

Country Paper: Bangladesh

Prepared for
SAARCFINANCE Database Seminar and Working Group Meeting 2022

On
Use of High-Frequency Indicators by Bangladesh Bank: Experience and Plan

Organised by
Maldives Monetary Authority

02 November 2022



Prepared by
Mohammad Monirul Islam Sarker and Md. Abdul Karim
Additional Director, Bangladesh Bank

Use of High-Frequency Indicators by Bangladesh Bank: Experience and Plan

Bangladesh Bank, the central bank of Bangladesh is established in 1972 immediately after the independence of Bangladesh in 1971 with a view to manage the monetary and credit system of Bangladesh to stabilise domestic monetary value and maintain a competitive external par value of Bangladesh Taka towards fostering growth and development of country's productive resources in the best national interest. Thus the specific objectives of establishing the Bangladesh Bank are: to stabilize the movements of the domestic price level and Bangladesh Taka (BDT) exchange rate, to secure stability in the financial sector of Bangladesh and to support achieving higher GDP growth.

To achieve the above-mentioned objectives, Bangladesh Bank (BB) adopts several policy decisions under the purview of monetary policy as and when necessary. BB always observes/monitors the movements of monetary policy-related major macroeconomic indicators and tries to figure out their near-term forecasts. In this context, BB uses both high and low-frequency economic indicators collected mostly from conventional sources. The conventional economic indicators are sometimes inadequate owing to issues of timeliness, granularity, and difficulty in collection. Therefore, the unconventional high-frequency and more granular data are needed to track economic activities. But the unconventional sources of high-frequency data are not yet developed in Bangladesh. However, BB's Statistics Department has taken an initiative to develop the high-frequency data, aggregating Big Data in the BB domain. Now, the sector-wise major macroeconomic indicators which are used in making the BB's policy decisions are briefly discussed below.

Real Sector Indicators

Bangladesh Bank analyses the movement of gross domestic product (GDP) deeply in order to formulate the monetary policy on an annual basis (fiscal year basis, starting from 1 July and ending on 30 June) or take any policy decision as and when necessary. But the GDP data, compiled by the Bangladesh Bureau of Statistics (BBS), are available only on an annual basis. In this circumstance, BB uses some high-frequency indicators like the monthly industrial production index (IPI) as a proxy of GDP. In addition, BB forecasts the annual real GDP growth

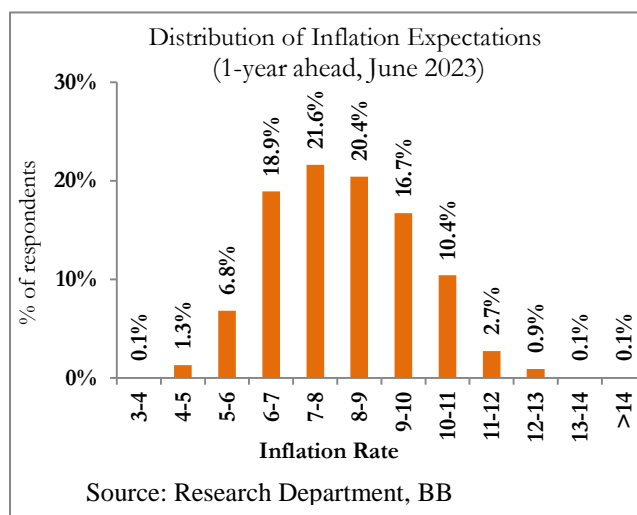
using the output gap model. In addition to the yearly real GDP forecast, BB provides a monthly ‘Nowcast’ of real GDP growth using 4 high-frequency macroeconomic variables, namely, composite leading indicators of the world (CLIW), growth of IPI, real broad money growth and lending rate, which are highly correlated with real GDP of Bangladesh.

Nowcasts of the last 12 months real GDP growth	
Month	GDP Growth (%)
Sep-21	8.69
Oct-21	9.14
Nov-21	8.55
Dec-21	7.35
Jan-22	9.15
Feb-22	7.74
Mar-22	6.97
Apr-22	5.65
May-22	5.35
Jun-22	6.72
Jul-22	7.47
Aug-22	6.47
Average	7.44

Source: Research Department, BB

- As the main components of GDP, BB monitors the movements of consumption and investment at the national level, compiled by BBS on an annual basis. To assess the movements/pattern of these components during the fiscal year, BB monitors the movements of private sector credit used for consumer finance as well as investment purposes. BB also analyses the movements of daily turnover as well as indices of the Dhaka Stock Exchange (DSE) and the Chotogram Stock Exchange (CSE), the existing two stock markets in Bangladesh.

- BB monitors the movements of domestic inflation (headline, food, non-food, and core; rural and urban) by using the consumer price index (CPI), compiled by BBS on a monthly basis, and takes necessary monetary policy actions as its key duty to keep inflation at a tolerable limit. BB’s Research Department also forecasts the 12-month average general inflation for the short to medium term using various time series econometric model like univariate ARMA, VAR and ARDL model. In addition, BB’s Research Department conducts an inflation expectation survey every quarter to assess the movements of domestic inflation.



Fiscal Sector Indicators

- Analysis of the movements of fiscal indicators is very significant for BB to take policy decisions. Therefore, BB analyses the movements and patterns of fiscal sector indicators that cover the main three sides of government fiscal operations: revenue, expenditure, and deficit financing. The revenue-related major indicators, compiled by the National Board of Revenue (NBR) on a monthly basis, are: income tax, value-added tax, and customs duty. The expenditure-related major indicators, compiled by BBS every quarter, are: current expenditure and annual development expenditure. The deficit financing-related indicators, compiled by the Statistics Department of BB are: bank financing, non-bank financing and foreign financing.
- BB emphasizes more on the movements/patterns of government borrowings from the banking system (Deposit Money Banks and BB) and uses the related data compiled by the Research Department and Statistics Department of BB on a daily and monthly basis, respectively.

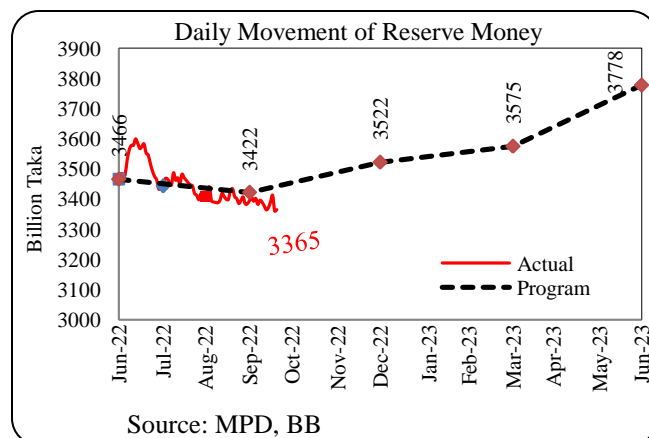
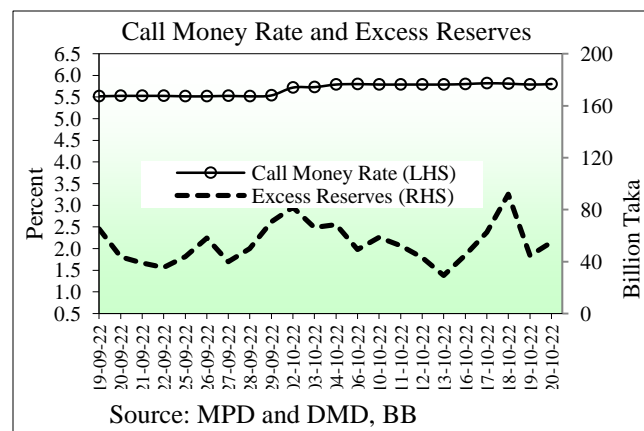
Monetary Sector Indicators

- BB is the main accumulator of different types of monetary sector indicators, compiled on a daily, weekly, monthly, and quarterly basis. Now, the list of these high-frequency monetary sector indicators compiled as well as used by BB are outlined below briefly.

(a) Daily indicators: interest rate and amount

of transactions in the call money market, reserves/required reserves/excess reserves (in local currency) of deposit money banks (DMBs) with BB, currency in circulation, reserve money, net foreign assets (NFA) and net domestic assets (NDA) of BB, DMBs' repo and reverse repo transactions with BB, interbank repo transactions, DMBs'

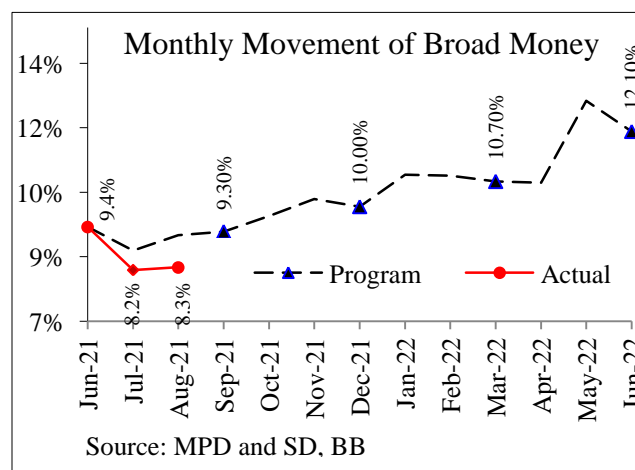
investments in BB bills, DMBs' investments in government treasury bills and bonds, BB's



investments in government treasury bills and bonds, investments/borrowings of Shariah-based DMBs to/from BGIIB fund, investments of Shariah-based DMBs in Sukuk, DMBs' borrowing from BB, government borrowing from the banking system, and yields on government treasury bills and bonds.

(b) Weekly indicators: financial positions (assets and liabilities) of BB and DMBs, and financial inclusion-related indicators like the number of new account holders as well as the outstanding number of account holders (region-wise).

(c) Monthly indicators: broad money, narrow money, reserve money, currency outside banks, demand and time liabilities of the banks, NFA and NDA of the banking system, domestic credit, public borrowings from the banking and non-banking (NSCs) system, private borrowings from the banking system, total/excess liquid assets of the banks, money multiplier, deposit and lending interest rates (nominal and real term), advance/investment to deposit ratio of the banks, financial inclusion related indicators like the number of new account holders as well as the outstanding number of account holders (region wise), mobile financial services, agent banking services, SME, agriculture and rural financing (disbursement, recovery and outstanding).



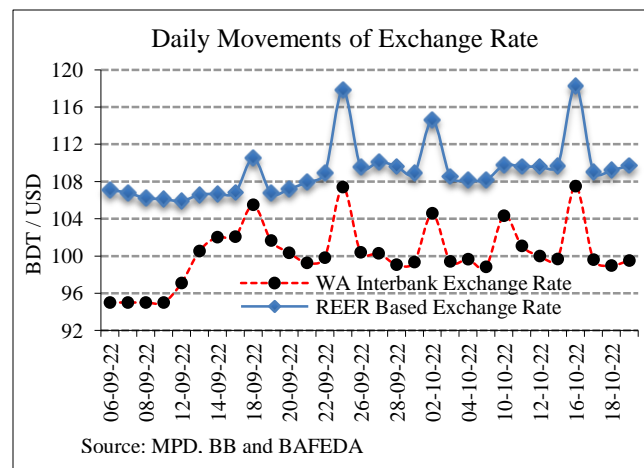
(d) Quarterly indicators: advances and deposits as per major economic purposes and economically significant geographical regions, non-performing loan ratio, capital adequacy ratio, capital to risk-weighted asset ratio, leverage ratio, liquidity coverage ratio, return on assets, return on equity, green finance and sustainable finance.

- Among the above-mentioned monetary sector indicators, Bangladesh Bank sets a broad money growth as the intermediate target and reserve money growth as the operational target of monetary policy to achieve the ultimate goal of price stability along with higher economic growth and financial sector stability. In this regard, BB analyses the movements/patterns of all monetary sector indicators rigorously and tries to link them with the real sector indicators. These analyses help BB to take policy decisions properly.

External Sector Indicators

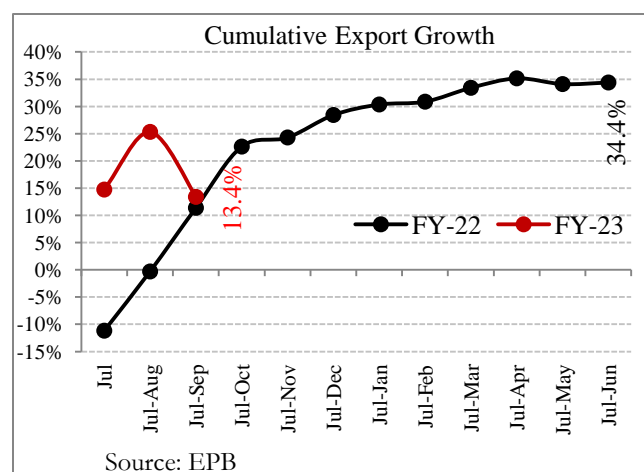
• Like monetary sector indicators, BB is the compiler of major external sector indicators, compiled mostly on a daily and monthly basis. Bangladesh Bank also collects some important external sector indicators from some domestic/international institutions/organizations like the Export Promotion Bureau (EPB), National Board of Revenue (NBR), Economic Resources Division (ERD), and Reuters. Now the list of important external sector indicators used by BB is highlighted below briefly.

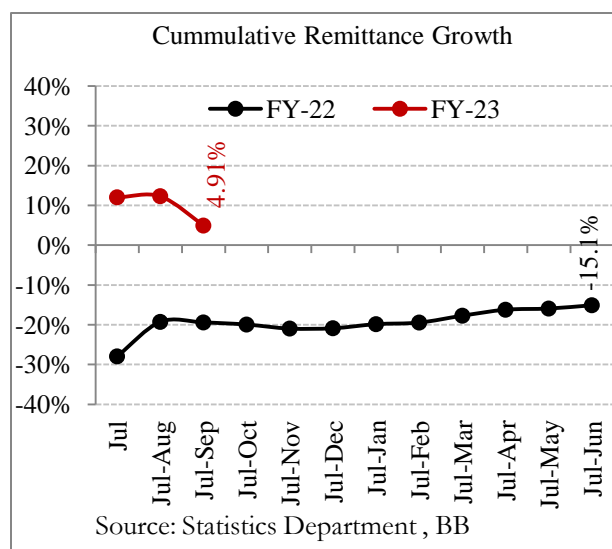
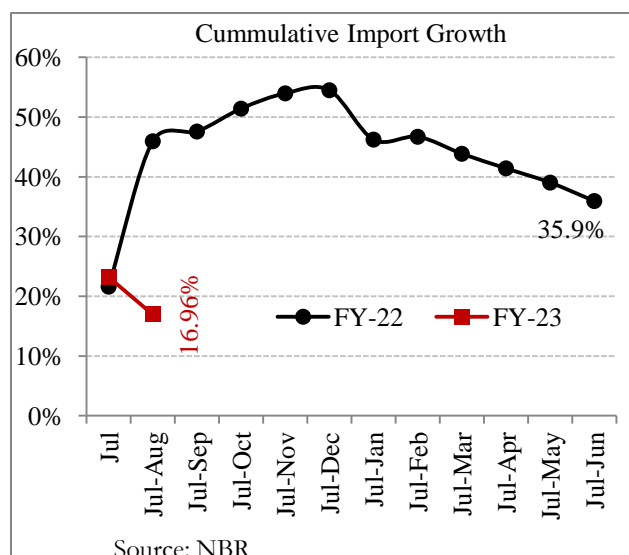
(a) Daily indicators: FX transactions by BB, interbank FX transactions (spot and SWAP), DMBs' foreign currency balance with BB, Asian Clearing Union (ACU) liability, foreign exchange reserves, net international reserves, overall foreign exchange position of DMBs, BDT exchange rate against USD and other important currencies, nominal effective exchange rate (NEER), REER



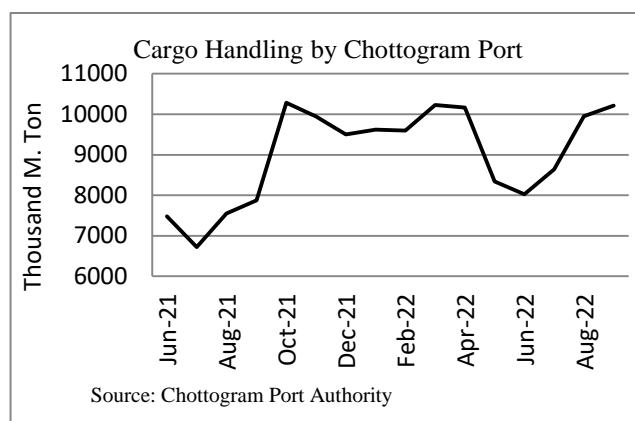
based exchange rate of BDT against USD, the exchange rate of some important currencies like euro and GBP against USD, and the prices of gold and crude petroleum in the international market.

(b) Monthly indicators: overall exports and imports of goods and services, commodity and country-wise exports and imports, opening and settlement of import letter of credits (LCs), overall workers' remittances, destination wise workers' remittances, overseas employments, foreign investments (FDI and portfolio investment), foreign aid (loans and grants), real effective exchange rate (REER) and cargo handling by the Chattogram port, the main seaport of Bangladesh.





- Bangladesh Bank analyses the movements/patterns of the external sector indicators and makes some near-term forecasts about the balance of payments items like exports, imports, remittances, foreign investment, and foreign aid which are necessary for taking monetary policy related decisions.



Initiatives and Future Plans for High-Frequency Indicators

With the advancement of digital finance and modern banking, high frequency real-time Big Data, got tremendous attention in the central banks all over the world. Big data can be used for producing different statistics that can be applied for policy decisions in the central bank. Considering the importance of big data, Bangladesh Bank has created a 'Big Data Analytics and Data Science Unit' in the Statistics Department. Although it is an initial stage, this unit is trying to produce the following statistics: (i) compilation of risk indicators for different banks and non-bank financial institutions on the basis of their advance status on a quarterly basis, (ii) compilation of credit card data to assess the consumption pattern, and (iii) compilation of demand components on the basis of public deposits in the commercial banks.

The Unit has taken a plan to produce the following statistics in the near future: (i) compilation of digital banking data like e-transactions, (ii) compilation of unstructured data from the speeches

of nationally important persons, (iii) creation of warning indicators for the economy using big data analytics, (iv) compilation of vehicle registrations, electricity consumption, credit card spending, transportation, road traffic, toll collection, etc. useful in forecasting the real economic indicators. Moreover, it is mentionable that BBS has taken initiative to develop GDP data on a quarterly basis which may come into effect shortly.