# Study of Bangladesh Bond Market

April 2019

pioneering infrastructure changing lives

GuarantCo
GUARANTEES FOR DEVELOPMENT

TAF Technical Assistance Facility

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# Abbreviations

| Acronym | Definition |
|---|---|
| ACI | Advanced Chemical Industries |
| ADB | Asian Development Bank |
| ADF | Asian Development Fund |
| ADP | Annual Development Plan |
| AIIB | Asian Infrastructure Investment Bank |
| AMC | Asset Management Company |
| AMEZ | Abdul Monem Economic Zone |
| AOA | Articles of Association |
| APSCL | Ashuganj Power Station Company Limited |
| ASA | Association for Social Advancement |
| BAS | Bangladesh Accounting Standards |
| BBA | Bangladesh Bridge Authority |
| BDT | Bangladeshi Taka |
| BEPZA | Bangladesh Export Processing Zones Authority |
| BERC | Bangladesh Energy Regulatory Commission |
| BEZA | Bangladesh Economic Zones Authority |
| BFI | Bilateral Financing Institutions |
| BGTB | Bangladesh Government T-Bonds |
| BHTPA | Bangladesh Hi-Tech Park Authority |
| BI | Bilateral Institutions |
| BIBM | Bangladesh Institute of Bank Management |
| BIDA | Bangladesh Investment Development Authority |
| BIFFL | Bangladesh Infrastructure Finance Fund Limited |
| BIMB | Bank Islam Malaysia Berhad |
| BIS | Bank for International Settlements |
| BLPA | Bangladesh Land Port Authority |
| BNM | Bank Negara Malaysia |
| BOO | Build-Own-Operate |
| BOOT | Build-Own-Operate-Transfer |
| BOT | Build-Operate-Transfer |
| BPDB | Bangladesh Power Development Board |
| BR | Bangladesh Railway |
| BRAC | Bangladesh Rural Advancement Committee |
| BREB | Bangladesh Rural Electrification Board |
| BRT | Bus Rapid Transit |
| BSA | Bangladesh Standards of Auditing |
| BSEC | Bangladesh Securities and Exchange Commission |

| Acronym | Definition |
|---|---|
| BTCL | Bangladesh Telecommunication Company Limited |
| BTRC | Bangladesh Telecommunication Regulatory Commission |
| CAAB | Civil Aviation Authority of Bangladesh |
| CAGR | Compound Annual Growth Rate |
| CCGT | Combined Cycle Gas Turbine |
| CDMA | Code-Division Multiple Access |
| CGS | Credit Guarantee Scheme |
| CHA | Custom Handling Agents |
| CHEC | China Harbour Engineering Company Limited |
| CP | Chittagong Port |
| CPA | Chittagong Port Authority |
| CRM | Credit Risk Mitigation |
| CRR | Cash Reserve Ratio |
| CSE | Chittagong Stock Exchange |
| DBFO | Design-Build-Finance-Operate |
| DCC | Dhaka City Corporation |
| DCCI | Dhaka Chamber of Commerce and Industry |
| DESCO | Dhaka Electric Supply Company Limited |
| DFI | Development Finance Institution |
| DGFP | Directorate General of Family Planning |
| DGHS | Directorate General of Health Services |
| DHUTS | Dhaka Urban Transport Network Development Study |
| DNCC | Dhaka North City Corporation |
| DPDC | Dhaka Power Distribution Company |
| DPHE | Department of Public Health Engineering |
| DSCC | Dhaka South City Corporation |
| DSE | Dhaka Stock Exchange |
| DTH | Direct-To-Home |
| DWASA | Dhaka Water Supply and Sewerage Authority |
| EBL | Eastern Bank Limited |
| ECA | Export Credit Agency |
| ECAI | External Credit Assessment Institution |
| ECGD | Export Credit Guarantee Department |
| EDCF | Economic Development Cooperation Fund |
| EDF | Export Development Fund |
| EDGE | Enhanced Data rates for GSM Evolution |
| EGCB | Electricity Generation Company of Bangladesh |
| EIB | European Investment Bank |
| EKVE | East Klang Valley Expressway |
| EPC | Engineering, Procurement and Construction |

| Acronym | Definition |
|---|---|
| EPZ | Export Processing Zones |
| ERG | Economic Research Group |
| EXIM | Export-Import |
| EZ | Economic Zone |
| FCB | Foreign Commercial Banks |
| FDI | Foreign Direct Investment |
| FFA | Freight Forwarders |
| FMO | Netherlands Development Finance Company |
| FSIBL | First Security Islami Bank Limited |
| FSRU | Floating Storage Regasification Unit |
| FTPS | Fast Track Projects Scheme |
| GBP | Great Britain Pound |
| GDA | Greater Dhaka Area |
| GDIC | Green Delta Insurance Company |
| GDP | Gross Domestic Product |
| GE | General Electric |
| GoB | Government of Bangladesh |
| GP | Grameen Phone |
| GPOBA | Global Partnership for Output Based Aid |
| GPRS | General Packet Radio Service |
| GSM | Global System for Mobile communication |
| GW | gigawatt |
| HBFC | House Building Finance Corporation |
| HBRI | Housing and Building Research Institute |
| HNI | High-net-worth Individual |
| HSIA | Hazrat Shahjalal International Airport |
| HSPA | High Speed Packet Access |
| IATA | International Air Transport Association |
| IBA | Islamic Banking Act |
| IBBL | Islami Bank Bangladesh Limited |
| IBRD | International Bank for Reconstruction and Development |
| ICB | Investment Corporation of Bangladesh |
| ICD | Inland Container Depot |
| ICT | Information and Communications Technology |
| IDA | International Development Association |
| IDCOL | Infrastructure Development Company Limited |
| IDLC | Industrial Development Leasing Company |
| IDRA | Insurance Development and Regulatory Authority |
| IFC | International Finance Corporation |
| IIDFC | Industrial and Infrastructure Development Finance Company Limited |

| Acronym | Definition |
|---|---|
| IIFC | India Infrastructure Finance Company |
| IIFCL | India Infrastructure Finance Company Limited |
| IMF | International Monetary Fund |
| IPFF | Investment Promotion and Financing Facility |
| IPO | Initial Public Offering |
| IPP | Independent Power Producer |
| IT | Information Technology |
| IWT | Inland Water Transport/Inland Waterways Transport |
| JICA | Japan International Cooperation Agency |
| JV | Joint Venture |
| km | kilometre |
| KPCL | Khulna Power Company Limited |
| kWh | kilowatt hour |
| LGD | Local Government Division |
| LGED | Local Government Engineering Department |
| LGI | Local Government Institutions |
| LIBOR | London Inter-bank Offered Rate |
| LNG | Liquefied natural gas |
| LoC | Line of Credit |
| LTA | Long Term Access |
| m | million |
| MDB | Multilateral Development Bank |
| MDG | Millennium Development Goals |
| MFI | Micro Finance Institution |
| MFI | Multilateral Financing Institution |
| MHPW | Ministry of Housing and Public Works |
| MHz | Megahertz |
| MIGA | Multilateral Investment Guarantee Agency |
| MNC | Multinational Corporation |
| MOA | Memorandum of Association |
| MoLGRD&C | Ministry of Local Government, Rural Development and Co-operatives |
| MP | Mongla Port |
| MPA | Mongla Port Authority |
| MRA | Microcredit Regulatory Authority |
| MRT | Mass Rapid Transit |
| MRTB | Ministry of Road Transport and Bridges |
| MVA | Mega Volt Amperes |
| MVNO | Mobile Virtual Network Operator |
| MW | megawatt |
| NBFI | Non-Banking Financial Institution |

| Acronym | Definition |
|---|---|
| NBR | National Board of Revenue |
| NCB | National Commercial Bank |
| NHA | National Housing Authority |
| NOC | No Objection Certificate |
| NPL | Non-Performing Loans |
| NRB | Non-Resident Bangladeshi |
| NSC | National Savings Certificate |
| NSD | National Saving Doctorate |
| NTPC | National Thermal Power Corporation |
| NTTN | Nationwide Telecommunication Transmission Network |
| NWPGCL | North West Power Generation Company Limited |
| ODA | Official Development Assistance |
| OFID | OPEC Fund for International Development |
| OPEC | Organization of the Petroleum Exporting Countries |
| PCB | Private Commercial Bank |
| PDB | Power Development Board |
| PGCB | Power Grid Company of Bangladesh |
| PIDG | Private Infrastructure Development Group |
| PKSF | Palli Karma Sahayak Foundation |
| PMO | Prime Minister's Office |
| PPP | Public Private Partnership |
| PPPO | Public-Private Partnership Office |
| PPSIP | Pro-Poor Slum Integration Project |
| PSE | Public Sector Entity |
| PSMP | Power System Master Plan |
| PV | Photovoltaic |
| PWD | Public Works Department |
| RAJUK | Rajdhani Unnayan Kartripakkha |
| RE | Renewable Energy |
| REHAB | Real Estate Housing Association of Bangladesh |
| RHD | Roads and Highways Department |
| RICT | Riverside Inland Container Terminal |
| RMG | Ready-Made Garments |
| RMP | Road Master Plan |
| RoE | Return on Equity |
| ROW | Right-of-Way |
| RPCL | Rural Power Company Limited |
| RWA | Risk-Weighted Asset |
| SAPL | Summit Alliance Port Limited |
| SCADA | Supervisory Control and Data Acquisition |

| Acronym | Definition |
|---|---|
| SEZ | Special Economic Zone |
| SHS | Solar Home System |
| SIBL | Social Islami Bank Limited |
| SIDA | Swedish International Development cooperation Agency |
| SLR | Statutory Liquidity Ratio |
| SME | Small and Medium Enterprises |
| SMEF | Small and Medium Enterprise Fund |
| SOCB | State Owned Commercial Bank |
| SPV | Special Purpose Vehicle |
| SREDA | Sustainable and Renewable Energy Development Authority |
| T & D | Transmission and Distribution |
| TAT | Turnaround Time |
| TEU | Twenty-foot equivalent unit |
| UK | United Kingdom |
| UMTS | Universal Mobile Telecommunications System |
| UNCDF | United Nations Capital Development Fund |
| USD | United States Dollar |
| WASA | Water Supply and Sewerage Authority |
| WB | World Bank |
| WZPDCL | West Zone Power Distribution Company Limited |
| YOY | Year-On-Year |

## Currency units (as on February 2019)

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|---|
| 1 BDT = 0.012 USD |
| 1 BDT = 0.0091 GBP |
| 1 USD = 0.76 GBP |

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# Forewords

For a country to benefit from affordable and sustainable infrastructure it follows that the ability to finance that infrastructure in an affordable and sustainable way is also required. Hence, the strong correlation between the development of domestic capital markets and the growth in GDP per capita in countries that have successfully transitioned from being classed as frontier markets to emerging and eventually developed market status. What we have learned at GuarantCo over the past decade supporting the development of frontier capital markets is the necessity for “crowding in” domestic institutional capital, from investors such a pension and insurance funds, to provide long-term stable financing for the critical infrastructure necessary to enable a country’s development. This Study of Bangladesh Bond Market is a key first step in a journey, which we hope will see GuarantCo partnering with the country’s policy makers, regulatory institutions, financiers and sponsors to unlock the potential of Bangladesh’s capital markets to finance the infrastructure needed to enable the country’s future growth and prosperity.

Lasitha Perera,
Chief Executive Officer,
GuarantCo.

Capital markets, especially bond markets, have been the dominant source of finance for infrastructure projects in mature and developed markets. With GuarantCo’s (a PIDG company) credit guarantee solutions, I hope that we will soon see pathfinder work in developing Bangladesh’s bond market as an important source of funding for infrastructure projects.

Andrew Bainbridge,
Chair,
The Private Infrastructure Development Group.

PIDG company, Technical Advisory Facility (TAF) is pleased to be part of a pioneering study for developing infrastructure bond market in Bangladesh. I hope that the study will be valuable in addressing Bangladesh’s long-standing need for developing bond market as an efficient, sustainable and potent means for financing infrastructure in the country.

James Leigland,
Technical Adviser,
Technical Assistance Facility.

Ever since I started engaging with sponsors and financiers in Bangladesh, it became clear to me that the country’s infrastructure sector needs more novel sources of capital like bonds and Islamic financing (e.g. Sukuk) to supplement traditional bank financing to fulfil its significant financing needs. Islamic finance in particular can play a pivotal role in addressing some of these funding needs as already proven in Malaysia and Saudi Arabia. Bangladesh’s vast pipeline of infrastructure projects means the funding needs will grow exponentially for the developers. We hope that the Study of Bangladesh Bond Market will help unlock the massive non-bank, institutional capital like insurance, pension and Zakat funds to help address Bangladesh’s long-term funding needs for infrastructure projects.

Nishant Kumar,
Regional Director,
South Asia, GuarantCo.

GuarantCo led study will play vital role in the development of a mature bond market in Bangladesh through a combination of advocacy, awareness generation and guarantee products. The study has largely addressed the challenges pertaining to a vibrant bond market in Bangladesh for infrastructure projects and I feel the challenges identified will enable local policymakers to know the next course of action to strengthen the Bond market and revival of capital market in Bangladesh as well as a source of new learning for all stakeholders. The broad-based bond market study makes scopes for local bond market development and highlights the potential of innovative avenues of infrastructure financing using local institutional capital for durable infrastructure development in the years to come. This study is expected to cater the sustainable avenues of much-needed infrastructure financing and contribute to the long-cherished economic transformation objectives of Bangladesh. Alongside bond financing, the local currency infrastructure financing can be opportune source of long-term financing reducing dependence on donors led borrowing. Since Bangladesh can utilize and accumulate various savings from insurance, Zakat and pension fund to create finance and corporate initiatives to meet long-term infrastructure financing in near future.

Osama Taseer,
President,
Dhaka Chamber of Commerce & Industries.

Robust financial system is a pre-requisite for the sustainable economic development of any country. A well-developed financial system plays a pivotal role in the interplay between mobilising savings and facilitating investments. Deep, diversified and well-functioning bond market is essential part of financial system, as it facilitates long-term financing for areas such as infrastructure, housing, and private sector development. Reciprocally, this provides long-term, stable and annuity type investment instruments for pension funds, mutual funds and insurance companies. Thus, it helps avoiding excessive dependence on banks, mitigating structural liquidity risk and facilitating diversification of corporate risks beyond the banking system. As Bangladesh economy is at the inflection point of becoming a middle-income country, it faces an increasing need for diverse and sophisticated financial services and risk management products especially for financing of infrastructure, which will require a total investment of approximately USD 600 billion by 2040. Capital market of Bangladesh as it stands today - does not have the breadth or depth to support the growth potential. The country needs to improve on the predictability of regulations, enhance framework and incentivise capital market activity at the initial stage. Furthermore, development of the bond market cannot be isolated from enhancing the equity market, as balanced capital structure will ensure appropriate risk and reward framework. Bangladesh is the best kept secret of Asia and to realize the full potential of the country, a collective call for action by all stakeholders is the need of the hour.

Naser Ezaz Bijoy,
Chief Executive Officer,
Standard Chartered Bank.

Bangladesh infrastructure financing market urgently needs to address the issues around availability of long-term sustainable funding. One of the most potent ways of achieving this is by developing a vibrant bond market in the country. A well-developed bond market will allow project sponsors to secure much needed affordable long-term financing for their projects thereby increasing their commercial and financial viability. I hope this bond market study conducted by GuarantCo shall not only help in addressing key gaps in infrastructure financing for Bangladesh but also suggest ways how the bond market could help de-risk traditional financing institutions i.e. banks and NBFIs.

Mohammad A. Moyeen,
Chairman,
LankaBangla Finance.

# Executive Summary

# Executive Summary

## Introduction

GuarantCo intends to play a pro-active role in the development of a mature bond market in Bangladesh, through a combination of advocacy, awareness generation and guarantee products.

Objective to commission this study: GuarantCo has commissioned this study to assess the challenges pertaining to a vibrant bond market in Bangladesh for infrastructure projects, and to identify possible interventions that will enable development of a bond market in Bangladesh. A two-pronged approach has been adopted:

a) conduct a detailed assessment of the market and regulations in Bangladesh and form a hypothesis that leverages our experience in similar developing markets; and

b) conduct an out-side in assessment of the challenges in Bangladesh debt capital markets through targeted interactions with sectoral and financial experts in Bangladesh.

The findings of this report will help all stakeholders to channelise their efforts into the development of a vibrant debt capital market in Bangladesh, through a mix of measures such as policy changes, awareness generation and introduction of financial products to mitigate potential risk for investors.

## The Bangladesh Infrastructure Financing Market

As per the Global Infrastructure Hub Report, Bangladesh will need to invest USD 608 billion from 2016-2040 in infrastructure sectors such as water, energy, telecom, ports, airports, rail and road. However, current trends indicate that Bangladesh will be able to meet USD 417 billion investment in the infrastructure sectors – thereby leaving a gap of USD 192 billion from 2016-2040 between required and current trend of infrastructure investment. In terms of sectors, the gap between required and current trend of investments is USD 100 billion in the power sector, USD 41 billion in the telecom sector and USD 40 billion in the water sector.

In this report, we have identified 12 infrastructure sub-sectors in Bangladesh, in which the investment deficit between required and current trends is high and the private sector has a vital role to play. The 12 infrastructure sub-sectors, based on their revenue models, can be classified into three categories:

- Theme 1 - Sectors with predictable and regulated revenues - Investors face no price risk, as an independent regulator pre-determines prices (also called tariffs or fares). Most of the sectors in this category are monopolies and possess negligible demand risk. Of the 12 infrastructure sectors, Power (Generation, Transmission & Distribution), Railways, Urban infrastructure (water supply and sanitation), and Ports fall in this category.
  The sectors in this category are low on risk, and thus, high on readiness to leverage debt capital markets.
- Theme 2 - Sectors in which price is determined by the market/ through competition- Prices, for the sectors in this category, are determined by the market and are based on either demand and supply dynamics or competition. Of the 12 infrastructure sectors, affordable housing, logistics, manufacturing, social infrastructure (health and education), and telecom, fall in this category. In these sectors, demand risk is borne by the investors.
  The sectors in this category fall in the medium risk band, and thus, the readiness to leverage debt capital markets varies (high to low), depending on the predictability of demand and elasticity of price.
- Theme 3 - Sectors with evolving Public-Private Partnership (PPP) structure – Private participation in the sectors belonging to this category is low and the PPP structures are evolving. Airports, Roads and Special Economic Zones, which are opening up to private participation under the PPP framework, fall under this category.
  The risk dynamics of sectors in this category are evolving. The readiness to leverage debt capital market will be dependent on government policy and interventions to help create a balanced private participation model. Interestingly, in other developing nations, airports and roads are two sectors in which interest from private investors is traditionally high. With favourable policy interventions - these two sectors will become ripe enough to move to Theme 1 or 2.

## Sources of funds for infrastructure projects

The Government of Bangladesh (GoB) and the multilateral and bilateral financial institutions fund most infrastructure projects in Bangladesh. As discussed in the previous section, current trends indicate a gap of USD 192 billion till 2040, and there is a need to tap into alternate sources of funds. Domestic financial institutions - notably commercial banks - have a low presence in the infrastructure space, and some of the reasons cited by experts in the country include increase in non-performing assets, mismatched tenures of lending vs borrowing and low capital adequacy ratio. Regulatory changes – such as a bankruptcy law – can help enhance the confidence of the banking sector.

Global pension funds, insurance funds and provident funds are large sized, low cost and long tenured and can be tapped into. Global private equity funds can help companies – in early or growth stages – with equity capital. However, presence of such funds is negligible in the country. In order to attract global funds, Bangladesh will need to put in place policies and regulations to enable ease of entry and exit for such funds, tax and fiscal incentives, bankable PPP framework and contracts, and a reasonable pipeline of infrastructure to be set up under the said PPP framework.

A novel approach to financing infrastructure projects for Bangladesh will be to utilise Islamic finance instruments - such as Sukuk bonds or Zakat funds. A number of Asian countries, such as Malaysia, have had reasonable success in deploying Zakat funds in infrastructure projects. The main challenge, according to a few experts we spoke to on this topic, is that the current system of collection and utilisation of such funds lacks transparency. Other challenges include:

- Low penetration of these funds in the financing market;
- Low tenure of funding of three to six months;
- One sided risk sharing between investors and borrowers; and
- A perception that the Shariah Board will be resistant to change.

### Debt market issues in Bangladesh

In order to reinforce our understanding of the underlying issues in debt market, we conducted meetings and discussions with diversified group of participants in Bangladesh. Our target group included representatives from private sector banks, Non-Banking Financial Institutions (NBFIs), mutual funds, private equity funds, regulators for financial markets, government authorities/bodies, and developers, and we were able to consolidate views from this wide group of respondents in this report.

The key issues that were highlighted by most respondents are summarised below:

- Supply side constraints –
  - There is a liquidity crunch in the market that is expected to continue in case no additional sources of financing are tapped;
  - Yields on government savings schemes and securities, such as National Savings Scheme, offer high returns compared to banks, investors are hence discouraged to invest in other securities;
  - Banks face challenges in maintaining their depository ratios, leading to lack of funds for investments; and
  - NBFIs face challenges in pooling funds and hence, hesitate to invest in large infrastructure projects.

- Non-availability of funds for longer tenure –
  - Poor credit appraisal and some well-publicised frauds have led to rise in Non-Performing Assets (NPA) in Bangladesh. As a result, to reign in on the growing problem of NPAs, Bangladesh Bank had to tighten norms and regulate the market by not allowing long-term funding;
  - Lending to operational assets is preferred; and
  - Banks have been asked to lend for a tenure of three to five years, which is not conducive for infrastructure projects that have a longer gestation and concessionaire period.

- The rise in NPA problem has led to Banks and NBFIs seeking multiple guarantees, including land/ asset collaterals, corporate guarantees and director/promoter guarantees in addition to blank cheques, at the time of funding. There is no relaxation offered to companies with a good credit history, and in the absence of a vibrant capital market infrastructure, investors do not find alternate route to raise funds, leading to delays in execution, cost over-runs and stranded assets.

- Time required to raise funds via the bond market is high (approximately five to six months, even higher for public sector banks) compared to other alternatives. There have been instances when investors did not receive funding within desired timelines and hence, had to seek financing from alternate sources such as multilateral agencies.

The corporate debt market in Bangladesh for infrastructure financing faces a number of challenges and the primary and secondary market is almost non-existent. Hence, without active interventions from policy makers and regulators, investors will continue to find it difficult to tap the domestic debt market to raise funds.

### Bond Market in Bangladesh

Experience in developed and developing economies indicate that capital markets play a pivotal role in bridging the gap between demand and supply of funds for infrastructure sector. The corporate bond market in the country is in a nascent stage; only three corporate bonds have been publicly placed, none of which are for financing infrastructure projects. Financial institutions, such as Banks and NBFIs, are active participants in private placement of bonds. Commercial banks rely on the bond market to meet their capital adequacy requirements, under the Basel III norms. Corporates, on the other hand, are not active in the debt capital market for raising funds.

Experts in the country opine that the bond market is almost non-existent and attracting investors, without systemic changes in the market and regulatory environment, to subscribe to the bonds will be very difficult. Institutional investors, however, have expressed interest in investing in high-grade corporate bonds that are aligned to their expectations of risk, yields and tenure. However, experts also indicated that with proper regulations, awareness, incentives and systemic corrections, retail and international investors would be attracted to invest in corporate bonds.

Government, regulators, market participants and other stakeholders will need to work together to revitalise the capital market in the country.

## Credit Guarantee Products in Bangladesh

'Credit enhancement and guarantee products are essential for the debt market' - Most of the stakeholders we interacted with during the course of the study agreed to the idea of Credit Guarantee Products.

At present, the guarantee space is small and informal – with a few players such as Shah Jalal Islamic Bank which provided guarantee worth USD ~12 million for a privately placed bond issuance. There are no large and globally renowned funds in this space now, and investors and issuers feel that the presence of credible and experienced funds can help in the development of the debt market. Participants also suggested that guarantee products should be offered to credible issuers, which makes it imperative for guarantee providers to have a strong credit appraisal process. This will go a long way in lending credibility to the entire process.

Although there are no formal regulations for credit guarantee products and related licensing activities, Bangladesh Bank has issued guidelines regarding the treatment of such guarantees. The joint co-operation of Bangladesh Bank, the Bangladesh Investment Development Authority (BIDA) and the Bangladesh Securities and Exchange Commission (BSEC) is required to formulate regulations that will enable the credit guarantors to operate in the country with ease.

## Conclusion

Research into the infrastructure sectors, debt and capital markets coupled with insights from experts and stakeholders in Bangladesh helped us to formalise a set of simple, implementable and impactful recommendations to revitalise the debt market for infrastructure projects. We have classified our recommendations into three categories based on ease of implementation and its impact, of which three categories warrant attention:

'At the stroke of a pen'- easy to implement and having high impact-

- Awareness programmes for investors and issuers;
- Reduction in transaction costs of bond issuances;
- Financial and tax incentives to both issuers and investors;
- Policy to attract Non-Resident Bangladeshi (NRB) investments into the bond market; and
- Issue of corporate bonds that are well structured and marketed.

'Requires sustained efforts and involvement of multiple stakeholders'-

- Design and implementation of benchmark indices, and promotion of secondary market;
- Initiatives to strengthen the issuer base;
- Course correction of interest rates/ yields on government securities and savings scheme;
- Policies to attract global pension funds, mutual and provident funds to invest in Bangladesh infrastructure space; and
- Introduction of regulations and policies for credit guarantee products.

'Look before you leap – evaluate and implement'-

- Simplification of bond issuance process;
- Electronic platform for trading debt securities; and
- Streamlining the information sharing process to ensure access is transparent and information is authentic.

# Introduction

# 1. Introduction

## 1.1. Background to our work

GuarantCo Limited (GuarantCo) has been established to address and overcome the constraints associated with the supply of local financing for infrastructure projects. It supports the development of local financial markets in low-income countries and utilises public-private partnership to catalyse private sector investments into infrastructure space. GuarantCo is a part of the Private Infrastructure Development Group (PIDG) and is owned by governments of five countries: the United Kingdom, Australia, Netherlands, Sweden and Switzerland.

Infrastructure projects in Bangladesh have been traditionally funded by the Bangladesh Government and by the multilateral and bilateral funding agencies. While banks and NBFIs have also been supporting private companies to meet their investment requirements, the need for financing from alternate sources continues to grow.

The objective of this report is three-fold:

- To identify investment opportunities in infrastructure space in Bangladesh;
- To assess the market scenario, opportunities, regulations and challenges in the bond market for long-term financing of infrastructure projects; and
- To study the challenges, opportunities and regulations of credit guarantee products.

The findings of this report will help in recognising the role credit guarantee products can play in overcoming the challenges in the bond market of Bangladesh.

## 1.2. Structure of the report

This report is divided into six chapters:

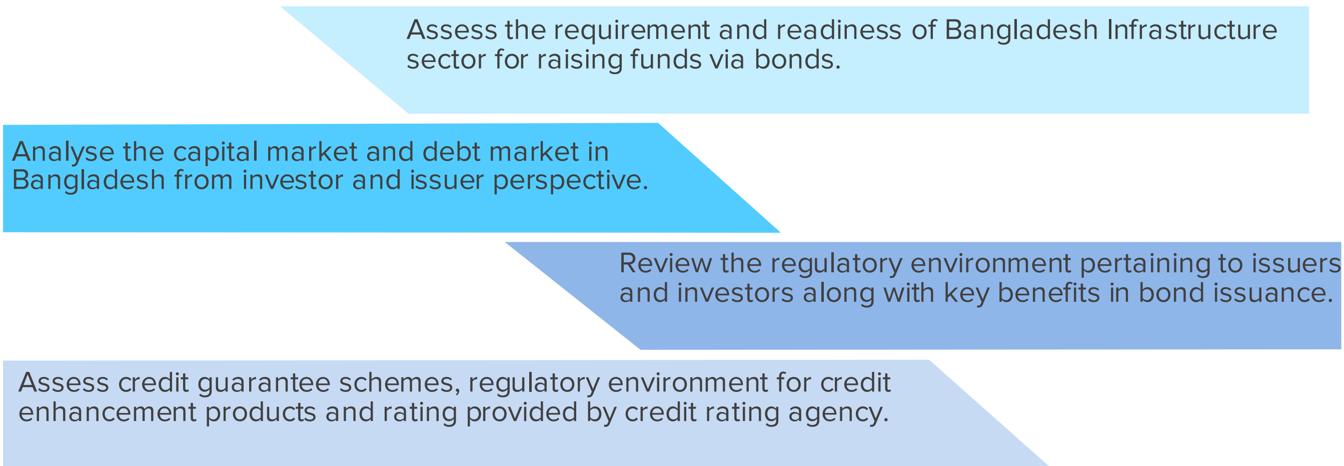
- Chapter one provides the background and introduction to the full report;
- Chapter two outlines the market size of infrastructure opportunities in Bangladesh and provides an overview of how infrastructure is financed in Bangladesh;
- Chapter three provides insights into the debt capital market of Bangladesh and focuses on identifying the hurdles and challenges to its development;
- Chapter four analyses the regulations for credit guarantee products in Bangladesh - market and regulatory overview and the role credit guarantee products can play in the debt capital market;
- Chapter five provides a summary of outside-in view of sectoral and functional experts in Bangladesh; and
- Chapter six summarises the key recommendations derived from this study.

## 1.3. Our methodology and approach

This report is prepared by synchronising views and outputs from two lines of study:

Secondary research - covering the market landscape, regulations, and experience in developing markets. The exhibit below shows our approach to the Literature review for this engagement in four simple steps:

Figure 1: Approach to literature review



Primary research - interviews with select experts and stakeholders in Bangladesh. As part of the study, 21 organisations participated in the primary discussions (List of organisations is mentioned in the Appendix B). The below indicates the type of institutions and stakeholders, who participated in the study:

- Three commercial banks;
- Two non-banking financial institutes;
- Two mutual funds;
- One insurance company;
- Three investment banks;
- Six authorities; and
- Four infrastructure companies.

The views of different stakeholders are summarised in Chapter six of this report.

# Overview of Bangladesh Infrastructure Financing Market

# 2. Overview of Bangladesh Infrastructure Financing Market


Summary

As Bangladesh targets to achieve middle-income status by 2024, the country would require investments of USD 608 billion by 2040 in the infrastructure sector. We identified 12 sub-sectors, having a pipeline of USD 186.7 billion worth of projects of which USD 85.4 billion is attributed to Private or PPP projects. Over the years, GoB, multilateral agencies - such as ADB, European Investment Bank and World Bank – and foreign governments – India, China and Japan - have been the main sources of funds for the infrastructure projects in sectors such as Special Economic Zones (SEZs), Airports, Roads and Highways, Power Transmission and Distribution, Railways and Ports. The involvement of local banks and NBFIs have low due high NPAs of State-Owned Commercial Banks (SOCB), low capital adequacy ratio, high lending rates (15%-18%) for long-term financing, and short tenor of lending. The current sources of funds will not be adequate to meet the growing needs of infrastructure in the country, and it is imperative to tap into alternate sources of funds such as debt capital markets and global sovereign and pension funds.

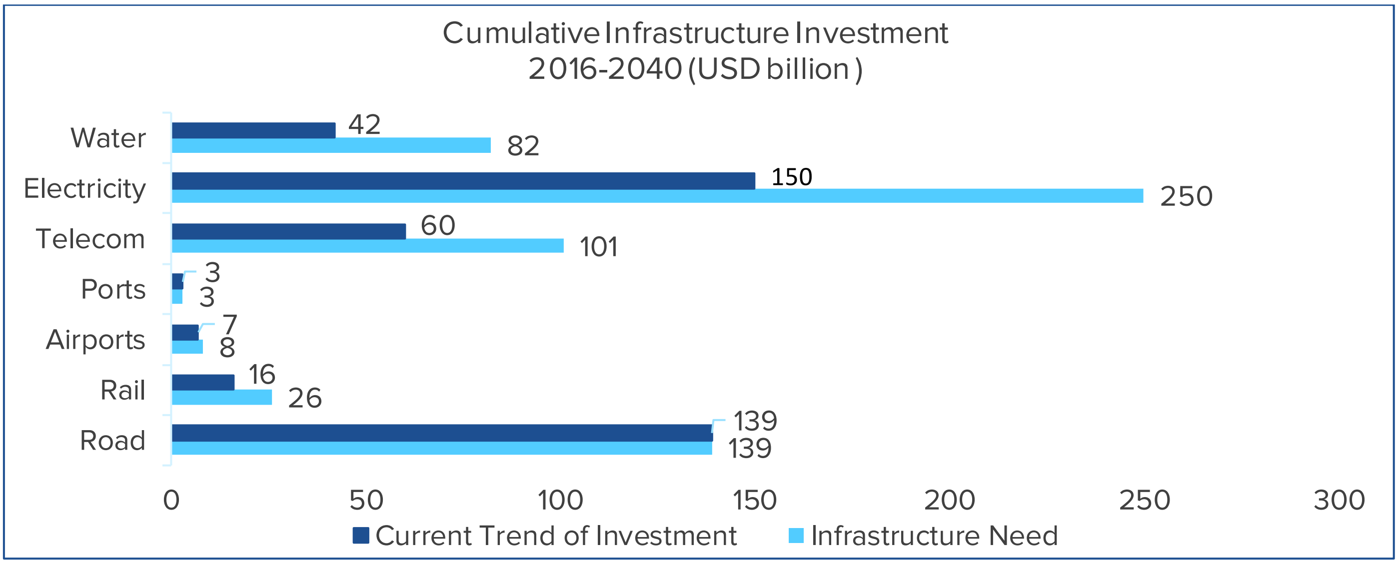
- To reduce the infrastructure investment gap in Bangladesh, Islamic banking and Islamic finance can play a pivotal role if a robust system is developed. In countries such as Malaysia and Saudi Arabia, the respective governments have been able to channelise Islamic funds into the infrastructure sector, thereby reducing the use of public funds in these sectors. In Bangladesh, eight Islamic banks have invested USD 26.4 billion across various sectors and have total deposits worth USD 27.3 billion.
- Bond market is quite inactive, with only three corporate bond listing till date. Policy and market changes are needed to rejuvenate the debt capital market. High yields on government savings schemes and bonds is one of the challenges for corporate issuers.

Global pension and sovereign funds will be attracted, if the policies, on ease of entry and exits, public-private partnership models and taxation, are eased. The vast pipeline of infrastructure projects is an advantage.


## 2.1. Introduction

As per the Global Infrastructure Hub report, Bangladesh needs USD 608 billion of investment in infrastructure sectors - water, electricity, telecom, ports, airports, rail and road - from 2016 to 2040. However, current trends indicate USD 417 billion of investment is possible in the aforementioned sectors –thereby leaving a gap of USD 192 billion in investments in the period 2016-2040. This gap in top three sectors, power, telecom and water sectors, is USD 100 billion, USD 41 billion, and USD 40 billion respectively.

Figure 2: Cumulative infrastructure investment (2016-2040) in Bangladesh



Traditionally infrastructure projects have been funded by the GoB and the multilateral and bilateral funding agencies. The strategic location of Bangladesh, as one of the busiest shipping lanes in the world and land ,and water connectivity among South Asian countries (India, Bhutan, Nepal to name a few), is a strong factor for continued support from bilateral agencies from China, Japan and India.

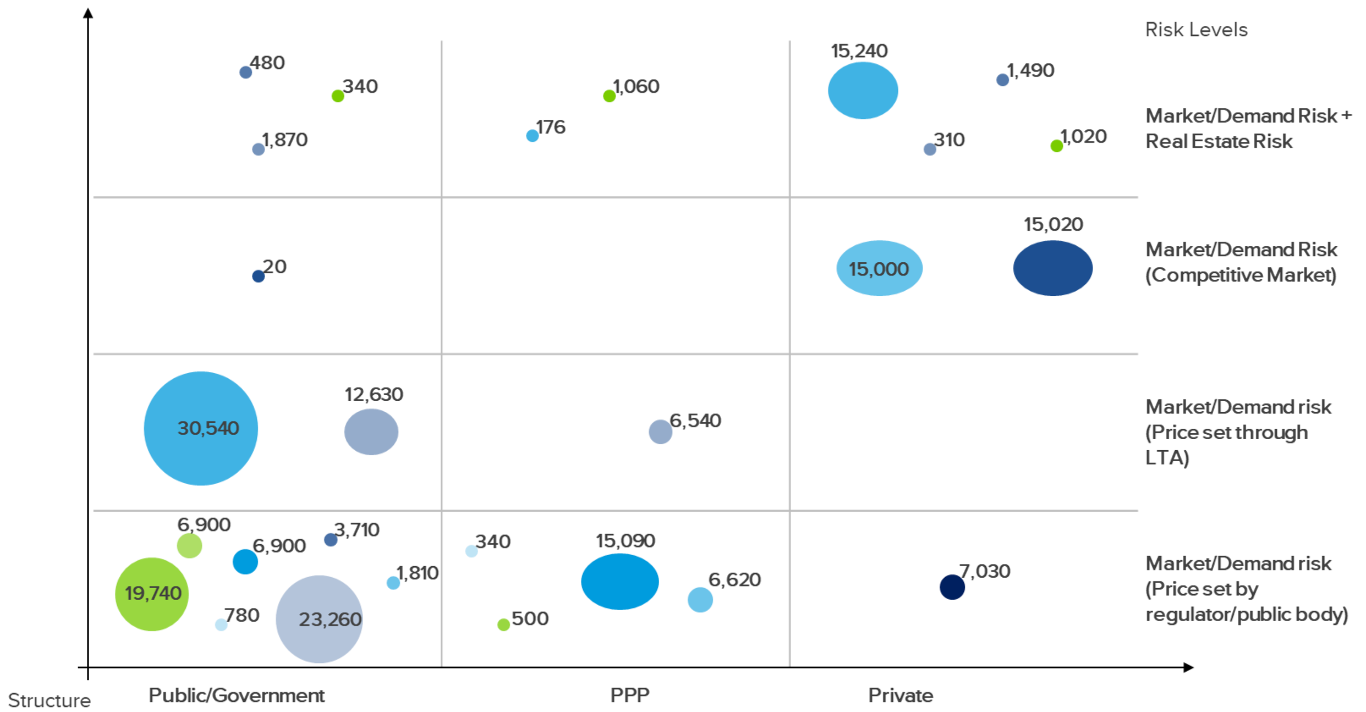
## 2.2. Overview of Bangladesh infrastructure pipeline

We have identified infrastructure projects of USD 186.7 billion in the pipeline, of which private sector is expected to invest USD 85.4 billion. We have mapped out the pipeline in each of the identified sectors, across a risk-readiness matrix, in the exhibit below.

The X-axis of the exhibit shows the project development mode (Public, PPP, Private), and Y-axis represent the revenue model (price and demand risks). The circles represent the market pipeline in USD million for each of the sub-sectors.

It will be pertinent to note that the risk-readiness matrix does not capture other risks such as macro-economic risks (inflation, exchange rate and interest rate) and execution risks (force majeure, cost and time overruns). We have covered these for each of the infrastructure sub-sectors in Appendix A.

Figure 3: Consolidated risk readiness matrix for 12 infrastructure sectors




Note: Circles represent the market pipeline in USD million for each of the sub-sectors

| | | |
|---|---|---|
| Affordable Housing | Power - Transmission & Distribution | Social Infrastructure |
| Airports | Telecommunications | Special Economic Zones |
| Logistics | Manufacturing | Urban Infrastructure |
| Ports | Railways | |
| Power - Generation | Roads | |

## 2.3. Infrastructure sub-sectors of potential interest

We have identified three investment themes, from the exhibit in the previous section. The three themes are:

- Theme 1: Sectors with revenues decided by the regulator/public body;
- Theme 2: Sectors with revenues based on competition; and
- Theme 3: Sectors with an evolving PPP structure.

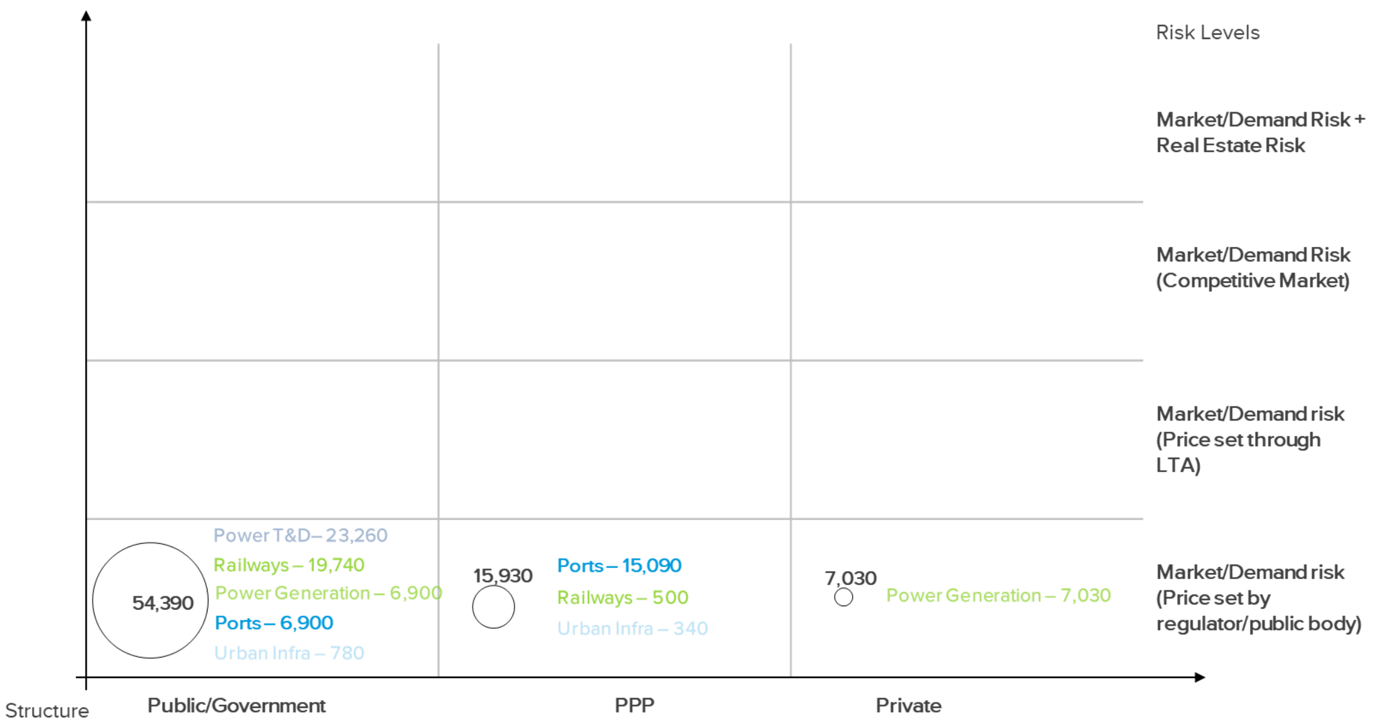
Sectors in each of the three categories are in different stages of readiness to tap into the debt capital market for financing. Some will rate high on the scale of readiness and others will need policy interventions to move from low to high on the same scale.

### Theme 1: Sectors with revenues decided by the Regulator/Public Body

Theme 1 represents infrastructure sub-sectors, in which an independent regulator sets prices, and revenue and demand risks are a pass through to the consumer. The overall commercial risks in these sectors are low and revenues are stable and predictable. The exhibit below shows the sectors that are categorised under category 1, which includes power, railways, ports and urban infrastructure. These sectors rate high on readiness to tap into the debt capital market with a low risk and stable revenue model.

In the subsequent pages, we briefly discuss each of the sectors under Theme 1.

Figure 4: Sectors with revenues decided by the regulator/public body




Note: Circles represent the market pipeline in USD million for each of the sub-sectors

### Power

Introduction

Bangladesh has an installed generation capacity of 20,430 MW[1], 54% of which is owned by a public sector entity – the Bangladesh Power Development Board (BPDB) – and 46% is owned by private companies. In terms of fuel-mix, thermal power plants based on natural gas, high-speed diesel and heavy fuel oil make up 85% of the total installed capacity. In recent times, the country has focused on attracting investments in coal based thermal power plants and in renewables.

Power Grid Company of Bangladesh (PGCB) develops, owns and operates the entire power transmission network in the country. There are six power distribution utilities in Bangladesh, largest among these is the Bangladesh Rural Electrification Board (BREB) that owns and operates approximately 85% of the total distribution network.

1 Bangladesh Power Development Board

Revenue Model

The national electricity regulator - Bangladesh Energy Regulatory Commission (BERC) determines the power tariffs for generators. However, a shift to tariff determination via competitive bidding is under deliberation. Related draft policy and guidelines are being prepared by the regulator. The transmission and retail tariffs are also determined by BERC based on notified guidelines.

Projects in Pipeline

The country has a long-term target of installing 40,000 MW of capacity by 2040 and private participation is allowed in it. Power generation has a pipeline of ~USD 14 billion in planning and construction phases. Private sector share in the investment pipeline is 49.5%. The pipeline of projects includes:

- Gas based plants, with an estimated investment of USD 3.8 billion, which are under construction in Bangladesh (private sector is responsible for 50% of the said investment);
- Two coal based thermal power plants that are under construction with an estimated investment of USD 2.3 billion (these projects are being executed by public utilities, with support of multilateral and bilateral funding); and
- A pipeline of 1,470 MW, with an estimated investment of USD 1 billion, of renewable energy projects, mainly solar projects, that have been identified (50% of the identified projects are to be developed by the private sector).

With a focus on reducing operating losses, increasing electricity access (currently at ~84%) and strengthening the distribution network and substation capacity, public sector utilities have chalked out a pipeline of ~USD 23 billion worth of projects. However, the transmission and distribution segments do not envisage any privatisation plans in the near future.

Source of Funding

The power generation sector has received funding from the government, and from bilateral and multilateral sources. Private sector, whose share in the generation sector is increasing, has been relying on domestic and international banks for long-term project funding. For the pipeline projects in transmission and distribution sectors - government budgetary allocations, multilateral funding agencies and bilateral line of credit extended by neighbouring countries are the prime sources of funding.

## Railways

Introduction: Bangladesh Railway (BR), which is under Ministry of Railways, Bangladesh, is responsible for development, expansion and operations of railway infrastructure in the country. BR operates a network of approximately 2,877 route-km (serving 44 out of 64 districts), and carries 71 million passengers annually.

Private sector participation in Bangladesh railways has been limited to non-core areas, such as design and development of ticketing systems, repair and maintenance of coaches and catering services. However, BR is exploring opportunities and options to expand private sector participation in developing railway hospitals and commercialising unused land in Dhaka and Chittagong.

Revenue Model: BR sets the passenger and freight rates that are endorsed by the Parliament Standing Committee. However, there are occasional interventions from the Ministry of Railways to set ceiling tariffs.

Projects in Pipeline: Currently, 28 new projects worth ~USD 20 billion are under consideration by BR for network expansion and efficient operations. Public Private Partnership Office (PPPO) is setting up a new Inland Container Depot (ICD), worth USD 500 million, on Public Private Partnership (PPP) basis.

Source of Funding: Budgetary allocations to the Ministry of Railways, and multilateral and bilateral funding are the primary sources of funds for BR. However, as private sector participation in railways increases, alternate sources of funding will need to be tapped.

## Urban Infrastructure

Introduction: The country has made inroads in providing access to clean water (98% of the population has access to improved water source) with the support of various government aided capital-intensive programmes. On the other hand, there is a lot of scope in improvement of sanitation facilities as only ~ 2% of the population has access to private sanitation facilities. Ministry of Local Government, Rural Development and Cooperatives (MoLGRD&C), with support from 12 publicly owned City Corporations/ Municipalities, is responsible for monitoring and developing the water and sanitation sector.

Revenue Model: The Water Supply and Sewerage Authorities (WASA) of the respective cities, acting as independent regulators in the sector, are responsible for determining the rates for water for both domestic and non-domestic users.

Projects in Pipeline: Recently, a large and integrated project, to develop water supply, sewerage facilities, and solid waste management system in Purbachal New Town, has been tendered on PPP basis. The project cost is estimated to be USD 340 million. However, the interest from private sector has been modest due to apprehensions around the risk of working with local bodies that are perceived to be lacking transparency and adequate financial resources.

Source of Funding: The urban infrastructure sector has survived on grants from the central government, although the sector has also received funding from Micro-Finance Institutions, Bangladesh Rural Advancement Committee (BRAC) and various multilateral funding agencies in the past. These funds, however, are linked to specific projects, and have a limited impact on national level. Budgetary allocation to the sector has increased marginally to USD 850 million in FY 2019 from USD 780 million in FY 2018.

The overall allocation to the sector is insufficient to meet the bludgeoning need for urban infrastructure, given the fact that the demographics of the Bangladesh is fast changing on account of rapid urbanisation. It is estimated that an additional USD 250 million of funds per annum is needed to meet the growing demand, and this gap can be met by enabling private participation through bankable PPP models.

## Ports

Introduction: Bangladesh has two operational maritime ports - Chittagong Port and Mongla Port, which were developed and are regulated and operated by the Ministry of Shipping through the respective port authorities. The Chittagong Port handles approximately 90% of the country's cargo traffic. Mongla Port, on the other hand, has witnessed significant growth in traffic (138% Year-on-Year) post the recent development of Mongla Economic Zones.

Revenue Model: The Chittagong Port Authority and the Mongla Port Authority determine the tariffs for services and facilities offered by the respective ports. The Bangladesh Land Port Authority sets the tariff for services and facilities offered at all the landside ports.

Projects in Pipeline: The PPPO, in accordance with the seventh five-year plan (2016-2020), has identified four projects to be developed under the PPP route. The total investment is envisaged to be USD 15 billion.

In Payra seaport, one the largest projects planned in the sector, private partners are expected to develop 17 out of 19 project components. The private partner for an initial dredging work (one of the 19 components) has secured a USD 1 billion loan from a consortium of banks and export credit agencies. Other projects to be developed under the PPP mode include:

(i) Terminals at Chittagong port (bulk) and Khanpur (inland container), and
(ii) Jetty project at Mongla port under a BOO (Build, Own and Operate) /BOT (Build, Own and Transfer) scheme.

In addition to the above, two projects, with an estimated investment of USD 3.7 billion, is being funded by government and bilateral institutions.

Source of Funding: Budgetary allocation, and multilateral and bilateral agencies are key sources of funds for the ports sector. New companies, such as Summit Alliance Port Limited, which developed and now operates an ICD, are tapping into the local banks and NBFIs to meet their funding needs.

## Theme 2: Sectors with revenues based on competition

Figure 5: Sectors with revenues based on competition


Note: Circles represent the market pipeline in USD million for each of the sub-sectors

Theme 2 represents infrastructure sub-sectors in which prices are discovered by the market forces. Revenue and demand risks are a function of demand and supply scenario. The overall commercial risks in these sectors range from medium to high and there is a growth component attached to revenues. Some sectors in this category may have a real estate component, and such sectors are generally considered highly risky. PPP in these sectors are successful in cases where the public utilities or the government takes steps to ensure demand growth. The exhibit above shows the sectors that fall under theme 2, which includes logistics, affordable housing, manufacturing, social infrastructure and telecommunications.

These sectors rate at varying degrees on readiness scale, based on the predictability and growth of demand in the sector. Some of the sectors – such as telecommunications and manufacturing – have a high growth rate and can tap into the debt capital markets, and others – such as social infrastructure – will need support from government in the form of fiscal and financial incentives and better PPP structures and contracts.

In the subsequent pages, we have briefly discussed each of the sectors under Theme 2.

### Affordable Housing

Introduction: The demographics of Bangladesh is fast changing with rapid urbanisation, resulting in a housing deficit in urban areas. The deficit is expected to touch 8.5 million units by 2021. Government investments are sufficient to meet only 7% of the total housing demand. Private sector will need to step in to meet the residual demand. The market is fragmented (with more than 1,500 active players), and informal. The sector falls under the high-risk category due to exposure to variations in real estate prices and demand, cost and time overruns due to right-of-way (ROW) issues, difficulties in land acquisition and in securing clearances, and scarcity of available land in urban areas.

Revenue Model: Constructed projects are directly sold to the consumers at market-determined rates.

Projects in Pipeline: The PPPO is planning three affordable housing projects worth ~ USD 1.1 billion under the PPP route. This is expected to benefit 20,000 households. In addition to this, private developers have an annual investment pipeline of USD 1.0 billion.

Source of Funding: Government projects are funded through annual budgetary allocations. In FY 2020, the total budgetary allocation is USD 340 million. Private developers rely on commercial banks and specialised housing finance companies for their financing requirements.

### Logistics

Introduction: Three key business segments of the logistics sector – transportation, warehousing and logistic services – are covered in this report. The logistics sector has a dominant presence of private players, except rail and air transportation that are managed by Bangladesh Railway and Biman Airlines, respectively.

Revenue Model: The sector is competitive with a large number of small and unorganised players operating at tariffs that are market determined. In case of rail and inland water transportation, the Ministry of Railways and the Water Transport Cell determine the fare, respectively, and all the participants have to abide by these.

Opportunity: The three segments bring forward a revenue potential of USD 15.0 billion by catering to domestic (56%), regional (4%) and global (40%) markets.

Source of Funding: Most corporates rely on domestic commercial banks and NBFIs to meet their funding needs, while some large domestic and foreign corporates tap into the foreign commercial banks as well.

## Manufacturing

Introduction: The manufacturing sector contributes to ~18% of the country's GDP (FY 2018: ~USD 48.7 billion). Ready-Made Garments (RMG) is the most important industry in the manufacturing sector, contributing to ~ 80% of the country's exports. Other sectors, such as food products, non-metallic products, leather, plastics and engineering goods are gaining prominence. The sector has a wide variety of players – from private sector companies, including few large and local conglomerates and number of small and medium enterprises (SMEs), to publicly owned companies.

Revenue Model: The demand and prices for goods and services are determined by market dynamics – domestic and international.

Opportunity: The investment potential in the manufacturing sector is USD 15 billion in the next two years.

Source of Funding: Companies use internal accruals and raise debt from commercial banks and NBFIs to fund their investment plans. However, in case of large corporates - the cost of funding for most investors is high, tenure is short and investors find it difficult to access credit.

## Social Infrastructure

Introduction: Currently, education establishments in the country include ~0.2 million schools, 9,314 Madrasahs and 4,368 colleges/ universities, of which 52% of the primary education and 82% of the higher education institutes are run by the private sector.

In the healthcare sector, 607 government hospitals operate under the Directorate General of Health Services (DGHS), along with 5,023 private hospitals and clinics.

Bangladesh has been making strides in improving healthcare and education facilities to its citizens.

Revenue Model: Prices charged by the players for their services are determined by market forces and are not regulated.

Projects in Pipeline: The PPP authority has identified a pipeline of projects encompassing medical colleges, hospitals and other healthcare facilities. The quantum of investment is estimated to be at USD 380 million.

Source of Funding: Government, local banks and NBFIs fund the social infrastructure projects in the country. An important trend to note is that the budgetary allocations for both the sectors have declined: allocation towards healthcare as a proportion of the total budget has reduced to 5.0% in FY 2019 from 5.03% in FY 2018. While in case of education sector, the allocation has dropped to 11.4% in FY 2019 from 12.6% in FY 2018. The reduction in government funding implies that more investments are expected from the private sector.

## Telecommunication

Introduction: The telecommunication industry has grown at a rate of ~ 6.6% in the last five years, and it supports 157 million active subscriptions, leveraging upon a network of 36,000 towers. The industry has undergone consolidation in the last few years. The top three cellular companies, which control 98% of the market share, are subsidiaries of large multinational corporates that have been investing heavily in the sector since the early 2000s. In the infrastructure space, four private companies have been selected to build, own, acquire, rent, lease, operate and maintain towers.

High licensing and spectrum acquisition costs, competition, and tariff pressures are key risks for cellular companies. Telecom infrastructure companies, on the other hand, face the risk of cost overruns, ROW and land acquisition issues, and real estate price fluctuations.

Revenue Model: While the Bangladesh Telecommunication Regulatory Commission (BTRC) sets guidelines and procedures for the companies to follow, they are free to set their tariffs within reasonable rules of competition.

Projects in Pipeline: The complete telecom ecosystem is estimated to generate a revenue of up to USD 17.1 billion by 2025. In order to cater to the growing demand, the sector needs an investment of ~ USD 2.2 billion in network expansion and spectrums, of which, the pipeline of private sector projects is valued at USD 310 million.

Source of Funding: Telecommunication infrastructure projects are financed by a variety of sources, including multilateral and bilateral funds, arranged by the government, domestic and commercial banks, and NBFIs.

## Theme 3: Sectors with evolving PPP structure

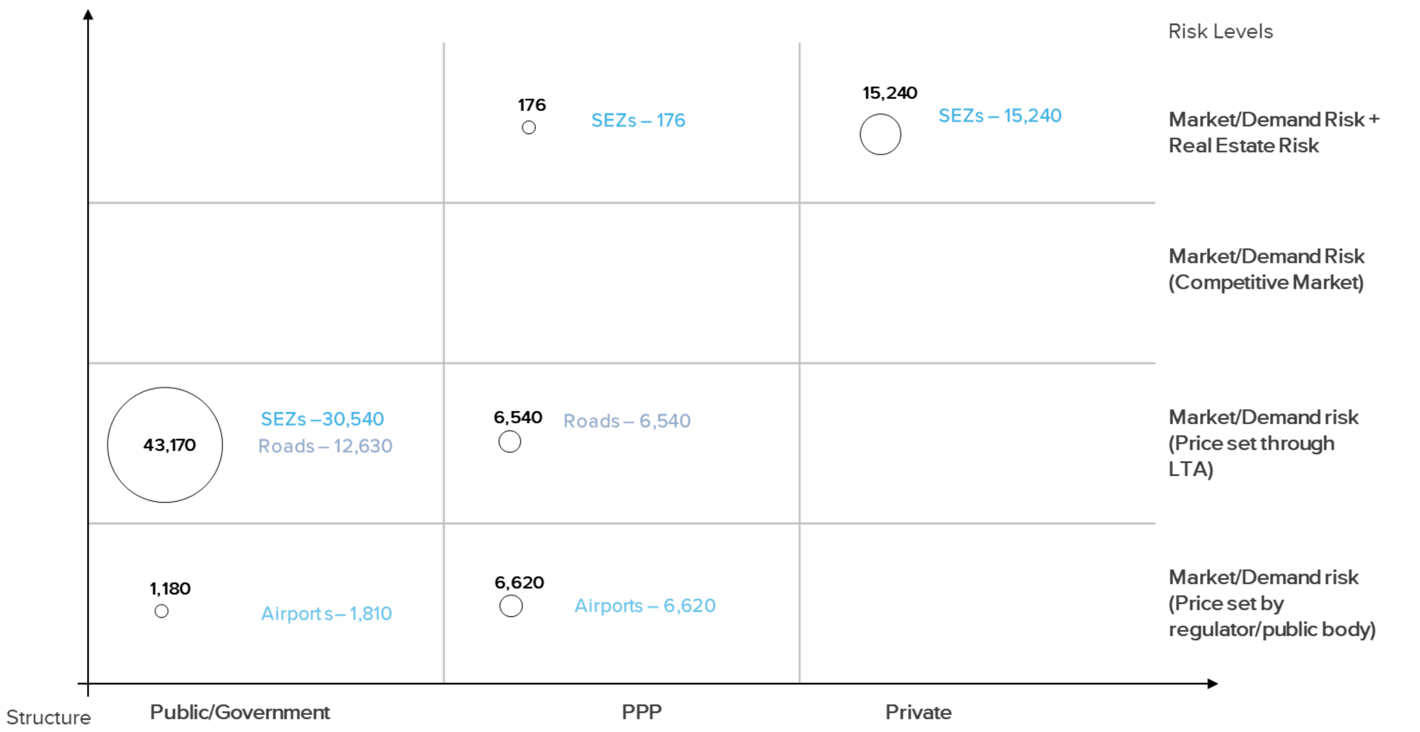
Theme 3 represents infrastructure sub-sectors in which the PPP structure is still evolving. Private participation in these sectors is very low till date. As the exhibit below indicates, a majority of the projects are developed by the public sector. Some of the sectors in this group, such as airports and roads, are ideal for private participation, and there are ample case studies of successful PPP models in these sectors around the developed and developing world.

Attempts should be made to move these sectors from theme 3 to theme 1, in which the demand risk can be passed-through and the revenue is predictable.

The exhibit below shows the sectors that are categorised under theme 3, which includes airports, roads and Special Economic Zones (SEZs). As these sectors are still in nascent stages of private participation, the manner in which PPP framework in these sectors evolves will determine their position on the risk and readiness scale. Some of the sectors – such as roads and airports – can have a robust PPP model drawn from experience in developed and developing countries, and these sectors can readily leverage debt capital markets.

In the subsequent pages, we briefly discuss each of the sectors under Theme 3.

Figure 6: Sectors with evolving PPP structure




Note: Circles represent the market pipeline in USD million for each of the sub-sectors

### Airports

Introduction: Civil Aviation Authority Bangladesh (CAAB) develops, regulates and operates the current network of 12 airports in the country. Private sector companies have contributed only in engineering, procurement and construction of airports. With an advent of PPP structure in setting up projects, private sector involvement is anticipated with players recovering expenditures through cost-reflective tariffs supported by CAAB regulations.

Revenue Model: Currently, services and facilities availed by passengers and airline operators are charged with a three-part tariff including embarkation fees, route navigation charges, and aerodrome charges as determined by CAAB.

Projects in Pipeline: Envisaging future demand driven by passenger and cargo traffic (expected to grow at a CAGR of 6.6% and 4.8% respectively), development of two greenfield airports (Bangabandhu Sheikh Mujib International Airport and Khan Jahan Ali Airport) on PPP basis has been planned with an estimated outlay of USD 6.6 billion. Further, two expansion projects worth USD 1.8 billion are planned with support from bilateral and government funding.

Source of Funding: The projects have been developed through budgetary allocations made by the GoB, funds from multilateral agencies and support from bilateral funding sources.

## Roads

Introduction: The Roads and Highways Department (RHD) is responsible for construction and maintenance of ~22,000 km road network supporting 73% and 82% of national passenger and freight traffic, respectively. With the implementation of PPP structure (initiated under the PPP Act, 2015), increasing private sector participation, and support from RHD & PPP authority the sector is expected to drive towards a positive direction.

Revenue Model: Private players (foreign entities) plan to operate two key projects (Dhaka bypass road of 48 km and a Dhaka elevated expressway of 46 km) in the country under a BOO model for the concessionaire period and recover revenues at an agreed tariff and fee increment.

Projects in Pipeline: Projects worth USD 19.2 billion have been identified for expansion and connectivity improvement. This includes seven projects worth USD 6.5 billion (with plans to contract USD 5 billion projects in two to three years) to be developed on PPP structure.

Source of Funding: Traditionally, projects have been constructed using budgetary allocations and aid received from Development Financial Institutions. Under the PPP structure, the GoB has been offering viability gap funding and a minimum revenue guarantee to the concessionaire for optimizing their cost of lending from banks and NBFIs.

## Special Economic Zones

Introduction: After successful development of eight Export Processing Zones (EPZs), which attracted investments of ~USD 4.2 billion and fuelled exports worth USD 59.4 billion over the last two decades, the Bangladesh Economic Zones Authority (BEZA) aims to build a hundred Special Economic Zones (SEZs) by 2025. Further, with continuous project monitoring and investment support, the newly developed SEZs are set to drive the country's economic growth by propelling exports and manufacturing activities of upcoming industries.

Revenue Model: The SEZ developer signs a long-term concessionaire agreement with BEZA. Post construction/ development phase, the operator leases out land, provides utility services to industries in the SEZ, and charges them rent in line with the terms of signed agreements.

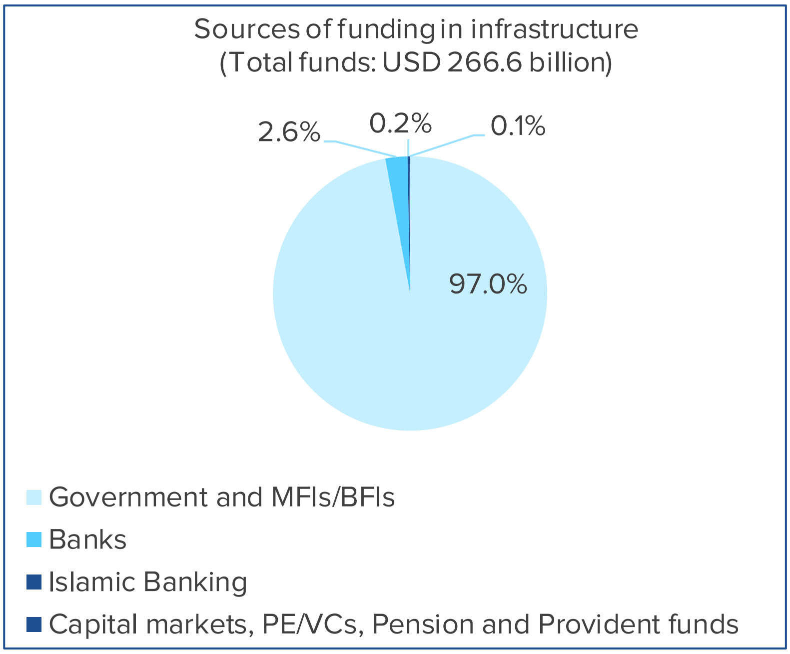
Projects in Pipeline: The government has approved the development of 88 SEZs, creating an investment pipeline of USD 47.5 billion. This includes 27 privately owned SEZs (worth USD 15.2 billion), out of which four projects are already commissioned, three are under construction and 16 others have received preliminary licenses. Further, amongst the 61 public SEZs, two projects have been identified to be developed under the PPP model, requiring an investment of USD 170 million.

Source of Funding: Development of SEZs are supported through public funding and multilateral / bilateral finance sources. Apart from investments using internal accruals, corporates depend on domestic and international commercial banks and NBFIs to meet their funding needs.

## 2.4. Sources of funds for infrastructure projects

The Government of Bangladesh and multilateral/ bilateral funding institutions have funded USD 151.8 billion and USD 58 billion, respectively in various infrastructure projects[2]. The banking sector has financed only 2.6% of funding requirements; while there has been negligible support from venture capital funds, pension funds and Islamic banking institutions in the sector.

Figure 7: Sources of funding in infrastructure projects




Financing institutions and structures vary across sectors. While 35% of all announced transactions in 2016-18 for the power sector was project financing, by comparison, 100% of closed transportation sector transactions in the same period has received public-sector financing[3]. As Bangladesh intends to achieve middle-income economy status by 2024, banks and other financial institutions have to bring in multiple long-term financing schemes, which are suitable for development of various infrastructure projects.

During discussions with project developers, it was observed that access to finance is difficult, with a majority of firms highlighting access to finance as a severe obstacle to business. In addition, most infrastructure lending face asset-liability mismatch as loans are for shorter duration, typically five to seven years, whereas funding requirement is for a much longer duration (15-30 years). As a result, long-term financing is typically procured through accumulated earnings, and firms tend to under-invest.

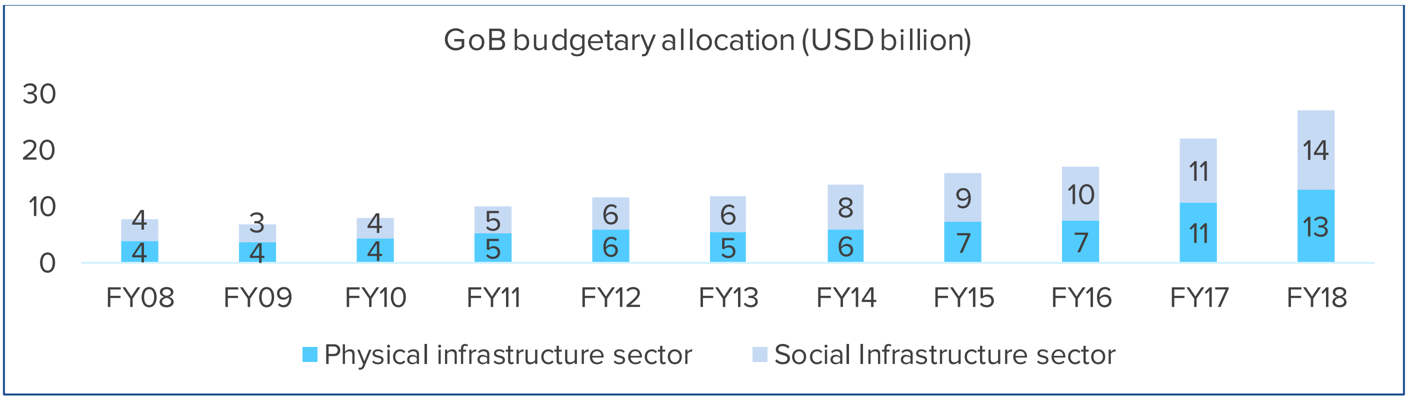
A detailed analysis of each of the funding sources have been carried out in this section.

### Government Funding

The public sector remains essential to the provision of infrastructure services – in this regard, it can act as the facilitator or the actual provider of services. The GoB has infrastructure funding as a priority item in their development agenda. The government's budgetary allocation on physical infrastructure sector in percentage terms has been in the range of 27.7% and 34.4% over the last decade.

However, in absolute terms the value has more than tripled from ~USD 3.9 billion in FY 2008 to ~USD 14.1 billion in FY 2018, owing to an increase in government outlay. Similarly, the percentage spending on social infrastructure sector has varied little (between 23.2% and 34.3%) since FY 2008; however, it has increased from ~USD 3.8 billion in FY 2008 to ~USD 13.0 billion in FY 2018.

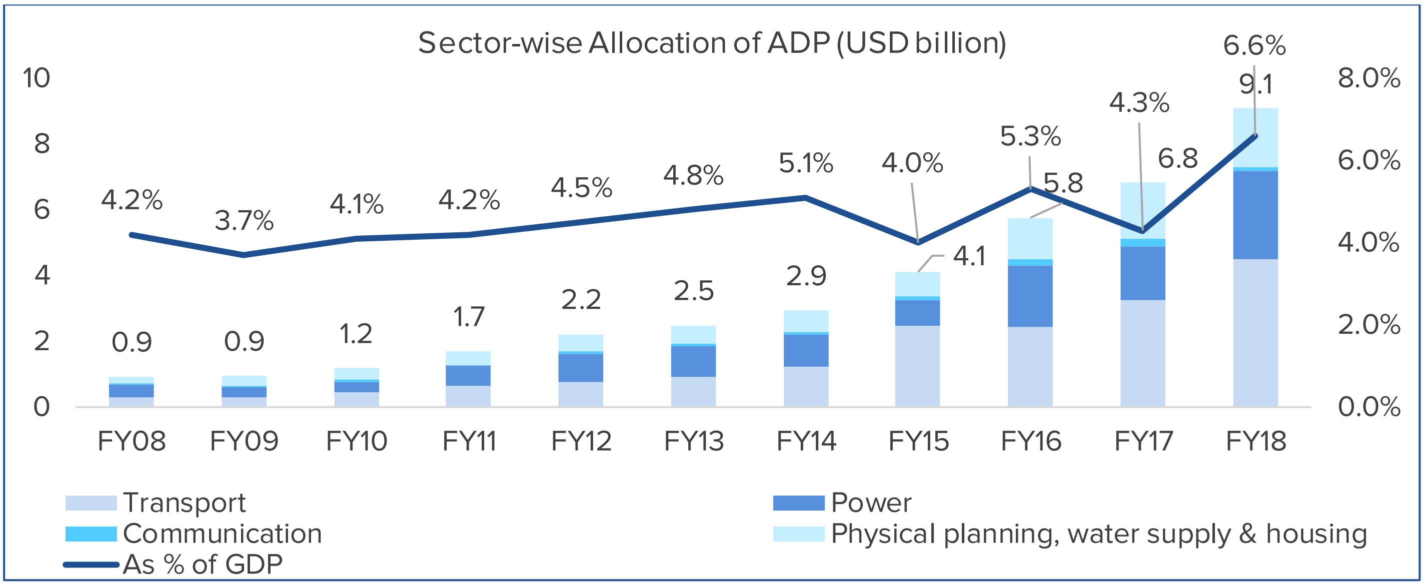
Figure 8: Government of Bangladesh budget allocation towards physical and social infrastructure sectors




The government's focus on infrastructure can be assessed through increased Annual Development Programme (ADP) allocations in the last ten years, from 34.3% (~USD 920 million) in FY 2008 to 51.2% (~USD 9.1 billion) in FY 2018. Further, allocation of ADP as percentage of GDP grew sharply from 4.3% in FY 2017 to 6.8% in FY 2019. Within infrastructure sub-sectors, the relative importance of transport sector and physical planning, water supply and housing sector has been on the rise whereas the communication sector has seen a decline.

2 PwC analysis
3 Asian Infrastructure Finance 2019- AIIB report

Figure 9: Sector-wise allocation of ADP




In spite of the aforesaid allocations, government funding is not sufficient to meet the country's growing economic and infrastructure needs. Fundamental reasons for under-spending by the government includes poor fiscal management, combined with poor planning and implementation of projects, especially in the road and power sectors. Additionally, government financing is restrained by budgetary constraints and deficits. The FY 2018 budget deficit is estimated to be ~USD 13.4 billion or 5% of GDP. Thus, increased commitment and interventions by the government shall be beneficial for the development of the overall sector.

## Multilateral and Bilateral financing institutions (MFIs/BFIs)

Several bilateral and multilateral development agencies have been focusing on infrastructure development in Bangladesh. The major focus for these lending institutions have been in core infrastructure sectors , i.e., airports, ports, power, roads, railways and telecommunication whereas sectors such as health, education and manufacturing have seen little or no involvement of the MFIs/ BFIs.

## Bilateral funding

Japan - Japan has been very active in providing for infrastructure investments in Bangladesh by means of USD ~2.0 billion in soft loans every year since FY 2013[4]. They have prioritised two major objectives for their investments: accelerating inclusive economic growth and overcoming social vulnerability. JICA provides long-term loans (15-20 years) at a fixed rate of 0.8% to 1.5% and variable rate of LIBOR + 0.4% to 1.1%. Some of the recent investments by Japan/JICA have been illustrated below:

Table 1: Investments by Japan International Cooperation Agency in Bangladesh

| Country | Year | Loan Amount ($m) | Projects |
|---|---|---|---|
| Japan/ JICA | 2018 | 783 | Dhaka Mass Rapid Transit Development Project |
| | | 609 | Matarbari Ultra Super Critical Coal-Fired Power Project |
| | | 336 | Jamuna Railway Bridge Construction Project |
| | | 24 | Matarbari Port Development Project |
| | 2017 | 695 | Hazrat Shahjalal International Airport Expansion Project |
| | | 477 | Kanchpur, Meghna and Gumti 2nd Bridges Construction and Existing Bridges Rehabilitation Project |
| | | 496 | Other projects |

China - China has reportedly committed USD 31 billion worth of projects in Bangladesh, in sectors including roads, railways, coal power plants and water treatment facilities. Once private sector investments are also factored in, the figure rises to USD 42 billion[5]. Key projects funded by China are as below:

4 JICA website
5 Financial Times

Table 2: Investments by China in Bangladesh

| Country | Year | Loan Amount ($b) | Projects |
|---|---|---|---|
| China | 2018 | 4.0 | Dhaka-Chittagong express railway |
| | | 2.9 | Coastal protection work and construction of marine drive expressway from Sitakunda to Cox's Bazar |
| | | 2.8 | Upgrading railway infrastructure |
| | | 1.4 | Dhaka-Ashulia elevated expressway |
| | 2016 | 3.5 | Padma Bridge Rail Link Project |
| | NA | 5.0 | Development of economic zones including 2.6 GW power plant. |

India - India and Bangladesh share close economic ties and collaborate extensively on fronts such as defense and energy. Some of the key projects funded by India are:

Table 3: Investments by India in Bangladesh

| Country | Year | Loan Amount ($b) | Projects |
|---|---|---|---|
| India | 2017 | 1.6 | 1,320 MW Maitree Power Project |
| | | 1.0 | First phase (750 MW) of 3,000 MW Meghnaghat Power Project |
| | | 2.0 | Thermal power plant of capacity 1,600 MW (developed by Adani Power Limited, India to supply power to Bangladesh) |
| | | 3.2 | National Thermal Power Corporation (NTPC) signed an agreement with Bangladesh Power Development Board for supply of power from Nepal |
| | | 4.5 | 17 priority infrastructure projects in electricity, roads, ports, railroads and shipping sectors. |

## Multilateral funding

Asian Development Bank (ADB) - Since 1973, ADB has approved USD 20.4 billion for 279 loans, USD 258 million for 432 technical assistance projects, and USD 787 million against 35 grants to Bangladesh[6]. In recent years, ADB development efforts in Bangladesh have focused on energy security, transportation services and connectivity, education and skills development, water resources management, urban infrastructure, and finance. ABD provides loans for tenors of up to 30 years at a fixed rate of 2.6% to 2.9% and variable rate of 6-month LIBOR + ~2.7%. Some of the recent investments by ADB have been illustrated below:

Table 4: Investments by Asian Development Bank in Bangladesh

| Year | Loan Amount ($m) | Projects |
|---|---|---|
| NA | 5,200-6,500 | Multiple Roads and Railway Projects |
| 2018 | 500 | Construction of 800 MW liquefied natural gas (LNG) power plant |
| | 362 | Modernisation of Bangladesh Railway network |
| | 357 | Development of two power line projects |
| 2017 | 583 | Development of Reliance Bangladesh LNG and power project |

World Bank- World Bank has been supporting Bangladesh's infrastructure development since its independence. Since then, the World Bank's concessional lending arm has committed more than USD 35.7 billion in grants, interest-free financing and concessional financing credits to Bangladesh. At USD 16 billion of funding- World Bank concessional lending arm- the International Development Association (IDA) accounts for over a quarter of all foreign aid to the country. Additionally, the International Finance Corporation (IFC) of the World Bank group has committed a portfolio of USD 1.5 billion in Bangladesh[7]. World Bank provides funding at rates of LIBOR + 0.5% to 1.5% for tenors of 8 to 20 years.

6 ADB website
7 World Bank website

Figure 10: Investments by World Bank in Bangladesh


Some of the key projects funded by World Bank are:

Table 5: Infrastructure projects sponsored by World Bank

| Year | Loan Amount ($m) | Projects |
|---|---|---|
| 2018 | 450 | Expansion of transmission network |
| | 425 | Modernisation of rural bridges |
| 2011 | 1,200 | Construction of Padma Multipurpose Bridge |
| NA | 526 | Improvement of road connectivity to rural areas |

European Investment Bank (EIB) - In 1997, EIB signed a Framework Agreement with Bangladesh to start financing capital investment in the country. Since then it has funded the key projects mentioned below:

Table 6: Investments by European Investment Bank in Bangladesh

| Year | Loan Amount ($m) | Projects |
|---|---|---|
| 2015 | 118 | Development of railways |
| 2014 | 112 | Development of new sustainable surface water supply system in Dhaka |

## Banks/Non-Banking Financial Institutions

There are 59 scheduled banks in Bangladesh, which operate under full control and supervision of Bangladesh Bank[8] comprising:

- Six State Owned Commercial Banks (SOCBs);
- Three Specialised Banks (SDBs);
- 41 Private Commercial Banks (PCBs) which can be categorised into 33 conventional PCBs and 8 Islami Shariah based PCBs; and
- Nine Foreign Commercial Banks (FCBs) operating in Bangladesh.

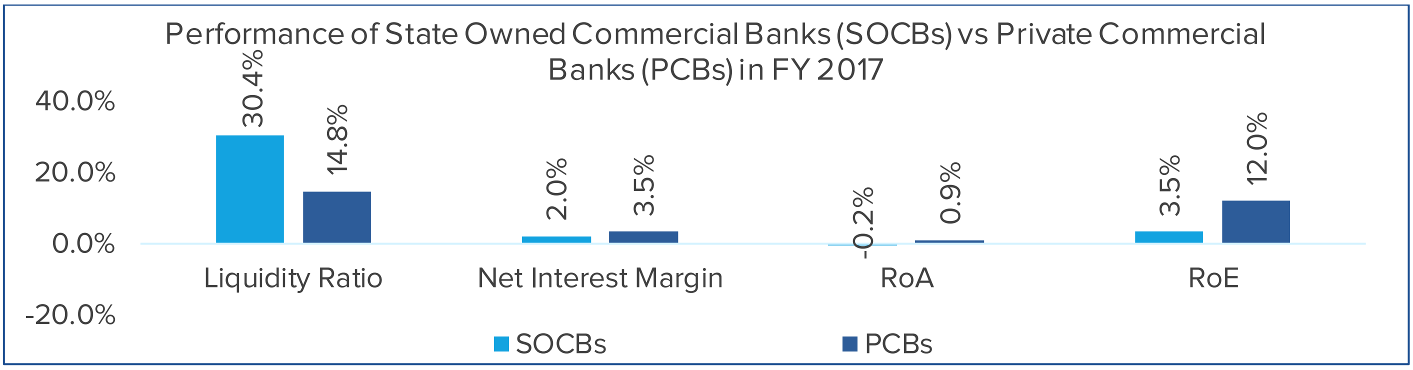
Exposure of commercial banks in the infrastructure space has been low: ~ USD 11 billion[9] outstanding loans in December 2018 towards transport and construction sectors. State Owned Commercial Banks (SOCBs), which traditionally had higher exposure to infrastructure sectors, have been ailing due to increase in non-performing assets and an extremely low capital adequacy ratio as against the guidelines of Bangladesh Bank[10].

As of December 2018, the SOCBs had 30.0% NPAs i.e. USD 5.8 billion. In contrast to this, the private commercial banks (PCBs) were able to maintain NPAs at 5.5%[11]. While the RoE of PCBs and FCBs (Foreign Commercial Banks) have been 8.1% and 13.6% in FY 2018, the RoE of SOCBs has been -12.2% FY 2018. In addition, infrastructure sector needs long tenure debt financing for ~15 to 30 years, which is not a time horizon preferred by commercial banks. In short, commercial banks are not in a position to enhance lending to the infrastructure sector.

8 Financial system, Bangladesh Bank
9 Quarterly report (October-December 2018), Bangladesh Bank
10 Banks are required to maintain a capital adequacy ratio of 10% in line with BASEL III norms. Apart for the foreign and private commercial banks, the SOCBs have not been able to meet the minimum capital adequacy requirements since 2013.
11 Quarterly report (October-December 2018), Bangladesh Bank

Since 2006, the World Bank is assisting capacity building of banks/ financial institutions for funding of private projects in the infrastructure sector via Investment Promotion and Financing Facility (IPFF) Project. Under IPFF, government approved private infrastructure development projects, which are developed on PPP structure are being financed or re-financed through selected participating banks / financial institutions. Eight banks and four NBFIs have signed the participation agreement with Bangladesh Bank under this project. Total commitment amount from World Bank towards the IPFF project has been USD 456.7 million in two tranches (IPFF I - USD 50 million and IPFF II - USD 356.7 million). Eligible sectors to be financed under IPFF include (i) power (ii) port development (iii) environmental, industrial and solid waste management (iv) highways and expressways (v) water supply and sanitation and (vi) industrial estates and park development.

Figure 11: Performance of State Owned Commercial Banks vs Private Commercial Banks in FY 2017




There are 34 non-banking financial institutions of which three NBFIs are owned by the government, fifteen by private sector, and remaining fifteen are joint ventures. The NBFIs are controlled by Bangladesh Bank and regulated under the Financial Institution Act 1993.

To facilitate infrastructure development via private funding, the Ministry of Finance incorporated Bangladesh Infrastructure Finance Fund Limited (BIFFL) in 2011 with a corpus of USD 400 million. In terms of capital base, BIFFL is the largest NBFI operating in the country with an objective to spur infrastructure development in sectors including power and energy, ports, connectivity, tourism and economic zones.

## Private Equity/Venture Capital

The BSEC approved the Bangladesh Securities and Exchange Commission (Alternative Investment) Rules, 2015 in June 2015. However, the country has not been successful in attracting too many private investors in the past. Even with formalisation of the infrastructure sector, only ~USD 150 million to USD 200 million[12] of committed capital has been received by the country's private equity and venture capital funds across power and infrastructure sector, the financial sector, and the textile sector.

## Capital Markets

Stock Exchanges were established in Bangladesh as early as 1954; however, it was only in the 1990s that Dhaka Stock Exchange saw any visible activity. Since then, the markets have been characterised by high volatility leading to investors demanding for a premium to compensate for the high market risk. In addition, capital markets of Bangladesh are in an evolving stage and there is a need to strengthen the regulatory framework to effectively support infrastructure financing.

Currently, a few infrastructure companies are successfully listed on the Dhaka Stock Exchange including 19 power and fuel companies, 54 textile companies and two telecommunications companies with a cumulative market capital of ~USD 13 billion (as on 19th April 2019)[13]. Listing these IPP's in the capital market is challenging as the Special Purpose Vehicles (SPVs) so formed are often created through BOOT (Build, Own, Operate and Transfer) schemes, as the project company needs to transfer ownership to the government after a predetermined period agreed during the project transaction phase. However, these companies can enter into a buyback option with investors from the capital market.

Given the inadequacy of the banking system and government funds to support infrastructure financing in Bangladesh, capital markets can step in and play an important role, provided the stakeholders take initiatives to develop the same.

## Pension and Provident Funds

There are very few pension and provident funds in Bangladesh and the segment is largely unregulated. Pension funds, provident funds and life insurance proceeds are very suitable to investments in infrastructure projects

12 www.export.gov
13 DSE website

owing to their longer tenures of investment. However, the market for pension funds is largely under developed owing to three major reasons:

- Lack of pension schemes in the country as only government officials get pensions, making the pool of capital available very small for significant investments into large infrastructure projects;
- Legal restrictions on the use of pension funds for investments by the government and autonomous agencies. Regulations enabling the government to use these funds need to be framed; and
- Absence of required institutional and infrastructural capabilities to channelise pension and provident funds into infrastructure projects. Mobilizing of funds therefore becomes quite challenging under such circumstances.

It may take a while before the market is ready to absorb such funds as a viable option for funding infrastructure investments in the country, but for now Bangladesh lacks the mechanisms and regulations needed for such channelisation.

## Islamic Banking

Bangladesh, a Muslim-majority country, has attracted the attention of the globe for Islamic banking renaissance. Islamic banking started in Bangladesh in 1983 with the establishment of Islami Bank Bangladesh Limited. Islamic insurance started in 1999, and Islamic finance and investment companies started operations in 2001. At present Islamic banking is a dominant part of the financial markets of Bangladesh.

The Islamic Banking Industry holds almost one-fourth share of the entire banking industry in Bangladesh in terms of deposits and investments. At the end of September 2018, eight full-fledged Islamic banks were operating in Bangladesh with 1,156 branches out of total 10,159 branches of the whole banking industry. In addition, 19 Islamic banking branches of nine conventional commercial banks and 25 Islamic banking windows of seven conventional commercial banks were also providing Islamic financial services in Bangladesh.

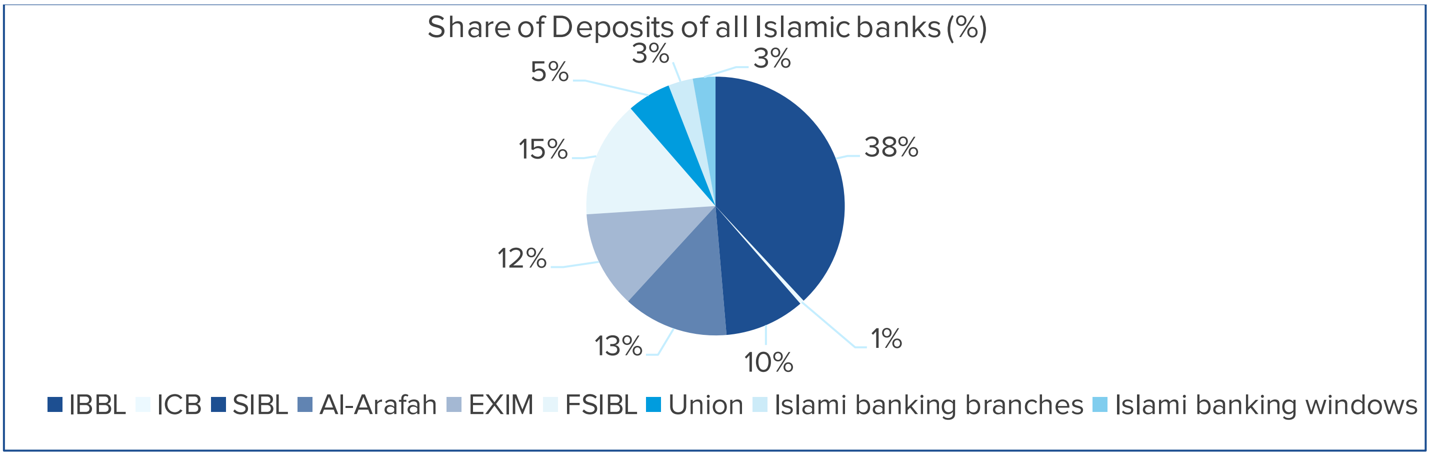
Based on the quarterly review released by the Bangladesh Bank, key highlights on the Islamic banking sector in Bangladesh (at the end of September 2018)[14] have been illustrated below:

Table 7: Overview on Islamic banking sector in Bangladesh

| S. No | Particulars | Amount ($m ) | Share of Islamic banks among all banks (%) |
|---|---|---|---|
| 1. | Total deposits | 27,340 | 23.3 |
| 2. | Total investments | 26,440 | 24.0 |
| 3. | Excess liquidity | 620 | 6.4 |
| 4. | Total remittances | 1,470 | 38.0 |

Total deposits of eight full-fledged Islamic banks accounted for 94.5% of deposits in the Islamic banking industry. Among all Islamic banks, Islami Bank Bangladesh Limited accounted for the highest share of deposits (35.3%), followed by First Security Islami Bank Limited (13.5%) and Al-Arafah Islami Bank Limited (12.2%).

Figure 12: Share of deposits of all Islamic banks

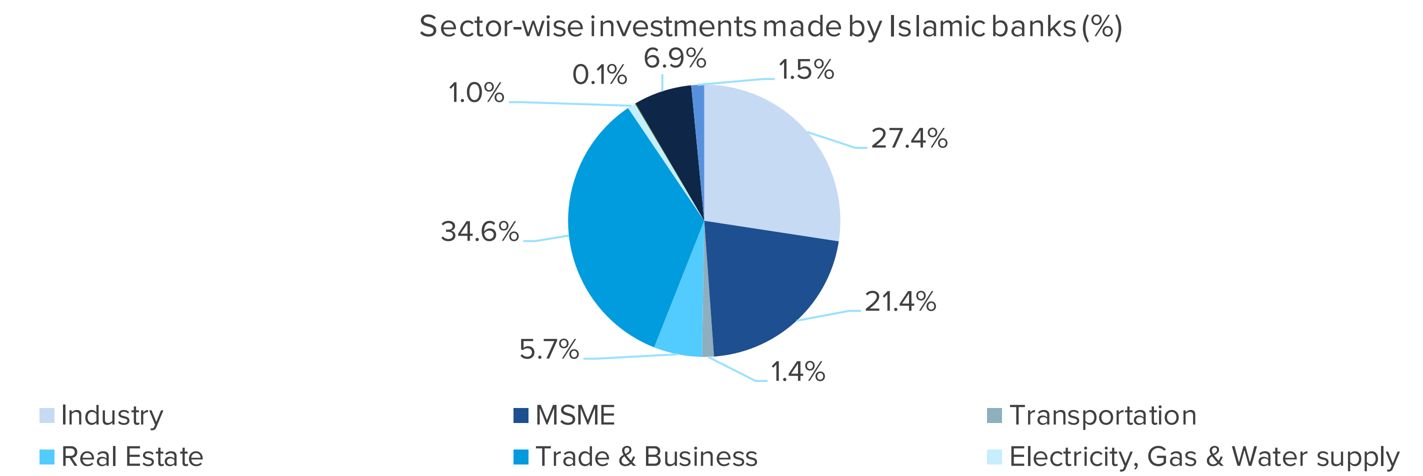



Amongst total investments (loans in the conventional sense) of Islamic banks, 95.3% were made by eight full-fledged Islamic banks, 2.6% by the scheduled banks' Islamic banking branches and the rest 2.1% by the scheduled banks' Islamic banking windows. After analysing the sector-wise investments, it can be observed that investments in trade and business sector (34.5%) was highest among all sectors at the end of September 2018.

14 Islamic banking quarterly report (July-September 2018), Bangladesh Bank

The other key areas of investments include industrial sector, MSME (Micro, Small and Medium Enterprises), real estate, agriculture, transportation and energy.

Figure 13: Sector-wise investments made by Islamic banks




## 2.5. Role of Islamic finance in the country

In several infrastructure projects in public sector and in PPP schemes, financing sources, which comply with Islamic practices, have turned out to be amongst the key sources of funds. Amidst the shortage of traditional financing for infrastructure projects in a Muslim majority country like Bangladesh, Islamic finance widens the avenues of sources of funds. There has been significant development of the global Islamic financial market; the regulatory bodies and framework defining the institutions on Islamic finance practices are well established, and so is the risk-sharing philosophy of Islamic finance.

Moreover, infrastructure projects under the PPP schemes are in a better position to attract Islamic finance because these projects offer many features that are well suited to the fundamentals of Islamic finance such as asset backing and risk sharing between parties.

The above advantages ensure that there is no need for structural changes in the project finance to accommodate Islamic financing options. In considering whether to accept such financing arrangements, project sponsors (equity investors) could simply consider the commercial issues such as the cost of financing, tenures, and fees.

In short, the asset-linked and risk-focused nature of PPPs make them a perfect investment opportunity for Islamic financing. This kind of financing has significant liquidity and growth potential to provide a suitable financing match for PPPs. This paves the way for Islamic finance and PPPs to support sustainable development and positive socioeconomic outcomes.

Table 8: Exploring synergies between Islamic finance and infrastructure PPP projects:

| Principles of Islamic Finance | Infrastructure PPP projects |
|---|---|
| Returns should be linked to the profits/earnings and derived from commercial risk taken by financier. | Infrastructure PPP projects allow risk to be shared among the parties involved in the project, including financiers. |
| Islamic financiers become partners in the project. | PPP projects allow Islamic financiers to become a party to the project, not just a mere lender. |
| Existence of uncertainties in a contract are prohibited. | Project contracts are generally well defined with no uncertainty (such as in case of lump sum, turnkey and EPC contracts). |
| Investments relating to alcohol, drugs, gambling, weapons, and other prohibited activities are not permitted. | Infrastructure PPP projects exclude all these areas. |

### Role of Zakat Funds in infrastructure funding

Zakat is a voluntary donation of 2.5% of savings, which is paid annually by Muslims. This practice aims to reduce poverty and redistribute wealth by giving support in cash or kind directly to poor and needy individuals. These funds are utilised by the local Muslim charities to support food banks, build hospitals and provide training to help the poor become self-sufficient.

There is no general consensus regarding whether or not Zakat can be used for infrastructure or construction projects. In countries like Egypt, Lebanon and Malaysia, Zakat has been used for building schools, mosques and hospitals but the Zakat foundation in Australia explicitly states that the funds cannot be used for construction.

Bangladesh's regulatory framework regarding the usage of Zakat funds for infrastructure/ construction projects is still in its early stages. Further, the Zakat Board of the Bangladesh Government does not have a structured process for Zakat administration, collection and distribution. Hence, there is little transparency on the corpus of Zakat funds collected in Bangladesh and their expenditure. Therefore, this acts as an impediment to tap Zakat funds in Bangladesh for infrastructure or development activities in a formal, structured manner.

## Islamic Financing products suited for infrastructure investments

Currently, a number of standard instruments of Islamic financing are being used to meet the needs of infrastructure PPP projects[15]. The most common instruments - Istisna and Ijarah are used for long-term financing arrangements, such as financing of power projects, transport equipment, and infrastructure. However, these two instruments are used in combination with each other— Istisna for the construction and procurement stage, and Ijarah for the operation stage. Experts believe that debt instruments, such as bonds for which the issuer guarantees the nominal value, are not tradable in an Islamic market, even though interest may be absent.

Sukuk, occasionally referred to as Islamic bonds, have emerged as one of the most promising developments in the area of Islamic finance. Sukuk mainly involves the issuance of certificates in the joint legal or beneficial ownership of the asset. The holders of the certificate receive income derived from the assets of the project. Currently, no regulations are in place for Sukuk issuances, even though there exists a huge market for both sovereign and corporate Sukuk.

Bangladesh Bank has been working on bringing some kind of industry-wide regulation for Islamic finance, which shall allow the sector to expand beyond retail banking. As of now, the central bank has identified Sukuk as a key instrument in mobilising funds for the private sector and government-related bodies to develop large infrastructure projects in the country. Only short-term Sukuk has been offered by Bangladesh Bank on a weekly basis to assist Islamic banks with their liquidity management needs. No corporate houses have issued Sukuk, mainly due to the lack of an efficient regulatory infrastructure.

Bangladesh has immense potential for Sukuk issuance, however there are certain challenges that need to be addressed before issuing Sukuk in a new market like Bangladesh:

- Necessary amendments in legal framework: There is an urgent need for making amendments to existing financial laws to pave the way for issuing Sukuk in Bangladesh. The amendments may induce public and corporate sectors to issue Sukuk, and attract both institutional and individual investors.
- Adoption of programmes for human resources development- Paucity of skilled human resources including Shariah scholars and specialised personnel on Sukuk is also a challenge in issuing and managing Sukuk in Bangladesh.
- Awareness programmes- There are knowledge gaps among policy makers, entrepreneurs and general investors regarding cost-benefits of Sukuk in Bangladesh. Since most of the concerned people are aware of conventional bonds and Sukuk is a new instrument, mobilisation of support for its introduction in Bangladesh is a major challenge.

To conclude, Sukuk can be a viable option for financing large-scale infrastructure investments in Bangladesh if proper policy reforms are undertaken to address the challenges. In order to reap the potential of Sukuk, Bangladesh needs to undertake proper steps to tackle the challenges of issuing Sukuk.

## Islamic Banking Success Stories in Malaysia and Saudi Arabia

The global Islamic banking market assets are expected to grow at a CAGR of 9.4% from USD 1.6 billion in 2016 to USD 2.4 billion in 2020. By actively addressing issues and enforcing remedial measures, countries like Malaysia and Saudi Arabia have witnessed an unparalleled growth in the Islamic banking sector. Currently, Saudi Arabia holds the largest share at 33%, followed by Malaysia whose shares stand at 15.5%. In 2017, Malaysia issued the highest volume of Sukuk worth USD 21.5 billion as compared to Saudi Arabia, ranked 2nd, which issued Sukuk worth USD 12.5 billion.

Malaysia has succeeded in positioning itself amongst the leaders in Islamic Banking, with the active participation of the Government of Malaysia and Bank Negara Malaysia (central bank). To promote Islamic banking products and services, Bank Islam Malaysia Berhad (BIMB) was licensed as a commercial bank under the Islamic Banking Act of 1983 (IBA). Bank Negara Malaysia allowed BIMB to operate as a sole Islamic bank in Malaysia for a period of ten years. To support and stabilise BIMB, government investment certificates were issued under the Government Funding Act of 1983. In addition to this, insurance products like Syarikat Takaful Malaysia Berhad and Sukuk were introduced into the Islamic banking and financing system.

In 2017, Malaysian issuers raised USD 31 billion from 199 deals in the debt capital market, with Islamic financing making up more than 60% of the total amount raised. The East Klang Valley Expressway (EKVE), a 36 km dual-lane expressway between Bandar Sungai Long and Ukay Perdana in Malaysia, was financed by a Sukuk

15 Mobilizing Islamic Finance for Infrastructure PPPs—World Bank, 2017

structure. The East Coast Rail Line in Malaysia, with a project cost of USD 13.5 billion, has raised 15% of funds through Sukuk from Malaysian investment banks. Malaysia has also launched Green Sukuk to support environmentally sustainable infrastructure projects.

## 2.6. Conclusion

A robust financial ecosystem is required to support USD 72.0 billion worth of infrastructure projects in Bangladesh. The market/demand risk associated with the sectors (illustrated in section 3.2) where the prices are set by the regulator/public body or through long-term agreements (LTAs), are low because of certainty in the cash flows. Hence, the developers may raise funds through issuance of bonds to execute projects pertaining to these sectors and the investors would be motivated to purchase such bonds. However, risky cash flows are associated with projects developed in sectors where the tariffs are directly linked to market risk. In such situations, it becomes difficult for the developer to raise funds and reduces the confidence levels of investors to invest in such projects. In addition to this, the project developers do not have access to long-term financing options as the financial institutions lend at high interest rates (8%-11%) with low repayment tenors (five to six years). In cases where the loan tenor is more than seven years, the lending rates are higher than 15%, which increases the project cost significantly. As a result, raising funds via bonds market becomes a viable long-term financing option for the developers in the infrastructure sector. In the following chapter, we provide an overview of the bond market of Bangladesh with a special focus on market infrastructure, key regulations and key structural issues in the market.

# Overview of Bangladesh Bond Market

# 3. Overview of Bangladesh Bond Market


## Summary

The Bangladesh capital market is institutionalised by Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE), which are governed by BSEC. As of June 2018, the market capitalisation of DSE and CSE stood at USD 46.2 billion and USD 37.5 billion, respectively. Currently, eight debentures are listed on the stock exchanges, all of which are matured and are still listed due to incomplete legal proceedings. The returns on such debentures have been higher (14%-17%) as compared to returns of 4% to 12% in government debt securities. However, defaults in interest and principal payments by the issuers has reduced the confidence level of investors and has raised questions over the enforcement of rules and regulations.

So far, only three corporate bonds have been listed, with returns ranging from 10.5% to 12.5% and maturity periods between 60 to 84 months. Investors in Bangladesh are inclined towards investing in high interest-low risk products such as National Saving Scheme, Treasury bonds, and Treasury bills. While the government provides tax benefits to individuals in order to encourage them to invest in debt securities market, there are no tax benefits provided for banks, insurance companies, and financial institutions. However, all companies are eligible for tax rebate on income derived from zero-coupon bonds. The Bangladesh bond market faces several structural issues, such as low demand for corporate bonds, low investor base, lack of awareness, lack of supply of bonds, high cost of bond issuance and weak market infrastructure, which needs to be addressed by various stakeholders.


## 3.1. Financial system of Bangladesh

The financial system of Bangladesh consists of three sectors: Formal sector, Semi-formal sector and Informal sector.

### Formal sector

The formal sector consists of all regulated institutions including banks (59 scheduled banks and five non-scheduled banks), insurance firms (32 life insurance companies and 46 general insurance companies), NBFIs (34), and capital market intermediaries such as merchant banks, brokerage houses, Asset Management Companies (AMCs), stock dealers/stock brokers, trustees/custodians and the Investment Corporation of Bangladesh (ICB).

#### 1) Financial Market

The financial market consists of three types of markets namely the money market, the capital market, and the foreign exchange market.

#### 1.1) Money market

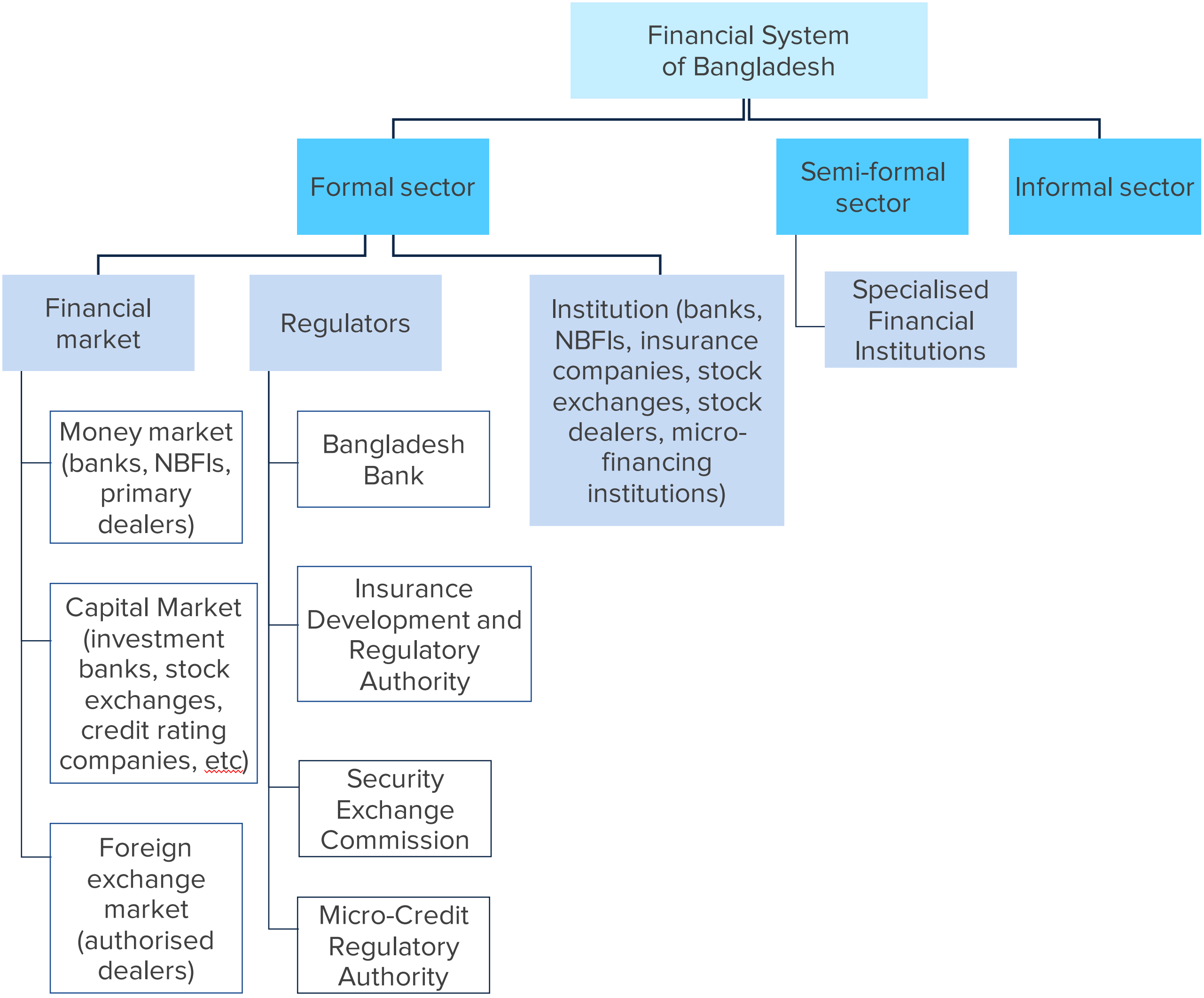
The money market consists of banks and financial institutions who act as intermediaries, out of which there are 20 primary dealers in government debt securities. These primary dealers purchase Treasury Bonds and Treasury Bills, which are then sold to individuals or companies. The money market acts as a channel for redistribution of funds amongst the financial institutions.

#### 1.2) Capital Market

Capital market financing for development of infrastructure sectors can be in equity or debt forms. Presently, companies in Bangladesh, especially in the power sector, prefer to raise equity financing for infrastructure projects. On the other hand, depending on the future cash flows from projects, developers can issue bonds to raise funds. With a total market capitalisation of USD 46.2 billion (DSE) in FY 2018, the depth of Bangladesh capital market is still very shallow for supporting infrastructure investments, especially considering that an average ticket size of USD 1 billion is required to develop large scale infrastructure projects. To overcome the problems in the capital market, the government needs to formulate a sound regulatory framework that provides linkage between the savings and preferred infrastructure investments.

The capital market is operated via offerings (both public and private) of equity and debt instruments and is governed by the BSEC. The market is institutionalised by two stock exchanges i.e. the Dhaka Stock Exchange and the Chittagong Stock Exchange.

Figure 14: Financial system of Bangladesh[16]




Dhaka Stock Exchange (DSE)

The Dhaka Stock Exchange was established in April 1954 and was then known as the East Pakistan Stock Exchange Association Limited.

As of June 2018, there are 572 listed securities governed by the DSE. The listed securities comprise 305 equity securities (including 30 banks, 23 financial institutions, and 47 insurance companies), 221 government bonds, 37 mutual funds, 8 debentures and a corporate bond. As of November 2018, the equity market holds the largest share of market capitalisation at 84.7% (USD 38.8 billion), followed by Treasury bond market at 14.4% (USD 6.6 billion). Since the markets for corporate bonds, debentures and mutual funds are in their nascent stages of development; their combined share in the market capitalisation is only 1.0%. The overall market capitalisation has grown at a CAGR of 6.9% between FY 2014 and FY 2018. The total number of securities grew from 536 in FY 2014 to 572 in FY 2018 with 63 companies raising funds through Initial Public Offerings (IPOs) in between. However, the market capitalisation of DSE as a percentage of GDP is a mere 14.5% as compared to 72.2% for Bombay Stock Exchange and 198.0 % for Singapore Exchange (as of 2018). The financial performance of Dhaka Stock Exchange in the last five years is mentioned overleaf:

16 Financial system, Bangladesh Bank

Table 9: Financial performance of Dhaka Stock Exchange[17]

| ($m) | FY 2014 | FY 2015 | FY 2016 | FY 2017 | FY 2018 |
|---|---|---|---|---|---|
| Market Capitalisation | 35,318 | 38,968 | 38,229 | 45,612 | 46,168 |
| Turnover value | 13,505 | 13,482 | 12,870 | 21,663 | 19,090 |
| Total no. of securities | 536 | 555 | 559 | 563 | 572 |
| Total no. of IPO | 16 | 16 | 11 | 9 | 11 |
| Capital raised via IPO | 112 | 150 | 103 | 47 | 65 |
| Total # of right issues | 6 | 5 | 2 | 4 | 3 |
| Capital raised through right issues | 82 | 173 | 38 | 125 | 47 |

Chittagong Stock Exchange (CSE)

Established only in October 1995, the Chittagong Stock Exchange is the relatively newer stock exchange in the country.

As of June 2018, the total number of listed securities in Chittagong Stock Exchange stood at 312. Between the period January 2018 and March 2018, the total value of traded shares was USD 258 million, which was 29.0% more than the total value of traded shares in the preceding quarter. The market capitalisation of CSE decreased by 0.01% to USD 37.5 billion[18] by the end of June 2018. However, during the same period, the total amount of issued capital rose to USD 7.8 billion. Amongst all the listed securities in CSE, Grameenphone Limited has the highest market share of 3.6%.

2) Foreign Exchange market

The foreign exchange market facilitates exchange of currencies. There are broadly three participants in the foreign exchange market - Bangladesh Bank, authorised dealers and customers. The foreign exchange market is regulated by the Bangladesh Bank and as per the Foreign Exchange Regulation Act of 1947. The central bank issues dealership licenses to scheduled banks only. The dealers are authorised to hold and transact in foreign currency within and outside Bangladesh.

3) Regulators

a) Bangladesh Bank: Established in 1972, Bangladesh Bank is the central bank of the country. The bank is responsible for formulating and implementing the monetary policy and the intervention policies in the foreign exchange market. It is also responsible for regulating and supervising banks and financial institutions in the country. Additionally, it holds and manages the official foreign reserves of Bangladesh.

b) Insurance Development and Regulatory Authority (IDRA): The GoB enacted the Insurance Development and Regulatory Act of 2010 to develop and regulate the insurance industry. IDRA operates under the Ministry of Finance, GoB. There are 46 general insurance and 32 life insurance companies under IDRA.

c) Bangladesh Securities and Exchange Commission (BSEC) regulates and supervises the capital markets of Bangladesh. The main functions of BSEC are to develop and maintain transparent and efficient securities markets and to ensure proper issuance of securities. BSEC thus approves capital issues and prospectus, restricts insider trading, and controls the stock exchanges and the companies involved in public issuance of various securities. BSEC holds the right to approve or cancel the certificates to merchant banks, brokers, stock dealers and intermediaries. In addition to this, BSEC undertakes various research activities on the capital market and publishes its findings.

d) Microcredit Regulatory Authority (MRA): It is the central body that supervises operations of Non-government Microfinance Institutions (NGO-MFIs) in the country. The MRA was created under the Microcredit Regulatory Authority Act of 2006.

4) Institutions: There are two types of banks in Bangladesh i.e. scheduled Banks and non-scheduled banks. Within 59 scheduled banks - there are six state owned commercial banks, three specialised banks, 41 private banks (conventional commercial banks and Islamic banks) and nine foreign banks. There are five non-scheduled banks namely, Ansar VDP Unnayan Bank, Karmashangosthan Bank, Grameen Bank, Jubilee Bank and Palli Sanchay Bank. Further, there are 34 NBFIs, which are controlled by the Bangladesh Bank. Out of these NBFIs, two are state owned, one is a subsidiary of state owned commercial bank, and there are 15 private NBFIs initiated by joint ventures.

17 Annual report FY 2018, Dhaka Stock Exchange
18 Annual report FY 2018, Chittagong Stock Exchange

### Semi-Formal sector

The Semi-Formal sector includes institutions, which are regulated but do not fall under the jurisdiction of either the central bank or the insurance authority or any other financial regulators. Institutions such as Grameen Bank, Samabag Bank and House Building Finance Corporation (HBFC) mainly represent the sector.

### Informal sector

The Informal sector includes private intermediaries, which are unregulated.

## 3.2. Long-term debt market in Bangladesh

### Introduction to long-term debt market

Bangladesh capital markets are not conducive to the issuance of debt instruments viz. debentures and bonds. There remains major structural issues in the long-term debt market such as low investor base, absence of yield curve, lack of investor awareness, and high issuance cost. Consequently, the long-term debt market still remains largely under developed to support capital- intensive projects in the country. The commission has been undertaking steps to support the market participants (issuers and investors) and to develop the capital market.

### Issuance of Debentures

Debentures are unsecured debt instruments issued by listed companies. Historically, the coupon rates offered by the issuers have been in the range of 14% to 17%. Currently, there are eight debentures, which are listed on the Bangladesh stock market.  However, the listed debentures have reached maturity but are still listed due to some incomplete legal proceedings. A total of USD 13.7 million was raised by the eight debentures.

Table 10: Details of eight debentures listed on Bangladesh stock market[19]

| S. No | Name | Units | Unit price | Total Amount ($) | Coupon rate | Year of Issue |
|---|---|---|---|---|---|---|
| 1 | Aramit Cements Limited | 20,000 | $30 (BDT 2,500) | 600,000 | 14% | 1998 |
| 2 | BD Welding Electrodes Limited | 8,000 | $4.8 (BDT 400) | 38,400 | 15% | 1999 |
| 3 | Bangladesh Luggage Industries | 60,000 | $30 (BDT 2,500) | 1,800,000 | 14% | 1996 |
| 4 | Bangladesh Zipper Industries | NA | NA | 480,000 | 14% | 1995 |
| 5 | Beximco Denims Limited | NA | NA | 3,600,000 | 14% | 1995 |
| 6 | Beximco Fisheries Limited | NA | NA | 1,440,000 | 14% | 1994 |
| 7 | Beximco Knitting Limited | NA | NA | 2,880,000 | 14% | 1994 |
| 8 | Beximco Textile Limited | 96,000 | $30 (BDT 2,500) | 2,880,000 | 14% | 1995 |

### Issuance of Listed Bonds

The corporate bond market is still at a nascent stage as compared to the Treasury bond market. Only three corporate bonds i.e. Islami Bank Bangladesh Ltd (IBBL) Mudaraba perpetual bond, Advanced Chemical Industries (ACI) zero-coupon bond (matured) and BRAC bank subordinated convertible bonds (matured) have been listed so far.

Table 11: Details of corporate bonds listed on Bangladesh stock market

| Name of the company | Islami Bank Bangladesh Limited (IBBL) | BRAC bank limited | Advanced Chemical Industries (ACI) |
|---|---|---|---|
| Size of the issue | $36m  ($18m each in private placement and IPO) | $36m ($32.4m in private placement and $3.6m in IPO) | $16m ($9.6m in private placement and $6.4m in IPO) |
| Number of units | 3m | 3m | 1.3m |
| Unit price | $12 | $12 | $12 |

19 Dhaka Stock Exchange

| Name of the company | Islami Bank Bangladesh Limited (IBBL) | BRAC bank limited | Advanced Chemical Industries (ACI) |
|---|---|---|---|
| Term | Perpetual (no maturity period) | 84 months from the date of issue | Five years with yearly redemption |
| Rate of interest | 1.2% (profit) + 10% of declared dividend | Interest margin + 12.5% | Discount rate of 10.5% |
| Trustee | Investment Corporation of Bangladesh | City Bank Limited | Industrial and Infrastructure Development Finance Company Limited (IIDFC) |
| Manager of the issue | ICB Capital Management Limited | IDLC (Industrial Development Leasing Company) Finance Limited | Alliance Financial Services Limited |
| Credit rating | A+ by CRISL | NA | A+ by CRISL |
| Investors | 100% issue offered to public | Public issue: 10%<br>Institutional investors: 90% | Public issue: 46%<br>Institutional investors: 54% |

Amongst the three corporate bonds, IBBL's Mudaraba Perpetual Bond (MPB) is currently listed and traded in Bangladesh stock market as IBBLPBOND. In 2007, IBBL bank issued MPB under the Mudaraba principles of Islamic Shariah law and received approval from BSEC and Bangladesh Bank. The Investment Corporation of Bangladesh is appointed as the trustee of MPB. The company issued three million units with a minimum subscription amount of USD 59.2 (BDT 5000) and raised a total capital of USD 35.5 million (BDT 3 billion) which qualified[20] for additional Tier-1 Capital under BASEL-III guidelines. As on 2017, the company has reportedly paid a total profit of ~USD 3 million. However, the dividends paid by IBBL on MPB has declined to 8.6% in FY 2017 from 13.5% in FY 2012.

## Private Placement of Corporate Bonds

Apart from the above-mentioned listed bonds, corporates in Bangladesh have also raised funds via private placement of bonds. Unlike private companies, local banks are fairly active in the bond market and have raised funds by issuing subordinated bonds. Over the last three years[21], 55 companies have privately issued bonds worth USD 2.7 billion. In 2018, bonds worth USD 1.2 billion were issued, which was 66.3% more than the capital raised by privately placed bonds in FY 2017. The companies issued different types of bonds such as non-convertible, redeemable, and unsecured bonds at floating rates. More than 20% of the companies issued zero-coupon bonds. These bonds have a maximum maturity period of seven years.

In 2018, the commission gave approval to 20 issuers to raise a total capital of USD 1.2 billion via private placement of bonds. These bonds would be sold to multiple banks, financial institutions, insurance companies, corporate bodies, asset management companies, mutual funds, and high net worth individuals. Amongst the 20 issuers, four Islamic banks i.e. Al-Arafah Islami Bank Limited, Islami Bank Bangladesh Limited, Social Islamic Bank and Shahjalal Islamic Bank, plan to raise a total capital of USD 276 million via subordinated bonds with floating rates, and with a maturity period of seven years. Additionally, there are ten banks and three textile companies (Generation Next Fashions Limited, Flamingo Fashion Limited, and Tarasima Apparels Limited), which will raise a total capital of USD 768 million and USD 66 million, respectively via issuance of bonds.

## Issuance of Government Securities

The government offers two types of debt instruments i.e. tradable securities (Treasury bonds and Treasury bills) and non-tradable securities.

a) Tradable Securities[22]

Treasury Bills (T-Bills) are free of credit risks and tradable in the secondary market. The government issues T-Bills with different maturity periods: 91 days, 182 days and 364 days. The investors purchase T-bills at a discounted rate and then redeem at face value after maturity. In FY 2018, T-Bills worth ~USD 7.0 billion were issued. The cut off yield for T-Bills increased by approximately 5% in FY 2018 from a year ago. The volume of issuance of T-Bills is directly linked to its yield rate. For example, the market share of 91 days T-Bills increased to 46% in FY 2018 from 32% in FY 2016 due to an increase in the yield rate. Moreover, the share of 364 days T-Bills decreased to 27% in FY 2018 from 47% in FY 2016, due to a decrease in the yield rate from 5.3% in FY 2016 to 5.0% in FY 2018.

20 Annual report (FY 2017), Islami Bank Bangladesh Limited
21 Bangladesh Securities and Exchange and Commission
22 Report on government securities FY 2018, Bangladesh Bank

Figure 15: Details of coupon rates offered on Treasury bills in the last three years

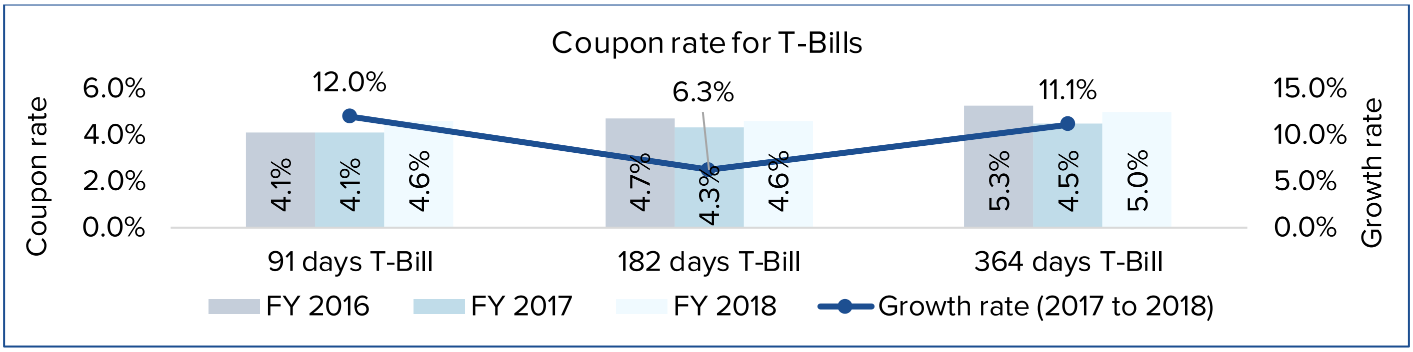
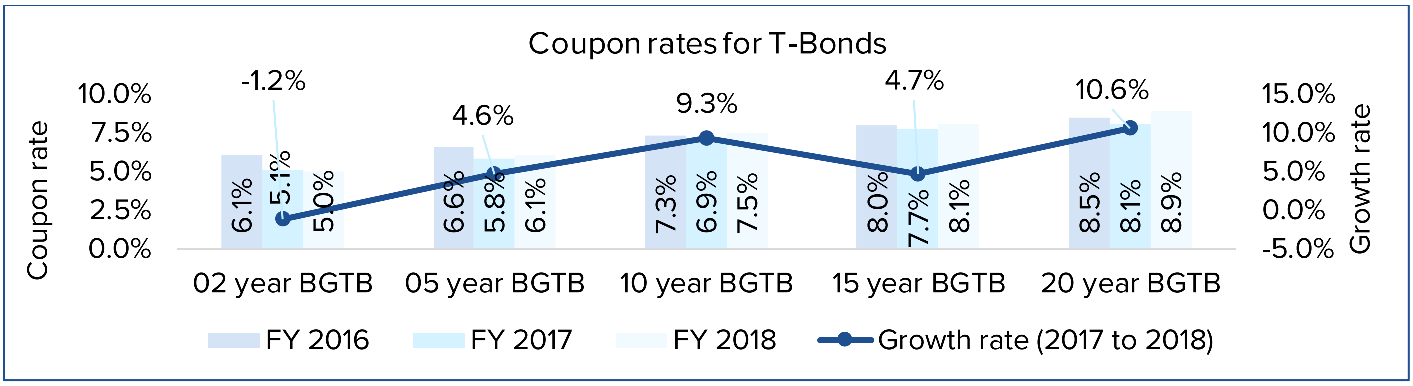



Figure 16: Details of coupon rates offered on Treasury bonds in the last three years




Bangladesh Government Treasury Bonds (T-Bonds) are available with maturity periods of two years, five years, 10 years, 15 years and 20 years. The T-Bonds are tradable in the secondary market. In FY 2018, T-Bonds worth USD 3.0 billion were issued. Over the past three years, the cut off yield for T-Bonds has increased except for two years T-Bond, whose yield reduced marginally by 6 basis points[23]. 10 years T-Bonds dominates the T-Bond market with a 38% market share followed by five years T-Bonds (with 21% share) and 15 years T-Bonds (with 18% share).

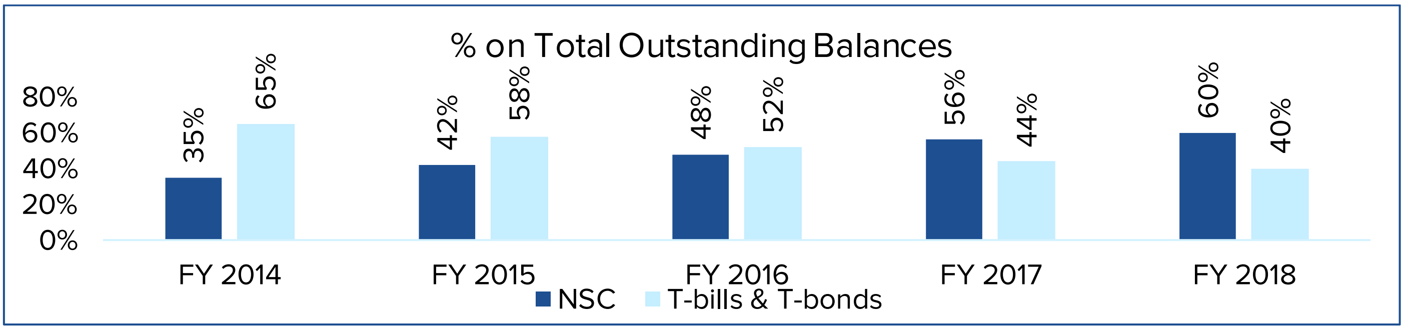
b) Non-tradable securities

There are four types of non-tradable securities[24] in the market, namely:

- National Saving Certificates (NSCs): Five years Sanchayapatra, Pensioner Sanchayapatra, Poribar Sanchayapatra, three monthly interest bearing Sanchayapatra;
- Bangladesh Prize Bond;
- Sanchayapatra: US Dollar Premium Bond, US Dollar Investment Bond, and Wage Earners Development Bond; and
- Special Purpose Treasury Bond.

These debt securities cannot be bought or sold in the secondary market. NSCs can only be sold by National Saving Bureau, Bangladesh Bank, scheduled banks or post offices. The interest rates offered for such certificates are in the range of 11.0% to 11.7%.

Figure 17: Total outstanding balances towards NSCs, Treasury bills and Treasury bonds[25]




23 One basis point equal to one-hundredth of one percentage i.e. 0.01%
24 Bangladesh Bank
25 Report on government securities FY 2018, Bangladesh Bank

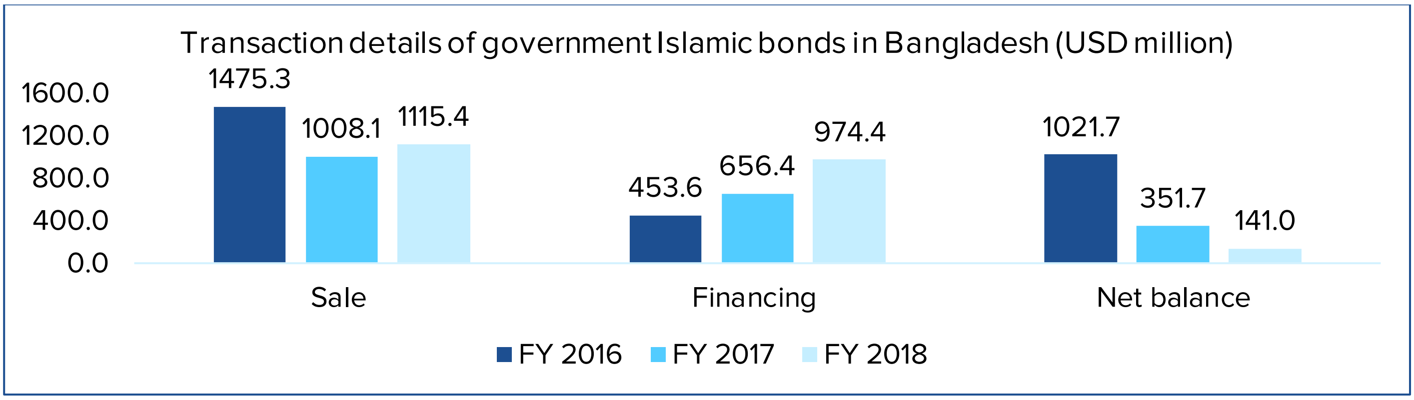
The outstanding liabilities through NSCs have more than doubled to USD 28.4 billion in FY 2018 from USD 12.7 billion in FY 2015 owing to their high interest rates. To ensure availability of NSCs to a higher number of investors, the authority has set a maximum limit of USD 36,000 for individual investment and USD 720,000 for joint investments in NSCs.

## Issuance of Islamic Bond

Islamic bonds are issued against capital raised by individuals and Islamic banks. The sale of Islamic bonds increased by 10.1% to USD 1.1 billion in FY 2018 from USD 1.0 billion in FY 2017. Any individual or corporation can purchase Islamic bonds issued by Islamic banks. The bonds have a maturity of three months, six months, one year or two years.

Unlike other countries such as Malaysia, Indonesia and Saudi Arabia the use of Islamic bonds in Bangladesh for financing long-term infrastructure projects has been minimal. Despite the large presence of Islamic banks in the country, there is a lack of Shariah compliant instruments to support the Islamic finance industry. This is because unlike other debt securities, the return on Islamic bonds is based on profit or loss sharing in line with the Shariah law. To ensure compliance with Islamic principles, the structuring of Islamic bonds requires approval from Shariah advisers. Hence, the GoB does not borrow money from the Islamic banking sector.

Figure 18: Transaction details of government Islamic bonds in Bangladesh




## Investor Base

It is important to have a large and strong investor base to ensure the growth of bond market in the country. Presently, the investor base in Bangladesh has not developed to satisfactory levels. Amongst the institutional investors, banks and other financial institutions are the main investors in debt securities market. Lack of a well-developed investor base affects the development of the bond market in the country.

### Commercial Banks

As per the regulatory norms of Bangladesh Bank, conventional banks must have a Statutory Liquidity Ratio (SLR) of 13% and Cash Reserve Ratio (CRR) of 5.5%. To comply with the SLR norms, commercial banks prefer to purchase debt instruments offered by the government. Banks therefore form the majority of the investor base, contributing to 77.1% of the total amount invested in government securities. In addition to this, the commercial banks also invest in privately placed subordinated bonds, which are issued either by banks or by textile or power companies.

### Insurance Sector

The insurance sector is potentially one of the most important investors in long-term government securities. As per The Insurance Act, 1938,[26] insurance companies are entitled to invest at least 30% of their funds in debt instruments. As per estimates, 48% (USD 1.7 billion) of the total insurance fund is invested in government securities. Another reason for investment preference towards government securities is that the investments are secured, and the funds can be withdrawn at any time. However, the presence of insurance companies as investors in the private bond market is negligible.

### Pension and Provident Funds

In Bangladesh, pension funds hardly participate in the capital market. In FY 2018, the provident, pension and gratuity funds invested a sum total of approximately USD 615 million in government securities. It is estimated that, approximately 40% of the pension funds are invested in government securities. The GoB has plans to create an authority to manage the provident and pension funds. Similar to other public schemes, the government plans to introduce mandatory pension schemes in the private sector.

26 Insurance Development and Regulatory Authority

Mutual Funds

The concepts of investment management and mutual funds are still in nascent stages in Bangladesh. There are only 37 close-ended mutual funds and 46 open-ended mutual funds[27] in the country. The Investment Corporation of Bangladesh (ICB), a public mutual fund, dominates the mutual fund market. ICB provides five Islamic mutual funds- UFS Padma life, Islamic Finance and Investment Limited (IFIL), Al-Arafah Islmai Bank Limited and Islamic Bank Bangladesh Limited The government's initiative to onboard private sector players has led to more than 25 private mutual funds schemes operating in the country.

According to mutual fund investment policies, a minimum of 60% of the total fund base is required to be invested in capital markets. AMCs, which manage the funds collected via mutual funds schemes, prefer to invest in blue chip stocks to ensure that their risks vs. returns are balanced. In addition to this, AMCs can invest a maximum of 25% of the fund in fixed income securities like NSCs (interest rate: 11.0% - 11.7%) and fixed deposits (interest rate: 5.5% - 9%). These fixed income securities are less risky and offer higher interest rates, as compared to privately placed debt securities like bonds and debentures where the risk is significantly higher, and the returns are relatively lower. Lack of any tax incentives on income generated from privately placed debt securities deter AMCs from investing in them. While, there have been instances of AMCs investing in privately placed bonds, they have been more inclined towards investing in securities, which are transferable or tradable.

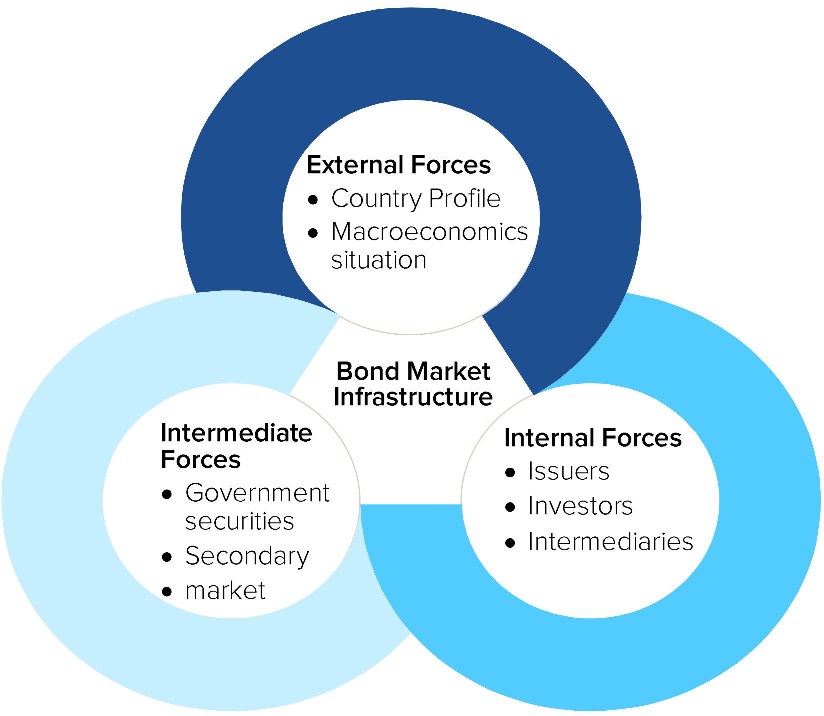
Individuals

Privately placed bonds have witnessed participation from individuals with high net worth. In 2010, 12 individuals invested a total amount of USD 1.4 million[28] in the bonds issued by ACI. However, as Individuals have a low appetite for risk, they prefer to invest in equity market and government debt securities where the returns are predominately higher.

# 3.3. Market infrastructure

Smooth operations of the bond market require a robust market infrastructure. At a fundamental level, the bond market can play a vital role in financing long-term infrastructure projects and in reducing fiscal deficits of the government. The development of bond market is especially crucial in Bangladesh, where companies do not have access to long-term financing options. There are three forces viz. external forces, internal forces, and intermediate forces, which influence the Bangladesh bond market infrastructure.

Figure 19: Bond market infrastructure in Bangladesh




## External Forces of the Bond Market

- Country profile

Bangladesh's stability has paved the way for it to achieve the status of a developing country. The government has introduced consistent policies and improved trade with partners across multiple countries. In an effort to promote business opportunities, and overcome energy crisis and infrastructural inefficiencies, the government

27 Bangladesh Securities and Exchange Commission
28 Repeat public offer of Advanced Chemical Industries Limited ACI 20% convertible zero-coupon bonds

has poured significant sums into the infrastructure sectors. In 2018, Moody's Investor Service affirmed the country's long-term issuer and senior unsecured debt rating at Ba3 and has maintained a stable outlook.

- Macroeconomic situation in the country

In FY 2018, the Bangladesh economy achieved a record growth of 7.9%. Bangladesh Bank has projected a GDP growth in the range of 7.5% to 7.7% in FY 2019. The country's stable economic growth can be attributed to effective implementation of framed policies. The growth will additionally be supported by exports from the competitive RMG industry. Further, the country witnessed an increase in remittance inflow by 36% from USD 11.0 billion in FY 2010 to USD 15.0 billion in FY 2018. High remittance inflows act as a catalyst to the economic growth. The country's economic growth is additionally supported by an increase in private sector investment by 14.6% to USD 54.8 billion and in public sector investment by 26.8 % to USD 17.6 billion in FY 2017[29].

Additionally, external financing from bilateral and multilateral agencies has been supporting multiple infrastructure and social projects. The inflation rate has reduced from 5.7% in December 2017 to 5.5% in December 2018. However, the risks due to an external vulnerability remain because of higher imports of fuel and infrastructure related products.

Foreign reserves reduced from USD 32.3 billion in FY 2018 to USD 31 billion as of January 2019. To stabilise the foreign exchange market, the central bank sold USD 1.2 billion in January 2019 and USD 2.3 billion in FY 2018 to various banks. According to Moody's report, current foreign reserves are sufficient to cover five to six months of imports.

## Intermediate Forces of the Bond Market

- Government Securities: The government issues debt instruments such as T-Bonds, T-Bills and NSCs to reduce its budget deficit. The central bank, on behalf of the government, is responsible for issuance and marketing these debt instruments. The debt securities market in the country is dominated by the government debt instruments, which offer higher returns as compared to returns provided by the bank deposit products. Further, even higher returns on NSC schemes incentivize individuals and companies, who have a low appetite for risk, to invest in them. Due to high demand of NSC products, the government had to cancel auctions of T-Bonds and T-Bills.
- Secondary Market: Absence of a benchmark yield curve and lack of debt instruments renders the secondary market inactive. As a result, there has hardly been any public issue of corporate bonds in the bond market. Given the small size of government's tradable bonds, secondary trading of T-bonds is also a rare phenomenon. Recently, Bangladesh Bank undertook an initiative to introduce the concept of repo and reverse repo rate in order to activate the secondary market. Additionally, Bangladesh Bank has issued multiple guidelines and increased the primary dealer base to promote trading of government securities in the secondary market. The central bank is in the process of developing an electronic payment system, to strengthen the corporate governance and improve transparency. It will help set a benchmark market rate to assist the secondary trading of debt securities. That said, the secondary bond market in Bangladesh is still non-existent and the bonds are considered as non-tradable assets.

## Internal Forces of the Bond Market

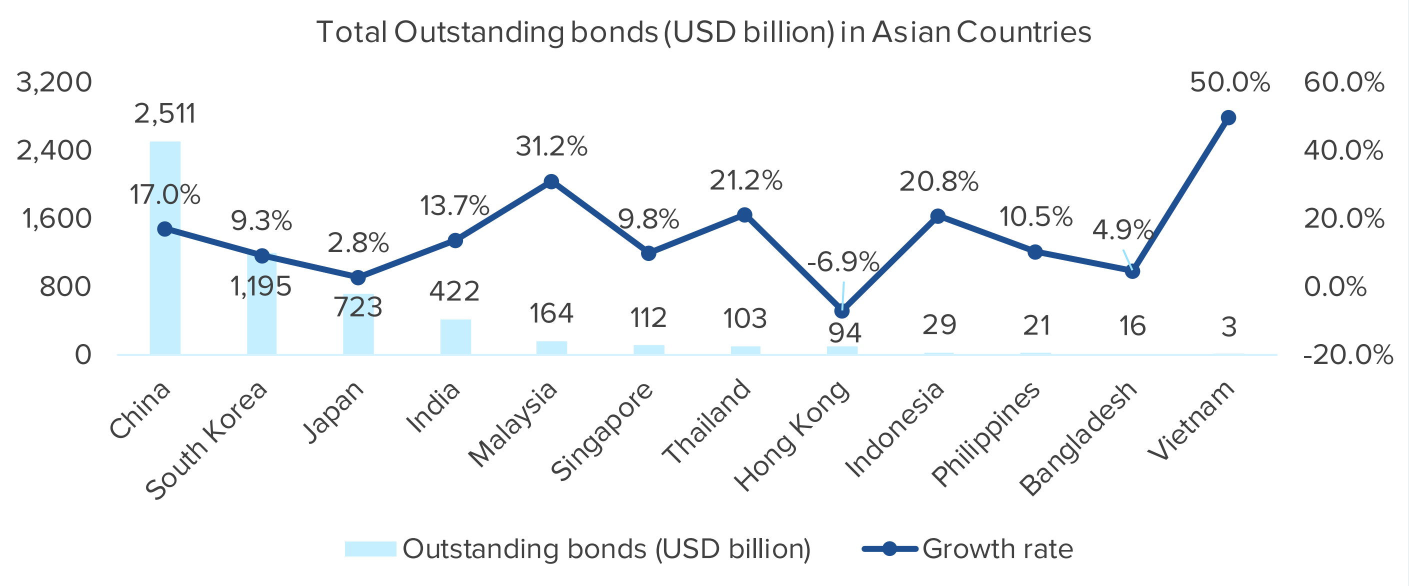
- Issuers: The country lacks both quality and quantity of issuers of debt securities. At present, only eight debentures and one corporate bond exist in the Bangladesh debt market. Further, the credibility of the issuers is also questionable, which has been a major concern for the investors. In the past, a few corporate debentures have defaulted in their payment to the investors. In addition to it, high costs of issuing debt securities (approximately 1.5%-2%[30] of total face value) have prevented issuers from issuing bonds or debentures.
- Investors: Domestic investors prefer to invest in high returns and low risk government securities. There are large number of institutional investors like insurance companies, mutual funds and other private financial institutions, but they do not invest in the private bond market. Pension and provident funds on the other hand are used by the government to fund ADP and to reduce budgetary deficiencies. Likewise, individual investors prefer to invest in common stock of listed companies, as the yields from the bond market are not attractive enough for them. This leaves a very small pool of investors in the bond market comprising mainly banks and financial institutions. Moreover, owing to past incidents of defaults in payment, the investors have poor confidence in the issuers, the legal and regulatory framework and the market.
- Intermediaries[31]: The capital market is supported by two stock exchanges, the DSE and the CSE. Further, there are 62 merchant banks, eight credit agencies, and 16 funds managers, five trustees for asset back securities, eight trustees for mutual funds and 83 trustees for debt securities. The BSEC regulates these intermediaries. However, the intermediaries are not robust enough to support the bond market.

29 Annual report FY 2017, Bangladesh Bank
30 Market perspective
31 Bangladesh Securities and Exchange Commission

# 3.4. Comparison of Bangladesh Bond Market with Other Asian Countries

The local currency bond market in Asia, increased significantly by 12.7% to USD 5,370 billion in FY 2018 from USD 4,771 billion in FY 2017. China dominates the Asian local currency bond market with 47% share, followed by South Korea and Japan. Indonesia, Philippines, Vietnam and Bangladesh have smaller bond markets as compared to other Asian countries. The presence of secondary market has played a vital role in the development of bond market in Asian countries. As a percentage of GDP, in 2018, South Korea had the largest corporate debt market (73% of GDP) followed by Malaysia (46% of GDP). In India, the corporate bond market is 16% of GDP. In Indonesia, 87% of the total outstanding bonds are traded in the secondary market, followed by 70% in India.

Figure 20: Total outstanding bonds (USD billion) in Asian countries




# 3.5. Current market procedures for issuing a bond

BSEC regulates the activities in the capital market. It has formulated the following regulations[32]:

- Securities and Exchange Commission (Issue of Capital) Rules, 2001: These rules are applicable for public or private companies raising capital;
- Securities and Exchange Commission (Public Issue) Rules, 2015: These rules are applicable for public issuance of debt securities or IPOs (fixed price and book building method) in the Bangladesh market;
- Securities and Exchange Commission (Private Placement of Debt Securities) Rules, 2012: These rules are applicable for a company issuing privately placed debt securities (corporate bonds, subordinate bonds, zero-coupon bonds, and short-term bonds); and
- For asset-backed securities, the commission has formulated separate rules under the Securities and Exchange Commission (Asset - Backed Securities) Rules, 2008.

Additionally, BSEC has separate regulations for intermediaries. The commission has approved a list of merchant bankers, credit rating agencies, asset management companies, trustees and fund managers who are eligible to provide various services with respect to the capital market.

## Key regulations for issuers

From the issuer's perspective, high transaction costs of bond issuance has been one of the major deterrents. Approximately, 1.5% to 2% of the total issuance cost is spent towards registration fees, stamp duties, issue manager fees, underwriting fees, credit rating, legal and auditing fees, central depository fees, and listing fees. Further, the trustee fees can be as high as 5% of the total issue value. Additionally, the registration fees for bond issuance is higher as compared to the registration fees for issuance of debentures. Considering the timelines mentioned in Securities and Exchange Commission (Private Placement of Debt Securities) Rules 2012, it would take approximately three to four months for an issuer to receive all the approvals from BSEC. However, the ecosystem in Bangladesh is such that it would take a minimum of 6 to 12 months to raise the bonds. As a result, the issuers prefer to avail loans from banks in lesser duration with minimum efforts.

As per the commission, below mentioned are the fees that shall be paid by the issuers:

32 Bangladesh Securities and Exchange Commission

Table 12: Fees charged by BSEC for issuance of privately placed debt securities[33]

| Particulars | Value |
|---|---|
| Application fee | BDT 10,000 or $120 |
| Consent fee | 0.01% of total face value |
| Trustee fee | Maximum 0.3% of the outstanding amount of debt securities |
| Trustee registration fee | BDT 50,000 or $ 600 |

Note: Apart from the above-mentioned fees, there are other costs such as legal and auditing fees, central depository fees, listing fees, and fees associated with printing and publication of certificates and prospectus.

For an issuer to privately place debt securities, the commission has formulated guidelines under the Securities and Exchange Commission (Private Placement of Debt Securities) Rules, 2012. As per the guidelines, there are a set of pre-conditions, which the issuer needs to fulfil before making an application for issuance of debt bonds or debentures. The pre-conditions are mentioned below:

- The total debt of the issuer shall not be more than 60% of the issuer's total tangible assets;
- The issuer should either have a proven track record of profitability and liquidity or have indicated in its financial projections significant profitability, liquidity and ability to payback;
- The issuer's company should provide its rating from one of the eight credit rating agencies registered with BSEC;
- The issuer should have a valid enforceable interest over its assets and the right to create charges during the course of issuance of debt instruments;
- The issuer shall obtain all necessary approvals from its primary regulator to issue debt securities;
- The issuer should appoint a trustee, registered with the commission;
- The issuer's financial statements must have been prepared as per Bangladesh Accounting Standards (BAS) and audited as per Bangladesh Standards of Auditing (BSA);
- If the issuer is a private company, then it should get prior approval from its Board of Directors or governing body to issue the debt instrument; and
- If the issuer is a listed company, then the issue of debt instruments should be approved by the board and at the general meeting.

On fulfilment of the above-mentioned conditions, the issuer will perform the following tasks:

Table 13: Tasks to be performed by an issuer on fulfilling the pre-conditions set by BSEC

| Particulars | Details |
|---|---|
| Application for consent to issue bonds | • The issuer shall pay an application fee of $120.<br>• The issuer shall submit an information memorandum, which shall contain its audited financial statements, purpose of issuance of bonds, description of business and disclosure of price sensitive information if the issuer is a listed company |
| Consideration of the application | • BSEC will accord Consent to Issue (CoI) within seven working days<br>• If the application does not fulfil the requirements, then the issuer shall provide the necessary documents. |
| Review of application | • If the application is rejected by BSEC, then the issuer may apply for review within 30 days from the date of rejection by BSEC. |
| Consent fee | • On approval of the application, the issuer shall pay a fees equivalent to 0.01% of the total face value within 15 days to BSEC<br>• If the issuer fails to pay the fees, the application will be rejected by BSEC. |

Conditions, which need to be fulfilled after receipt of CoI (valid for a year), are mentioned below:

- The issuer should execute the deed of trust as approved by BSEC in favour of the trustee;
- The issuer shall create charges over assets in favour of the trustee (only applicable for issuance of secured bonds);
- The issuer should provide a guarantee in favour of the trustee;

33 Securities and Exchange Commission (Private Placement of Debt Securities) Rules, 2012

- The trustee should submit a report to the commission stating that all guarantees as per the trust deed, agreements and information memorandum have been properly executed;
- The issuer should submit a report on the issue of debt instruments to BSEC within 30 days; and
- The issuer should submit audited financial statements as per BSA, annual report, and minutes of annual general meeting within 14 days from the date of CoI.

After obtaining the CoI and making the appointment of a trustee, the issuer can issue debt securities to eligible investors viz. banks, insurance companies, financial institutions, mutual funds, provident and pension funds, corporates, primary dealers, and individuals (resident and non-resident). In case of any violation of the rules, the respective person/s will be subject to civil and criminal penalties as per the law.

Upon compliance of the requirements of Securities and Exchange Commission (Private Placement of Debt Securities) Rules, 2012, the issuer can issue debt securities through a public offer. As per the Securities and Exchange Commission (Public Issue) Rules, 2015, the issuer needs to comply with the following conditions at the time of making a public offer:

- The issuer should have an existing paid up capital of BDT 150 million or USD 1.8 million.
- The issuer or any of its directors should not be a bank defaulter.
- The issuer should not have accumulated retained loss.
- The issuer should comply with the rules of preparing a prospectus and corporate governance guidelines.
- The valuation of assets should be conducted as per the guidelines mentioned by the commission.

Upon compliance with the above conditions, the issuer shall submit the application. The issuer shall be then required to appoint an issue manager and an underwriter, registered with the commission. The issue manager is responsible for the issue of debt securities, while the underwriter subscribes to the securities and pays (in cash) the issuer within 15 days. The fees associated with the underwriter and issue manager shall be paid by the issuer. In addition to this, the issuer will be required to publish the prospectus/information memorandum on its own website as well as on the issue manager's website.

## Key regulations for investors

### Banks

It is mandatory for conventional banks to maintain an SLR of 13%[34] and for Islamic banks to maintain it at ~ 6%. SLR can be maintained in the form of cash, gold or debt securities (as approved by the commission). This makes the SLR requirement for the banks the biggest driver of the demand for government securities. As per the central bank norms, the market value of investments in the capital market (including bonds) cannot exceed 50% of the bank's total paid up capital. While this restriction strengthens the bank's capital base, it restricts the amount that the banks (who are major investors in the bond market) can invest in bonds.

### Insurance companies

Insurance companies are potentially one of the most important investors in the bond market. State owned insurance companies such as Sadharan Bima Corporation and Jiban Bima Corporation, have invested a majority of their funds towards government securities, debentures and shares. Life insurance companies have long-term and predictable liabilities, which help them use their funds wisely. As per The Insurance Act, 1938, life insurance companies are mandated to invest at least 30% of their funds in government securities in order to maintain their statutory reserves.

### Mutual funds

Mutual fund companies can invest their funds in securities or debentures approved by BSEC or Bangladesh Bank. The funds can also be invested in privately placed debentures. However, the companies cannot invest more than 25% of their total assets in securities or debentures of any one industry. In addition to this, they cannot invest more than 20% of their total assets in debentures or securities of a single company or group.

### Individuals

Bangladesh Bank offers non-tradable[35] US Dollar premium bonds and wage earner development bonds to individuals of Bangladesh. Bangladesh Bank has formulated The Wage-Earner Development Bond Rules, 1981 and The US Dollar Premium Bond Rules, 2002. The key regulations around these bonds have been mentioned overleaf:

34 Bangladesh Bank
35 Bangladesh Bank

Table 14: Details of US Dollar Premium bonds and Wage Earner Development bonds

| | US Dollar Premium Bonds | Wage Earner Development Bonds |
|---|---|---|
| Eligible Investors | Non-residents (Bangladesh nationals residing abroad) | |
| Face value | $500 to $50,000 | $300 to $60,000 (BDT 25,000 to BDT 5 million) |
| Tenure | Three years | Five years |
| Coupon rate | 7.5% for 36 months | 12% for 60 months |
| Payment of interest | Semi-annually | Semi-annually |
| Payment terms | The interest will be payable in the local currency while the principal amount will be paid in US Dollar | The interest and the principal amount will be paid in the local currency. |
| Commission to Dealers/Agents | 0.5 % on total face value of the purchase (paid by Bangladesh Bank) | |

# 3.6. Key benefits in bond issuance

The National Revenue Board has developed various tax benefit schemes for individuals investing in the debt securities market while no such tax benefits are available for banks, financial institutions or insurance companies. However, resident companies are exempted from taxes on capital gains that arise from the transfer of government securities. The government needs to offer further financial incentives in order to attract more investors to the Bangladesh bond market.

According to The Income Tax Ordinance 1984, any income derived from zero-coupon bonds by a person other than a bank, an insurance company or a financial institution is exempted from tax. The tax benefit is only applicable if the zero-coupon bond (if issued by the banks, financial institutions and other companies) is approved by BSEC or Bangladesh Bank.

The details of the tax benefits to individuals are highlighted below:

- An individual is entitled to a tax rebate (as mentioned below) on any sum invested in government T-bonds and Sanchayapatra:

Table 15: Tax rebate for individuals investing in Treasury bonds and Sanchayapatra

| Total income | Tax rebate |
|---|---|
| Less than $12,000 (BDT 1 million) | 15% |
| Over $12,000 (BDT 1 million) to $36,000 (BDT 3 million) | 15% on $3,000 (BDT 250,000) and 12% on the balance amount |
| Over $36,000 (BDT 3 million) | 15% on $3,000 (BDT 250,000) , 12% on next $6,000 (BDT 500,000) and 10% on the balance amount |

- In addition to this, an individual is entitled to tax exemption on the income generated from US dollar premium bond, US dollar investment bond, wage earner bond, and Euro and Pound Sterling premium bond.

# 3.7. Structural issues associated with the debt market of Bangladesh

### Bond Subscribers

- Lower demand for corporate bonds: Government securities are risk free, provide higher returns (7.5%-9%), and have longer maturity periods (10-20 years) as compared to corporate bonds. Additionally, purchase of government securities provides tax incentives to individuals. On the other hand, NSC Schemes provide coupon rates of 11% to 12%, which are very attractive to investors. Institutional investors such as mutual funds, pension and provident funds, insurance firms, banks and NBFIs prefer to invest in government securities as they can withdraw funds at any time and it helps them maintain their SLR requirements. Further, the investors find it difficult to judge the creditworthiness of the companies issuing bonds despite ratings being provided by local credit rating agencies. All these factors have contributed to significantly lower demand for corporate bonds.

- Low investor base: Domestic investors are unable to invest in corporate bonds due to a lack of professional fund management. Moreover, the bond market significantly lacks presence of international investors. In the past, issuers have failed to service their payment obligations on time, while the trustees have failed to enforce the debt securities holder's rights. Thus, general investors lack confidence in the private sector due to an absence of a robust regulatory system.
- Lack of investor awareness: Lack of an investor education programme and adverse perception by the market participants deters participation in the bond market. Investors also lack knowledge on how to sell bonds in the capital market, as there is a difference between equity selling and bond selling. It is the primary responsibility of BSEC to undertake both education and training programmes for the market participants.

### Bond Issuers

- Lack of supply of bonds: In Bangladesh, donor agencies provide loans at an interest rate of 3% to 4% whereas the investors in the bond market expect a return of at least 10% from companies with a good credit rating. Further, the process of getting a loan from the bank is streamlined and quick as compared to the tedious process of raising funds through bonds. Hence, the issuers do not prefer to issue bonds.
- High cost of bond issuance: Approximately 1.5% to 2% of the cost is associated with issuance of new bonds in the country. The costs include registration fees, annual trustee fees on outstanding debt securities amount, listing fees, printing of prospectus costs, application and certificates fees, central depository charges, legal and audit fees, credit rating fees, and underwriters' fees (in case of public issue of bonds). Further, trustee fees can be as high as 5% of the total amount raised.

### Market Intermediaries

- Weak regulations and market infrastructure: It takes a minimum of six months to one year for a company to issue bonds. Due to lack of infrastructure, the approving authorities are not able to conduct due diligence and compliance checks in a short turnaround time. Hence, companies that would be interested to raise funds within three to six months would eventually borrow money from banks or donor agencies.
- Inactive secondary market: Benchmark yield is an indicator of the current structure of interest rates. Based on this yield, the investors can predict the movement of future interest rates and associated risks. Due to the absence of a credible long-term yield curve, the corporate bond market is underdeveloped.
- Absence of digital platforms: An absence of a centralised database management system hinders issuers and investors from accessing authentic information. As a result, lack of information prevents issuers and investors from entering into the bond market. Privately placed bonds are traded over the phone by the companies. Such old-fashioned trading techniques bring in transparency issues in the bond market. However, the government has plans to implement an electronic platform to trade the debt securities.

## 3.8. Conclusion

The Bangladesh bond market has been inactive over the years on account of several issues that have acted as barriers for issuers and investors alike. From the issuers point of view, the cost of issuance of bonds in Bangladesh is significantly high (1.5%-2% of the total issuance value as compared to approximately 0.2% cost of issuance of bonds in India). In addition to this, there is an absence of tax benefits or other incentives for the issuers raising funds via issuance of debt securities.

The regulators lack the necessary infrastructure to perform due diligence of the application received from the issuers. As a result, it takes six months to one year for the issuer to receive the CoI from the regulator to issue bonds. This acts as a major barrier for a project developer who wants to raise funds via the bond market in a short time. Due to the lack of availability of long-term financing options, the project developers either avail funds through bridge financing or avail long-term financing from NBFIs and banks at interest rates of 15% to 18%, which substantially increases the overall project cost.

The long-term debt market has witnessed lack of participation from institutional investors as well as individual investors. Institutional investors like banks, insurance companies and mutual funds prefer to invest in high return-low risk debt securities offered by the government instead of the low return-high risk bond market. The confidence of general investors in the private sector is still low because of the lack of regulatory regime, lack of awareness and failure to service the interest and principal payment obligations in the past by the issuers. Furthermore, due to lack of benchmark yield curve, the presence of secondary market is almost negligible.

Overall, the long-term debt market is yet to emerge as an effective investment avenue to large and small investors as well as position itself as an attractive avenue for the companies to raise funds through issuance of debt securities.

# Overview of Credit-Guarantee Products in Bangladesh

# 4. Overview of Credit-Guarantee Products in Bangladesh


Summary

Credit Guarantee Scheme (CGS) products are provided by the central bank in collaboration with local banks such as Sonali Bank, Janata Bank, and Agrani Bank. The government has been trying to extend such CGS products to Small and Medium Enterprises (SMEs) but has not been able to achieve the desired objective. The central bank has introduced CGS products specifically for the women entrepreneurs and has approved 12 guarantees worth USD 130,000 under the scheme. In addition to this, the government has launched four types of export related guarantees under the Sadharan Bima Corporation.

For a company to avail loans, credit rating is one of the important parameters based on which the lenders freeze their interest rates. The central bank recognises eight credit rating agencies, which meet the guidelines set by External Credit Assessment Institution (ECAI) and have received license from the BSEC. However, the banks can also avail the credit ratings from foreign credit agencies. In Bangladesh, credit guarantors are considered as underwriters for bond issuance, and fall under the purview of BSEC Public Issue Rules, 2015.


## 4.1. Current credit guarantee schemes available in the Bangladesh financing environment

Bangladesh Bank defines a guarantor as “A person/institution that guarantees to pay for someone else's debt if the borrower defaults on a loan obligation. A guarantor acts as a co-signor of sorts, in that they pledge their own assets or services if a situation arises in which the original debtor cannot perform their obligations.” No established CGS products are currently available in Bangladesh barring the few outlined below:

- Bangladesh Bank supported banks such as Janata Bank, Agrani Bank and Sonali Bank to jointly launch a CGS. However, a significant number of loans that were lent out under this scheme turned out to be unviable and turned into bad debts.
- There have also been a few attempts to launch CGSs for SMEs. However, they were not successful as envisioned due to lack of proper planning and understanding. The Economic Research Group (ERG) prepared a report on “Review of SME Credit-related Policies of Bangladesh Bank”, which proposed that CGS for SMEs must be developed on a trial basis by the Bangladesh Bank and the Small and Medium Enterprise Fund (SMEF).
- Bangladesh Bank has introduced a CGS for Women Entrepreneurs recently, partnering with the United Nations Capital Development Fund (UNCDF). Under the scheme, a USD 0.2 million grant has been provided by UNCDF for the period of 2016 to 2019. In addition, twelve guarantees worth USD 0.1 million have been provided in eight districts of Bangladesh under the scheme.
- At the end of 2018, the Bangladesh Institute of Bank Management (BIBM) submitted a proposal to the government to float a USD 24 million CGS to boost the confidence of banks lending to SMEs. The interest rate for SMEs in Bangladesh is high, at 14% to 18% compared to a rate of 10-12% for other enterprises. The proposed model stipulated that the guarantee would cover 50% of the loan amount. The loan amount must range from USD 3,600 to USD 24,000. Bangladesh Bank is currently reviewing the scheme model proposed by BIBM.
- Technaf Solartech Energy Limited (TSEL) is the first utility scale solar project in Bangladesh, with a capacity of 28 MWp. The project has availed debt finance from Standard Chartered Bank (UK and Bangladesh) and One Bank in Bangladesh. GuarantCo, which is a part of the Private Infrastructure Development Group (PIDG), furnished an unconditional credit guarantee for 50% of the debt undertaken by the project.
- In addition, Bangladesh has Export CGSs, which are provided by Sadharan Bima Corporation. At present, the Export Credit Guarantee Department (ECGD) issues the following finance guarantees and policy:
  - Export Finance (Pre-shipment) Guarantee;
  - Export Finance (Post-shipment) Guarantee;
  - Whole turnover Export Finance (Pre-shipment) Guarantee; and
  - Export Payment Risk Policy (Formerly known as Comprehensive Guarantee.

## 4.2. Credit assessment in Bangladesh

A credit rating agency (known as External Credit Assessment Institution (ECAI)) is a company that has been authorised by the government to rate securities like stocks or bonds (including business entities) based on their risk, credit worthiness and pricing. The higher the rating, the lower the risk of default. Thus, companies with higher credit ratings have a significant advantage of lower cost of capital because of lower interest rates, allowing them to raise money at cheaper rates. According to the Basel III framework, ECAIs' credit ratings of banks and FIs' clients are mapped to corresponding risk weights. Following this process, banks or FIs calculate capital adequacy assessing their total Risk Weighted Asset (RWA) as per section-13 of Bank Company Act 1991.[36]

Bangladesh Bank has recognised eight credit rating agencies, which meet the eligibility criteria of its ECAI guidelines and have received licenses from the BSEC:

a) Credit Rating Agency of Bangladesh (CRAB) Limited;
b) Credit Rating Information and Services Limited (CRISL);
c) National Credit Ratings Limited (NCRL);
d) Emerging Credit Rating Limited (ECRL);
e) ARGUS Credit Rating Services Limited (ACRSL);
f) Alpha Credit Rating Limited (ACRL);
g) WASO Credit Rating Company (BD) Limited (WCRCL); and
h) The Bangladesh Rating Agency Limited (BDRAL).

Bangladesh Bank has also decided that banks may use the ratings (if available) of the following international credit rating agencies for the purposes of risk weighting their exposures abroad:

I. Fitch Rating Inc.;
II. Moody Investor Services; and
III. Standard and Poor.

The Credit Rating Categories of the recognised ECAI's have been mapped with Bangladesh Bank's Rating Grade in the table below:

Table 16: Mapping of credit rating categories with Bangladesh Bank's rating grade

| BB Rating Grade | Equivalent Rating of S&P and Fitch | Equivalent Rating of Moody | Equivalent Rating of CRISL | Equivalent Rating of CRAB | Equivalent Rating of NCRL | Equivalent Rating of ECRL | Equivalent Rating of ACRSL | Equivalent Rating of ACRL | Equivalent Rating of WCRCL |
|---|---|---|---|---|---|---|---|---|---|
| 1 | AAA to AA | AAA to Aa | AAA, AA+, AA, AA- | AAA, AA1, AA2, AA3 | AAA, AA+, AA, AA- | AAA, AA+, AA, AA- | AAA, AA+, AA, AA- | AAA, AA+, AA, AA- | AAA AA1, AA2, AA3 |
| 2 | A | A | A+, A, A- | A1, A2, A3 | A+, A, A- | A+, A, A- | A+, A, A- | A+, A, A- | A1, A2, A3 |
| 3 | BBB | Baa | BBB+, BBB, BBB- | BBB1, BBB2, BBB3 | BBB+, BBB, BBB- | BBB+, BBB, BBB- | BBB+, BBB, BBB- | BBB+, BBB, BBB- | BBB1, BBB2, BBB3 |
| 4 | BB to B | Ba to B | BB+, BB, BB- | BB1, BB2, BB3 | BB+, BB, BB- | BB+, BB, BB- | BB+, BB, BB- | BB+, BB, BB- | BB1, BB2, BB3 |
| 5 | Below B | Below B | B+, B, B-, CCC+, CCC, CCC-, CC+, CC, CC- | B1, B2, B3, CCC1, CCC2, CCC3, CC | B+, B, B- | B+, B, B- | B+, B, B-, CC+,CC,C C- | B+, B, B-, CCC | B1, B2, B3, CCC |
| 6 | | | C+, C, C-, D | C, D | C+, C, C-, D | D | C+, C, C-, D | CC+,CC,C C, C+, C, C-, D | CC1, CC2, CC3, C+, C, C-, D |

The credit guarantee providers are required to map their credit rating, which can be an international or Bangladesh-ECAI rating, to the Rating Grade of Bangladesh Bank to assess their eligibility to be able to provide a credit guarantee on behalf of bond issuers.

## 4.3. Key regulations pertaining to treatment of credit guarantee products

### Credit Risk Mitigation

Bangladesh Bank issued 'Guidelines on Risk-Based Capital Adequacy' in 2014 for banks, in which it recognised a number of techniques that banks used to reduce the credit risk to which they are exposed. This framework for

36 Bangladesh Bank

Credit Risk Mitigation (CRM) considers the effect in calculating risk-based capital requirement by a bank. These effects are considered under two aggregate heads[37]:

a) The effect of collateral for CRM: Where a transaction is secured by eligible financial collateral and meets the eligibility criteria and minimum requirements, banks are allowed to reduce their credit exposure/potential credit exposure to cover exposure under that particular transaction (except claims against investor account/margin account holder). This is done by taking into account the risk mitigating effect of the collateral for the calculation of capital charge.
b) The effect of guarantee for CRM: To reduce credit risk, transactions may be secured by guarantees. Where the guarantees are direct, explicit, irrevocable and unconditional, banks may consider such credit protections in calculating capital requirements through a substitution approach. Only guarantees issued by or protection provided by entities with a lower risk weight than the counterparty will lead to reduced capital charges. The protected portion of the counterparty's exposure is assigned the risk weight of the credit guarantor or protection provider, whereas the uncovered portion retains the risk weight of the underlying counterparty.

## Eligibility criteria of guarantees and guarantors under the CRM Framework

Bangladesh Bank issued 'Guidelines on Risk-Based Capital Adequacy' in 2014 for banks. Guarantees that are eligible under the CRM framework outlined by Bangladesh Bank in these guidelines are as follows:

- A guarantee/counter-guarantee must represent a direct claim on the protection provider and must be explicitly referenced to specific exposures or a pool of exposures, so that the extent of cover is clearly defined and indisputable. The guarantee must be irrevocable; no clause in the contract must allow the protection provider to unilaterally cancel the cover without an increase the effective cost of the cover. The guarantee must also be unconditional and have no clause that is outside the direct control of the bank. In addition, there should be no clause that could prevent the protection provider from being mandated to pay out in a timely manner in the event that the original counterparty fails to make the payment(s) due.
- All exposures will be risk weighted after taking into account the risk mitigation available in the form of guarantees. When a guaranteed exposure is classified as non-performing, the guarantee will cease to be a CRM and no adjustment would be permissible on its account. The entire outstanding, net of specific provisions and net of realisable value of eligible collaterals / CRMs, will attract an appropriate risk weight.
- Legal certainty requirements are to be recognised in case of guarantees for CRM. Banks must have the right to receive any such payments from the guarantor without first resorting to legal actions in order to pursue the counterparty for payment.

Credit protection given by the following entities will be recognised as eligible guarantors:

- Sovereigns, sovereign bodies (including BIS, IMF, European Central Bank and European Community as well as multilateral development banks), public sector entities, and banks with a lower risk weight than the counterparty;
- Other entities with a rating equivalent to one and two of the Bangladesh Bank Rating Grade. This includes the guarantee cover provided by parent, subsidiary and affiliate companies when they have a risk weight that is lower than the obligor; and
- Sovereign guarantees and counter-guarantees: Claims may be covered by a guarantee that is indirectly counter-guaranteed by a sovereign. Such claims may be treated as covered by a sovereign guarantee provided that:
  - o the sovereign counter-guarantee covers all credit risk components of the claim;
  - o the original guarantee and the counter-guarantee meet all operational requirements for guarantees, except that the counter guarantee need not be direct and explicit to the original claim; and
  - o no past evidence suggests that the coverage of the counter-guarantee is effectively less than that of a direct sovereign guarantee.

Bangladesh Bank issued 'Guidelines on Credit Risk Management (CRM) for Banks' in 2016, which covered third-party guarantees.

Bangladesh Bank has directed banks to note that the credit risk on a loan is not eliminated by the existence of a third-party guarantee. The bank merely substitutes the credit risk of the guarantor for that of its own client. Regarding guarantees, banks should evaluate the level of coverage being provided in relation to the credit-quality and legal capacity of the guarantor. Additional credit-enhancing steps to be ensured by banks for third-party guarantees are as follows:[38]

- The company giving the corporate guarantee must support it by its Memorandum of Association (MoA) and Articles of Association (AoA). Additionally, the corporate guarantee must be approved in the board meeting of the corporate guarantor.
- The guarantor company must be rated in any of the investment grade categories by at least one ECAI.

37 Guidelines on Risk-Based Capital Adequacy–Bangladesh Bank, 2014

38 Guidelines on Credit Risk Management (CRM) for Banks–Bangladesh Bank, 2016

- The balance sheet of the third party giving a corporate guarantee is to be analysed. Net worth, total assets, profitability, existing credit lines, and security arrangements of the company giving the corporate guarantee is to be analysed to ensure that the company is not exposed to a financial obligation that is beyond its capability.
- In case the financial stability of the corporate guarantor has deteriorated in terms of the above, the bank shall ask for remedial measures from the borrower (replacement/new collateral).
- Reciprocal guarantee arrangements made between two banks will be disregarded. For example, if Bank A guarantees loans made by Bank B to certain client(s), and Bank B guarantees loans made by Bank A to certain client(s), only the difference between the two guaranteed amounts will be considered as credit enhancement for the purposes of determining the overall level of credit risk at the bank whose borrowers benefitted from the higher amount.

## 4.4. Key licensee requirements if an entity plans to set up operations to provide such products

The approval of Bangladesh Bank will not be required to issue guarantees, such as personal guarantee, corporate guarantee and third-party guarantees, for any loans that have been issued by foreign lenders to industrial enterprises in Bangladesh. However, the Board of Investment in Bangladesh must approve these loans.

According to the 'Guidelines for Foreign Exchange Transactions, 2018', a bank may, without prior approval of Bangladesh Bank, issue guarantee, bid bond or performance bond in foreign currency on behalf of a non-resident firm/company favouring the residents in Bangladesh. This is subject to the condition that a back-to-back guarantee covering the guaranteed amount from an overseas correspondent or any other bank abroad is held by this bank. The bank should satisfy itself about the bonafides of the overseas guarantee before issuing its own guarantee/bid bond/performance bond there against.

Further, Banks may issue, on behalf of residents, bid bonds/performance bonds/guarantees in foreign currency in favour of local project authorities against goods/services procurement tenders financed by international/ foreign donor agencies, on the condition that in case the guarantee is invoked, the claim against it would be paid only in Taka equivalent and not in any other currency.

In tune with market interactions and discussions with Bangladesh Bank and the DSE, credit guarantors fall under the purview of the 'BSEC Public Issue Rules, 2015', and are treated similar to underwriters for bond issuances.

## 4.5. Conclusion

While there are no formal regulations specifically around CGS products and their related licensing activities, Bangladesh Bank has issued guidelines regarding the treatment of such guarantees. The country is open to credit enhancement by way of such credit guarantees provided by established players. However, the joint co-operation of Bangladesh Bank, BIDA and the BSEC is required to formulate regulations that will enable the credit guarantors to establish their presence in the country and provide greater confidence to investors in the bond market.

# Market Perspective

# 5. Market Perspective

## Summary of key pointers

Figure 21: Summary of key findings

What are investors looking for?

| | | | |
|---|---|---|---|
| 100% Investors prefer exposures in local currency | 90% Investors are sector agnostic in their approach | 70% Investors prefer yield over credit during investment evaluation | None of the investors rely completely on ratings by Local Credit Rating Agencies |
| "Foreign currency exposures are limited to a couple of foreign banks. Key reasons being high currency devaluation risk and markets lack hedging products." | "Preferred sectors include power, renewable energy, telecom and manufacturing." | "Moreover the investors preferred having a balanced approach in their evaluation." | "Ratings provided by CRAB and CRISL are preferred. Internal assessments are given more weighting." |

How has the bond market performed?

"Only three publicly placed bonds till date; out of which one is currently being traded on the Dhaka Stock Exchange"

"Majority of bonds are privately placed by banks to meet their capital adequacy requirements as per the Basel III norms"

Major reasons for a nascent bond market in the country –

1 70% Respondents believe **low literacy and awareness level** amongst participants is the key hindrance towards market development which has led to low confidence towards debt capital market

2 **Mismatch in risk-return expectations** with market dynamics disrupted by low risk products providing higher returns

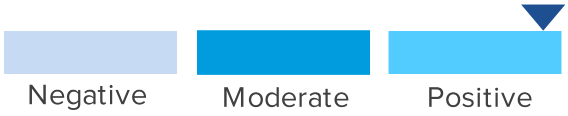
3 **Regulatory challenges** and lack of policy interventions in form of incentives or other measures

4 **Liquidity crisis** and presence of non-tradable products

5 **High credit risk** of issuers which is due to lack of corporate governance and accountability

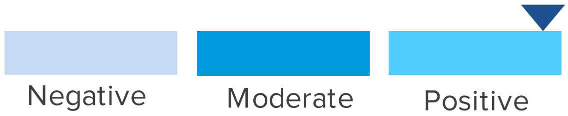
### Some other insights

Does the financial market need support from Foreign Credit Rating Agencies assessing the credit worthiness of companies in Bangladesh?




Will taka bonds be a successful product for raising foreign currency funds?


Will the current financial market dynamics improve with introduction of credit enhancement / guarantee products?




# 5.1. Introduction

This section sets out the key themes and viewpoints arising from discussions with key participants, which included a diversified group of respondents including private sector banks, NBFIs, mutual funds, private equity funds, regulators for financial markets, government authorities/bodies and developers in the field of infrastructure development.

# 5.2. Key findings

## Inputs on the overall infrastructure sector in Bangladesh

Almost all participants to the discussions indicated a positive outlook towards the infrastructure sector. With the country at the cusp of economic development, the government has huge focus towards infrastructure development, worth USD 300-320 billion (includes 200-250 identified projects) in the next five years[39].

Private sector participation is intended to drive the vision of growth. PPP structure in the country is still a nascent and evolving concept for most infrastructure sectors. Developers are facing challenges in getting approvals from local administrations and ROW clearances in cases of development of economic zones through the PPP structure. The authorities believe that private mode of operation seems to be the most successful model with big groups companies developing their manufacturing setups across self-identified land parcels. Respondents believe it will take ~10-15 years for scalable private sector penetration. Currently, a lot of bureaucracy exists in the sector that needs to be tackled. Having said that, few sectors such as power generation, renewables, telecommunications and manufacturing setups (majorly textiles) have attracted private participation in the recent years.

With the PPP Authority gaining experience in handling infrastructure projects, the Prime Minister's Office (PMO) has issued a directive for infrastructure projects to be routed through the PPP Authority. The PPP Authority (under PPP mode) shall execute 30% of the projects planned as per the ADP. It has also been working with other infrastructure bodies and regulators educating them on benefits of PPP structures and developing ways to incorporate more projects under the same.

## Infrastructure Financing

Investment in infrastructure sector is led by the GoB through budgetary allocations, along with support from neighbouring countries (China, India and Japan) and grants/loans from various multilateral donor agencies. Banks and NBFIs also lend to develop private sector infrastructure projects. However, alternate financing options in the form of investments by mutual funds, insurance companies and pension funds are negligible in the country.

In case of financing from banks and NBFIs, there is no prevalence of long-term funding. Maximum tenure for financing the projects is seven years, including two years as moratorium. Developers manage funding in phases, divided into: initial funding for plant and machinery through foreign banks/IFCs (one to two years), followed by bridge financing by local banks (one to two years), and then operational phase financing/working capital loans borrowed for a maximum period of eight to ten years (renewed on an annual basis).

Foreign currency lending - Loans are generally provided in local currency, with the exception of funding obtained through multilateral donor agencies. Foreign currency funding is limited through (i) Export Development Fund by Bangladesh Bank, (ii) Export Credit Agency (ECA) financing and (iii) Trade finance related products offered by the offshore lending arms of various banks. Hedging such exposures is neither prevalent nor structured/mandatory

[39] As mentioned by various participants during primary interactions

in the market. Participants highlighted devaluation of Taka and non-convertible form of the currency as major impediments to increasing foreign currency lending.

## Investor profile and their preferences

Table 17: Details of investor profile and their preferences

| Particulars | Banks | NBFIs | Mutual Funds | PE Funds | Insurance Companies and Pension Funds |
|---|---|---|---|---|---|
| Investment Currency | Local currency (Taka); limited USD exposures | Taka | Taka | Taka | Taka |
| Preferred Route of investments | Debt products, Equity market exposures limited | | Equity (60%) | Equity (90%) | Debt and Equity, Dependent on opportunities |
| Investment tenure | Maximum - seven years | Maximum - five years | Dependent on investment strategy, two to three years cycle | Generally less than two years | Preferred for less than one year |
| Ticket size | Dependent on exposure limits as per the regulations set by Bangladesh Bank on – Sector, Company/Group Companies, and Capital Markets | | | | |
| Expected returns | 10%-12% | 13%-15% | 15%-18% | 12%-15% | Dependent on instruments |
| | Investors are currently looking for premium to invest in corporate bonds with minimum expectation of 10-12%. | | | | |
| Importance of Yield/Credit | Yield | Yield | Credit | Majorly yield | Credit |
| | Investors have suggested requirement of a balance between yield and credit during investment evaluations. However, when asked to choose one, yield was preferred. | | | | |
| Investments in bond market | Yes (majorly through private placements) | | Yes (but, very limited) | No | Few insurance companies have invested in privately placed bonds |

Issuers' Perspective - Issuers suggested that funding of infrastructure projects vary as per the needs (Capital structure is 60:40 or 70:30). Debt funding from banks are for ~ five years, and at a rate of ~10% to 13%. NBFIs provide infrastructure financing at rates, which are 2% to 3% higher than the bank lending rates. Developers mentioned their preference towards raising funds via IPO route over approaching the debt capital markets.

## Issues in debt financing

During the discussions, respondents indicated that the country's debt market lacks depth as well as has several other systemic, regulatory and market related issues.

i. Supply side constraints - Participants indicated a liquidity crunch in the market, which is expected to continue, in case no additional sources of financing are developed. With investors preferring government securities due to higher returns, banks have faced challenges in maintaining their depository ratios, leading to lack of funds for investments. Similarly, NBFIs find it difficult to pool funds and hence, do not invest in large projects.
ii. Non-availability of funds for longer tenure - Poor credit appraisal and frauds have led to rising NPA in the financial market. Hence, Bangladesh Bank had to tighten lending norms and regulate the market by not allowing long-term funding. Lending to operational assets is preferred and banks have been asked to keep loan tenors at three to five years.
iii. Banks and NBFIs look for multiple guarantees, which include land/asset collaterals, corporate guarantees, director/promoter guarantees and blank cheques while funding. There is no relaxation in these requirements in spite of companies having a good credit history.
iv. Time required for raising funds is very high (approximately five to six months; even higher for public sector banks). There have been instances when an infrastructure developer has not received funding within desired timelines and hence, had to ensure financing through multilateral donor agencies.
v. Inactive debt capital market along with no secondary market for investments.

## Review of Bond Markets

With growing financing requirements in the country, there is a market for alternate financing options such as bonds. The bond market in the country is at a very nascent stage. Only three corporate bonds have been publicly placed, none of which were for financing an infrastructure project. Banks and NBFIs are the key participants for privately placed bonds issued majorly by banks to meet their capital adequacy ratios under the Basel III norms. Developers do not consider raising funds from the debt capital market. The prevalent opinion is that the bond market is non-existent and getting investors to subscribe to the bonds will be very difficult.

However, respondents amongst banks, NBFIs and other financial institutions have expressed interest to invest in high grade of bonds with reasonable yield and aligned tenure of investments. The opinion of experts was that even other institutional and retail investors would be interested in these products.

Investor preference for investment in bonds - There are two key priorities for investing in the bonds - yield and credit. Most respondents indicated that there has to be a balance between them, but upon request to rank them, put yield above credit.

**Critical challenges and suggestions to mitigate the same…**

"The bond market in the country is not very active. Key reasons include pricing issues (lower returns as compared to anticipated risks), absence of benchmarking indices and lack of participation of good credit rating companies looking to raise funds from the capital debt market. The first steps, towards encouraging both issuers and subscribers, are educating the investors and developing appropriate benchmarking indices. Further, ensuring quality of projects/companies raising funds, proper marketing of instruments offered by highly rated companies and balancing the pricing vis-à-vis associated risks are some of the crucial steps, which might support development of the bond market."

–Mr. Shams Zaman (Head of Corporate and Investment Banking, Citibank Bangladesh)

"The key issue in the current bond market is lack of liquidity with investors not having free cash available for investments. The situation is expected to continue for the next 18 to 24 months. Secondly, rate paradox exists, with government securities (at low-risk) priced at similar rate of returns from a corporate bond issuance, a high-risk product. The government has been asked to rectify the same, but the situation doesn't seem to be improving. Further, there are no sovereign bonds in the market leading to absence of benchmark indices. Additionally, market volatility is very high leading to investor inhabitation and deterioration of confidence."

–Mr. Faisal Rahman (Head of Structured Finance and Relationship Unit, Corporate Banking, Eastern Bank Limited)

During discussions with particpants, various issues were highlighted along with ideas to mitigate the same. Such challenges and corresponding measures have been ranked according to number of respondents mentioning the same.

Table 18: Key challenges in the Bangladesh bond market and possible mitigation measures

| Rank | Key Challenges | Description | Possible Mitigation |
|---|---|---|---|
| 1 | Lack of financial literacy in the market | • Respondents believe lack of knowledge in the subject matter and no awareness about processes and related incentives are the major reasons for a bond market that is low in depth and liquidity. | • They feel related authorities need to put in considerable efforts towards promotions and marketing activities. |
| 2 | Risk and returns mismatch | • Investors have the option of low risk-high return instruments (Government NSCs, which have tax exemptions too) as against the perceived high-risk bonds, leading to a minimum return expectation of 10% to 12%.<br>• Issuers suggested that if the rates at which bonds can be raised is similar to that of bank lending rates (10% for a company with a good credit rating); they are not motivated to shift. | • Strategic transformation of government financing in line with reducing reliance on instruments such as NSCs.<br>• Revamping the financial market structure wherein the return expectations are aligned to stakeholder requirements. |

| Rank | Key Challenges | Description | Possible Mitigation |
|---|---|---|---|
| 3 | Regulatory challenges/ policy bottlenecks | • Investors felt that the market is highly regulated with restrictions on taking exposures in a company/sector.<br>• Funding from capital markets is allowed only for projects with minimum three years of operations and prohibited for green field projects.<br>• Corporates[40] and HNIs avail the tax benefits from investing in bonds whereas the same is not available for banks and other financial institutions. | • Coordinated efforts from various stakeholders (Ministry of Finance, PMO, Bangladesh Bank, BSEC, BIDA, PPP Authority, sector regulators) to develop clear set of market regulations/ procedures.<br>• Respondents feel that incentives need to be revisited and structured to benefit both investors as well as the issuers. |
| 4 | Liquidity Issues | • Investors do not prefer their exposures stuck in illiquid instruments for tenures of more than three years. This results into high opportunity cost and them missing out on other investment options with better returns. | • They would prefer development of a secondary market having instruments that are traded through an electronic platform. |
| 5 | High Credit Risk | • Corporate governance levels amongst private players/ corporates in the country are low and they lack accountability.<br>• There have been defaults in interest payments against the bonds raised in the market leading to low investor confidence. | • Bonds to be raised by companies that are leaders in their respective market segments and have a good credit profile.<br>• Respondents added that such issuances should be well structured and marketed. |
| 6 | Tedious process and time taken by BSEC for approval | • Respondents find the multi-step application process complicated. The procedure is similar to IPO issuance and requires more documentation leading to delays in getting clearances[41].<br>• It takes six months to one year for getting an approval from BSEC. Additionally, the transaction requires a go ahead from the Bangladesh Bank, BIDA and respective regulator (in case of companies in the infrastructure sector) | • Simplification of the related procedures to allow ease of application.<br>• Supporting regulators with necessary infrastructure for conducting compliance checks and reducing their Turnaround Time (TAT). |
| 7 | Absence of benchmark indices | • The market does not have a credible yield curve making it difficult for participants to have a mark-to-market valuation of bonds<br>• Investors have been highlighting the problem for the last four to five years, but no positive outcome has been reached due to the government's reluctance. | • Develop other mechanisms to benchmark a bond (e.g. using sovereign rating for indicative indices). The regulators have indicated support in setting such mechanisms, if deemed fit. |
| 8 | High Issuance Cost | • High upfront commissions/ charges during prospectus filling (in form of trustee deed, stamp duty, etc.) lead to even higher cost of funding for the issuers | • Coordinated efforts with various stakeholders (especially, BSEC and NBR) to relax such high charges and bring parity with other instruments such as mutual funds. |

40 Participants highlighted that many corporates do not file required tax returns. As a result, tax incentives cannot be availed (filing of tax returns is a mandatory requirement for availing incentives), and they do not consider investing in corporate bonds as well.
41 The approving authorities lack infrastructure, systems/processes to conduct necessary due diligence/ checks in a shorter turnaround time.

## Outlook on other key aspects

### Credit Rating Agencies

In Bangladesh, eight domestic Credit Rating Agencies operate including CRAB and CRISL, which are referred to as preferred agencies by the investors, regulatory bodies as well as the borrowers. They are operating as per norms set by Bangladesh Bank, providing quality assessment and following set compliances and regulations. Investors indicated that credit rating plays a vital role while evaluating their investments in debt markets. It is a part of the credit evaluation process, along with internal matrices specific to the needs of investors for making decisions. Further, there are no regulations/ requirement for a credit rating at the time of issuance of bonds. However, BSEC assesses financial strength and credit rating of issuers due the approval process.

Most respondents indicated that there is a need for more reputed global credit rating agencies in the market to add credibility and a better outlook to issues in the market. Some of the leading corporate houses have received their ratings from renowned foreign agencies for internal benchmarking purposes. Foreign credit rating players are much in demand, and such agencies need to take approvals from Bangladesh Bank, which shall not be difficult.

> “Bangladesh Bank has been trying to promote Foreign Credit Rating Agencies and is encouraging issuers to get ratings from such reputed agencies. Recently, a transaction with the borrower submitting a foreign credit rating report has also been approved.”

It was also indicated that the foreign credit rating agencies would need to ensure in-depth analysis of the market and on-ground assessment in order to preclude themselves from inaccurate data points shared by the interested parties.

### Taka Bonds

Respondents felt that the introduction of Taka Bonds might not be a good idea and may not see success due to reasons including:

i. Low country rating, leading to lack of interest from investors ; potential impact on rating of corporates as well;
ii. Absence of sovereign bonds in Bangladesh, which leads to no benchmarks available for placements of bonds in the foreign market;
iii. Possibility of being detrimental at times of excess liquidity; and
iv. Lack of willingness from the government in issuance of such bonds.

> “IFC has been trying to raise Taka denominated bonds (two instances), but has not been successful. In the first case, the government had retreated and had started issuing NSCs for funding their fiscal deficits. The second instance was before the recent elections and the issuance did not go through due to rate expectation mismatch. Such challenges continue and might be difficult to sort out.”

### Islamic Banking

Participants highlighted that the Islamic Banking system has a large corpus for investment, which includes Zakat funds worth USD ~1.8 to 2 billion deposited annually. The system is opined to be largely informal, and lacks both transparency and ease of accessibility. Additionally, it was suggested that money is being routed into the system through the informal economy.

Usage of the funds do not come under the regulatory purview of Bangladesh Bank. Any transaction/ funding proposal needs to be approved by the Shariah Board, which assesses whether both source and usage of funds are Shariah compliant. Additionally, corporates do not consider the Islamic Banking route for funding their projects. Neither do they have any specific mandates to raise funds through Shariah compliant products.

> “Though concept of Islamic Financing is simple to understand, application of the same is equally difficult.”
>
> “Islamic Banking systems in Bangladesh could be improved in line with development measures taken by Malaysia in funding the infrastructure requirements in the country.”

Key detrimental factors resulting in lower penetration of these funds in the financing market include–funding tenure limited to three to six months, risk sharing between investors and borrowers not balanced and the perception of the Shariah Board being resistant to change.

### Credit Guarantee Products

Respondents felt that credit enhancement or guarantee products are essential for supporting the market. The segment is very small and informal with players like Shah Jalal Islamic Bank. They have recently provided a guarantee worth USD ~12 million for a privately placed bond. Investors as well as issuers suggested presence of a foreign entity, which has credibility and experience, will surely help in raising funds from the debt market.

> "For debt enhancement products, similar process applicable to equity enhancement products (in form of underwriters) under Public Issue Rules, 2015 need to be looked at with the key regulator - BSEC. The government and related bodies will be supportive in bringing such instruments to the market."

Participants suggested that, in Bangladesh, such guarantee products should be provided only to top rated companies and the guarantee provider should have extremely strong credit appraisal processes to prevent default risks. A few suggestions for developing and expanding the product line included:

i. Offshore structuring might be a better option for the guarantee provider keeping in mind their cost structures and scalability options;
ii. Partnering with leading private sector insurance companies for marketing the product with probable issuers;
iii. Looking into the concept of securitisation and pooling together requirements of a sector/ group company
iv. Pitching the product to regulators/issuers in line with ECA financing/ structures issued by Multilateral Investment Guarantee Agency (MIGA); and
v. Communication and investor reach-out would be the key in developing such a product line.

# Conclusion

# 6. Conclusion

## Prioritisation Framework for Recommendations

While the previous chapters highlight the key issues in infrastructure financing and the hurdles to development of a robust bond market in Bangladesh, in this chapter we have focused on the major recommendations and takeaways in order to overcome the aforesaid hurdles. We have developed a framework for prioritisation of our recommendations based on the efforts required and the impact achieved.

EFFORT would be defined in terms of complexity of solution involved, timeline needed to implement those solutions, no. of stakeholders (regulatory, government etc.) involved in implementation of the solution, structural changes involved and financial outflow (if any) required. IMPACT is measured in terms of the effects on the development of bond market, availability of easy finance to infrastructure players and overall infrastructure development in Bangladesh.

Those solutions/recommendations requiring low efforts but having a high impact have been classified as “At the stroke of a pen”. If efforts required are low and impact is also low then it is crucial to evaluate the impact of recommendation in the first place and if both efforts and impact are high then the sustainability of the efforts needs to be examined.

Figure 22: Prioritisation framework for recommendations

### At the stroke of a pen

- Awareness programmes for investors and issuers
  The bond market in Bangladesh is underdeveloped due to low participation from potential market players arising from a lack of knowledge about the procedure to sell bonds in the capital market. The difference between equity selling and bond selling along with the absence of a formal education programme for investors renders them clueless regarding the advantages of methodology of bond issuances. The Securities and Exchange Commission of Bangladesh is primarily responsible to educate and train market participants around bond issuances so that they actively engage in it and develop the market.
- Reduction in transaction costs of bond issuance
  Companies that are looking to issue bonds in the market are often deterred by high transaction costs of bond issuances in Bangladesh. Approximately 1.5%-2% of the total issuance cost is spent towards registration fees, stamp duties, trustee fee , issue manager fees, underwriting fees (in case of public issue of bonds), credit rating, legal and audit fees, central depository fees, listing fees, printing of prospectus, application and certificates. Further, trustee cost can go up to 5% of the total amount raised.
  High transaction costs form a major entry barrier for potential issuers into the bond market. However, authorities such as Bangladesh Bank, BIDA and the BSEC can jointly work towards reducing the associated costs. Such charges have already been waived for mutual fund issuances. The registration fees for issuance of debentures is also lower than that for bond issuances. Similar incentives must be extended to bond issuers to increase their participation in the market.
- Financial and tax incentives to both issuers and investors
  In addition to providing financial incentives to issuers as stated above, the GoB also needs to incentivise investors in the bond market. The National Revenue Board in Bangladesh has developed various tax benefit schemes for individuals investing in debt securities. However, such tax benefits are not available for banks, financial institutions or insurance companies. The government needs to provide financial and tax incentives to issuers and investors, at an individual and institutional level, to launch the rapid development of the bond market.
- Policy to attract Non-Resident Bangladeshis' investment into the Bangladesh bond market
  There is a huge potential investor base outside Bangladesh in the form of Non-Resident Bangladeshis (NRBs). The current inflow of funds into the country in the form of remittances stands at USD 15.9 billion for the year 2018, ranking ninth in the world and third in South Asia. These NRBs invest majorly in real estate since there are limited attractive investment avenues available to them. A policy framework must be designed effectively to enable such NRBs to invest in the Bangladesh bond market.
- Issue of corporate bonds that are well structured and marketed
  A well-established corporate bond market is crucial for companies to be able to raise low-cost capital based on their creditworthiness. In Bangladesh, corporate houses have to ensure that they issue well-structured bonds that are marketed extensively to attract all potential investors to invest in their bonds. Investors, on the other hand, need to invest in reasonably creditworthy bonds while they look for high yields in the market. Balancing the yield and credit based on their risk appetite is crucial for investors and for the overall smooth functioning of the market.

### Requires sustained efforts and involvement of multiple stakeholders

- Introduction of regulations and policies for credit guarantee products
  There are no regulations in Bangladesh regarding licensing activities for credit guarantors who form an important part of the bond market as they enhance the creditworthiness of bonds. While the Dhaka Stock Exchange (DSE) has suggested that they fall under the purview of underwriters, there is no formal regulation mentioning the same. Greater clarity on such issues through regulations will enable credit guarantors to enter the Bangladesh bond market and enhance the quality of bonds issued.
- Relaxation of stringent regulations around bond issuance
  There are stringent regulations around bond issuances and investments in them. For instance, Bangladesh Bank has restricted investment in the bond/debenture of a single company at 5% of the banks' total amount of paid-up capital, share premium, statutory reserves and retained earnings. These regulations need to be relaxed to ensure a greater flow of investments into the bond market.

- Development of a robust market infrastructure
  The companies that look to raise funds via bonds have to wait for a minimum of six months to one year to issue bonds. These companies eventually take loans from banks/donor agencies since bonds create a bottleneck in their fund stream. Approving authorities take a long time to conduct due diligence and compliance checks, which leads to the delay. There needs to be a proper system/process in place by way of strengthening regulations to ensure a faster turnaround time for such checks. Additionally, infrastructure strengthening and capacity building of approving authorities needs to be carried out to enable them to comply with the stringent timelines outlined in such regulations.
- Strengthening of the issuer base
  With only one corporate bond and eight debentures, Bangladesh falls short in terms of quality and quantity of issuers of debt securities. A few corporate debentures have defaulted in the payment to investors. This has reduced the attractiveness of the debentures and their liquidity at the stock exchanges. Policy-level interventions are being explored for using the large corpus of pension funds and insurance proceeds, along with areas in which they could invest. These large investors will need a creditworthy issuer base, as they are averse to high-risk debt instruments. This issuer base needs to be strengthened to be able to attract huge investments in the debt market.
- Design and implementation of benchmark indices and promoting secondary market
  The secondary bond market in Bangladesh is inactive due to the absence of a benchmark yield curve and lack of debt instruments to assess the same. The secondary trading of government bonds is rare due to their small size. Bangladesh Bank has taken steps to activate the secondary market such as the introduction of repo and reverse repo rate concepts and increasing the base of primary dealers to trade government securities. Additionally, it is developing an electronic payment system to strengthen corporate governance, improve transparency and eventually set a benchmark index to enable secondary trade of debt securities. However, additional measures are required to accelerate this development.
- Increased commitment from the stakeholders towards development of bond markets
  The development of Bangladesh's bond market depends upon the co-operation and commitment of various stakeholders such as the government authorities, corporate houses and the investor base. Government authorities such as Bangladesh Bank, BIDA and the BSEC, must draft a clear, detailed policy that is specific to bond issuances to ensure greater clarity among issuers and investors. Corporate houses and investors must co-operate with these authorities to develop a robust framework that addresses challenges faced by them around issuing and investing in bonds.
- Policies to attract global pensions funds, mutual and provident funds to invest in Bangladesh Infrastructure space
  Mutual funds are one of the potential sources of funds for the bond market in Bangladesh. Regulations and incentives that focus the channelling of mutual funds into the bond market will propel investments into the bond market. While educating individual investors about bonds might be time-consuming, attracting investments from mutual funds that hold their capital is an efficient method of rapidly growing the bond market. Likewise, a conducive environment needs to be built to tap pension and provident funds for financing infrastructure projects. These funds are better suited than banks to invest in infrastructure projects, having liabilities that are of longer tenures as compared to banks. This makes such projects ideal to meet asset-liability matching obligations.
- Scaling the use of Islamic finance for infrastructure—tapping Zakat funds for infrastructure sector
  The use of Islamic finance to fund infrastructure projects remains a challenge in Bangladesh. The country has a Zakat Board but does not have a structured process for the collection and distribution of Zakat funds. This lack of transparency on the corpus and usage of Zakat funds makes them unsuitable as a source of infrastructure financing. Bangladesh Bank is working on industry-wide regulations to use Islamic finance instruments (such as Sukuk) to fund large infrastructure projects. However, the government needs to formulate regulations, spread more awareness and ensure greater transparency regarding the use of Islamic finance, to be able to tap into such funds in the future. Properly collected and managed Zakat funds could significantly reduce dependence on foreign aid for infrastructure investments.
- Streamlining the planning and implementation process of infrastructure projects
  The projects across all major sectors in Bangladesh suffer from a lack of proper planning leading to a delay in their implementation. This needs to be addressed by ensuring the autonomy of the Planning Commission who must identify projects based on available resources and demand, without external political pressure or other influence. The implementation of identified projects must be carried out by competent organisations with a demonstrated track record of successful project management, appointed through a transparent selection process. The sources of funds need to be identified clearly at the start of the project to avoid gaps in financing during project construction.

Look before you leap—evaluate and implement

- Simplification of bond issuance process
  The process of raising funds through bonds is a tedious, time-consuming process in Bangladesh as compared to getting a loan from the bank. The process of issuing bonds needs to be simplified to ensure quick raising of funds from the market with minimal hurdles, while ensuring that the transparency of the market is not compromised.
- Electronic platform for trading debt securities.
  Issuers and investors in the bond market do not have access to authentic information due to the lack of a central database management system. This creates a high entry barrier for issuers and investors in Bangladesh, where privately placed bonds are still traded over the phone by companies. These outdated operations create transparency issues in the bond market. The government is trying to address this issue by implementing an electronic platform to trade the debt securities. It also needs to make it mandatory for investors and issuers to trade over the platform to uphold the transparency of the bond market.
- Streamlining the information sharing process to ensure access is transparent and information is authentic.
  Investors require detailed, authentic and transparent information about the companies issuing bonds before investing into them. However, there is a poor system of disclosure of accounting information to the public. A central database with such information is missing in the country and different sources represent different data points. The government needs to ensure formulation and strict implementation of policies regarding the disclosure of such information to enable investors to make quick, informed decisions regarding investment in bonds.

# Appendix A

# Appendix A: Infrastructure Sectors in Bangladesh

## A.1. Affordable Housing

### Industry Overview

Affordable housing refers to housing units that are affordable by sections of society that have an income below the median income of the country.

In Bangladesh, the urban population accounts for 35% of the total population in 2017 and has grown at a Compound Annual Growth Rate (CAGR) of 4% per annum in the last ten years, of which 55% reside in slums. Lack of affordable housing for Bangladesh's large urban population is a challenge in all cities and secondary towns, especially in Dhaka, which has 4,000 informal settlements, or slums.

The GoB through the National Housing Authority (NHA) has been proactively undertaking initiatives to address the demand for formal housing units. Amongst those initiatives, is the Pro-Poor Slum Integration Project (PPSIP), which has been initiated by the GoB with the World Bank to improve quality of living conditions for the poor people living in slums. Objective of the PPSIP is to provide 7,000 residential flats and 5,000 residential plots to the people living in slum areas by 2021.

The National Housing Policy, established in 2016, sets a direction for proper implementation of projects in the affordable housing sector. The government has provisioned incentives to private sector developers for keeping a reasonable share of units in their projects as affordable housing units by means of cross-subsidisation. The developers can avail these incentives in form of low-cost financing and low-cost building materials.

The housing sector in Bangladesh is driven by market prices. Each housing unit is sold by the developer in exchange for money, which may be arranged by the buyer through personal finances or loans taken from public/private banks.

### Market Size and Opportunity

Both formal and informal delivery systems in Bangladesh, wherein the share of formal system is comparatively smaller. The government can meet only 7% of the total housing demand, whereas the private sector entertains the remaining bulk (93%). A significant percentage (55%) of the private sector housing is supplied by the informal sector (individual developers).

The housing deficit in urban areas has grown from ~1.1 million units in 2001 to 4.6 million units in 2010, and is estimated to touch 8.5 million units by 2021, if investments in the housing sector do not keep pace with the population growth.

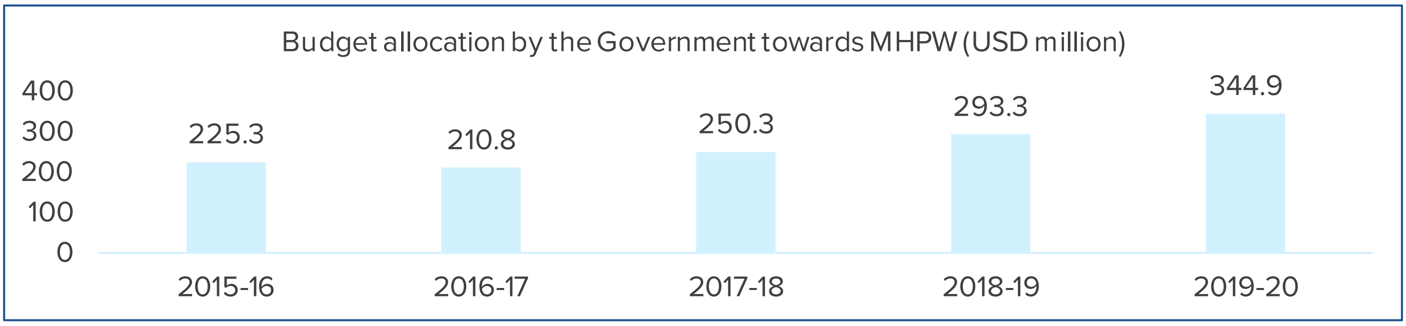
Table 19: Housing deficit in urban areas

| Year | Housing deficit in urban areas (units) | Total urban Population (m) |
|---|---|---|
| 1991 | 950,000 | 20.9 |
| 2001 | 1,130,000 | 28.8 |
| 2010 | 4,600,000 | 43.4 |
| 2021 | 8,500,000 | 60.0 |

To estimate housing costs per unit, we have used the costs of the Jhilmil project; the project is intended to benefit low and middle-income groups, and falls under the purview of affordable housing. Average cost of one housing unit under the affordable housing scheme is estimated at USD 60,000 based on overall project cost. This brings forward a huge opportunity for multiple players, both public and private, with an anticipated investment requirement of USD 510 billion up to 2021. The estimated investment requirement was calculated by multiplying housing deficit in 2021 (8.5 million housing units) and average cost per housing unit.

Regarding housing and public works, most of the housing activities are in private sector. However, the Ministry of Housing and Public Works (MHPW) provides support to low cost housing schemes while the RAJUK (Rajdhani Unnayan Kartripakkha), which is a public sector land development agency, develops plots of land to facilitate urban housing. Under the Bangladesh's Seventh Five Year Plan, the Government has proposed ~USD 345 million (a ~18% increase Year-on-Year) to MHPW:

Figure 23: Budget allocation by the Government towards Ministry of Housing and Public Works




The NHA has plans to develop residential flats and plots across six regions. The project details are summarised below:

Table 20: Development of flats across six regions in Bangladesh

| Area | Number of flats/plots |
|---|---|
| Dhaka | ~12,500 flats and 234 plots |
| Chittagong | ~400 flats and 1,900 plots |
| Khulna | ~330 plots |
| Mymensingh | ~196 plots |
| Sylhet | ~152 plots |
| Barisal | ~151 plots |

Currently, the PPPO is planning housing projects on a Public-Private Partnership (PPP) basis, allowing significant opportunities for private players to establish their presence. The approved projects[42] listed below are expected to benefit 20,000 probable households.

Table 21: Affordable housing projects in PPP consideration

| Affordable Housing Projects under PPP Consideration | Estimated capital cost ($m) |
|---|---|
| Construction of high-rise residential apartment building for Low and Middle Income group of people at Jhilmil Residential Project, Dhaka | 900 |
| Construction of satellite township with multi-storied flat building at section 9, Mirpur, Dhaka | 60 |
| Construction of multi-storeyed commercial cum residential apartment complex with modern amenities at Nasirabad Chattogram Under PPP | 100 |

## Financing

Out of the total credit provided by banks and financial institutions to the private sector, the exposure to housing loans was 9.6%, amounting to USD 9.8 billion (as of end June 2018). In recent years, significant changes have taken place in total housing loan portfolios. Private banks with ample deposit resources have been expanding their housing loan portfolios. These banks had a dominant market position with the largest amount of USD 5.7 billion in outstanding housing loans as of end June 2018. The State-Owned Commercial Banks (SOCBs) had the second largest amount of ~USD 2.0 billion and other banks had USD 274 million in total outstanding of housing loans as of end June 2018.

Additionally, two private sector specialised housing finance companies (Delta-Bangladesh Rural Advancement Committee (BRAC) and Housing Finance and National Housing Finance (HBFC)) also provide significant amount of loans in the sector. The source of funds for operations are by taking long-term deposits including some contractual deposit schemes.

Strengthening of the HBFC is being undertaken for the provision of soft loans to low and middle income population. HBFC has two sources of funds:

- Paid-up capital provided by the government

42 PPP Authority of Bangladesh

- Issuing low-interest, government guaranteed debentures, which were bought by SOCBs. This source of funding has been unavailable in recent years.

The outstanding housing loans[43] over the past three years are listed below:

Table 22: Outstanding housing loans over the past three years

| Lenders | Outstanding as of end June 2018 ($m) | | |
|---|---|---|---|
| | FY 2016 | FY 2017 | FY 2018P |
| a. Specialised housing finance providers | 851.3 | 932.8 | 991.4 |
| i. HBFC | 360.4 | 358.0 | 360.4 |
| ii. Delta-BRAC Housing Finance | 399.9 | 468.2 | 506.5 |
| iii. National Housing Finance | 91.0 | 106.6 | 124.5 |
| b. Banks | 5,382.2 | 6,384.4 | 7,962.5 |
| i. Private Commercial Banks | 3,702.3 | 4,463.8 | 5,699.5 |
| ii. State Owned Commercial Banks | 1,428.4 | 1,681.1 | 1,988.8 |
| iii. Other banks (foreign and specialised) | 251.5 | 239.5 | 274.2 |
| c. Other financial institutions | 621.4 | 763.9 | 798.6 |
| d. Micro-credit lenders<br>Grameen Bank | 0.1 | 2.4 | 8.4 |
| Total | 6,854.9 | 8,083.4 | 9,760.9 |

Under the Grihayan Tahobil Scheme, the Non-Government Organisations (NGOs) can avail loans from the government at an interest rate of 1.5%. These NGOs provide housing credits to people living in rural areas at a lower interest rate of 5.5% with a loan tenor up to ten years as compared to banks, which offer loans at an interest rate in the range of 9% to 11% with a maximum tenor of five years. As on June 2018, the Grihayan Tahobil has disbursed USD 34.7 million through 616 NGOs for construction of 75,444 houses across 64 districts in the country. Further, Tahobil has recovered over USD 20.4 million against the total receivable amount of USD 21.6 million at a recovery rate of 97.6% as on the same period.

Real estate players in Bangladesh receive loans with a tenor of only two to three years. The players use internal accruals and sale proceeds from flats to accumulate capital. Central Bank has placed restrictions on lending to real estate players due to past cases of fraud. The real estate lobby in Bangladesh is putting forth propositions to the Bangladesh Bank to allow partial loan disbursements based on already constructed units/flats.

## Key Players

Rajdhani Unnayan Kartripakkha (RAJUK) is the leading public sector land development agency in the Dhaka city supplying about 75% of the city's serviced housing. It has developed 13 townships/housing estates/site and services projects. Government agencies such as Dhaka City Corporation (DCC), Roads and Highways Department (RHD), Power Development Board (PDB), Public Work Department (PWD), Dhaka Water Supply and Sewerage Authority (DWASA), and Department Public Health Engineering (DPHE) have supported the promotion of housing projects through the provision of infrastructure and utility services.

Private real estate companies started investments in the sector since the early 1980s, and at present, there are ~ 1,500 active private real estate companies in Bangladesh. Out of the housing units supplied annually, private real estate companies contribute more than 17,000 units. A glimpse of major private sector developers in Bangladesh's housing sector are mentioned below:

1. Building Technology and Ideas Limited: Since 1987, they have completed 308 projects with 4,572 apartments in Dhaka, Chittagong and Comilla. They also have 26 upcoming projects in Dhaka and Chittagong.
2. Concord Real Estate: Concord Real Estate has completed more than 1,000 projects so far since 1973. They have a few landmark constructions such as the Savar National Monument and the Hazrat Shahjalal International Airport.

43 Bangladesh Bank annual report 2018

3. Navana Real Estate: They have 177 completed and ongoing projects along with 11 upcoming projects in the Dhaka and Chittagong areas.

## Risks and Challenges

Key risks in the affordable housing market are:

- Scarcity of land is one of the major reasons for escalation in land prices, which substantially increases the overall project cost of affordable housing projects. The unfavorable location of projects for low-income housing limits the mobility as well as livelihood opportunities for the dwellers.
- Concentrated growth with lack of initiatives for directing real-estate development towards existing urban agglomerations outside the core city of Dhaka.
- Absence of strong legislation on affordable housing for all, urban planning and development. There is no real estate act to protect home buyers as well as help boost investments in the real estate industry.
- Lack of access to cheap financing for a large portion of the population and a lack of information on access to loan products for low-income groups is also a challenge.
- The complex and lengthy processes for pre-implementation activities such as the land registration process, building plan scrutiny and approval, and receiving No Objection Certificate (NOC) from multiple departments turns out to be a major hindrance for the private sector developers.

# A.2. Airports

## Industry Overview

The aviation industry of Bangladesh started its operations in 1972 at Tejgaon Airport, Dhaka. Later, to cater to the increasing number of international and domestic passengers, Zia International Airport, Dhaka was constructed in 1983 (now known as Hazrat Shahjalal International Airport or HSIA).

HSIA handles 75% of the total passengers and 90% of cargo demand. Since the inception of private airlines in the country, the total number of passenger movement have increased significantly to 10 million in 2017 from 7 million in 2013. Currently, six private airlines (owned by private players in Bangladesh) and one public airline company (Biman Bangladesh) provide domestic flight services in Bangladesh.

The Civil Aviation Authority Bangladesh (CAAB) is responsible to develop and regulate aviation facilities in the country. Presently, there are three international airports, two short take-off and landing ports, and seven domestic airports, which are operated and maintained by CAAB. As per estimations of CAAB, the total number of passenger movement is expected to grow at a CAGR of 6.5% to 23.9 million (international: 22.7 million and domestic: 1.2 million) by 2035 and cargo demand is projected to increase at a CAGR of 4.8% to 663,360 tons by 2035.

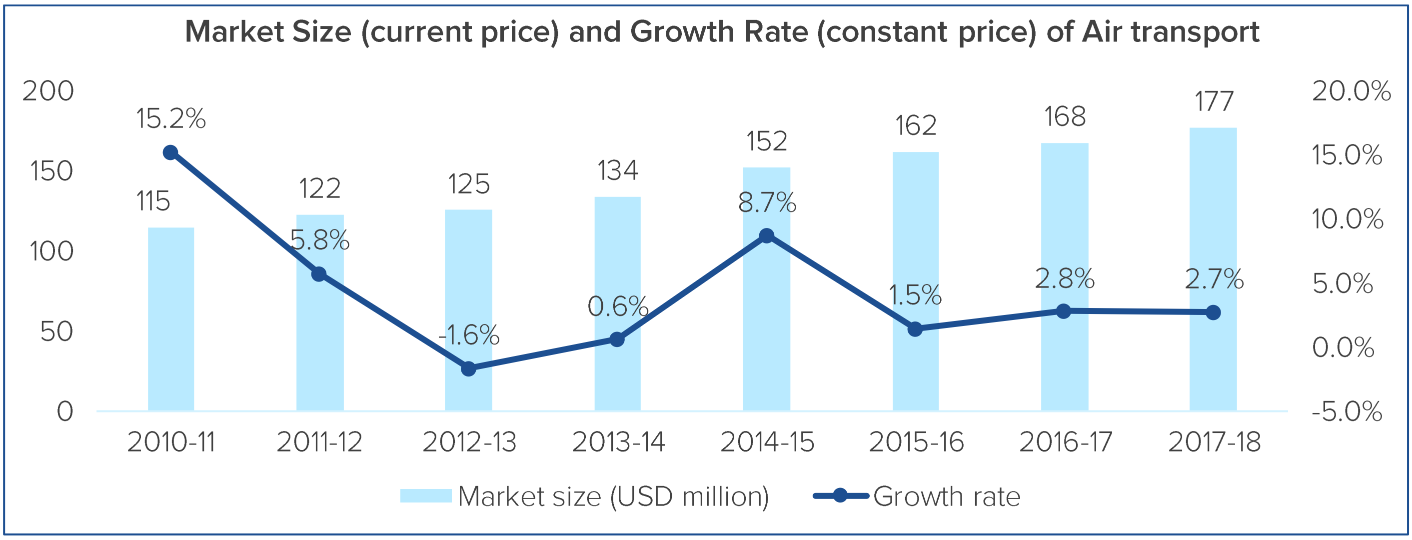
As CAAB is responsible to operate and maintain airports in Bangladesh, it regulates the tariffs[44] for the services and facilities, which are availed by the passengers and airline operators. The tariff structure is broadly categorised into three parts:

- The passengers pay embarkation fees. However, it is the responsibility of the airline operator to collect the fees from passengers at the time of ticket purchase.
- Route navigation charges: The airline operators utilising the air-route navigation facilities for flying over the territory shall pay navigation related charges.
- The airline operator pays aerodrome charges. The charges include landing, parking, boarding bridge fees, etc.

## Market Size / Opportunity

The air transportation contributes to USD 177 million[45] i.e. 0.1% of the GDP (constant price) in FY 2018.

Figure 24: Market size and growth rate of Air transportation




CAAB has envisaged construction of a new airport to cater to the future demands. The PPPO is in the planning stages for development of an airport expansion project and construction of a new airport on a Public-Private Partnership model. To attract funds from the global market, the GoB has recently allowed 100% ownership of equity in Greenfield projects for foreign investors.

The government has planned to execute several projects, which includes construction of four airports, under the seventh five-year plan. The project details[46] of the airport projects are mentioned overleaf:

44 Civil Aviation Authority of Bangladesh
45 Bangladesh Economic Review 2018
46 Bangladesh Infrastructure Report Q1 2019, Fitch Solutions

Table 23: Details of upcoming airports projects in Bangladesh

| Airport | Project Description | Funding structure |
|---|---|---|
| Hazrat Shahjalal International Airport | Construction of a new passenger terminal along with other facilities at an estimated cost of USD 1,776.3 million | GoB and Japan International Cooperation Agency (JICA) |
| Bangabandhu Sheikh Mujib International airport | Construction of a new airport at an estimated cost of USD 6,552.6 million | PPP |
| Khan Jahan Ali Airport | Construction of a new airport at an estimated cost of USD 64.4 million | PPP |
| Cox's Bazar Airport | Development of first phase at an estimated cost of USD 32.8 million | CAAB (public funding) |

## Financing

CAAB along with the GoB has been funding various projects in the aviation sector. Recently, JICA declared an investment of ~USD 1.8 billion[47] in six projects, which includes expansion project of Hazrat Shahjalal International Airport. However, the sector lacks active participation from local banks and private investors due to lack of long-term financing options and high interest rates (9%-11%) charged by local banks and investors in comparison to interest rates (approximately 6%-7%) charged by bilateral agencies.

## Key Players

Below mentioned are the two EPC (Engineering, Procurement and Construction) based companies who have been awarded with airport expansion contracts in the past.

Table 24: EPC companies who provide airport construction services

| Ownership | Companies | Remarks |
|---|---|---|
| Private sector | National Development Engineers Limited | The company focuses primarily on construction sector. It is the EPC contractor for construction of international passenger terminal building at Cox's Bazar Airport. |
| | Concord Group | It is one of the largest conglomerates in Bangladesh. Major engineering and construction projects include the main passenger terminal building at Hazrat Shahjalal International Airport. |

## Risks and Challenges

- Regulatory Challenges: CAAB is the sole regulator who operates the airports and determines tariffs. This leads to a lack of operational efficiency, accountability and probable monetisation opportunities.
- Demand risks: The passenger movement and transportation of cargo traffic is concentrated to Hazrat Shah Jalal International Airport as compared to the other airports in the country. It leads to demand risk for the new airports, which could substantially affect the developer’s revenues.
- Exchange Rate Fluctuations: The aviation sector faces currency fluctuation risks on account of revenues being collected in local currency as against operating expenses (fuel) and servicing of debt/equity involving foreign currency payments.
- Lack of Government support: Support from the government and formulation of new incentives are essential to achieve sustained level of growth of the aviation industry. Moreover, the pressing need for modernisation and effective planning to execute various projects must be addressed immediately.

47 JICA website

# A.3. Logistics

## Industry Overview

In Bangladesh, the logistics market provides three types of logistics services:

a) Transportation–includes all the transportation modes, i.e. road, rail, air, inland waterways and sea transport.

- Road transportation constitutes approximately 53% of the total transportation market and is used almost exclusively for domestic and regional movement of goods. Large MNCs (multinational companies) who own large fleets of transportation vehicles are able to engage in long-term contracts with customers. Whereas individuals or small companies, who own small size trucks, provide transportation services to various customers. Such small companies provide transportation services through agents who work on a commission basis. The freight charges vary from player to player and fluctuate according to the demand supply mechanism.
- Sea transportation market constituting ~42% of share corresponds to the sea shipment costs incurred for import of goods in Bangladesh. The private shipment companies determine the freight cost for import and export of goods.
- Inland Waterways Transportation (IWT) mode has a share of ~5%. The bulk commodities imported at Chittagong Port and Mongla Port are transported majorly through IWT, which is regulated by the Water Transport Cell (WTC) who determines tariff and cargo allocation.
- Rail and Air have negligible shares in the transportation market. Bangladesh Railways (state owned) and airline operators (mostly international private airlines) determine the freight fares for transportation services.

b) Warehousing includes both industrial (manufacturing, retail, EXIM) and agricultural warehousing (cold and dry storages).

- Retail warehousing (showrooms/retail stores) constitute the largest share (55%) of the market.
- Agricultural warehousing consisting of cold storages (mainly for potato storage) and dry warehouses (for other crops and seeds) has 28% share of the market.
- Manufacturing related warehousing, i.e. warehousing used by industries for storage of raw materials and finished goods (including distribution depots) has a ~14% share; EXIM related warehousing (i.e. bonded warehouses) forms the rest ~3% share.

As the warehousing sector is highly fragmented and privatised, warehouse owners fix the tariff. The charges may vary according to the demand supply mechanism and from operator to operator.

c) Other services– It includes services such as clearing and forwarding of import and export cargo, custom clearance, export documentation services, booking and shipping of cargo, freight forwarding services, etc., which are provided by Custom Handling Agents (CHAs) and Freight Forwarders Agents (FFAs) who charge based on percentage of shipment value or fixed charge per consignment (Bill of Lading).

Logistics service providers cater to demands of various industries arising from the following three market segments:

- Domestic market–The domestic market is majorly served through road and inland water transport network of the country.
- Regional market–Demand arising for serving the regional countries such as India, Nepal and Bhutan is classified as a part of the regional market, which is supported by network of sea trade, land ports and roads.
- Global market–Demand for logistics services arising due to trade with foreign countries other than the regional market is considered as the Global market. The global market is served through the seaport and international airports of the country.

All the sectors within transportation (except rail and sea transportation) and warehousing are highly fragmented and are completely operated by private players. The agents providing custom handling services and freight forwarding services for export and import of goods are small in number as compared to the number of players providing warehousing or transportation services. However, large private companies also provide CHAs and FFAs services on contract basis to large overseas partners and network firms.

## Market size / Opportunity

The total warehousing market in Bangladesh is about USD 3.3 billion. The summary of market size (USD million) of various warehousing services is presented in the table overleaf:

Table 25: Market size for warehousing services in Bangladesh

| Warehousing Service | Global Market ($m) | Regional Market ($m) | Domestic Market ($m) | Total market ($m) |
|---|---|---|---|---|
| Bonded warehousing | 93 | - | - | 93 |
| Cold storages | - | - | 417 | 417 |
| Dry storages | - | - | 544 | 544 |
| Retail warehousing | 77 | - | 1,772 | 1,849 |
| Manufacturing related warehousing | - | - | 491 | 491 |
| Total | 170 | - | 3,224 | 3,394 |

Summary of market size of logistics sector (USD million) for other services category is presented in the table below:

Table 26: Market size for Freight forwarding and Custom handling services in Bangladesh

| Other Service | Global Market ($m) | Regional Market ($m) | Domestic Market ($m) | Total Market ($m) |
|---|---|---|---|---|
| Freight forwarding | 136 | 1 | - | 137 |
| Customs handling | 228 | 40 | - | 268 |
| Total | 364 | 41 | - | 404 |

Opportunity mapping for the private sector in the provision of logistics services are mentioned in the table below:

Table 27: Opportunity mapping for private sector companies in the Logistics sector

| Logistics services | Domestic-private company | Foreign-private company |
|---|---|---|
| Road Transportation | Yes | Limited |
| Rail Transportation | No | No |
| Inland Water Transportation | Yes | Limited |
| Air Transportation | Limited | Yes |
| Sea Transportation | Limited | Yes |
| Bonded warehousing | Yes | No |
| Manufacturing related warehousing | Limited | No |
| Retail warehousing | Yes | No |
| Cold storages | Yes | No |
| Freight forwarding | Yes | Limited |
| Customs handling | Yes | No |

## Financing

The Public sector banks play a negligible role in funding and financing of transportation and logistics sector owing to already bad advances. As a result, private sector banks provide short-term loans to companies who operate in the transportation and logistics sector. Similarly, NBFIs also finance such companies but at a higher rate (11% to 18%). Foreign commercial banks primarily focus on financing large corporates with high credit rating.

The financing mechanisms in the logistics sector are mentioned overleaf:

Table 28: Financing mechanism in the Logistics sector

| Type of Financial institution | Lenders | Lending rates | Loan tenor | Remarks |
|---|---|---|---|---|
| Public bank | • Janata Bank Limited.<br>• Pubali Bank Limited<br>• Islamic Bank Bangladesh Limited<br>• Dutch Bangla Bank Limited | 8%-10% | five to seven years | The public banks are inclined towards lending to the road transport services sector. Loans towards river transportation services are provided to credit worthy customers only. |
| Private bank | • The City Bank Limited<br>• Citibank<br>• Eastern Bank Limited (EBL) | 9%-10% | five years | Private banks prefer lending to established road and river transportation players. However, in case of small players, financing is carried out on a case-to-case basis after assessing the credit worthiness of the player. |
| NBFI | • Lanka Bangla Finance Limited.<br>• IPDC Finance Limited<br>• IDLC Finance Limited<br>• BD Finance Limited<br>• Lanka Bangla Finance Limited | 11%-14% | five years | NBFIs majorly provide loans to SMEs and vehicle dealers. Such vehicle dealers provide loans to individuals who do not qualify for formal banking solutions. As a result, high lending risk is associated with such lending mechanism. |

## Key Players

Road Transportation: There are seven major private transportation companies in the country.

Table 29: List of major road transportation companies in Bangladesh

| Transporter Name | Fleet Size | Private/For hire |
|---|---|---|
| Pran Group | 1,500 | Private |
| Shah Cement | 900 | Private |
| Bashundhara Group | 640 | Private |
| Meghna Group | 500 | Private |
| Crown Cement | 285 | Private |
| MM Transport | 255 | For hire |
| Shuktara Transport Agency | 200 | For hire |

Inland Water Transportation: The sector is served by six major players with a total market share of 26% and asset size of 316.

Table 30: List of major Inland Water Transportation companies in Bangladesh

| Players in IWT | Fleet size | Private/For hire |
|---|---|---|
| MST Marine Enterprises | 150 | For hire |
| MN shipping | 50 | For hire |
| Meghna Group | 46 | Private |
| CTLL | 30 | Private |
| Bashundhara Group | 20 | Private |
| HAS Shipping | 20 | For hire |

Air Transportation: There are five major airline companies that provide cargo services in the country.

Table 31: List of airlines providing cargo services in Bangladesh

| Name of transporter | Freighters | Passenger flights |
|---|---|---|
| Emirates | 2 | 27 |
| Cathay Pacific | 3 | 5 |
| Qatar | 7 | 21 |
| Kuwait | NA | 10 |
| Etihad | NA | NA |

Sea Transportation: There are six shipping companies that provide shipping line operations. Maersk has the highest market share of 8.3% in terms of revenue generated.

Table 32: List of shipping companies providing cargo services in Bangladesh

| Player | Number of vessels |
|---|---|
| Maersk | 16 |
| Far shipping | 7 |
| PIL | 3 |
| ACL | 3 |
| Samudhera | 2 |
| Cosco | 2 |

Currently, there are five major players in the cold storage sector, which contribute to only 0.9% (approximately 880,000 bags) of the total market share.

Table 33: List of major players in the cold storage sector

| Name of the service provider | Storage Capacity (No of Bags) |
|---|---|
| Moynakuti Agro Industries | 370,000 |
| Sinha Specialised Cold Storage | 110,000 |
| Himadri Limited | 60,000 |
| Zenin Cold Storage | 60,000 |
| BADC Cold Storage | 12,500 |

FFAs: There are more than 2,500 freight forwarders operating in Bangladesh. One of the leading multinationals, Kuehne Nagel handles about 45,000 TEUs (twenty feet equivalent units), which translates to about 2.5 % share of total import-export of laden containers in Bangladesh.

## Risks and Challenges

- Gaps related to private sector participation in the provision of services: There is a lack of coordination among various authorities, which has resulted in inefficient infrastructure development. In addition, the sector lacks effective implementation of existing regulations, which is important to ensure high quality standards.
- Entry barriers: Reputed players such as DHL and Kuehne-Nagel are already operational in Bangladesh however; they are not able to provide vertically integrated services. The key reason for this is the strict regulations in Bangladesh, which mandate constitution of a Joint Venture (JV) with a local player for entering the transportation and warehousing market. International companies refrain from such JVs, as they are doubtful of performance levels of the local players.
- Inadequate control of regulatory authorities over the issuance of certificates to trucks and barges impact the quality of assets and transportation services available in the market.
  Inefficiencies in the system: High input costs, financing costs, and facilitation payments lead to high costs of services without any apparent improvement in quality of services. In addition to this, there are no benchmark prices, which the customers or service providers can refer to.

# A.4. Manufacturing

## Industry Overview

Although Bangladesh is primarily an agrarian economy, it has witnessed a large number of industries being set up. Textiles and Wearing Apparel takes up a major share of the manufacturing industry's pie with a combined share of over 42% in terms of number of establishments (2017). Food products and non-metallic mineral products contribute ~20% and ~11% of the country's manufacturing establishment base, respectively.[48]

Other notable contributors to the country's GDP and exports include leather (0.6% to the country's GDP and 3.4% of the total export earnings of Bangladesh in FY 2016), plastics (domestic plastic market valued at USD 2.4 billion in FY 2015) and the engineering goods sector (0.4% of total exports from Bangladesh in FY 2016)[49].

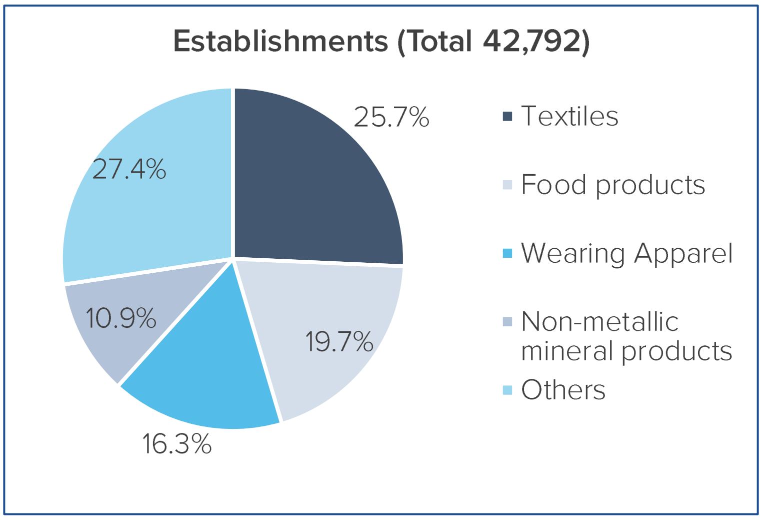
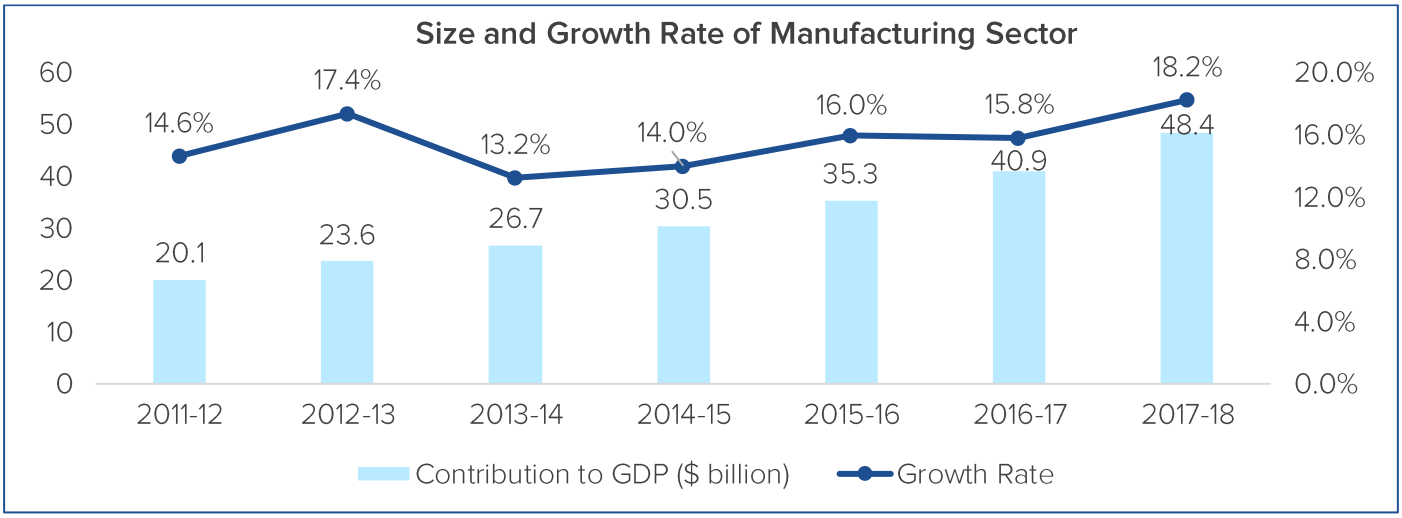



Figure 25: Establishment in the Manufacturing sector

## Market Size and Opportunity

At USD 48 billion, the manufacturing sector contributes to about 18% of the GDP (FY 2018)[50], a steep increase from FY 2011 figures of ~USD 20 billion. It is further expected to grow at a rate of 13%[51] going forward.

Figure 26: Market Size and growth rate of manufacturing sector




Source: Ministry of Finance portal

The growth rate of the manufacturing sector is dominated by Ready-Made Garments (RMG). Bangladesh is amongst the largest RMG exporters in the world, second only to China in terms of market share. ~80% of the country's export earnings are accountable to the RMG sector.

The RMG industry is currently Bangladesh's most important industry sector. The government's vision is to achieve ~USD 50 billion worth of apparel exports by 2021 from the FY 2016 levels of ~ USD 28.5 billion. Bangladesh is therefore destined to be the next sourcing hotspot of the world with its prime advantages including affordable labour, quality products, price points and geographical location. This presents insurmountable opportunities for the sector to grow and expand.

## Financing

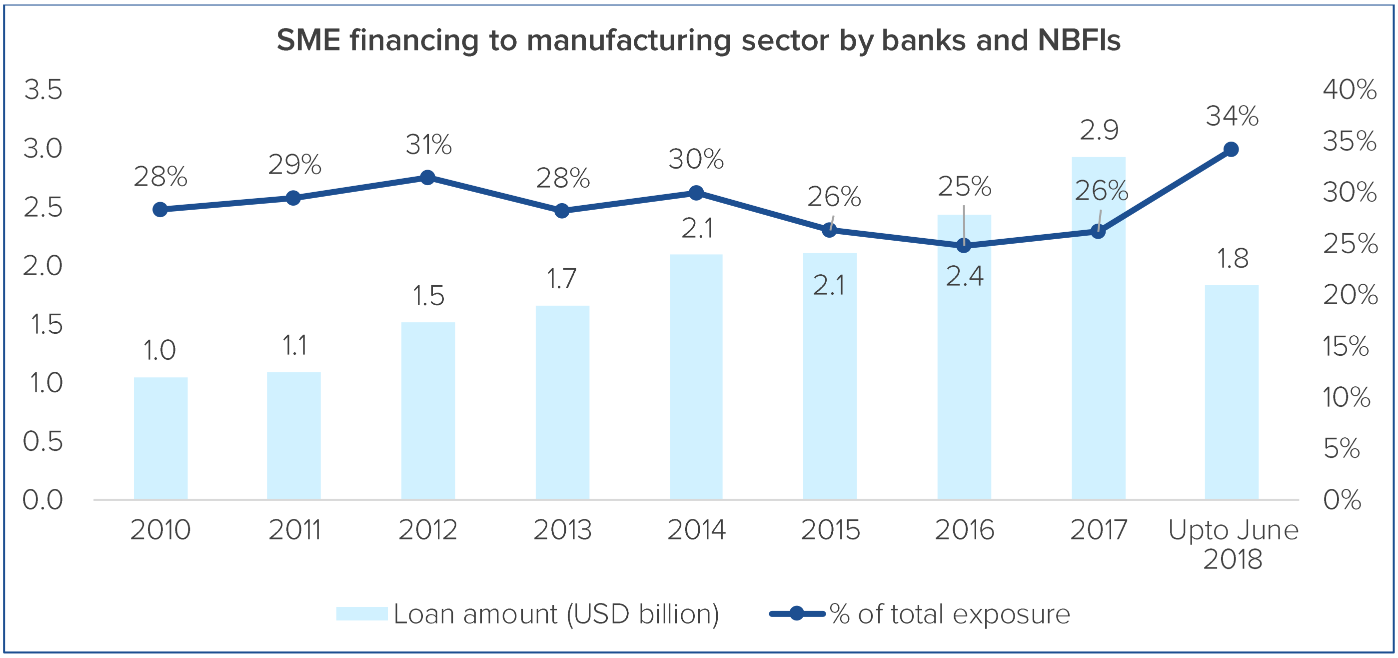
Banks and NBFIs: Large conglomerates receive long-term debt funding from banks such as Sonali Bank, Janata Bank, National Bank, Rupali Bank and Agrani Bank. However, banks are typically wary of investing in the sector owing to a high credit risk profile of players.

[48] 2017 Statistical Year Book Bangladesh
[49] Ministry of Finance portal
[50] Business Economic Review 2018
[51] Financial Express article

The relative ratio of exposure to the manufacturing sector between banks and NBFIs stand at 85:15. The maximum tenor for loans in this sector stand at five years and goes up to seven years including the moratorium period. This is usually enough for the manufacturers and they use bridge financing in case of additional funding requirements. The interest rates in the sector typically stand at 9% to 12.5% depending on the creditworthiness of the company.

The trend of exposure of banks and NBFIs to manufacturing SMEs has been captured in the graph below:

Figure 27: SME financing to Manufacturing sector by banks and NBFIs




Stock Markets: Even though the Bangladesh capital markets are in a nascent stage, it has witnessed successful listing of stocks of scores of manufacturing entities. The Dhaka Stock Exchange (DSE) has three paper and printing companies, five ceramics companies, seven cement companies, 31 pharmaceutical and chemicals companies, 37 engineering companies and as many as 53 textile companies listed on it.

Bonds: Some of the manufacturing entities have also resorted to issuance of bonds, mainly zero-coupon bonds, to meet their funding requirements. These bonds are typically privately placed with corporates, banks or individuals. Examples would be the recent issue of Paramount Textile Limited of ~USD 6 million worth of zero-coupon bonds in the market or the issuance of ~USD 18 million worth zero-coupon bonds by Envoy Textiles through private placement.

Export Development Fund (EDF) financing[52]: Bangladesh Bank established the EDF in 1989 to support financing in the manufacturing sector, especially in the RMG industry. The EDF is intended to facilitate access to financing in foreign exchange for input procurements by manufacturer-exporters and is said to be the lifeline of the manufacturing sector.

## Key Players

The manufacturing sector of Bangladesh is dominated by a few large and local conglomerates[53] such as the Beximo group and the Habib group, and multiple smaller SMEs.

Table 34: Key Players in the Manufacturing sector[54]

| Company | Key Sector Presence | Topline/Revenue ($m) | Employee Base |
|---|---|---|---|
| Meghana Group | Tissue, paper, seed crushing, fish and poultry feed, chemical, cement, power plant, shipping, general insurance, media, aviation | 3,000 | 30,000 |
| Hameem Group | Textiles and garments | 550 | 50,000 |
| Habib Group | Cement, steel, textiles, fertilizers, paper, yarn, and apparel | 500 | 20,000 |

52 Bangladesh Bank
53 Respective Company website and annual reports
54 Data from respective company websites and annual reports

| Company | Key Sector Presence | Topline/Revenue ($m) | Employee Base |
|---|---|---|---|
| Beximco Group | Textiles, pharmaceuticals, ceramics, real estate and trading and energy | 285 (FY 2018) | 60,000 |
| Confidence Group | Mid-tech engineering products including the manufacture of cement and paint | 90 (FY 2011) | NA |

## Risks and Challenges

- Lack of infrastructure: Poor infrastructure and logistics development has hindered the growth of imports and exports. Shipping transit times are higher than benchmarks due to navigability issues, thus leading to high transit costs. There is an overall lack of robust infrastructure that can cater to requirements of shorter lead times and reliable transport systems.
- Lack of skilled workforce: Bangladesh as a country has the demographic dividend advantage but it lags far behind when it comes to availability of skilled workforce. Skilling of workforce is a major challenge for most of the SME units that cannot afford to provide adequate in-house and on the job training. There is a perpetual need to train unskilled laborers that enter the workforce in large quantities and a high demand rate for skilled workers resulting in a high attrition rate amongst them as well.
- Access to credit: The 2018 Ease of Doing Business index revealed that Bangladesh ranked 159 out of 190 countries in ‘getting credit’. Banks in Bangladesh are centralised and decision-making is slow, with processes taking up to six months. Access to credit remains a challenge in the country. There is a preference towards short-term financing in the country against the short-term deposits that banks obtain and longer tenor loans are scarcely available. The SMEs in Bangladesh find it much harder to obtain credit owing to traditional ways of management and lack of specialised staff to maintain financial documentation or prepare project feasibility or credit risk reports.
- Uninterrupted Electricity: Access to uninterrupted electricity is a key requirement in the manufacturing sector. However, frequent power outages continue to plague the sector. The annual loss of production due to power disruptions exceeds 0.5% of the country’s GDP and there is heavy reliance placed on high-cost diesel generators to meet the burgeoning electricity needs.
- Exchange rate fluctuations: Exchange rate fluctuations affect the manufacturing industry’s export trends. The exchange rate changed from BDT 57 per USD in FY 2004 to BDT 83 per USD in FY 2019.

## A.5. Ports

### Industry Overview

Bangladesh has two operational maritime ports Chittagong Port (CP) and Mongla Port (MP), which have been financed by the GoB with support from multilateral agencies. The Chittagong Port and Mongla Port are maintained and operated by the Chittagong Port Authority (CPA) and Mongla Port Authority (MPA) respectively, which are directly controlled by the Ministry of Shipping (MoS). CPA and MPA are bestowed with the responsibility to develop and regulate the respective ports. Apart from this, Bangladesh Land Port Authority (BLPA) imposes tariffs for services and facilities offered at all the landside ports. As the ports are operated by the respective authorities, role of private sector operators or developers in the port sector is almost negligible.

CP handled 73,173 Metric Tonnes (MT)[55] of cargo in FY 2017 (growth of 69%) as compared to 43,374 MT in FY 2013. Moreover, CP handles 90% of the seaborne trade because it is well connected to road, rail and inland waterways and with the Dhaka city. With recent development of SEZs (Special Economic Zones) near the MP area, the port has witnessed a steep growth of 138% to 7,515 MT in FY 2017 in terms of cargo handled. However, Mongla Port lacks dependable connectivity with the Dhaka apart from roadways.

Due to several limitations pertaining to the existing maritime ports, the GoB has plans to develop two main deep-sea ports (DSP) i.e. Payra Port and Sonadia Port, which will serve larger vessels and handle large quantity of cargo shipped in and out of the country.

### Market Size / Opportunity

There are several projects which are under the planning phase. Amongst these, Matarbari Port[56] will be developed as part of the bilateral agreement between Japan and GoB. In addition to this, the GoB has considered developing Sonadia Port, which is part of the ten Fast Track Projects Scheme (FTPS).

The seventh five-year plan (2016-2020) identifies port and water transport as one of the thrust sectors under PPP model.

Table 35: List of PPP projects in the Ports sector

| Project Name | Project Description | Commercial operation year | Funding structure |
|---|---|---|---|
| Payra Port[57] | Development of Payra Port, which will be the third port of the country. The estimated cost of the project is USD 5,000 million. The project has been divided into 19 components, amongst these two components will be undertaken by the GoB. Under the PPP structure, the Port Authority has signed a PPP contract with Jan De Nul for dredging related activities. | 2022 | PPP |
| Laldia Bulk Terminal | Construction of Laldia Bulk Terminal at Chittagong Port at an estimated cost of USD 60.9 million | NA | PPP (Construction) |
| Inland Container Terminal | Construction and operation of Inland Container Terminal (ICT) at Khanpur at an estimated cost of USD 32.5 million | NA | PPP (Build/Operator) |
| Mongla Port Jetty project[58] | PowerPac Ports Limited Company was awarded a project to develop two jetties at Mongla Port but financial closure has not been reached yet. The estimated construction cost is USD 52.8 million. | Under project development stage | PPP (Build/Operator) |

### Financing

Over the past few years, infrastructure investment in the sector has been on rise with an increase in allocation of funds by the GoB along with additional financial support from countries such as Japan, India and China. Currently, JICA is investing USD 23.7 million towards the development of the Matarbari Port.

With the inclusion of port sector under the PPP policy, private sector developers such as PowerPac Holding Limited and Summit Alliance Port Limited (SAPL) East Gateway have undertaken projects in the port sector. SAPL has developed Inland Container Depot (ICD) and container freight station on BOO (Build Own and Operate) model. SAPL had successfully secured a long-term foreign currency loan of USD 30.5 million from IDCOL (Infrastructure Development Company Limited) and FMO (Netherlands Development Finance Company)

55 2017 Statistical year book Bangladesh
56 JICA website
57 Bangladesh Infrastructure Report Q1 2019, Fitch Solutions
58 Public Private Partnership monitor, ADB

at an interest rate of 4.25% + LIBOR (London Inter-bank Offered Rate)[59]. Additionally, SAPL has also obtained loans from local banks such as Eastern Bank Limited, Jamuna Bank Limited and Dutch Bangla Bank Limited.

Adani group, which is the largest port operator in India, is exploring possibilities to invest in the proposed Bay Terminal at Chittagong port.

## Key Players

Multiple state owned companies, which provide various services and facilities, massively drive the sector. However, due to introduction of the PPP structure in the sector, few private players have initiated investments. Details of some notable companies are given below:

Table 36: Details of state owned companies and private companies in the Ports sector

| Ownership | Companies | Remarks[60] |
|---|---|---|
| Government Owned | CPA | CPA generated a net income of USD 325 million in FY 2018 |
| | MPA | CPA generated a net income of USD 31.5 million in FY 2018 |
| | Payra Port Authority – The project is divided into 4 components | The first dredging phase of the project has been awarded to Jan de Nul company, Luxembourg |
| | Bangladesh Land Port Authority: Operates 23 land ports on Build-Operate-Transfer (BOT) basis | The company generated a total revenue of USD 17.7 million in FY 2018 |
| | Department of Shipping: Responsible for ensuring safety of inland, coastal fishing, ocean-going vessels of Bangladesh and foreign vessels calling at Bangladeshi ports | The company generated a total revenue of USD 4.6 million in FY 2018 |
| | Bangladesh Shipping Corporation (BSC) | The company generated a total revenue of USD 7.4 million in FY 2018 |
| Private sector | SAPL | It has established a river terminal, which is built on a 15 acres land. The terminal has warehouse facilities to store cargo and containers |
| | PowerPac Ports Limited | It is a subsidiary of the local Sikder Group |

## Risks and Challenges

- Lack of infrastructure: Embarkation and disembarkation facilities for passengers are not safe and comfortable. Out of 1,200 landing stations, only 380 stations have been developed and are currently used by inland vessels. In addition to this, the ports in Bangladesh suffer from infrastructural issues such as lack of adequate warehousing space, inadequate parking yard for the trucks waiting for cargo, absence of banking facilities at the ports for submission of challan, etc.
- Funding/financing gap: Involvement of private sector in development of infrastructure is one of the most effective ways of reducing the financing gap faced by the government. However, due to the lack of a PPP framework specific to the port sector, the private sector developers have shown less interest towards development of projects in this sector.
- Inadequate dedicated storage yard for storing empty containers: Owing to limited infrastructure capacity at Chittagong Port, the excess empty containers are transported to the off-docks. These empty containers are again transported back to the port from the off-docks for export. This leads to redundant trips between port and off-docks for transporting empty containers.
  Capacity constraint: Total maritime ports are not sufficient to accommodate projected container throughput in the coming years. The Chittagong Port throughput has reached the maximum capacity and new ports are still under development stage. As a result, this capacity constraint leads to increase in congestion at the port and affects turnaround time of the vessels.

59 Summit Alliance Port Limited, Annual report FY 2018
60 Annual reports of respective companies

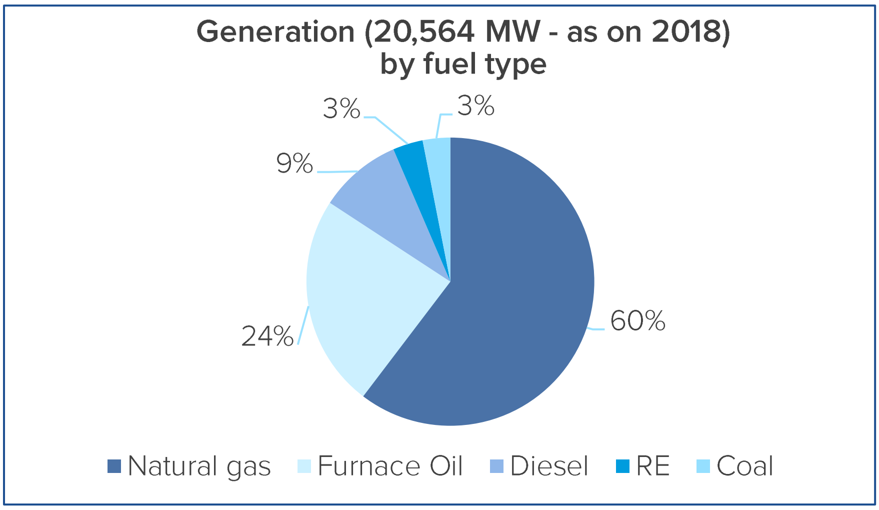
# A.6. Power

## Industry Overview

### Generation

As on January 2019, the total installed capacity was at 20,564 MW[61] (including captive power plants) split between private and public sectors at 46% and 54%, respectively. Under the public sector, 76% of the power plants are gas based thermal power plants and majority of these power plants generate power using Combined Cycle Gas Turbine (CCGT) technology, while others generate power using steam turbine technology. Of the total power plants under the private sector, 51% are gas based thermal power plants, which generate power using various technology such as CCGT and reciprocating engine generator. Over the last six years, the peak generation and net energy generation have grown at a CAGR of 11.7% and 10.6%, respectively, from 2011-2017[62].

Figure 28: Power generation (as on FY 2018) by fuel type




However, to reduce the demand supply gap, 1,160 MW of electricity is being imported from neighboring countries in addition to 2,800 MW of power, which is generated by captive power plants within Bangladesh. Considering high economic growth prospects, the government is planning to import 9,000 MW from its neighboring countries i.e. Nepal, Bhutan, Myanmar and India by 2041.

The power generation from combined cycle gas power plants have witnessed a growth of 46% from 6,016 MW in FY 2014 to 8,809 MW in FY 2017. Because of fast depletion of natural gas[63], the country intends to include generation of power majorly from coal and nuclear power plants. As on 2018, about 559 MW (solar, hydro and wind of 326 MW, 230 MW, and 3 MW respectively) renewable energy plants have been installed in the country, contributing approximately 3% of total power generation capacity.

Adoption of off-grid renewable energy systems have played a pivotal role in providing electricity to the people living in rural areas. Today, off-grid systems contribute approximately 51% (289 MW) of the total renewable energy installation. IDCOL, which is one of the financing institutions, has been playing an important role in promoting and financing off-grid renewable energy systems in the country. Under the IDCOL Solar Home System (SHS) programme, 4.3 million (total capacity: 185 MW)[64] small scaled solar systems have been installed across various locations providing electricity to ~18 million people. To implement off-grid renewable energy systems, IDCOL has selected 56 Partner Organisations (PO) through which funds are channelled to the end users and equipment suppliers. IDCOL receives financial support from multilateral agencies such as Asian Development Bank (ADB), World Bank, KfW and bilateral agencies such as JICA. The POs seek soft loans from IDCOL at an interest rate of 6% to 7 % with a loan tenor of five to seven years. These funds are utilised towards purchase of solar equipment from registered suppliers. Further, the POs provide loans, up to 80% of the project cost, to the end users at an interest rate of 12% with a repayment period of three years. The POs are responsible for installation and maintenance of SHSs.

As on June 2018, IDCOL has invested over USD 696 million in the SHS programme. However, with the market beginning to mature and constraints around consumers being unable to repay the amount, IDCOL has reduced the subsidies from USD 90.8 per system in 2003 to USD 19.7 per system in 2015.

Apart from IDCOL, there are other players such as Dhaka Power Distribution Company (DPDC), Dhaka Electric Supply Company (DESCO), West Zone Power Distribution Company Limited (WZPDCL), Rural Power Company Limited (RPCL), Sustainable and Renewable Energy Development Authority (SREDA), Electricity Generation Company of Bangladesh (EGCB), and Bangladesh Power Development Board (BPDB) who have funded and installed multiple off-grid renewable energy systems.

### Transmission

Power Grid Company of Bangladesh (PGCB) has been taking significant efforts to improve the overall grid network by increasing the 230 kV transmission network at a CAGR of 4% and 132 kV transmission network at

61 Bangladesh Power Development Board website
62 Annual report FY 2017, Bangladesh Power Development Board
63 Bangladesh market update (2019) by PwC
64 Making renewable energy a success in Bangladesh, ADB

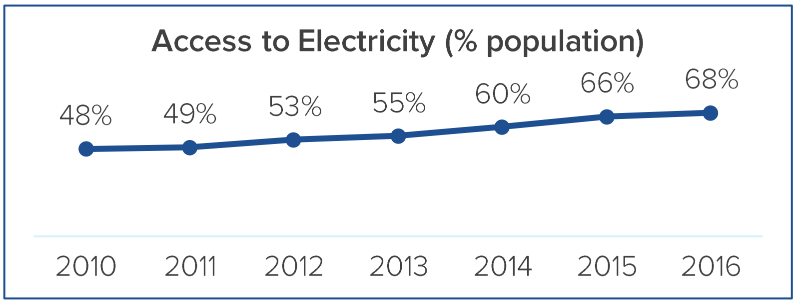
a CAGR of 1%, over the 2011-2017 period. PGCB has focused on improved maintenance of network with a total availability of transmission lines of 99.9% in FY 2017.

As a result, the transmission losses have also decreased to 2.7% from 2.9%. In the last six years, PGCB has expanded substations capacity from 1,500 MVA to 23,000 MVA. To avoid transmission bottleneck, PGCB has also set-up two HVDC sub-stations with a 500 MW capacity each to import power from India.

### Distribution

With rapid development in the distribution sector, approximately 68% of the total population has gained access to electricity. Amongst all the distribution companies, Bangladesh Rural Electrification Board (BREB) owns ~85% of the total distribution network length. BREB covers ~90,000 villages, out of which ~84% are already electrified across the country, providing electricity to ~107 million people.

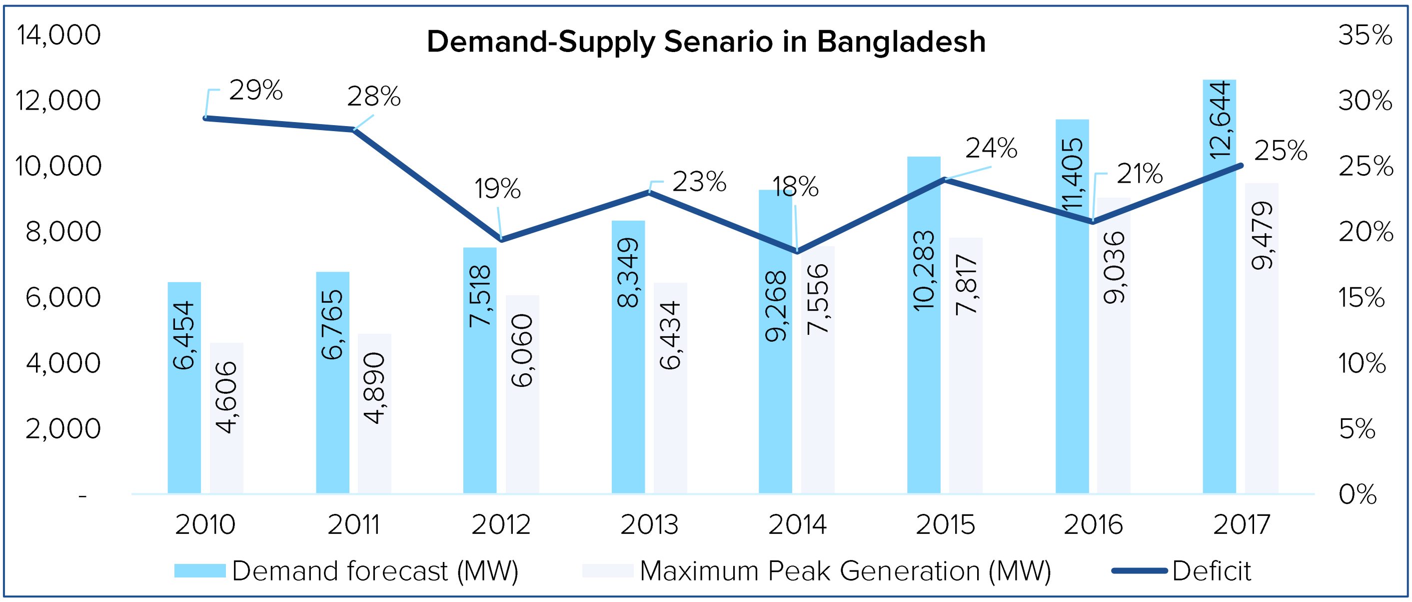
Figure 29: Access to electricity (percentage of population)




In terms of the length of the distribution network, BPDB constitutes 7% to 8% of the distribution network length and distributes electricity to ~2.5 million consumers.[65]

The share of WZPDCL and Northern Electricity Supply Company Limited (NESCO) has been in the range of 6% to 10% of the total distribution network. DESCO and DPDC distribute electricity in and around areas of Dhaka. Over the years, the distribution companies have been able to reduce distribution losses from 11.9% in FY 2014 to 9.6% in FY 2018.

Figure 30: Electricity demand-supply scenario in Bangladesh

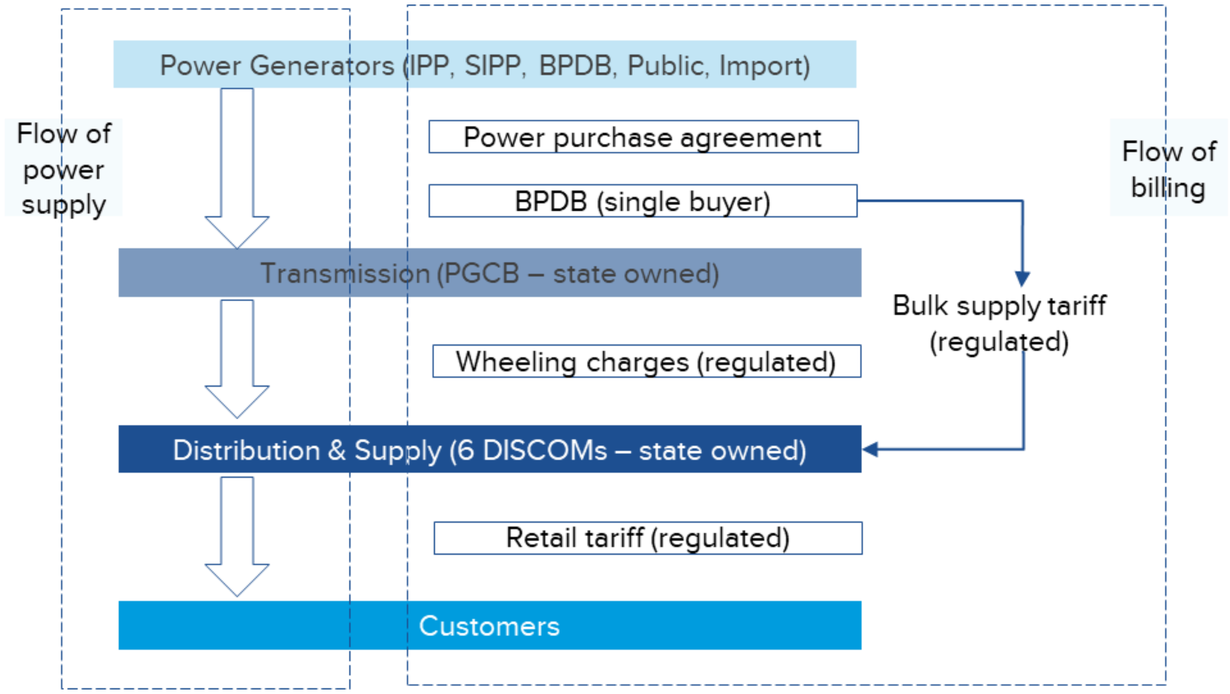



### Revenue structure

For power generation companies, Bangladesh Electricity Regulatory Commission (BERC) determines the bulk tariff (fixed charges and variable charges) for power generation, wheeling charge for transmission and retail tariff for distribution of electricity (flow diagram mentioned below). The GoB is in the process of preparing the draft for competitive bidding, Feed-In-tariff and other incentives (mainly financial ones) to promote renewable energy businesses.

65 Bangladesh market update (2019), PwC

Figure 31: Revenue structure in the Power sector

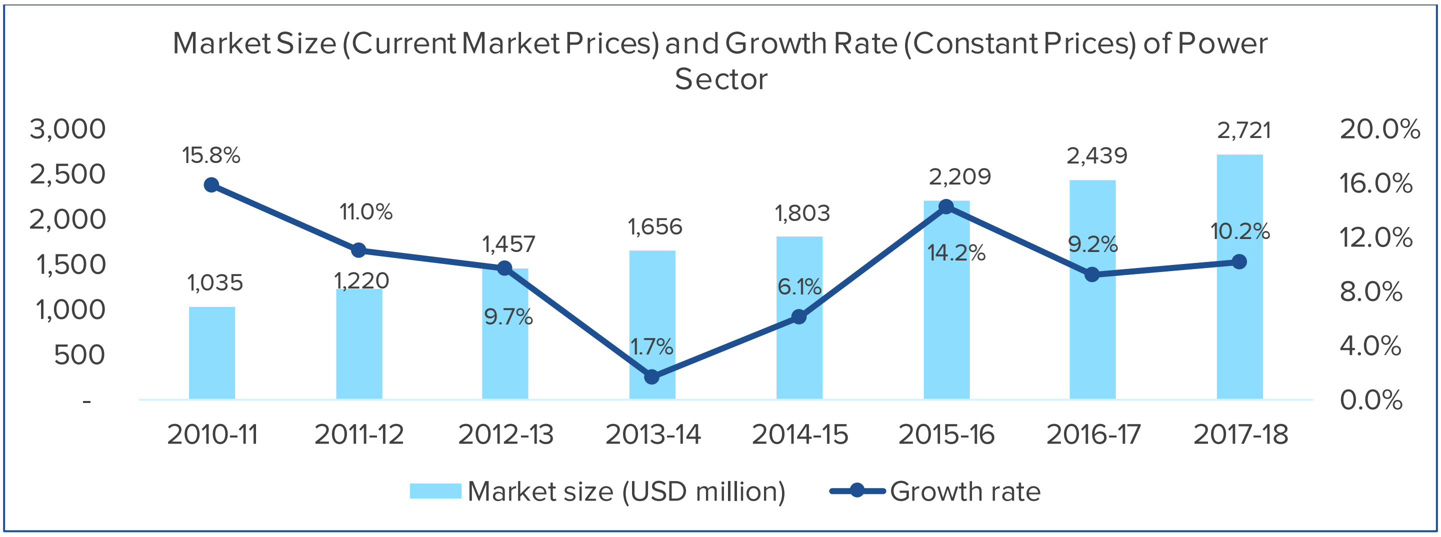



The charges applicable to the end consumers are divided into two parts i.e. per unit charge (BDT/kWh) and demand charges (BDT/kW/month). Further, the electricity consumers are divided into ten categories i.e. residential, agricultural pumping, small industries, non-residential, commercial and office, medium voltage for generation purpose (11 kV), extra high voltage for general purpose (132 kV), high voltage for general purpose (33 kV) and streetlights and water pumps. The tariff rates vary based on a) electricity supply (Low Tension, Medium Tension, High Tension and Extra High Tension) b) unit slab – flat rate, consumption during off-peak and peak time (except for category residential consumers who are charged based on six-step slab basis). The tariff rate is determined based on the BERC (Electricity Generation Tariff) Regulation, 2008.

## Market Size/ Opportunity

The GoB aims to increase the installed capacity from 20 GW (gigawatt) in January 2019 to 24 GW by 2021, 40 GW by 2030 and 60 GW by 2041[66]. The power sector grew by 10.2%[67] in FY 2018 with overall contribution of 1.3% to the GDP (constant prices) during the same fiscal year.

Figure 32: Market size and growth rate of Power sector




### Generation

The role of private players, contributing to 46% of the total installed capacity, in the Bangladesh power sector has been significantly growing over the years. By 2021, the private sector players are expected to commission a total capacity of 4,770 MW, which includes 2,590 MW of gas power plants. During the same period, the GoB also intends to commission multiple gas power plants, which totals to 2,610 MW. The approximate cost of

66 Transforming the power sector in Bangladesh, PwC
67 Bangladesh economic review 2018

projects developed by private and public sector is USD 3.1 billion and USD 4.4 billion, respectively. Further, the GoB has floated tenders for 23 projects, which includes 18 projects that will be funded and developed by the private players. The government will develop the rest five projects.

The Long-term plan of the government is to generate 10% of the total electricity from renewable energy sources by 2021[68] by setting up 2,470 MW. According to renewable energy development targets set by SREDA (Sustainable and Renewable Energy Development Authority), 1,270 MW of solar plants and 1,150 MW of wind energy projects will be developed during the period 2017 to 2021. Along with this, 40 MW power will be generated from waste-to-energy, 30 MW from biomass, 2 MW from biogas and 6 MW from hydro by 2021. Independent Power Producers (IPPs) are in the process to develop power projects in the renewable energy sector totaling to 1,416 MW, which includes 1,345 MW of solar power plants. However, these projects are still under the planning stage.

A list of IPP power projects, which are under the planning stage, are mentioned below:

Table 37: List of IPP power projects[69]

| S. No | Capacity (MW) | Type of plant | Funding structure | Developers |
|---|---|---|---|---|
| 1 | 100 | Solar Park | Private | Energon Technologies FZE and China Sunergy Co. Limited |
| 2 | 100 | Solar Park | | Zhejiang Dun An New Energy Co., Limited, China National Machinery Import and Export Corporation, Solar Tech Power Limited, and Amity Solar Limited |
| 3 | 100 | Solar Park | | Madargonj 100 MW Solar PV Power Project |
| 4 | 100 | Solar Park | | Shapoorji Pallonji Infrastructure Capital Company Private Limited |
| 5 | 60 | Wind | | US-DK Green Energy Limited |
| 6 | 30 | Solar Park | | Beximco Power Company Limited and Jiangsu Zhongtian Technology China |
| 7 | 1 | Waste to Energy | | It is a grid connected RE plant |
| 8 | 800 | Combined Cycle Power Plant (Rupsha) | G to G | ADB: USD 500 million; Islamic development bank: USD 300 million and Japan fund for poverty reduction: USD 1.5 million |
| 9 | 1,320 | Thermal Power Plant (Rampal) | | Bilateral agreement between Government of India and GoB. Estimated cost of the project is USD 2,000 million. |
| 10 | 3,600 | Gas based Combined Cycle Power Plant (Patuakhali) | PPP[70] | Partnership between NWPGC and Siemens AG (Germany). The estimated cost of project is USD 2,800 million. |

To promote PPP projects in the power sector, the GoB provided Government Guarantees to 22 PPP projects and support on availability/performance based payments to 55 projects (worth USD 11.6 billion).

## Transmission

- As on 2018, the total transmission network in the country was 11,123 circuit km. Inline to the Government's future power development plans, PGCB has plans to construct around 10,513 circuit km of transmission lines and 160 grid substations at different voltage levels till 2021. To achieve the expansion targets, PGCB is executing 26 projects, which include 13 projects that have a current completion status of only 10%. Details of completed, on-going and upcoming projects pertaining to the transmission sector are mentioned overleaf:

68 Power Division, Bangladesh
69 Sustainable and Renewable Energy Development Authority, Ministry of Power
70 News article, Energy Bangla

Table 38: Investments by project type in the Transmission sector[71]

| | Expansion ($m) | Expansion -new power plants ($m) | Network reinforcement ($m) | Others | Number of projects |
|---|---|---|---|---|---|
| Completed Projects | 600 | 300 | 30 | 100 | 21 |
| On-going Projects | 2,100 | 3,600 | 1,400 | 100 | 26 |
| Upcoming Project | 2,300 | 1,200 | 100 | 1 | 12 |

Distribution

As per PSMP (Power System Master Plan) 2010 report, the GoB intends to expand the distribution network from present 460,000 km to 530,000 km by 2030. BPDB has undertaken various projects that are funded by the Bangladesh Government along with the financial support from multilateral agencies such as Asian Development Fund (ADF) and KfW. Recently, BPDB signed a contract with CEC Fortune JV, China for installation of 33/11 kV sub-stations in Bangladesh. In addition to this, BPDB has undertaken a project to install solar-street lighting in city corporations and SCADA (Supervisory Control and Data Acquisition) systems across different locations.

Table 39: Investments by project type in the Distribution sector[72]

| | BREB | | DPDC | | BPDB | |
|---|---|---|---|---|---|---|
| | Investment ($m) | Number of projects | Investment ($m) | Number of projects | Investment ($m) | Number of projects |
| Completed Projects | 2,300 | 30 | 300 | 4 | NA | NA |
| On-going Projects | 5,000 | 18 | 430 | 7 | 1,510 | 7 |
| Upcoming Project | 1,770 | 8 | 2,500 | 2 | 2,500 | 6 |

## Financing

The power sector has witnessed large investments being made by multilateral agencies, Development Financial Institutions, bilateral agreements between countries and private investors.

In the generation sector, GoB, local banks, private players (local and foreign), ADB, and different Development Finance Institutions have funded the projects in the past.

In the transmission sector, the projects have been partly funded by the GoB and PGCB. Apart from these government entities, multiple funding agencies such as Economic Development Cooperation Fund (EDCF) Korea, ADB, KfW, SIDA (Swedish International Development Cooperation Agency), JICA and IDA (International Development Association, World Bank), China (Bilateral agreement) and Indian lines of credit have provided funds for the completed projects.

In the distribution sector, 75% to 80% funds for BREB's on-going projects are provided by the GoB, whereas ADB and IDA have provided ~10% each. DPDC, on the other-hand plans to implement projects with funds through internal accruals, GoB, ADB, KfW and concessional loans from the Chinese government.

Table 40: Source of funds in the Power sector

| Ownership | Lending Agency | Loan Amount ($m) |
|---|---|---|
| Multilateral Agency | JICA | 3,840 |
| | ADB | 2,069 |
| | World Bank | 1,268 |
| Private player | Chinese companies | 3,616 |
| | GE, Mitsubishi and Summit corporation (Joint Venture) | 3,000 |

71 Bangladesh market update, PwC
72 Bangladesh market update (2019), PwC

| Ownership | Lending Agency | Loan Amount ($m) |
|---|---|---|
| | KEPCO and Bangladesh Power Development Board | 893 |
| | General Electric (GE) | 840 |
| | Reliance Power, India | NA |
| Bilateral | EXIM, India | 1,600 |
| | EXIM, China | 433 |

The Financing mechanisms[73] availed by companies in the power sector are mentioned below:

Table 41: Financing mechanism in the Power sector

| Type of Financial institution | Name | Lending rates | Loan tenor | Remarks |
|---|---|---|---|---|
| Public Bank | • Islami Bank Bangladesh Limited | NA | Short–term (6-12 months) and Long–term (five to six years) | Presence of public sector banks in the power sector is less as compared to the private banks due to high NPAs of public banks. |
| Private Bank | • City Bank<br>• Citibank<br>• BRAC Bank<br>• Standard Chartered<br>• Bank Asia Limited<br>• EBL<br>• Trust Bank | 10% to 11.5% | | The loan size is typically in the range of USD 1 million to USD 4 million. Few private players secure short–term loans for refinancing their working capital requirements and substituting a part of the long–term loan. |
| NBFIs | • IDCOL, Bangladesh<br>• BIFFL, Bangladesh<br>• OFID<br>• FMO, Netherland | 5% to 4.25% + 3 months LIBOR | 6-12 years | The loan size ranges between USD 4 million to USD 30 million. The loan tenor includes 6-12 months of grace period. Local NBFIs such as IDCOL and BIFFL provide low cost debt financing as compared to others NBFIs. |

## Key Players

### Generation

To reduce the use of public funds in the power generation sector, the government has been focusing on promoting rental and IPP players, who cumulatively generate 7,539 MW[74].

Table 42: Market share of power generators in Bangladesh

| S. No | Generators | Market share | Capacity - MW (Jan 2019) |
|---|---|---|---|
| 1 | BPDB | 44% | 9,065 |
| 2 | IPP | 29% | 5,899 |
| 3 | Captive Power installed | 14% | 2,800 |
| 4 | Rental power plant | 8% | 1,640 |
| 5 | Power import | 6% | 1,160 |
| | Total | 100% | 20,564 |

Amongst private players in the country, Summit Power Limited operates 16 power plants with a total installed capacity of 1,665 MW. Other companies include Khulna Power Company Limited (KPCL), Doreen Power Generations and Systems Limited, United Power Generation and Distribution Co Limited and Barka Power Limited.

73 Annual reports of private players operating in the power sector
74 Annual report FY 2017, Bangladesh Power Development Board

Table 43: Market share of private players in the Power sector

| S. No | Project Developers | Market share | Total installed capacity - MW (FY 2018) |
|---|---|---|---|
| 1 | Summit power Limited | 20% | 1,665 |
| 2 | CDC Haripur Limited | 4% | 360 |
| 3 | Khulna Power Company Limited | 3% | 265 |
| 4 | Orion Power Dhaka Limited | 2% | 200 |
| 5 | Doreen Power Generations and Systems Limited | 2% | 176 |
| 6 | United Power Generation and Distribution Limited | 2% | 160 |
| 7 | Barka Power Limited | 1% | 101 |
| 8 | Shahjibazar Power Company Limited | 1% | 111 |
| 9 | Other small individual players | 65% | 5,316 |
| | Total | 100% | 8,354 |

Transmission

Currently, Power Grid Company of Bangladesh Limited (PGCB), a public entity, is fully responsible to develop the transmission infrastructure in the country. Recently, encouraged by the success of private players in power generation, the GoB has allowed participation of private players in transmission sector as well.

Distribution

Power distribution in the country is provided by six public sector companies, with BREB having a total market share of 44.5%.

Table 44: Market share of Distribution companies

| S. No | Distribution | Market Share | Key Operating Regions |
|---|---|---|---|
| 1 | BREB | 45% | Distributes electricity across rural areas in the country |
| 2 | BPDB | 21% | Supplies to four distribution zones |
| 3 | DPDC | 16% | Distributes electricity in 18 regions within Dhaka |
| 4 | DESCO | 9% | Distribution area comprises 220 sq. km of the Dhaka city area |
| 5 | WZPDCL | 6% | Distributes electricity in the western zone of the country |
| 6 | NESCO | 5% | Distributes electricity to Rajshahi and Rangpur division |

## Risks and Challenges

Generation

- Natural gas storage: Domestic gas reserves in Bangladesh are depleting and would not be enough to meet the growing demand of the country.
- Lack of expertise: Due to absence of sector specific skill development programmes, there is a lack of skilled manpower to work in power plants. Hence, extensive training and exposure is required to build up a suitable work force within the country.
- Limited renewable energy potential: Bangladesh has limited potential for renewable energy due to limited land availability (which is expensive) and meteorological conditions. The country has a maximum renewable energy potential of 3,700 MW (1,400 MW solar park, 637 MW Wind park, 645 MW solar SHS and irrigation, 635 MW solar rooftop, 286 MW biomass, 60 MW Small hydro, and 3 MW Hybrid).

Transmission

- System congestion and inefficiency: Lack of coordinated system planning has caused both congestion and system stability issues. As a result, certain regions have witnessed high system loss and voltage drops.
- Import of key components: Equipment and other accessories required for development of the transmission sector are not being manufactured in desired quantities within the country, leading to increased import quantities against the same.

Distribution

- Power quality and distribution losses: Due to the demand-supply gap present in the country, end-users face load shedding. Additionally, the distribution networks have leakages preventing quality power to be supplied to the end-users. Due to presence of non-metered consumers, there are heavy commercial losses, which are borne by the distribution companies.
- High cost of power procurement: At the time of power deficit scenarios, utilities source power from private players using diesel generators at high fuel costs. This subsequently increases the power procurement cost to the utilities, while tariffs are capped as per the BERC regulations, thus leading to under recovery of costs.

# A.7. Railways

## Industry Overview

The railways sector, which in the 1800's enjoyed a 100% share in the national freight traffic, witnessed a gradual decline in market share to 30% in 1975 and further down to a mere 4% share in 2005 for both passenger and freight transport. Major underlying causes for this slump were inherent inefficiencies in the rail transportation system and gradual emergence of road transport.

The Ministry of Railways is responsible for development, expansion and operations of the railways (including international, inter-city, and suburban rail systems) through the Bangladesh Railway (BR). BR has about 2,877 route-km of railways (serving 44 out of the 64 districts), with 458 stations, 282 locomotives, 1,474 coaches and 9,179 wagons. It carried 71 million passengers in FY 2016, up from 40 million in FY 2005. However, a decreasing trend in freight traffic has been observed over the years with BR carrying 2.6 million tons in FY 2016, down from 3.3 million tons in 2005[75].

The Jamuna river separates the railway network into two zones of operation - the western zone and the eastern zone with 1,568.8 km and 1308.3 route-km of network, respectively. There are 341 passenger trains and 37 goods and container trains in the country[76].

## Market Size and Opportunity

Vision 2021 has enabled the GoB to attach topmost priority to the railways as a means of passenger and goods transportation throughout the country. 28 new projects have been approved in the past two years and many are under active consideration for improvement of the railway system, amounting to more than ~USD 20 billion in total, new investment in the sector.

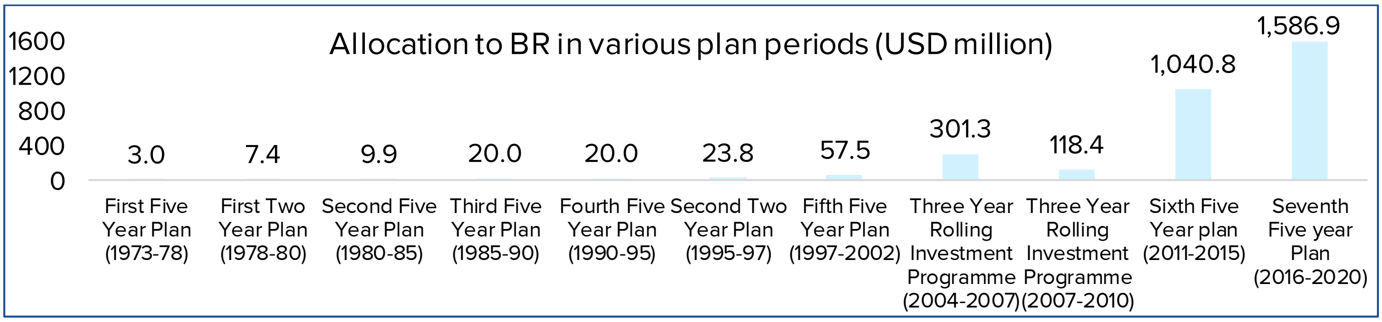
Furthermore, as a part of long-term planning, BR prepared a Railway Master Plan for the period of 2010 to 2030 with a list of 235 projects organised into four phases of five years each. The goal of the Railways Master Plan is realising the full potential of BR through planned investment track, signalling, rolling stock, maintenance and human resource development.

The PPP concept for railways is at an early development stage and there is no set precedence on the type of PPP contract and/or concession agreement. Currently, the PPPO has taken a project to construct a new ICD on PPP basis at an estimated value of USD 200-500 million[77]. The project was approved in August 2013 and is currently at the project preparation stage.

## Financing

Lack of sufficient means of financing has historically plagued the railways sector in Bangladesh. Government budgetary allocations have traditionally funded both train operations and infrastructure investments in the sector. However, with continued support from the government, the BR is yet to gain financial independence and continues to make operating losses year on year. The development plan outlays in the major plan periods are exhibited as below:

Figure 33: Allocation to Bangladesh Railway in various plan periods




As per the Railway Master Plan (July 2010-June 2030), over the next 20 years, USD 1.40 billion per year will be needed to develop the sector (~USD 28 billion in total). Against that, the annual allocation made towards the Sixth Five Year plan (2011-2015) was only USD 1.04 billion, indicating that historically, there has been gap in investment requirements against funding availability.

However, in the last decade, gap in railways infrastructure funding is gradually narrowing with an increased budgetary allocation and an influx of funds and support from bilateral agencies in China, Japan and India and from multilateral agencies such as ADB, World Bank and even the European Investment Bank (EIB). For example, the 2016-17 Annual Development Plan included 41 Investment Projects and 7 Technical Assistance Projects of BR worth ~USD 11 billion, out of which agencies such as JICA, ADB, WB and EIB funded approximately two-thirds (in terms of value) and the remaining one-third was funded by the GoB.

75 BR Information Book 2015
76 Position paper on Bangladesh Railway
77 PPPO website

Some of the key project funding received by the sector are outlined below:

Bilateral Funding:

- Japan: JICA has sanctioned ~USD 1.0 billion[78] for the construction of Jamuna Railway Bridge Project.
- China**:** China has played an active role in financing railway projects in the country lately. The country committed ~USD 3.5 billion for Padma Bridge Rail Link Project (contract inked with China Railway Group Ltd. in Aug 2016). Additionally, around ~USD 4.0 billion is expected from the country for the Dhaka-Chittagong express railway[79].
- India**:** The first Indian Line of Credit (LoC) was signed in 2010 with an allocation of ~USD 330 million for 12 projects. Thereafter, ~USD 1.0 billion was allocated under the second and third LoCs for five projects.
- Korea**:** EDCF funded around ~USD 275 million for construction of Karnaphuli rail-cum-road bridge, procurement of carriages and locomotives and modernisation of signaling system.

Multilateral Funding:

- ADB**:** ADB is expected to commit between ~USD 5.0 to 6.5 billion to the Bangladesh roads and railways sector over the next few years. In 2018, ADB approved loans totalling ~USD 360 million for modernisation of the BR network.
- EIB: In 2015, the European Union's long-term financing institution lent ~ USD 155 million to the GoB to further improve the country's railways[80].

Continued investments are important to the sector, especially in order to enable Bangladesh Railways to compete with other modes of transportation.

## Key Players

The public sector provides and operates most rail services with little involvement of any private players. BR is the key rail transport agency and is a government owned and managed organisation.

BR is both a public utility service organisation and a commercial enterprise. As a public utility service organisation, BR is expected to provide efficient mass transportation facilities, whereas, as a commercial enterprise, it undertakes activities that generate revenues to fund its own cost elements, a feat that has not been achieved by BR.

Participation of private players in the sector was seen in the following three arenas:

1. Computerised railway ticketing and reservation systems on few routes has been introduced since 1994 on Built, Operate and Transfer (BOT) basis.
2. Installation, operation and maintenance of fiber-optic cables along major railway lines, in order to improve communication and signalling systems of the railway was handed out to Grameen Phone (GP), a private cell phone operator.
3. Repair of passenger coaches, cleaning of locomotives and passenger carriages and catering of food and beverages in trains have been dished out to private enterprises.

Additionally, certain other non-core areas such as owning and operating railway hospitals, commercialisation of unused land in major cities such as Dhaka and Chittagong by development of shopping centers and hotels etc. are being explored by BR on a PPP basis.

## Risks and Challenges

There are a few challenges in the railway sector of Bangladesh as listed below:

- Lack of connectivity and orientation problems - The railway network does not adequately serve the transportation needs of the country. Out of 64 districts in Bangladesh, the network serves only 44. In Bangladesh, a riverine country with 405 rivers flowing through it, connectivity becomes even more challenging due to the requirement of constructing expensive bridges. Additionally, the presence of multiple gauges on the same network gives rise to orientation problems and affects the overall functionality of the railways.
- Lack of investment - There has been a shift of investment focus from railways to roads over the years. Consequently, there has not been any construction of new railway routes or maintenance of existing routes due to a serious gap in funding requirements versus funding availability.
- Slow implementation - Lack of funding and resources have resulted in slow implementation of projects in the sector. In some cases, even with funding obtained, there have been delays in implementation due to delays in the decision making process.
- Climate change - Bangladesh receives heavy rainfall and the Brahmaputra River that flows through the country is subject to frequent flooding. As a consequence, the railways sector needs to formulate strategies and raise funds to be able to successfully tackle the effects of such climatic catastrophes.

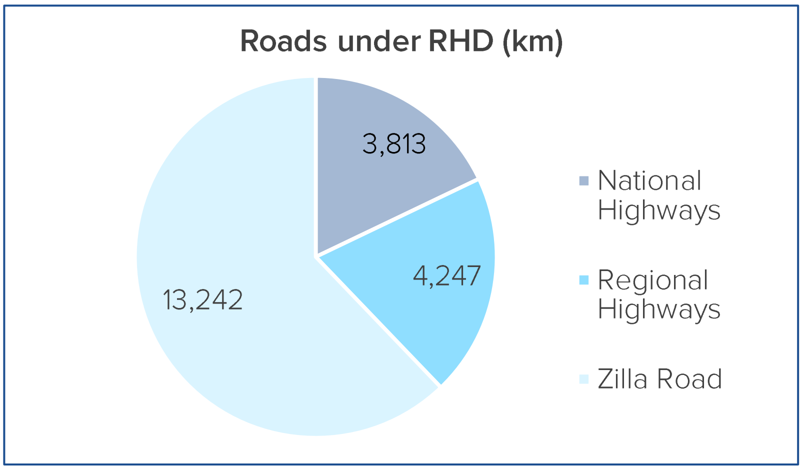
78 EMIS database
79 EMIS database
80 EIB website

# A.8. Roads and Highways

## Industry Overview

Ministry of Road Transport and Bridges (MRTB), the state authority, oversees the Roads and Highways Department (RHD) responsible for construction and maintenance of major road networks of Bangladesh, which include national highways, regional highways, and zilla roads. The size of Bangladesh's major road network[81] has grown from 2,500 km to approximately 22,000 km over the last four decades supporting 73% and 82% of the national passenger and freight traffic, respectively.

Figure 34: Overview of road network in Bangladesh




Private sector participation initiated under the PPP Act, 2015 has resulted in implementation of two key projects (details mentioned in table 47) in the country. The PPP model enables the private partner in designing, building, financing, operating, and maintaining (DBFO mode) for the concessionaire period and recover revenues from the user at an agreed tariff and fee increment.

## Market Size and Opportunity

The Road Master Plan (RMP) formulated under the timeframe of 2009-2029 outlines maintenance of road and bridge assets, improving connectivity along with developing strategic road networks to meet economic and traffic growth targets. Bangladesh has sought ADB assistance for a TA project to update the Road Master Plan by Q4 2019. The projects identified under the RMP (2009) include:

1. 37 capital programmes and projects costing ~USD 5.1 billion
2. Recurrent expenditure programmes including traffic management, periodic maintenance and road safety measures for these projects estimated at ~USD 3.5 billion

Currently, roads and bridges have a project pipeline of USD 19.2 billion. Numerous projects under this and the RHD have been identified for implementation under the PPP model. This includes ~USD 1.54 billion ongoing projects and ~USD 5 billion to be contracted in the next two to three years.

Table 45: Roads and Highway projects under PPP consideration[82]

| Road and Highway Projects under PPP Consideration | Estimated capital cost ($m) | Status |
|---|---|---|
| Dhaka - Chattogram Access Controlled Highway | 2,800 | Upcoming |
| Second Padma Multipurpose Bridge at Paturia Goalundo | 1,500 | Upcoming |
| Dhaka Elevated Expressway | 1,200 | Ongoing |
| Upgrading of Dhaka Bypass to 4 lanes | 350 | Ongoing |
| Shantinagar - Dhaka Mawa Road | 320 | Upcoming |
| Hatirjheel - Rampura Bridge | 200 | Upcoming |
| Gabtoli - Nabinagar Road | 180 | Upcoming |

81 Roads and Highway Department, Bangladesh
82 PPP Authority of Bangladesh

## Financing

Roads and Highways are constructed using funds mainly from the government along with project aid received from development financial institutions. For projects under the PPP mode, the GoB offers viability gap funding (VGF) and a minimum revenue guarantee to the concessionaire to optimise the cost of financing.

A total number of 140 development projects including three Technical Assistance projects were included in the Annual Development Programme (ADP) of Roads and Highways Department[83] for FY 2018. An amount of USD 1.7 billion was allocated for these development projects funded by the GoB (USD 1.3 billion) and project aid from DFIs such as ADB, World Bank, Asian Infrastructure Investment Bank (AIIB) and JICA (USD 404 million). 99.9% of the allocation had been spent during the same year.

The major investments that have taken place recently in this sector are listed below:

Figure 35: Financing for Roads and Highways in FY 2018

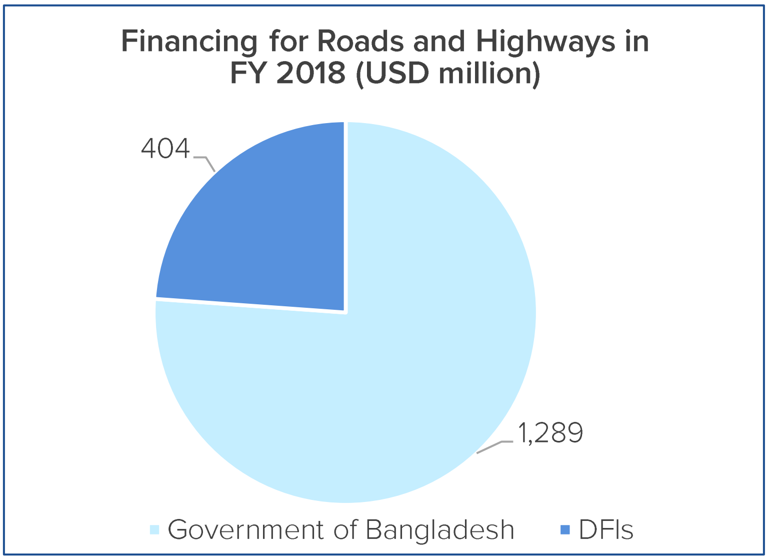



Table 46: Key investments in the Road sector

| Key investments in the roads sector |
|---|
| • A consortium of companies from the People's Republic of China–Sichuan Road and Bridge Group, Shamim Enterprise Limited, and UDC Construction Limited–have signed a concession contract with the GoB to upgrade the 48 km Dhaka Bypass Road to a dual carriageway for improving connectivity between country's north and northwest parts with Chattogram Port. This is the first PPP project of RHD, and once completed, it will be the first toll road in the country.<br>• An agreement has been signed with the Italian Thai Development Public Company Limited to construct the 46.7 km long Dhaka elevated expressway at a cost of USD 1.2 billion from Hazrat Shah Jalal International Airport to Kutubkhali on the Dhaka-Chattogram highway on a PPP structure.<br>• Funding of USD 500 million has been secured by RHD for two important highway projects (Kewatkhali Bridge and a new highway connecting Tamabil with Sylhet) from the AIIB.<br>• JICA has signed a loan agreement with the GoB to provide USD 468 million for construction and repair of Kanchpur, Meghna and Gumti bridges.<br>• ADB has approved an additional amount of USD 1.2 billion to finance the second phase of the Dhaka-Northwest international trade corridor for improving the 190 km section from Elenga through Hatikurul to Rangpur.<br>• World Bank has sanctioned USD 526 million, 30-year loan to improve connectivity to rural areas in Bangladesh. |

## Key Players

The major players involved in implementation of Roads and Highways in Bangladesh are:

Table 47: Responsibilities of state owned agencies in the Road sector

| S. No | Agency | Key Responsibility | Assets under consideration |
|---|---|---|---|
| 1 | Roads and Highways Department (RHD) | Main body responsible for construction and maintenance of major road networks of Bangladesh. | Out of the total road network under this department, 3,813 km is National Highway (17.9%), 4,247 km Regional Highway (19.9%) and remaining 13,242 km is Zilla roads (62.2%). In addition to these, RHD has 4,404 bridges and 14,814 culverts under its control. |
| 2 | Local Government Engineering | LGED is responsible for implementing projects/ programmes for the | Since its inception up to FY 2018, LGED has so far developed 113,210 km upazila, union and rural roads, constructed 1,364 km of |

83 Bangladesh economic review 2018

| S. No | Agency | Key Responsibility | Assets under consideration |
|---|---|---|---|
| | Department (LGED) | development of rural and urban infrastructures of the country. | bridges/culverts and planted trees along 25,016 km of those roads.[84] |
| 3 | Bangladesh Bridge Authority (BBA) | BBA is responsible for implementation and maintenance of bridges and tunnels (which are 1,500 metres and over in length), flyover, expressway, causeway and link roads | The main projects of the 'Bangladesh Bridge Authority' are the Bangabandhu Bridge, Padma Multi-purpose Bridge, and Bus Rapid Transit (BRT) Lane. |

## Risks and Challenges

The Bangladesh Roads and Highways sector faces significant challenges such as:

- Demand Risk: Revenue generation from tolls has been sluggish impacted by uncertainty in ridership, thus making projects non-bankable.
- Delays in land acquisition: This is due to resistance from residents–especially in areas with high urban density.
- Cost overruns: Inaccurate cost estimations during the project planning stage and price escalation of resources have led to funding shortfalls affecting project completion timelines.
- Road maintenance: Climatic conditions, natural calamities and vehicle overloading damage the road network, which is aggravated by the lack of adequate investments for road maintenance.

84 LGED Bangladesh road database

# A.9. Social infrastructure (Health and Education)

## Industry Overview

Bangladesh has been focused on mega-infrastructure projects to ensure enhanced connectivity amongst various parts of the country. However, this has come at the cost of improving the social infrastructure–mainly comprising of the health and education sectors. The national budget allocations to education and health sectors have been falling short of the targets identified under the Seventh Five-Year Plan.

Despite extreme poverty, Bangladesh has made great strides towards improving the health of women and children. Since the mid-1980s, the maternal mortality rate has fallen by one-third, and in the last decade, the child mortality rate has been reduced to half. However, according to the Healthcare Access and Quality Index published by leading British medical journal, The Lancet in May 2018, Bangladesh still ranks 133rd out of 195 countries worldwide in providing access to quality healthcare.

In a country of over 18 million primary school students, Bangladesh has achieved near universal net primary enrolment, with over 97.9% of children of primary school age enrolling in school. Nonetheless, the quality of education in Bangladesh remains low. UNESCO's Education 2030 Framework for Action recommended spending at least 4-6% of the GDP on education, while WHO (World Health Organization) recommends allocating at least 5% of a country's GDP towards health, both of which are much higher than Bangladesh's current allocations.

## Market size and Opportunity

Primary schools forms a major part of the educational institutions in Bangladesh with ~130,000 primary schools[85].

The distribution of institutes apart from primary schools is depicted in the chart.

In the health sector, Bangladesh has around 607 government hospitals under the Directorate General of Health Services (DGHS) and 5,023 non-government hospitals and clinics.

The major upcoming opportunities for Public-Private Partnership (PPP) projects[86] in the Health and Education sectors along with their estimated costs are listed below:

Figure 36: Number of Institutions except primary schools in Bangladesh

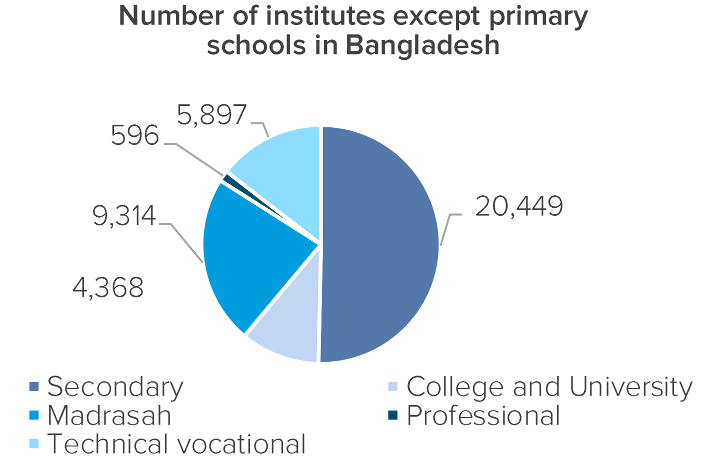



Table 48: List of PPP projects in the Social Infrastructure sector

| Healthcare, Education projects under PPP Consideration | Estimated cost ($m) | Project Stage |
|---|---|---|
| Medical college and modernisation of railway hospital at Saidpur in Nilphamari | 75 | Project Development Stage–Advisor Appointment |
| Medical college and modernisation of railway hospital at Paksey in Pabna | 75 | Project Development Stage–Advisor Appointment |
| New modern medical college and hospital of 250 beds on the unused land in Khulna | 100 | Project Development Stage–Advisor Appointment |
| Medical college and modernisation of railway hospital at CRB in Chattogram | 30 | Procurement Stage–Negotiation Completed |
| Establishment of a 50–seat medical college and nursing institute and up gradation and modernisation of railway hospital into 250 beds at Kamlapur, Dhaka. | 100 | Project Development Stage–Detailed Feasibility Study |

Bangladesh Railway has hospitals that render medical services to common people as well as BR's employees. A few old railway hospitals are on the verge of closure due to shortage of doctors, nurses and other staff, and

85 2017 Statistical Yearbook of Bangladesh
86 PPP Authority of Bangladesh

unavailability of important equipment for diagnosing diseases. These hospitals are being upgraded to cope with the growing demand for advanced treatment.

Bangladesh spends ~USD 2.0 billion abroad for medical treatment in a year. This signifies the untapped potential in the healthcare sector. According to BIDA, the healthcare demand in Bangladesh is growing at 21% annually. The demand for health care services is accelerating because of increasing purchasing power of the growing middle and upper middle classes.

## Financing

The private hospitals and schools in Bangladesh secure short-term and long-term financing facilities from banks and financial institutions. Banks such as HSBC Bank, IFC (ECB arm), Standard Chartered Bank, Janata Bank, BRAC Bank, Eastern Bank, Mercantile Bank and Southeast Bank have provided loans to the companies. The rate of interest for these loans varies from 10% to 15% with loan tenors of five to seven years.

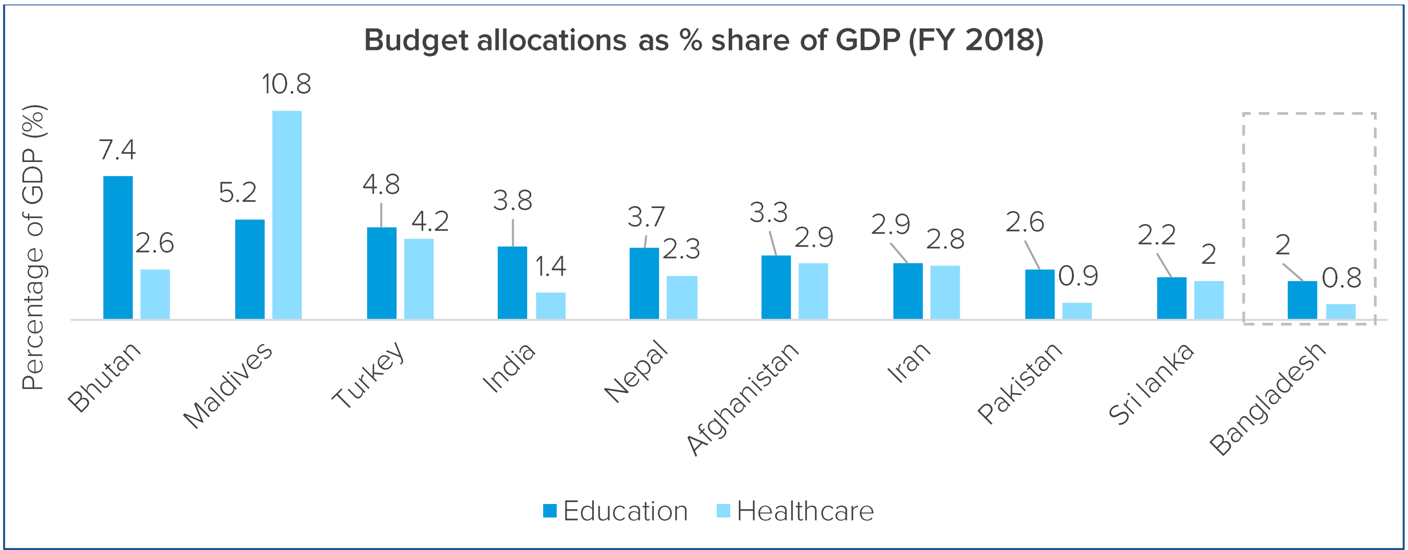
In addition, World Bank, ADB and United Nations Children's Fund provide low-interest loans for health and education in Bangladesh.

The national budget allocations to education and health sectors have been falling short of the targets identified under the Seventh Five-Year Plan.

For FY 2019, Bangladesh has allocated USD 2.8 billion for health and USD 8.4 billion for education[87]. The Seventh Five-Year Plan aimed to spend 1.0% of the GDP on the health sector in the FY 2019 budget, while the sector was allocated only 0.9% of the GDP. Similarly, for the education sector, the Seventh Five-Year Plan targeted to spend 2.8% of total GDP on education while only 2.1% of the GDP has been allocated.

When compared with other South and South-West Asian countries, Bangladesh has the lowest share allocated to health and education sectors as a percentage of GDP.

Figure 37: Budget allocations as percentage share of GDP in South-West Asian countries




There is only one operational PPP project in the social infrastructure sector, wherein Sandor Medicaids, an Indian company, invested USD 2 million to set up Homo-dialysis centres in Dhaka and Chittagong.

## Key Players

Healthcare

The Ministry of Health and Family Welfare, through the two Directorates, General of Health Services (DGHS) and Family Planning (DGFP-Directorate General of Family Planning), manages a dual system of general health and family planning services through district hospitals. The top private companies in the healthcare sector are listed below:

Table 49: List of private companies in the Healthcare sector

| Companies | No. of beds (Bangladesh) | Brief Overview |
|---|---|---|
| Apollo Group | 450 | Apollo has emerged as Asia's foremost integrated healthcare services provider and has a robust presence across the healthcare ecosystem, including hospitals, pharmacies, primary care and diagnostic clinics. |

87 Bangladesh National Budget FY 2019

| Companies | No. of beds (Bangladesh) | Brief Overview |
|---|---|---|
| United Group | 450 | United Enterprises & Co Limited (UECL) is one of the largest socio-economic infrastructure-based company in Bangladesh. UECL has a diverse investment portfolio spanning from power generation to healthcare, education, real estate, construction, port, yarn spinning, specialised services, shipping and logistics among others. |
| Square Group | 320 | The Square group has presence in various sectors in Bangladesh such as pharmaceuticals, textile, information technology (IT), healthcare products, food products, and hospitals, etc. with an annual turnover above USD 260 million and with a workforce of more than 35,000 people. |

Education

The Ministry of Education is the ministry responsible for secondary, vocational and tertiary education in Bangladesh. Primary education and mass literacy is the responsibility of the Ministry of Primary and Mass Education. At present, there are 132 universities in Bangladesh of which 95 are private and 37 are public. A few key private universities are North South University, Independence University, Darul Ihsan University and BRAC University. The majority of the renowned private universities are in Dhaka and Chittagong.

## Risks and Challenges

The challenges in the sector are as highlighted below:

- Lack of efficiency control in health services: The Bangladesh public health system remains highly centralised, with planning undertaken by the Ministry of Health and Family Welfare and little authority delegated to local levels. This leads to a lack of focus on local levels, slow decision-making processes and inefficiency in programme implementation.
- Low government spending on healthcare and education as a share of the gross domestic product (GDP): Currently government spending on healthcare and education is around 3% of GDP, the second lowest in South Asia. This would result in potential inability to provide adequate services to the populations.
- Absence of robust performance standards for institutions: This paves the way for large variations in performance levels across schools. Incentives for good performance are non-existent or minimal, rendering good policies ineffective.

# A.10. Special Economic Zones (SEZs)

## Industry Overview

Special Economic Zones (SEZs) are demarcated zones in the country which have revised business regulations /practices allowing units present therein to enjoy special privileges/incentives

The sector has been an area of focus for the Government, enabled by the enactment of Bangladesh Export Processing Zones Authority Act, 1980 under which the semi-autonomous body, Bangladesh Export Processing Zones Authority (BEPZA) has leased serviced land to industrial tenants in eight export processing zones (EPZs) across the country, primarily focused on the garment sector. It is estimated that these EPZs have attracted USD 4.2 billion of investment in the last two decades (until FY 2017).

Along with BEPZA, the Bangladesh Economic Zones Authority (BEZA) and the Bangladesh Hi-Tech Park Authority (BHTPA) have been tasked to oversee the expansion of economic zones (EZs) and hi-tech parks (HTPs) in the country. These new types of zones operate under different regulatory regimes from BEPZA, allowing for production aimed at both domestic and foreign markets. BEZA has not had a great experience with the PPP model. It is now focusing on the Private EZ model, BEPZA model (wherein they develop and operate the zones) and G2G Models with countries like India, Japan and China.

The SEZ developer signs a developer agreement with BEZA. The SEZ developer then leases out the land and provides utility services to industries in the SEZ. In return, industries pay a fixed rent as agreed with developers. However, the rent amount charged is regulated by BEZA. Additionally, there is also a 5% to 10% surcharge on utility services and EZ service fee (operation and maintenance charge) that has to be paid by industries who are operating in the EZ.

## Market Size and Opportunity

The eight EPZs in the country have housed 591 enterprises (463 in operation and 128 under implementation) drawing investments of USD 4.2 billion and generating exports of USD 59.4 billion (~19% of the total exports from the country).

Further, BEZA aims to develop 100 EZs by 2025 over 30,000 hectares of land producing goods and services worth USD 40 billion, creating employment for 10 million people, and uplifting of the underdeveloped regions. The government has already identified 88 EZs (worth USD 47.5 billion), out of which 61 are public economic zones and 27 are private economic zones[88].

Out of the 27 private zones (worth USD 15.2 billion), four are in operation and three are under construction. Sixteen have received preliminary licenses and four are yet to receive licenses due to land clearance issues. Out of the public economic zones, two economic zones are under PPP consideration[89]. One IT park is also being considered under the PPP model:

Table 50: Economic Zones under PPP consideration

| Economic Zones under PPP Consideration | Estimated cost ($m) |
|---|---|
| Hi-tech Park at Kaliakoir ( Block two, three and five) | 235 |
| EZ 4: Mongla | 70 |
| EZ 2: Mirersharai | 100 |

The key investments in important Bangladesh economic zones have been listed below:

Table 51: Key investments in Bangladesh Economic Zones

| Key investments in Bangladesh Economic Zones |
|---|
| • BEZA has signed a shareholder deal (government-to-government agreement) with the Chinese company China Harbour Engineering Company Limited (CHEC) for establishing Chinese Economic and Industrial Zone in Anwara of Chittagong. It is expected to attract USD 42 billion investment and would create 0.2 million jobs in the zone.<br>• 70 acres of land in Mirsarai has been allocated to a JV of Nippon Steel and Sumikin Bussan Corporation of Japan and Mcdonald Steel Building Products Limited of Bangladesh to build a large steel mill with an investment of ~USD 59 million in the zone.<br>• A Chinese company, Zhejiang Jindun Pressure Vessel Co Limited has invested USD 2.5 billion for establishing industries that include a coal-based power plant over 500 acres of land in Mirersarai economic zone, off Chittagong port.<br>• An MoU has been signed by BEZA under the G2G model with NIDAR Industrial Park Pune Private Limited, part of the Hiranandani Group, to set up an Indian Economic Zone over 110 acres in Mongla. |

88 BEZA website
89 PPP Authority of Bangladesh

| Key investments in Bangladesh Economic Zones |
| --- |
| • A Japanese economic zone is being set up in Araihazar in a G2G model with JICA lending USD 120 million to Bangladesh at a concessional interest rate to develop the zone. Sumitomo Corporation is developing the zone with an investment of USD 72 million. |

## Financing

Operating structures differ based on the component of financing and operations taken by the public or private entity. Financing of external off-site infrastructure requires major investments, and involves coordination with public policy and broad national infrastructure planning, resulting in it being financed either entirely by public sources or through PPPs.

Bangladesh signed the third Line of Credit (LoC) agreement for USD 4.5 billion with India in October 2017. Bangladesh will pay an interest of 1% per annum with a 20-year repayment period. It plans to use this line of credit for setting up of the Indian EZs, along with other infrastructure projects.

JICA, the development arm of the Japanese government, also extends soft loans to Bangladesh for off-site infrastructure development in EZs. Most financing for Chinese investment in Bangladesh comes through soft Chinese loans, with interest rates of 2% and repayment periods of 20 years.

For financing of on-site infrastructure and ongoing operations within the SEZ, mixed financing modes have been explored. These include the full range of entirely public financing, PPPs of various types and purely private financing.

Table 52: Financing mechanism in the Special Economic Zone

| Requirement | Source of funding | Common structures | Example financiers |
| --- | --- | --- | --- |
| External off-site infrastructure | Public or private | Outright public ownership; PPPs | IDA; World Bank; Chinese government; commercial banks |
| SEZ on-site infrastructure | Public or private | Outright public ownership; PPPs; private companies with public and/or private shareholders | BIFFL; venture capital; World Bank |
| SEZ management | Public or private | Private companies with public and/or private shareholders | Venture capital; World Bank; Chinese government |
| Firms operating in SEZs | Private | Private corporations | Self-financing including foreign direct investment (FDI) and venture capital |

## Key Players

Local, non-resident Bangladeshis or foreign investors, business organisations or groups can establish Private Economic Zones individually or jointly. BEZA has developed a Private EZ policy for private developers and has provided pre-qualification licenses to the following players in four phases. After obtaining pre-qualification licenses from BEZA, private developers have started on-site development activities. In all, these private Economic Zone developers invested USD 488 million[90].

Table 53: List of private Economic Zone developers

| Private EZ | Brief Description | Developer investment ($m) | Suitable Industries |
| --- | --- | --- | --- |
| AK Khan Economic Zone | Located approximately 56 km northeast of Dhaka city, spread over 200 acres with a River Side Inland Container Terminal (RICT) for providing port facilities | 35 | Mobile handsets, telecom towers, pharmaceutical, agro-based industries, chemicals, and aircraft instruments |
| Abdul Monem Economic Zone (AMEZ) | AMEZ is located in Gazaria, Munshiganj on a land parcel of 216 acres with an option to expand up to 300 acres | 65 | Textile and garment and accessories, leather products and shoe industry, pharmaceuticals, and food processing |

90 BEZA annual report

| Private EZ | Brief Description | Developer investment ($m) | Suitable Industries |
|---|---|---|---|
| Meghna Private Economic Zone | Meghna Economic Zone (MEZ) is situated at Meghnaghat, Sonargaon, Narayanganj on the banks of the river Meghna over 68 acres | 56 | Pulp and paper, sanitary napkin, baby diaper, PVC plant, oil refinery, flour mill, power plant, petrochemicals, and ceramics |
| Meghna Industrial Economic Zone | Located at ChotoShilmandi adjacent to the Dhaka – Chittagong highway with a gross area of 80 acres | 40 | Garments accessories, auto bricks, beverage, IT, IT accessories, pharmaceutical bottle etc. |
| Aman Economic Zone | Located in Hariamouza over 150 acres, the developer has a plan to attract foreign and other domestic investments to this zone | 68 | Construction materials, packaging, agro based, foods and beverage, and power |
| Bay Economic Zone | Bay Economic Zone is owned by Bay Group and is spread over 65 acres, 34 kms from Dhaka city | 63 | Leather product, shoe material and accessories, information technology, chemical, electronic, and light medical equipment |
| Arisha Economic Zone | Arisha Economic zone will be a multi-sectoral as well as closest EZ to the Capital city of Dhaka encompassing an area of 150 acres, plot sizes of 2,000 sq. m each | 160 | RMG, light engineering and auto parts, packaging, telecom, and aeronautical component industry |

## Risks and Challenges

Bangladesh's development agenda using SEZs is affected by internal and external challenges that the government will need to address. These include:

- BEZA is playing the role of a developer of economic zones. This is undesirable since BEZA has a target of 100 economic zones and needs to focus more as a regulator rather than a developer of economic zones.
- Apart from BEPZA that has nearly four decades of experience, the new agencies tasked with the expansion of industrial infrastructure are young institutions and it will take time to build the technical capacity to be effective regulators and partners in negotiations with leading industry groups and foreign multinationals. Political interference in site selection can be a threat to investment decisions and the ability of senior management to handle such pressure will be crucial.
- Banks are yet to accept SEZs as infrastructure projects in Bangladesh. Moreover, these projects have long gestation periods with a breakeven of 10 to 12 years for small land parcels and over 12 years for larger land parcels.
- Repatriation of profits for foreign investors has been a key bottleneck in BEPZA EPZs. There is a need to streamline the process to attract more foreign players. Although exemptions are provided through lucrative incentive structures, the turnaround time is too long.
- Interest rates range between 9% – 14% depending on the debt exposure of the companies (local) thereby affecting the viability of projects. Cheaper sources of financing and concessional loans need to be promoted if the government wants to achieve its target of 100 SEZs. A developed bond market will provide further impetus to cheaper SEZ financing.

# A.11. Telecommunication Industry

## Industry Overview

Liberalisation of the Bangladesh telecommunication sector began in 1989 with issuance of license to Bangladesh Telecom Limited and Sheba Telecom. Later by 2001, Bangladesh Telecommunication Act (2001) was enacted to establish Bangladesh Telecommunication Regulatory Commission (BTRC) and was assigned with responsibilities such as establishing, operating, regulating and maintaining telecommunication establishments.

Due to rapid adoption of telecommunication services, unique subscriber penetration in the country rose to 55% in 2018 from 1% in 2003. As on 2018, the number of active subscriptions stood at 157 million. Despite the launch of 4G services in 2018, 3G coverage dominates the market with 64.9 million subscribers as compared to 11.7 million 4G subscribers. To support the increasing subscriber base, there are 36,000 towers, and majority of them are owned by multi-national organisations (MNOs). Recently BTRC has published new guidelines with an aim to rationalise the number of towers and create two separate industries i.e. network business and infrastructure services.

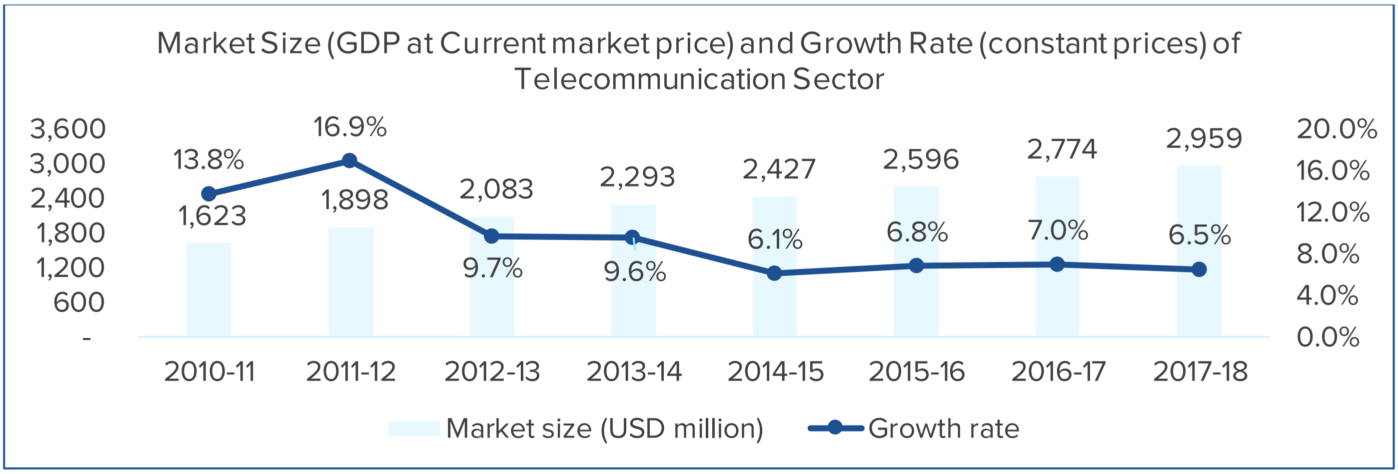
As on 2018, five NTTN (Nationwide Telecommunication Transmission Network) operators along with mobile operators have laid 55,370 km of fibre optic cables NTTN operators namely Summit Communication, Fibre@home, BTCL (Bangladesh Telecommunication Company Limited), Power Grid Company of Bangladesh and Bangladesh Railway, have a major share of fibre optic network in the country. Among the mobile operators, Banglalink has the highest share (3,000 km) of fibre optic network, while Grameenphone has 2,500 km, Citycell has 1,127 km, Robi has 831 km and Teletalk has 101 km of fibre optic network. Large fibre optic network has enabled the residents of Bangladesh to have access to high-speed internet.

There are three private cellular companies and a state owned cellular company in the country. The cellular operating companies, as per the guidelines established by BTRC, set the tariff to be recovered from users. Further, under the new landscape of infrastructure services, four private companies have been selected to build, own, acquire, rent, lease, operate and maintain towers.

## Market size/Opportunity

The telecommunication sector grew by 6.5% in FY 2018 and contributed 2.5% to the GDP (at constant prices) during the same fiscal year. It is estimated that a 1% increase in mobile penetration as well as in internet penetration can lead to an increase in GDP growth rate by 0.3% and 0.08% respectively.

Figure 38: Market size and growth rate of Telecommunication sector[91]




Bangladesh is materialising its vision of Digital Bangladesh by 2021. The country is undergoing a series of digital transformations, which will call upon a major contribution from the telecom sector. The mobile ecosystem is estimated to generate ~ USD 17.1 billion by 2025. Mentioned below are key developments in the telecom industry, which shall require participation and investments from the private sector.

- Unique mobile internet subscriptions expected to grow at a CAGR of 10% to 73 million by 2025 from 35 million in 2017 (penetration rate of ~21%).
- Unique mobile subscribers expected to be 107 million with 60% penetration rate by 2025 as compared to present 85 million at 55% penetration rate.
- Total SIM connections expected to touch 190 million with 102% penetration rate by 2025.
- With the launch of 4G services, mobile broadband adoption is expected to grow from 29% (2017) to 82% by 2025.

91 Bangladesh economic review 2018

- Availability of low cost smartphones to fuel the rate of smartphone adoption, which is expected to increase from 31% (45 million) in 2017 to 75% (138 million) by 2025.

Investment Plans of Cellular Companies

- Teletalk cellular company is investing USD 654 million to expand its network. In addition, LG Uplus has offered USD 1.2 billion to upgrade the core network and develop the infrastructure while ensuring 4G coverage in 98% of the country's geography with 11,275 towers.
- Banglalink is investing USD 308 million in spectrum to double its 3G network capacity in the country.
- Grameenphone will invest USD 2 million mainly on 2G, 3G, and 4G site rollout and network modernisation.

## Financing

The telecom industry in Bangladesh has been developed through investments largely incurred by the cellular companies operating within the country. Key sources of funding include loans from local banks and from multilateral agencies like KfW Bank (Kreditanstalt für Wiederaufbau Bankengruppe), International Finance Corporation, FMO–Dutch development bank, PROPARCO–French Development Financial Institution, CDC group–UK, and OPEC Fund for International Development.

In addition, the GoB has been able to attract funds from the Indian and Chinese governments.

The financing mechanism[92] in the telecommunication sector is mentioned below:

Table 54: Financing mechanism in the Telecommunication sector

| Type of Financial institution | Name | Lending rates | Loan tenor | Remarks |
|---|---|---|---|---|
| Bank | • Citibank<br>• Standard Chartered Bank<br>• HSBC Bank<br>• BRAC Bank | 10%-11% | Short-term (one year) | The loan amount has been typically in the range of USD 16 million to USD 20 million. |
| NBFI | • IDCOL | NA | Long-term | Among the NBFIs, IDCOL is actively funding various projects in the telecommunication sector. |
| Foreign Donors | • International Finance Corporation<br>• KFW DEG<br>• FMO, Netherlands<br>• PROPARCO<br>• CDC Group | 3.5% + 6 months LIBOR | 5-6 years | Grameenphone has been borrowing syndicate loan from foreign donors. The loans amount has been in the range of USD 300 million to USD 350 million |

Bilateral

BTCL is expanding (2,367 km) its next generation fibre-optic backbone infrastructure network in the country. The project is being financed by the GoB (USD 0.9 million) and a 20 year credit facility will be provided by the Chinese government (USD 2.2 million).

## Key Players

There are four cellular companies, who operate in the telecom sector of Bangladesh.

Table 55: Cellular companies operating in Bangladesh

| Company | Market Share | Remarks |
|---|---|---|
| Grameenphone | 46% | Grameenphone dominates the telecom industry with a 46% market share in terms of subscribers. It generated a total revenue of USD 1,590 million with an EBITDA of USD 9.7 million in FY 2018. |
| Robi Axiata | 30% | Robi Axiata is a JV between Axiata group (68.7%), Bharti Airtel (25%) and NTT Docomo (6.3%). The company reported a total revenue of USD 700 million in FY 2016. |

92 Annual reports of cellular operators

| Company | Market Share | Remarks |
|---|---|---|
| Banglalink | 22% | The company reported a total revenue of USD 38.9 million in FY 2015, a growth of 84% on year-on-year basis. |
| Teletalk | 2% | Teletalk is a state-owned company. It generated a revenue of USD 85.3 million in FY 2017, a 28% decline in revenue on year-on-year basis. |

Four firms[93] have been selected to own towers and provide the required infrastructure to the cellular network operators. The details of the firms are mentioned below:

Table 56: List of private cellular network operators

| Company | Remarks |
|---|---|
| Edotco Bangladesh Tower Company | The company has developed a portfolio of 9,900 towers and has provided built-to-suit and data center facility offerings to the telecommunication service providers. |
| TASC Summit Tower | It is a JV of Summit Communications (50% share), UK-based TASC Tower and India based Global Holding Corporation Private Limited. |
| Kirtankhola Tower Bangladesh Limited | It is a joint venture between Confidence Tower (30%) and Singapore's ECP Tower company (70%). |
| AB HiTech Consortium Limited | The consortium has five local partners (80%) and two foreign partners (20%). The local partners are ADN Telecom, AB Hightech International, ZN Enterprise, Synergy Logistics and Orange Digital and the foreign partners are China Communications Services and Changshu Fengfan Power Equipment. |

Table 57: Major deal in the Telecommunication sector

| Deals[94] |
|---|
| • Airtel Bangladesh (had entered the market in 2010 with acquisition of a local player – Warid Telecom) merged with Robi (present in the country for over two decades) leading to formation of the second largest telecom company in the country with a market share of 28.7%. The new entity paid USD 11.9 million as merger charges and USD 41.6 million as spectrum charges. |

## Risks and Challenges

- Publicly traded or non-publicly traded company is entitled to pay 25% and 35% tax respectively. However, a mobile phone operator is entitled to pay 45% tax. As per the BTRC norms, a mobile operator shall pay 5.5% of its gross revenue to BTRC, in addition to Social Obligation Fund Subscription fees of 1%. This is a huge cost for the telecom operators.
- There are several disputes between the mobile operators and National Board of Revenue (NBR), which are yet to be resolved.
- High spectrum reserve prices led to acquisition of a limited number of spectrums by the cellular companies. As a result, it affected the investment in the networks and affordability of services. It can lead to a negative impact on the quality, speed and reach of the mobile broadband services.
- Affordability is a major barrier: Limited access to telecommunications in rural areas is greatly exacerbated by the very high cost of the connection charges, which makes the service unaffordable for a large proportion of the population.

93 Bangladesh may declare SMP in mobile tower sector, NEWAGE Business
94 Robi, Airtel networks integrated in Dhaka, Telegeography

# A.12. Urban infrastructure (Water, Sanitation and Waste Management)

## Industry Overview

The Ministry of Local Government, Rural Development and Cooperatives (MoLGRD&C) in Bangladesh is vested with the statutory responsibility for the Water Supply and Sanitation (WSS) sector. The Local Government Division (LGD) within the MoLGRD&C is responsible for the overall development of the WSS sector, as well as for local government institutions (LGIs) in urban areas.

The GoB has taken major steps to meet the water and sanitation targets by 2030. As per the ongoing Seventh Five-Year Plan (2016–21), the target for urban areas includes providing water access and improved sanitation access to 100% of the urban population; coverage of drainage system to be expanded to 80%, and ensuring sustainable urban development that supports increased productivity, investment, and employment.

Average total solid waste generation in Bangladesh is 14,249 tonnes/day of which DCC itself contributes more than 4,978 tonnes/ day and most of the waste is collected haphazardly from roadsides. The total waste collection rate in major cities of Bangladesh is ~44%. Bangladesh treats only 17% of its wastewater.

Bangladesh achieved the Millennium Development Goal (MDG) water target to halve the proportion of people using unimproved water sources by 2015. Bangladesh has made significant headway in recent years towards the goal of universal access to improved water sources. Today, close to 98% of the population have access to some technologically improved water source. When considering E. coli and arsenic contamination, 52% of the population have access to potable, improved water sources. Across the country, capital-intensive programmes of public and private investment have replaced unimproved sources of water (e.g., unprotected springs and surface water) with wells, managed reservoirs, and piped water supply schemes.

Only 2% have access to a private sanitation facility that is connected to a sewerage system. As expected, access to sewerage is lower in rural areas (1%) compared to that in urban areas (7%).

## Market size and Opportunity

Bangladesh's current national plan is the Sector Development Plan (SDP) for the WSS Sector designed under the leadership of the MoLGRD&C. The national plan was introduced in 2011 and remains valid until 2025.

Based on a moderate planning scenario of achieving goals by 2025 in the WSS sector, the SDP[95] (2011) estimates a total investment requirement of USD 21 billion in 2010 prices. Of the total investment requirement, the urban subsector dominates with a share of requirement of 84% in areas such as piped water supply, sewerage, and drainage. The estimated budget gap is about 47% to meet the government's envisioned water targets by 2025.

This total budget gap of about 47% is substantial (of which 69% in the urban subsector and 31% in the rural subsector). According to the SDP, even in the short run, investments have to increase by twofold to meet the requirements after accounting for the linear trends in budgetary allocations for WSS as well as development assistance. An upcoming opportunity for a Public-Private Partnership (PPP) project[96] in the WSS sector in Bangladesh along with the estimated cost is listed below:

Table 58: Water Supply and Sanitation project under PPP consideration

| WSS project under PPP Consideration | Estimated cost ($m) |
|---|---|
| Installation of water supply, sewerage, drainage system and solid waste management system in Purbachal New Town. | 340 |

The WSS project at Purbachal is the only upcoming project open for private participation. RAJUK is implementing the Purbachal New Town project with a goal to develop a modern, well-planned township near the Dhaka city. Total area of the Purbachal Project is 6,150 acres. Development and installation of water supply, sewerage, drainage system and solid waste management system is a critical component of the project. Traditionally, water and sewerage projects have been developed by a formal and traditional public procurement basis. However, in order to access private sector expertise for efficient water and sanitation services and unlock private financing, RAJUK has taken a decision to implement this project on a PPP basis.

Although, water supply and distribution, sewerage and drainage, effluent treatment plants are included in the sectors covered by the national PPP framework, there has been no experience of water supply PPP projects at the national level. The water sector is a difficult sector to enter for the private partner, mainly because the private partners will have to deal with the Pourashavas (Municipal Corporations) rather than with the national government. The Pourashavas in general do not see the need for private sector involvement, and therefore are not open to PPPs in the water sector.

95 GoB sector development plan (2011-2025): Water Supply and Sanitation Sector
96 PPP Authority of Bangladesh

## Financing

In Bangladesh, the share of budgetary allocation to the WSS sector in the national budget has been falling over the last ten years. In FY 2017, it was less than half of what it was in FY 2008. However, the total allocation in absolute numbers on WSS in the Annual Development Programme has nearly doubled from USD 330 million to USD 620 million during the same period.

Sub-sectoral budgetary allocations reveal that between FY 2008 to FY 2017, there has been consistent growth in budgetary allocations toward water, and that hygiene remains the subsector receiving the lowest budgetary allocation. It is worth emphasising that the allocation in each of the subsectors has fluctuated dramatically over the years. Sanitation, for example, has fluctuated between 12% and 30% of total budgetary allocation.

In addition, the sector has received loan funding from micro-finance institutions. Until recently, Grameen Bank offered a specific water and sanitation loan product for basic toilet construction, but the same was discontinued in 2012 after the country achieved substantial progress in reducing open defecation.

BRAC has also provided financial support to local entrepreneurs and consumers for improving sanitation facilities. At the end of 2014, the Association for Social Advancement (ASA) introduced a sanitation loan product in a number of districts based on its experiences of the pilot programme with the Water and Sanitation Programme. The World Bank, under the Global Partnership for Output Based Aid (GPOBA), has developed a micro-finance programme with Palli Karma Sahayak Foundation (PKSF) and ASA in 2015 to provide credit support to (a) rural consumers, for the purchase of materials and the construction of completed hygienic latrines, and (b) small-scale local sanitation entrepreneurs, who will provide products and construction services.

## Key Players

The Water Supply and Sewerage Authorities (WASAs) of the respective cities provide water supply, sewerage and drainage services in the four large cities of Dhaka, Chittagong, Rajshahi and Khulna. The Department of Public Health Engineering (DPHE) is responsible for implementation of the publicly funded water supply projects in all rural areas, and in all urban areas (12 city corporations and 329 municipalities) outside the areas covered by the four WASAs.

Typically, after construction of assets, these systems are handed over to local bodies to operate and maintain. LGED is responsible for assisting municipalities in implementing urban infrastructure e.g. roads, bridges, drains, buildings, etc., and support in implementation of improved planning, and organisational systems in municipalities. All the three agencies, i.e. DPHE, LGED and the WASAs, function under the administrative control of the LGD. Following the Local Government (Amendment) Act, 2010, LGIs including municipalities in urban areas are expected to take on greater responsibilities for water supply and sanitation.

The City Corporations/ Municipalities in Bangladesh are responsible for water and waste management. There are 12 city corporations in Bangladesh of which the main ones in Dhaka are the Dhaka North City Corporation (DNCC) and Dhaka South City Corporation (DSCC).

## Risks and Challenges

- Unclear and overlapping allocations of functions, funds and functionaries are a binding limitation to improving water supply, sanitation, and hygiene services in Bangladesh.
- A lack of national standards and monitoring mechanisms has left gaps in water quality and fecal sludge management practices. There is no formal regulation on service standards and pricing.
- The share of budget allocation to the WSS sector in the national budget is insufficient and has significantly decreased in the past decade. The estimated budget gap is about 47% to meet just the government's envisioned targets by 2025.

# Appendix B

# Appendix B: List of Institutions

Table 59: Primary list of institutions

| S. No | Type of Institutions | Players | Description |
|---|---|---|---|
| 1 | Banks | Citibank | Citibank has three branches and two banking offices in Bangladesh. The company reported a net profit of approximately USD 6 million in FY 2017. |
| 2 | | Standard Chartered Bank | Standard Chartered Bank provides a comprehensive range of financial services including retail banking and wealth management, commercial banking, corporate banking and institutional banking. The bank generated a net revenue of USD 238.2 million and sanctioned loans and advances worth USD 1,929 million in FY 2017. |
| 3 | | EBL Bank | EBL Bank is one of the leading local private sector banks in the country. In 2016, EBL was rated as AA+ by CRISL. The bank's total loan and advances grew by 21% to USD 2,208.3 million in FY 2017. |
| 4 | NBFI | Industrial Development Leasing Company (IDLC) | IDLC provides a comprehensive range of services such as SME financing, corporate financing, consumer financing, wealth management, portfolio management, mutual funds, alternative investments and issue managements. As on 2017, IDLC had a total loan portfolio of USD 858 million. |
| 5 | | Lanka Bangla | Lanka Bangla is one of the market leaders in the capital market services. It has three subsidiaries namely Lanka Bangla Securities Limited, Lanka Bangla Investment Limited, and Lanka Bangla Asset Management Company Limited. The company's loans and advances grew by 27.9% to USD 798.5 million in FY 2017. |
| 6 | Mutual funds | VIPB AMC | VIPB Asset Management Company is one of the pioneer investment management companies in the country. It is backed by multiple financial institutions like City Bank, NCC Bank, Southeast Bank, etc. |
| 7 | | IDLC AMC | The company provides mutual funds for institutions and individuals, portfolio management services to institutional clients, services related to alternative investment funds and corporate advisory services. |
| 8 | Insurance Company | Green Delta Insurance Company (GDIC) | GDIC is one of the leading non-life insurance companies in Bangladesh. GDIC provides stock brokerage services through Green Delta Securities and Investment banking services through Green Delta Capital Limited. The company's net premium income stood to USD 18.3 million in FY 2017. |
| 9 | PE funds/ Investment Banks | Maslin Capital Limited | Maslin Capital is an alternative investment company that provides a platform for investors. Maslin also provides financial and knowledge capital to start ups who do not get access to conventional source of finance. |
| 10 | | EBL Securities | EBL Securities is a fully owned subsidiary of Eastern Bank Limited. EBL Securities provides brokerage services to investors through DSE and Chittagong Stock Exchange (CSE). |
| 11 | | NDB Capital | NDB Capital is a subsidiary of National Development Bank of Sri Lanka. The company is licensed as a merchant bank. NDB Capital offers a comprehensive range of investment banking products ranging from |

| S. No | Type of Institutions | Players | Description |
|---|---|---|---|
| | | | corporate advisory services to debt and equity fund raising services. |
| 12 | Government Bodies/ Authorities/ Regulators | BEZA | BEZA was instituted by the government under the Bangladesh Economic Zones Act of 2010. It is responsible to establish, license, operate, manage and control economic zones across various locations in the country. BEZA is attached with the Prime Minister's Office. |
| 13 | | Bangladesh Bank | Bangladesh Bank is the central bank and apex regulatory body for the country's financial system and monetary system. |
| 14 | | PPP Authority | The Public Private Partnership Authority (PPPA) was established in September 2010 to proactively implement PPP projects in the country. PPPA is entrusted with the responsibility to identify, develop, tender and finance PPP projects. During the period May 2016 to May 2017, PPPA approved 45 projects worth USD 14 billion. |
| 15 | | DSE | DSE is one of the two stock exchanges, which operates in the Bangladesh capital market. DSE is a member of the World Federation of Exchange Limited. As at November 2018, DSE's total market capitalisation stood at USD 3,886 million. |
| 16 | | DCCI | Dhaka Chamber of Commerce and Industry was established in 1958 under the Companies Act of 1913. It is entrusted with the responsibility to provide a vibrant platform for companies entering into the Bangladesh market. |
| 17 | | Bangladesh Investment Development Authority | BIDA is the government agency, which is responsible for facilitating and encouraging private investment in the country. It provides a comprehensive range of services such as guidance on doing business, responding to investment related queries, facilitation of utility services, registration of new industries, and support for obtaining external financing, etc. to investors. |
| 18 | Infrastructure companies | Gasmin Limited | It is one of the leading EPC based companies in the country. The company is engaged in major construction fields such as pipe line construction, roads and highways, industrial and commercial building, hydraulic structures, etc. |
| 19 | | Hamid Group | Hamid group is a conglomerate which operates in five sectors i.e. construction and infrastructure, property development, specialised project management, apparel manufacturing and retailing. |
| 20 | | DWASA | DWASA is a services oriented organisation in the public sector. It is responsible for providing water supply, sewerage disposal and storm water drainage services in Dhaka city. Dhaka WASA has four water treatment plants, which produces 2,450 million litres per day. |
| 21 | | S Alam Group | S Alam Group's annual turnover is over USD 2,000 million. The group provides a comprehensive range of products and services across various sectors such as food and allied products, cement, steel, power and energy, transportation, shipping, manufacturing, real estate, agro, and trading. |

# Appendix C

# Appendix C: References

## List of Reports


1. Annual report FY 2018, Bangladesh Bank.
2. Annual report FY 2018, Chittagong Stock Exchange.
3. Annual report FY 2018, Dhaka Stock Exchange.
4. Asian corporate bond market-a comparison with India 2018, CARE Rating.
5. Bangladesh Capital Market Development Master Plan 2012-2022, BSEC.
6. Bangladesh Delta Plan 2100, Bangladesh Planning Commission.
7. Bangladesh Economic Review 2018, Ministry of Finance.
8. Bangladesh Infrastructure Report (Q1 2019), FitchSolutions.
9. Bangladesh Market Update Report, PwC.
10. Bangladesh Securities and Exchange Commission (Public Issue) Rules 2015, BSEC.
11. Bangladesh-Debt Sustainability Analysis 2018, International Monetary Fund.
12. Bond market development in developing Asia, ADB.
13. Capital market development in Bangladesh, ADB.
14. Capital market developments in Bangladesh (April 2018-June 2018), Bangladesh Bank.
15. Corporate governance of capital market of Bangladesh, 2013.
16. Cost benefit analysis of establishing a secondary bond market in Bangladesh.
17. Developments of Islamic Banking in Bangladesh, Bangladesh Bank.
18. EDGE Bangladesh Mutual Fund, 2018.
19. Financing Green Growth in Bangladesh: Challenges and Opportunities, UKaid.
20. Government borrowing from domestic services (July 2019-September 2019), Bangladesh Bank.
21. Government of Bangladesh – Ba3 Stable, Moody's Investors Service.
22. Government of Bangladesh Sector Development Plan (2011-2025): Water Supply and Sanitation Sector.
23. Income tax at a glance, National Board of Revenue.
24. Mobilising Islamic Finance for Infrastructure PPPs 2017, World Bank.
25. Prospects and challenges of bond market development in Bangladesh.
26. Report on government securities FY 2018, Bangladesh Bank.
27. Securities and Exchange Commission (Private Placement of Debt Securities) Rules, 2012.
28. Seventh Five Year Plan (FY 2016-FY 2020), Bangladesh Planning Commission.
29. South Asian bond market, World Bank.
30. State of the Bangladesh Economy in FY 2018.
31. Statistical Year Book Bangladesh 2017, Bangladesh Bureau of Statistics.
32. The U.S. Dollar Premium Bond Rules, 2002.
33. The Wage-Earner Development Bond Rules, 1981.

## List of Websites

1. Asian Development Bank
2. Bangladesh Bank
3. Bangladesh Economic Zones Authority
4. Bangladesh Power Development Board
5. Bangladesh Securities and Exchange Commission
6. Chittagong Stock Exchange
7. Dhaka Stock Exchange
8. Japan International Cooperation Agency
9. Ministry of Finance
10. Ministry of Housing and Public Works, Bangladesh
11. Ministry of Local Government, Rural Development and Co-operatives, Bangladesh
12. Ministry of Planning, Bangladesh.
13. Ministry of Railway, Bangladesh
14. Ministry of Road Transport and Bridges, Bangladesh
15. Ministry of Shipping, Bangladesh.
16. Power Division, Bangladesh
17. Public Private Partnership Authority
18. Sustainable and Renewable Energy Development Authority
19. World Bank

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