

BANGLADESH BANK

Central Bank of Bangladesh



Macroprudential
Supervision of
Financial System

Bangladesh Systemic Risk Dashboard (BSRD)



Financial Stability Department
December 2019

DISCLAIMER: The risk dashboard is a set of quantitative indicators and not an early-warning system. The indicators should not be treated as the basis for any mechanical form of inference.

Bangladesh Systemic Risk Dashboard (BSRD)

December 2019

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- *This dashboard is based on data and information available as of December 2019, unless stated otherwise.*
 - *This dashboard can be accessed through internet at <https://www.bb.org.bd/pub/index.php>.*

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List of acronyms

ADR	Advance-to-Deposit Ratio
BB	Bangladesh Bank
BRPD	Banking Regulation and Policy Department
CY	Calendar Year
DFIM	Department of Financial Institutions and Markets
DMD	Debt Management Department
DOS	Department of Off-site Supervision
DSE	Dhaka Stock Exchange
DSEX	DSE Broad Index
ERD	Economic Relations Division
FCBs	Foreign Commercial Banks
FIs	Financial Institutions
FSD	Financial Stability Department
FY	Fiscal Year
GDP	Gross Domestic Product
GoB	Government of Bangladesh
IMF	International Monetary Fund
MA	Moving Average
NBDC	Non-bank Depository Corporation
NFCs	Non-financial Corporations
NII	Net Interest Income
NPL	Non-performing Loan
PCBs	Private Commercial Banks
P/E ratio	Price/Earnings Ratio
ROA	Return on Assets
ROE	Return on Equity
RWA	Risk-weighted Assets
SCBs	State-owned Commercial Banks
SBs	Specialized Banks
T-bill	Treasury Bill
T-bond	Treasury Bond
TOI	Total Operating Income

Bangladesh Systemic Risk Dashboard: An Overview

1. Macro risk

Real GDP growth rate was recorded at 8.1 percent (indicator 1.1) in the fiscal year 2018-19 (FY19), which was 7.9 percent in FY18. Current account balance-to-GDP ratio (indicator 1.2) declined slightly during the second half of 2019 compared to that of the preceding period.

Aggregate debt-to-GDP ratio (indicator 1.3) decreased moderately in FY19 compared to that of FY18. During the same period, government debt-to-GDP ratio (indicator 1.4) increased due to rise in government's development expenditure as evident from an increase in government deficit-to-GDP ratio (indicator 1.5).

Financial burden of households, measured by household debt-to-gross disposable national income ratio (indicator 1.6), increased during the second half of 2019 compared to the position of the preceding period. Non-financial corporation (NFC) debt-to-GDP ratio (indicator 1.7) also increased in the review period.

2. Credit risk

Credit growth to households by both banks (indicator 2.1) and non-bank depository corporations (NBDCs) (indicator 2.2) decreased slightly at end-December 2019 compared to those of end-June 2019. A slowdown in credit growth to NFCs by both banks (indicator 2.3) and NBDCs (indicator 2.4) was also observed at the end of December 2019 compared to the positions of the preceding period.

At the end of December 2019, provision maintenance ratio (indicator 2.5) of banks recorded an increase while the same of financial institutions (FIs)¹ (indicator 2.6) registered a decrease compared to those of end-June 2019.

In terms of changes in banks' interest rates for housing loans (indicator 2.7), a net tightening was observed at the end of December 2019, indicating a higher number of banks increased their interest rates in housing sector compared to the number of banks those eased their rates.

3. Funding and liquidity risk

During the review period, liquidity support provided to banks by Bangladesh Bank in the form of assured liquidity support (ALS) increased sharply while special repo decreased compared to those of the preceding period (indicator 3.1). These liquidity supports against treasury bills and bonds were taken by banks to meet up their occasional demands. Led by a decreased advance-to-deposit ratio (ADR) of domestic private commercial banks (PCBs), ADR of the banking industry (indicator 3.2) decreased slightly at end-December 2019 compared to end-June 2019 position.

¹ In few cases due to NBDCs' data unavailability, data of FIs, which constitute the majority of NBDCs, were used.

Maturity profile of banks' outstanding debt securities (indicator 3.3) demonstrates that banks' investment in treasury bonds (T-bonds) with all types of residual maturity increased at end-December 2019 compared to those of end-June 2019. T-bonds having residual maturity over 5 and up to 10 years made up the largest share of the total value of T-bonds outstanding while the same with remaining maturity over 15 years remained the lowest. Treasury bills (T-bills) with all types of residual maturity except up to 91 days recorded an increase at end-December 2019 compared to those of end-June 2019. Subordinated debt (indicator 3.4), as a source of funding for banks, experienced a slowdown at the end of the review period.

4. Market risk

Major equity indices (indicator 4.1) decreased markedly at end-December 2019 compared to end-June 2019. Market price/earnings (P/E) ratio (indicator 4.2) maintained a downward trend during the review period.

Average call money market rate (indicator 4.3) decreased slightly at the end of December 2019. Compared to the position of end-June 2019, banks' weighted average interest rates on both deposits and advances (indicator 4.4) increased, yet their spread continued to decrease at end-December 2019. Besides, weighted average exchange rate of BDT against USD (indicator 4.5) depreciated further at the end of the review period.

5. Profitability and solvency risk

Banks' return on equity (ROE) and return on asset (ROA) (indicators 5.1a and 5.1b) increased markedly during the July-December 2019 period compared to those of the preceding period. During the same period, cost-to-income ratio (indicator 5.1c) decreased while net interest income to total operating income ratio (indicator 5.1d) remained almost same. At end-December 2019, though banks' Tier-1 capital to risk-weighted assets ratio (indicator 5.2a) decreased compared to that of end-June 2019, it remained well above the regulatory requirement of 6.0 percent. Banks' gross non-performing loan (NPL) ratio (indicator 5.2b) recorded a significant decrease at the end of the review period.

FIs' ROE and ROA (indicators 5.3a and 5.3b) showed a notable increase during the review period compared to those of the preceding period. FIs' cost-to-income ratio (indicator 5.3c) decreased while net interest income to total operating income ratio (indicator 5.3d) maintained an increasing trend during the same period. Their Tier-1 capital to risk-weighted assets ratio (indicator 5.4a) recorded an increase while their gross NPL ratio (indicator 5.4b) decreased at the end of December 2019.

6. Inter-linkages

Banks' credit growth to the government (indicator 6.1) increased at end-December 2019 compared to that of end-June 2019. Government borrowing from NBDCs (indicator 6.2), though was very low, also increased.

Banks' loan growth to both residential and commercial housing sector (indicator 6.3a and 6.3b) demonstrated an overall slowdown. Growth of FIs' loans to housing sector (indicator 6.4) also recorded a decrease and turned negative at end-December 2019.

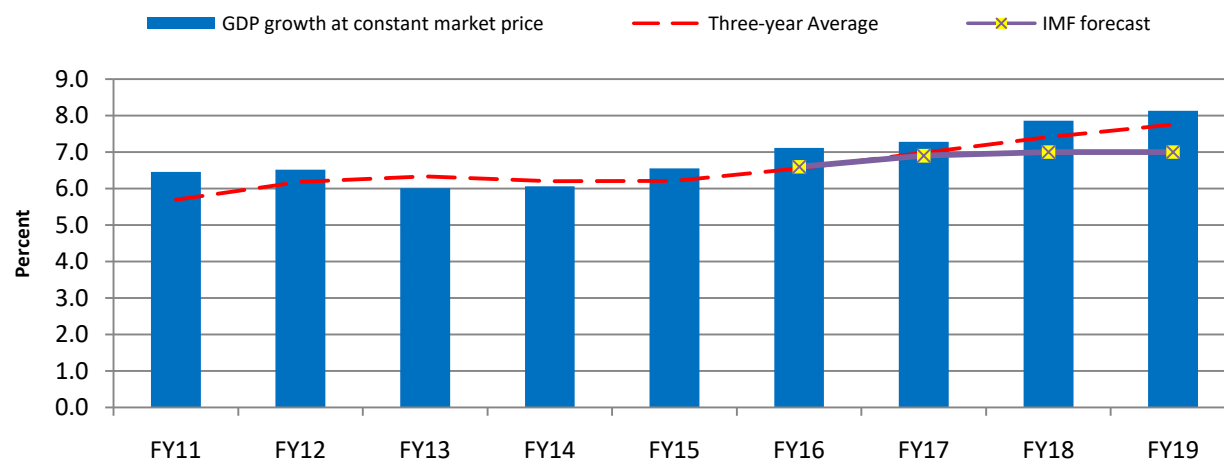
An increasing trend was observed in banks' credit exposure to its major public and private counterparts (indicator 6.5), in which NFCs accounted for almost seventy percent. NBDCs' credit exposure to its major counterparts marked a slowdown due largely to decline in loans to NFCs (indicator 6.6). Banks' cross-border claims (indicator 6.7) recorded a slight increase and remained less than one percent of banks' total assets at end-December 2019. NBDCs' cross-border claims (indicator 6.8) was almost non-existent at the end of December 2019.

7. Structural Risk

Aggregate assets of both domestic banks and foreign banks, as a percentage of nominal GDP, (indicator 7.1) increased at end-December 2019 compared to those of end-June 2019. FIs' aggregate assets to nominal GDP ratio (indicator 7.3) remained the same as end-June 2019 position. Leverage ratio of banks (indicators 7.2) demonstrated a slight increase while the same for FIs (indicators 7.4) declined at the end of the review period.

1. Macro risk

1.1 Current and forecasted real GDP growth

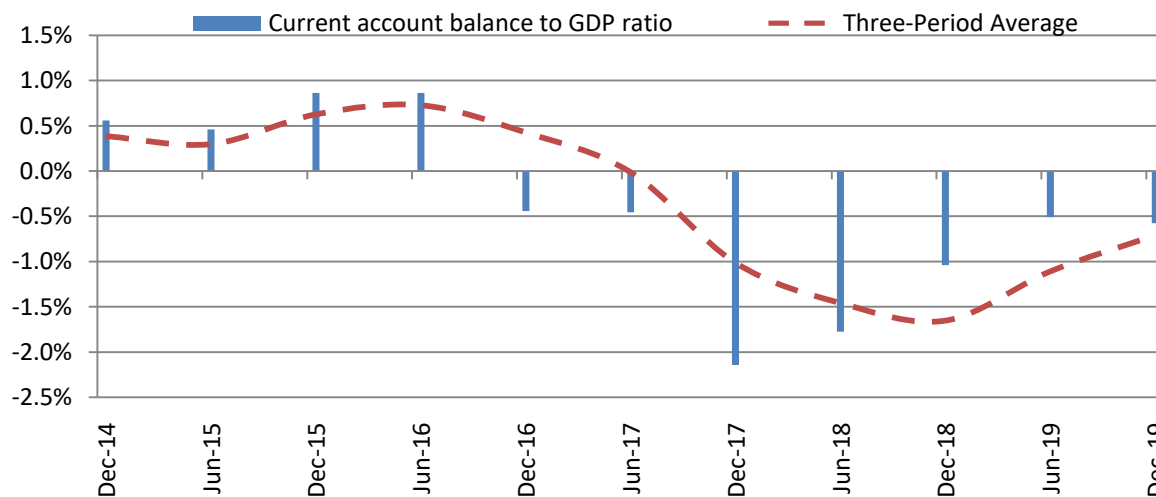


Source: Statistics Department, BB; IMF's World Economic Outlook, April, 2019.

Notes: As half yearly GDP is not calculated in Bangladesh, GDP growth is shown for only fiscal years.

Real GDP growth showed an increasing trend, surpassing the IMF forecast for the fiscal year 2019 (FY19).

1.2 Current account balance-to-GDP ratio



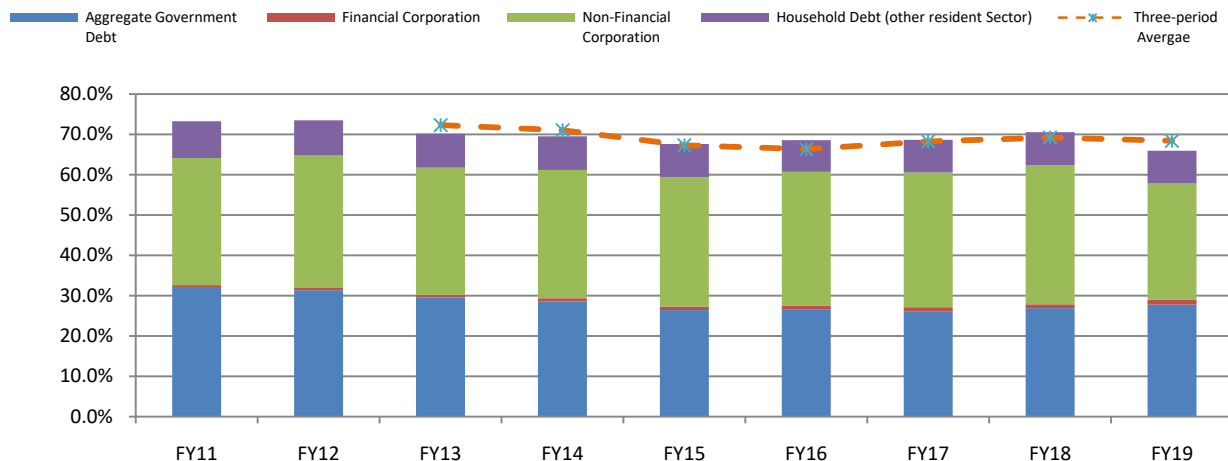
Source: Monthly Economic Trends, BB.

Note: As half yearly GDP is not calculated in Bangladesh, June based GDP data is used as a proxy for December in calculating current account balance-to-GDP ratio.

Current account balance-to-GDP ratio showed a slight decline during the second half of 2019 compared to the preceding period; however, it improved markedly compared to the corresponding period of 2018.

1. Macro risk-Cont'd.

1.3 Aggregate debt-to-GDP ratio

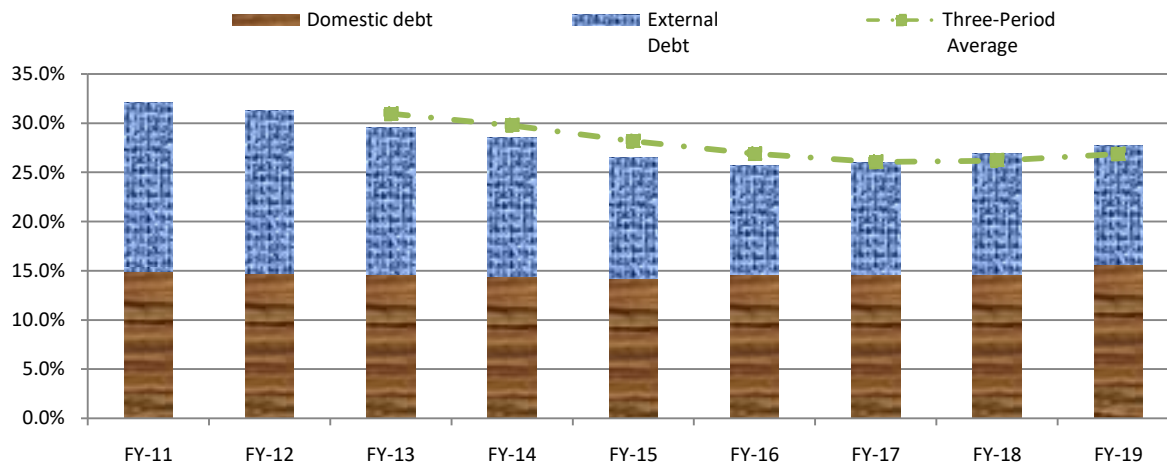


Sources: Bangladesh Economic Review 2019, Ministry of Finance, GoB; Monthly Economic Trends, BB (various issues).

Note: Because of unavailability of half yearly data of GDP, aggregate debt-to-GDP ratio is shown only for fiscal years. Aggregate debt refers to the claims on government, households, financial and non-financial corporation by depository corporations. Government debt includes both domestic and external debt. External Debt figures are up to February, 2019.

Aggregate debt-to-GDP ratio recorded moderate decrease in FY19 compared to that of FY18. Debts of non-financial corporations and government are the major constituents of aggregate debt.

1.4 Government debt-to-GDP ratio



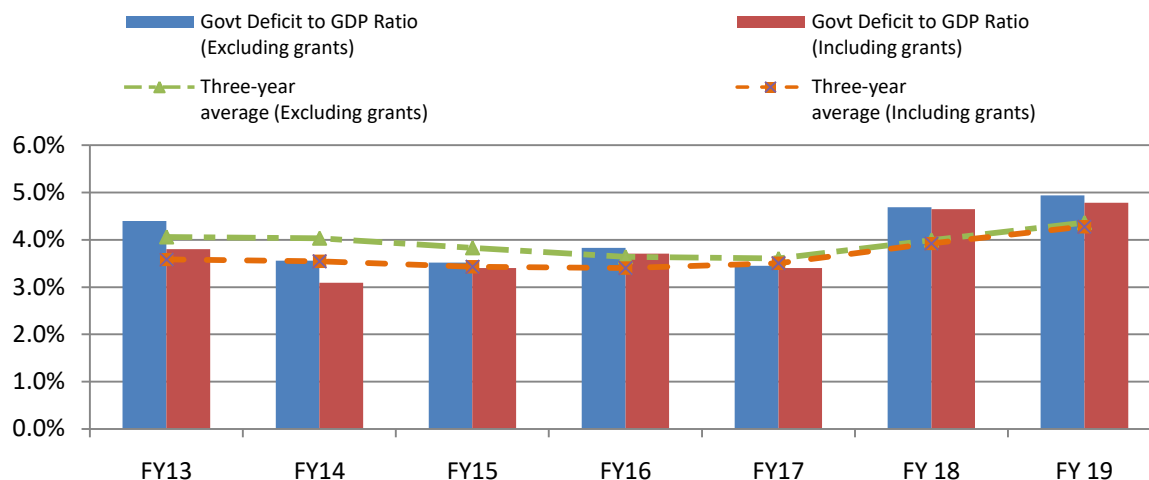
Source: Bangladesh Economic Review 2019, Ministry of Finance, GoB; Monthly Economic Trends, BB.

Notes: Because of unavailability of half yearly data of GDP, government debt-to-GDP ratio is shown only for fiscal years. External Debt figures are up to February, 2019.

Government debt-to-GDP ratio slightly increased in FY19 compared to that of FY18 due to increase in government's borrowing from the banking system.

1. Macro risk-Cont'd.

1.5 Government deficit-to-GDP ratio

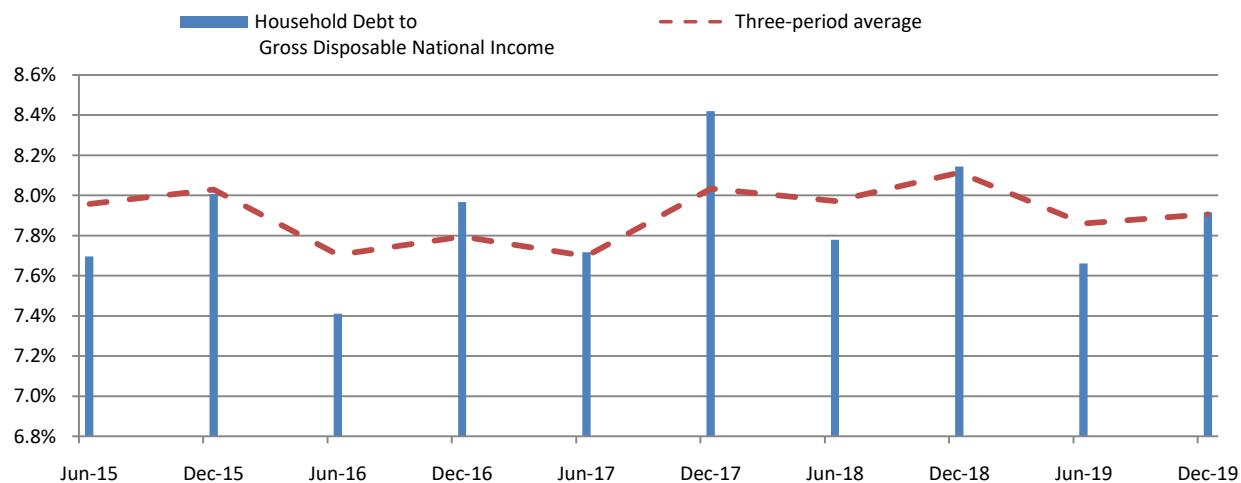


Source: Monthly Report on Fiscal Position, Government of Bangladesh (GoB), February' 2020 and various prior issues.

Notes: Because of unavailability of half yearly data of both government deficit and GDP, government deficit-to-GDP ratio is shown for fiscal years only. Actual figures of government deficit are used here.

Government deficit-to-GDP ratio, both including and excluding grants, increased in FY19 compared to the preceding fiscal year.

1.6 Household debt-to-gross disposable national income ratio



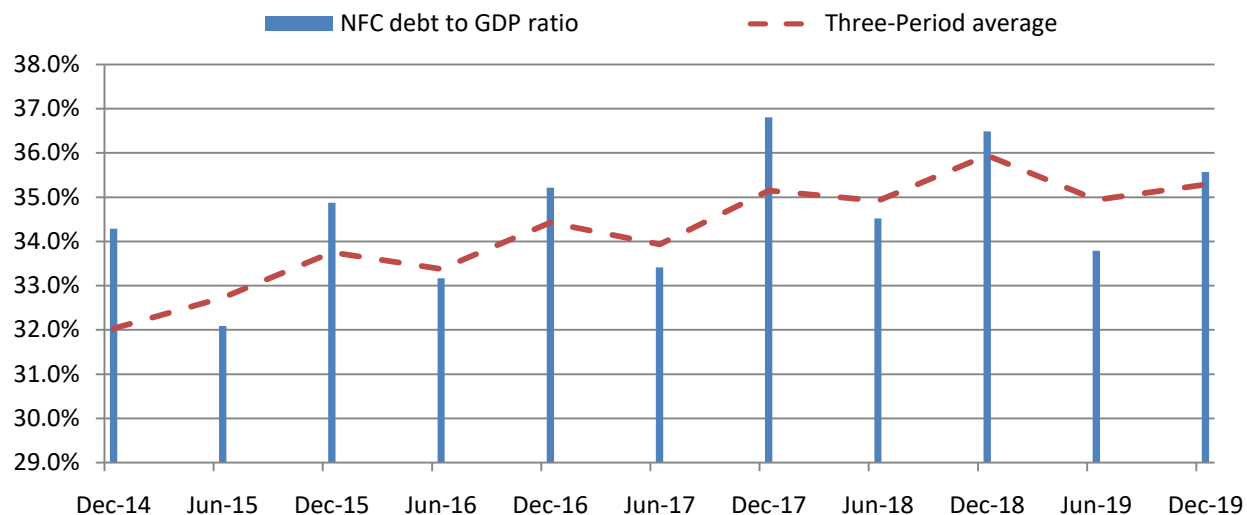
Sources: Monthly Economic Trends, BB (various issues).

Notes: As half yearly gross disposable national income is not calculated in Bangladesh, June based data of gross disposable national income is used for both June and December in calculating household debt-to-gross disposable national income ratio.

Household debt-to-gross disposable national income increased in December 2019 compared to that of June 2019. However, compared to December 2018, the ratio slightly decreased.

1. Macro risk-Cont'd.

1.7 Non-financial Corporation (NFC) debt-to-GDP ratio



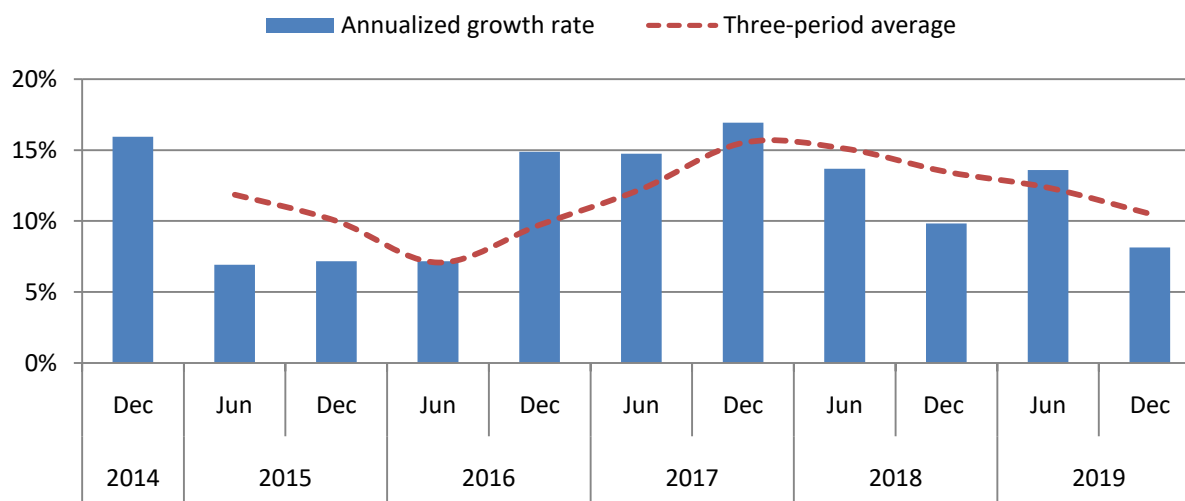
Sources: Monthly Economic Trends, BB (various issues).

Notes: NFC debt includes debts of both public and private NFCs. As half yearly GDP is not calculated in Bangladesh, June based GDP data is used as a proxy for December in calculating the ratio.

NFCs' debt-to-GDP ratio increased by 1.8 percentage points at end-December 2019 compared to the end-June 2019 position and decreased by 0.92 percentage point from that of end-December 2018. Private NFCs' debt comprises major portion of aggregate NFCs' debt.

2. Credit risk

2.1 Growth of banks' loans to households

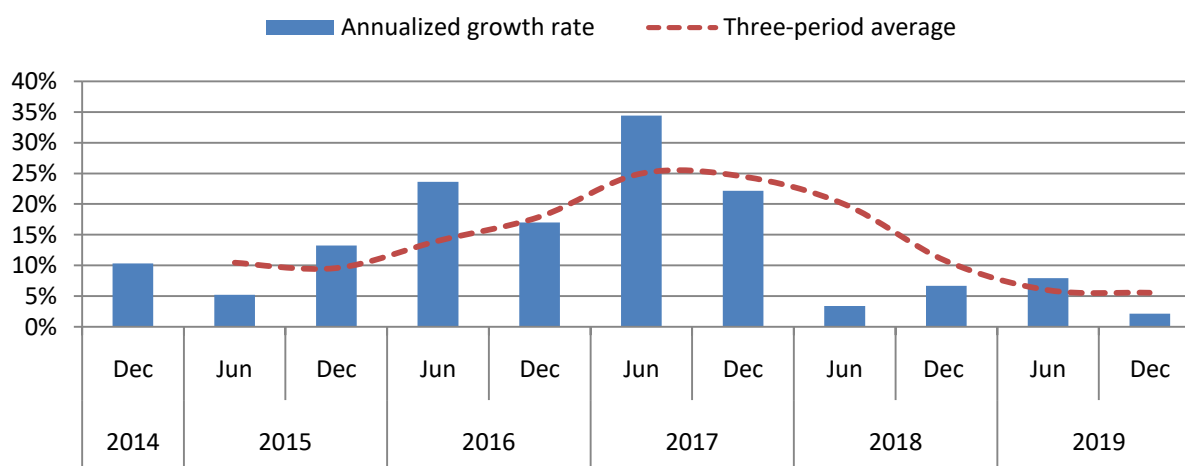


Source: Statistics Department, BB.

Notes: Data of households from December 2014 to June 2019 are revised. Loans refer to outstanding loans and advances extended to domestic households (individuals) excluding bills.

An overall downward trend in growth of household loans is observed since December 2017. At end-December 2019, a slight decrease was recorded compared to end-June 2019.

2.2 Growth of NBDCs' loans to households



Source: Statistics Department, BB.

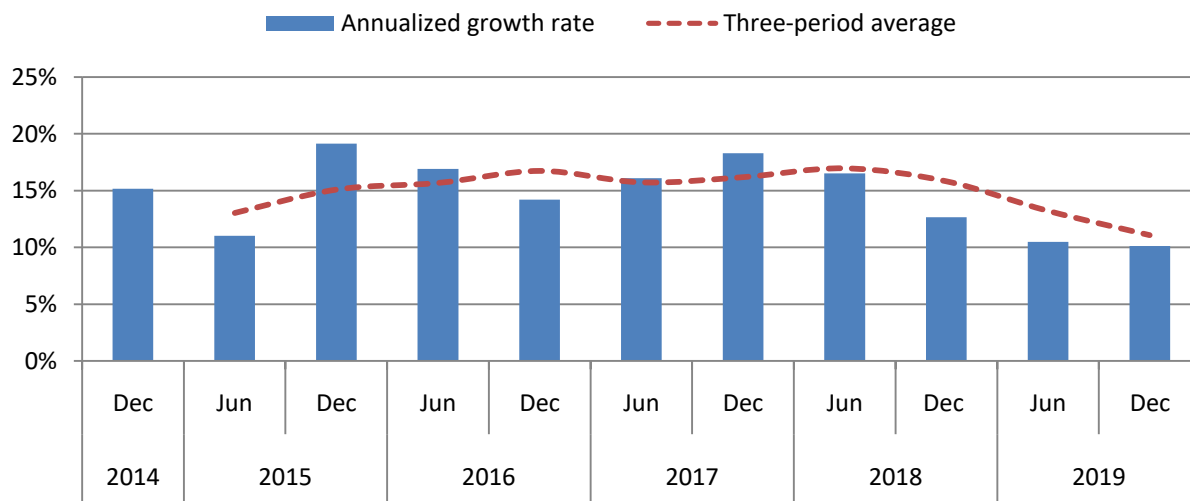
Notes: NBDCs include deposit taking FIs², Ansar-VDP Unnayan Bank, Karmasangsthan Bank, Grameen Bank and Bangladesh Samabaya Bank.

Non-bank depository corporations' (NBDC) loan growth to household sector remained low since June 2017. The growth declined further at end-December 2019 compared to that of end-June 2019.

²FIs refer to non-bank financial institutions. Out of 34 FIs, 29 are deposit taking FIs.

2. Credit risk-Cont'd.

2.3 Growth of banks' loans to private non-financial corporation (NFC)

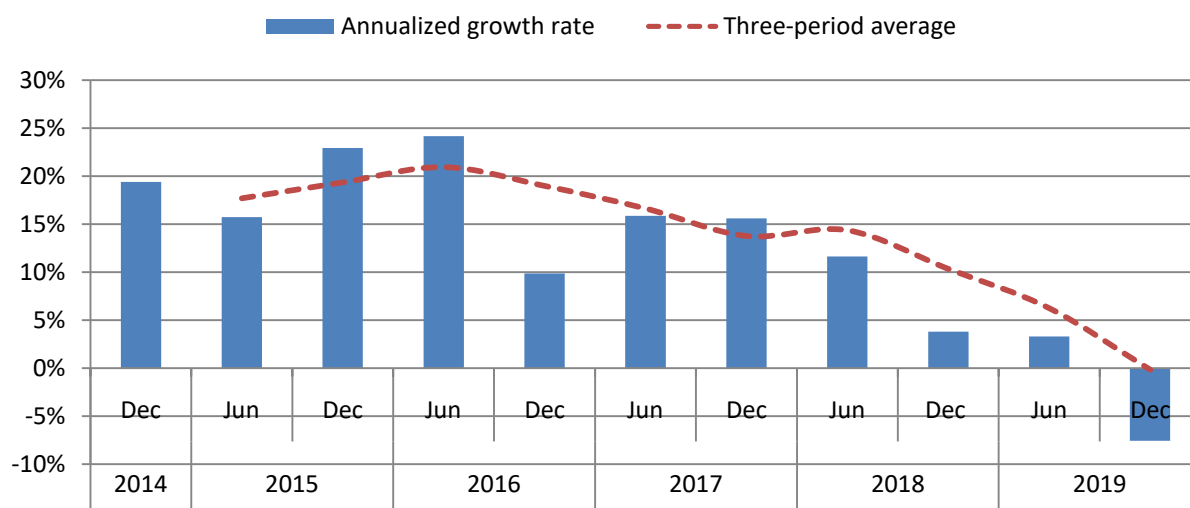


Source: Statistics Department, BB.

Notes: Data of NFCs from December 2014 to June 2019 are revised. Loans refer to outstanding loans and advances extended to private NFCs excluding bills.

An overall downward trend in growth of private NFCs' loans is observed since December 2017. Loan growth recorded further slowdown at end-December 2019 compared to that of the preceding period.

2.4 Growth of NBDCs' loans to private non-financial corporation (NFC)



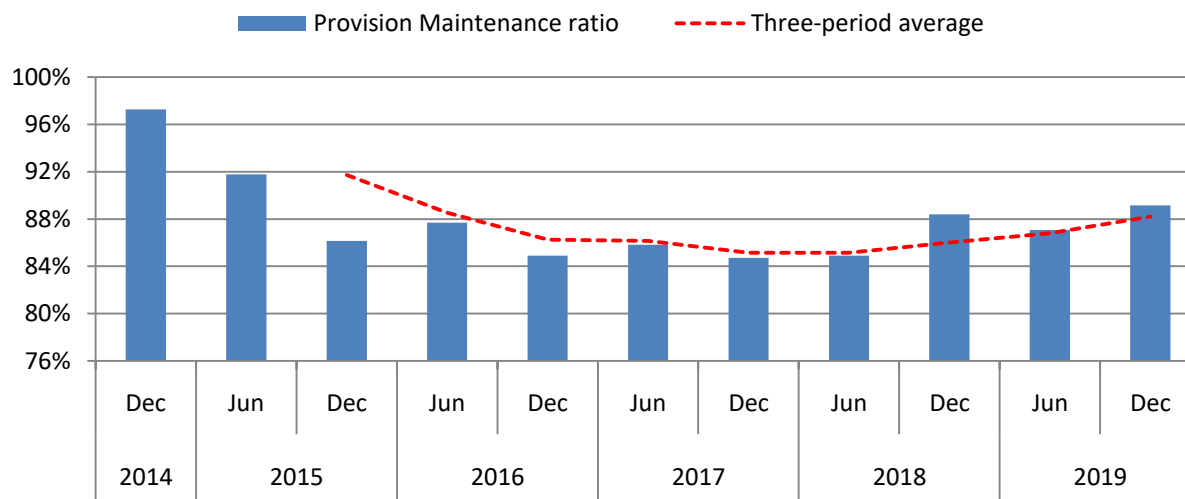
Source: Statistics Department, BB.

Notes: NFC refers to private NFCs only. NBDCs include deposit taking FIs, Ansar-VDP Unnayan Bank, Karmasangsthan Bank, Grameen Bank and Bangladesh Samabaya Bank.

NBDCs' loan growth to private NFCs remained subdued and turned negative in the second half of 2019.

2. Credit risk-Cont'd.

2.5 Provision maintenance ratio of banks

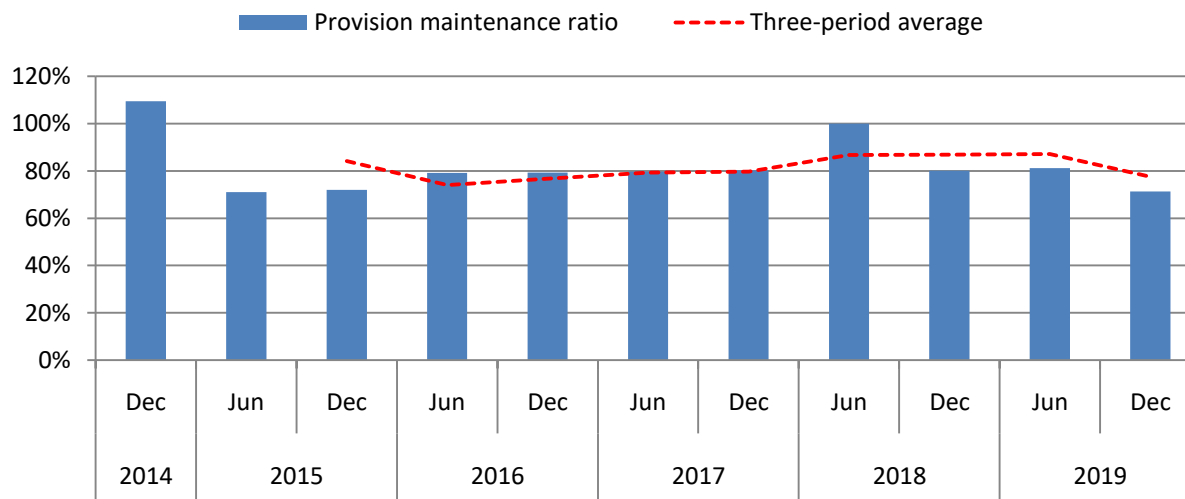


Source: BRPD, BB.

Notes: Provision maintenance ratio refers to maintained provision as a percentage of required provision.

Banks' provision maintenance ratio recorded an increase at end-December 2019 compared to that of both end-June 2019 and end-December 2018.

2.6 Provision maintenance ratio of FIs



Source: DFIM, BB.

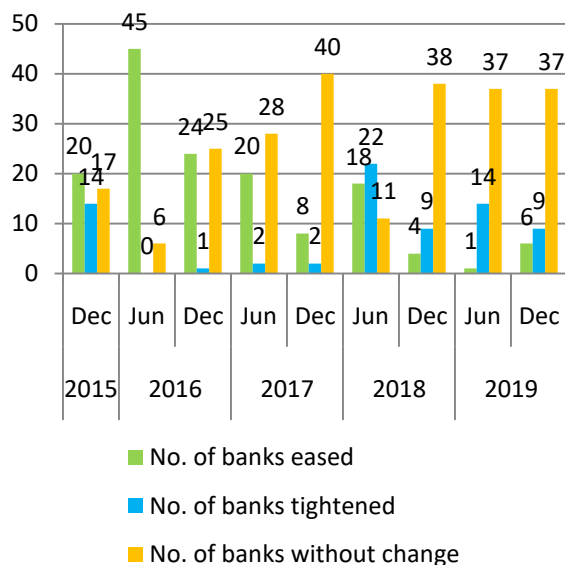
Notes: Due to NBDCs' data unavailability, data of FIs were used which include both deposit takers and non-deposit takers.

FIs' provision maintenance ratio registered a decline at end-December 2019 compared to the position of the preceding period.

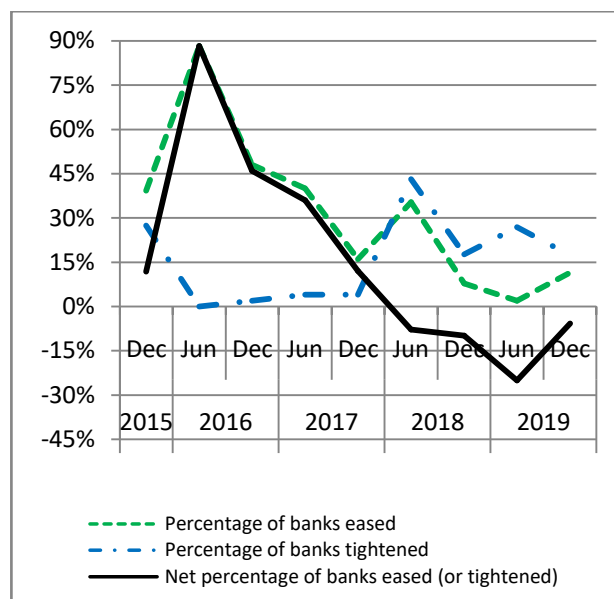
2. Credit risk–Cont'd.

2.7 Changes in banks' interest rates for housing loans

a. No. of banks having changes in their interest rates for housing loans



b. Percentage of banks having changes in their interest rates for housing loans



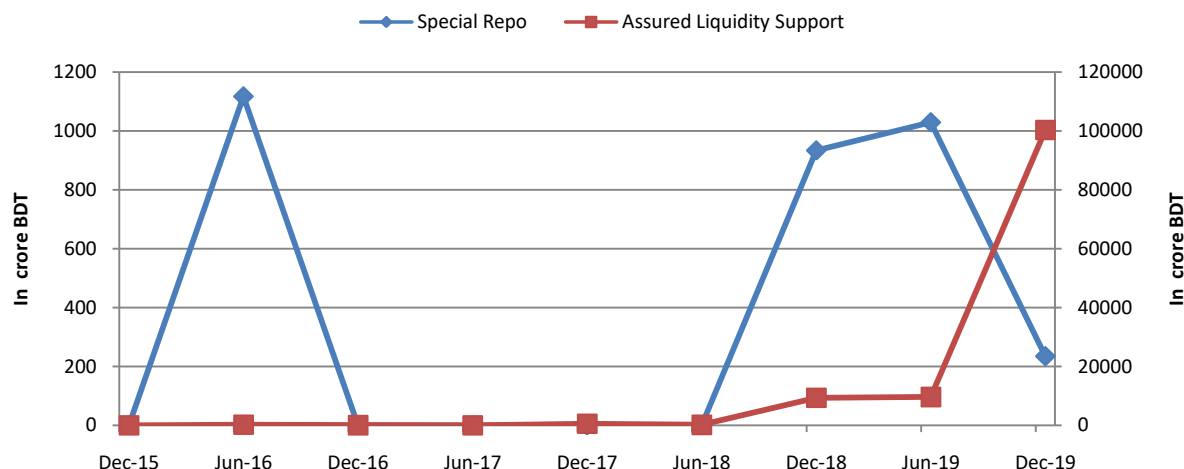
Source: Scheduled bank lending rate, Bangladesh Bank website (<https://www.bb.org.bd/fnansys/interestlending.php>).

Notes: Changes in banks' announced interest rate for housing loans have been used as a proxy for changes in banks' credit standards. Net percentage change is the difference between the share of banks reporting that interest rates have been eased (decreased) and the share of banks reporting that they have been tightened (increased). A positive net percentage change indicates that a larger proportion of banks have eased credit standards ("net easing"), whereas a negative net percentage change indicates that a larger proportion of banks have tightened credit standards ("net tightening").

In the second half of 2019, 11.5 percent banks eased the interest rates of housing loans while 17.3 percent banks tightened the same; the remaining banks kept their rates unchanged during the same period. Hence, after netting off the impacts of easing, an overall net tightening, though softened compared to the preceding period, is observed during this period.

3. Funding and liquidity risk

3.1 Bangladesh Bank's liquidity support to banks

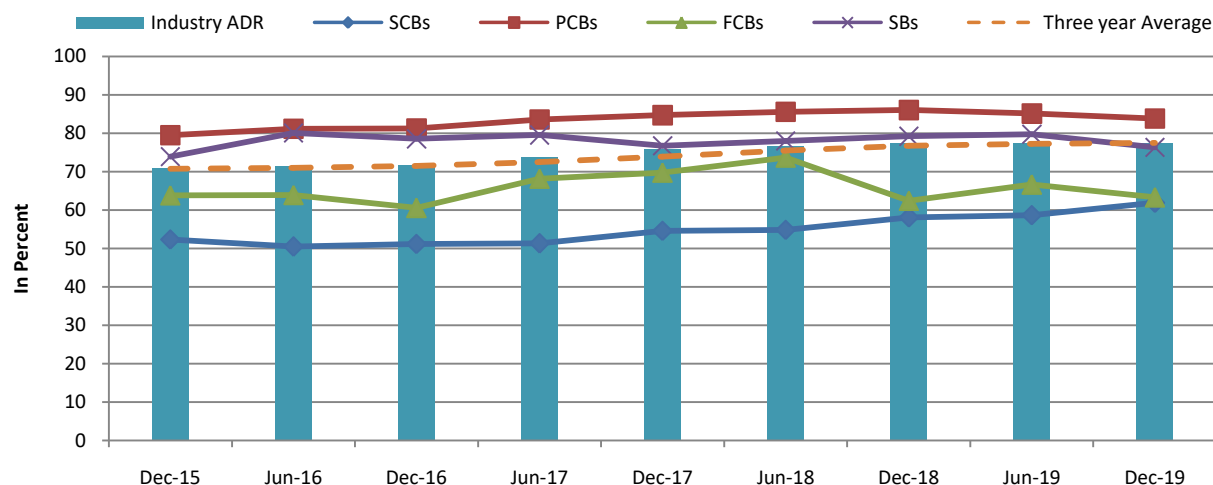


Source: DMD, BB.

Note: LHS represents Assured Liquidity Support & RHS Special Repo.

Assured liquidity support jumped significantly during the second half of 2019 compared to last few years whereas special repo facility recorded a decrease during the same period compared to the preceding period. However, amount of repo during this period was BDT 50,355 crore, which decreased significantly from that of the previous period.

3.2 Banks' advance-to-deposit ratio



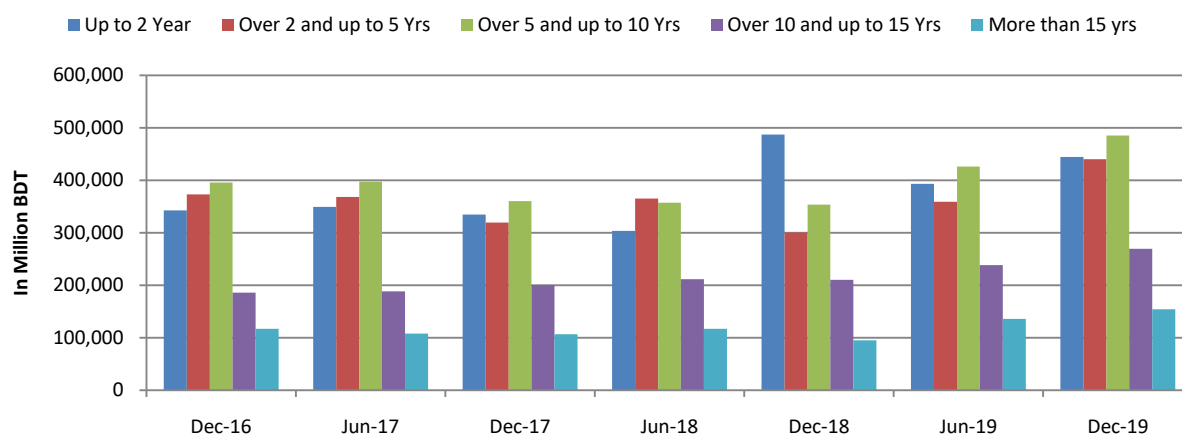
Source: DOS, BB.

Advance-to-deposit ratio (ADR) decreased slightly in December 2019 after remaining mostly stable over the last few years. ADRs of PCBs and SBs were higher than the industry average whereas ADRs of FCBs and SCBs were lower.

3. Funding and liquidity risk-cont'd.

3.3 Maturity profile of banks' outstanding debt securities

a. Treasury Bond

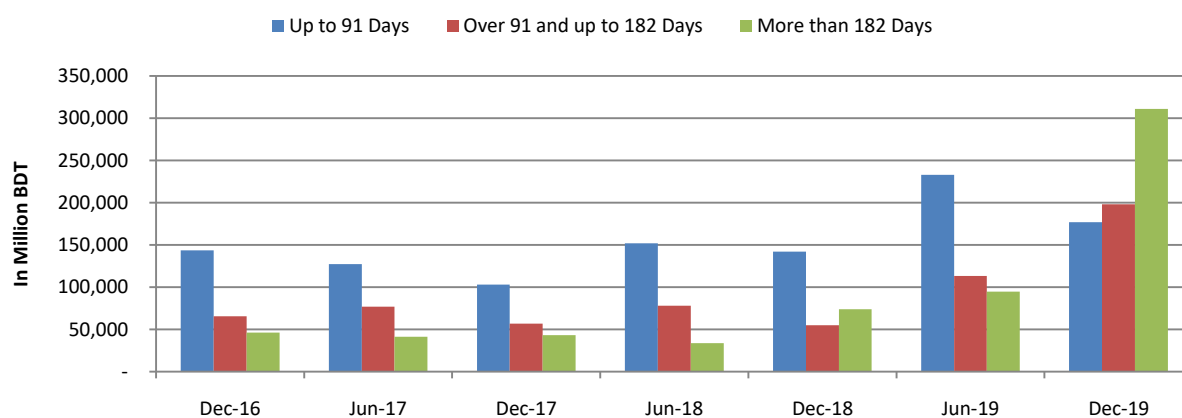


Source: DMD, BB.

Notes: The maturity profile refers to the residual maturity of long-term and short-term debt securities issued by Government of Bangladesh. Banks' investments in long-term debt securities includes government treasury bond with a maturity of more than 12 months. Data are based on amounts outstanding at the end of the corresponding year or month.

Treasury bonds with remaining maturity over 5 and up to 10 years remained the largest in terms of volume whereas the ones with remaining maturity of more than 15 years remained the smallest at end-December 2019. All type of treasury bonds increased in December 2019 compared to June 2019. Besides, there were also special purpose treasury bonds (SPTB) of different maturities amounting to BDT 106,959.2 million as of end-December 2019.

b. Treasury Bill



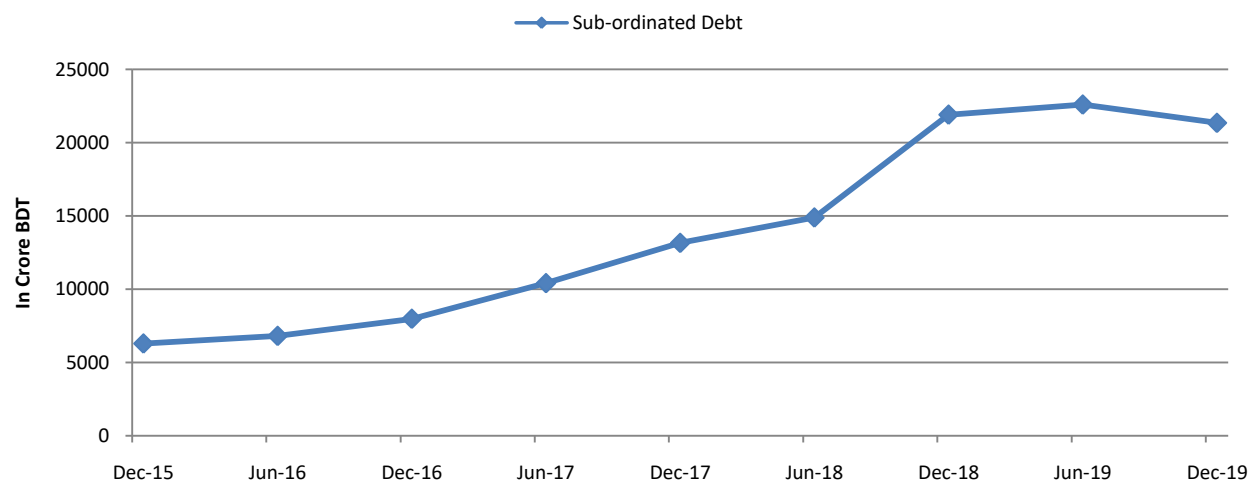
Source: DMD, BB.

Notes: Banks' investment in short-term debt securities includes government Treasury bill with a maximum maturity of 12 months. Data are based on amounts outstanding at the end of the corresponding year or month.

Treasury bills with remaining maturity of more than 182 days were the largest in terms of volume and increased significantly from June 2019. The same with remaining maturity of up to 91 days were the smallest and decreased from June 2019. However, Treasury bills with remaining maturity over 91 and up to 182 days increased from June 2019.

3. Funding and liquidity risk-cont'd.

3.4 Subordinated debt



Source: DOS, BB.

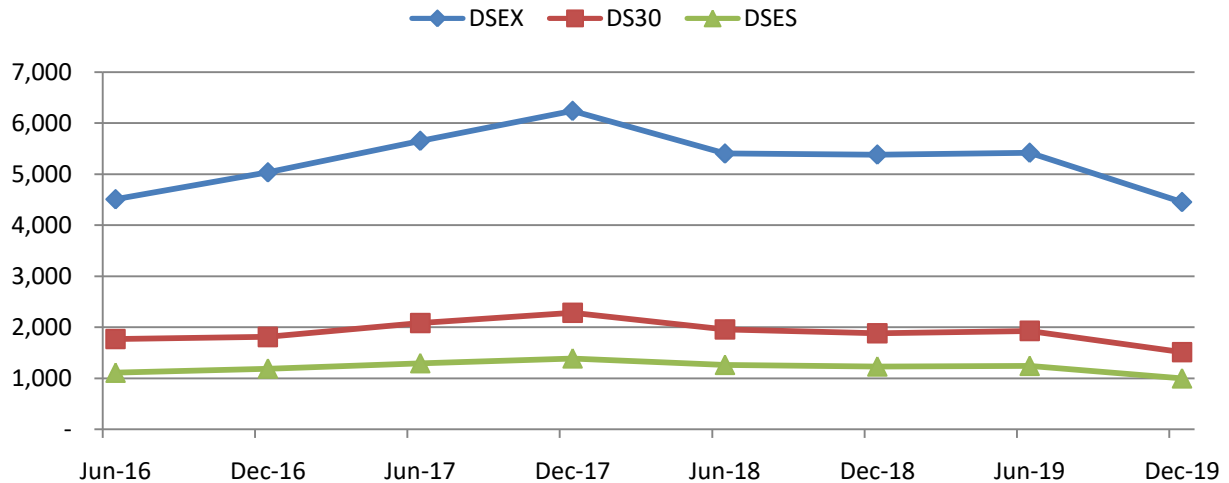
Notes: 1. Subordinated debts are eligible to be included as Tier 2 Capital for calculating the regulatory capital as per BASEL III Capital Framework.

2. One Crore = 10 million.

Subordinated debt issued by banks showed an increasing trend since 2015, but decreased slightly in December 2019 compared to June 2019.

4. Market risk

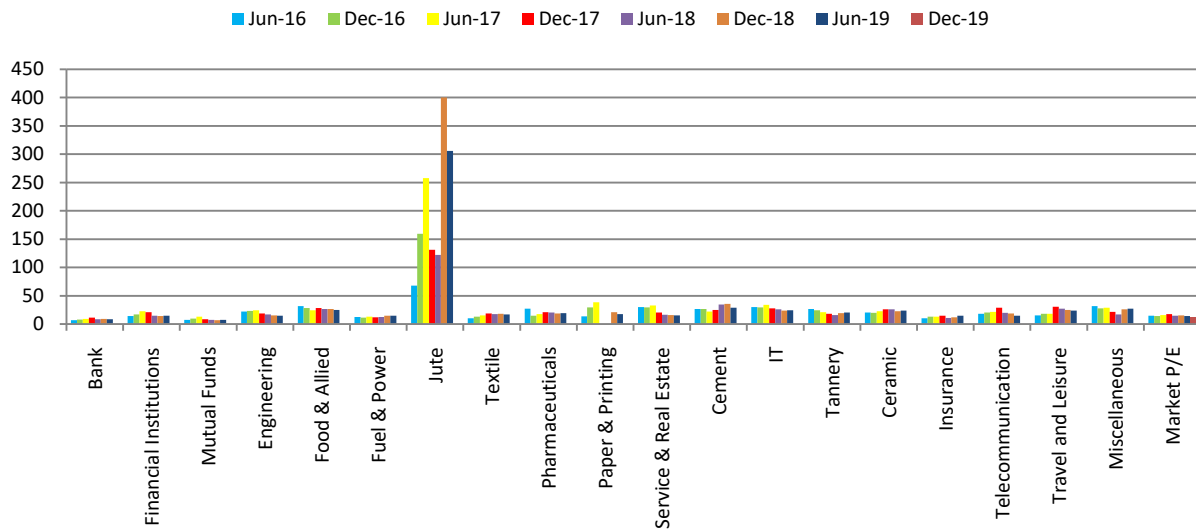
4.1 Equity indices



Source: DSE Website.

DSE Broad Index, DSEX, decreased at end-December 2019 compared to that of end-June 2019. Besides, DS30 and DSES also exhibited decrease in the review period.

4.2 Price/earnings (P/E) ratio



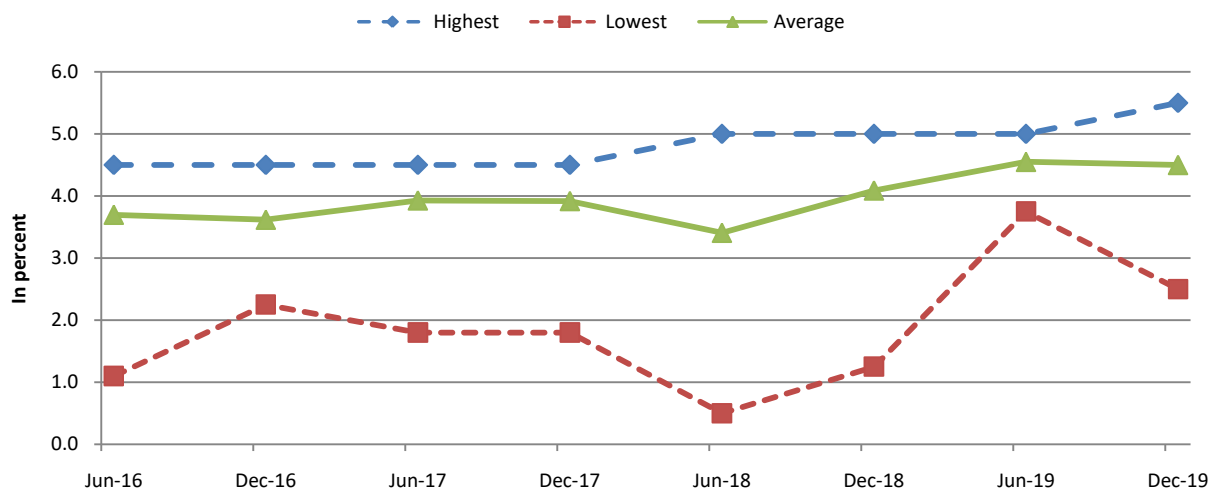
Source: DSE Website.

Note: Updated data for sector-wise P/E ratio are not available in DSE website. Only market P/E ratio is available.

Market P/E ratio maintained the downward trend and stood at 11.8 at end-December 2019, which was 14.3 at end-June 2019 and 15.2 at end-December 2018.

4. Market risk–cont'd.

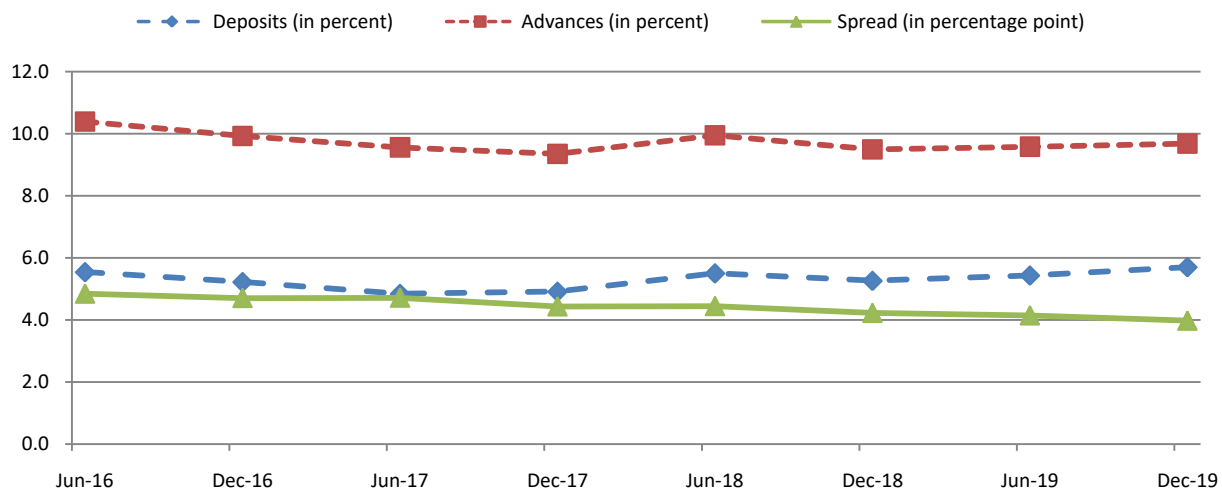
4.3 Weighted average call money market rates



Source: Statistics Department, BB.

Weighted average call money borrowing rate decreased slightly at end-December 2019 compared to that of end-June 2019.

4.4 Scheduled banks' weighted average interest rate on deposits and advances

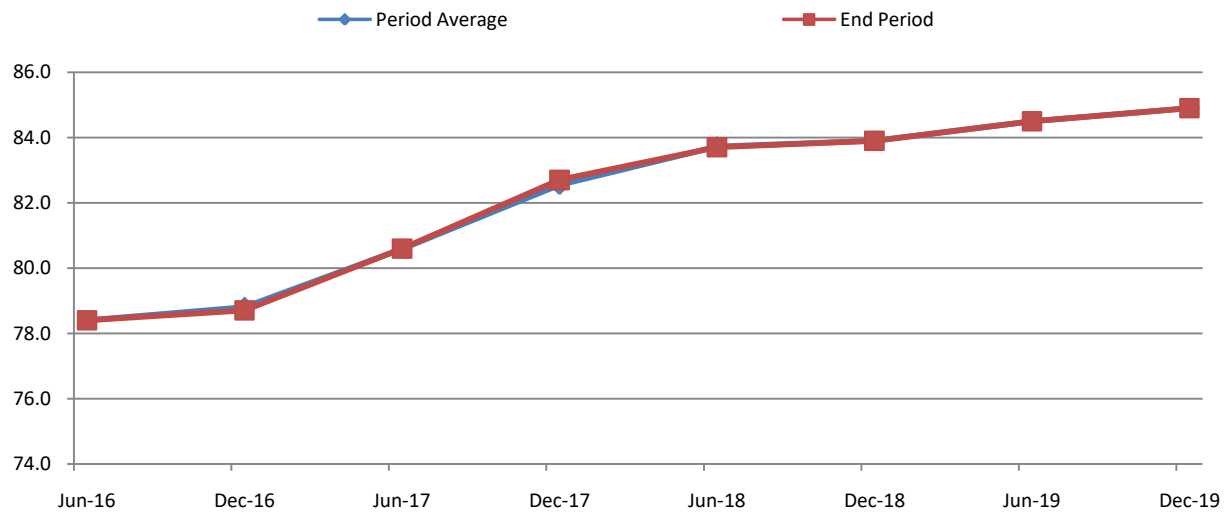


Source: Statistics Department, BB.

Weighted average interest rates on both advances and deposits increased slightly at the end of December 2019 compared to those of end-June 2019. However, the spread continued its declining trend.

4. Market risk-cont'd.

4.5 Weighted average exchange rate (BDT/USD)



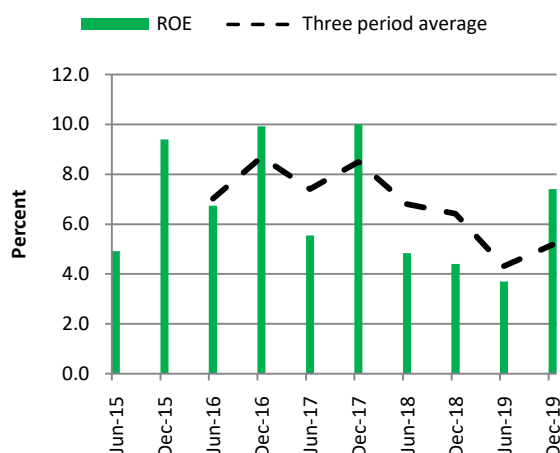
Source: Statistics Department, BB.

The nominal exchange rate (BDT per USD) recorded further depreciation at end-December 2019.

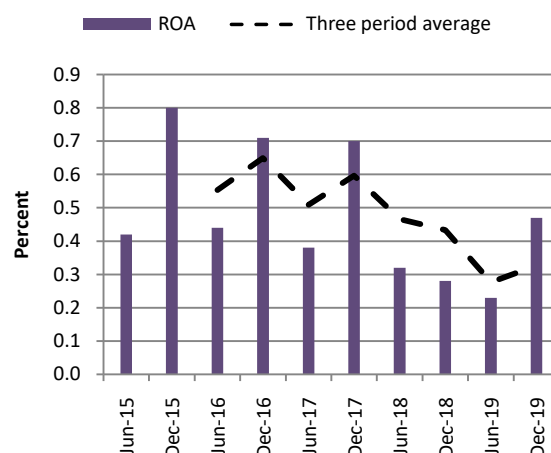
5. Profitability and solvency risk

5.1 Banks' profitability indicators

a. Return on equity (ROE)



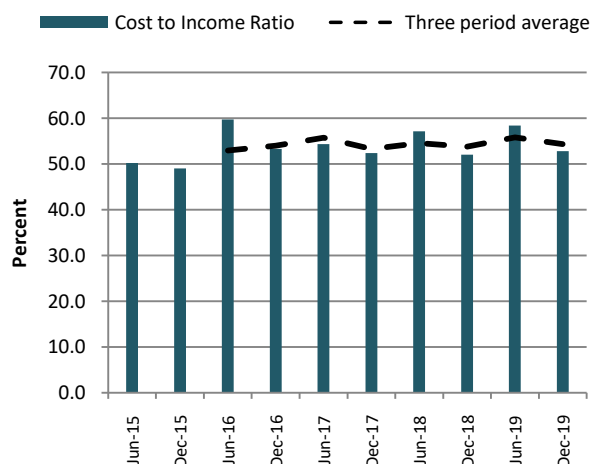
b. Return on assets (ROA)



Source: DOS, BB; Computation: FSD, BB.

Both ROE and ROA increased markedly during the second half of 2019 compared to the positions of the preceding period.

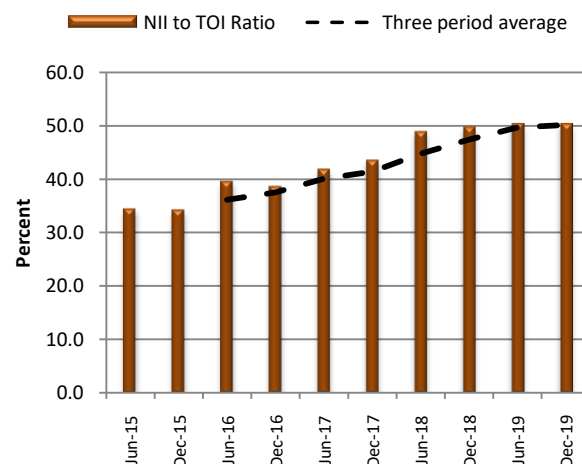
c. Cost-to-income ratio



Source: DOS, BB; Computation: FSD, BB.

Note: Ratio between operating expenses and total (operating) income.

d. Net interest income to total operating income ratio



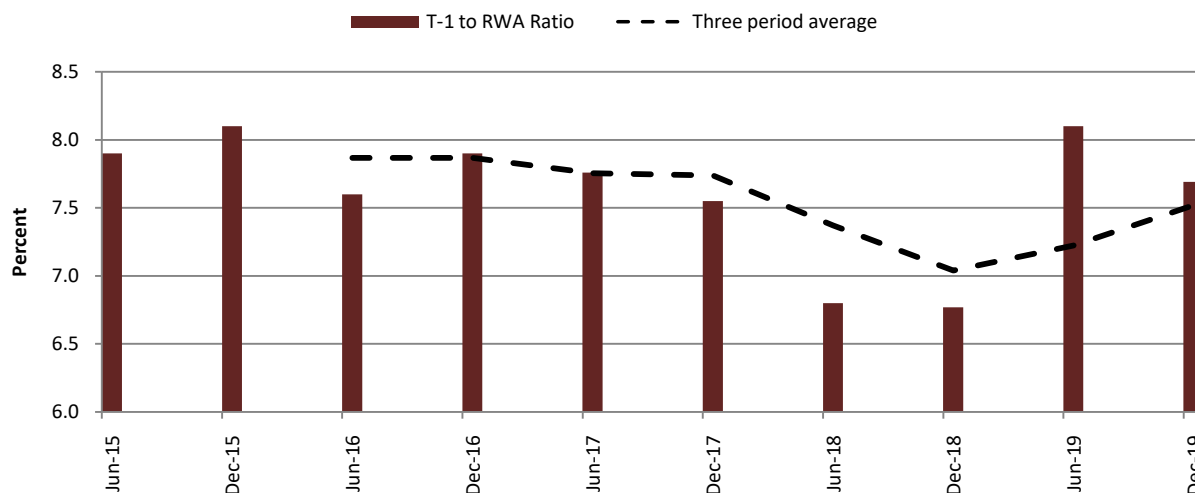
Source: DOS, BB; Computation: FSD, BB.

Compared to the positions of January-June 2019, banks' cost-to-income ratio decreased during July-December 2019. Banks' net interest income to total operating income ratio remained almost unchanged during the same period.

5. Profitability and solvency risk-cont'd.

5.2 Banks' solvency indicators

a. Tier-1 to RWA ratio

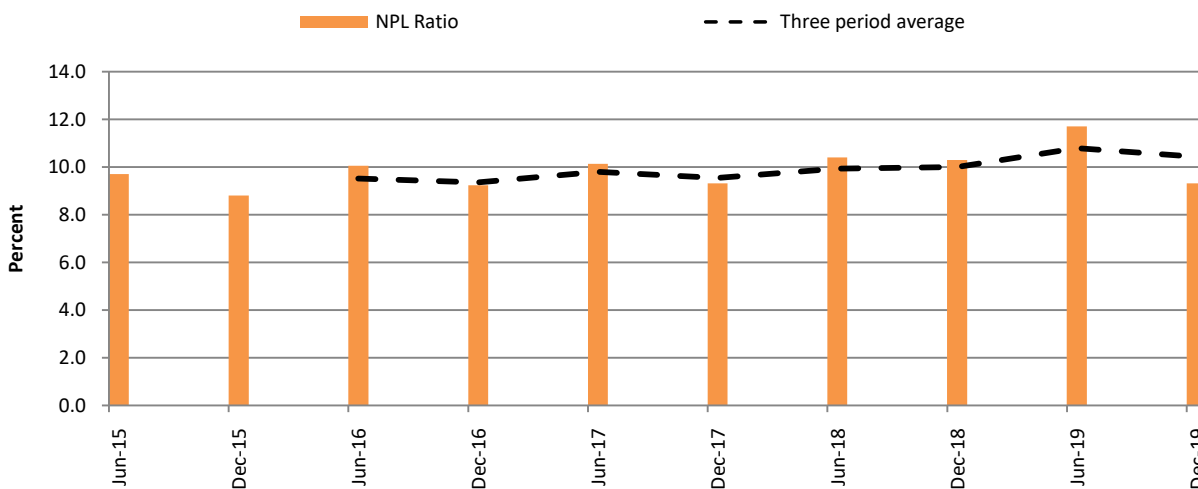


Source: DOS, BB.

Note: Ratio of Tier-1 capital to total risk-weighted assets.

Banks' tier-1 capital ratio decreased at end-December 2019 compared to the preceding period; however, the ratio was higher than the end-December 2018 position and remained well above the regulatory requirement.

b. Gross non-performing loan (NPL) ratio



Source: BRPD, BB.

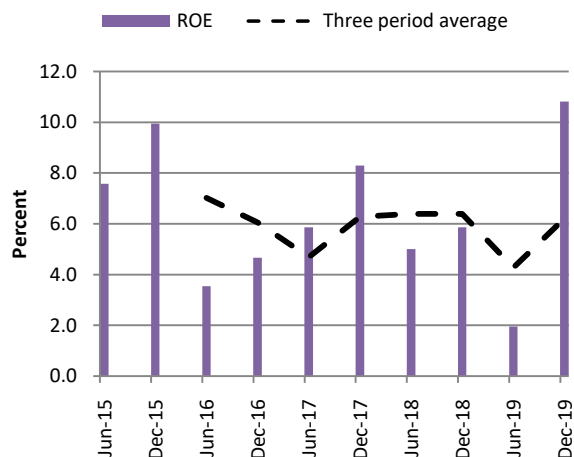
Note: Ratio of total non-performing loans & advances to total loans & advances.

The gross NPL ratio decreased considerably at end-December 2019 compared to that of both end-June 2019 and end-December 2018.

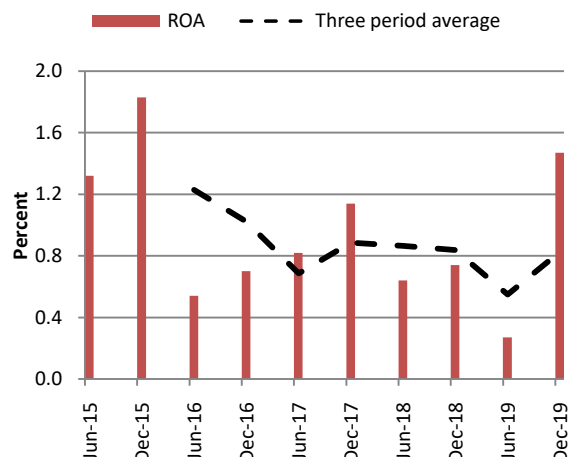
5. Profitability and solvency risk-cont'd.

5.3 FIs' profitability indicators

a. Return on equity (ROE)



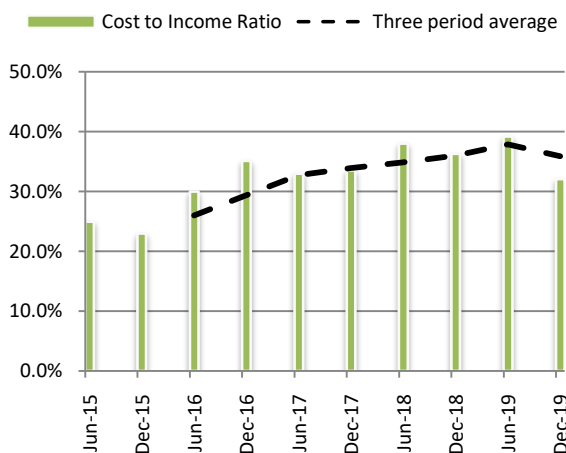
b. Return on assets (ROA)



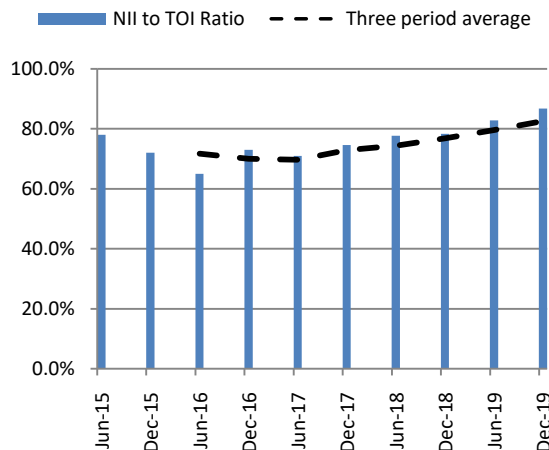
Source: DFIM, BB.

FIs' ROE and ROA both increased sharply during July-December 2019 compared to the corresponding values of January-June 2019 and July-December 2018.

c. Cost-to-income ratio



d. Net interest income to total operating income ratio



Source: DFIM, BB.

Source: DFIM, BB.

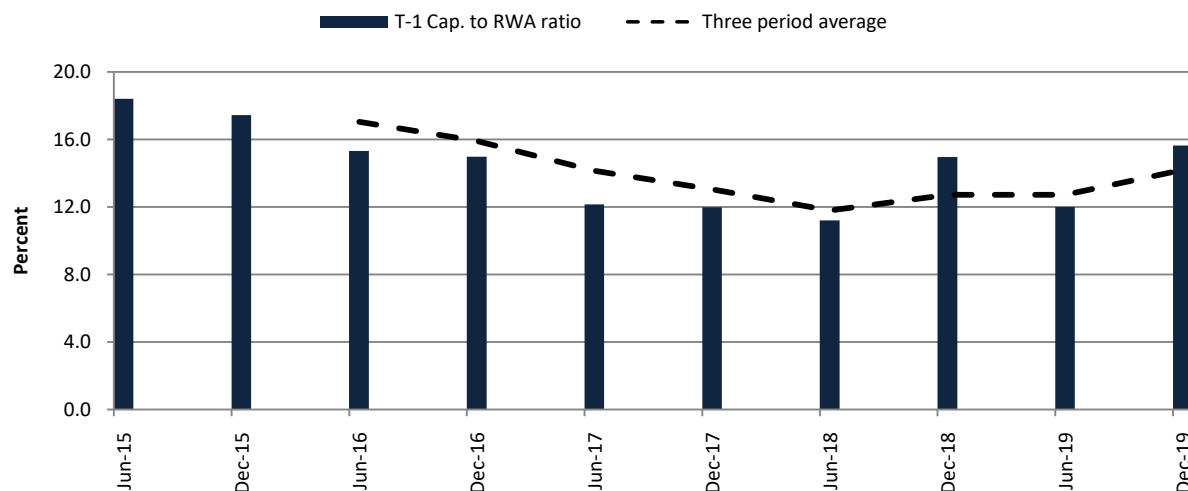
Note: Ratio between operating expenses and total income.

FIs' cost-to-income ratio decreased during the second half of 2019 compared to that of the previous period. On the other hand, net interest income to total operating income ratio showed an increasing trend during the same period.

5. Profitability and solvency risk-cont'd.

5.4 FIs' solvency indicators

a. Tier-1 to RWA ratio

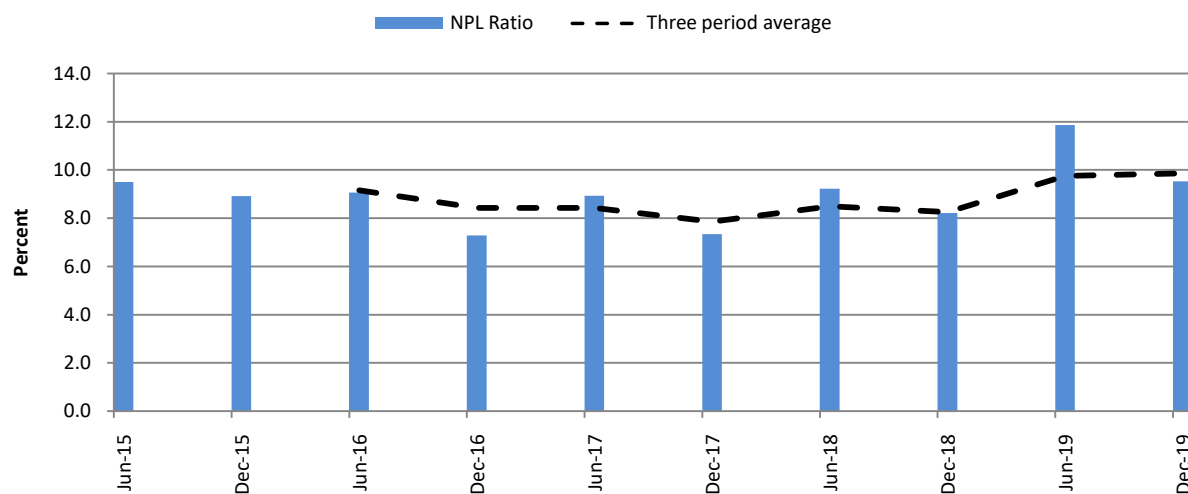


Source: DFIM, BB.

Note: Ratio of Tier-1 capital to total risk-weighted assets.

FIs' Tier-1 to RWA ratio increased moderately at end-December 2019 compared to that of the preceding period and remained well above the regulatory requirement.

b. Gross non-performing loan (NPL) ratio



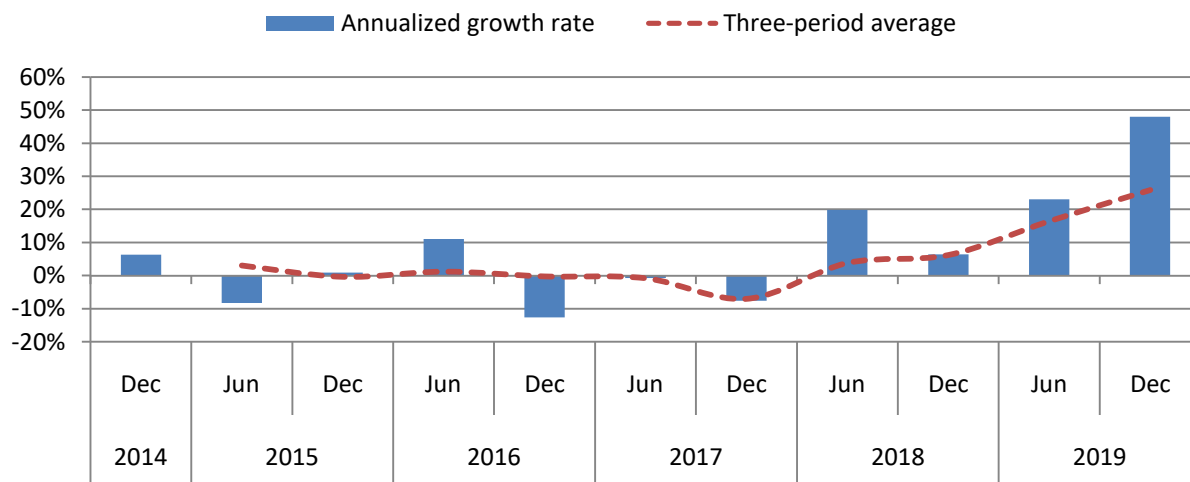
Source: DFIM, BB

Note: Ratio of non-performing loans & leases to total loans & leases.

Gross NPL ratio of FIs decreased at end-December 2019 compared to that of end-June 2019, but increased while compared to end-December 2018.

6. Inter-linkages

6.1 Growth of banks' credit (gross) to government

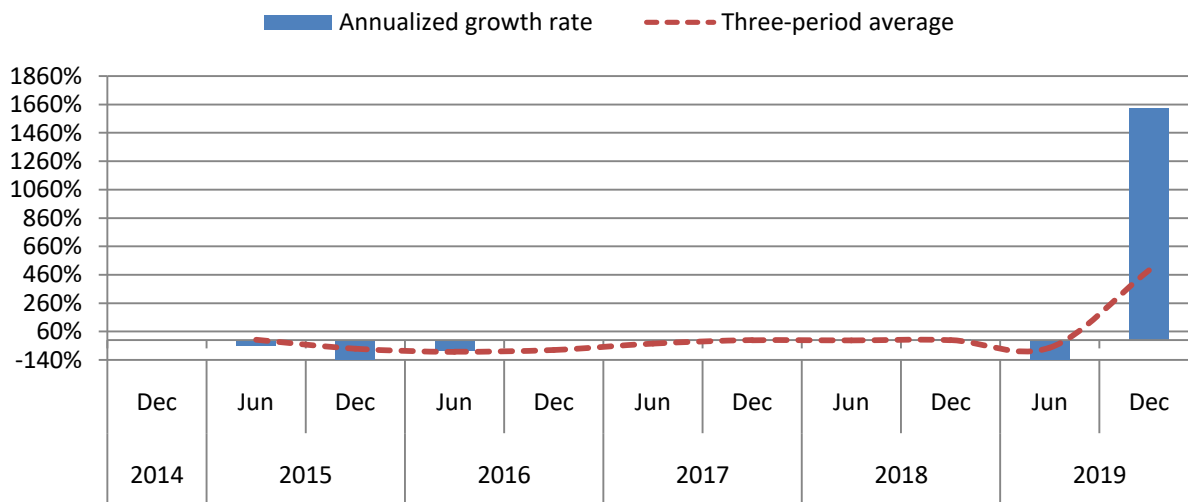


Source: Statistics Department, Bangladesh Bank.

Notes: Credit extended to the government refers to gross amount.

Government borrowings from the banking sector registered a sharp increase at end-December 2019 compared to the previous period.

6.2 Growth of NBDCs' credit (gross) to government



Source: Statistics Department, Bangladesh Bank.

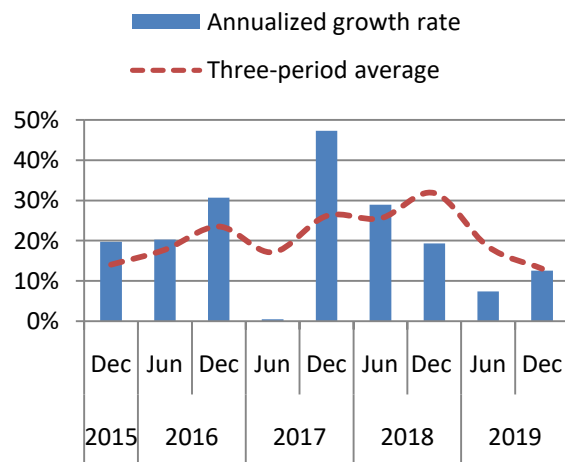
Notes: Data of government borrowing for June 2019 is revised. NBDCs include deposit taking FIs, Ansar-VDP Unnayan Bank, Karmasangsthan Bank, Grameen Bank and Bangladesh Samabaya Bank.

Government borrowings from the NBDCs, though remained very low compared to the same from the banking system, witnessed a sharp rise at end-December 2019 compared to the earlier periods.

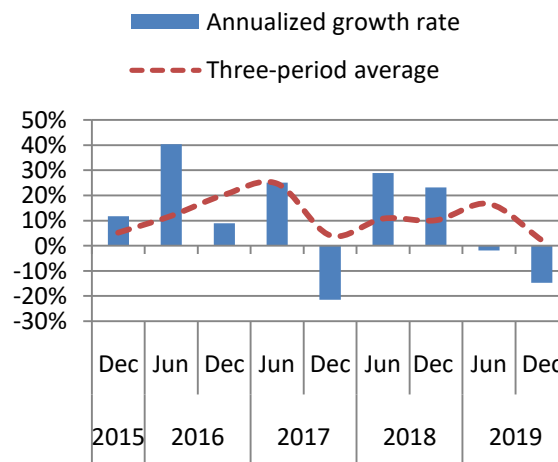
6. Inter-linkages– Cont'd.

6.3 Growth of banks' loans to housing sector

a. Loans to residential housing



b. Loans to commercial housing

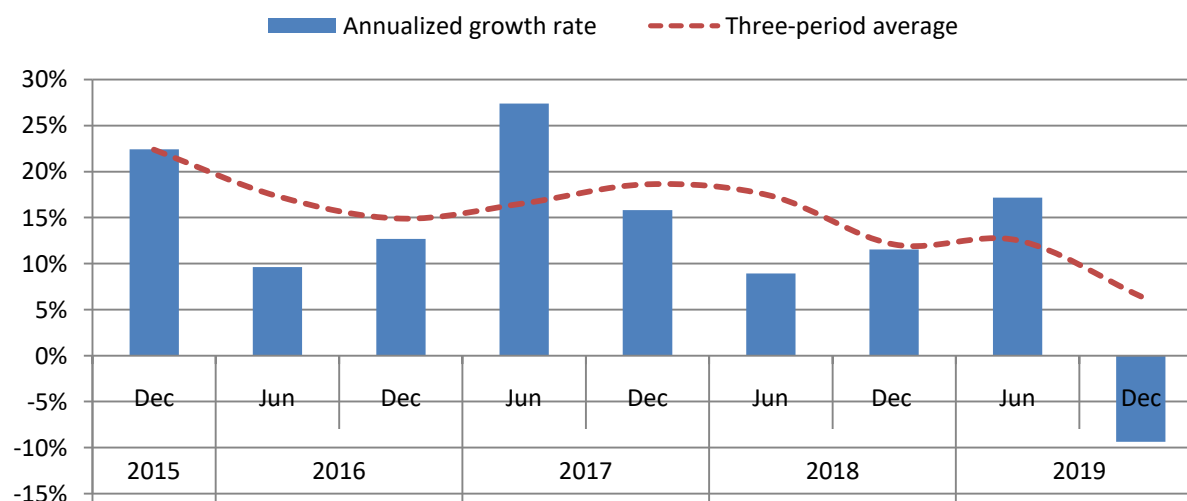


Source: Statistics Department, Bangladesh Bank.

Notes: Data for December 2019 are provisional. Loans refer to outstanding loans and advances excluding bills. Loans to residential housing refer to loans extended to domestic households for house/flat/land purchase and repair/renovation/extension. Loans to commercial housing refer to loans extended to commercial developers/contractors.

Loan growth in residential housing sector demonstrated a slowdown since December 2017. Loan growth in commercial housing sector also showed a declining trend.

6.4 Growth of FIs' loans to housing sector



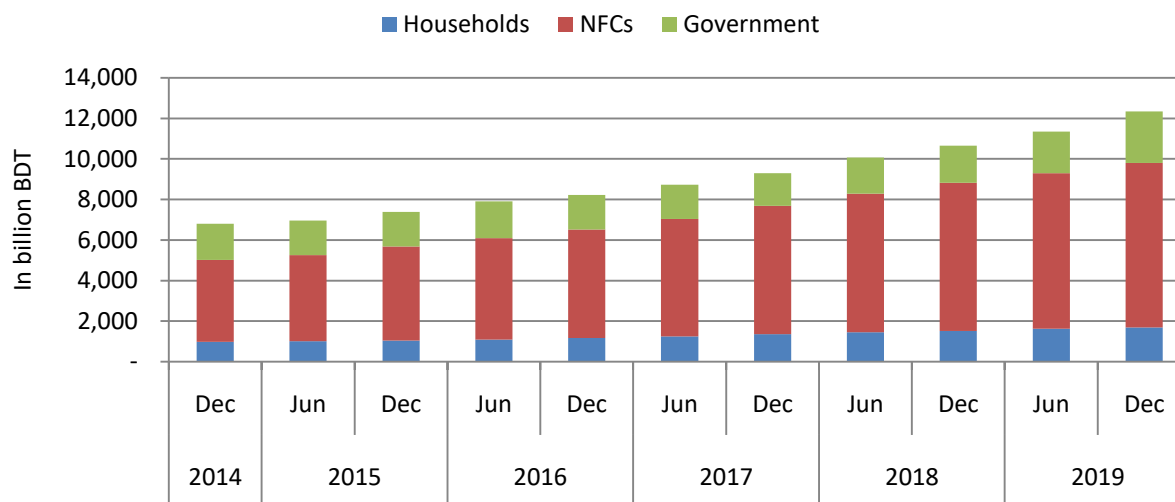
Source: DFIM, Bangladesh Bank.

Notes: Due to NBDCs' data unavailability, data of FIs were used which include both deposit takers and non-deposit takers.

Growth of FIs' loans to housing sector showed a sharp decline and turned negative at the end of December 2019.

6. Inter-linkages– Cont'd.

6.5 Banks' loans to counterpart sectors

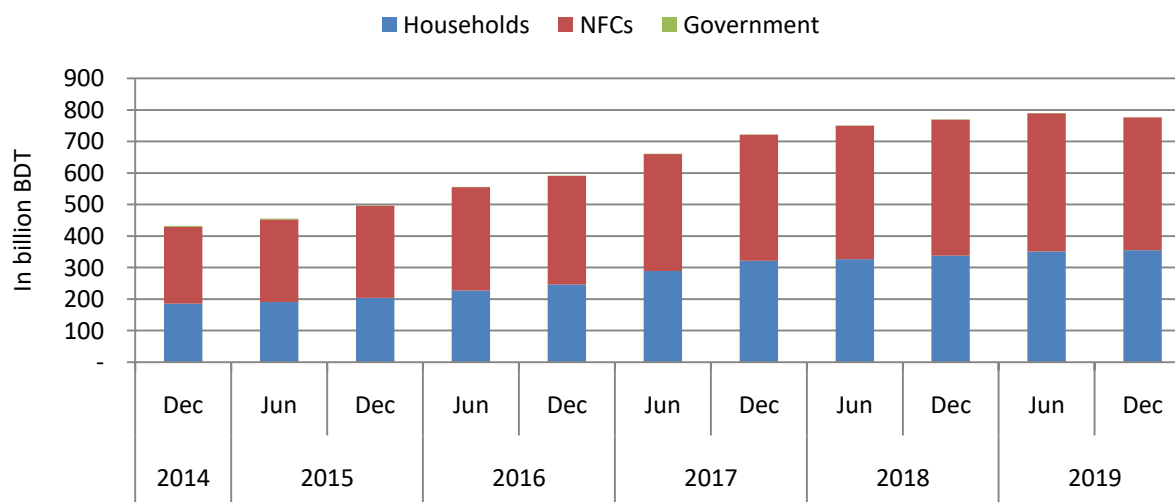


Source: Statistics Department, Bangladesh Bank.

Notes: Data of households and NFCs from December 2014 to June 2019 are revised. Loans extended to households and NFCs refer to outstanding loans and advances excluding bills. Loans to government refer to gross amount.

Banks' exposures to its major public and private counterparts, led largely by private NFCs, continued its increasing trend.

6.6 NBDCs' loans to counterpart sectors



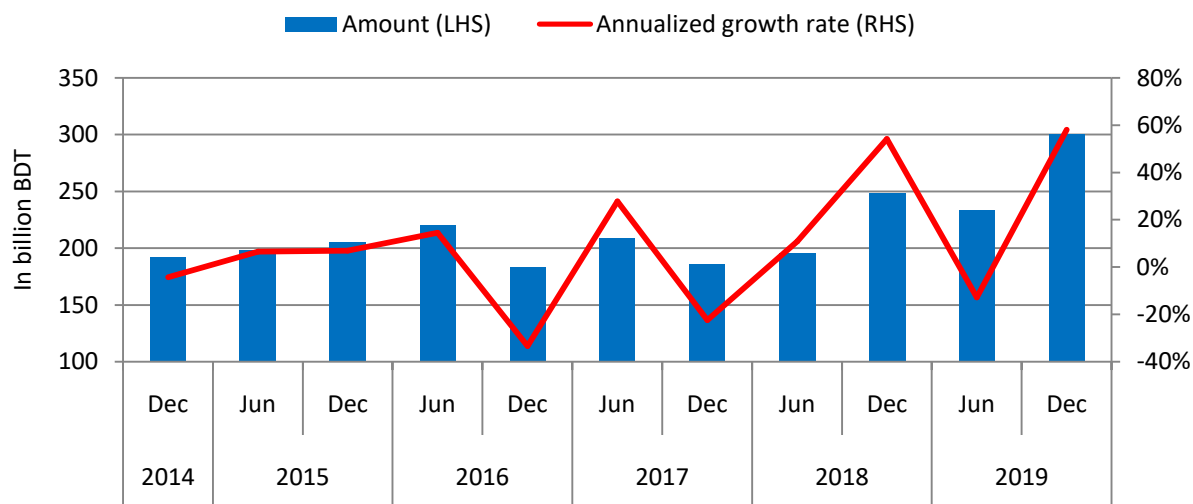
Source: Statistics Department, Bangladesh Bank.

Notes: Loans to government refer to gross amount. NBDCs include deposit taking FIs, Ansar-VDP Unnayan Bank, Karmasangsthan Bank, Grameen Bank and Bangladesh Samabaya Bank.

NBDCs' loan portfolio experienced a slight decline at end-December 2019 largely due to decline in loans to NFC.

6. Inter-linkages– Cont'd.

6.7 Banks' cross-border claims

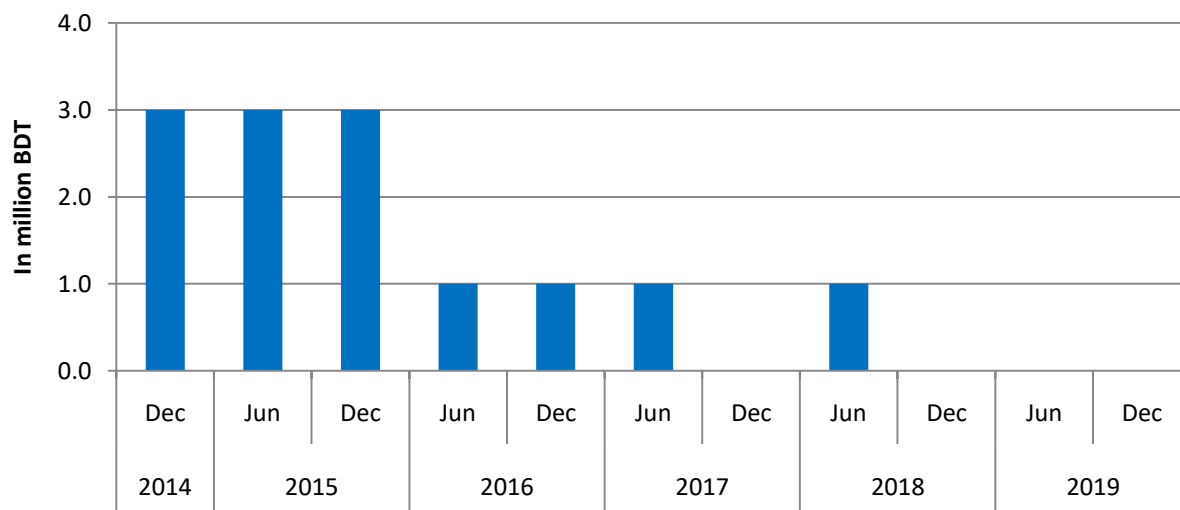


Source: Statistics Department, Bangladesh Bank.

Notes: Cross-border claims include foreign currency notes in hand, balances with banks abroad, bilateral trade credits, wage earners' balance abroad, foreign bills, foreign direct investment, portfolio investment.

Banks' cross-border claims, though increased at end-December 2019, remained low accounting for less than one percent of total assets of the banking sector.

6.8 NBDCs' cross-border claims



Source: Statistics Department, Bangladesh Bank.

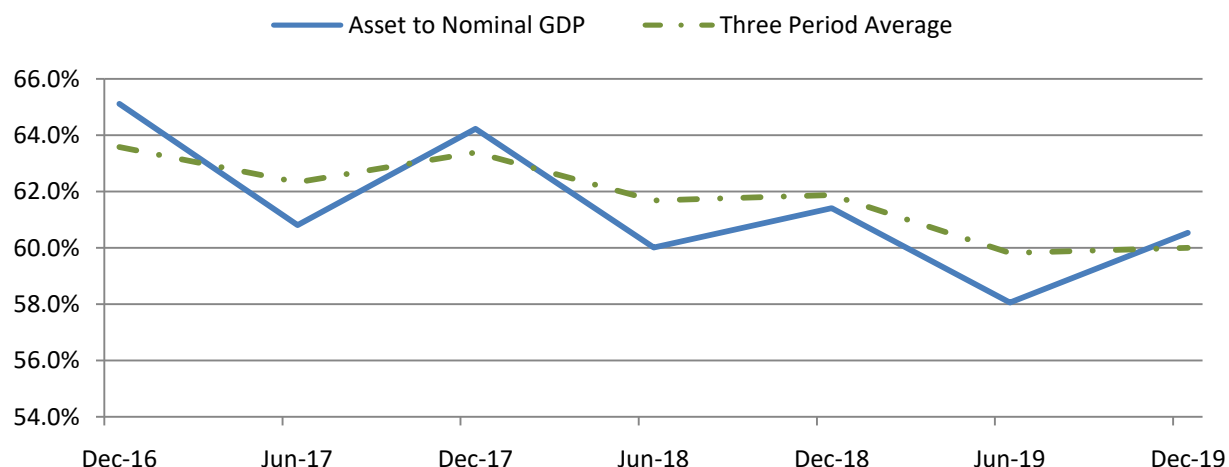
Notes: Claims include only foreign currency notes in hand. No other claims have been generated yet. NBDCs include deposit taking FIs, Ansar-VDP Unnayan Bank, Karma Sangsthan Bank, Grameen Bank and cooperative banks.

NBDCs' cross-border claims remained almost non-existent at the end of December 2019.

7. Structural risk

7.1 Banking sector size

a. Domestic Banks

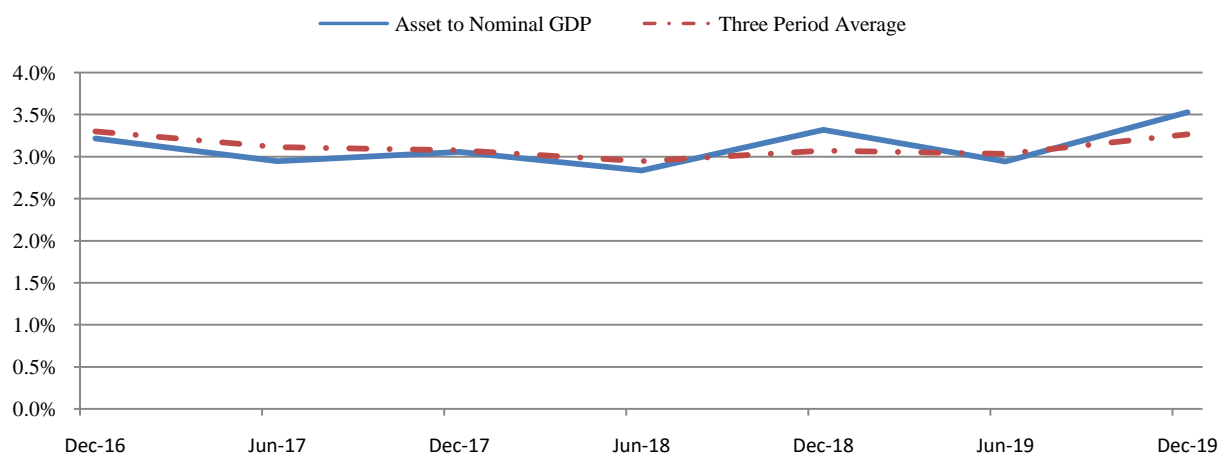


Source: DOS, BB and Monthly Economic Trends, BB; computation: FSD, BB.

Note: Ratio of domestic banks' total assets to Nominal GDP. As half yearly GDP is not calculated in Bangladesh, June based GDP data is used as a proxy for December in calculating this ratio.

Domestic banks' total assets to nominal GDP ratio increased in December 2019 compared to that of June 2019, but decreased when compared to that of December 2018. An overall downtrend is observed since December 2016.

b. Foreign Banks



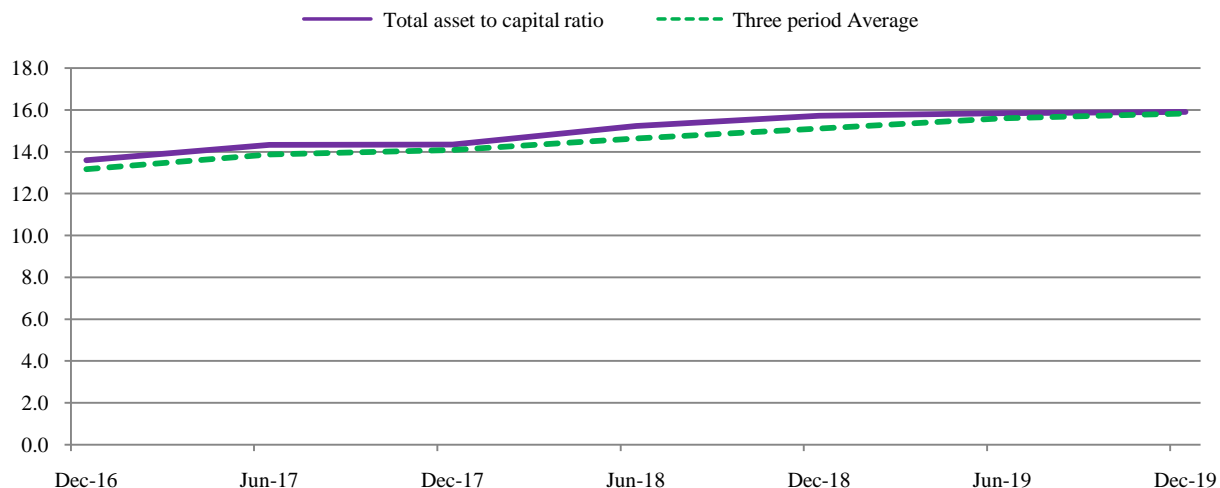
Source: DOS, BB and Monthly Economic Trends, BB; computation: FSD, BB.

Note: Ratio of foreign banks' total assets to Nominal GDP. As half yearly GDP is not calculated in Bangladesh, June based GDP data is used as a proxy for December in calculating this ratio.

Foreign banks' total assets to nominal GDP ratio increased moderately in December 2019 compared to that of both June 2019 and December 2018.

7. Structural risk-cont'd.

7.2 Banking sector leverage



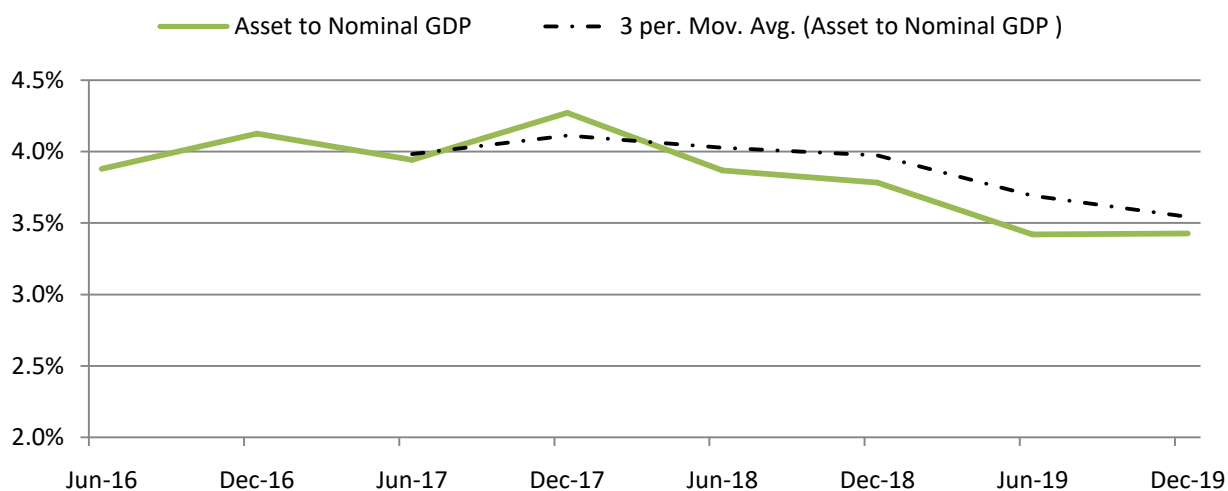
Source: DOS, BB; computation: FSD, BB.

Note: Leverage ratio is defined as total (on-balance sheet) asset of the banking sector to its total (on-balance sheet) capital ratio.

Banking sector's total assets to capital ratio increased slightly in December 2019 compared to that of June 2019.

7.3 Financial institutions (FIs) sector size

FIs' assets to nominal GDP



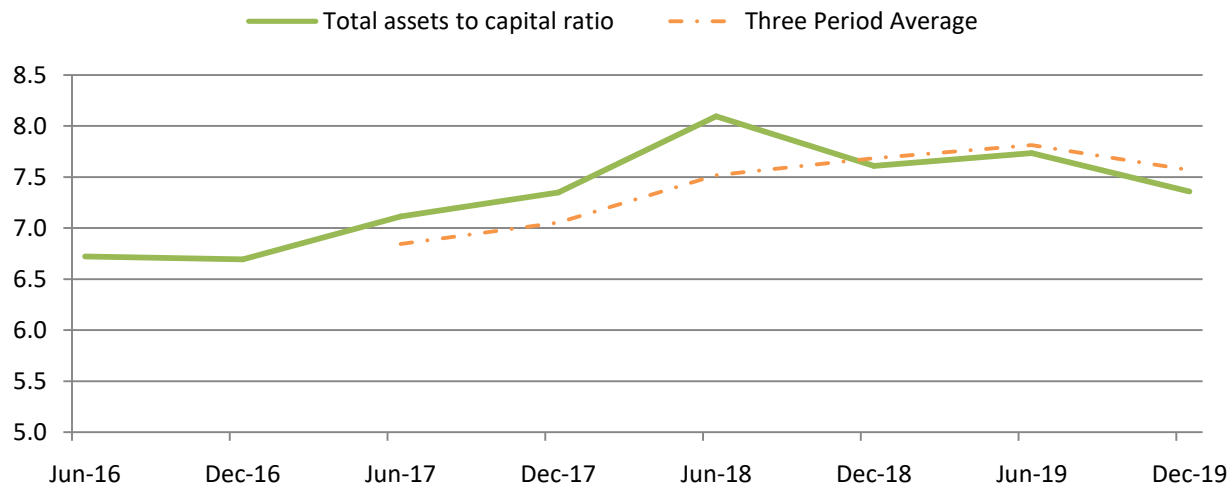
Source: DFIM, BB and Monthly Economic Trends, BB; computation: FSD, BB.

Note: Ratio of total asset of financial institutions to nominal GDP. As half yearly GDP is not calculated in Bangladesh, June based GDP data is used as a proxy for December in calculating this indicator. Data of December 2017 and December 2018 are revised.

An overall declining trend is observed in financial institutions' assets to nominal GDP ratio.

7. Structural risk-cont'd.

7.4 Financial institutions (FIs) sector leverage



Source: DFIM, BB; Computation: FSD, BB.

Note: Leverage ratio is defined as the total (on-balance sheet) asset of the FIs sector to its total (on-balance sheet) capital ratio. Data of December 2017 and December 2018 are revised.

Financial institutions' total assets to capital ratio showed a downtrend since June 2018.

Annex to Bangladesh Systemic Risk Dashboard

1. Macro risk:

1.1 Current and forecasted real GDP growth

Sources: Statistics Department, Bangladesh Bank and IMF World Economic Outlook Update, April 2018.

Current real GDP growth is the latest actual financial year-on-year growth at constant market price. Average of three periods is the three-year moving average of GDP growth rate. Forecasted real GDP growth rate is taken from IMF's World Economic Outlook Update, April 2018.

1.2 Current account balance-to-GDP ratio

Sources: Monthly Economic Trends, BB.

Current account balance represents the sum of the 6 months' current account balances. GDP is at current market price. Average of three periods is the three-period moving average of current account balance-to-GDP ratio.

1.3 Aggregate Debt-to-GDP ratio

Sources: ERD, Ministry of Finance and Monthly Economic Trends of BB (various issues).

The aggregate debt as percentage of GDP represents the sum of the debt-to-GDP ratio of Financial, Non-Financial Corporations, Government, as well as households sectors (other resident sector).

1.4 Government debt-to-GDP ratio

Sources: ERD, Ministry of Finance; and Monthly Economic Trends of BB (various issues).

Government debt includes both domestic government debt and local authorities and external debt. Local authorities include City Corporations, Zilla Parisad, Municipalities, Thana/Upazila Parishad, Union Parishad, Gram Parishad and Other Local Bodies. The dotted line represents three-period moving average of the government debt-to-GDP ratio.

1.5 Government deficit-to-GDP ratio

Sources: Monthly Report on Fiscal Position (various issues), Ministry of Finance, Government of Bangladesh.

The government deficit-to-GDP ratio is shown as both deficits excluding grants and including grants to nominal GDP.

1.6 Household debt-to-gross disposable income ratio

Sources: Monthly Economic Trends, BB.

Claims on other resident sector has been classified as Household's debts. The resident sector has been classified according to the IMF's Monetary and Financial Statistics Manual (MFSM). Claims on resident sector exclude BB and ODCs (other depository corporations). Household debt-to-gross disposable income ratio represents resident sector loans as a ratio of gross disposable income over the financial year.

1.7 NFC debt-to-GDP ratio

Sources: Monthly Economic Trends, BB.

Debts of both public non-financial corporations and private non-financial corporations are considered for deriving non-financial corporations' debt. Public non-financial corporations are corporations owned or controlled by the Government that produce goods or services for sale to the public at a significant market price whereas private non-financial corporations encompass corporations and quasi corporations engaging primarily in the production of goods and non-financial services for sale to the public at a significant market price (profit motive).

2. Credit Risk:

2.1 Annual growth rate of banks' loans to households

Source: Statistics Department, Bangladesh Bank.

It refers to loans extended by banks to domestic households (individual customers); it excludes bills purchased and discounted.

2.2 Annual growth rate of NBDCs' loans to households

Source: Statistics Department, Bangladesh Bank.

It refers to loans extended by non-bank depository corporations (NBDCs) to domestic households; NBDCs include depository financial institutions (FIs), Ansar-VDP Unnayan Bank, Karmasangsthan Bank, Grameen Bank and Bangladesh Samabaya Bank.

2.3 Annual growth rate of banks' loans to NFCs

Source: Statistics Department, Bangladesh Bank.

It refers to loans extended by banks to private non-financial corporations (NFCs); it excludes bills discounted and purchased.

2.4 Annual growth rate of NBDCs' loans to NFCs

Source: Statistics Department, Bangladesh Bank.

It refers to loans extended by NBDCs to private NFCs.

2.5 Provision maintenance ratio of banks

Source: Banking Regulation and Policy Department, Bangladesh Bank.

It refers to the ratio of loan-loss provision maintained by banks against their required provision. Mentionable that this ratio is calculated on yearly basis.

2.6 Provision maintenance ratio of FIs

Source: Department of Financial Institutions and Market, Bangladesh Bank.

It refers to the ratio of loan-loss provision, maintained by FIs, against their required provision; due to unavailability of data of all NBDCs, provision maintenance ratio of FIs was used as FIs constitute the majority of NBDCs.

2.7 Changes in banks' interest rates for housing loans

Source: Bangladesh Bank website (<https://www.bb.org.bd/fnansys/interestlending.php>).

It refers to the net percentage change in credit standards for housing loans by banks; changes in banks' announced interest rate for housing loans have been used as a proxy for changes in banks' credit standards; net percentage change is the difference between the share of banks reporting that interest rates have been tightened (increased) and the share of banks reporting that they have been eased (decreased).

3. Funding and liquidity risk:

3.1 Bangladesh Bank's liquidity support to banks

Sources: Debt Management Department, BB.

Bangladesh Bank's liquidity support comprises assured liquidity support and special repo. Assured liquidity support is given against the government securities holding by the banks issued within last 60 days. Special repo is given upon request to BB when there is a possibility of shortfall in CRR.

3.2 Advance-to-deposit ratio

Sources: Department of Off-site Supervision, BB.

It refers to the ratio between total outstanding loans and total deposits of bank clusters/banking industry.

3.3 Maturity profile of banks' outstanding debt securities (treasury bills, treasury bonds)

Sources: Debt Management Department, BB.

The maturity profile refers to the residual maturity of long-term and short-term debt securities issued by the Government of Bangladesh. Banks' long-term debt includes government Treasury bond with a maturity of more than 12 months. Banks' short-term debt includes government Treasury bill with a maximum maturity of 12 months. Data are based on amounts outstanding at the end of the corresponding year or month.

3.4 Subordinated debt

Sources: Department of Off-site Supervision, BB.

The subordinated debt refers to the debt instruments which will be subordinated to deposits and other liabilities of the bank. It implies that the claims of the subordinated debt holders will be junior to the claims of the depositors and the other creditors.

4. Market risk:

4.1 Price/earnings ratio of equity indices

Sources: Dhaka Stock Exchange Website (<http://www.dsebd.org>).

The indices used are for Banks, Financial Institutions, Mutual Funds, Engineering, Food & Allied, Fuel & Power, Jute, Textile, Pharmaceuticals, Paper & Printing, Service & Real Estate, Cement, IT, Tannery, Ceramic, Insurance, Telecommunication, Travel and Leisure, Miscellaneous and Market P/E.

4.2 Equity indices

Sources: Dhaka Stock Exchange Website (<http://www.dsebd.org>)

The equity indices displayed are DSEX, DSE30 and DSES. DSEX is considered as the benchmark general index of the market as it shows the exact price movement of the listed companies. As for DSE30, 30 companies based on profitability, market capitalization and share size were selected, with the companies changed every six months on the basis of performance. DSES index is launched for people and institutions willing to invest in Shari'ah-compliant securities and products.

4.3 Weighted average call money market rates

Source: Statistics Department, BB.

The indicators reflect the nature of money market and include rate charged against exposures of scheduled banks and FIs with one another.

4.4 Scheduled banks' weighted average interest rate on deposits and advances

Source: Statistics Department, BB.

The indicators reflect the condition of scheduled banks and show the difference between average yields received from advances and average rate paid on deposits.

4.5 Weighted average exchange rate (BDT/USD)

Source: Statistics Department, BB.

The indicator reflects the exchange rate movement in BDT per US Dollar.

5. Profitability and solvency risk:

5.1 Banks' profitability indicators

a. Return on equity (ROE)

Source: Department of Off-site Supervision, BB; computation: Financial Stability Department, BB.

The indicator is based on the ratio between profit/loss for the period and total equity. End-June ratios are annualised.

b. Return on assets (ROA)

Source: Department of Off-site Supervision, BB; computation: Financial Stability Department, BB.

The indicator is based on ratio between profit/loss for the year and total assets. End-June ratios are annualised.

c. Cost to income ratio

Source: Department of Off-site Supervision, BB; computation: Financial Stability Department, BB.

The indicator is based on the ratio between operating expenses and total income. End-June ratios are annualised.

d. Net interest income to total operating income ratio

Source: Department of Off-site Supervision, BB; computation: Financial Stability Department, BB.

The indicator is based on the ratio between net interest income and total operating income. End-June ratios are annualised.

5.2 Banks' solvency indicators

a. Tier-1 capital to risk-weighted assets ratio

Source: Department of Off-site Supervision, BB.

The indicator is based on the ratio between Tier-1 capital and total risk exposure amount.

b. Gross non-performing loan (NPL) ratio

Source: Banking Regulation and Policy Department, BB.

The indicator is based on the ratio between non-performing loans and advances to total outstanding loans and advances.

5.3 FIs' profitability indicators

a. Return on equity (ROE)

Source: Department of Financial Institutions and Markets, BB.

The indicator is based on the ratio between profit/loss after tax and provision for the period and total equity. End-June ratios are annualised.

b. Return on assets (ROA)

Source: Department of Financial Institutions and Markets, BB.

The indicator is based on ratio between profit/loss after tax and provision for the year and total assets. End-June ratios are annualised.

c. Cost to income ratio

Source: Department of Financial Institutions and Markets, BB.

The indicator is based on the ratio between operating expenses and total income. End-June ratios are annualised.

d. Net interest income to total operating income ratio

Source: Department of Financial Institutions and Markets, BB.

The indicator is based on the ratio between net interest income and total operating income. End-June ratios are annualised.

5.4 FIs' solvency indicators

a. Tier-1 capital to risk-weighted assets ratio

Source: Department of Financial Institutions and Markets, BB.

The indicator is based on the ratio between Tier-1 capital and total risk exposure amount.

b. Gross non-performing loan (NPL) ratio

Source: Department of Financial Institutions and Markets, BB.

The indicator is based on the ratio between non-performing loans and advances to total loans and advances.

6. Inter-linkages:

6.1 Annual growth rate of banks' credit (gross) to Government

Source: Statistics Department, Bangladesh Bank.

It refers to gross loan amount extended by banks to the Government.

6.2 Annual growth rate of NBDCs' credit (gross) to Government

Source: Statistics Department, Bangladesh Bank.

It refers to gross loan amount extended by NBDCs to the Government sector.

6.3 Annual growth rate of banks' loans to housing sector

Source: Statistics Department, Bangladesh Bank.

Loans to residential housing refers to loans extended by banks for residential housing in urban and rural areas, house renovation/repairing/extension, flat and land purchase; loans to commercial housing refers to loans extended by banks for commercial building and housing by developers/contractors.

6.4 Annual growth rate of FIs' loans to housing sector

Source: Department of Financial Institutions and Markets, Bangladesh Bank.

It refers to loans extended by FIs for both residential and commercial purposes; due to unavailability of data of all NBDCs, FIs' loans to housing sector was used as FIs constitute the majority of the NBDCs.

6.5 Banks' loans to counterpart sector

Source: Statistics Department, Bangladesh Bank.

It refers to loans extended by banks to their three major institutional counterparts namely NFCs (both private and public), households and government; it excludes bills discounted and purchased.

6.6 NBDCs' loans to counterpart sector

Source: Statistics Department, Bangladesh Bank.

It refers to loans extended by NBDCs to their three major institutional counterparts namely NFCs (both private and public), households and government.

6.7 Banks' cross-border claims

Source: Statistics Department, Bangladesh Bank.

Cross-border claims of banks include foreign currency notes in hand, balances with banks abroad, bilateral trade credits, wage earners' balance abroad, foreign bills, foreign direct investments, portfolio investments and advances to non-residents; claims that are granted or extended to non-residents are referred to as cross-border claims on an “immediate borrower” basis i.e. claims allocated to the actual non-resident borrowers with whom the original risk lies; it differs from “ultimate risk” basis which refers to claims allocated to the non-resident guarantors (of the non-resident borrower) with whom the final risk lies. For more details, see “Guidelines to the international consolidated banking statistics” available at http://www.bis.org/statistics/consbankstatsguide_old.pdf.

6.8 NBDCs' cross-border claims

Source: Statistics Department, Bangladesh Bank.

Cross-border claims of NBDCs include only foreign currency notes in hand.

7. Structural risk:

7.1 Banking sector size

a. Domestic Bank

Source: Department of Off-site Supervision, BB and Monthly Economic Trends, BB; computation: Financial Stability Department, BB.

The indicator is based on the ratio of total assets of domestic scheduled banks to nominal GDP; domestic scheduled banks include all scheduled banks except foreign commercial banks.

b. Foreign Bank

Source: Department of Off-site Supervision, BB and Monthly Economic Trends, BB; computation: Financial Stability Department, BB.

The indicator is based on the ratio of total assets of foreign commercial banks to nominal GDP.

7.2 Banking sector leverage

Source: Department of Off-site Supervision, BB; computation: Financial Stability Department, BB.

The indicator is based on the ratio of total (on-balance sheet) assets of the banking sector over its (on-balance sheet) capital.

7.3 FI sector size

Source: Department of Financial Institutions and Markets, BB; computation: Financial Stability Department, BB.

The indicator is based on the ratio of total assets of financial institutions (FIs) to nominal GDP.

7.4 FI sector leverage

Source: Department of Financial Institutions and Markets, BB; computation: Financial Stability Department, BB.

The indicator is based on the ratio of total (on-balance sheet) assets of the FIs sector over its (on-balance sheet) capital.

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