MITIGATE AND PREVENT EXCESSIVE CREDIT GROWTH AND LEVERAGE

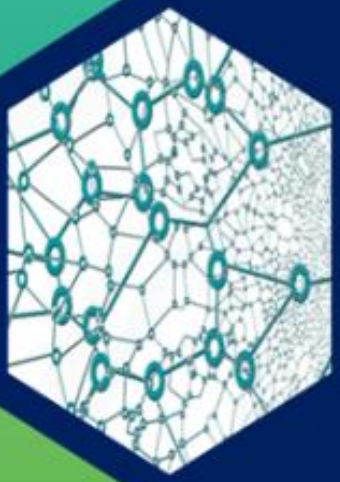
MITIGATE AND PREVENT EXCESSIVE MATURITY MISMATCHES AND MARKET ILLIQUIDITY

LIMIT DIRECT AND INDIRECT EXPOSURE CONCENTRATIONS

Macroprudential Policy Report

Highlights

LIMIT THE IMPACT OF INTERCONNECTED-NESS, SYSTEMIC IMPORTANCE AND MISALIGNED INCENTIVES



STRENGTHEN THE RESILIENCE OF THE FINANCIAL SYSTEM & INFRASTRUCTURE

JANUARY 2021

Contents

Preface

Bank of Jamaica frequently conducts assessments of the resilience and strength of the financial system. These financial system stability assessments inform the Bank's macroprudential policy. This report provides highlights of those assessments for the reporting quarter. The document is organized into five objective assessment areas, the analysis of which utilizes leading and coincident indicators relevant to the specific type of vulnerability. The aim of the report is to:

- *Convey Bank of Jamaica's financial system stability assessment.*
- *Make clear the link between the Bank's assessment and any policy action taken.*
- *Provide information on matters related to financial system stability.*

Overview

There are indications that risks to financial stability have improved for the September 2020 quarter relative to the previous quarter. This has been demonstrated by improvements in key systemic risk metrics for both depositing-taking institutions (DTIs) and non-deposit taking financial institutions (NDTFIs). Regarding liquidity, there were reductions in the extent of liquid liabilities relative to broad liquid assets for NDTFIs. While short-term maturity gaps for DTIs remained relatively unchanged. In addition, there were improvements in the interest rate risk exposure across the system as duration gaps of both DTI and NDTFIs narrowed slightly over the September 2020 quarter.

The fall-out in real GDP due to the COVID-19 does however create continued uncertainties over the medium to long-term horizon. In the context of a further decline in nominal GDP, there was a continued increase in the credit-to-GDP gap for the September 2020 quarter. This outturn suggests that there is an increased likelihood of reversal in the credit cycle. Already, there is evidence of a slowdown in the pace of the growth in credit as reflected in the stock of loans issued by DTIs and financing raised via the issuance of corporate securities.

Regarding measures of debt sustainability, there was a deterioration (rise) in debt-to-income ratios for households and corporates during the review quarter, largely due to weaker income levels for both sectors. However, the net financial position to GDP ratios for both sectors improved, relative to the previous quarter, primarily due to slower growth in debt. Despite these developments, loan quality has remained stable in the September 2020 quarter. Additionally, credit metrics showed that financial institutions did not demonstrate any over-leveraging or significant maturity mismatch.

Stress test results showed that DTIs remained largely robust to the contemplated financial shocks, with the sector being most susceptible to hypothetical deposit withdrawals. Regarding the NDTFIs, the securities dealers sector continued to display the greatest susceptibility to interest rate shocks, which also impacted the performance of the key banking groups that were examined. As it relates to interconnectedness of the system, while the network remained vulnerable to contagion, there were notable improvements in interconnectivity and counterparty risks in September 2020 as a result of reduction in the value of financial balances vis-à-vis other financial entities.

Objective 1

Mitigate and prevent excessive credit growth and leverage

1.0 Credit growth slowed over the review quarter. The annual growth of total DTI credit at September 2020 was 11.1 per cent, relative to 12.4 per cent at June 2020. In particular, private sector credit reflected an increase of 12.2 per cent for the year-ended September 2020, slower than the 13.3 per cent growth recorded at end-June 2020 (see Chart 1.0).

1.1 The total credit-to-GDP gap indicator, which is a measure of leverage for the economy, increased to 7.4 per cent at end-September 2020, relative to 4.9 per cent at end-June 2020[1]. This outturn reflected a decline in nominal GDP of 1.8 per cent as well as an increase in total DTI credit of 3.0 per cent. The credit-to-GDP gap indicator is projected to remain relatively unchanged at 7.5 per cent for the December 2020 quarter (See Chart 1.1)[2] .

1 The credit-to-GDP gap indicators measure the deviation of credit-to-GDP variables relative to long-term trends to signal excessive credit risk accumulation. Total credit used to calculate the credit-to-GDP gap, is comprised of private sector credit plus corporate securities held by DTIs plus public sector credit

2 Private Sector Credit is measured as DTIs' loans and advances to the private sector excluding credit to overseas residents and other financial institutions. Total DTI credit includes private sector credit plus credit issued to the public sector plust DTIs' holdings of coproate securities. .

Chart 1.0 Annual Growth in Credit

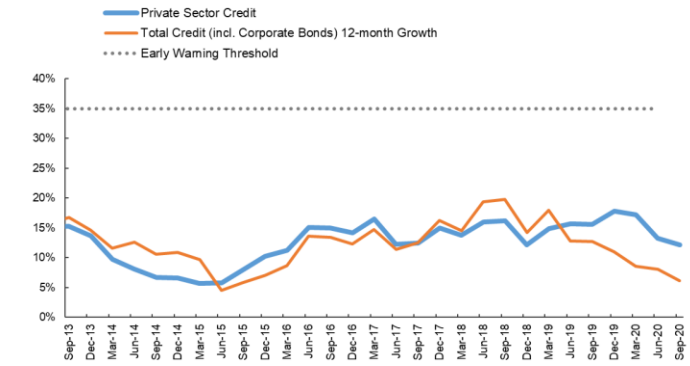


Chart 1.1 Evolution of Credit-to-GDP Gap Indicators

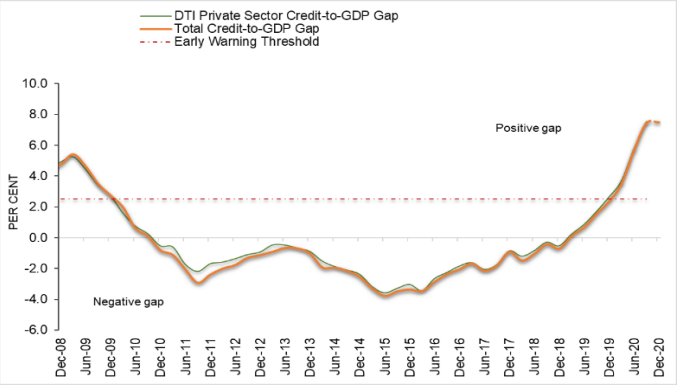
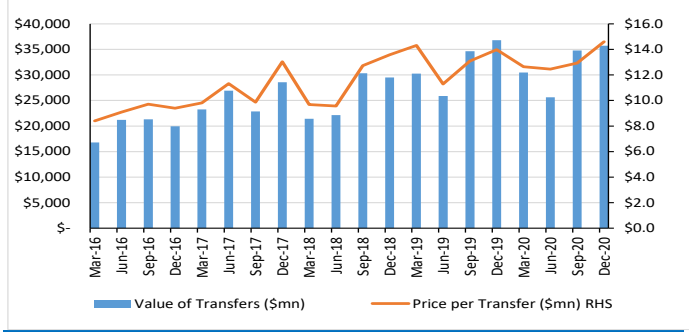


Chart 1.2 Value of Transfers and Price per Transfer



1.2 Activity in Jamaica's property market remained buoyant. The total value of title transfers for the December 2020 quarter was $35.7 billion dollars, which reflected a 2.7 per cent increase compared to the September 2020 quarter and a 3.1 per cent increase compared to September 2019 (See Chart 1.2).

Objective 2

Mitigate and prevent excessive maturity mismatches and market illiquidity

2.0 Maturity transformation risk metrics generally improved across the financial sector for the September 2020 quarter.[3] There were reductions in the maturity mismatch ratios for the life insurance and securities dealers sectors, mainly resulting from a greater than proportional increase in long-term liabilities & equities relative to long-term assets. On the other hand, the improvements in the maturity transformation metric for DTIs and general insurance sectors were due to a faster pace of growth in long term assets relative to long term liabilities (see Chart 2.0).

2.1 DTIs', cumulative maturity gaps up to 30 days and up to 365 days as a per cent of assets for both foreign and domestic currency improved over the quarter.[4] This improvement reflected a slight decline in DTIs' vulnerability to interest rate increases and deposit withdrawals. Of note, the gap ratios remained well in line with historical averages.

[3] Maturity Transformation (Long term) = (long term assets - long term liabilities - nonredeemable equity) / total financial assets.

[4] Cumulative maturity gaps are defined as the difference between maturing assets and liabilities up to a certain time bucket. They are used to examine the mismatch between maturing assets and liabilities and hence susceptibility to interest rate and liquidity risks.

Chart 2.0 Maturity Transformation (Long term) DTIs, SDs, Lis & GIs

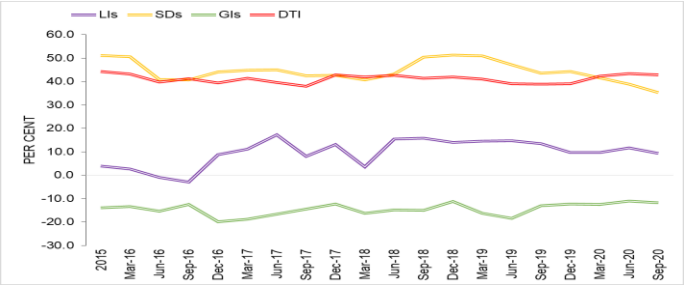


Chart 2.1 Cumulative Maturity Gap (% Assets) by Currency

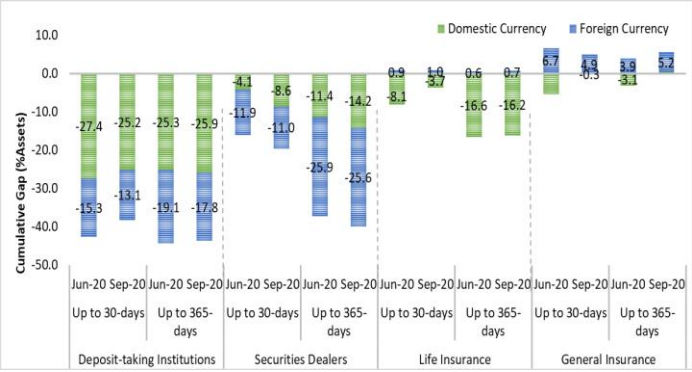
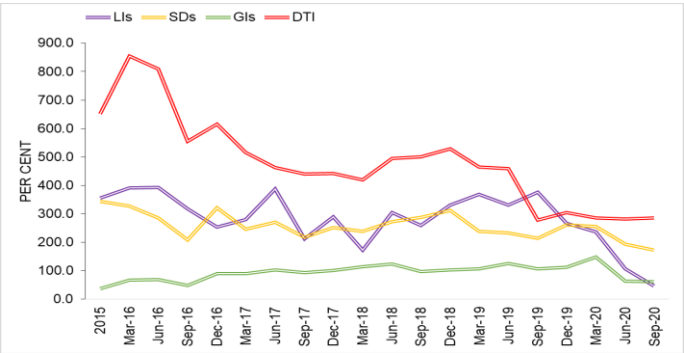


Chart 2.2 Liquidity Transformation – DTIs, SDs, and LIs & GIs



2.2 On the other hand, securities dealers' overall short-term maturity gaps deteriorated relative to the previous quarter. This deterioration was largely due to a deterioration in the domestic gaps. The domestic currency cumulative maturity gap ratios up to 30 days and 365 days for the sector deteriorated to -8.6 per cent and -14.2 per cent, respectively, at end-September 2020, relative to -4.1 per cent and -11.2 per cent at end June 2020 (see Chart 2.1).

2.3 Liquidity transformation metrics, that measure the extent of coverage of short-term liabilities with liquid assets, improved across all sub-sectors with the exception of the DTI sub-sector, which remained relatively unchanged.[5] The improvement in liquidity transformation for the securities dealers, life and general insurance sectors was mainly due to a faster pace of growth in liquid assets relative to short-term liabilities for the September 2020 quarter (see Chart 2.2).[6]

Objective 3

Limit direct and indirect exposure concentrations

3.0 Lending to the main economic sectors by DTIs exhibited generally growth over the September 2020 quarter. Personal loans, which account for the largest share of the DTIs' loan portfolio, increased marginally by 2.9 per cent for the review quarter. Against this background, DTIs' exposure to household debt as a share of total assets was relatively unchanged for the review period.

[5] Liquidity Transformation = short term liabilities [≤ 30 days] / liquid assets. Liquid assets include high quality liquid assets, such as cash and equivalents, short-term investments and government securities with a 0% risk-weight.

[6] Liquid assets for DTIs securities dealers, general and life insurance companies grew by 5.9 per cent, 6.9 per cent, 12.2 per cent and 2.7 per cent respectively for the September 2020 quarter. Meanwhile short-term liabilities for securities dealers, general and life insurance companies declined by -3.9 per cent, -51.4 per cent and -2.1 per cent, respectively. On the other hand, short-term liabilities for DTIs increased by 7.5 per cent.

Chart 3.0 DTI Exposure to Public, Household and NFC Debt

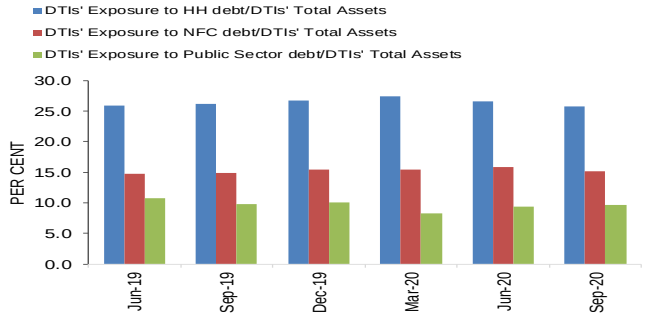


Chart 3.1 Household and NFC Debt Ratios[7]

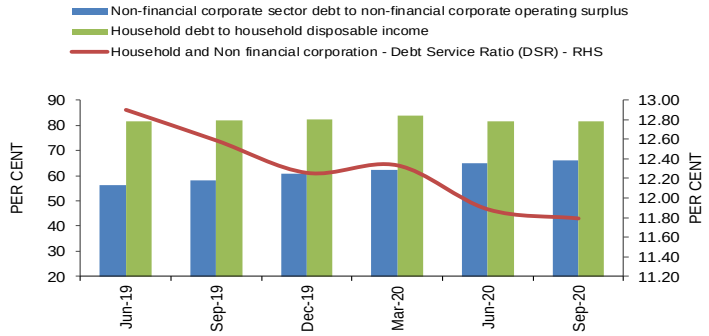
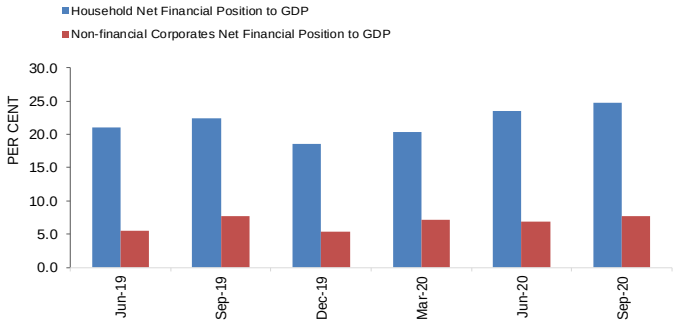


Chart 3.2 Household and NFC Net Financial Positions[8]



3.1 Households' and non-financial corporates (NFCs') debt sustainability measures showed mix results over the review period. More specifically, household debt to disposable income increased, reflecting a decline in disposable income relative to the increase in household debt for the review period. Households' net financial position to GDP ratio also increased for the September 2020 quarter, arising from an increase in deposits and retail repos and a fall in household debt (Chart 3.1). Regarding NFCs, the sector's ratio of debt to operating surplus and their net financial position to GDP increased relative to the previous quarter.

3.2 The low interest rate environment as well as moratoria offered on loans has, however, afforded a greater capacity for households and NFC sectors to fulfil their debt obligations when they become due as seen in the reduction in the debt service ratio for the review period.[9]

Objective 4

Limit the impact of interconnectedness, systemic importance and misaligned incentives

4.0 In the context of the COVID-19 pandemic, there were improvements in interconnectivity and counterparty risk in September 2020, as a result of reduction in the value of transactions. Although, there was a decrease in reciprocation and density of the network, these metrics still continued to be high (see Chart 4.0) [10].

[7] Household debt is measured as household loans extended by DTIs and NHT loans. Household disposable income is measured as compensation of employees (Domestic and R.O.W.(net)) minus (PAYE and Other contributions). The DSR for the HH and the NFC is computed as follows: $DSR_{j,t} = \frac{i_{j,t}}{(1-(1+i_{j,t})^{-s_{j,t}})} * \frac{D_{j,t}}{Y_{j,t}}$ where $D_{j,t}$ denotes the total stock of debt, $Y_{j,t}$ denotes aggregate income available for debt service payments, $i_{t.j}$ denotes average interest rate on the existing stock of debt and $s_{j,t}$ the average remaining maturity across the stock of debt.

[8] (i) Net financial position = financial assets minus financial liabilities; (ii) financial assets for NFCs include: deposits and repo liabilities; (iii) financial liabilities for NFSCs include: NFC loans and non-exempt distributions; (iv) financial assets for households include: pension holdings, deposits, retail repos, life assurance and annuity contracts and policyholder funds on deposit; (v) financial liabilities for households include: consumer loans and mortgage loans.

9 Arising from economic shutdown, some banks have offered short term deferred payments on a portion of their performing loans which may have been in danger of becoming non-performing

[10] Density of a network refers to the proportion of actual links from all possible links, while, eigenvector centrality is used to measure the importance of nodes, irrespective of the number of links it has in a network.

Chart 4.0 Descriptive statistics of the financial institutions "funding to" exposures network[11]

J$'000	Jun-20	Sep-20
Total System Funding To Exposure	360,173,092	264,409,806
Total Funding of Highest Lender	52,195,396	47,805,738
Maximum Single Transaction	13,888,199	22,162,613
Network Mean	653,672	479,873
Reciprocity (%)	48.6	44.1
Density (%)	26.8	23.3
Systemic Risk Score	5.0	4.4
Fragility Score	16.6	14.2
Diameter	7	7
Articulation Points	2	3

Chart 4.1 Network of gross credit exposures between DTIs and securities dealers including foreign institutions

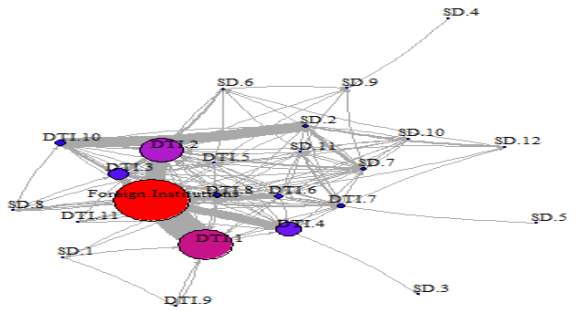
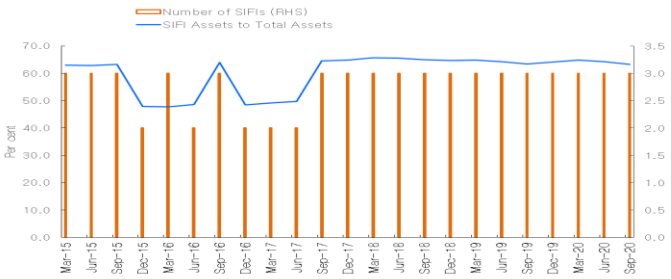


Chart 4.2 Total SIFI Group Assets to Total System Assets



4.1 As it relates to interconnectedness within the financial system and the potential for contagion, network analysis indicated that commercial banks and securities dealers continued to be the central players in the financial network. Securities dealers and commercial banks recorded a funding relationship with all other sectors in the system.

4.2 Network analysis that focusses on DTIs' and SDs' funding relationships with other financial institutions exhibited a significant reduction in the value of exposures and a notable decrease in the degree of interconnectedness in the system during the September 2020 quarter.[12,13] Specifically, the reciprocated links and density within the network decreased to 44.1 per cent and 23.3 per cent, respectively, for the review period, compared to 48.6 per cent and 26.8 per cent for June 2020 (see Chart 4.1).

4.3 Notably, at-end September 2020, foreign institutions contribution to the domestic funding network (domestic DTIs and securities dealers) fell substantially for the review period by approximately 55.0 per cent to $141.3 billion. This reduction was mainly attributed to some entities no longer engaging in funding relationships with the external financial systems. As a result, there was a decline in funding vulnerabilities to international financial shocks.

[11] Network Metrics (reciprocity, density, systemic and fragility score, diameter and articulation points) are based on a network without foreign transactions.

[12] Gross "funding to" exposures were also utilised as with the financial sector network.

13 System here refers to the DTI sector and the twelve main securities dealers.

Chart 5.0 Macro-Financial Index

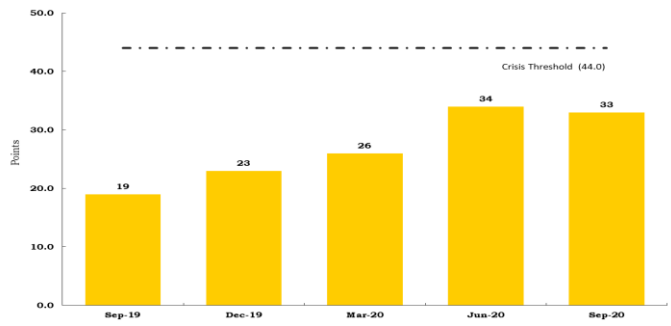
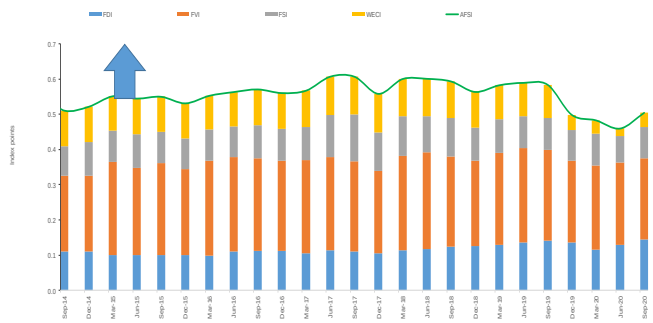


Chart 5.1 Aggregate Financial Stability Index[14]



4.4 The number of domestic systemically important institutions (SIFIs) remained at three for the September 2020 quarter (see Chart 4.2). Total SIFI groups' assets as a share of total assets decreased marginally to 63.2 per cent at end-September 2020 from 64.3 per cent at the end of the previous quarter.[15]

Objective 5

Strengthen the resilience of the financial system

5.0 The composite indicators of macro-financial conditions showed improvements for the review quarter and continued to demonstrate the relative health of the banking system. Specifically, the macro-financial index (MaFI) decreased by 1.0 point to 33.0 points at end-September 2020, but remained below the crisis threshold of 44.0 index points. This improvement largely reflected a positive outturn for 12 month GDP growth indicator, which was partially offset by a deterioration in indicators for fiscal measures (see Chart 5.0).

5.1 The Aggregate Financial Stability Index (AFSI) increased to 0.51 at end-September 2020 from 0.46 at end-June 2020. This was due to an improvement in three (3) of its sub-indices, namely, the Financial Development, Financial Soundness and the Global Economic Environment sub-indices. The improvement in the Financial Development sub-index indicates an improvement in the ability of credit institution to carry out their intermediation functions. Additionally, the non-performing loans (NPL) as a ratio of total loans decreased and the probability to the risk of insolvency (Z score) increased.

5.2 Routine stress tests conducted for the September 2020 quarter showed that securities dealers were the most susceptible to interest rate risk. This result was largely attributable to fair value losses due to institutions' positive repricing gap positions. While DTIs were most vulnerable to deposit

[14] The Aggregate Financial Stability Index is computed as a weighted average of normalized balance sheet and macroeconomic partial indicators, capturing financial development (FDI), financial vulnerability (FVI), and financial soundness (FSI).

[15] The D-SIB framework currently used by the Bank follows the methodology outlined in Brämer and Gischer (2012), which assesses the significance of banking groups based on four key categories: (1) size, (2) interconnectedness, (3) non-substitutability and (4) complexity. The score for banking group i for period j is computed as follows:

$$SCORE_{ij} = \frac{A_{ij}}{\sum_i^n A_{ij}} + \left(\frac{(LFC_{ij} + DFC_{ij})}{(\sum_i^n LFC_{ij} + \sum_i^n DFC_{ij})}\right) + \left(\frac{(LH_{ij} + LNFC_{ij} + LGG_{ij} + LCS_{ij})}{(\sum_i^n LH_{ij} + \sum_i^n LNFC_{ij} + \sum_i^n LG_{ij} + \sum_i^n LCS_{ij})}\right) + \left(\frac{(TS_{ij} + IS_{ij})}{(\sum_i^n TS_{ij} + \sum_i^n IS_{ij})}\right)$$

where, A represents total resident assets, LFC represents loans to financial corporations, DFC represents deposits from financial corporations, LH represents loans to households, LNFC represents loans to non-financial corporations, LGG represents loans to the general government, LCS represents loans to community service and non-profit organizations, TS represents trading securities and IS represents investment securities.

withdrawals due to the level of liquid assets to fund these hypothetical withdrawals.

Outlook

6.0 The magnitude of the economic downturn due to the COVID-19 pandemic still remains largely uncertain. Economic activity is expected to rebound by fiscal year-end 2021/22 where GDP is projected to grow in the range 3% to 6%. The low interest rate environment and continued bearish capital markets will constrain earnings across the financial system. While at the same time labour markets are expected to be particularly weak.

6.1 Thus far, the extent of credit growth across the system slowed over the review quarter. In addition, non-deposit taking financial institutions are demonstrating reductions in their duration gaps as well as improvements in the extent of coverage of short-term liabilities with liquid assets.

6.3 Overall, the financial sector has maintained capital in excess of the prudential minimum required over the September 2020 quarter. However macroeconomic projections imply that there is still risk that the COVID-19 crisis could eliminate these buffers over time. Financial institutions have been offering moratoria to help borrowers. Under this moratorium arrangement, loans will not be classified as 'non-performing' over the period for which a moratorium is applied.