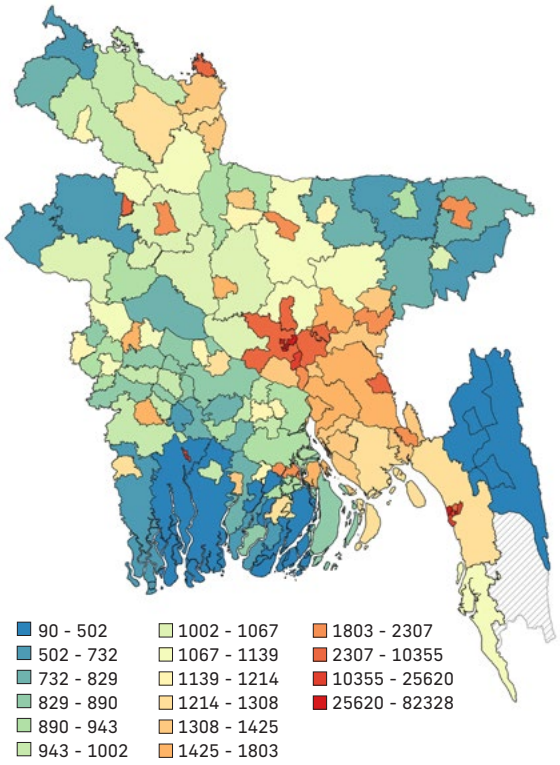
Map 5.7: Impact of Sea Level Rise on Wages



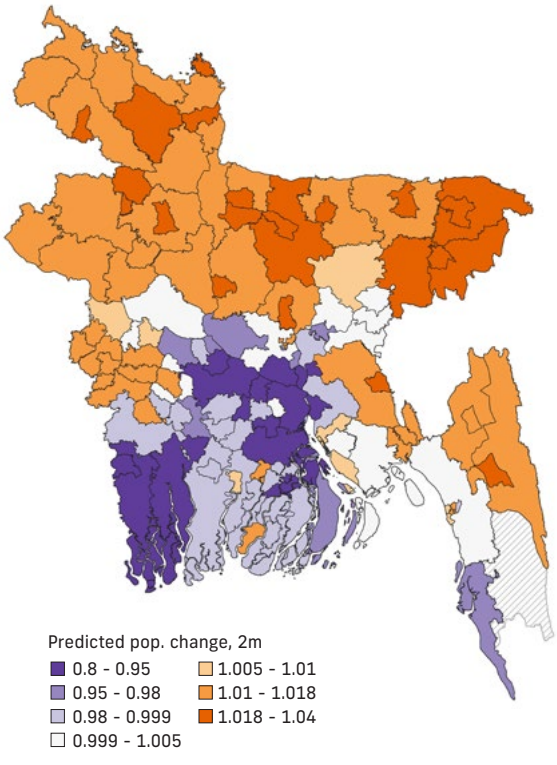
Source: Authors' estimates based on the spatial equilibrium model

Map 5.8: Impacts of Sea Level Rise on Population

a. Population density, 2010



b. Predicted change in population



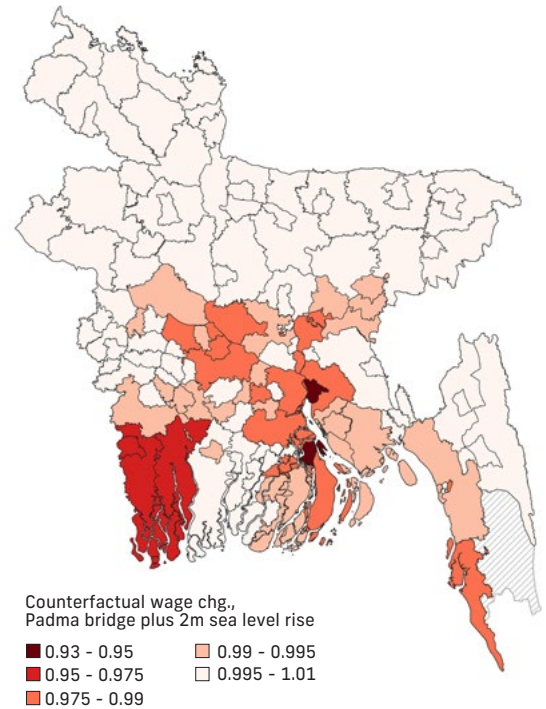
Source: Authors' estimates based on the spatial equilibrium model

Chittagong cities will not be affected as much. This is due to the fact that both cities are surrounded by low-lying areas with less than 2 meters of elevation, and they are expected to lose some land mass. In addition, both cities will face significant congestion diseconomies in the short run due to migration, which will in turn induce people to move to less congested areas in the longer run. Without investment in protection from sea level rise, Munshiganj, for example, will see a significant exodus of people, as will Faridpur on the other side of the river. The results suggest that urbanization will most likely move north in the very long run (over the next 100 years).

Counterfactual 3: Climate Change Affects Returns to Connectivity

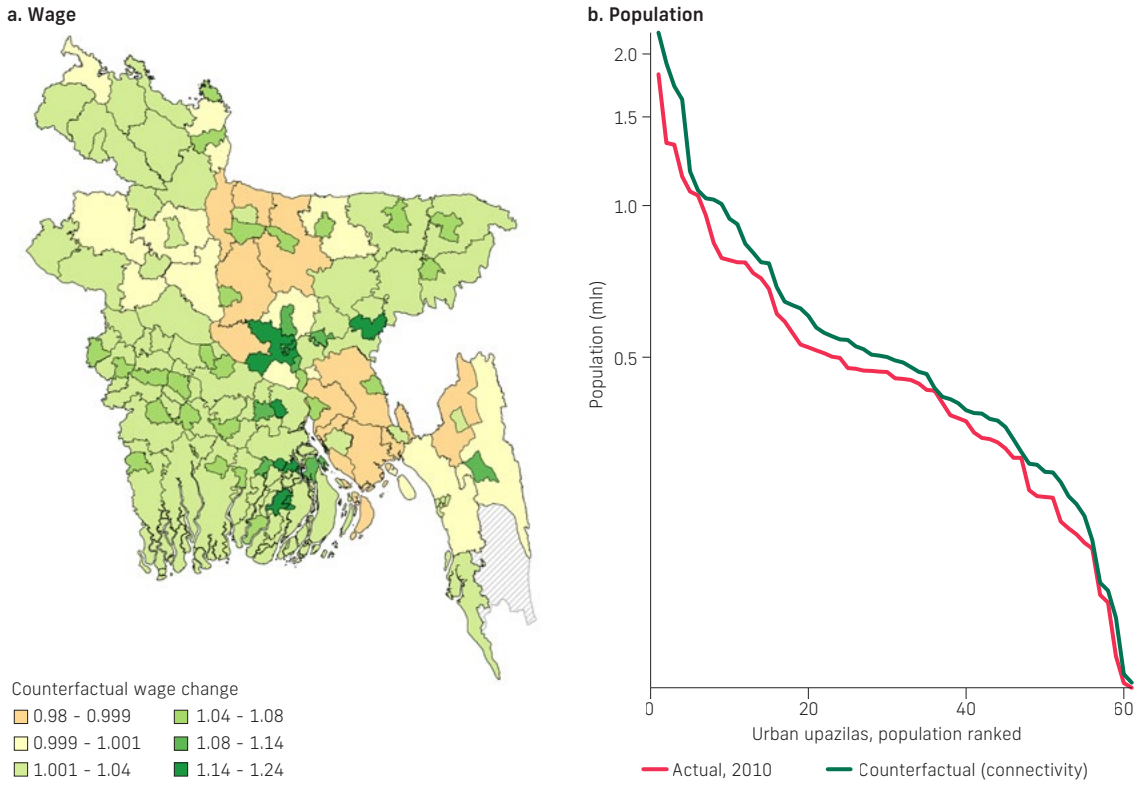
The placement of connective infrastructure will have to account for the impacts of climate change. As already demonstrated, Padma Bridge will bring benefits to the connected areas in the south, which are also quite vulnerable to sea level rise. Map 5.9 examines the impacts of the Padma Bridge on wages in the presence of a 2-meter rise in sea level. It suggests that much of the gains from the improved connectivity in the most vulnerable areas in the south will be wiped out because of sea level rise. Understandably, the benefits of Padma Bridge will perhaps

Map 5.9: Combined Impacts of Sea Level Rise and the Padma Bridge



Source: Authors' estimates based on the spatial equilibrium model

Figure 5.10: Impact on Wages and Urban Population in Response to a Highway System Connecting other Urban Areas to Dhaka



Source: Authors' estimates based on the spatial equilibrium model

accrue long before the 2-meter rise in the sea level. Yet, map 5.9 underscores the need for incorporating the effects of climate change on infrastructure placement. In addition, protective infrastructure, such as embankments, should be planned at the same time as the placement of connective infrastructure.

Counterfactual 4: Improving the Connectivity of different locations to Dhaka City

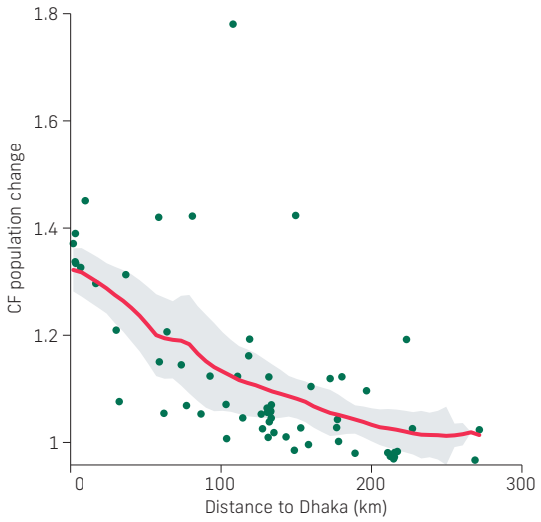
To kickstart the economies of cities outside of Dhaka city, an important policy intervention will be to connect them to larger markets. To see what this would do to other cities across Bangladesh, a policy simulation is run using the spatial equilibrium model developed earlier. Travel times between urban upazilas in each district and Dhaka (both the district and urban upazilas within it) are improved to approximate the effect of a national network of access-controlled expressways providing connectivity to Dhaka. Under this counterfactual, it is assumed that (i) the "circuity" of all road travel to Dhaka is improved to be at least as good as the national average (which is 1.33 road km per km "as the crow flies"), (ii) travel to Dhaka is assigned double the national average speed, and (iii) delays in ferry crossings are removed. In a way, this intervention contemplates the creation of a national highway system connecting all urban upazilas to Dhaka city and its surrounding areas.

The reduction in the costs of trade due to better connectivity will reinforce the tendency to concentrate in larger cities, although it will help to distribute the gain to the next tier of urban areas. Figure 5.10, panel a, shows the changes in wages across locations. The increase in wages is concentrated mostly around Dhaka. The rural areas in the southeast to northwest gradient witness a slight decline in wages because they are excluded from the improvement in connectivity by assumption. These were also places that were dense and already benefited from relatively good connectivity. As other areas get better connectivity, those rural areas lose their comparative advantage, leading to decreased population, productivity, and wages. In practice, a national highway system would reduce travel time for rural areas along the highway as well, benefitting all of them, although the spatial pattern in the change in wages may still look similar to figure 5.10, panel a. In figure 5.10, panel b shows the change in the distribution of population across cities in response to this intervention.

The urban upazilas are plotted according to their population rank in 2010. The intervention increases the population in all cities, including Dhaka, because of the reduction in trade costs. The population increases come at the expense of the rural population. Interestingly, most of the increases are concentrated in larger and medium-sized urban areas.

Dhaka city and urban areas close to it gain the most from the reduction in the costs of trade due to improvement in intercity transport connectivity. Figure 5.11 plots the ratio of population post-intervention over that pre-intervention against distance to Dhaka city. As can be seen from the polynomial fit, the gains in population decrease with distance from Dhaka city and become statistically insignificant after 200 km. This is consistent with empirical findings that show that place-based policies such as connectivity or special economic zones are more effective when the targeted places are nearer larger cities.[105] This in turn means that connecting medium-sized cities not far from larger cities will provide larger returns to connectivity investments and should perhaps receive priority over embarking on a nationwide intercity highway network.

Figure 5.11: Increase in Population and Distance to Dhaka City



Source: Authors' estimates based on the spatial equilibrium model

Digital Connectivity for Urbanization in Bangladesh

An important tool for more balanced urbanization is improved connectivity that would connect smaller cities to growing and vibrant markets and reduce the costs of doing business. Transport infrastructure—as the simulation results for Padma Bridge and the intercity transport network indicated—is a powerful tool for connectivity. With the advance of digital technology, digital infrastructure has become another important way to connect firms and consumers from far locations. This section provides suggestive evidence on its importance for urbanization.

Better physical and digital access to dynamic and growing markets is associated with more built-up growth in Bangladesh. To uncover this correlation, the changes in built-up areas and internet download speeds are plotted for two selected cities and their surrounding areas in map 5.10: Dhaka and Mymensingh. The simulation of sea level rise suggests that there will be population growth in Mymensingh. The built-up growth around Dhaka city suggests that much of the expansion of the Gazipur area happened post-1990s. Gazipur is about 30 km from Dhaka and enjoys relatively high internet speed as well. The better connectivity undoubtedly helped to attract more factories and businesses to Gazipur. In contrast, Mymensingh has not shown much growth in built-up density. Internet download speeds are also much lower in Mymensingh. While the direction of causality is unclear here, the correlation confirms the positive association between connectivity and city growth.

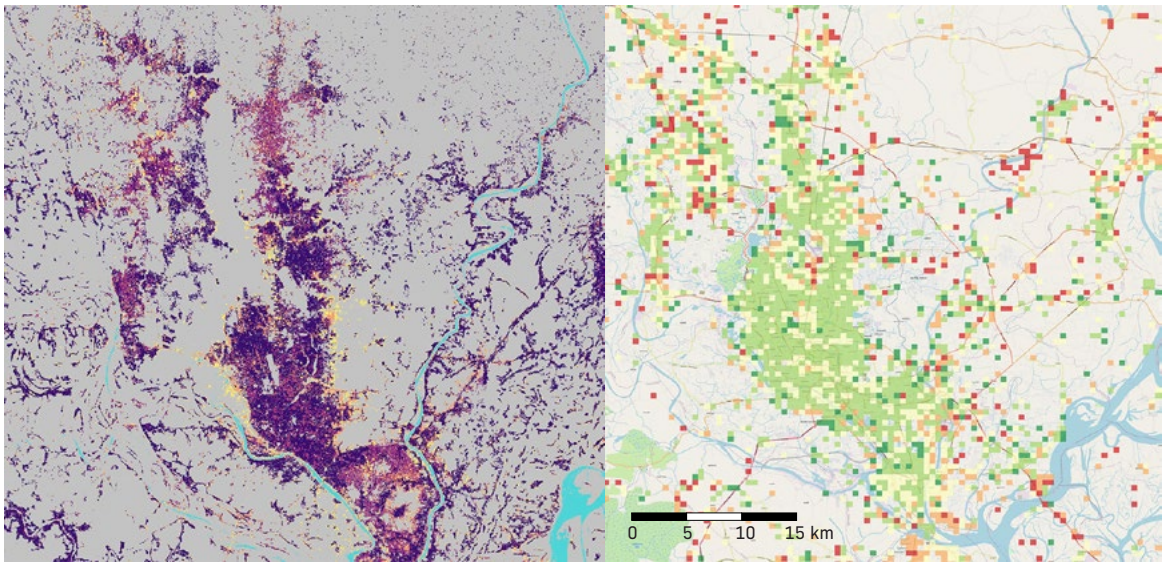
Counterfactual 5. Improving Digital Connectivity in All Urban Areas

How would urbanization respond if internet download speed were upgraded? To conduct this policy simulation, it is assumed that the productivity of every urban upazila is augmented by an assumed effect of digitization on productivity times and a "digitization catch-up factor." The assumed effect of digitization on productivity is taken to be 10 percent.[106] The assumed catch-up in digitization for urban upazilas is modeled as the gap in average fixed broadband download speed (from Ookla open data) between all sampled points in the upazila and the Kolkata district in West Bengal. As an

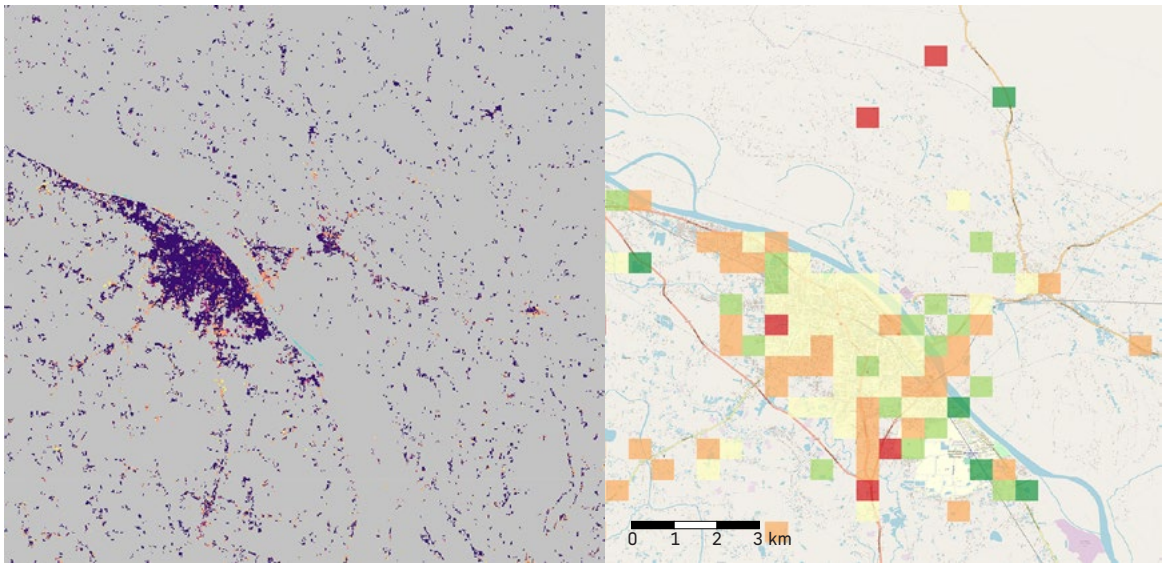
105 Box 5.2 provides a review of this literature.
106 Cusolito et al. (2022) obtain estimates in the range of 1 to 20 percent for the impacts of different digitization technologies on revenue productivity in South Asia. However, total factor revenue productivity is a measure of productivity on firm sales; it is not necessarily proportional to the output productivity parameters in a quantitative spatial economic model.

Map 5.10: Growth of Built-Up Area and Internet Speed

Dhaka and Gazipur



Mymensingh



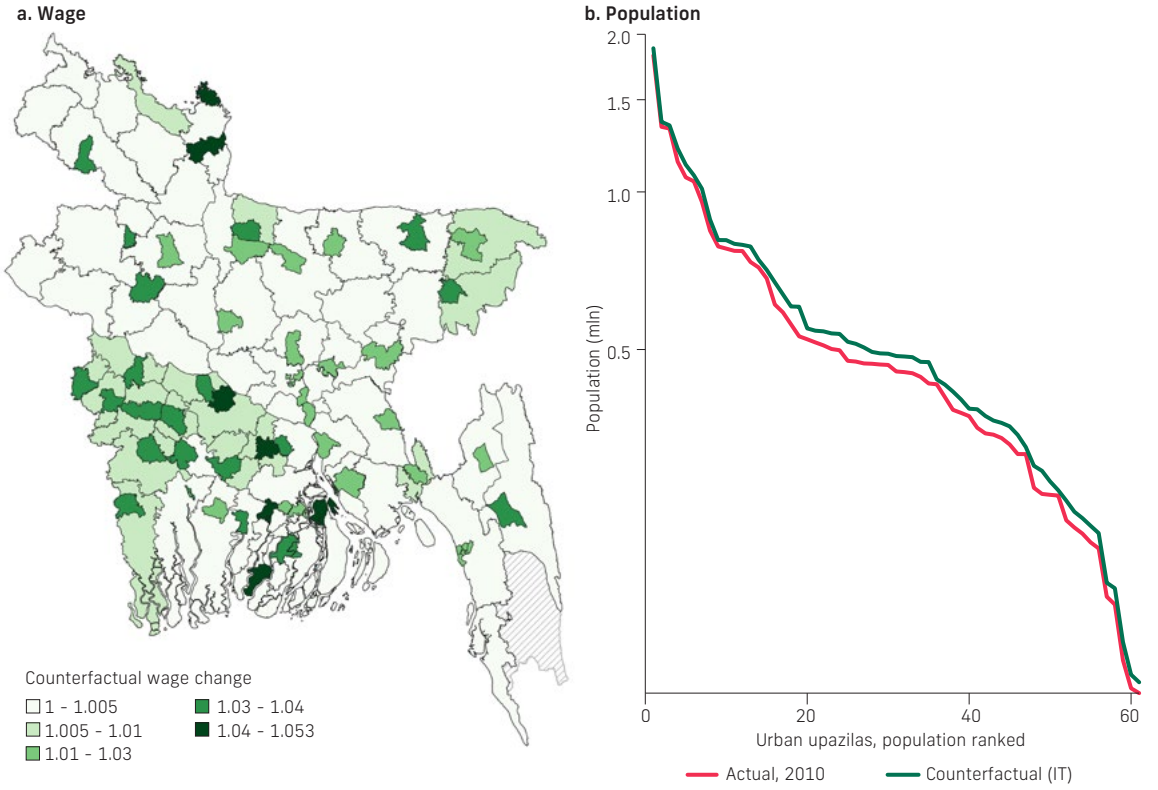
Water surface
Not built
Built-up between 2000 - 2014
Built-up between 1990 - 2000
Built-up between 1975 - 1990
Built-up before 1975

< 5 mbps
5 - 15
15 - 25
25 - 40
> 40 mbps

Source: Authors' estimates based on the GHSL and Ookla data

example, an upazila with a download speed that is 80 percent that of Kolkata is assumed to catch up by 20 percent and is assigned a 2 percent productivity shock in the counterfactual. Another upazila at 20 percent of Kolkata's speed gets an 8 percent productivity shock.

Figure 5.12: Simulated Effect of Improvement in Internet Download Speed on Population and Wage Distribution



Source: Authors' estimates based on the spatial equilibrium model

The improvement in digital connectivity helps all cities to grow. The result from this counterfactual exercise is plotted in figure 5.12. As before, we focus on wage and population changes. Because areas with much lower internet download speed get a much larger boost in productivity, this intervention benefits those places more (figure 5.12, panel a). In terms of population increase, the upazilas that rank in the middle of the population distribution gain the most. This intervention indeed helps medium-sized cities to boost their population and productivity.

Policy Options for Urbanization

The triple challenges of urbanization—how to sustain the momentum of productivity growth in Dhaka city, how to make other cities more attractive as destinations for firms and people, and how to tackle the surge of migration flows in response to climate change—appear quite formidable. What approaches should be taken by policymakers and leaders at the local to national levels to tackle these challenges? The policy choices can be grouped into three categories in terms of when actions are needed:

1. In the *short term*, the focus should be on the creation of jobs in tradable activities for all types of cities. Dhaka and Chittagong have the experience of nurturing a dynamic ready-made garment industry. These cities need to diversify their portfolio of tradable activities, which will require national-level policy reforms to enhance trade competitiveness. Chapter 3 elaborates the steps toward these reforms. City-level leaders should focus on reforms to ensure affordable housing and equitable access to city services.
2. In the *medium term*, improving connectivity both within and across cities as well as some measures of climate change mitigation and adaptation should be the focus.
3. In the *long term*, the focus should be on dealing with the infrastructural challenges of climate change mitigation and adaptation since sea level rise or warming is happening at a slower pace.

The urbanization challenges will also require interventions at different geographical levels: large cities, small and medium-sized cities, and the national level.

Because of the central role of Dhaka city in Bangladesh's urban hierarchy, policy options for the development of Dhaka have been discussed widely and are largely known. The development of Dhaka city has been the focus of a number of studies over the past decade, including World Bank (2012), Lall et al. (2021), and Bird et al. (2018). The following are the key policy recommendations:

- Develop intracity as well as intercity transport infrastructure to transform Dhaka into a globally competitive metropolitan city. A north-south road through the middle of Dhaka city is expected to reduce commuting time by 25 percent and increase workers' welfare by 0.5 percent and landowners' welfare by 1 percent (Sturm, Takeda, and Venables 2022).
- Reform urban housing policies (for example, zoning restrictions) to increase housing supply elasticities. A simulation exercise by Sturm, Takeda, and Venables (2022) shows that such reform would generate large welfare gains (47 percent increase) and allow buildings to become taller—almost doubling heights in the city center—and accommodate more people. A better city form would also increase urban productivity.
- Low-lying areas in and around Dhaka and Chittagong are vulnerable to sea level rise. As the poor are more likely to be located in those vulnerable areas, both cities will have to plan for combating the potential impacts of climate change and this should be a priority for further studies.

The policy options for cities other than Capital city are less well known not just for Bangladesh, but also for developing countries in general. The usual policy reaction is that these cities and towns cannot attract firms and people and hence an incentive scheme to locate in relatively remoter places might work. Box 5.2 describes various place-based policies adopted by countries across the world. The empirical evidence across countries indicates mixed results for such place-based policies (Grover, Lall, and Maloney 2022). A recent study finds that of the seven special economic zones created in Peru since the 1990s, only one has been mildly successful in generating jobs and investment (World Bank 2016; Rodríguez-Pose and Wilkie 2019). By contrast, the special economic zones in the Dominican Republic have had better outcomes, in part through their ease of access to US markets. Examples of export processing zones in Bangladesh (in Chittagong and elsewhere) point to the importance of natural endowments and accessibility to markets in the success and/or failure of these place-based interventions. Grover, Lall, and Maloney (2022) observe that *economic zones are certain to fail unless they are well integrated with large, vibrant urban economies or wider trade systems that can reliably supply the needed inputs. Whatever complements are needed for a place-based policy to work, their provision needs to be ensured before the combined package of spatially targeted interventions can be approved.* This principle extends to targeting the development of small and medium-sized cities as well.

Urban transition in Dhaka and Chittagong offers opportunities for other cities to attract new activities and better jobs. As urban productivity grows and the cost of living increases, low-productivity manufacturing and services move out of larger cities and into small and medium-sized cities that are well connected to the larger cities and trade networks. This transition has been in progress in Dhaka, which has seen many garment factories moving out to nearby locations. As Map 5.10 shows, nearby locations such as Gazipur, and Savar have experienced substantial growth in the garment sector and hence built-up density in recent years. These places are not only connected to Dhaka through transport networks but also have better digital connections and are less susceptible to flooding. Transport and digital connectivity should be key elements in promoting growth outside Dhaka and other metropolitan cities. Even with connectivity, policymakers must recognize that urbanization is based on agglomeration externalities, which create regional inequality, and that connecting every place is not only financially infeasible but also could be ruinous.

Attracting tradable activities to other smaller and medium-sized cities may require public interventions. The specific interventions include the following:

- *Improving intercity transport connectivity.* The policy simulations suggest an important principle in selecting potential transport routes. The returns to investments in intercity transport routes are higher for small and medium-sized cities that are located close to larger cities. The returns are lower in areas that are vulnerable to climate shocks, such as sea level rise or flooding.
- *Improving digital connectivity.* This has the potential to increase the population and productivity growth in small and medium-sized cities. The principle for targeting transport investment applies in this case as well.

Box 5.2: Are Special Economic Zones the Answer for Stimulating Urban Economies outside Metropolitan Areas?

Place-based policies—spatially targeted interventions aiming to boost economic development in particular geographical areas—are increasingly being adopted around the world to shore up fortunes in places left behind. These policies include investments in connectivity and provision of services as well as targeted interventions, including special economic zones (SEZs), such as industrial districts, free trade zones, export processing zones, and special districts with favorable fiscal or institutional treatment. The economic case for pursuing SEZs is often based on potential economic efficiency gains from spatial concentration in the provision of infrastructure and the development of clusters of businesses. Further, in resource-constrained developing countries, it would not be feasible to relax institutional and financial constraints across the economy. SEZs reduce the dimensionality of the reform problem.

SEZs often employ a range of "hardware" and "software" policies in a well-defined geographical area or areas (World Bank 2017). Hardware policies include (i) liberal treatment of imports and exemptions from customs duties, particularly (but not only) in the export processing zones and free trade zones that were precursors to the current SEZs; (ii) tax incentives, particularly holidays from corporate income taxes; (iii) provision of infrastructure, including electric power, transport, water, and sanitation; (iv) distinct regulatory regimes, often involving laxer labor regulations, restrictions on union activity, and different land tenure systems; and (v) provision of large parcels of land, often with industrial sheds built in advance of occupation. Software policies include (i) management of SEZs that seeks out and works closely and effectively with private sector investors, (ii) effective implementation and management, and (iii) labor training. How successful are these policies in achieving their goals?

Frick, Rodríquez-Pose, and Wong (2019) provide the first study on this, covering 346 zones in 22 developing countries. They use changes in nighttime light luminosity as a measure of economic activity in the zones. Between 2007 and 2012, 33 of the zones in the study shrank. Looking at the performance of the zones relative to national growth paints an even less positive picture. Fewer than 20 percent of the zones grew faster than the national average, while most zones grew at the speed of the national economy. The econometric analysis does not find any significant positive association between growth of the zones and incentive packages, ownership, and management schemes. The provision of corporate tax breaks has been of marginal importance, as have most nonfiscal benefits, such as the availability of national one-stop shops and the independence of zone regulators. Larger zones and those located near larger cities are found to have performed better than smaller zones. Moreover, and contrary to the expectations of policy makers and zone designers, low-tech, labor-intensive zones have been more economically dynamic than their more high-tech counterparts.

Based on the findings of Frick, Rodríquez-Pose, and Wong (2019) and a review of the World Bank's portfolio of SEZ projects (World Bank 2017), two essential conditions are identified for the growth of SEZs: connectivity to large cities, and the predisposition of the economy or its current level of capability. A country dominated by agriculture most likely will have difficulty leaping into non-agriculture-based industrialization through SEZ policies alone. Even where zone programs have a greater potential to succeed, the effects tend to be limited both in time and spatial extent, and SEZ policy should account for the transience of the positive effects.

Sources: Frick, Rodríguez-Pose, and Wong (2019); World Bank (2017).

- *Improving access to basic services.* The quality and quantity of city services for firms and residents in small and medium-sized cities are most likely not as good as in metropolitan cities such as Dhaka and Chittagong. Small and medium-sized cities—particularly those located near larger cities—would need to invest in these services to attract firms in tradable activities.

Whether transport connectivity, service provision, or even special economic zones, these interventions should be based on a sound analysis of their pros and cons. As the evidence on the effectiveness of special economic zones in box 5.2 suggests, place-based interventions should be based on an honest assessment of their prospects

and challenges, along with projections of the direct and indirect effects of each proposed intervention. Duranton and Venables (2018) provide a step-by-step guide for ex-ante evaluation of place-based interventions, to make policy choices transparent for policymakers and leaders.[107]

At the national level, coordination of urban and regional planning is required. Most metropolitan cities have urban planning units that lay out the plan for land use and infrastructure placements. In most developing countries, city planning has lagged well behind the needs of cities in the face of migration and shocks related to climate change. The result of this lag is evident in the proliferation of unplanned sprawl and informal settlements. At the regional level, as the simulation of the impacts of sea level rise indicated, places are interlinked, and a shock in one place spills over to other places through trade and migration networks. Regional-level coordination is needed to ensure that place-based policies do not benefit one place at the expense of another.

Urban governance and accountability are additional areas that will require attention. To finance the investment programs, most cities rely on intergovernmental transfers. In the longer run, cities would have to raise their own revenues to finance their infrastructure investments and provision of services. An important source of finance is the taxation of the value of land and property, which in turn will require reforms in the land and housing markets. Increasingly, metropolitan cities are relying on public-private partnerships and borrowing from capital markets to finance their budgets. However, tapping into these sources requires cities to have solid reputations with respect to governance and accountability to their residents. This issue will become more relevant, particularly for metropolitan cities in Bangladesh.

107 Duranton and Venables (2018).

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