



CENTRAL BANK OF
TRINIDAD & TOBAGO

FSR

FINANCIAL STABILITY REPORT

2019



Financial
STABILITY REPORT
2019

Central Bank of Trinidad and Tobago

Financial Stability Report

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List of Abbreviations

| ABBREVIATION | NAME |
|-----------------------|---|
| ACH | Automated Clearing House |
| AE | Advanced Economies |
| AML/CFT | Anti-Money Laundering/Combating the Financing of Terrorism |
| ATI | All T&T Index |
| ATM | Automated Teller Machine |
| AUM | Assets Under Management |
| BA | British American Insurance Company (Trinidad) Limited |
| BERT | Barbados Economic Recovery and Transformation |
| BCBS | Basel Committee on Banking Supervision |
| BIS | Bank for International Settlements |
| BPSP | Bill Payment Service Provider |
| CAIR | Caribbean Association of Insurance Regulators |
| CAR | Capital Adequacy Ratio |
| CBDC | Central Bank Digital Currency |
| CEMLA | Center for Latin American Monetary Studies |
| Central Bank | Central Bank of Trinidad and Tobago |
| CFATF | Caribbean Financial Action Task Force |
| CFWG | CARICOM Fintech Working Group |
| CIS | Collective Investment Scheme |
| Clearance Certificate | Overseas Law Enforcement Clearance Certificate |
| CLI | Cross-Listed Index |
| CLICO | Colonial Life Insurance Company (Trinidad) Limited |
| COC | Police Certificate of Good Character |
| CPI | Composite Price Index |
| ECL | Estimated Credit Loss |
| EMDE | Emerging Market and Developing Economy |
| EOIR | Exchange of Information on Request |
| ESG | Environmental, Social and Governance |
| EU | European Union |
| FATF | Financial Action Task Force |
| FIA | Financial Institutions Act, 2008 |
| Fintech | Financial Technology |
| FIP | Financial Interconnectedness Project |
| FIUTT | Financial Intelligence Unit of Trinidad and Tobago |
| FMI | Financial Market Infrastructure |
| FSAP | Financial Sector Assessment Program |
| FSI | Financial Soundness Indicator |
| FSR | Financial Stability Report |
| FY | Fiscal Year |
| GDP | Gross Domestic Product |
| GFC | Global Financial Crisis |
| GFSR | Global Financial Stability Report |
| Global Forum | Global Forum on Transparency and Exchange of Information for Tax Purposes |

List of Abbreviations

| ABBREVIATION | NAME |
|--------------|--|
| CORTT | Government of the Republic of Trinidad and Tobago |
| IA | Insurance Act, 2018 |
| ICRG | International Co-operation Review Group |
| ICT | Information and Communications Technology |
| IMF | International Monetary Fund |
| LAC | Latin America and the Caribbean |
| ML/TF | Money Laundering/Terrorist Financing |
| MMRR | Mortgage Market Reference Rate |
| MMOU | Multilateral Memorandum of Understanding |
| NGFS | Network for Greening the Financial System |
| NIF | National Investment Fund Holding Company Limited |
| Non-banks | Non-Bank Financial Institutions |
| NPL | Non-Performing Loan |
| OECD | Organisation for Economic Co-operation and Development |
| OTC | Over the Counter |
| POS | Point of Sale |
| PSP | Payment Service Provider |
| PQD | Personal Questionnaire Declaration |
| ROA | Return on Assets |
| ROE | Return on Equity |
| RTGS | Real Time Gross Settlement System |
| S&P | Standard and Poor's |
| SIFI | Systemically Important Financial Institution |
| TTSEC | Trinidad and Tobago Securities and Exchange Commission |
| UK | United Kingdom |
| US | United States |
| WEO | World Economic Outlook |
| WTI | West Texas Intermediate |

PREFACE

The Central Bank of Trinidad and Tobago (the Central Bank) plays a vital role in maintaining financial stability and promoting confidence in the domestic financial system. Financial stability refers to the resilience of the financial system in the face of adverse shocks so as to enable the continued smooth functioning of financial intermediation and payments settlement. Effective financial intermediation, which involves the ability of households and businesses to channel savings into productive investments with confidence, is essential for sustainable economic growth and the welfare of Trinidad and Tobago.

The *Financial Stability Report* (FSR), which is currently published annually, complements the Central Bank's bi-annual *Monetary Policy Report* and other publications by providing an overview of developments in the financial sector and insights into vulnerabilities and risks to stability posed by domestic, regional and international factors. While financial system vulnerabilities increase susceptibility to shocks, effective governance and risk management, strong capital buffers and proactive supervision and regulation help to enhance resilience. The FSR also highlights the on-going efforts of the Central Bank to strengthen these areas and aims to foster informed discussion on financial stability issues.

The FSR is available on the Central Bank's website at <https://www.central-bank.org.tt/core-functions/financial-stability/financial-stability-report>.

OVERVIEW

The External and Domestic Macro-Financial Setting

Global financial stability concerns increased in 2019 as efforts to support economic activity intensified. Softened global growth prospects, caused in the main by episodic trade and geopolitical frictions among major economies, heightened economic uncertainty. The International Monetary Fund (IMF) marked down its estimates for global growth on three occasions in 2019 and signalled that the growth outturn would be the slowest since the 2007/2008 Global Financial Crisis (GFC). Policymakers were pressed into action to ease financial conditions in order to support economic activity. Many countries employed monetary accommodation, with a few advanced economies either pausing or reversing plans for monetary policy normalization. This was anticipated to improve growth prospects in 2020, with the IMF projecting an increase in world output of 3.3 per cent in its January 2020 World Economic Outlook (WEO) Update. Accommodative financial conditions came with additional risks to financial stability. The IMF's October 2019 Global Financial Stability Report (GFSR) highlighted concerns relating to rising corporate debt, elevated holdings of riskier and illiquid assets, rising household debt in some economies and higher borrowing from emerging market economies. The failure of climate change mitigation and adaptation strategies as well as cyber-attacks were also identified as global risks in the World Economic Forum's 2020 Global Risks Report.

The outbreak of the novel coronavirus (COVID-19) pandemic in early 2020 threatens to plunge the world into a deep economic recession, upend financial markets and unwind the gains from the financial reforms introduced post-GFC. Country authorities have instituted containment measures to reduce virus contagion. The negative externalities from such decisions have stagnated economic activity and tightened financial conditions. Equity markets declined sharply and investor pessimism resulted in a movement away from risky assets to perceived risk-free assets that were more liquid. Consequently, the IMF's April 2020 WEO revised the 2020 global growth estimate to -3.0 per cent (a downward revision of 6.3 per cent compared to the January 2020 WEO). Moreover, as the virus-related measures reduced oil demand, West Texas Intermediate (WTI) crude

oil prices averaged US\$29.88 per barrel in March 2020 and plummeted below zero on the futures market for a short period in April 2020, severely impacting financial markets. The IMF's April 2020 GFSR highlighted that banks will be exposed to increased credit risk from the private sector due to rising unemployment from government-imposed 'stay-at-home' measures and that losses on insurance companies' investment portfolios could materialize due to lower interest rates.

The Caribbean region faces a perfect storm with tourism-dependent and commodity-exporting economies both severely affected by the fallout from COVID-19. In 2019, Caribbean economies were already facing challenges on the economic and financial fronts. For example, a few Caribbean territories continued to be blacklisted by the European Union as non-cooperative jurisdictions for tax purposes and for anti-money laundering/combating the financing of terrorism (AML/CFT) deficiencies. The Caribbean's susceptibility to weather-related disasters from climate change was on full display as Hurricane Dorian ravaged The Bahamas, resulting in economic and insurance losses which were only partially mitigated by reinsurance inflows. Amidst these difficulties, a number of bright spots appeared to indicate the early phases of a turnaround, which is now being threatened by COVID-19. In Barbados, public debt pressures abated following the introduction of the home-grown Barbados Economic Recovery and Transformation (BERT) programme. Jamaica successfully exited its IMF-supported Extended Fund Facility and Guyana was on the cusp of recording the highest rate of economic expansion in the Western Hemisphere following the start-up of crude oil commercialization in late 2019. However, the emergence of COVID-19 has caused a sudden stop in tourism earnings and a sharp decline in commodity prices, stripping countries of fiscal firepower to combat the disease, and leaving many to lean on multilateral support. In terms of fintech, the Eastern Caribbean Central Bank and the Central Bank of The Bahamas launched digital versions of their national currencies on a trial basis.

Domestically, it is estimated that the energy sector underperformed in 2019, with spill-overs on non-energy sector activity, while inflation remained very low.¹ The energy sector experienced a decline in the production of crude oil, which was only partially offset by higher petrochemical production. Inflation hit record lows of below 1 per cent during the year, while the labour market continued to soften despite a decline in the number of persons retrenched. The fiscal deficit fell from 3.6 per cent of gross domestic product (GDP) in fiscal year (FY) 2017/2018² to 2.4 per cent of GDP in FY 2018/2019, while net public sector debt rose by 5.2 per cent to 63.2 per cent of GDP in FY 2018/2019. Gross official reserves continued on a downward trend but remained high by conventional benchmarks. The financial sector recorded adequate liquidity levels with notable increases in the second half of 2019 (daily excess reserves averaged \$4.8 billion compared to \$3.2 billion in the first half of 2019). This was attributed to increased injections into the financial system from the maturity of open market operations securities. Consolidated lending to the private sector grew by 4.6 per cent year-on-year in December 2019, compared to 4.3 per cent in December 2018. Moreover, the demonetization of the cotton-based TT\$100 note, which began during the fourth quarter of 2019, contributed to a pick-up in deposits at commercial banks as some persons opted to deposit cash into their bank accounts as part of the redemption process.

Moving forward, substantial capital and liquidity buffers in the financial sector suggest some measure of resilience against the COVID-19 shock. Liquidity was further bolstered by a mix of monetary and fiscal measures. In March 2020, the Central Bank reduced the primary reserve requirement for commercial banks by 3 percentage points to 14 per cent. This released an additional \$2.6 billion into the financial system. On the fiscal front, the Government signed an agreement on May 8, 2020 with the Co-operative Credit Union League of Trinidad and Tobago and the Central Finance Facility for a \$100 million Government Guaranteed Loan Facility for the credit union sector to provide Emergency Income Loans. Businesses received VAT refunds in the amount of \$700 million and a \$300 million loan program to support small and medium-sized enterprises was approved.

The Performance of the Domestic Financial Sector

The resilience of the regulated financial sector continued to strengthen in 2019. Conventional indicators of financial soundness for the banking sector and insurance companies generally pointed to a healthy financial sector from the standpoint of capital adequacy, asset quality, liquidity levels and profitability. Payment systems indicators also pointed to the increasing adoption of electronic payments, but the use of cheques remained substantial. The macroprudential indicators (Appendix B) – which can be interpreted as early warning signals of possible threats to the financial sector – suggested pockets of vulnerability as at December 2019. In particular, the credit-to-GDP gap suggested that the expansion in credit continued to exceed its long-run trend.

The banking sector as a whole performed well in 2019. Capital buffers remained high and profitability trended upwards. Capital adequacy, as measured by the regulatory capital-to-risk weighted assets ratio, was 23.6 per cent on a Basel I basis, and 20.9 per cent on a Basel II basis as at December 2019 – far in excess of the minimum statutory requirement of 8 per cent (Basel I) and 10 per cent (Basel II). Return on assets and return on equity posted positive gains, with the former rising to 3.6 per cent from 3.0 per cent in 2018 and the latter strengthening to 24.3 per cent from 20.2 per cent the previous year. During the year, there was expansion in credit across the major sectors – consumers (8.4 per cent), government (11.8 per cent) and businesses (5.3 per cent) – but lending to consumers dominated. In particular, real estate mortgages continued to record strong growth. Meanwhile, refinancing and debt consolidation loans expanded at a double-digit pace. Notwithstanding the strong growth in the consumer loan segment, the Central Bank has not observed any notable deterioration in underwriting standards, as institutions continue to extend credit based on the customers' ability to repay and the availability of suitable collateral. As such, asset quality remained healthy and stable throughout 2019. The ratio of non-performing loans to total loans remained unchanged at 3.1 per cent. However, with the shock to household and business income due to COVID-19 containment measures, the quality of loan portfolios may be at risk.

¹ For further details refer to the May 2020 Monetary Policy Report at <https://www.central-bank.org.tt/sites/default/files/latest-news/monetary-policy-report-may-2020.pdf>.

² The fiscal year spans the twelve-month period from October to September.

The banking sector's exposure to the domestic sovereign declined in 2019 but remains an area of concern as large exposure stress tests (Appendix D) highlight the sector's vulnerability to a shock to the domestic sovereign. At end-2019, total sovereign exposures (which include loans and investments in government and government-related entities) represented 23.6 per cent of gross assets. Of this, domestic sovereign exposure amounted to 74.7 per cent of total sovereign exposures. This represented a fall of 4.3 per cent from the previous year, which was largely due to the maturity of domestic Treasury Bills.

Despite acquisition activity involving entities that are part of regional conglomerates, the performance of the insurance industry has not been affected. In 2019, financial soundness indicators pointed to stability across the industry. Capital, liquidity, asset quality and profitability ratios generally improved. In the life insurance industry, insurers acquired the assets and liabilities of two pension fund plans in wind-up, which served to expand the asset base to approximately \$30 billion. Despite economic challenges, the life insurance sector showed signs of premium growth, though at a slower rate than in previous years. Excluding the impact of the assets and liabilities from the pension plans in wind-up, premium growth was 5.1 per cent. The non-life sector also experienced an expansion in gross premiums of 10.7 per cent, primarily driven by increasing rates and demand for property insurance in the wake of significant weather-related events. In 2019 net premium income grew further because of reduced reinsurance coverage, as some insurers increased property risk retention. In this regard, a combination of increased premium rates and greater demand for coverage following adverse weather conditions in previous years undergirded profitability for non-life insurers.

Despite an increase in pension assets, the low interest rate environment is adversely affecting occupational pension plans. Total assets of occupational pension plans ended 2019 at \$53 billion – 5.4 per cent higher than the previous year. The 2018 position, where expenses exceeded income, was reversed in 2019. However, pension plans may be becoming more reliant on investment income to meet their expenses, such as benefit payments and fees, as expenses are exceeding the contributions being made to the plans by members and plan sponsors. In light of upheavals

in international capital markets in early 2020 due to COVID-19, investment income could come under increasing strain in the period ahead. Further, an increasing number of plans (35 per cent in 2019 compared with 27 per cent in 2015) are underfunded, with actuaries recommending an increase in contributions in many cases.

Vulnerabilities and Risks

The domestic financial system as a whole is healthy, but uncertainties related to the pandemic have heightened risks. The 2019 FSR has identified three vulnerabilities in the financial sector. While these vulnerabilities remain unchanged from the 2018 FSR, the COVID-19 pandemic has the potential to impact the financial sector through channels and at transmission speeds not previously contemplated.

Growing Household Indebtedness. This vulnerability has persisted since the 2017 FSR and is reflective of household debt that continues to rise at a steady pace alongside a proclivity by the banking sector for consumer-oriented lending. The situation has become more evident as the COVID-19 pandemic unfolds. Factors include depressed economic activity and resultant strains on household income which could negatively affect the quality of commercial banks' loan portfolios. Over time, this could spill over into an eventual credit crunch as banks become wary of extending loans to customers due to concerns about creditworthiness.

High sovereign concentration in the financial system. The domestic sovereign remains the largest exposure for the financial sector, representing just under a quarter of banks', insurers' and pension plans' combined assets. A weakening of the fiscal position represents a risk in this area.

Rapid digitalization in the financial services industry. Introduced in the 2018 FSR, this vulnerability relates to the rapid increase in digitalization in the domestic financial system, which has accelerated following the 'stay-at-home' measures deployed to arrest contagion from the novel coronavirus. There is some evidence that cyber-breaches have increased, in the context of the surge in the number of persons that have been ushered onto digital platforms.

Promoting Financial Stability

Some of the notable developments in 2019 and early 2020 were:

Improving the Regulatory Framework

A major reform to the Insurance legislation was passed by the Parliament in February 2020. The new legislation will substantially strengthen the regulatory framework for the insurance sector including larger capital buffers and measures to bolster governance and controls. Proclamation is pending.

Improving Risk-Based Supervision and Governance in Financial Institutions

In November 2019, the Central Bank issued policy proposals for the implementation of Phase 2 of its Basel II/III project implementation plan. Phase 2 supplements the minimum capital standards addressed under Phase 1 by proposing that licensees and financial holding companies comprehensively assess their material risks and hold additional capital for these risks (Pillar 2 – Basel II). Additional capital measures under Basel III are aimed at promoting the resilience of financial institutions. Some of these measures include a non-risk-based backstop leverage ratio; a liquidity coverage ratio; a capital conservation buffer which speaks to how much dividends an institution can pay depending on its capital level; and a capital add-on for domestic systemically important banks. The Regulations which gives legal effect to the new Basel II/III capital rules was passed on May 14, 2020.

Ensuring Compliance with International Standards for AML/CFT and Tax Transparency

The Central Bank, as a member of the National AML/CFT Committee, contributed to national initiatives to strengthen the country's compliance with the Financial Action Task Force (FATF) Recommendations and Global Forum's Tax Transparency Standards. This resulted in improved technical compliance ratings in May 2019 and the removal of the country from the FATF 'grey' list in February 2020. Legislation addressing tax transparency was assented to in Parliament in March 2020 and awaits proclamation.

Strengthening Technical and Analytical Capability in Supervision and Resolution

The Central Bank engaged with key stakeholders in 2019, namely the Trinidad and Tobago Securities and Exchange Commission (TTSEC) and the Deposit Insurance Corporation of Trinidad and Tobago (DIC) to revise and finalize the Framework for the Resolution of Financial Institutions (formerly the National Financial Crisis Management Plan). The Framework was expanded to cover all regulated financial entities and is intended to guide the management and resolution of a financial institution in distress without severe systemic disruption and ultimately aims to minimize recourse to taxpayers' funds.

Payment Systems Developments

In order to address ongoing developments in the payments system, the Central Bank has developed and issued e-money and fintech policies. These policies would facilitate and regulate the use of non-traditional payment instruments and services, and ensure that proper market conduct practices are established. This is critical given the potential for these technology-led innovations to foster greater financial inclusion.

The fintech policy will allow for more effective engagement with entities via the establishment of an innovation hub and a regulatory sandbox, which will allow entities to test their innovative products/services in a live environment for a restricted period of time prior to full public launch. The e-money policy will allow a category of non-bank non-financial institutions to issue e-money.

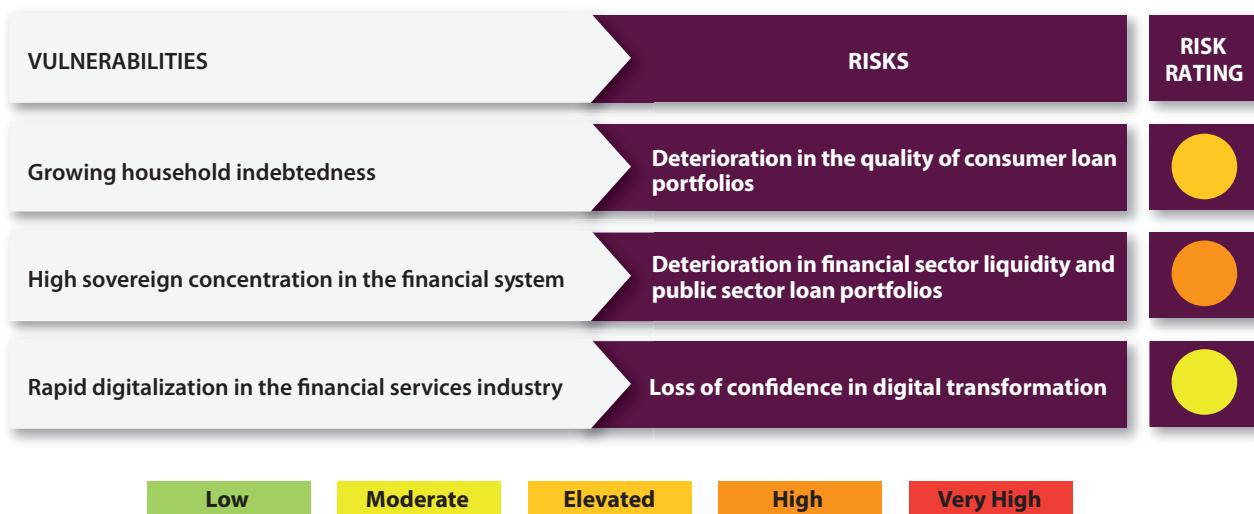
In addition, the Payment System Guidelines were revised to reflect new payment system developments and provide a more transparent and comprehensive framework for the registration of payment service providers and non-interbank payment operators.

Coordination with Other Supervisory Agencies

The Central Bank continued to foster cooperation and coordination among domestic and regional supervisory agencies. The Caribbean Association of Insurance Regulators implemented a Framework for Supervisory Colleges in September 2019 – an essential tool for supervision of cross-border insurance groups – following which, the Central Bank conducted a Supervisory College for a significantly important financial group with a regional footprint and

with operations in the banking and insurance sectors. A multilateral Memorandum of Understanding (MMOU) was established in July 2019 amongst the Central Bank, the TTSEC and the Financial Intelligence Unit of Trinidad and Tobago, replacing the bilateral MOUs established in 2014. The MMOU serves to strengthen supervisory collaboration, including the conduct of joint onsite examinations, and information sharing, among the three regulators.

Summary Heat Map Key Vulnerabilities and Risks to Financial Stability in Trinidad and Tobago



Source: Central Bank of Trinidad and Tobago

CHAPTER 1

THE MACRO-FINANCIAL ENVIRONMENT

CHAPTER 1

THE MACRO-FINANCIAL ENVIRONMENT

Global financial conditions concerns increased in 2019 as efforts to support economic activity intensified.³ The International Monetary Fund (IMF), in its April 2020 World Economic Outlook (WEO), estimated global growth at 2.9 per cent for 2019 compared with 3.6 per cent in 2018. The weakening of economic activity in 2019 was hinged on trade frictions between the United States (US) and China, financial market volatility due to geopolitical tensions between the US and Iran, idiosyncratic stresses in emerging market economies and weather-related disasters. To support economic recovery efforts and curb financial market disruptions several economies adopted accommodative monetary conditions. Even so, the IMF's October 2019 Global Financial Stability Report (GFSR) highlighted concerns relating to rising corporate debt, elevated holdings of riskier and illiquid assets, rising household debt in some economies and higher borrowing from emerging market economies. Additionally, the limited effectiveness of climate change mitigation and adaptation strategies as well as cyber-attacks were identified as global risks in the World Economic Forum's 2020 Global Risks Report. Notably some central banks have incorporated Environmental, Social and Governance (ESG) factors in their investment decisions to better manage risks and ensure sustainable returns and are exploring climate-related stress testing for the financial sector. Moreover, as fintech evolves regulators are advocating for proper legislative frameworks to mitigate financial disturbances (Box 1).

With the emergence of the novel coronavirus (COVID-19) pandemic in early 2020 financial markets have been significantly stressed with heightened prospects for severe global growth contractions. The spread of the virus globally during the first quarter of 2020 weighed on the macro-financial environment. Authorities worldwide instituted containment measures to reduce the number of cases. The negative externalities from such decisions stagnated economic activity and tightened financial conditions. Equity markets declined sharply and investor pessimism resulted in the movement away from risky

assets to risk-free and more liquid assets. Consequently, the IMF's April 2020 WEO revised the 2020 global growth estimate to -3.0 per cent (a downward revision of 6.3 per cent compared to the January 2020 WEO). Further, as the virus-related measures reduced oil demand, West Texas Intermediate (WTI) crude oil prices averaged US\$29.88 per barrel in March 2020 and plummeted below zero on the futures market for a short period in April 2020, severely impacting financial markets. The IMF's April 2020 GFSR highlighted that banks will be exposed to increased credit risk from the private sector due to higher unemployment from 'stay-at-home' measures and losses on insurance companies' investment portfolios could materialize due to lower interest rates. However, in the wake of financial reforms post the Global Financial Crisis (GFC), financial institutions have built up reasonable capital buffers.

Economic conditions in advanced economies (AEs) weakened in 2019 and economic activity is projected to further weaken in 2020. Amid weak global growth developments in 2019, the US Federal Reserve reduced the pace of monetary policy normalization, resulting in excessive risk-taking in the non-financial sector such as a rapid increase in corporate debt levels and the holding of riskier assets in search of higher yields. Although there was uncertainty from oscillating trade conflicts between the US and China toward the end of 2019, tensions receded. This was due to an agreement to partially cut back on tariffs thereby improving investor sentiments. Meanwhile household debt grew, albeit at a slowed pace. Disruptions in global trade have partly affected growth in the Euro Area. In response, the European Central Bank pushed interest rates into negative territory and eased lending conditions to safeguard banks from the possible adverse consequences of this policy action. Additionally, Brexit-related concerns have diminished with the United Kingdom (UK) formally leaving the European Union (EU) on January 31, 2020. The UK entered into a transition period until December 2020 during which time the substance and form of future relationships with the EU

³ Figures 4 and 5 outline key financial stability developments and concerns by international bodies as well as some of the major risks highlighted in selected Financial Stability Reports (FSRs).

would be defined. During this transition period current trading relationships with the EU will still be applied. Rising household debt and house prices in Canada and Australia negatively impacted economic activity, with the bushfire crisis in the latter also leading to increased insurance payouts.

The growth outlook for AEs was revised to -6.1 per cent in 2020, (a downward revision of 7.7 per cent compared to the January 2020 WEO) due to the COVID-19 pandemic.

Since the outbreak of the virus, the US and EU have been the most severely affected. Economic growth in these economies is expected to fall to -5.9 per cent and -7.9 per cent, respectively. COVID-19 has resulted in a fall in US government bond yields due to lower term premiums and investors' expectation of further monetary policy easing. Given the reduction in the Federal Funds rate in March 2020, bond yields are expected to stay lower for longer. Corporate bond markets were also jolted in the US and Europe, resulting in these countries implementing additional credit and liquidity facilities to support the market. Some AEs have implemented unprecedented fiscal measures to provide relief for the unemployed, prevent corporate bankruptcy and to support medical funding.

Growth momentum deteriorated in emerging market and developing economies (EMDEs), especially in the Latin American and the Caribbean (LAC) region.

The IMF identified increased external borrowings by EMDEs as a risk, which can further widen debt burdens in the long run. Rising total debt mainly from the private sector, together with weakened trade flows due to trade protectionism measures imposed by the US, presented downside risk to the Chinese economy. To stimulate the economy, accommodative monetary policy measures were instituted. However, this resulted in a build-up of corporate debt which can expose firms to debt repayment difficulties. At the same time, household debt remained elevated in China, making the financial system vulnerable to defaults. Economic, social and political distress lingered in Latin American countries whilst in the Caribbean several challenges remain including high debt levels; blacklisting of some territories by the EU as non-cooperative jurisdictions for tax purposes and anti-money laundering/combating the financing of terrorism (AML/CFT); and susceptibility to weather-related disasters from climate change. Hurricane Dorian ravaged The Bahamas in 2019, resulting in economic

and insurance losses which were partially mitigated by reinsurance inflows. Meanwhile, mergers and acquisitions in the region continued, although regulatory approvals are pending in some instances. Caribbean economies have been embracing fintech, with the Eastern Caribbean Central Bank and the Central Bank of The Bahamas at the forefront. Both central banks have made significant strides in launching digital versions of their national currencies on a trial basis.

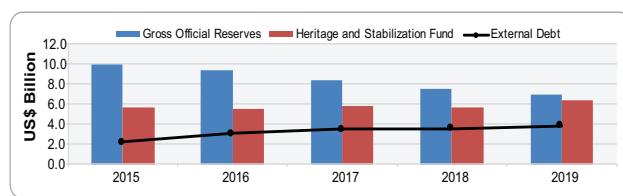
The COVID-19 outbreak is anticipated to result in contraction of growth performance of EMDEs and LAC in 2020, with commodity exporters facing more severe pressures. EMDEs' economic growth is expected to decline by 1.0 per cent in 2020 (a downward revision of 5.4 per cent compared to the January 2020 WEO). Although the first COVID-19 cases were detected in China, the pace of spread has significantly slowed in that country. The economy is projected to record positive growth and favourable financial conditions. This is partly due to the Government's quick response to maintain financial market stability by easing monetary policy and injecting liquidity into the banking sector. Moreover, monetary actions to reduce the tightening of financial conditions and alleviate household and corporate distress due to lockdown measures were instituted. As EMDEs and the LAC region combat the spread of COVID-19, lower economic activity will further exacerbate reliance on external borrowing (possibly at higher interest costs given sizeable capital outflows in early 2020), exposing these economies to deeper debt vulnerabilities. Moves are afoot to negotiate debt relief, but thus far these efforts have centred on low-income countries. Other areas of concern are the reduced demand for these economies' financial assets, reduction in trade, and exchange rate pressures. With the deterioration in energy prices, oil exporters such as Russia, Saudi Arabia, Venezuela, Colombia, Nigeria and Trinidad and Tobago face even more severe constraints as export-earning capacity deteriorates. This can worsen external sustainability dynamics and expose financial institutions to credit and liquidity risks. These countries have responded by introducing measures to provide liquidity support for the financial sector.

THE DOMESTIC SETTING

Despite tentative signs of a pick-up in the fourth quarter, domestic economic activity was subdued in 2019. According to the Central Bank's Quarterly Index of Economic Activity, estimated economic activity declined in 2019 driven mainly by lower crude oil production which weighed on the energy sector. Inflation levels continued to be low at 0.4 per cent on a year-on-year basis to December 2019 compared to 1.0 per cent one year earlier. Furthermore, with no official labour market statistics available for 2019, supplemental data from the Ministry of Labour and Small Enterprise Development revealed a 17 per cent decrease in retrenchments in 2019 compared to the previous year. Nevertheless, labour market conditions remained generally weak as the demand for labour (proxied by the number of job advertisements in the daily newspapers) continued to fall during the period.

Gross official reserves continued on a downward trend but remained strong by conventional measures. In 2019, gross official reserves fell to US\$6.9 billion (7.7 months of import cover) from US\$7.6 billion in 2018. This was mainly attributed to outflows stemming from the Central Bank's sale of foreign exchange to authorized dealers and external debt servicing. However, there was a rise in inflows associated with disbursements from multilateral, bilateral and commercial loans that supplemented receipts from energy exports. The Heritage and Stabilization Fund continues to provide a useful buffer for the economy (Figure 1).

Figure 1
External Sector Dynamics,
2015 – 2019

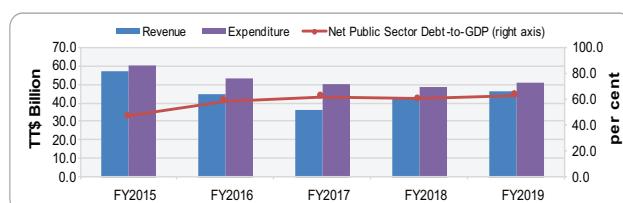


Source: Central Bank of Trinidad and Tobago

The fiscal deficit narrowed in fiscal year (FY) 2018/2019

(Figure 2). The fiscal deficit fell from 3.6 per cent of gross domestic product (GDP) in FY 2017/2018 to 2.4 per cent of GDP in FY 2018/2019. This improvement was attributed to increased government revenues (7.9 per cent) outstripping the rise in government expenditure (3.4 per cent). Government revenue was boosted by higher non-energy sector revenue as well as additional tax revenues collected from the tax amnesty during June to September 2019. Concomitantly, increased transfers and subsidies, wages and salaries, and interest payments pushed up government expenditure. As the Government continued to borrow both domestically and externally to finance the fiscal deficit, net public sector debt-to-GDP rose by 5.2 per cent to 63.2 per cent in FY 2018/2019. In March 2019, Standard and Poor's (S&P) downgraded the sovereign's foreign and local currency credit rating from BBB to BBB- and maintained a stable outlook and investment grade status. Meanwhile Moody's Investors Service in May 2020 affirmed a credit rating at Ba1 but changed the outlook from stable to negative.

Figure 2
Fiscal Operations FY 2015 – FY 2019



Source: Central Bank of Trinidad and Tobago

Monetary and financial conditions were attuned to supporting economic activity. The repo rate remained constant at 5.0 per cent in 2019 as the Central Bank maintained a neutral policy stance. Excess liquidity conditions persisted with notable increases in the second half of 2019 (daily excess reserves averaged \$4.8 billion compared to \$3.2 billion in the first half of 2019). This was attributed to increased injections into the financial system from the maturity of open market operations as the Central Bank sought to ensure adequate system liquidity given Government's capital market activity. The weighted average commercial bank lending rate decreased from 8.0 per cent at the end of December 2018 to 7.7 per cent in December 2019, reflective of increased competition within the sector.

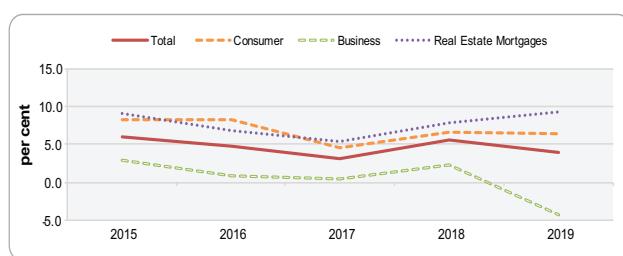
Consolidated lending to the private sector grew by 4.6 per cent year-on-year in December 2019, compared to 4.3 per cent in December 2018. Notably, business credit trended downward due to decreased lending to the construction and the finance, insurance and real estate sectors. Consumer lending remained robust and was attributable mainly to a pick-up in loans for debt consolidation and refinancing. Favourable interest rates have spurred consumers to rebalance their debt portfolios. Meanwhile, increasing competition among financial institutions for real estate mortgage business, reflected in their tactical marketing strategies, influenced a steady rise in this category of lending (Figure 3). Moreover, the demonetization of the cotton-based TT\$100 note⁴, which began during the fourth quarter of 2019, contributed to a pick-up in deposits at commercial banks as some persons opted to deposit cash into their bank accounts as part of the redemption process.

In the context of growing concerns about the potential impact of climate-related risks on financial stability, the Central Bank conducted a survey of banks and insurance companies to evaluate their incorporation of climate issues into risk management practices.

In the domestic context, the COVID-19 crisis is expected to adversely weigh on macro-financial conditions therefore measures to ease financial conditions amidst COVID-19 have been instituted. The repo rate was reduced from 5.0 per cent to 3.5 per cent and the primary reserve requirement for commercial banks was lowered from 17 per cent to 14 per cent. Financial institutions have also deferred loan payments for up to six months to temper the impact of falling household income and rising unemployment on clients' debt-servicing capacities. The Government introduced a Salary Relief Grant, among other measures, targeting those whose jobs may have been affected by the pandemic. Unplanned outlays have widened the fiscal deficit to about \$14.5 billion compared with a budgeted deficit of \$5.3 billion for FY2020 and will increase public debt above implicit ceilings.

Given the destabilizing effects the pandemic is having globally, economies are crafting recovery plans to deploy once conditions have subsided to ensure macro-financial stability. The IMF recommended a roadmap which includes measures such as multilateral cooperation amongst countries; steady removal of crisis-related monetary and fiscal policies in line with the recovery; and putting in place effective debt resolution and restructuring strategies.

Figure 3
Private Sector Credit Granted by the
Consolidated Financial System –
End of Period Average, 2015 – 2019



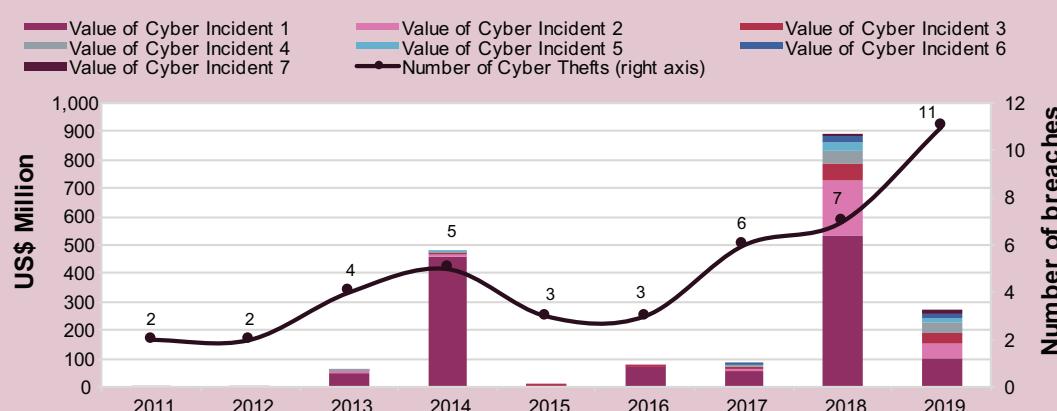
Source: Central Bank of Trinidad and Tobago

⁴ Hilaire, Alvin and Reshma Mahabir (2020). "The Great Exchange: Rapid Demonetization in Trinidad and Tobago." Central Bank of Trinidad and Tobago, Working Papers WP 03/2020. <https://www.central-bank.org.tt/sites/default/files/latest-news/great-exchange-working-paper-03-june-2020-linked.pdf>

BOX 1: DEVELOPMENTS IN FINTECH: REGULATORY RESPONSES TO CRYPTOCURRENCY

Over the course of 2019, international organizations have been advocating for advanced guidance in the face of an increasingly dynamic financial technology (fintech) industry. This box highlights the market developments and regulatory responses to a burgeoning field in the fintech sphere – cryptocurrencies. Growing reports of cyber breaches and subsequent losses have stymied interest in cryptocurrencies as a mainstream payment substitute and it has instead been viewed as vehicle for online trading and investment.¹ As an example, cryptocurrency exchanges reported the highest frequency of thefts in 2019 (Figure 1) and several high-profile fraud cases, such as the Quadriga CX bankruptcy². Regulators have expressed concern that as markets evolve, cryptocurrencies' connections with markets can act as a contagion channel for financial instability. The 2020 World Economic Forum included the appropriate and ethical use of blockchain and fintech on its thematic agenda to respond to these demands.

Figure 1:
Cryptocurrency Stolen during Cybersecurity Breaches (Volume and Value), 2011 – 2019



Source: Cointelegraph Analytics, Selfkey and BBOD (Blockchain Board of Derivatives)

Note: Cyber incident values are recorded when there is a loss of funds. In some cases hacks occurred but data was stolen instead of cryptocurrency.

In June 2019, global social media platform, Facebook, published a whitepaper for their blockchain-based stablecoin³, Libra. Stablecoins have been around since 2015 with the creation of Tether, which was fiat-backed by US dollar currency on a one-to-one exchange. Since then, some stablecoins have collapsed trying to defend pegged values, thus undermining their stability and eroding consumer confidence. However, as investors seek access to a cryptocurrency without the volatility experienced by its predecessors, the design and intended use of Libra caught the attention of regulators. Facebook proposed a global stablecoin which would extend financial infrastructure across borders. Price stability would have been achieved through the use of a reserve, comprising bank deposits and short-term

¹ A survey by the Economist Intelligence Unit has indicated that 34 per cent of respondents believe that cryptocurrencies are primarily for online payments, while a further 24 per cent see it as a short-term investment and another 24 per cent view it as a longer-term asset. The Economist Intelligence Unit. 2020. "Digimentality: Fear and favouring of digital currency." Crypto.com, April 16. <https://digitalcurrency.economist.com/wp-content/uploads/2020/04/EIU-Crypto-Digimentality.pdf>

² Quadriga CX, Canada's largest cryptocurrency exchange, filed for bankruptcy in January 2019 after the mysterious death of its founder Gerald Cotton exposed the loss of US\$190 million as a result of fraud. Rushe, Dominic. "Cryptocurrency investors locked out of \$190m after exchange founder dies," The Guardian, February 3, 2019, <https://www.theguardian.com/technology/2019/feb/04/quadrigacx-canada-cryptocurrency-exchange-locked-gerald-cotton>

³ A stablecoin has the same features as cryptocurrencies but seeks to stabilize the value by linking it to a pool of assets, thereby serving as a means of payment and store of value (G7 Working Group on Stablecoins 2019).

BOX 1: Continued

government securities in currencies from stable and reputable central banks.⁴ Facebook has since modified its initial proposals due to international public authorities' scepticism and pressure and is instead considering digital versions of existing currencies such as the US dollar or the euro.⁵

The advent of Libra was a jolt for many national authorities, especially in Europe and the US. International regulators were concerned over the potential loss of monetary sovereignty and global financial stability risks that Libra could pose if there were widespread public use. Some of these concerns included: the increased risk of illicit finance; cybersecurity threats; scarcity of reserve assets purchased to stabilize currency values; weakened monetary policy transmission; and loss of seigniorage. In an effort to address these concerns, the Bank for International Settlements (BIS) hosted a meeting of twenty-six (26) central banks and private sector representatives to discuss, *inter alia*, the regulatory issues surrounding Facebook's currency. Regulators insisted that a stronger framework was required for a project of this nature to mitigate potential financial and monetary risks.

Supervisory agencies are at various stages of crafting recommendations to support countries' fintech policies and regulatory frameworks. Research by the G7 Working Group on Stablecoins emphasized that digital currencies with global reach pose a significant risk to worldwide financial stability.⁶ Other international regulatory agencies have come to similar conclusions about the risks of stablecoins. They are eager to leverage the benefits which the technology brings but are resolute that there must be formal oversight to mitigate monetary and financial risks. For example, money laundering and terrorist financing (ML/TF) issues are a prominent part of blockchain technology concerns due to the anonymity it affords investors. With this in mind, the Financial Action Task Force issued Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers in June 2019. The Guidance includes, *inter alia*, examples of national approaches to regulating and supervising virtual asset activities and virtual asset service providers to prevent their misuse for ML/TF. The Basel Committee on Banking Supervision echoed these sentiments in its draft discussion paper aimed at designing a prudential framework for crypto-assets, highlighting that risks must be treated consistently. With regard to national authorities' responses to cryptocurrency regulations, the Law Library of Congress indicated that in a survey of forty-six (46) jurisdictions during April 2019, authorities either used the existing law to extend it to crypto-assets based on risk features or implemented specific extensions of securities law which could be related to the cryptocurrency.

An option for mitigating financial stability concerns originating from stablecoins has been to link private cryptocurrency to regulatory oversight and resources through access to central bank reserves.⁷ This has been referred to as synthetic Central Bank Digital Currency (sCBDC) and addresses many of the concerns raised by regulators. Access to the most liquid and high-quality assets in the financial system can build public trust in stablecoin projects which mitigates the risk of runs and destabilizing effects. Although stablecoins have been marketed as less volatile when compared to standard cryptocurrency, information disclosed in recent civil lawsuits has eroded trust in the ability of these options to maintain

⁴ Libra Association Members, "An Introduction to Libra," Libra.org. June 18, 2019, https://libra.org/en-US/wp-content/uploads/sites/23/2019/06/LibraWhitePaper_en_US.pdf

⁵ Malara, Neha. "Facebook to revamp its digital currency plans: The Information," Reuters, March 3, 2020, <https://www.reuters.com/article/us-facebook-cryptocurrency/facebook-to-revamp-its-digital-currency-plans-the-information-idUSKBN20Q333>

⁶ G7 Working Group on Stablecoins, "Investigating the impact of global stablecoins," Basel: Bank for International Settlements, 2018. <https://www.bis.org/cpmi/publ/d187.pdf>

⁷ Adrian, Tobias, and Tommaso Mancini-Griffoli." From Stablecoins to Central Bank Digital Currencies." IMF Blog. September 26, 2019. Accessed April 8, 2020. <https://blogs.imf.org/2019/09/26/from-stablecoins-to-central-bank-digital-currencies/>.

BOX 1: Continued

independent reserves and prices.⁸ Stablecoins have also pressured national authorities to research the feasibility of developing their own digital currency as it has become more evident that there are gaps in current payment mechanisms.

In January 2020, the BIS published a sequel to its survey on worldwide CBDC initiatives. Based on the responses from sixty-six (66) central banks, interest in blockchain projects has expanded significantly, fuelled mainly by decreased cash use and the spectre of competing payment methods. Many jurisdictions indicated that research would inform policy perspectives, but CBDC issuance is unlikely in the near future. This is attributed to the high operational burden and steep challenges which current distributed ledger technology systems face in comparison to traditional payments infrastructure. Based on results from their digital currency research, the Bank of Canada indicated that there was no need to issue a CBDC at the time.⁹ However, they did emphasize that there were contingency plans in place to implement a CBDC if cash use declined severely or a foreign-denominated private currency was a plausible competitor with the Canadian dollar. This is in contrast to the Middle East, where the United Arab Emirates and Saudi Arabia have launched the development of a common CBDC, Aber. Aber would be used for more direct, cross-border settlement of remittances.

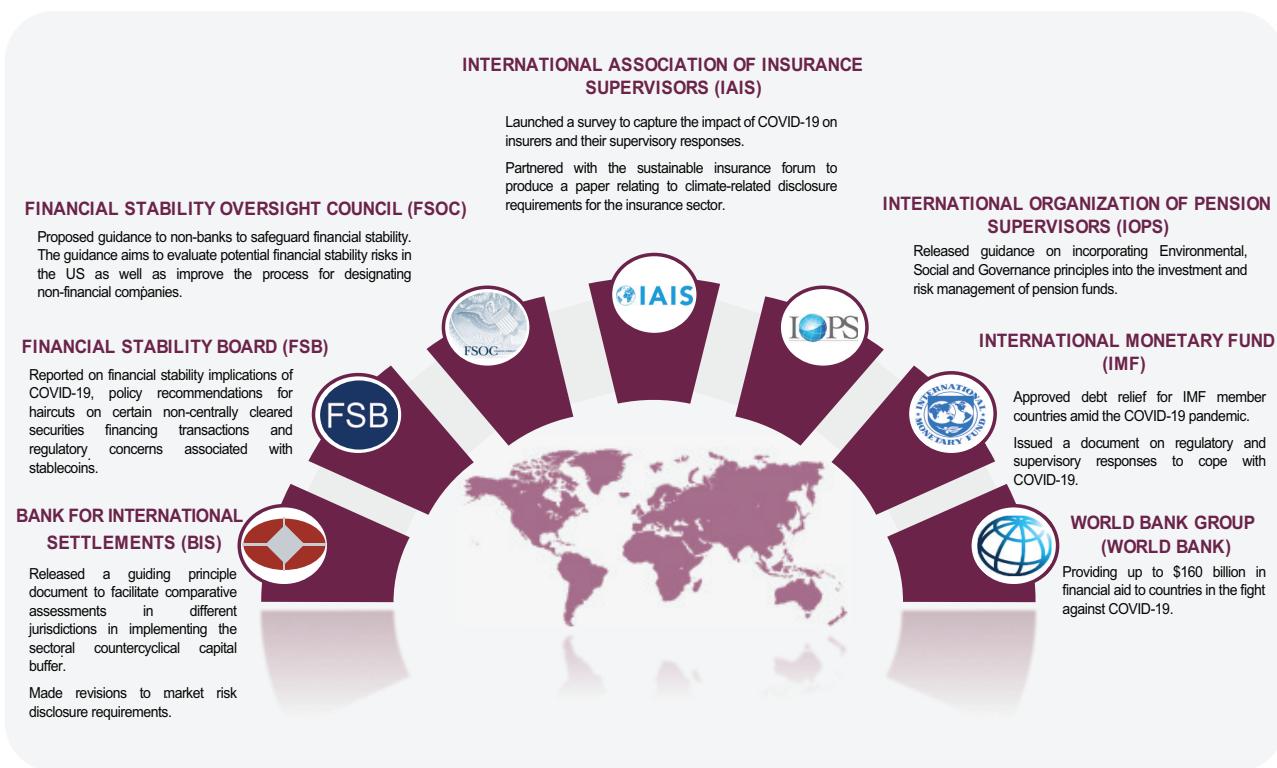
The 2017 and 2018 FSRs outlined the state of CBDCs and blockchain in the Caribbean and since then, there has been building interest in blockchain technology applications in the region. However, as compliance costs increase and withdrawals of correspondent banking relationships ensue, there is even greater incentive for autonomous payment frameworks which can bridge Caribbean and international financial sectors. Previously identified CBDC projects appear to be on-schedule. The second phase of the Eastern Caribbean Central Bank's digital version of the EC dollar (DXCD) was rolled out in March 2020 in a controlled environment to a small sample of countries. Project Sand Dollar, The Bahamas' CDBC, is on track for implementation in all islands by the second half of 2020. The Central Bank of The Bahamas also indicated that they would use blockchain technology to reduce corporate loan rejection rates with technical assistance from the Inter-American Development Bank. Newer projects include an announcement by the Jamaican stock exchange that it would partner with Canadian firm, Blockstation, to list cryptocurrencies for trading.

Domestic regulators have noted the rising interest in fintech and have issued preliminary guidance. The Central Bank has developed a fintech policy aimed at promoting financial innovation while mitigating associated risks, as well as an e-money policy. The Central Bank has also engaged with sixteen entities seeking guidance on fintech-related products and services. The capital market regulator, the Trinidad and Tobago Securities and Exchange Commission (TTSEC), published a policy position on fintech activities and cautioned against unsafe investment practices. Collaborative oversight efforts included a Joint Fintech Steering Committee comprising the Central Bank, TTSEC and the Financial Intelligence Unit of Trinidad and Tobago have been established to progress regulatory initiatives. The fintech landscape, both domestically and internationally, is likely to continue to expand with greater consumer interest and scope of applications, as well as increased regulatory scrutiny. Appropriate surveillance and regulatory frameworks are critical to leveraging the benefits while mitigating the risks.

⁸ Kharif, Olga. Tether says stablecoin is only backed 74 per cent by cash, securities. Bloomberg, April 30, 2019. <https://www.bloomberg.com/news/articles/2019-04-30/tether-says-stablecoin-is-only-backed-74-by-cash-securities>

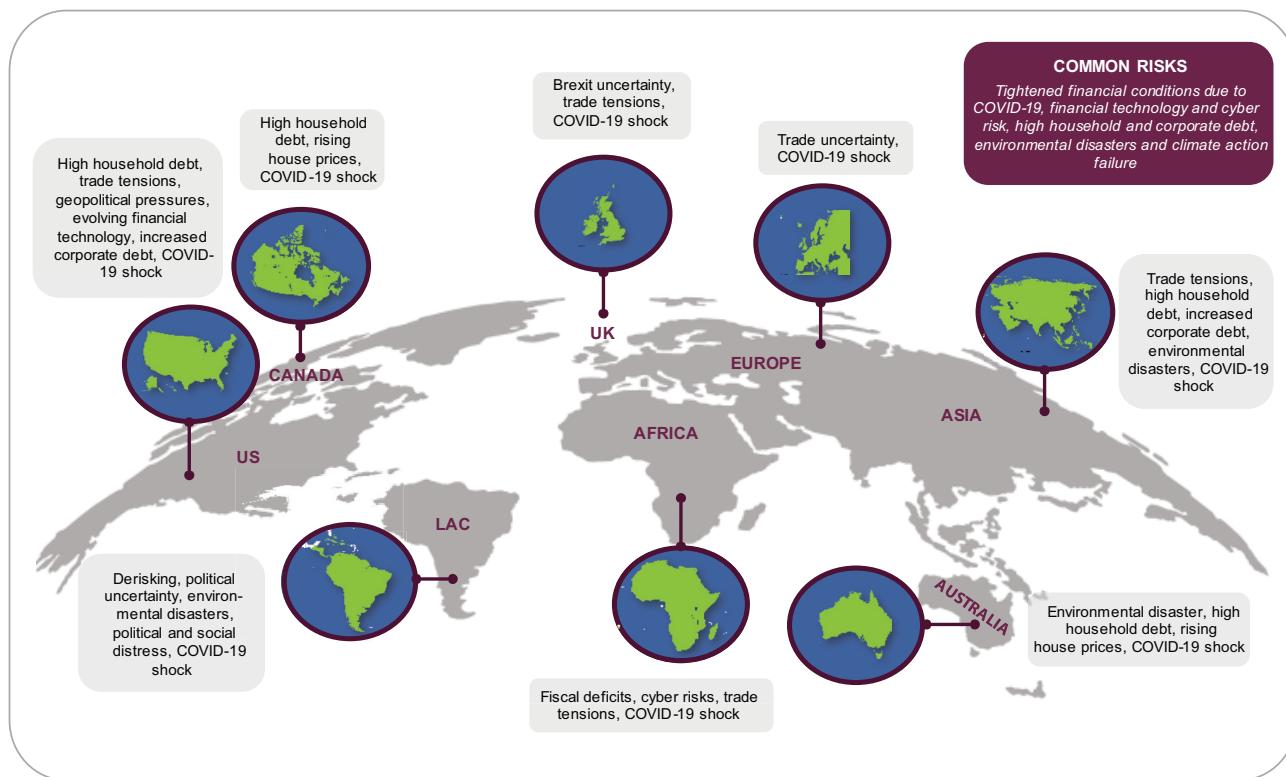
⁹ Bank of Canada, "Contingency Planning for a Central Bank Digital Currency," Bank of Canada, February 25, 2020, <https://www.bankofcanada.ca/2020/02/contingency-planning-central-bank-digital-currency/#8-Conclusion>.

Figure 4
Key International Financial Regulatory Developments and Perspectives in 2019 and Early 2020



Source: Various international regulatory and supervisory bodies' reports

Figure 5
Summary of Global Financial Stability Risks



Source: Various countries' FSR

CHAPTER 2

FINANCIAL SECTOR DEVELOPMENTS

CHAPTER 2

FINANCIAL SECTOR DEVELOPMENTS

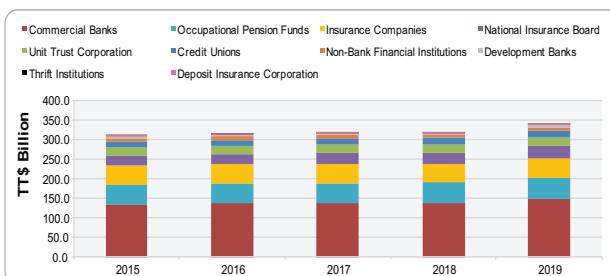
The domestic financial sector is dominated by the banking, insurance and pension sectors, which collectively account for approximately 80 per cent of total domestic financial sector assets, as at December 2019 (Figure 6). Overall, the financial sector remained resilient in the face of a contraction in economic activity during 2019. The asset base of the banking, insurance and pension sectors expanded, while healthy financial soundness indicators (FSIs) in terms of profitability, liquidity and capital adequacy were recorded. Asset quality remained stable.

FINANCIAL SOUNDNESS INDICATORS⁵

Banking Sector⁶

FSIs point to a relatively stable banking sector (Table 1). The sector possesses high capital buffers and healthy balance sheets as reflected by, among other things, a stable NPL ratio and funding profile. Profitability as measured by return on equity (ROE) remained robust, ending 2019 at 24.3 per cent.

Figure 6
Composition of Assets in the Financial Sector,
2015 – 2019



Source: Central Bank of Trinidad and Tobago

Note: The data for Credit Unions are estimated.

⁵ Trinidad and Tobago is an FSI Reporting Country to the IMF's Statistical Department: <https://www.imf.org/external/np/sta/fsi/eng/fsi.htm>

⁶ The banking sector includes commercial banks and non-bank financial institutions (non-banks) in Trinidad and Tobago licensed pursuant to the FIA.

Table 1
Banking Sector: Financial Soundness Indicators, 2015 – 2019
/Per cent/

| | Dec-15 | Dec-16 | Dec-17 | Dec-18 | Dec-19 |
|---|--------|--------|--------|--------|--------|
| Capital Adequacy | | | | | |
| Regulatory capital-to-risk-weighted assets | 24.1 | 23.8 | 23.4 | 23.3 | 23.6 |
| Regulatory tier I capital-to-risk-weighted assets | 25.0 | 23.0 | 23.1 | 23.5 | 22.3 |
| Regulatory capital-to-total assets | 12.6 | 12.5 | 12.9 | 12.7 | 13.0 |
| Net open position in foreign exchange-to-capital | 9.7 | 13.8 | 16.9 | 14.4 | 11.2 |
| Asset Composition | | | | | |
| Sectoral distribution of loans-to-total loans | | | | | |
| Households | 44.0 | 45.7 | 46.7 | 47.2 | 47.4 |
| Public sector | 16.5 | 13.9 | 13.3 | 12.8 | 13.3 |
| Financial sector | 13.1 | 15.1 | 16.0 | 16.2 | 16.2 |
| Oil and gas sector | 2.6 | 3.5 | 3.1 | 4.9 | 4.8 |
| Construction | 9.5 | 6.1 | 4.5 | 4.1 | 2.7 |
| Transport and communication | 3.2 | 2.7 | 2.8 | 3.1 | 2.2 |
| Non-residents | 2.6 | 2.9 | 3.4 | 4.1 | 6.2 |
| Foreign currency loans-to-total loans | 15.2 | 15.5 | 16 | 17 | 18.1 |
| Asset Quality | | | | | |
| Non-performing loans-to-gross loans | 3.7 | 3.2 | 3.0 | 3.1 | 3.1 |
| Non-performing loans (net of provisions)-to-capital | 6.3 | 6.3 | 5.9 | 5.1 | 5.4 |
| Total provisions-to-impaired loans* | 54.3 | 60.3 | 65.6 | 68.6 | 61.6 |
| Specific provisions-to-impaired loans | 42.1 | 37.4 | 37.8 | 53.4 | 48.8 |
| General provisions-to-gross loans* | 0.4 | 0.7 | 0.8 | 0.5 | 0.4 |
| Specific provisions-to-gross loans | 1.6 | 1.2 | 1.1 | 1.7 | 1.5 |
| Earnings and Profitability | | | | | |
| Return on assets | 2.9 | 2.9 | 2.9 | 3.0 | 3.6 |
| Return on equity | 18.2 | 19.9 | 19.0 | 20.2 | 24.3 |
| Interest margin-to-gross income | 57.8 | 62.0 | 64.7 | 62.9 | 58.5 |
| Non-interest income-to-gross income | 42.2 | 38.0 | 35.3 | 37.1 | 41.5 |
| Non-interest expenses-to-gross income | 61.8 | 60 | 58.1 | 57 | 52 |
| Liquidity | | | | | |
| Liquid assets-to-total assets | 23.1 | 21.8 | 19.7 | 19.0 | 21.5 |
| Liquid assets-to-total short-term liabilities | 30.6 | 27.8 | 25.3 | 24.4 | 27.9 |
| Customer deposits-to-total (non-interbank) loans | 159.8 | 164.6 | 154.7 | 153.2 | 150.3 |
| Foreign currency liabilities-to-total liabilities | 25.4 | 26.0 | 26.4 | 26.4 | 25.8 |

Source: Central Bank of Trinidad and Tobago

* These ratios are not the typically used measures of financial soundness, but are included for comparison purposes.

Life Insurance Sector

Over the last five years, the FSIs of the life insurance sector reflected a positive position (Table 2). Capital growth has been on an upward trajectory, while the expansion in the sector's asset base in the last year has brought about a small improvement in asset quality. In 2019, and previously in 2016, the industry's premium and asset base increased as a result of the acquisition of the assets and liabilities of a pension plan in wind-up. The

improvement in the expense ratio reflected the results of the implementation of expenditure control measures within the sector, combined with the effects of increased premium base from the acquisition of the annuities. There was a gradual improvement achieved in the yield on the investment portfolio. Profitability remained strong, spiking in 2016 and in 2019, due to the acquisition of the annuities of pension plans in those years. Liquidity levels remained acceptable over the period.

Table 2
Life Insurance Sector: Financial Soundness Indicators⁷, 2015 – 2019
/Per cent/

| | Dec-15 | Dec-16 | Dec-17 | Dec-18 | Dec-19 |
|---|--------|--------|--------|--------|--------|
| Capital Adequacy | | | | | |
| Capital-to-total assets | 20.7 | 20.3 | 21.5 | 20.9 | 23.1 |
| Capital-to-technical reserves | 28.5 | 27.6 | 29.8 | 29.0 | 33.1 |
| Asset Quality | | | | | |
| (Real estate + unquoted equities + debtors)-to-total assets | 7.8 | 8.0 | 8.6 | 8.8 | 8.3 |
| Earnings and Profitability | | | | | |
| Expense ratio = expense (incl. commissions)-to-net premium | 29.9 | 26.6 | 34.6 | 28.2 | 27.2 |
| Investment yield = investment income-to-investment assets | 4.5 | 4.7 | 4.7 | 4.7 | 4.9 |
| Return on equity = pre-tax profits-to-shareholders' funds | 11.3 | 15.4 | 13.8 | 13.1 | 16.6 |
| Liquidity | | | | | |
| Liquid assets-to-current liabilities | 37.5 | 27.3 | 24.9 | 22.0 | 23.9 |

Source: Central Bank of Trinidad and Tobago

⁷ Figures exclude data from Colonial Life Insurance Company (Trinidad) Limited (CLICO) and British American Insurance Company (Trinidad) Limited (BA) which remained under the emergency control of the Central Bank.

Non-Life Insurance Sector

In the non-life sector, asset quality was maintained over the years (Table 3). The industry's risk retention has been increasing only gradually, as insurers have had to be cautious to ensure risk protection given the frequency of natural perils and catastrophes. The decline in the ratio of net technical reserves to the three-year average of claims paid was due to the large claims payouts arising from adverse events over the last three years. Despite the

challenges faced in previous years from losses arising out of hurricanes, floods and earthquakes, the loss ratio quickly stabilized. Consequently, profitability rebounded in 2019 as heightened consumer demand for insurance protection contributed to growth in premium income. The rise in liquidity levels was due to cash advances received from reinsurers, which were used to settle catastrophe claims.

Table 3
Non-Life Insurance Sector: Financial Soundness Indicators, 2015 – 2019
/Per cent/

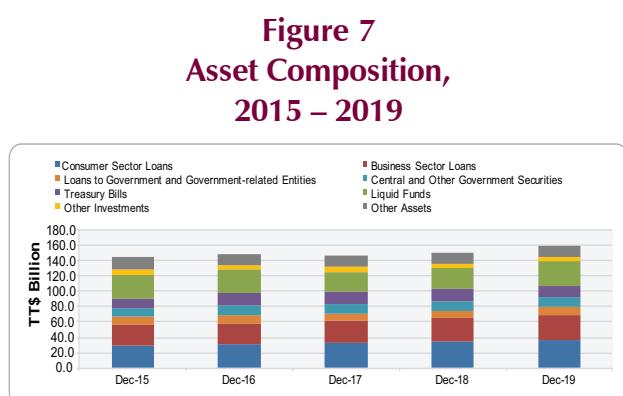
| | Dec-15 | Dec-16 | Dec-17 | Dec-18 | Dec-19 |
|--|--------|--------|--------|--------|--------|
| Asset Quality | | | | | |
| (Real estate + unquoted equities + accounts receivables)-to-total assets | 16.4 | 17.9 | 18.0 | 18.3 | 17.2 |
| Debtors-to-(gross premiums + reinsurance recoveries) | 14.1 | 16.0 | 11.0 | 14.6 | 13.4 |
| Reinsurance and Actuarial Issues | | | | | |
| Risk retention ratio = net premiums written-to-total gross premiums | 43.0 | 45.8 | 45.2 | 46.0 | 46.9 |
| Net technical reserves-to-average of net claims paid in the last three years | 167.0 | 155.9 | 146.3 | 139.7 | 130.7 |
| Earnings and Profitability | | | | | |
| Combined Ratio | 100.8 | 102.8 | 110.4 | 106.2 | 99.7 |
| Expense ratio = expense (incl. commissions)-to-net premiums | 52.2 | 55.5 | 56.8 | 56.8 | 54.6 |
| Loss ratio = net claims-to-net earned premiums | 48.6 | 47.2 | 53.6 | 49.4 | 45.1 |
| Investment income-to-net premium | 5.8 | 6.1 | 6.6 | 7.4 | 6.7 |
| Return on equity = pre-tax profits-to-shareholders' funds | 10.1 | 12.7 | 4.5 | 7.3 | 11.9 |
| Return on assets | 4.8 | 5.8 | 2.0 | 3.1 | 5.5 |
| Liquidity | | | | | |
| Liquid assets-to-current liabilities | 58.9 | 49.3 | 49.8 | 47.2 | 54.3 |

Source: Central Bank of Trinidad and Tobago

BANKING SECTOR (COMMERCIAL BANKS AND NON-BANKS) PERFORMANCE

Assets

The banking sector's balance sheet expanded in 2019 by 6.1 per cent, ending the year at \$160.4 billion (Figure 7). The asset composition has seen minimal changes over the last year, with loans, investments and liquid funds accounting for 49.7 per cent, 20.4 per cent and 20.5 per cent of total banking sector assets, respectively. Liquid assets and capital buffers remained high, so banks were well placed to respond to liquidity shocks. During the year, there was a broad-based expansion in credit to the major sectors – government, businesses and consumers.



Source: Central Bank of Trinidad and Tobago

Consumer Sector Loans

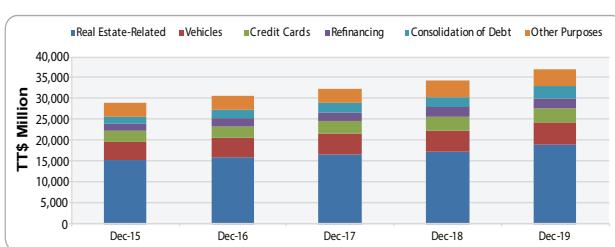
Consumer loans totalled \$37.1 billion (46.5 per cent of gross loans) as at December 2019 (Figure 8), with an accelerated level of growth recorded during the year under review. Specifically, consumer loans increased by 8.4 per cent (\$2.9 billion) in 2019 compared to an average of 6.8 per cent or \$2.1 billion per year over the last five years. The consumer loan segments that displayed the most growth were real estate-related⁸, debt consolidation and refinanced⁹ loans (Table 4), with the latter two still exhibiting strong growth albeit at a slower pace than in the previous year. The net increase in real estate-related loans was led by double-digit growth in real estate mortgages on account of:

- i. aggressive marketing within banks' own customer base;
- ii. competition for new business as banks seek to attract:
 - a. real estate mortgages (and other loans) from competitor banks, which frequently results in a larger mortgage based on the increased value of the underlying collateral and the customer's ability to repay; and
 - b. real estate mortgages from other financial institutions such as mortgage companies and credit unions; and
- iii. the repurchase of mortgage pools previously sold by a large commercial bank to an insurance subsidiary.

Incentives such as larger loan facilities, lower interest rates and waiver of legal fees continue to be extended to qualifying customers.

Moderate increases in credit card and motor vehicle loans were also reported. Over the year, strong growth in the 'used motor vehicle' segment was recorded as customers sought more affordable options. Several banks have also engaged in competitive rate campaigns and partnered with used car dealers to promote sales.

Figure 8
Consumer Loans by Purpose,
2015 – 2019



Source: Central Bank of Trinidad and Tobago

⁸ 'Real estate-related loans' of the consumer sector refers to: real estate mortgages; bridging finance; land and real estate loans; and home improvement or renovation loans.

⁹ Debt consolidation and refinanced facilities include a number of home equity loans extended for a variety of purposes.

Notwithstanding the strong growth in the consumer loan segment, the Central Bank has not observed any notable deterioration in underwriting standards as institutions continue to extend credit based on customers' ability to repay and the underlying collateral.

Table 4
Growth in Consumer Loans by Purpose¹⁰, 2015 – 2019
/Year-on-Year Per cent Change/

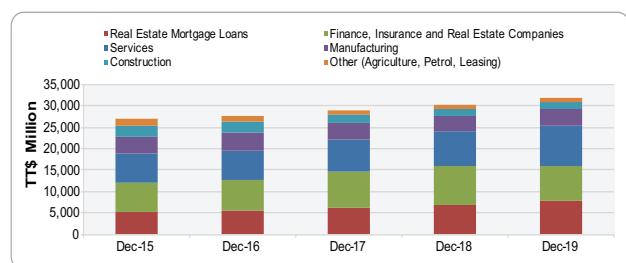
| CATEGORIES | Dec-15 | Dec-16 | Dec-17 | Dec-18 | Dec-19 |
|---|------------|------------|------------|------------|------------|
| Real Estate-related (including mortgages) | 7.5 | 4.1 | 5.5 | 4.1 | 9.8 |
| Vehicles | 21.8 | 7.5 | 3.0 | 0.6 | 3.1 |
| Credit Cards | 3.9 | 13.7 | 6.1 | 7.6 | 3.8 |
| Refinancing | 5.3 | 5.2 | 10.4 | 11.4 | 9.1 |
| Consolidation of Debt | 4.5 | 10.1 | 16.0 | 18.4 | 13.6 |
| Other Purposes | 2.9 | 2.5 | 3.2 | 6.4 | 9.0 |
| TOTAL GROWTH IN CONSUMER LOANS | 8.3 | 5.7 | 5.8 | 5.5 | 8.4 |

Source: Central Bank of Trinidad and Tobago

Business Sector Loans

There was some pick-up in business lending in the twelve months to December 2019, with growth of 5.3 per cent (\$1.6 billion) compared with 4.6 per cent in 2018 (\$1.3 billion) (Figure 9). The increase was reflected mainly in additional exposures to commercial real estate mortgages. Acceleration was also reported in the 'Hotels and Guest Houses' segment due to the extension of US dollar loans for construction/upgrades to US dollar-earning entities based in the region. Lending growth within the Manufacturing sector was buoyed by significant lending in the 'Chemicals and non-metallic materials' segment as well as in the 'Food, drink and tobacco' sub-sector, albeit to a lesser extent. Lending to the Construction and Distribution segments was moderate, while an increase in facilities extended in the Personal Services sector was recorded.

Figure 9
Business Loans by Activity,
2015 – 2019



Source: Central Bank of Trinidad and Tobago

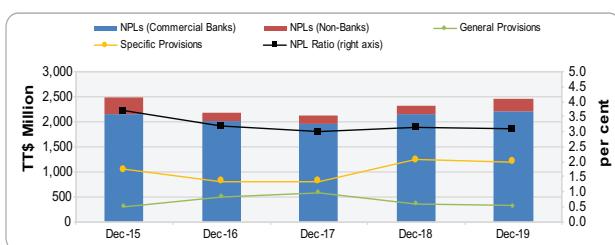
¹⁰ Absolute values are available in Appendix A

Performance of the Loan Portfolio

The quality of the loan portfolio remained stable throughout 2019 (Figure 10). Asset quality, as measured by the NPL ratio, remained unchanged at 3.1 per cent. This was supported by strong loan growth, effective management of the credit portfolio and adequate loan loss provisions. However, the credit risk facing licensees has increased as downward pressures on household and business sector incomes would negatively impact their capacity to service their debts.

Increases in NPLs were reported in the commercial bank consumer and government loan categories, as well as the non-bank segment. However, the impact was tempered by a decline in commercial bank business sector NPLs. This improvement was as a result of several large pay-downs rather than a general improvement in the debt servicing capacity of the sector (Table 5).¹¹

Figure 10
Banking Sector NPLs,
2015 – 2019



Source: Central Bank of Trinidad and Tobago

Table 5
NPLs by Sector, 2018 – 2019
/TT\$ Thousand/

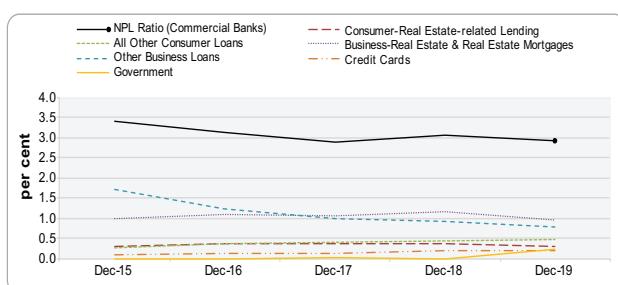
| | Dec-18 | Dec-19 | Change | Change (per cent) | Dec-18 NPL Ratio (per cent) | Dec-19 NPL Ratio (per cent) |
|--|------------------|------------------|----------------|----------------------|-----------------------------------|-----------------------------------|
| Consumer NPLs | 695,831 | 722,864 | 27,033 | 3.9 | 2.1 | 2.1 |
| Business NPLs | 1,462,791 | 1,315,034 | -147,757 | -10.1 | 5.1 | 4.4 |
| Government NPLs | - | 173,045 | 173,045 | - | 0.0 | 1.6 |
| NPLs – Commercial Banks | 2,158,619 | 2,210,948 | 52,329 | 2.4 | 3.1 | 2.9 |
| NPLs – Non-Banks | 165,056 | 244,192 | 79,136 | 47.9 | 4.2 | 6.2 |
| Total NPLs – SYSTEM | 2,323,675 | 2,455,140 | 131,465 | 5.7 | 3.1 | 3.1 |
| Loan loss provisions (specific and general) | 1,592,899 | 1,511,648 | -81,251 | -5.1 | | |

Source: Central Bank of Trinidad and Tobago

¹¹ NPLs by sector is not available for non-banks. However, commercial banks account for 90 per cent of system NPLs so figures are representative of industry performance.

The growth in NPLs outpaced the increase in loan loss provisioning. Against this background, although there were divergences at the institutional level, loan loss provisioning appeared adequate on a system-wide basis.

Figure 11
Sector Specific NPL Ratios in the Commercial Banking Sector, 2015 – 2019



Source: Central Bank of Trinidad and Tobago

Sovereign Exposure

At end-2019, total sovereign exposures (which include loans and investments in government and government-related entities) were approximately \$37.9 billion (23.6 per cent of gross assets). Of this, domestic sovereign exposures amounted to \$28.3 billion (74.7 per cent of total sovereign exposure).¹² This represented a decline of 4.3 per cent, relative to end-2018.

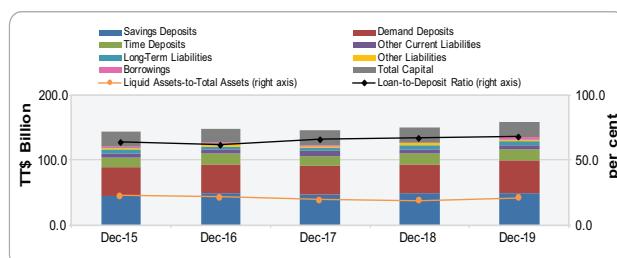
The banking sector's exposure to sovereigns moderated during 2019 largely due to the maturity of domestic Treasury Bills. The decline was tempered by an increase of 11.8 per cent in sovereign loans which were extended to state-owned and other government bodies in Trinidad and Tobago. The exposure to the sovereign is expected to increase in the short term as the Government requires additional financing to treat with the COVID-19 pandemic. Banks are, however, constrained by the large exposure provisions in the Financial Institutions Act, 2008 (FIA).

Liability Profile and Funding

Low-cost deposits continued to account for the dominant share of licensees' funding base and remained the main source of credit growth financing. Total deposits stood at \$117.2 billion at the end of December 2019 (Figure 12). This represented an increase of \$6.4 billion (5.8 per cent) over the year. This is above the typical rate of growth, with significant increases being reported during the demonetization process at the end of 2019. Sectoral changes in deposits for the last quarter of 2019 were as follows:

- Business increased by 10.1 per cent (\$4.2 billion)
- Consumer rose by 3.4 per cent (\$1.8 billion)
- Government increased by 4.5 per cent (\$703.0 million)

Figure 12
Deposits, Other Liabilities and Capital, 2015 – 2019



Source: Central Bank of Trinidad and Tobago

The loan-to-deposit ratio – which has averaged a conservative 64.8 per cent over the period 2015 to 2018 – stood at 68.0 per cent as at December 2019.¹³

Consumer deposits remained the largest source of the deposit base (47.2 per cent) for the banking sector at the end of December 2019. Preliminary information suggests that intra-group borrowing increased but remained immaterial, accounting for 2.4 per cent of all liabilities.

¹² Investment in US Treasury Bills amounted to \$6.5 billion (TT\$ equivalent) or 17.1 per cent of sovereign exposures as at December 2019.

¹³ The loan-to-deposit ratio is the ratio of a bank's total outstanding loans for a period to its total deposit balance over the same period. This indicates that the system therefore had excess liquidity and a capacity to lend.

Overall, liquid asset buffers remained comfortable, and banks continued to be well placed to respond to liquidity shocks. Banking sector liquidity, as measured by the ratio of liquid assets to total assets, increased to 21.5 per cent as at December 2019 from 19.0 per cent in December 2018.

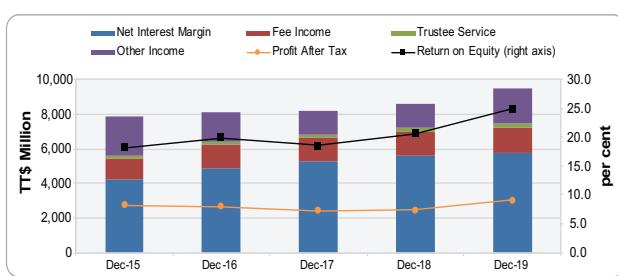
Sources of Earnings and Profitability

In 2019, the banking sector recorded before-tax profits of \$5.5 billion – an increase of 24 per cent over the previous year. Similarly, the sector's ROE¹⁴ increased by approximately 400 basis points to 24.3 per cent while return on assets (ROA) increased to 3.6 per cent from 3.0 per cent one year earlier.

The ROA and ROE were buoyed by gains in 'other income', which increased to close to \$2.6 billion at end-December 2019 relative to \$2.0 billion in 2018.

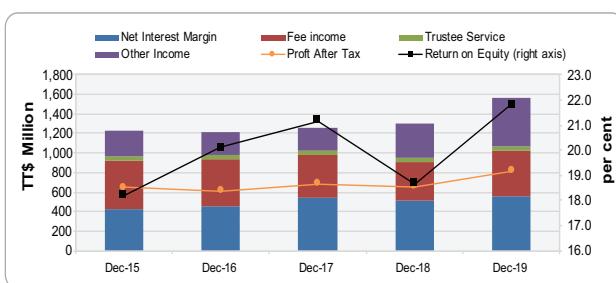
This partially reflected a one-off increase of \$438.4 million, representing a write-back of deferred taxes, which resulted from the amendment of the terms of a large bank's post-retirement medical benefits plan in line with market, as well as an increase in dividends from subsidiaries. The overall improvement in operating income was supported by core business operations, which facilitated an increase in net interest and fee income and foreign exchange profits. These gains were, however, tempered somewhat by an increase in operating expenses.

Figure 13
Commercial Banks' Contribution to Profit by Source, 2015 – 2019



Source: Central Bank of Trinidad and Tobago

Figure 14
Non-Banks' Contribution to Profit by Source, 2015 – 2019



Source: Central Bank of Trinidad and Tobago

Capital Adequacy

Capital adequacy, as measured by the regulatory capital-to-risk weighted assets ratio, continued to be healthy and far in excess of the minimum statutory requirement of 8 per cent on a Basel I basis, and 10 per cent on a Basel II basis (Pillar 1).

Regulatory Tier I Capital, the core measure of a bank's financial strength, stood at 23.6 per cent in December 2019 with all institutions reporting ratios over the minimum of 8.0 per cent, and most ratios exceeded 20.0 per cent. The banking sector's capital adequacy ratio also surpassed 20 per cent under Basel II. This level of capital improves banks' ability to absorb potential asset losses or write-offs.

¹⁴ ROE is a measure of financial performance calculated by dividing net income by shareholders' equity.

LIFE INSURANCE SECTOR

Assets

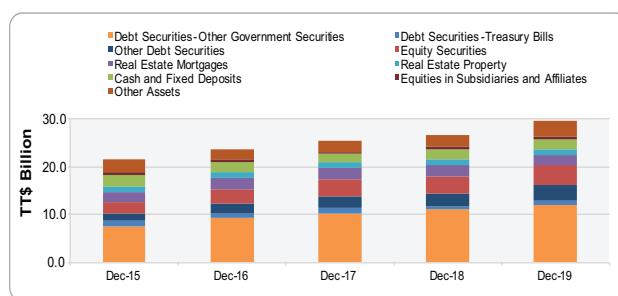
Total assets of the life insurance sector (excluding CLICO and BA) as at December 2019 were \$29.6 billion – an increase of 10 per cent from the previous year (Figure 15). Over the last five years, asset growth has averaged 7.3 per cent per annum. The increase was partly due to observed changes in debt securities as a result of the following:

- i. In 2019, insurers acquired the assets and liabilities of two pension fund plans in wind-up. The assets acquired from these two plans included debt securities; and
- ii. Investments in the National Investment Fund Holding Company Limited bonds in late 2018.

Debt securities accounted for more than 50 per cent of assets in the life insurance sector and remain the preferred class of investments to facilitate asset-liability matching. Government and government-guaranteed debt accounted for 79.4 per cent of total debt securities.

Notably, there are two systemically important regional market players, which together accounted for 62.8 per cent of the sector's assets and 70.8 per cent of annual gross premium income.

Figure 15
Assets – Life Insurance Sector,
2015 – 2019

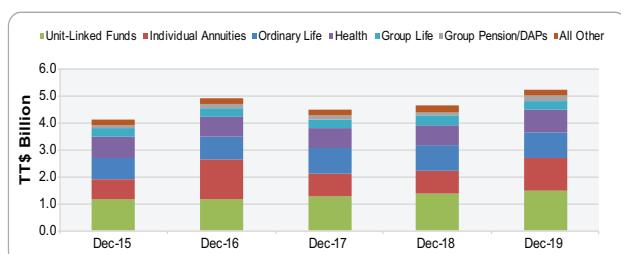


Source: Central Bank of Trinidad and Tobago

Lines of Business

Unit-linked products have dominated the market in terms of premium income (Figure 16). The spikes in individual annuity business in 2016 and in 2019 were one-off increases in annual premium income, attributed to the acquisition of the assets and liabilities of pension fund plans in wind-up as the premiums were absorbed by the industry. Despite economic challenges, the life insurance sector showed signs of premium growth, though at a slower rate than in previous years. Over the last five years, gross premium income grew at an average annual rate of 7.1 per cent. In 2019, the average growth rate (excluding the impact of the assets and liabilities from the pension plans in wind-up) was 5.1 per cent.

Figure 16
Gross Premium Income – Life Insurers,
2015 – 2019

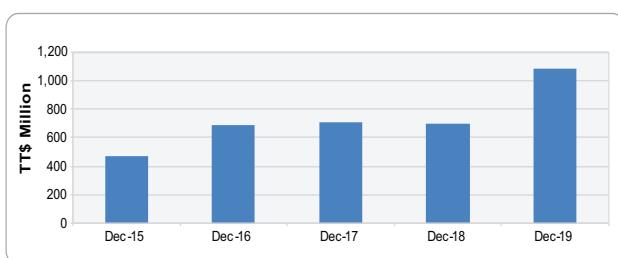


Source: Central Bank of Trinidad and Tobago

Reported Profits

Profits remained fairly constant since 2016 before a noticeable uptick in the year ending December 2019 (Figure 17). Major contributors to the 2019 profit outturn were increased premiums from the assets and liabilities acquired from a pension plan fund in wind-up and increased investment income mainly from realized and unrealized gains on debt and equity securities.

Figure 17
**Profits Before Taxes – Life Insurers,
 2015 – 2019**

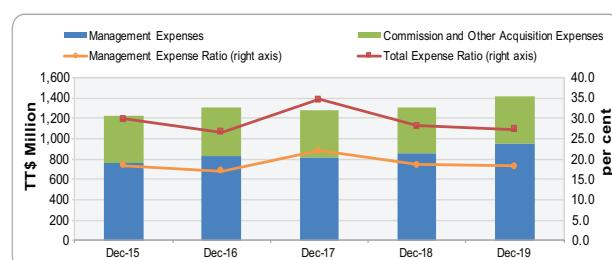


Source: Central Bank of Trinidad and Tobago

Expenses

Management expenses and acquisition costs increased in 2019 (Figure 18) due largely to a combination of costs associated with the industry's preparations for implementation of IFRS 17 and with the acquisition of the assets and liabilities of pension plans in wind-up. Notwithstanding the increased expenses, the declines in the expense ratios were attributed to the increased premium income from the annuity business.

Figure 18
**Expenses and Expense Ratios – Life Insurers,
 2015 – 2019**



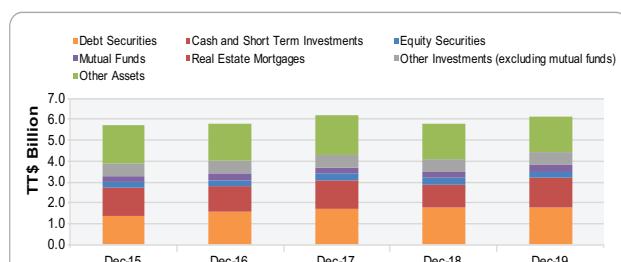
Source: Central Bank of Trinidad and Tobago

NON-LIFE INSURANCE SECTOR

Assets

Total assets in the non-life sector were \$6.0 billion as at December 2019, with a five-year average annual growth rate of 2.4 per cent (Figure 19). The level of assets fluctuated over the period 2017-2019 due to funds advanced from reinsurers to the local market in light of claims stemming from natural catastrophes in the region. However, as these claims were paid and settled, the growth rate of assets normalized in the subsequent period (as was the case for 2017).

Figure 19
**Assets – Non-Life Insurance Sector,
 2015 – 2019**



Source: Central Bank of Trinidad and Tobago

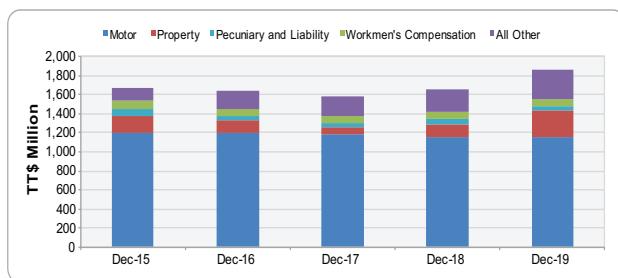
Lines of Business

Annualized gross premium income for the non-life sector was \$4.0 billion for the year ending December 2019. Gross premium growth recovered in 2018, following the contraction in the energy sector (a major contributor to general insurance premium growth) and the softening of rates in earlier years. In 2019, gross premiums grew by approximately 10.7 per cent, primarily driven by the increasing rates and demand for property insurance post significant weather-related events. One institution with a regional presence controls approximately one-third (34.5 per cent) of the market share based on annualized gross premiums, while the next three largest institutions control a combined market share of 31.1 per cent.

Net retained premium income stood at \$1.9 billion for the year ending December 2019 (Figure 20), representing an increase of 12.9 per cent from the previous year. Net premium income rose because of

reduced reinsurance coverage, as some insurers increased property risk retention. The gross premiums written for the motor and property lines accounted for 34.5 per cent and 48.2 per cent of total gross premiums, respectively. However, after deduction of reinsurance premiums, the composition shifts to 62.3 per cent for motor business and 14.3 per cent for property business of total net premiums retained. This disparity is due to the fact that a large proportion of risk underwritten in the property line is reinsured whereas for motor business, most of the risk is retained by the local insurers.

Figure 20
Net Retained Annual Premium Income – Non-Life Insurers, 2015 – 2019



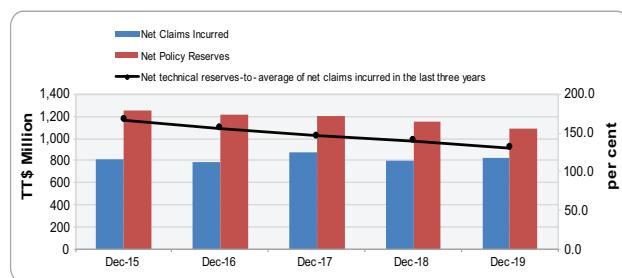
Source: Central Bank of Trinidad and Tobago

Claims Adequacy

Weather-related events such as heavy rainfall and flooding have increased the frequency and severity of claims in recent years, particularly in 2017. The companies impacted have competently managed the consequences of these events through their reinsurance treaties, as claims that emanated from the 2017 hurricanes have been fully paid and settled.

Conversely, claim reserves have contracted since 2017 as greater focus was placed on the claims management process and quicker settlements of claims. The reduced reserves, combined with the increasing trend in claims incurred, resulted in a lower ratio of net technical reserves to the three-year average of net claims incurred as at December 2019 (Figure 21).

Figure 21
Net Technical Reserves¹⁵/ Three-year Average Net Claims Incurred, 2015-2019

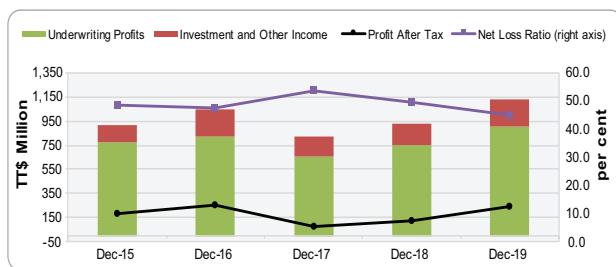


Source: Central Bank of Trinidad and Tobago

Earnings and Profitability

Underwriting profits have been volatile over the last five years, as results in 2017 were impacted by climate risks (Figure 22). However, the reinsurance arrangements provided adequate protection of the capital base of insurers, and the underwriting profits had a steady growth rate surviving the impact of extreme claims from hurricanes, earthquakes and floods. In 2019, underwriting profits were not as heavily impacted by adverse events as in the prior year. Also contributing to the 2019 profit outturn was a combination of increased premium rates and greater demand for coverage following the adverse weather conditions in previous years.

Figure 22
Contribution to Profit and Expenses – Non-Life Insurers, 2015 – 2019



Source: Central Bank of Trinidad and Tobago

¹⁵ Net Technical Reserves = Claims Reserves plus any Other Transfers from Funds.

OCCUPATIONAL PENSION PLANS

As at December 2019, there were 186 active registered pension plans with a total membership of approximately 100 thousand persons and assets of \$53.0 billion (Table 6). Pension plans which are in the process of being wound up amounted to 78 plans. Total occupational pension plan assets increased by 5.4 per cent (\$2.7 billion), from \$50.3 billion as at December 2018 to \$53.0 billion as at December 2019. Approximately 93 per cent of pension fund assets was owned by self-administered plans. The remaining 7 per cent was placed in investment and administrative policies with insurance companies. Although pension plans sponsored by government-related entities represented 24 per cent of pension plans (44 plans), these accounted for 58.6 per cent of total assets.

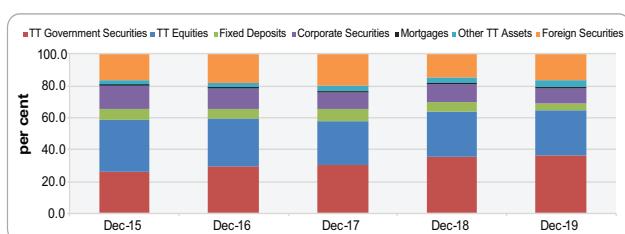
Table 6
Pension Plan by Type, 2019

| | Sponsored by Government or Government-related Entities | | Private Company Sponsored | |
|------------------------------------|---|------------------------------------|----------------------------------|------------------------------------|
| | Defined Benefit | Defined Contribution/Hybrid | Defined Benefit | Defined Contribution/Hybrid |
| Number of Plans | 35 | 9 | 71 | 71 |
| Total Assets (TT\$ Billion) | 31.0 | 0.4 | 13.6 | 8.0 |

Source: Central Bank of Trinidad and Tobago

There has been little change in the mix of assets held by pension plans over the last five years (Figure 23). Government of the Republic of Trinidad and Tobago (GORTT) bonds and local and foreign equities accounted for 39 per cent and 30 per cent of the plans' assets, respectively. Foreign assets accounted for approximately 16 per cent of the portfolio and grew by 18.6 per cent year-on-year to December 2019, as opposed to 6.1 per cent growth in local assets. This has been due mainly to gains on US shareholdings which may be reversed in 2020 due to the impact of the COVID-19 pandemic on the stock market. Pension plans are therefore expected to see declines both in the value of their share portfolios and in income due to lower dividend receipts in at least the near and medium terms.

Figure 23
Assets as a Proportion of Funds –
Pension Plans Asset Mix, 2015 – 2019

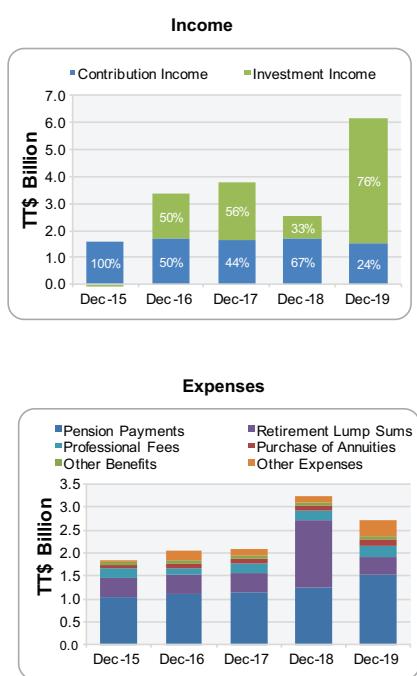


Source: Central Bank of Trinidad and Tobago

Pension plan contributions received have been fairly consistent over the past five years but declined in 2019.

This has been primarily due to the closure of the largest pension plan sponsor in late 2018 and termination of all its employees. The closure also resulted in an increase in pension payments to \$1.5 billion in 2019 from \$1.3 billion in 2018. There was also an accompanying spike in retirement lump sum payments in 2018 for the same reason. Overall, the ratio of pension benefits to contribution income has fallen from 99 per cent in 2015 to 69 per cent in 2019. Therefore, pension plans are becoming more reliant on investment income to pay their expenses (Figure 24).

Figure 24
Pension Sector Income and Expenses,
2015 – 2019



Source: Central Bank of Trinidad and Tobago

Pension plans have also contended with low interest rates on their local long-term investment portfolios, even prior to the impact of the COVID-19 pandemic. Containment measures in early 2020 are expected to reverse equity price gains seen in 2019 and potentially lower dividend income from both domestic and international markets, worsening investment conditions faced by pension funds. Additionally, there is the added possibility of lower contribution income with the temporary closure of non-essential businesses due to the pandemic.

The Central Bank has continued to monitor the funding level of pension plans and will intensify surveillance to determine if pension plans face further challenges in the context of the COVID-19 pandemic. Pension plans' triennial actuarial valuation reports provide estimates of pension plans' funded levels. Funding has declined over the period from 2015 to 2019, with 34.8 per cent of registered pensions reporting being underfunded as at December 2019 in contrast to 26.7 per cent as at December 2015. In the majority of cases, the actuaries have recommended that plan sponsors pay increased contributions to these plans. The Central Bank regularly engages with the plans' Trustees to monitor the implementation of the actuaries' recommendations.

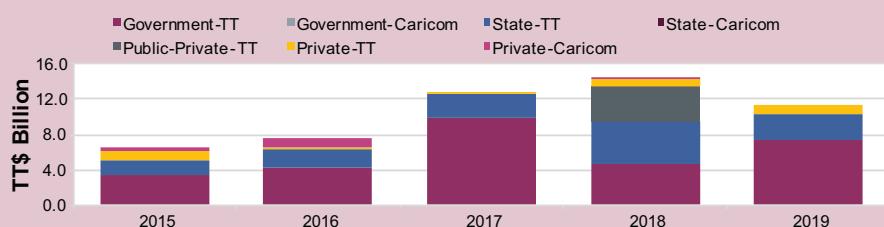
BOX 2: CAPITAL MARKET DEVELOPMENTS IN TRINIDAD AND TOBAGO

In 2019, capital market activity continued to be heavily influenced by government transactions. The banking sector played an important dual role of market maker and investor, as all government bond issues during the year were privately arranged by these institutions. Like other countries, domestic financial markets have been adversely affected by the COVID-19 pandemic – equity markets have declined and long-term bond yields have pushed upwards during the first quarter of 2020.

Fixed Income / Bond Market

Provisional information suggests that during 2019 there were 17 issues totalling \$11.3 billion on the fixed income security market, compared to 23 issues (\$14.4 billion) in 2018 (Figure 1). The central government was more active during 2019, issuing 10 bonds raising just under \$7.3 billion, compared to 8 bonds at \$4.7 billion in 2018. Furthermore, all primary issues in 2019 were conducted privately, while in 2018, the National Investment Fund Holding Company Limited (NIF) publicly offered three bonds for the purpose of monetizing assets transferred to the Government as repayment for debt owed by CL Financial and its subsidiaries.

Figure 1:
Primary Fixed Income Security Market, 2015 – 2019



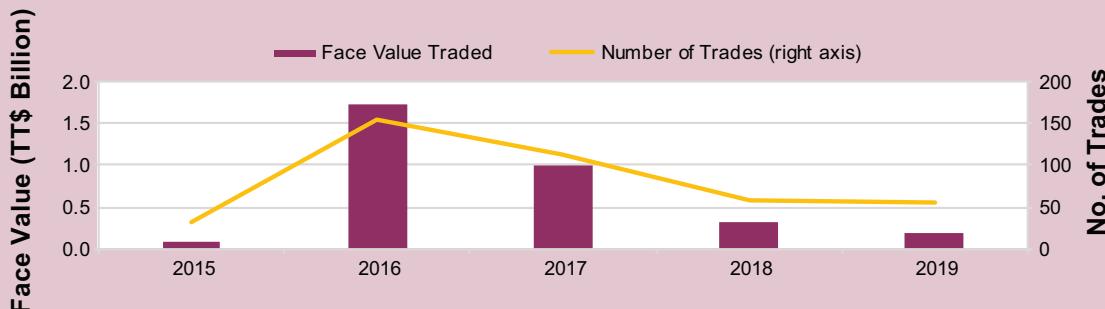
Source: Central Bank of Trinidad and Tobago

Activity in the secondary government bond market continued its downward trend, likely due to a lack of new publicly offered government bonds on the primary market. Over 2019, the market observed 55 trades at a face value of \$182.0 million compared to 57 trades at a face value of \$318.1 million in the previous year (Figure 2). Furthermore, since the listing of the NIF bonds in August 2018, the secondary corporate bond market observed 25 trades at a face value of \$46.7 million during the final quarter of 2018. However, during 2019, the market registered 118 trades while the face value traded slipped to just under \$22.0 million.

Over the first three months of 2020, activity on the secondary government bond market fell off substantially with only one recorded trade at a face value of \$2.0 million, compared to 20 trades at a face value of \$57.8 million in the same period in 2019. On the other hand, the secondary corporate bond market continued to record activity during the first quarter of 2020 with 25 trades at a face value of \$2.3 million. However, the same period in 2019 recorded 30 trades at a face value of \$11.9 million.

BOX 2: Continued

Figure 2:
Government Bond Trading, 2015 – 2019

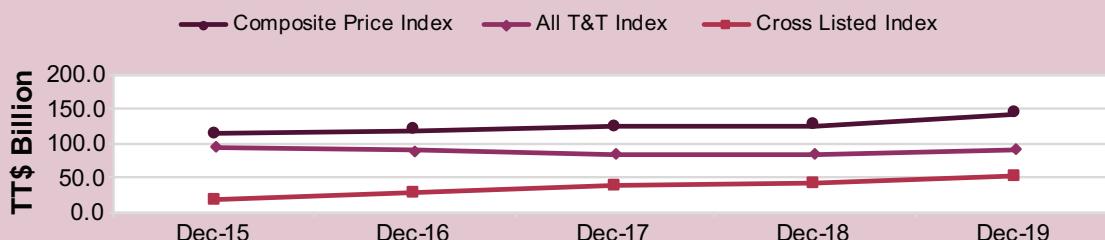


Source: Central Bank of Trinidad and Tobago

Equity Market

Performance indicators of the domestic equity market revealed robust growth during 2019 (Figure 3). Total stock market capitalization rose by 13.3 per cent, supported by strong performance of cross-listed stocks (20.9 per cent), and notable recovery of the All T&T index (ATI) (9.4 per cent). The market was driven by expansions in the Banking (15.5 per cent), Manufacturing I (15.3 per cent) and Conglomerates (14.3 per cent) sub-indices, despite substantial declines in the Energy (-17.7 per cent) and Manufacturing II (-26.2 per cent) sub-indices.

Figure 3:
Stock Market Capitalization, 2015 – 2019



Source: Trinidad and Tobago Stock Exchange

At the end of the first quarter of 2020, the domestic stock market witnessed a substantial change in its performance. During the first two months of 2020, market activity remained positive as the Composite Index (CPI) recorded a 3.3 per cent increase, supported by the ATI and the Cross-Listed Index (CLI) which rose by 3.9 per cent and 2.1 per cent, respectively. However, as a result of the COVID-19 pandemic and the subsequent downturn in domestic economic activity, the CPI fell by 13.1 per cent in March 2020, driven by an 18.2 per cent drop in the CLI and a 10.4 per cent decline in the ATI. Consequently, total stock market capitalization plummeted by roughly \$19.4 billion to \$128.7 billion over the month.

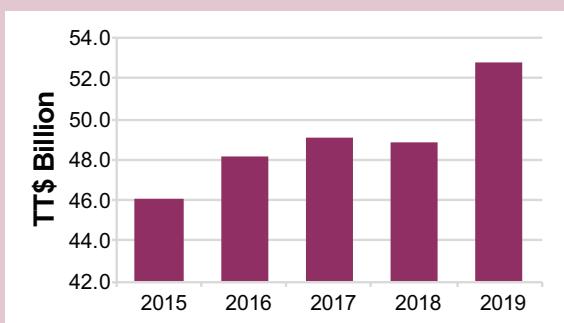
BOX 2: Continued

Mutual Fund Industry

According to the Trinidad and Tobago Securities and Exchange Commission, the Collective Investment Scheme (CIS) industry observed an 8.0 per cent increase in assets under management (AUM) to \$52.8 billion during 2019¹ (Figure 4). The Central Bank captures information on mutual fund providers² which accounted for roughly 89.3 per cent of total industry AUM at the end of 2019. Total AUM for these institutions expanded by 6.6 per cent to just over \$47.1 billion over the year. With respect to the investment structure (Figure 5), income funds continued to dominate, however, they accounted for a decreasing share of the industry. On the other hand, the share of money market funds has increased notably, reflecting the demand by investors for liquidity and shorter-term investment products.

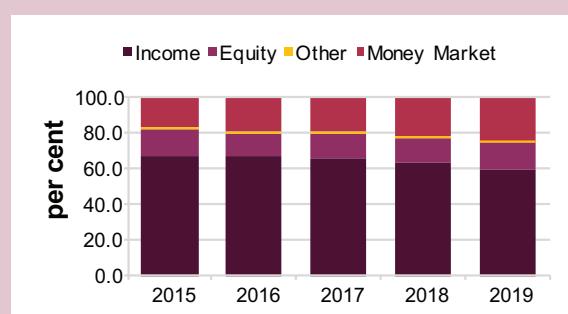
Mutual Fund Data, 2015 – 2019

Figure 4:
AUM, 2015 – 2019



Source: Trinidad and Tobago Stock Exchange.

Figure 5:
Portfolio Investment Structure, 2015 – 2019



Source: Trinidad and Tobago Stock Exchange.

¹ The Intergovernmental Panel on Climate Change (2007) asserts that “most of the observed increase in global average temperatures ... is very likely due to the observed increase in anthropogenic greenhouse gas concentrations”. Cook, et al. (2016) found that 90 to 100 per cent of published climate change research endorses the IPCC conclusions.

² For example, Hurricane Maria (2017) resulted in losses of approximately 225 per cent of GDP in Dominica. Similarly, Hurricane Ivan (2004) cost Grenada an estimated 200 per cent of GDP.

PAYMENT SYSTEMS

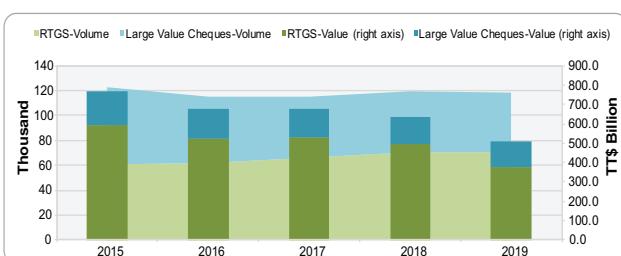
Payment System Activity (Local Currency Payments)

During 2019, the usage of electronic payment methods maintained an upward trend, while the volume and value of payments made by cheque continued to decline.

Wholesale Payments Transaction Volume and Value

The volume of wholesale¹⁶ (large-value) transactions settled over the Real Time Gross Settlement System (RTGS) grew by less than 1.0 per cent in 2019, while the volume of transactions for large-value cheques continued to fall, declining by 2.5 per cent in 2019 when compared to one year ago. In value terms, RTGS transactions and large-value cheque payments decreased by 24.1 per cent and 3.0 per cent, respectively in 2019 (Figure 25).

Figure 25
Share of Wholesale Payments – Volumes and Values, 2015 – 2019



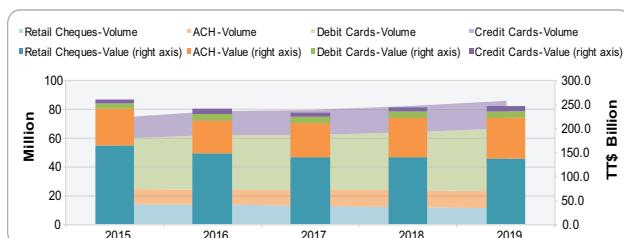
Source: Central Bank of Trinidad and Tobago

Retail Payments - Transaction Volume and Value

Similar trends were observed for retail payments, as the volume and value of electronic retail payments¹⁷ continued to increase, while the volume and value of retail cheques declined. The Automated Clearing House (ACH) processed a total volume of 12.2 million transactions valued at \$85.1 billion in 2019, an increase of 5.0 per cent and 3.3 per cent, respectively when compared to 2018. Although the value of retail cheques remained significant, a 2.7 per

cent fall from \$140.9 billion in 2018 to \$137.1 billion in 2019 was realized. In addition to this, the number of retail cheque payments fell to 11.3 million in 2019, a 5.6 per cent reduction when compared to 2018 (Figure 26).

Figure 26
Share of Retail Payments – Volumes and Values, 2015 – 2019



Source: Central Bank of Trinidad and Tobago

In terms of volume, debit and credit cards dominated retail payments in 2019. Debit card transactions accounted for over half (53.0 per cent) of the total volume of all retail payments, reflecting increased activity at Point of Sale (POS) terminals. Credit card transactions were the second highest at 23.4 per cent, followed by ACH transactions at 14.8 per cent and retail cheques at 13.8 per cent.

Conversely, in terms of value, retail cheques accounted for the largest share of retail payments at 55.7 per cent, followed by ACH transactions at 34.5 per cent, debit cards at 5.5 per cent and credit cards at 4.4 per cent.

Payments Infrastructure

At the end of 2019, both the number of Automated Teller Machines (ATMs) and POS Terminals increased to 492 and 23,931 respectively. New ATMs were commissioned to improve access to electronic banking services whilst at the same time reducing the volume of over-the-counter (OTC) transactions. Commercial banks have also been seeking to increase their merchant base and convenience to customers by offering mobile POS machines in addition to the regular stationary machines located at retail outlets.

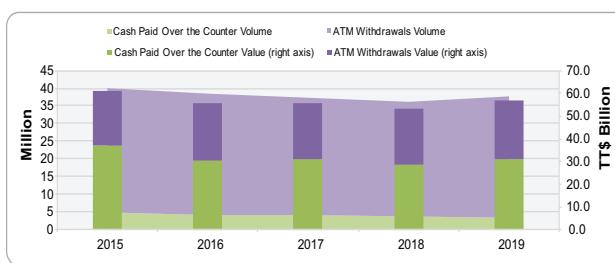
¹⁶ Wholesale payments are more than \$500,000 in value.

¹⁷ Retail payments are less than \$500,000 in value.

Cash Withdrawals

Cash remained an important payment instrument in 2019. Overall, there was an increase in the volume and value of cash withdrawals by 3.4 per cent and 6.8 per cent, respectively, when compared to one year earlier. However, the expansion in the volume of cash withdrawals was driven by ATM withdrawals, which grew by 4.1 per cent, as the number of OTC cash withdrawals at commercial banks fell by 2.7 per cent. The latter was attributable to the fees charged by banks for frequent OTC cash withdrawals and the push toward electronic banking. Nevertheless, the value of cash paid OTC increased from \$28.9 billion in 2018 to \$30.8 billion in 2019, while ATM withdrawals rose from \$24.4 billion in 2018 to \$26.1 billion in 2019 (Figure 27).

Figure 27
Cash Withdrawals – Volumes and Values, 2015 - 2019



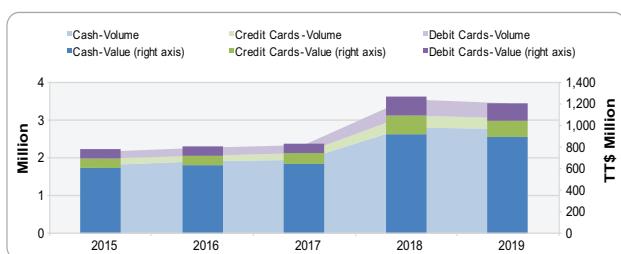
Source: Central Bank of Trinidad and Tobago

Bill Payment Service Providers (Bpsps)

In 2019, the three registered BPSPs processed a total of 3.5 million transactions valued at \$1.2 billion, compared with 3.6 million transactions valued at \$1.3 billion in 2018. The reduction was attributable in part to the discontinuation of the contractual relationships with payment aggregators by one of the BPSPs.

Cash remained the most popular means of making payments at BPSPs, accounting for over 74 per cent in both the volume and value of all payments made (Figure 28). This was largely attributable to one BPSP accepting cash payments only. Meanwhile, both the volume and value of payments by debit cards and credit cards declined in 2019 when compared to the previous year.

Figure 28
Trends in Domestic Retail Payments – Bill Payments, 2015 – 2019



Source: Central Bank of Trinidad and Tobago

CHAPTER 3

VULNERABILITIES AND RISKS

CHAPTER 3

VULNERABILITIES AND RISKS

This chapter adopts an integrated approach¹⁸ to discuss the transition of vulnerabilities to risks in the macro-financial system. The risk assessment continues to be based primarily on expert judgement complemented by an analysis of domestic macroprudential indicators (Appendix B). The framework for risk assessment and risk ratings are defined in Appendix C. Complementing the single-factor stress tests of the commercial banking sector is a scenario which traces the possible impact of a pandemic on the financial sector.

While most of the financial system vulnerabilities identified in the 2018 FSR remain relevant, a few became more prominent while another vulnerability receded. In this year's Report, 'growing household indebtedness' takes centre stage while the system's vulnerability to 'keeping pace with evolving international standards on money laundering, terrorist financing and tax transparency' retreated significantly as a result of ongoing legislative and policy reform. The 2018 FSR also highlighted the following key risks to financial stability:

1. Deterioration in the quality of consumer loan portfolios;
2. Rise in public sector-related NPLs;
3. Delays in executing international payments; and
4. Loss of confidence in digital transformation.

For 2019, two out of the four risks (no. 2 and no. 4) persisted over the year, with the risk of a rise in public sector-related NPLs deepening to be now reflected as the risk of a deterioration in financial sector liquidity and public sector loan portfolios. With softening labour market conditions, the risk of deterioration in the quality of consumer loan portfolios has become more acute given the COVID-19 developments in early 2020. Meanwhile, risks of delays in executing international payments have diminished following notable progress on the legislative front.

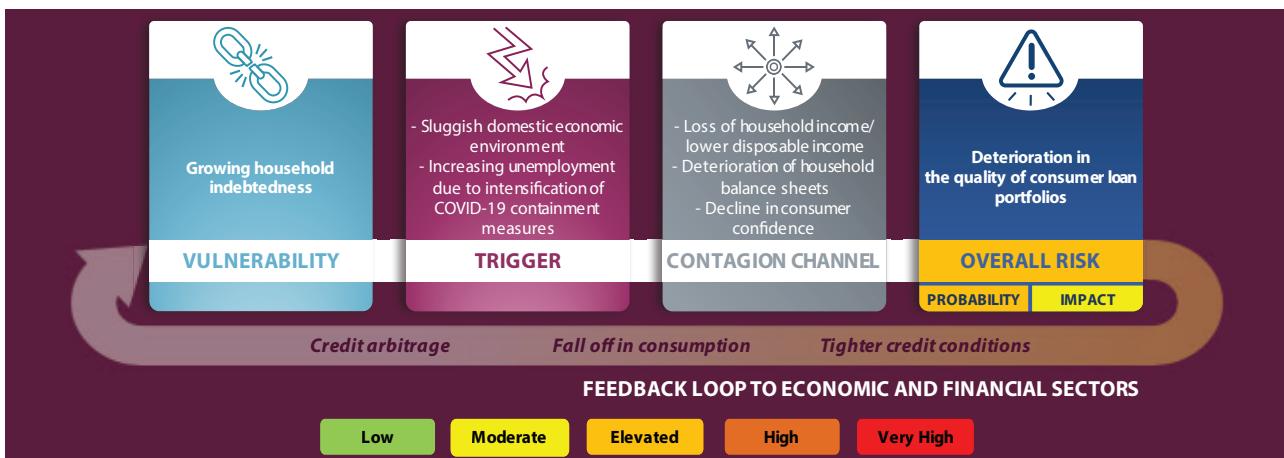
GROWING HOUSEHOLD INDEBTEDNESS

The materialization of downside risks to domestic economic activity in early 2020 could further unearth household debt sustainability concerns (Figure 29). Estimates suggest that household debt¹⁹ grew by \$2.4 billion (4.2 per cent) in 2019, to total \$58.3 billion (Figure 30). The ratio of household debt to GDP rose by 80 basis points to 35.5 per cent – continuing the slowdown in the pace of growth observed since 2017. Despite the slower accumulation, discussions with the IMF on the financial sector highlighted that the level and dynamic of household debt in Trinidad and Tobago is among the highest in LAC. Persistently lower business credit demand and perceived higher credit risks posed by certain economic sectors have reinforced the banking sector's proclivity for consumer lending. Although banking institutions are well capitalized, the balance sheet structure can make institutions more vulnerable to disruption from economic sectors which are major contributors to bank profits. Household debt can pose risks to financial stability as the majority of exposures are held by commercial banks which depend on consumption-driven credit to fuel profitability. There is a heightened possibility that households may struggle to meet their financial obligations if the domestic economy endures an extended period of sluggish growth, given the ramifications of the COVID-19 pandemic.

¹⁸ The framework was adapted from the approach used by the Bank of Canada and is based on work undertaken by Adrian, T, D Covitz, and N Liang. "Financial Stability Monitoring." Federal Reserve Board Finance and Economics Discussion Paper, 2013 and the 2013 Annual Reports of the US Department of the Treasury and the Office of Financial Research.

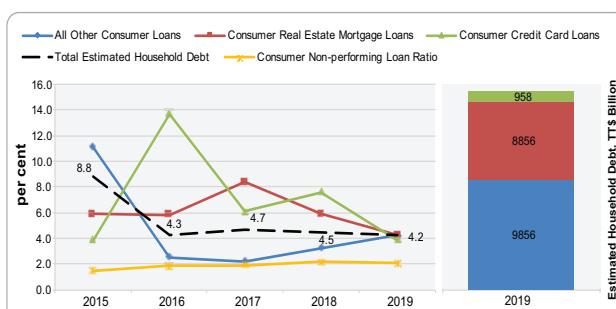
¹⁹ Household debt comprises credit extended to households from: commercial banks; non-banks; insurance companies; credit unions; the Home Mortgage Bank; the Trinidad and Tobago Mortgage Finance Co.; and other retail merchants.

Figure 29
Vulnerabilities and Risks Assessment Framework
– Growing Household Indebtedness



Source: Central Bank of Trinidad and Tobago

Figure 30
Estimated Growth in Household Debt²⁰,
2015 – 2019



Source: Central Bank of Trinidad and Tobago

As household credit continues to grow, albeit at a slower pace, the main risks to domestic financial stability stem from the quality of these debt exposures. In general, credit risks in the banking sector appear contained as the consumer NPL ratio for 2019 stood at just 2.1 per cent. Much of the growth in household debt came from loans extended to finance the purchase, development and improvement of residential real estate. Still, associated credit risks appear low as these loans were concentrated in residential real

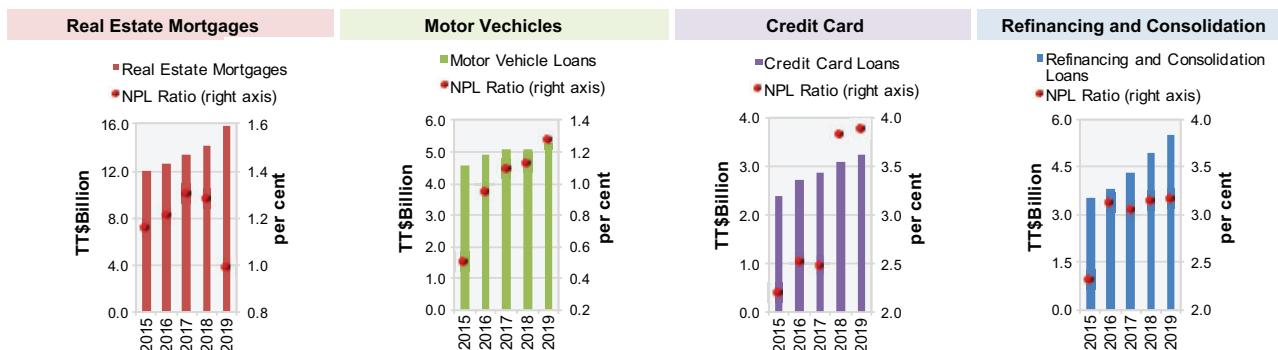
estate mortgages (loans secured by deeds and other liens to finance activities in the real estate sector) and its associated NPL ratio was only 1.0 per cent. The remaining large consumer loan categories are for motor vehicles, credit cards and consolidated and refinanced loans. The credit risks emanating from these consumer loan categories appear negligible given their low NPL ratios – credit card loans had the highest NPL ratio (3.9 per cent) – and overall past due loans were contained (Figures 31 and 32). The consumer NPL ratio may remain low in the short run following efforts to mitigate the economic impact of COVID-19 on households. The Bankers Association of Trinidad and Tobago advised that their members will defer loan payments²¹ for individuals and businesses and the Central Bank relaxed the regulatory treatment for past due loans (not yet considered non-performing) for a period of three months effective March 31, 2020²². These measures may temporarily insulate loan portfolios from severe deterioration in quality, but if containment measures for the virus extend into the second half of 2020 or if there is a second wave of the virus as anticipated, expected credit losses may have to be revisited.

²⁰ All Other Consumer Loans comprises of those loans made to households for: purchasing motor vehicles; refinancing and consolidation; education; medical; travel; and other miscellaneous expenses.

²¹ Most major commercial banks indicated that loan payments could be deferred for up to 3 months from March 2020.

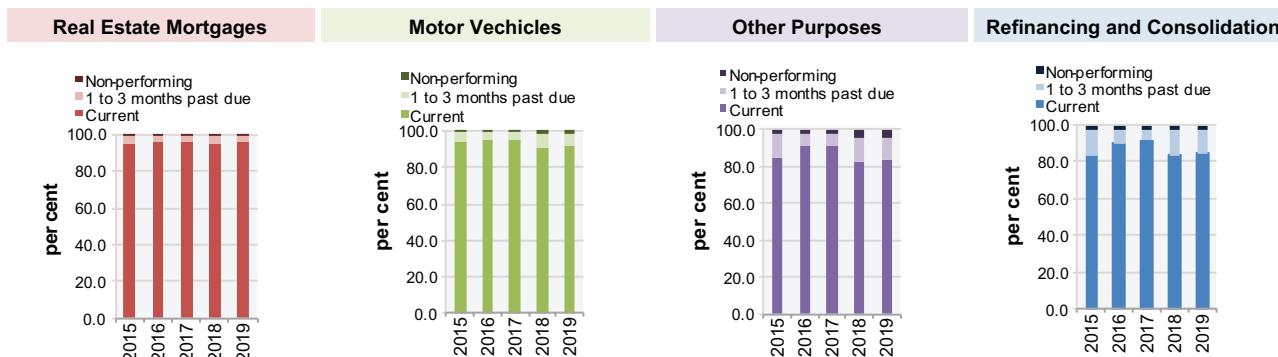
²² <https://www.central-bank.org.tt/sites/default/files/latest-news/regulatory-treatment-of-payment-deferrals-due-to-covid-19-measures-march-2020.pdf>

Figure 31
Selected Loan Categories, NPL Ratios²³ and Share by Purpose, 2015 – 2019



Source: Central Bank of Trinidad and Tobago

Figure 32
Selected Loan Categories²⁴ by Days Past Due, 2015 – 2019



Source: Central Bank of Trinidad and Tobago

The global pandemic is expected to weaken aggregate demand and heighten credit risk as the shock extends to the financial sector. As businesses remain shut-in or scale back production, particularly those in the services sector which account for approximately 70 per cent of employment, the demand for labour is unavoidably affected. While announced support measures can mitigate some of the economic impact from the initial employment shock, the labour market could take some time to recover. Again, any intensification of COVID-19 containment measures may have adverse consequences for the banking sector as declining incomes ultimately impair the ability of households to meet their financial obligations. In the event of a prolonged economic decline, commercial banks and non-banks can face pressure on both sides of their balance sheets as loan delinquencies increase and depositors draw-down on savings to buffer income losses.

As borrowers' capacity to meet contractual obligations deteriorates, it can result in loan impairment and eventual write-off if loans cannot be successfully restructured. Higher loan delinquencies may encourage financial institutions to offset the impact on liquidity and profitability by the liquidation of collateral assets or trigger a sell-off of investment assets. Due to thinly traded domestic capital markets, sustained liquidation could result in the compression of asset prices and deterioration of financial institutions' balance sheets. Greater diversification in interest income and risk-based buffers will assist institutions in navigating pandemic-driven credit uncertainty. Job losses could also trigger potential negative spill-overs to other segments of the financial sector as individuals may not be able to service their insurance premiums, which could give rise to increasing policy surrenders or lapses.

²³ NPL ratios are based on commercial bank data only.

²⁴ 'Other Purposes' includes credit card loans and other miscellaneous expenses, where credit card loans account for 53.1 per cent of the total.

Financial institutions may seek to mitigate credit losses by curtailing the credit supply, leading to second-round macroeconomic effects such as deeper contractions in consumption and real GDP. In the absence of a mandatory and up-to-date central repository for creditor details, financial institutions may not be able to proactively flag “at-risk” borrowers. The establishment of an official credit registry could pay dividends beyond the current crisis as financial institutions will be in a better position to assess credit risks.

Based on stress testing results, commercial banks appear generally resilient to economic and financial shocks (Appendix D). System CAR fell marginally to 17.8 per cent in response to accelerated migration of loans to non-performing status. This outturn is based on an instantaneous shock (a 20 per cent decline in GDP) and not a prolonged economic disruption which may be the case with COVID-19. Given there are diverse results across individual institutions, lower capitalized institutions may experience difficulties if the shock is persistent.

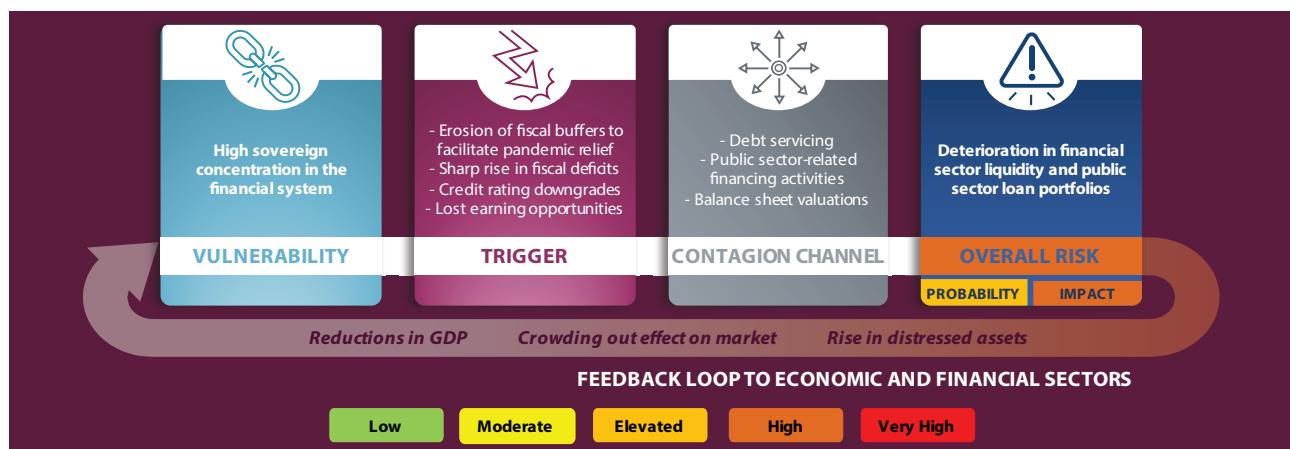
The overall financial stability risk posed by a deterioration in consumer loan portfolios is assessed as ‘elevated’. Given expectations for subdued economic activity, mounting evidence of rising job separations, bank cash

flow interruptions (from deferrals) and possible difficulties in flagging at-risk customers, the probability of this risk manifesting is ‘elevated’. Due to broad-based social safety net packages, significant loss absorption capacity at commercial banks, temporary loan deferral initiatives, the impact is assessed as ‘moderate’ in the short run, but the path to normalization from the pandemic is uncertain. Regulatory forbearance regarding the treatment of COVID-19 related loan deferrals has been extended for a further three months until August 2020.²⁵ In this setting, it would be important for commercial banks to closely monitor their credit portfolios to safeguard against possible moral hazard arising from these measures.

HIGH SOVEREIGN CONCENTRATION IN THE FINANCIAL SYSTEM

Public sector debt continues to increase and is projected to accelerate in the short-to-medium term as spill-overs from the dual shock – the energy price shock and the novel coronavirus pandemic – worsen.²⁶ In this regard, the domestic financial sector’s relatively high and growing exposure to sovereign debt represents a potential vulnerability (Figure 33).

Figure 33
Vulnerabilities and Risks Assessment Framework
– High Sovereign Concentration in the Financial System



Source: Central Bank of Trinidad and Tobago

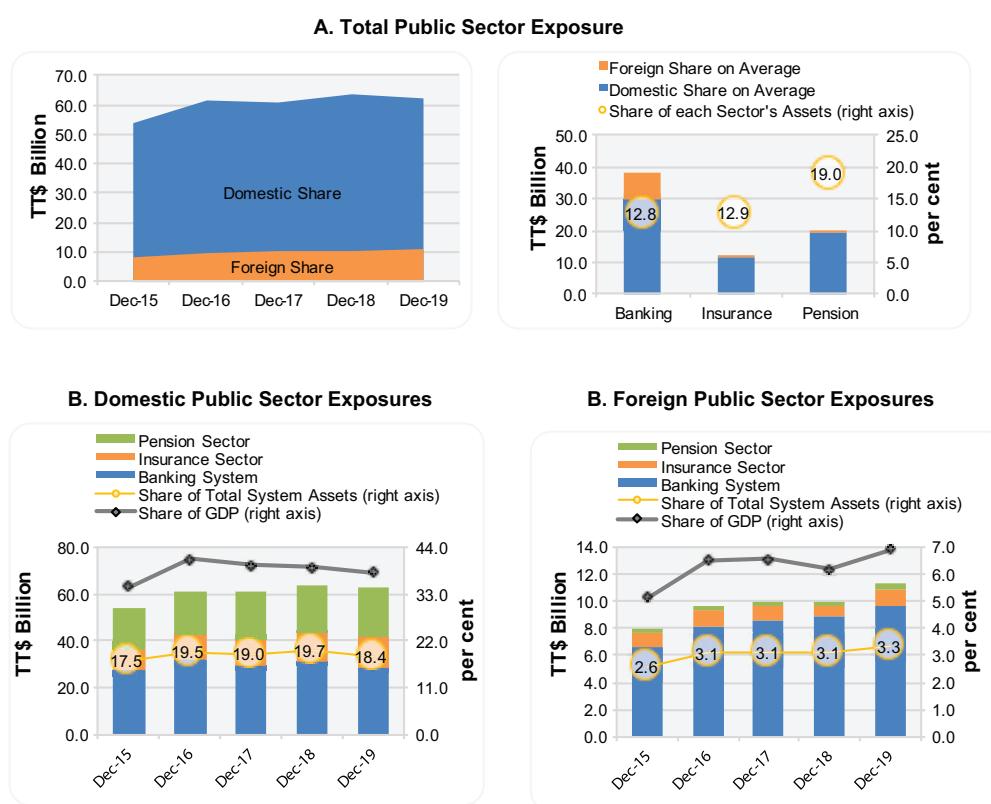
²⁵ Central Bank circular letter to financial institutions dated May 5, 2020. https://www.central-bank.org.tt/sites/default/files/circular_letters/circular-letter-extension-on-treatment-of-deferred-payments.pdf

²⁶ According to the IMF's staff estimates and projections debt loads (as a per cent of GDP) in emerging market and middle-income economies are expected to increase by about 8 per cent.

As at December 2019, the financial sector's²⁷ exposure to the domestic public sector (central government, statutory bodies and state-owned entities) stood at approximately 22 per cent of total financial sector assets (equivalent to 45 per cent of GDP) (Figure 34). On

average, these exposures have mainly consisted of Treasury bills and securities from the central government and state entities. Compared to December 2018, exposures grew slightly, driven by a marginal increase in the financial sector's foreign public sector exposures.

Figure 34
Financial Sector Public Sector Exposure



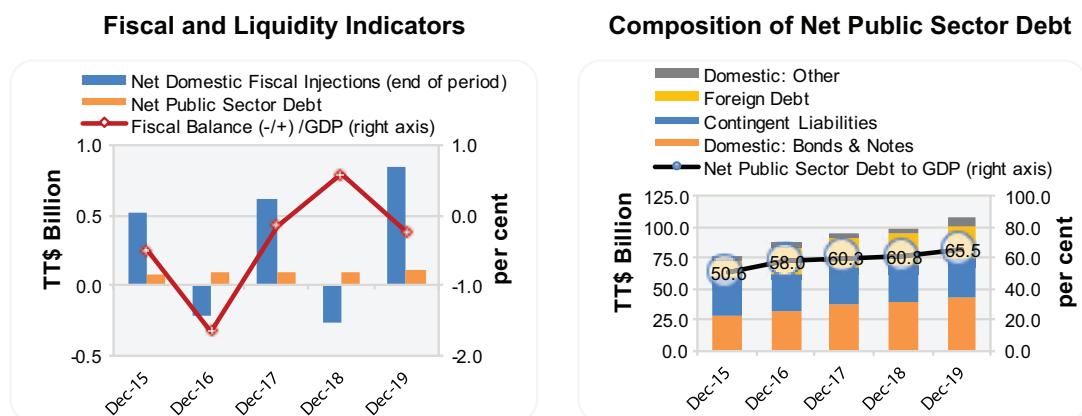
Source: Central Bank of Trinidad and Tobago

²⁷The banking sector, insurance sector and pension sector on average have accounted for over 75 per cent of total financial system assets. These sectors will be used as a proxy to assess the local system's exposures to the public sector.

Pre-crisis fiscal and debt trajectories have shaped the assessment of the credit rating agencies (Figure 35). During the first quarter of 2020, the country's sovereign credit rating and that of other local financial and state entities were downgraded by an international credit rating agency.²⁸ In general, the perception of external agencies

and borrowers in the face of the evolving fiscal situation is relevant to the cost of sovereign borrowing. As noted earlier, the financing requirements to fund the crisis response will further worsen Government's fiscal position and erode available buffers (Figure 36).

Figure 35
Pre-Crisis Domestic Sovereign Vulnerability Indicators

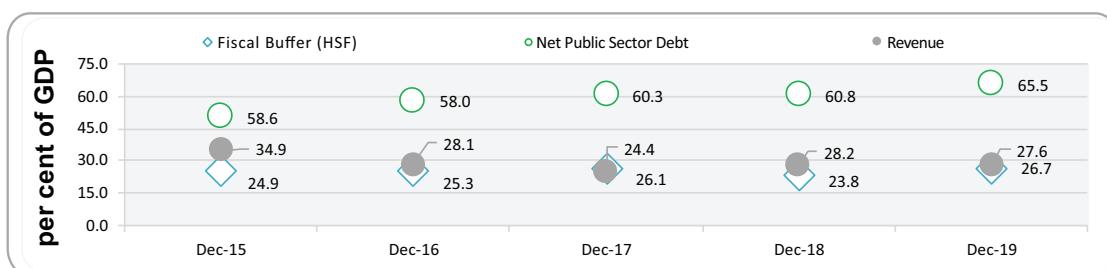


Long-Term Credit Ratings

| | Dec-15 | Dec-16 | Dec-17 | Dec-18 | Dec-19 | 2020 | Outlook Key |
|---------|--------|--------|--------|--------|--------|------|-------------|
| Moody's | Baa2 | Baa3 | Ba1 | Ba1 | Ba1 | Ba1 | Negative |
| S&P | A | A- | BBB+ | BBB+ | BBB | BBB | Stable |

Source: Ministry of Finance, Central Bank of Trinidad and Tobago, Moody's Investor Service, S&P Global Ratings.

Figure 36
Fiscal Buffers, 2015 – 2019



Source: Central Bank of Trinidad and Tobago and the Ministry of Finance.

²⁸ S&P Global Ratings revised the Banking Industry Country Risk Assessment economic risk to negative from stable. Additionally, the long-term and short-term issuer credit ratings on two systemically important commercial banks were revised to 'BBB-/A-' from 'BBB/A-2', respectively. For two other government-related infrastructure entities, the downgrade followed the same action that was taken on the sovereign.

²⁹ According to the Ministry of Finance in its statement to the House of Representatives on the economic effect and financial response to the COVID-19 pandemic, just over TT\$5.5 billion (TT\$5 billion sourced externally and TT\$500 million sourced locally) will be used to fund the fiscal response packages.

According to the Government, pandemic relief fiscal measures (Table 7) are expected to cost \$6 billion²⁹ and the energy price shock is expected to cause a further \$9.2 billion shortfall in projected revenue. Domestic financing must also be considered. As government revenue is curtailed and debt exposures simultaneously rise, debt servicing challenges can eventually emerge, with implications for the health of banks' balance sheets.

Table 7
Fiscal Crisis Responses as at April 2020
/TT\$ Million/

| Packages | Description | Spent |
|---|---|-------|
| Refunds | VAT refunds for payouts of ranges TT\$0 - TT\$250,000 Income tax refunds for payouts of ranges TT\$0 - TT\$20,000 | 700 |
| Social Development and Family Services Assistance | Food and disability assistance Salary Relief Grant of TT\$1,500 per month for an initial three months Rent Relief Grant of up to TT\$2,400 per month for an initial three months Religious group of TT\$10 million per month for an initial three months | 260 |
| Special Loans/Debt Arrangement | Credit Union Agreement for affordable loans of up to TT\$5,000 per month for three months, or TT\$15,000 in total, to their members | 100 |
| Foreign Exchange Window | Agreement with the Export Import Bank of Trinidad and Tobago Limited to provide US\$25 million a month for three months to facilitate the importation of essential items | 502 |
| Public and Private Entities in Tobago | Disbursements to the Tobago Regional Health Authority and the Tobago House of Assembly and hotel upgrades in Tobago | 105 |
| Other Fiscal Packages | This includes public sector agencies disbursements (for the Office of the Prime Minister, Trinidad and Tobago Police Service, the Ministries of Agriculture, Health, National Security), loan programme for Small/Medium Businesses, public supply of face masks and Caribbean Airlines expenditure | - |

Source: Ministry of Finance

Stress test results for commercial banking large exposures as at December 2019 highlight this scenario. The results showed that a shock from a severe deterioration in the domestic sovereign's credit fundamentals would have a persistently large and negative impact on the commercial banking sector's CAR. As at December 2019, the shock resulted in a 14 percentage point fall in the sector's CAR – a similar drop when compared with the period ending

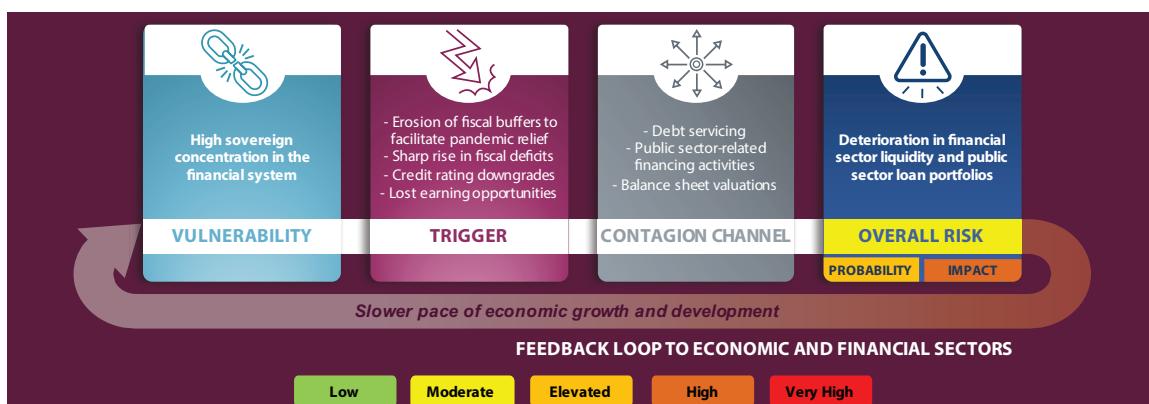
December 2018. Therefore, the risk of a deterioration in financial institutions' credit and liquidity positions from public-sector exposures is assessed as '**elevated**' while the associated impact on the domestic financial system and real economy remains '**high**'. In this regard, fiscal consolidation efforts following the pandemic shock would be essential.

RAPID DIGITALIZATION IN THE FINANCIAL SERVICES INDUSTRY

The drive for digitalization in financial services persists as institutions continue to leverage newer technologies to generate efficiency gains. The 2018 FSR introduced digitalization in financial services as an explicit vulnerability of the financial system, noting that rapid development without the appropriate defences could leave the system exposed to attacks in the digital space. This vulnerability remains relevant (Figure 37) as expenditure on software development at banks and insurers has continued to grow over 2019, albeit at a slower pace than in previous years (Figure 38). The emergence of the novel coronavirus in early 2020

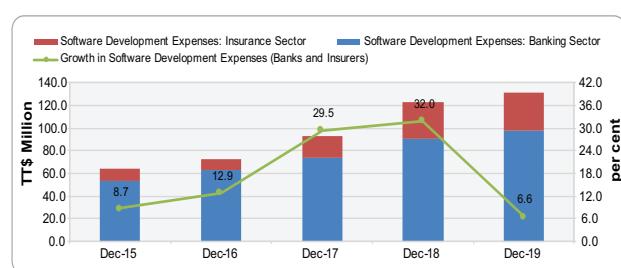
underscored the value of digitalization as social distancing measures resulted in reduced working hours or closure of operating branches at many of the nation's financial service providers. Institutions have actively encouraged the use of electronic channels to conduct business (including online and mobile banking as well as online claims systems) and have ramped up support through offsite assistance. At the same time, the rapid transition to these digital alternatives can lead to longer-term adoption by consumers who may come to appreciate the conveniences offered. Together, these point to a greater shift toward the digital delivery of products and services in the short- to medium-term, warranting ongoing analysis of the associated risks.

Figure 37
Vulnerabilities and Risks Assessment Framework –
Rapid Digitalization in the Financial Services Industry



Source: Central Bank of Trinidad and Tobago.

Figure 38
Financial Sector Software Development Expenses, 2015 – 2019

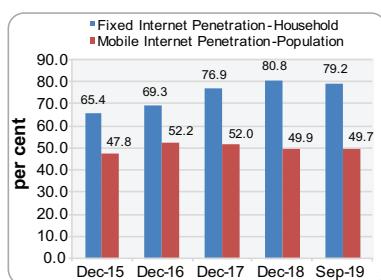


Source: Central Bank of Trinidad and Tobago

The ease with which this transition can occur is aided in part by domestic usage of information and communication technology (ICT), as well as current access to ICTs and the capacity of domestic infrastructure to facilitate wider availability. Trinidad and Tobago reports a high internet penetration rate with around 79 per cent of households having fixed internet access at the end of 2019, while almost half the population utilize mobile internet through post-paid and prepaid subscriptions (Figure 39). The mobile internet market is primed for expansion given the significant mobile voice penetration rate; there are 155 mobile voice subscriptions per 100 persons, well over

the average for the Americas of 110 subscriptions (Figure 40). Work is underway at a national level to increase ICT availability, connectivity and usage by promoting investment to support universal broadband access for households and businesses and enhancing digital literacy.³⁰ The financial sector can exploit these technological developments to expand their consumer base and deepen financial inclusion.

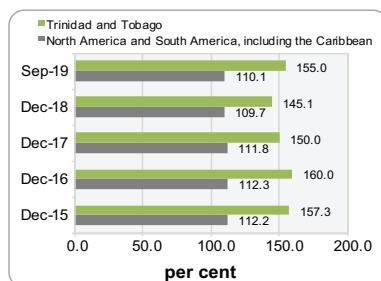
Figure 39
Internet Subscription Penetration Rates,
Dec 2015 – Sep 2019



Sources: Telecommunications Authority of Trinidad and Tobago and ITU World Telecommunication/ICT Indicators database

Source: Telecommunications Authority of Trinidad and Tobago, ITU World Telecommunication/ICT Indicators database.

Figure 40
Mobile Voice Penetration - Population,
Dec 2015 – Sep 2019



Sources: Telecommunications Authority of Trinidad and Tobago and ITU World Telecommunication/ICT Indicators database

As financial institutions broaden the digital delivery of products and services through online and mobile platforms, the access points and complexities of cyber-attacks on their systems increase commensurately. A cyber-attack can be described as the malicious use of information technology to disrupt financial services or access sensitive data to commit theft and fraud. While attacks may directly target FMs (single points of failure) or financial institution systems, hackers often gain access through third-party exposures such as partners and vendors. The 2018 FSR highlighted the risks associated with cyber-attacks in an increasingly digital financial landscape. Attacks on critical business operations (FMs) or a key player in the payment system may lead to settlement and liquidity risk due to the inability to settle obligations and the temporary loss of funding; systemic liquidity risks may manifest due to interconnectedness among players in the system. Other quantifiable costs may stem from financial losses from the theft of funds, as well as expenditure on cyber insurance, cyber security systems, recovery and compliance in the aftermath of an attack. Reputational risks may be less measurable, but the effects may be longer lasting and more difficult to repair. Cyber-attacks may engender distrust and loss of confidence in digital transformation, which has the potential to extend to traditional financial services, leading to diminished confidence in financial institutions. Negative spill-overs can hinder financial inclusion and impede economic growth and development, for example through the reduction in resources available for lending and investment.

Trends in cyber risk for the financial sector and the adequacy of cyber security frameworks continue to be monitored at the Central Bank to ensure licensees are balancing risk with opportunity. Supervision intensified at the beginning of 2020 as the Central Bank began a thematic review of cyber risk on the commercial banking sector, informed in large measure by the results of a cybersecurity survey issued in 2019. Concurrently, work is ongoing to formalize a reporting process for cyber incidents recorded at the institutions. Moreover, as the Central Bank moves to adopt fully Basel II/III, financial institutions would be required to have systems in place to monitor, manage and report on operational risks which includes cyber risk. Banks will also be expected to stress their main risks under Pillar 2 Supervisory Review and Evaluation Process³¹ of the Basel II/III Capital framework. In this regard, the

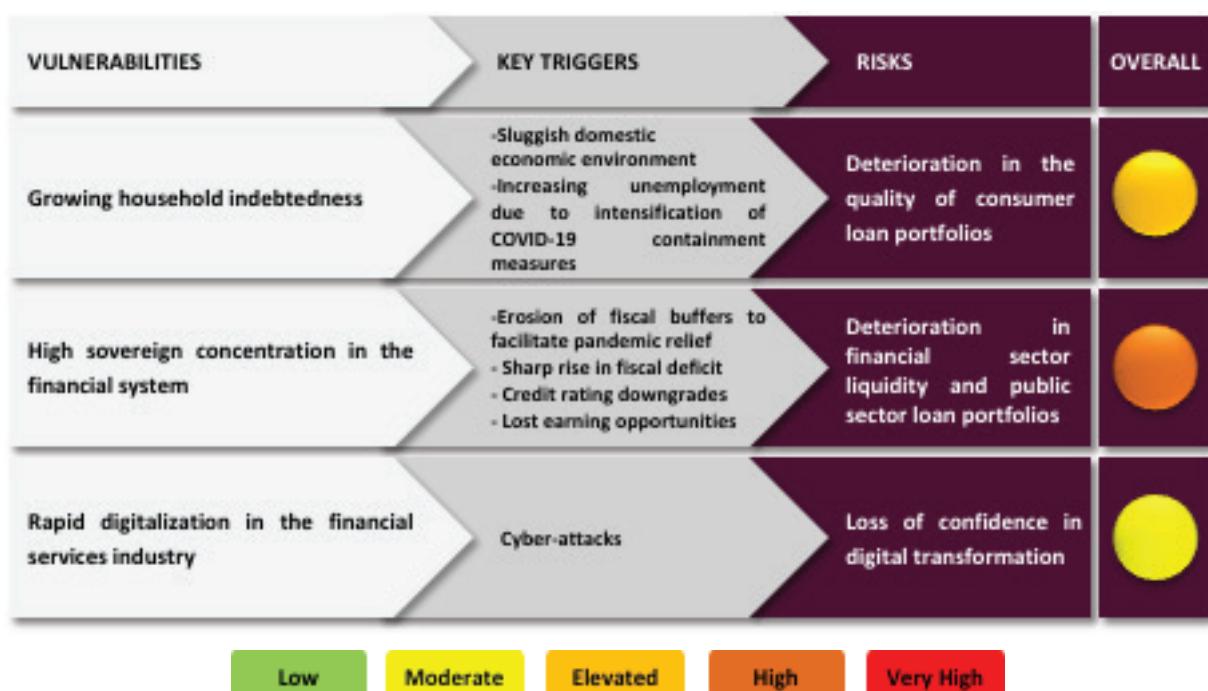
³⁰ National ICT Plan Working Group. "Trinidad and Tobago's National ICT Plan ICT Blueprint 2018 – 2022" Ministry of Public Administration, August 2018.

³¹ Under Pillar 2, banks will be required to develop an Internal Capital Adequacy Assessment Process where they assess the optimal amount of capital that they need for their material risks, including under plausible stress scenarios.

probability of the loss of confidence in digital transformation is '**moderate**', consistent with the assessment in the 2018 FSR. However, its impact has been raised from 'moderate' to '**elevated**' given the anticipated increase in the delivery and adoption of digital products and services in the aftermath of COVID-19. There may be a segment of late and /or reluctant adopters who may be more vulnerable to cyber-attacks. The overall risk remains '**moderate**'.

The heat map below (Figure 41) summarizes the key vulnerabilities and associated risks along with an overall risk assessment.

Figure 41
Summary Heat Map –
Key Vulnerabilities and Risks to Financial Stability in Trinidad and Tobago



Source: Central Bank of Trinidad and Tobago.

BOX 3: HOW RESILIENT IS THE REAL ESTATE MORTGAGE MARKET?

Economic growth has averaged -0.6 per cent per annum during 2009-2018. Despite subdued economic activity over the period, the real estate mortgage market in Trinidad and Tobago has consistently expanded at a rate significantly above real GDP growth. Is this high rate of growth sustainable and could it pose potential challenges for financial institutions in the years ahead as loan concentration intensifies? This box examines the banking sector's resilience to shocks to its real estate mortgage portfolio.

Though mortgage lending is available through insurance companies, pension funds, other private institutions and government agencies, the overwhelming majority is issued by the banking sector (commercial banks and non-bank financial institutions). The banking sector mortgage portfolio has more than doubled since 2009 and stood at \$23.7 billion at the end of 2019; two-thirds of this amount is attributable to consumers (Figure 1). At the same time, mortgages remain the largest component of the consumer loan book (43 per cent). After a slowdown in the growth rate for the period 2015-2018 (Figure 2), growth in residential mortgages returned to double-digits in the latter half of 2019 reigniting concerns about a potential asset bubble. There has also been a steady climb in the share of commercial mortgages as a per cent of total loans to the business sector (Figure 3). Mortgages are the second largest component of the business loan book (25 per cent), with the largest component holding a mere 1 per cent edge.

Anecdotal evidence suggests that a combination of factors may be fuelling the consistent growth in the mortgage market including high liquidity in the banking sector; increasingly favourable loan-to-value ratios (for selected customers); low interest rates; the persistent demand for housing; and aggressive marketing efforts by commercial banks amidst rising competition from other agencies for financing. On the other hand, it can be argued that stable real estate prices may also be a contributing factor as the property price indicator, the median residential house price, fluctuated between just \$1.1 million and \$1.3 million from 2013 to 2017.¹ This gives some measure of predictability for collateral values in the event of default.

Consideration of the drivers behind the growth in real estate mortgages is important as developments in the macro-financial environment can have a strong influence on the quality and resilience of the mortgage portfolio. For example, Workers' Bank's Varinstall mortgage demonstrated how innovations in housing finance can mutate and present risks to financial stability.² Falling property prices or shocks to economic agents' debt-servicing capacities (triggered by a loss of income or increasing interest rates) can have significant adverse repercussions for bank solvency and liquidity given that residential and commercial mortgages account for 30 per cent of the sector's total loan portfolio. The Central Bank routinely assesses the impact of extreme, but plausible shocks on the capital adequacy of commercial banks utilizing stress testing techniques.

¹ Using data supplied by the Association of Real Estate Agents and private sector valuers, the Central Bank of Trinidad and Tobago (the Central Bank) estimated the median residential house price of a three-bedroom home in Trinidad and Tobago from 1971 – 2017 (the statistic was discontinued in 2017).

² To increase their share of the real estate market, the Workers' Bank introduced a novel mortgage financing scheme called the "Varinstall mortgage" in the late 1970s and early 1980s. While Varinstall mortgages were popular due to initially low instalments, provisions for escalation of the instalments were based on the assumption that property values as well as incomes would continue to rise annually, the onset of an economic recession in the latter half of the 1980s created distress for the product. As at April 1989, about 90 per cent of the entire mortgage portfolio was in arrears. This led to chronic liquidity problems for Workers' Bank, resulting in its technical insolvency and the ultimate intervention of the Central Bank in April 1989.

BOX 3: Continued

Results of an instantaneous deterioration of the real estate mortgage portfolio³ suggested that commercial banks have healthy capital buffers enabling them to withstand a wide range of shocks to mortgagors' debt-servicing capacities. This was due in part to their high asset quality as non-performing loan ratios for the consumer and commercial real estate mortgage portfolios stood at just 1.0 and 3.8 per cent, respectively for December 2019. When the shock was applied, the commercial banking sector's capital adequacy ratio (CAR) fell by 4.8 percentage points to 15.2 per cent, well above the proposed 10 per cent Basel II minimum requirement when instituted.⁴ Further analysis, via breaking point stress testing, showed that the sector remained resilient in the face of a significant write-down of the portfolio. It was determined that just under 31 per cent of residential and commercial mortgages (\$7.3 billion) would have to be written off before realizing the minimum 10 per cent CAR.

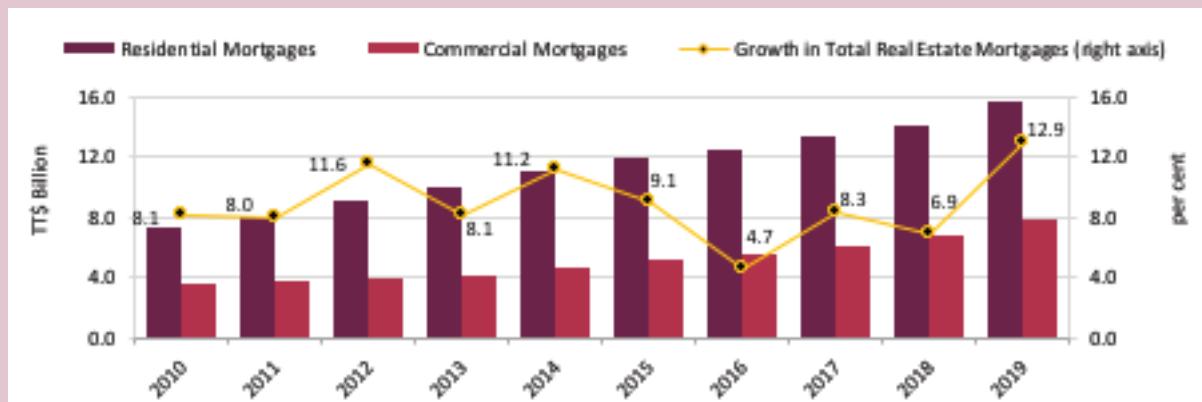
Trinidad and Tobago has entered a period of heightened economic uncertainty due to the COVID-19 outbreak and falling energy prices, increasing the probability of default as economic agents face distress. However, with the support of the Government and the Central Bank, measures have been introduced by commercial banks to alleviate the financial burden of affected parties and preserve bank asset quality. While deferrals and refinancing options could serve as additional stop-gaps during the containment period, there is no guarantee that households and businesses will be in a better position to repay their debt obligations after the deferral period has ended. Second-round shocks to the macro-financial system may manifest or containment measures may be intensified if COVID-19 is more persistent than originally anticipated. This may result in a slowdown in the rate of expansion of the mortgage portfolio or conversely it could intensify loan concentration as lending in other categories fall precipitously. In the emerging economic dispensation, property prices and property valuations may face downside risks. In addition, business and household incomes may be compromised for a period beyond when the threat of COVID-19 infection dissipates.

³ It is assumed that 10 per cent of loans that are current and past due (PD) 1-3 months are migrated to the 3-6 months PD category; 25 per cent of loans PD 3-6 months are migrated to the 6-12 months PD category; and 100 per cent of loans PD 6-12 months are migrated to the over 12 months PD category. Provisions are calculated as follows for the new portfolio: 6 per cent of loans that are current and PD 1- 3 months; plus 20 per cent of loans PD 3-6 months; plus 50 per cent of loans PD 6-12 months; plus 100 per cent of loans over 12 months PD. Capital is adjusted based on additional provisions required.

⁴ The pre-shock CAR, adjusted for provisioning, was 19.9 per cent.

BOX 3: Continued

Figure 1: Banking Sector Real Estate Mortgages Portfolio, 2010 – 2019



Source: Central Bank of Trinidad and Tobago.

Figure 2: Consumer Real Estate Mortgages,
2010 – 2019



Source: Central Bank of Trinidad and Tobago.

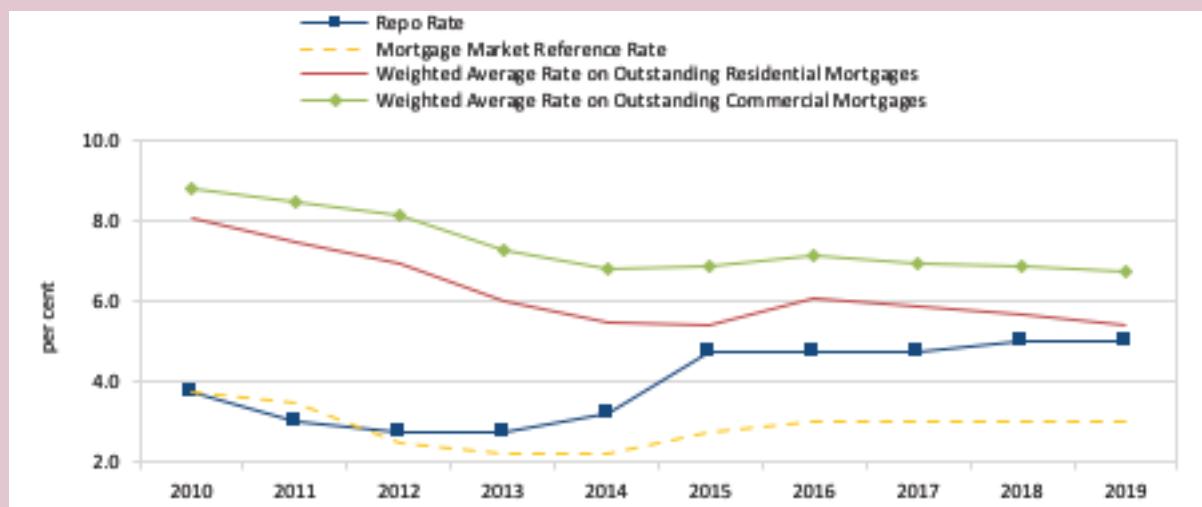
Figure 3: Commercial Real Estate Mortgages,
2010 – 2019



Source: Central Bank of Trinidad and Tobago.

BOX 3: Continued

Figure 4: MMRR and Selected Interest Rates, 2010 – 2019



Source: Central Bank of Trinidad and Tobago.

BOX 4: MACRO-FINANCIAL STRESS SCENARIO: A FRAMEWORK FOR A PANDEMIC SHOCK TO THE DOMESTIC FINANCIAL SECTOR

A pandemic poses a unique threat to financial stability as exogenous shocks emanating from global health crises have been historically observed to spawn multiple risks in the macro-financial environment. The COVID-19 pandemic is the latest example of this extraordinary shock which has snowballed into the greatest challenge to the global financial system since the Great Depression. Though a pandemic is a rare and uncertain event, the Central Bank has been cognizant of its threat to systemic risk and had considered that the transmission channels for such an event would mimic the local natural disaster stress scenario which has formed part of the Central Bank's routine stress testing exercise for commercial banks since 2010. This box widens the scope and traces the channels through which a pandemic shock can directly and indirectly affect the local financial system. The emergence of the novel coronavirus demonstrated that during a pandemic governments focus on developing and implementing strategies to contain infection cases or 'flatten the curve'. Even so, the severity or socio-economic consequences of a pandemic are not dependent solely on its impact on public health (a factor of its transmission and mortality rates). Of equal importance is the public response to alleviate its spread and the subsequent implications for macroeconomic and financial variables.

Internationally, widespread efforts to contain transmission of a communicable disease by stifling activity may lead to heightened uncertainty and turmoil in financial markets and the real economy. A global economic contraction can materialize on account of declining international trade, productivity, consumer spending and corporate investment. Domestically, Trinidad and Tobago may face a first-round shock to public and private incomes as a result of its own containment measures which may shut-in activity for a number of economic sectors, of which the services sector is expected to be hardest hit¹. Reduction in the economy's productive capacity may lead to declines in gross domestic product (GDP). Second-round effects are likely to be more severe as income losses faced by households and corporates could translate into mounting balance sheet imbalances. While fiscal support measures may temporarily offset a proportion of the income shock, they can create additional strain on government resources and contribute to a widening of the fiscal deficit. Financing the deficit could result in an intensification of the sovereign-bank nexus against the backdrop of a commercial banking sector which is a major source of domestic financing for the Government.

Pandemic shocks heighten credit risks for financial institutions via a number of channels which can impact banks' liquidity and profitability. Income shocks to the private sector may result in delays in debt-service payments in the banking sector and increased requests for surrenders, lapses or cancellations of insurance policies. Specifically, life insurers could face an increase in morbidity and mortality claims depending on the local proliferation of the virus. Insurers' balance sheets may also be affected if there is an increase in reinsurance rates to ease pressure from increased claims faced by global reinsurers. Consideration must be given to operational risks as well as risks faced in other areas of the balance sheet such as equity and investments. Foreign equity markets will likely be subjected

¹ Chapter 3 outlines potential credit risks emanating from the services sector due to curtailment measures related to the COVID-19 pandemic.

BOX 4: Continued

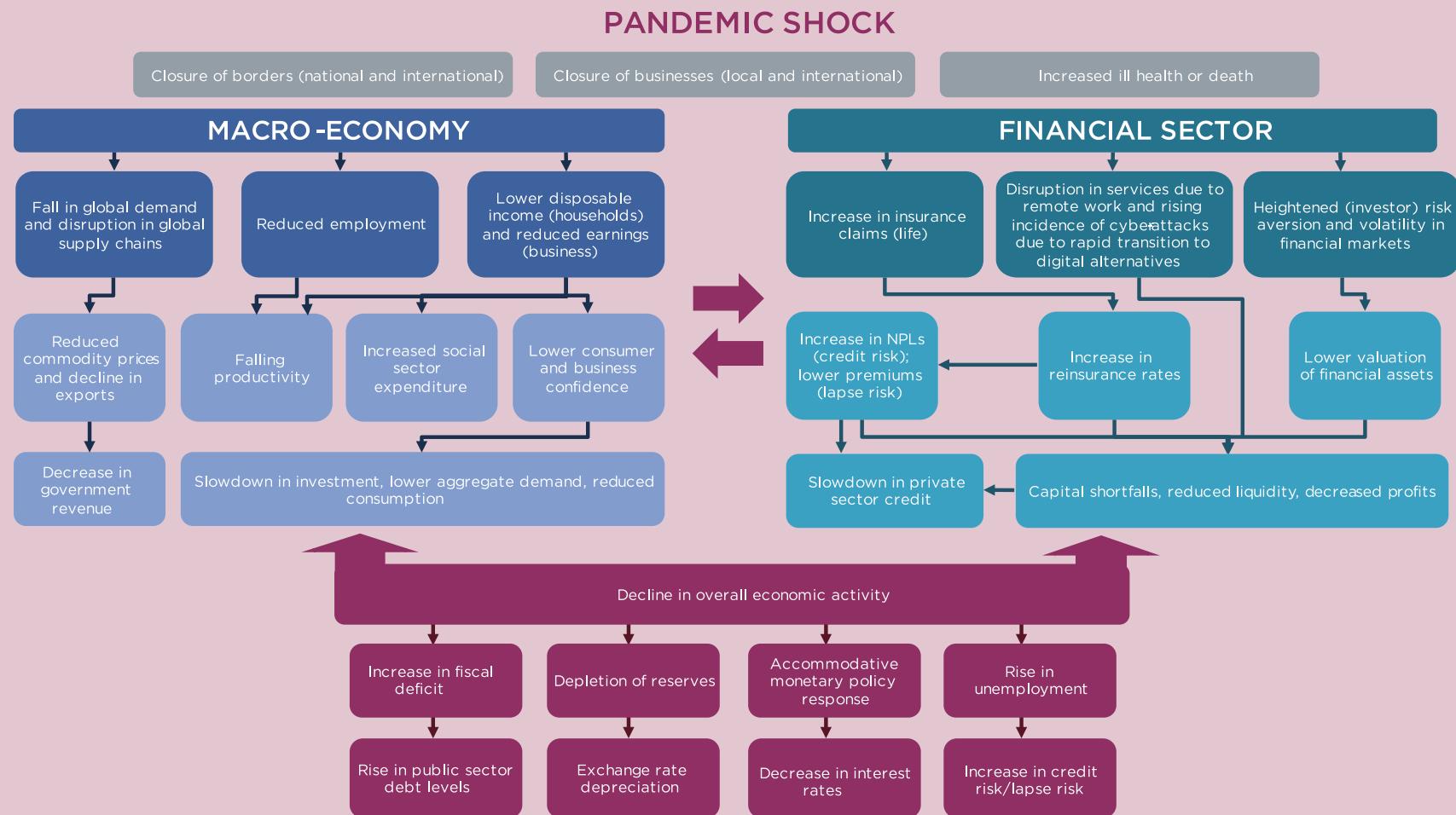
to high volatility as a result of an outbreak. Locally, deteriorating macroeconomic conditions have weighed on the performance of listed companies and their stock values. Investor sentiment may also wane resulting in decreased demand for domestic financial products. At the same time, global monetary policy responses to prevent a possible credit crunch – including the lowering of interest rates – could have implications for the valuation of domestic financial sectors' foreign investment portfolios (which are heavily domiciled in the US). It must be noted that companies outside the regulatory scope are susceptible to similar risk depending on their asset allocations. The interconnectedness between financial agents can exacerbate shocks to financial statements. Moreover, the increasing size and complexity of regional financial conglomerates can amplify cross-border contagion caused by shocks to regional GDP and financial conglomerates may not be able to rely on dividend income to bolster profitability.

Indirectly, spill-over effects from a global contraction in economic activity threaten to undermine domestic macroeconomic indicators and activate second-round shocks to the local financial system should initial containment measures prove insufficient. A global disruption in supply chains and weakened demand for energy products can worsen domestic revenue shortfalls, deepen the pandemic-driven shock to economic activity and ultimately influence labour market conditions. There is already limited fiscal space to weather the initial effects of the shock. Subsequent recovery efforts may necessitate alternative funding via withdrawals from the Heritage and Stabilization Fund, increasing government debt and tapping various streams of available multilateral support. Chapter 3 highlights concerns with increasing public debt levels and underscores the vulnerability associated with high sovereign concentrations in the financial system.

To reflect the potential stress of a pandemic crisis on the local economy, the local natural disaster stress test scenario provided a template which could be modified to capture the transmission mechanism of a pandemic shock to the local banking and insurance sectors (Figure 1). Policy responses from the Central Bank have not been incorporated into the baseline schemata. However, in an active scenario it is anticipated that appropriate fiscal, monetary and prudential action would reduce shock parameters and alleviate some of the identified pressures of a pandemic event on the macro-financial economy. For example, to stimulate economic activity the policy interest rate may be cut in order to reduce the cost of finance.

It is intended that this framework provide a baseline which can be modified in practical applications for different shock parameters, according to varying combinations of transmission and mortality rates, expected duration and intensity of policy responses for each unique event.

BOX 4: Continued



CHAPTER 4

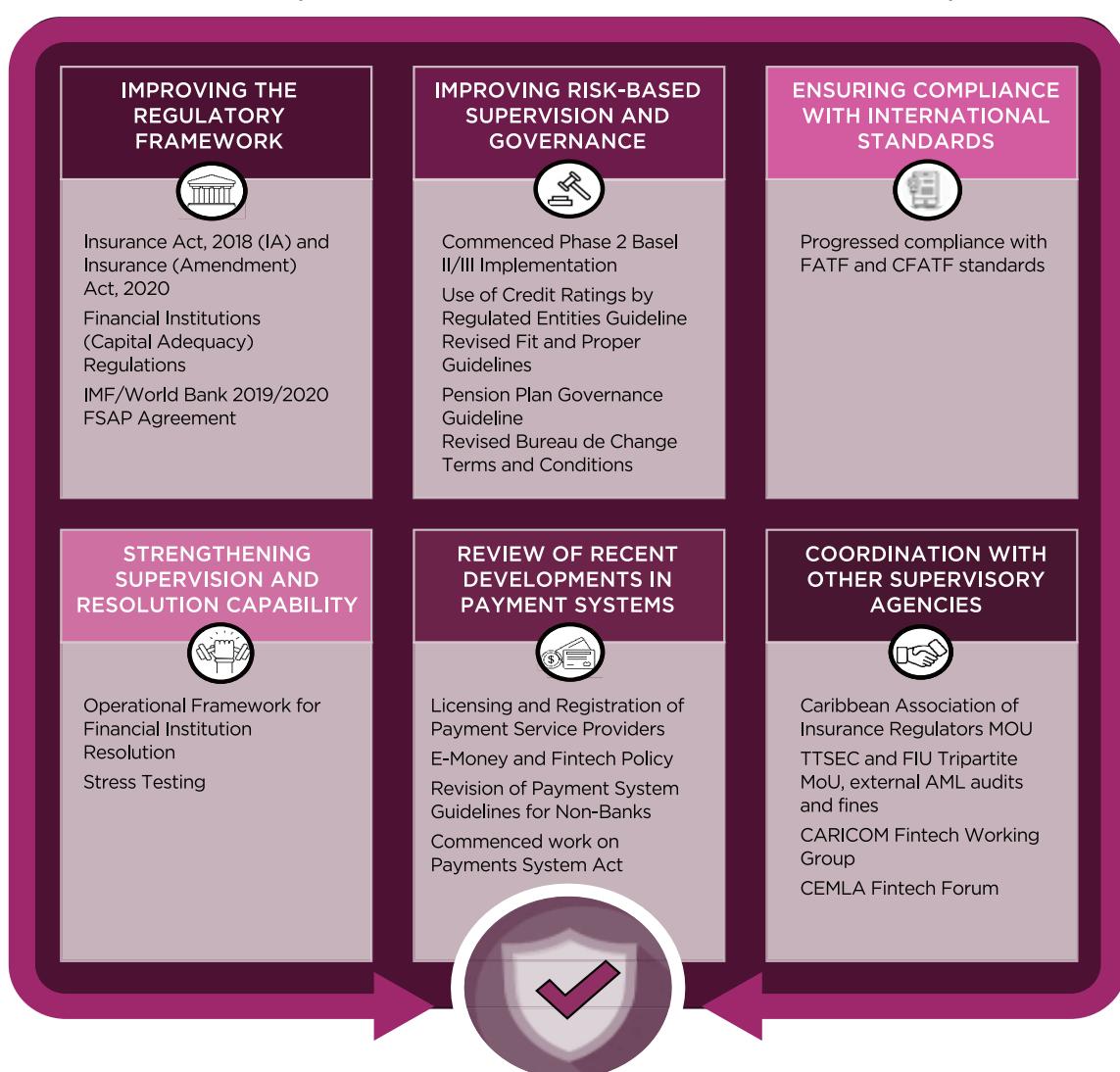
PROMOTING FINANCIAL STABILITY

CHAPTER 4

PROMOTING FINANCIAL STABILITY

The Central Bank has sought to safeguard financial stability under the guidance of its 2016/17 – 2020/21 Strategic Plan. Chapter 4 reviews strategic projects over the 2019 period and the early part of 2020 which have reinforced financial regulatory and supervisory capacity. The Central Bank also introduced or advanced other measures to promote operational resiliency and financial sector development. These measures are discussed in this Chapter.

Figure 42
Advances in Operational Resilience and Financial Sector Developments



Source: Central Bank of Trinidad and Tobago.

IMPROVING THE REGULATORY FRAMEWORK

1. Insurance Act, 2018 (IA)

The Central Bank is awaiting the proclamation of new IA in order to implement a more robust risk based regulatory regime for insurance companies. The IA was enacted and subsequently assented to on June 4, 2018. The Insurance (Amendment) Act, 2020 was passed by Parliament and received Presidential assent on February 18, 2020. Both Acts are to come into force upon proclamation by the President. Further, by way of the Finance Act No. 23 of 2019 (assented to on December 17, 2019), some necessary amendments to the Corporation Tax Act, Chap. 75:02 were enacted by section 4(k) to facilitate the taxation of insurance companies under the new framework contemplated by the IA. This would also come into effect by proclamation.

The Minister of Finance is expected to make recommendations later in 2020 for the date of Proclamation in respect of the legislation above.

IMPROVING RISK-BASED SUPERVISION AND GOVERNANCE IN FINANCIAL INSTITUTIONS

1. Basel II/III Implementation

In keeping with the Central Bank's objective to improve capital and liquidity standards for the banking sector, in November 2019 the Central Bank issued policy proposals for the implementation of Phase 2 of its Basel II/III project implementation plan. Phase 2 supplements the minimum capital standards addressed under Phase 1³² by introducing measures that promote more holistic capital measurement and management by licensees and financial holding companies. This is firstly achieved by introducing Pillar 2 of Basel II which requires institutions to comprehensively assess their material risks and hold additional capital (in excess of the regulatory capital requirement) for these

risks. Effective capital management will also be encouraged under Pillar 3 of Basel II which requires public disclosure by licensed financial institutions as a means of promoting sound risk and capital management practices.

Phase 2 includes further capital measures under Basel III aimed at promoting resilience of financial institutions and by extension the financial system. These include the non-risk based leverage ratio which complements Pillar 1 capital requirements and is aimed at preventing excessive leverage in the system, a capital conservation buffer which provides an additional capital cushion for institutions and prevents the distribution of earnings where this buffer is not maintained and a capital add-on for domestic systemically important banks in view of the risks that failure of such large institutions pose to the stability of the financial system. Given that failures of financial institutions may also be triggered by poor liquidity, Phase 2 introduces the liquidity coverage ratio which introduces a minimum short term liquidity requirement for licensees and financial holding companies.

Importantly, the Financial Institutions (Capital Adequacy) Regulations was promulgated with effect from May 14, 2020. This concluded Phase 1 of the Basel II/III project implementation plan by giving legal effect to the revised minimum capital requirements and allows for the introduction of Phase 2 elements³³.

³² Phase 1 of the Central Bank's Basel II/III project implementation plan addressed Pillar 1 (the Minimum Capital Requirement) which introduced comprehensive changes to capital requirements for licensees and financial holding companies including the inclusion of operational risk (in addition to credit and market risk) and an enhanced alignment of capital to the risk of individual credit exposures. Two Basel III measures aimed at improving the quality and quantity of capital held by licensed institutions (i.e. the increased Tier 1 ratio to 6% and the common equity tier 1 ratio of 4.5%) were also introduced. The minimum capital adequacy ratio was also increased to 10% as an additional buffer for risk.

³³ Given the potential impact of COVID-19 pandemic, while an initial timetable to transition to Phase 2 measures was indicated to the industry, the Central Bank has signaled its intention to delay the introduction of Phase 2 elements to January 2022. Moreover, the Regulations include a transition period that would allow institutions which, for any reason, are unable to meet the Phase I minimum capital requirements, a period of at least one year within which to do so. The transition period may be extended for a further year if deemed necessary by the Inspector of Financial Institutions.

2. Guideline for the Use of Credit Ratings by Regulated Entities

The Central Bank's "Guideline for the Use of Credit Ratings by Regulated Entities³⁴" establishes minimum standards that must be met by credit rating agencies whose ratings are to be recognized for regulatory purposes and sets out rules for the use of credit ratings by regulated entities addressing areas such as unsolicited ratings and multiple credit ratings. The Guideline was issued by the Central Bank in May 2020 and supports the capital adequacy Regulations for banks. The Guideline would also support the new capital adequacy regime to be implemented for insurers.

3. Revised Fit and Proper Guideline

In October 2019, the Central Bank issued a revised Fit and Proper Guideline to relevant persons licensed, registered or issued a permit by the Central Bank under the FIA, IA³⁵, the Central Bank Act, Exchange Control Act or other relevant legislation, for example, AML/CFT.

The updated Guideline generally sets out the principles and minimum expectations of the Central Bank on the factors regulated entities must take into account when considering the fitness and propriety of directors, officers, controllers, significant and controlling shareholders, and acquirers of regulated persons. A key update in the revised Guideline is the inclusion of requirements for consideration of conflicts of interest, time commitment of directors and the collective suitability of the board.

4. Guideline on Pension Plan Governance

In its effort to sensitize the operators of pension plans to international governance best practices, and after consultation with industry stakeholders, the Central Bank issued a Guideline on Pension Plan Governance in August 2019.

The good governance of a pension plan requires the professional management of a pension plan's operations by competent, knowledgeable persons who are aware of

their roles, responsibilities and accountabilities, and who conduct their activities in a lawful, accurate, consistent, equitable, ethical and transparent manner. The Guideline outlines practices which would meet these requirements. The Central Bank has encouraged pension plans to review their operations to identify where gaps in their governance practices may exist so that they may be remedied.

5. Guideline for the Treatment of IFRS 9 (Estimated Credit Loss Provisions) for Regulatory Capital Reporting Purposes ("ECL Provisions Guideline").

In December 2019, the Central Bank issued an Estimated Credit Loss (ECL) Provisions Guideline. The purpose of this Guideline is to provide financial institutions with guidance on the categorization of provisions under the ECL model as either general or specific provisions for regulatory capital reporting purposes, in line with the Basel Committee of Banking Supervision (BCBS) guidance.

6. Terms and Conditions for the Operation of a Bureau de Change

The revised Terms and Conditions for the Operation of a Bureau de Change was issued in December 2019. The Terms and Conditions details the licensing and operating requirements for Bureau operators and includes provisions for Bureau operators who conduct foreign exchange conversions to facilitate international money remittance transfers.

³⁴ The term 'regulated entity' means an institution which is licensed or registered by the Central Bank in accordance with the FIA, an insurance company registered by the Central Bank in accordance with the IA, or a financial holding company issued a permit under the FIA or IA or other written law.

³⁵ In relation to entities and persons regulated under the IA Chapter 84:01, only those parts that are relevant under the current legislative regime will be enforced by the Central Bank, until such time as the IA is proclaimed.

ENSURING COMPLIANCE WITH INTERNATIONAL STANDARDS FOR AML/CFT AND TAX TRANSPARENCY

The Financial Action Task Force (FATF) International Co-Operation Review Group (ICRG) Monitoring

In January 2020, the FATF conducted an on-site assessment to verify Trinidad and Tobago's implementation of its ICRG action plan and to confirm that sustainable measures were in effect. Consequently, Trinidad and Tobago is no longer subject to the FATF's monitoring process and was removed from the FATF ICRG 'grey' list which mitigates potential for de-risking by correspondent banks.

The Caribbean Financial Action Task Force's (CFATF) Enhanced Follow-up Process

In May 2019, Trinidad and Tobago underwent its third CFATF enhanced follow-up and technical compliance review. The CFATF concluded that there were significant improvements in the country's AML/CFT regime. Consequently, the ratings for several of the FATF Recommendations upgraded. The country is now rated 'Compliant' or 'Largely Compliant' on thirty-five (35) Recommendations and 'Partially Compliant' on five (5) Recommendations.

Trinidad and Tobago's OECD Global Forum Status and Compliance with the EU's Tax Transparency Standards

Notwithstanding the country's removal from the FATF 'grey' list, as at April 2020, Trinidad and Tobago remains the only Global Forum member country that is non-compliant with the Global Forum's Standard for the Exchange of Information on Request (EOIR) for tax purposes after the First Round Peer Review.

As at February 18, 2020, Trinidad and Tobago along with 11 other jurisdictions, was included on the EU's list of non-cooperative jurisdictions for tax purposes. Trinidad and Tobago was deemed a non-cooperative jurisdiction since 2017 and remains on the list because of:

- i. its non-application of automatic exchange of information;
- ii. its "Non-Compliant" rating by the Global Forum for the EOIR;

- iii. its non-signage and non-ratification of the OECD Multilateral Convention on Mutual Administrative Assistance in Tax Matters; and
- iv. the presence of a possible harmful preferential tax regime.

To address the requirements, in March 2020 the Tax Information Exchange Agreements (United States of America) Act, 2017, the Income Tax Amendment Act and the Mutual Administrative Assistance in Tax Matters Act were assented to in Parliament and await proclamation. Additionally, Trinidad and Tobago is scheduled for its Second Round Peer Review of the Global Forum in the third quarter of 2020.

STRENGTHENING TECHNICAL AND ANALYTICAL CAPABILITY IN SUPERVISION AND RESOLUTION

An Operational Framework for the Resolution of Financial Institutions

An Operational Framework for the Resolution of Financial Institutions (formerly the National Financial Crisis Management Plan) was reviewed and updated in 2019 by key stakeholders, namely the Trinidad and Tobago Securities and Exchange Commission (TTSEC) and the Deposit Insurance Corporation of Trinidad and Tobago, following completion of an internal review.

While the former Plan addressed crisis situations in institutions considered systemically important, the Framework was expanded to cover all regulated financial entities. The Framework is intended to guide the management and resolution of a financial institution in distress without severe systemic disruption and ultimately aims to minimize recourse to taxpayers' funds by either: (i) Facilitating the return or recovery of the financial institution to financial strength and viability; or (ii) Enabling orderly resolution, including exit from the market.

Once finalized and agreed upon by all relevant stakeholders, including the Ministry of Finance, the operational aspects of the framework will be further detailed in regulator-specific operational handbooks which will present a detailed, step-by-step approach to managing the resolution of a financial institution in distress.

Stress Testing

Technical assistance received from the Caribbean Regional Technical Assistance Centre (CARTAC) in 2019 and the involvement of the IMF and World Bank during their 2020 Financial Sector Assessment Program (FSAP) mission, were valuable in the further development of the single-factor and scenario stress tests for the banking sector and the design of insurance sector stress testing frameworks. The Central Bank intends to introduce a revised banking sector stress testing framework to the industry by December 2020.

The introduction of a top-down stress testing framework for the insurance sector is aimed for implementation in the upcoming financial year 2020/2021. It is expected that the results of insurance top-down stress tests will work alongside the Financial Condition Reports which insurers will be required to complete under the provisions of the IA. Work is also underway to develop frameworks for stress testing of payment systems. Stress testing will assist the Central Bank in its surveillance of systemic risk by shedding light on potential vulnerabilities in the financial system which could erode financial institutions' capital base.

REVIEW OF RECENT DEVELOPMENTS IN PAYMENT SYSTEMS

Licensing and Registration

In 2019, three Payment Service Providers (PSPs) were registered with the Central Bank. Two of these PSPs were previously registered BPSPs but were required by the Central Bank to be registered as PSPs as their payment service offering had expanded over time beyond that of utility companies³⁶.

Policy and Guidelines

E-Money Policy

Of the 16 expressions of interests received in 2019, half pertain to prospective e-money issuers. However, these applications could not be advanced since the E-money Order is yet to be enacted. Section 17(4) of the FIA provides

for the Minister by Order to allow categories of persons other than licensed financial institutions to issue e-money subject to meeting certain specified terms and conditions. In this regard, the Central Bank completed and submitted an E-Money Policy and draft Ministerial Order to the Minister of Finance in October 2019. The Central Bank has been advised that the E-money Policy is being advanced and therefore is awaiting the making of the Order.

Fintech Policy

Further work is ongoing towards establishment of an innovation hub and regulatory sandbox which will allow for live testing of entities' innovative products and services prior to full public launch. The Central Bank has developed the Fintech Policy which specifies how it intends to engage with fintechs. In keeping with the Policy, a Joint Fintech Steering Committee has been established which comprises the Central Bank, TTSEC and the Financial Intelligence Unit of Trinidad and Tobago (FIUTT) to provide collaborative oversight over new and innovative developments in fintech. Two key deliverables of the Fintech Policy are the establishment of a regulatory Innovation Hub and a Regulatory Sandbox. The Innovation Hub formalizes the process for the regulators to engage with fintechs to, inter alia, understand their business models and explain regulatory requirements and expectations. The Regulatory Sandbox is the testing environment for those fintechs with novel business models but who do not satisfy all regulatory requirements at the point of application and /or where the regulators may have concerns about certain aspects of the entity's business model, risk management or controls.

Guidelines for Non-Banks in Retail Payments

Due to the ongoing technological innovations occurring in the financial services industry generally and more specifically in the payments space within recent times, the Central Bank updated its guidelines governing Payment System Operators and Service Providers. To this end, Payment System Guidelines 2 and 3 entitled "Registration and Operation of Non-Interbank Payment Systems" and "Operation of Payment Service Providers" were merged into one Guideline entitled "Non-Banks Non-Financial

³⁶ See notice titled "Authorised Payment Service Providers and Payment System Operators" via <https://www.central-bank.org.tt/sites/default/files/page-file-uploads/central-bank-of-trinidad-and-tobago-approved-payments-system-providers-operators-jan222020.pdf> published to the Central Bank's website, which identifies the entities that were registered or licensed with the Central Bank as at January 22, 2020.

Institutions in Retail Payments". The latter provides more comprehensive guidance for entities wishing to provide payment services or operate a payment system. The Guideline applies to any entity that provides services along the payment chain including those providing software and hardware to facilitate payment services.

COORDINATION WITH OTHER SUPERVISORY AGENCIES

Key initiatives to strengthen supervisory collaboration included the hosting of a supervisory college for a significant insurance group, strengthening of memoranda of understanding and participation in regional working groups on fintech.

The Caribbean Association of Insurance Regulators (CAIR)

CAIR implemented a Framework for Supervisory Colleges in September 2019 – an essential tool for supervision of cross-border insurance groups, following which, the Central Bank conducted a Supervisory College for a significantly important financial group with a regional footprint and with operations in the banking and insurance sectors. This was a major achievement which enhanced supervisory coordination and collaboration among regional regulators. Participants from 18 jurisdictions across the Caribbean attended the College, which was held over a two-day period and was the first of its kind in the insurance sector in the Caribbean. The participants included regulators from 20 supervisory agencies in the region, inclusive of the Bank of Jamaica and the TTSEC.

Issuance of a Multilateral Memorandum of Understanding (MMOU) & Operating Protocols

The Central Bank repealed its two bilateral MOUs with the TTSEC and the FIUTT and replaced it with an MMOU & Operating Protocols with TTSEC and the FIUTT in July 2019. The MMOU strengthens provisions for collaboration and co-operation with respect to supervisory and regulatory functions and duties, and for the sharing of confidential information.

CARICOM Fintech Working Group (CFWG)

The CARICOM central bank governors established the CFWG in November 2016, which functions as an advisory group to the central bank governors on fintech-related matters. In 2019, Barbados assumed chairmanship of the work group, succeeding Jamaica. The CFWG held its annual face-to-face meeting in Curaçao during the Center for Latin American Monetary Studies (CEMLA) Regional Payments Week in November 2019. The discussions focused on the 2019/2020 work agenda and ongoing regional fintech developments.

The work group is undertaking research toward developing a common framework as far as possible for treating with digital currencies. Two surveys have been conducted: firstly, to ascertain the status of digital currencies in the region (2018); and secondly, the status of the legal and regulatory framework for digital currency (2019).

BOX 5: REGULATORY AND SUPERVISORY MEASURES IMPLEMENTED BY THE CENTRAL BANK IN RESPONSE TO THE COVID-19 PANDEMIC

The financial sector has introduced a number of support measures to mitigate the debt servicing burden of households and firms in the wake of the COVID-19 pandemic which erupted domestically in mid-March 2020. This box highlights the regulatory actions undertaken by the Central Bank in support of some of the forbearance measures introduced by licensees.

**Restructured Loans**

The Central Bank relaxed its regulatory treatment for restructured loans due to deferred payments or rate reductions and past due facilities for a period of six (6) months. These conditions only applied to performing loans and loans past due up to 89 days as at March 1, 2020. Credit facilities which have been afforded deferred payments or rate reductions, should NOT be reported as "Restructuring or Rescheduled" on the monthly regulatory returns.

**Submission of Regulatory Returns**

The Central Bank granted licensees and financial holding companies a grace period of ten (10) additional business days from the regular due dates, for the submission of regulatory returns for a period of three (3) months.

**Virtual Meetings and Electronic Submission of Correspondence**

The Central Bank implemented a remote work policy with limited 'in office' presence from March 30, 2020 until further notice. Accordingly, the Central Bank indicated that no face-to-face meetings would be held with external parties and will instead utilize available audio and video conferencing facilities for meetings. All correspondence, documents and regulatory returns should be submitted electronically.

**AML/CFT Identification and Verification Requirements**

The Central Bank asked financial institutions to consider several measures for acceptance of electronic or digital identification where a person's identity cannot immediately be verified face-to-face during the COVID-19 period. Such measures included delaying physical verification of documents where non face-to-face business relationships are established and imposing limitations or restrictions on account usage until identity can be verified with original documents; accepting scanned documentation sent by e-mail, preferably as a PDF, accompanied by some form of declaration; and accepting recently expired government-issued identification to verify the identity of individuals.

**Submission of Personal Questionnaire Declaration (PQD) Applications**

A key document required to be submitted with PQD applications is the Police Certificate of Good Character (COC) from the Trinidad and Tobago Police Service or an Overseas Law Enforcement Clearance Certificate ("Clearance Certificate") from an equivalent body in a foreign jurisdiction. Given social distancing measures implemented due to COVID-19, the Central Bank advised its regulated entities that where the COC or Clearance Certificate is unavailable at the time of submission, the application will be assessed to determine if a final decision can be made in the absence of the COC or Clearance Certificate. COCs and Clearance Certificates however must be submitted to the Central Bank at the first available opportunity.

CHAPTER 5
AN ANALYSIS OF THE FINANCIAL
INTERCONNECTEDNESS OF THE DOMESTIC
BANKING INDUSTRY

CHAPTER 5

AN ANALYSIS OF THE FINANCIAL INTERCONNECTEDNESS OF THE DOMESTIC BANKING INDUSTRY

Financial technology has spurred efficiency gains in cross-border financial intermediation, but has also increased the number and strength of contagion channels by which shocks are transmitted between countries. Consequently, prudential authorities have been paying close attention to the level of interconnectedness not only across borders, but between the different components of a domestic financial system. Previous FSRs have highlighted regional financial interconnectedness as a vulnerability of the financial system as domestic institutions have expanded their footprint throughout the Caribbean. Most recently, the Central Bank's 2018 FSR discussed this phenomenon and shared regulators' approach to understanding its significance utilizing network analysis tools. Some Caribbean territories have conducted studies of their individual systems³⁷ and network analysis has been applied in several recent FSAPs or Financial System Stability Assessments including The Bahamas (2019) and Jamaica (2018). To undertake a national assessment, Trinidad and Tobago has benefitted from technical assistance sponsored by CARTAC. Against this backdrop, and in the context of a 2019/2020 FSAP, the Central Bank conducted its first domestic banking sector interconnectedness exercise.

This Chapter summarizes the approach to the identification and assessment of the defined network linkages within the banking industry based on direct, bilateral asset exposures. The results identify potential systemic linkages and the likelihood of shock transmission throughout the banking sector. The Chapter also discusses the usefulness of network analysis as a component of domestic macroprudential surveillance.

FINANCIAL NETWORK ANALYSIS

Financial network analysis is a mathematical instrument that is capable of analyzing the cross-sectional dimension of systemic risk, that is, the magnitude of risk due to direct or indirect links between financial entities at a point in time. Allen and Gale (2000) were cited as the first authors to use network theory to study financial systems. Since then a number of systemic events have occurred (GFC, Euro Area Debt Crisis), triggering the widespread use of financial network analysis as a tool to address the “too-connected-to-fail” problem³⁸.

The analytical approach to financial networks can be static and/or dynamic. Static network analysis depicts the financial network architecture (concentration and interconnections); identifies its core structural features; and tracks the evolution of the network over time to assess its robustness (Bennani, et al. 2014). Dynamic network analysis relies on simulation studies that allow regulators (and other researchers) to produce a metric on the domino effect induced by financial distress; identify systemic linkages and vulnerable institutions; and track the transmission of contagion (see IMF 2009; Bennani et al. 2014). Regulators generally apply the static approach as the first stage in understanding interconnectedness, before expanding the study with dynamic analysis.

The static approach to network analysis can be conducted via network-based or non-network-based models. The literature suggests that network-based studies that use direct exposures – those that are explicitly reported and observable³⁹ – are easier to manipulate.

³⁷ In Jamaica, Milwood (2014) used a two-pronged approach (both static and dynamic analysis) to examine the structure and resilience of the Jamaican financial system to credit and inter-bank funding shocks. The Eastern Caribbean Currency Union focused primarily on spill-over effects captured in dynamic network analysis (Csonto, et al. 2018).

³⁸ The “too-connected-to-fail” problem refers to the failure of one institution which could lead to successive rounds of failures of others in the system due to the existence of direct and indirect linkages between institutions (Chan-Lau 2014).

³⁹ Such as credit exposures between institutions; FMI relationships; third-party relationships; and other financial service dependencies (Arregui, et al. 2013).

However, the data requirements for these models are challenging to fulfil and are often backward-looking. Networks based on indirect exposures – those that arise from exposure to common risk factors⁴⁰ – are more comprehensive, but are highly subjective and reliant on underlying assumptions that are difficult to verify. Non-network-based studies draw on real-time, high-frequency data (for example, stock market data) but the model's results may be hard to validate and this data may not be available for some jurisdictions.

A review of the literature on financial network analysis, in particular, shows that the most prevalent sectors analyzed thus far have been the banking sector, payment system and the sovereign debt market (van Lelyveld and Liedorp 2004; Aydin et al 2011). As explained in the 2018 FSR⁴¹, nodes in a network can represent entities such as financial institutions, groups or sectors and the links connecting the nodes can represent an exposure or relationship between the entities. Major data sources include financial statements; outstanding exposures; large-value payment system transactions; and stock exchange prices. Extracted values for modelling interconnectedness include inter-bank cash flows or other quantitative data.

THE DOMESTIC FINANCIAL INTERCONNECTEDNESS PROJECT

Based on a comprehensive review of the literature and recognizing the limitations on data availability, it was determined that a network-based, static approach to interconnectedness was most feasible for the domestic financial interconnectedness project (FIP). However, the granularity of balance sheet-based data required to conduct the exercise was not readily accessible as it is not captured in standard Central Bank regulatory returns.⁴² As such, a succinct dataset was developed using the balance sheet regulatory return (CB20) and the Caribbean Regional Financial Project⁴³ template as its base. Specifically, the FIP template captured claims data⁴⁴ related to:

- i. Direct, bilateral (inter-institutional) exposures;
- and
- ii. Cross-border exposures.

In order to conduct an interconnectedness assessment as part of the FSAP, the FIP template was distributed to the banking and insurance industries in November 2019 and captured data as at June 2019. While data collection for the FSAP covered both banks and insurers, the FIP highlighted here focuses on the results of direct, bilateral (inter-institutional) exposures within the banking sector, that is, commercial banks and non-banks⁴⁵.

³⁹ Such as credit exposures between institutions; FMI relationships; third-party relationships; and other financial service dependencies (Arregui, et al. 2013).

⁴⁰ Such as similar business models; 'fire' sales; and informational contagion (Arregui, et al. 2013).

⁴¹ See Central Bank's 2018 FSR, Box 5 (Central Bank of Trinidad and Tobago 2019).

⁴² Balance sheet data collected from the Central Bank's regulatory returns (CB20 – Balance Sheet) represents banks' credit exposures to the aggregate banking sector, and not to an individual bank (bilateral exposures). Additionally, the structure of large (credit) exposure data, that is, the aggregate of all credit exposures to a person or a borrower group which amounts to 25 per cent or more of the capital base or assigned capital of a licensee ([CB 105 – \(Large\) Credit Exposures Reporting Form](#)), may not allow for appropriate 'data-matching' to construct a bilateral matrix of claims.

⁴³ The Caribbean Regional Financial Project was launched in 2013, with the assistance of the IMF, to identify financial stability risks due to interactions between regional banks, insurers and sovereigns; assess the resilience of the regional financial system to macroeconomic shocks; and strengthen macroprudential policies, alongside regional supervision and crisis management (Canetti, et al. 2017).

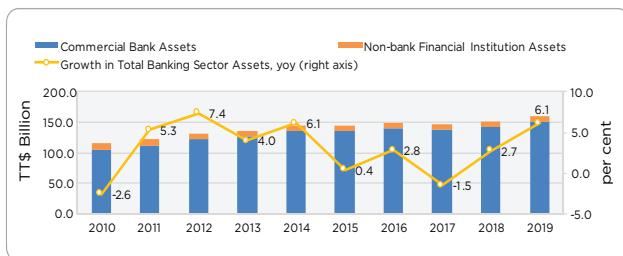
⁴⁴ According to the IMF (2014), "each claim is a financial asset that has a corresponding liability. Equity is regarded as a claim; it represents a claim of the owner on the residual value of the entity."

⁴⁵ Non-banks in Trinidad and Tobago refer to trust and mortgage finance companies, finance and merchant houses.

BANKING SECTOR: STYLIZED FACTS

As at December 2019, the banking sector comprised eight commercial banks and sixteen non-banks. Together, these institutions accounted for the majority of financial system assets (46.9 per cent) and a significant portion of GDP (96.8 per cent). The size of the banking industry has increased from \$116.1 billion at the end of 2010 to \$160.4 billion at the end of 2019 (Figure 43). This represents cumulative growth of just over 38 per cent over the period. Notably, four of the eight commercial banks contribute over 85 per cent of total banking sector assets and just under 90 per cent of deposits as at December 2019. There is also a noteworthy degree of concentration within the sector as indicated by Herfindahl-Hirschman Index values of 1,981 (assets) and 2,144 (deposits).

Figure 43
Growth in Total Banking Sector Assets,
2010 – 2019



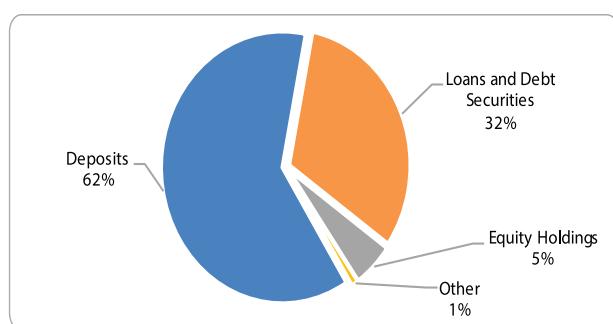
Source: Central Bank of Trinidad and Tobago

With respect to ownership structure, 11 banking institutions are locally owned and 13 are foreign-based.

Moreover, one bank and two associated non-banks are wholly owned by GORTT. GORTT also has controlling shares in another local bank. Foreign-based institutions have parent companies based in Jamaica, India, Canada and the US. Many commercial banks and non-banks form part of the same financial holding company. As such, there are expected linkages between these entities. Data collected for the FSAP supported this assumption. Total inter-bank claims as at June 2019 amounted to \$3.1 billion, with around one quarter representing intra-group exposures. Claims were largely classified as loans and debt securities, deposits and equity holdings. Figure 44 shows that deposits accounted for the overwhelming majority of claims (62 per cent). Further,

inter-bank claims as a per cent of total banking sector assets and total banking sector capital were minimal at 2.1 per cent and 15.5 per cent, respectively.

Figure 44
Inter-Bank Claims by Type, June 2019

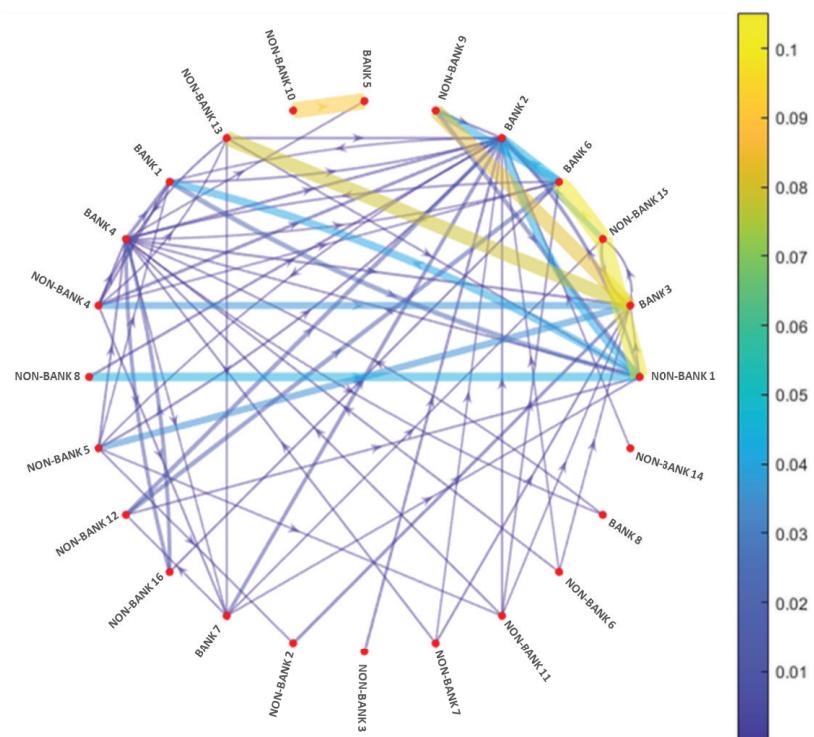


Source: Central Bank of Trinidad and Tobago

RESULTS AND ANALYSIS

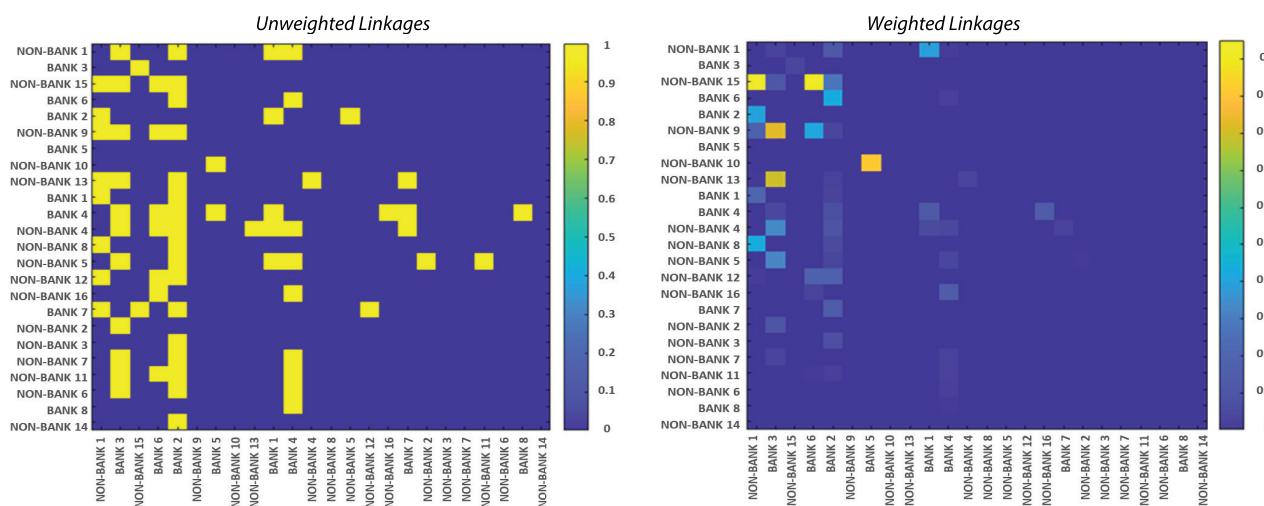
The inter-bank network map (Figure 45) illustrates the direct, bilateral asset exposures between the 24 institutions in the banking sector, but also gives insight into indirect linkages that exist. Each institution is represented by a node on the map (•) and each link or exposure between nodes is represented by a line. The network map is weighted and directed. That is, the colour and width of the line indicate the relative magnitude of the exposure within the network, while the direction of the arrow indicates the flow of funds. A node has a claim on another node to which the arrow is pointed. Additionally, Figure 46 presents associated heat maps which depict: i) unweighted linkages, indicating the existence of a relationship (value of 1); and ii) weighted linkages, indicating the existence and relative importance of a relationship within the network. Institutions on the y axis have claims on those on the x axis.

Figure 45
Network of Inter-Bank Bilateral Asset Exposures between Banks, June 2019



Source: Central Bank of Trinidad and Tobago

Figure 46
Heat Maps of Inter-Bank Bilateral Asset Exposures between Banks, June 2019



Source: Central Bank of Trinidad and Tobago

Figures 45 and 46 show that there are many interlinkages within the banking sector, but the most significant exposures are concentrated among few institutions. Direct claims between commercial banks were negligible, while exposures between banks and non-banks dominated the relationships (75 per cent of claims). One indigenous bank (Bank 2) and one foreign-owned bank (Bank 4) had the most number of connections with other nodes. Notably, 17 institutions had claims on Bank 2, though they were moderate in comparison to the rest of the network. Moreover, the sum of these claims represented under 2 per cent of Bank 2's assets and approximately 10 per cent of its capital base. A greater number of claims on banks rather than non-banks was generally observed, with the exception of Non-Bank 1; eight institutions listed claims on this locally owned non-bank. These exposures were material in the context of total banking sector claims and represented 18.5 per cent of Non-Bank 1's assets and 132.4 per cent of its capital.

Network measures gave credence to these observations and allowed for the quantification of systemic risks. The assessment of these statistics was done on two levels:

- i. Network-level analysis which focused on topological properties of the entire network; and
- ii. Node-level analysis where core nodes of the network were identified and investigated.

The former describes the level of connectivity within the network, while the latter highlights the centrality of the individual nodes, that is, their relative importance within the network. Table 8 presents the metrics used for both network-level and node-level analyses, though interpretation, computation and scores refer to the overall network.⁴⁶

Table 8
Statistical Properties of the Inter-Bank Network, June 2019

| Measure | Description | Interpretation | Computation | Score |
|--------------------------------|--|--|---|------------------------|
| Density | The overall level of connectivity in the network | Higher values indicate higher network connectivity | Ratio of the number of realized links (contagion paths) to the number of all possible links in the network | 13.04% |
| Diameter | The longest path that it will take for contagion to pass through the network | Lower values indicate higher network connectivity | The maximum value of the minimum connections (contagion paths) between each pair of nodes | 6 |
| Distance | The speed of transmission or flow of contagion throughout the network | Lower values indicate higher network connectivity | The average of the minimal amount of intermediary connections between each pair of nodes | 2.34 |
| Degree | The connectivity of nodes in the network | Higher values indicate higher network connectivity | The average (standard deviation) number of connections that nodes have in the network irrespective of the direction | 3 (2.51) |
| Strength | The intensity of connections in the network | Higher values indicate higher network connectivity | The average (standard deviation) of link weights of nodes in the network | 0.04 (0.05) |
| Reciprocity | The likelihood of 'bi-directional' relations between nodes in the network | Higher values indicate higher network connectivity | The ratio of reciprocated (bilateral) links in the network | 25.00% |
| Clustering Co-efficient | The size of counterparty risk of a node | Higher values indicate higher network connectivity | The relative frequency of triangles (clusters) in the network | 4.55% |

Source: Roukny, et al. (2014) and León (2015)

Note: For financial network analysis, the links or connections are synonymous to the bilateral exposures and thus are assumed to map the flow of contagion throughout the network. Scores for a given network indicate the complexity of the network at a given point in time. Most studies compare past network scores or cross-country/system scores to assess the relative depth of their network's complexity.

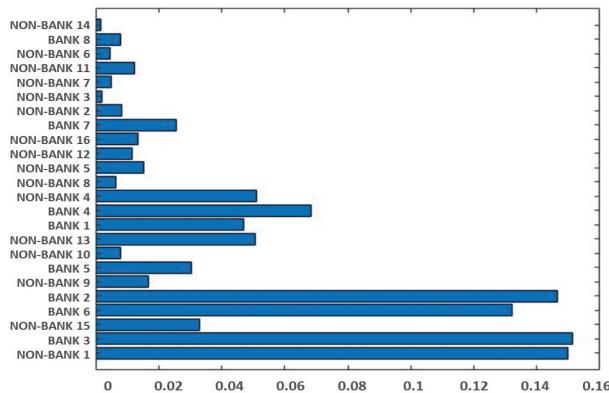
⁴⁶ In most instances, the sum, average or standard deviation of individual node scores is used to compute the network score.

The architecture of a financial network, that is, the connective and hierarchical structure, contributes to a system's robustness, fragility and resilience to shocks. Network statistics revealed that connectivity within the local banking sector is close, but there is limited density. The network appeared sparse with only 13 per cent of connections being utilized. However, there were close links between entities (on average about 2.3 connections between any two nodes) which signal a heightened threat of contagion pass-through in the event of a shock to an institution. Despite this, system-level results suggested that transmission of the shock may be slow, requiring six inter-bank connections before the entire network is affected. The average closeness of entities may be explained by the bank-based structure of the domestic financial sector and the associated preference with conducting business with commercial banks. The short distances within the network, compounded by the low number of existing links (network degree shows about 3 connections per node), suggested that several ‘well-connected’ nodes exist. This is supported by the data which showed the prevalence of intra-group exposures, as well as Figures 45 and 46 which indicated high concentrations of funding from a subset of institutions. These trends could point to systemically important connections within the network. Nevertheless, the intensity of the networks’ connections at a system level appeared low (0.04), reducing the likelihood of a system-wide collapse from a shock. Similar conclusions can be made when considering the likelihood of contagion through counterparties (second-round effects), which was only 25 per cent.

Centrality results (Figure 47) indicated that the local inter-bank network contains few nodes that are considered core to the network (contributing heavily to the centrality index⁴⁷). This confirmed preliminary observations made from the network maps (Figures 45 and 46). High in-degree (and in-strength) scores versus out-degree (and out-strength) scores⁴⁸ indicated where pools of contagion lie in the network. From an individual node perspective, the top five rankings of each category

of network measures outlined in Table 8 drew attention to three commercial banks (Bank 3, Bank 2, Bank 6) and one non-bank (Non-Bank 1). From the perspective of this network, these institutions represented a combined total of 44.7 per cent of total banking sector assets and 40.0 per cent of capital. Consequently, these results could suggest that the stability of the entire network is generally more dependent on the liquidity and solvency of four entities.

Figure 47
Contribution to Centrality Index, June 2019



Source: Central Bank of Trinidad and Tobago

⁴⁷ The centrality index employs Principal Component Analysis to aggregate different centrality metrics including degree, strength, distance, pagerank, hub centrality and authority centrality (León, et al. 2015).

⁴⁸ In-degree (and in-strength) scores measure the liabilities of nodes, that is, the number of entities that the node of interest has received funding from (and the weight of the exposure). Out-degree (and out-strength) scores measure the assets of nodes, that is, the number of institutions that the node of interest has funded (and the weight of the exposure). In the network map, in-degree scores are indicated by the number of arrows pointing toward an entity, while out-degree scores are indicated by the number of arrows emanating from the entity.

IMPLICATIONS

The FIP improves the understanding of domestic financial linkages and helps clarify policy options to manage contagion risk and mitigate costly spill-overs in the macro-financial system.

The static analysis of interconnectedness within the domestic banking industry lays the groundwork for a dynamic approach to network analysis, which can facilitate the application of shocks to the sector such as credit shocks, funding shocks and risk-transfer shocks (Chan-Lau 2014). Specifically, dynamic analysis incorporates simulation studies to quantify the strength of explicit contagion channels and the speed at which first-round shocks can propagate throughout the system for several rounds, inducing financial distress in a greater subset of institutions along the way. This would supplement the observations of network topology and centrality provided by the static approach and support the robust identification of risk drivers, systemic linkages and vulnerable institutions. Results would provide meaningful input into the Central Bank's initiatives to strengthen supervision through the designation and monitoring of systemically important financial institutions (SIFIs)⁴⁹—one of the Central Bank's key financial stability strategic projects.

At the same time, the identification of systemic risk drivers can inform top-down stress testing at the Central Bank. The Central Bank routinely assesses the resilience of individual commercial banks and the commercial banking sector to a range of factors⁵⁰. The current framework applies instantaneous shocks and possesses no early warning properties, underscoring the need for complementary dynamic models. The results of the network linkages within the banking sector suggest that there may be market concentration in the non-bank industry that can pose systemic risks. As such, it would be useful to extend coverage of the stress testing framework to the more significant non-banks as identified by their size and interconnectedness within the banking sector.

In order to strengthen technical and analytical capacity in defining and quantifying financial linkages and to support a comprehensive assessment of systemic risks associated with growing interconnectedness, the FIP template would have to be expanded to further disaggregate balance sheet data and capture exposures to other components of the domestic financial system. This exercise focused on bilateral asset exposures between institutions, but systemic linkages can arise in other inter-institutional relationships, for example, through large-value payment system transactions (direct) or common exposures to an institutional group or sector (indirect). As the structure of relationships evolves over time, the cooperation of licensees would be vital as efforts ensue to formalize data collection to allow for the periodic assessment of linkages.

CONCLUSION

Direct connections via bilateral asset exposures within the banking sector (commercial banks and non-banks) were determined to be limited but close, with a small subset of institutions acting as central nodes in the network. From a micro (node-level) perspective, this type of financial structure could potentially propagate shocks between neighbouring institutions very rapidly. However, from the macro (network-level) view, there is some delay before the entire network is affected. At the same time, the average strength of connections was low. The stability of a few nodes seems crucial to controlling cross-sectional risks within the banking industry. The exercise will serve as a foundation for the development of dynamic network models to monitor spill-over risks.

⁴⁹ According to the BCBS, interconnectedness is one of five main categories of indicators that can aid in the designation of a SIFI. Other indicators include size, substitutability, complexity and cross-jurisdictional activity.

⁵⁰ Inter alia movements in interest rates and credit conditions; the risk of large exposure shocks, an energy price collapse and local or regional disasters; and the effect of a sudden run on deposits (Hilaire, et al. 2011).

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APPENDIX

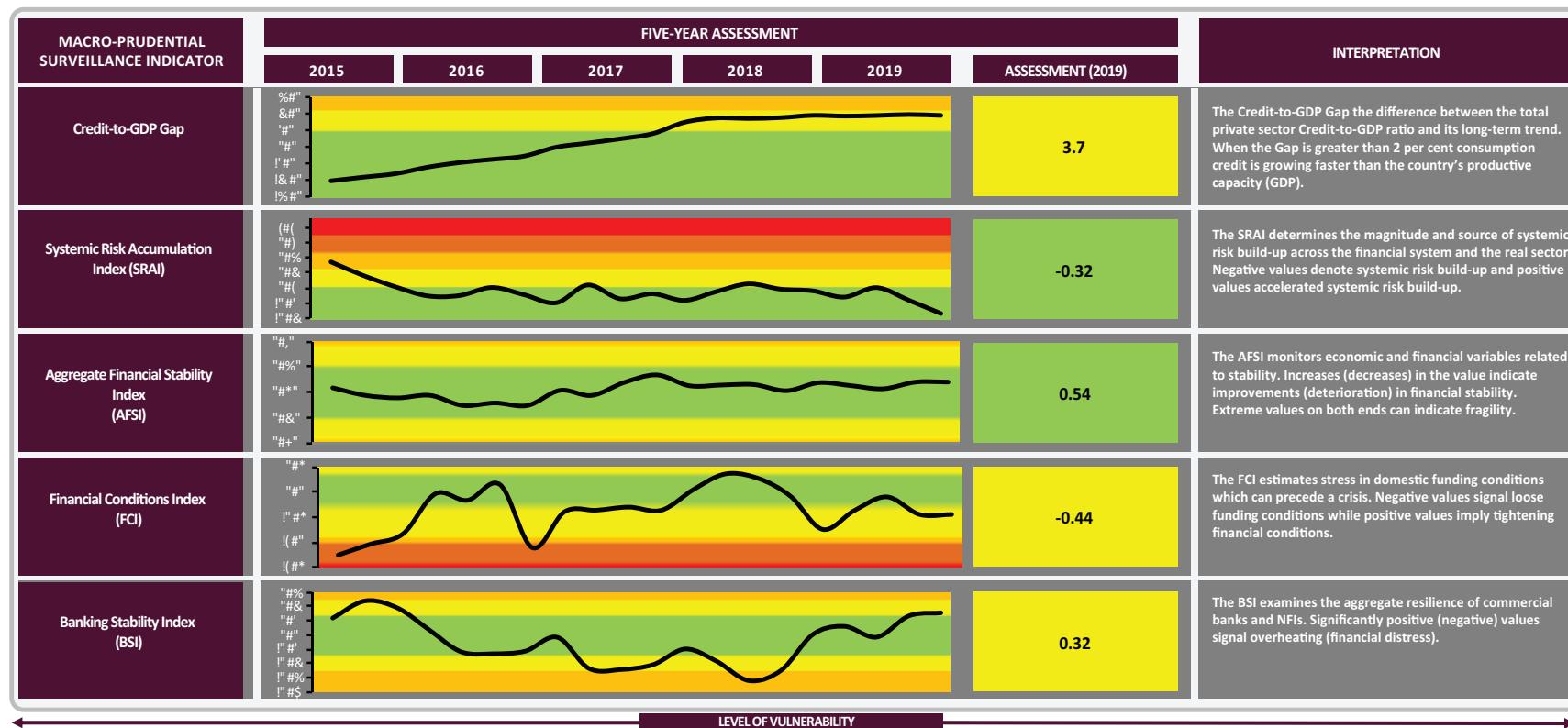
APPENDIX A
Banking Sector Loans by Sector,
2015 – 2019

| | TT\$ Millions (Absolute Values) | | | | | TT\$ Millions (Change) | | | | | Percentage Change (per cent) | | | | |
|--|---------------------------------|---------------|---------------|---------------|---------------|------------------------|------------------|------------------|------------------|------------------|------------------------------|------------------|------------------|------------------|------------------|
| | Dec-15 | Dec-16 | Dec-17 | Dec-18 | Dec-19 | Dec-14 Dec-15 | Dec-15 Dec-16 | Dec-16 Dec-17 | Dec-17 Dec-18 | Dec-18 Dec-19 | Dec-14 Dec-15 | Dec-15 Dec-16 | Dec-16 Dec-17 | Dec-17 Dec-18 | Dec-18 Dec-19 |
| PUBLIC SECTOR CREDIT ACTIVITIES | Dec-15 | Dec-16 | Dec-17 | Dec-18 | Dec-19 | Dec-14 Dec-15 | Dec-15 Dec-16 | Dec-16 Dec-17 | Dec-17 Dec-18 | Dec-18 Dec-19 | Dec-14 Dec-15 | Dec-15 Dec-16 | Dec-16 Dec-17 | Dec-17 Dec-18 | Dec-18 Dec-19 |
| Petroleum | 660 | 1,545 | 1,553 | 2,995 | 3,155 | (130) | 885 | 8 | 1,442 | 160 | (16.4) | 134.1 | 0.5 | 92.8 | 5.3 |
| Construction | 3,630 | 1,593 | 1,418 | 1,517 | 545 | 283 | (2,037) | (175) | 98 | (972) | 8.4 | (56.1) | (11.0) | 6.9 | (64.1) |
| Transport, Storage and Communication | 1,223 | 1,120 | 1,178 | 1,244 | 640 | 485 | (103) | 57 | 66 | (604) | 65.7 | (8.4) | 5.1 | 5.6 | (48.5) |
| Finance, Insurance and Real Estate | 2,026 | 2,555 | 2,585 | 2,539 | 4,470 | 16 | 530 | 30 | (46) | 1,931 | 0.8 | 26.1 | 1.2 | (1.8) | 76.0 |
| Electricity and Water | 3,069 | 2,555 | 2,639 | 1,168 | 1,228 | 1,941 | (514) | 83 | (1,470) | 60 | 172.0 | (16.7) | 3.3 | (55.7) | 5.2 |
| Other | 456 | 615 | 25 | 46 | 597 | (18) | 159 | (590) | 21 | 551 | (3.7) | 34.9 | (95.9) | 83.8 | 1,192.3 |
| TOTAL | 11,065 | 9,985 | 9,398 | 9,510 | 10,636 | 2,577 | (1,080) | (587) | 112 | 1,126 | 30.4 | (9.8) | (5.9) | 1.2 | 11.8 |
| BUSINESS CREDIT ACTIVITIES | Dec-15 | Dec-16 | Dec-17 | Dec-18 | Dec-19 | Dec-14 Dec-15 | Dec-15 Dec-16 | Dec-16 Dec-17 | Dec-17 Dec-18 | Dec-18 Dec-19 | Dec-14 Dec-15 | Dec-15 Dec-16 | Dec-16 Dec-17 | Dec-17 Dec-18 | Dec-18 Dec-19 |
| Real Estate Mortgage Loans | 5,290 | 5,552 | 6,161 | 6,841 | 7,856 | 542 | 262 | 610 | 680 | 1,015 | 11.4 | 4.9 | 11.0 | 11.0 | 14.8 |
| Finance, Insurance and Real Estate Companies | 6,622 | 7,074 | 8,515 | 9,206 | 8,241 | (484) | 452 | 1,441 | 691 | (966) | (6.8) | 6.8 | 20.4 | 8.1 | (10.5) |
| Services | 6,982 | 6,938 | 7,447 | 8,148 | 9,271 | (287) | (44) | 509 | 701 | 1,122 | (3.9) | (0.6) | 7.3 | 9.4 | 13.8 |
| Manufacturing | 3,869 | 4,328 | 4,044 | 3,602 | 3,934 | 719 | 460 | (284) | (442) | 332 | 22.8 | 11.9 | (6.6) | (10.9) | 9.2 |
| Construction | 2,605 | 2,475 | 1,715 | 1,450 | 1,566 | 28 | (130) | (760) | (265) | 116 | 1.1 | (5.0) | (30.7) | (15.5) | 8.0 |
| Other (Agriculture, Petroleum, Leasing) | 1,762 | 1,418 | 1,186 | 1,156 | 1,138 | (133) | (345) | (232) | (30) | (18) | (7.0) | (19.6) | (16.3) | (2.6) | (1.5) |
| TOTAL | 27,130 | 27,785 | 29,069 | 30,403 | 32,006 | 384 | 655 | 1,284 | 1,334 | 1,602 | 1.4 | 2.4 | 4.6 | 4.6 | 5.3 |
| CONSUMER LOAN BY PURPOSE | Dec-15 | Dec-16 | Dec-17 | Dec-18 | Dec-19 | Dec-14 Dec-15 | Dec-15 Dec-16 | Dec-16 Dec-17 | Dec-17 Dec-18 | Dec-18 Dec-19 | Dec-14 Dec-15 | Dec-15 Dec-16 | Dec-16 Dec-17 | Dec-17 Dec-18 | Dec-18 Dec-19 |
| Real Estate including Mortgages | 15,151 | 15,775 | 16,645 | 17,321 | 19,017 | 1,060 | 624 | 870 | 677 | 1,695 | 7.5 | 4.1 | 5.5 | 4.1 | 9.8 |
| Vehicles | 4,573 | 4,914 | 5,063 | 5,092 | 5,250 | 819 | 341 | 148 | 30 | 158 | 21.8 | 7.5 | 3.0 | 0.6 | 3.1 |
| Credit Cards | 2,392 | 2,720 | 2,886 | 3,105 | 3,225 | 90 | 328 | 166 | 219 | 120 | 3.9 | 13.7 | 6.1 | 7.6 | 3.8 |
| Refinancing | 1,842 | 1,938 | 2,140 | 2,384 | 2,602 | 93 | 96 | 202 | 244 | 218 | 5.3 | 5.2 | 10.4 | 11.4 | 9.1 |
| Consolidation of Debt | 1,675 | 1,844 | 2,139 | 2,532 | 2,878 | 72 | 169 | 295 | 393 | 345 | 4.5 | 10.1 | 16.0 | 18.4 | 13.6 |
| Other Purposes | 3,358 | 3,446 | 3,549 | 3,778 | 4,122 | 94 | 89 | 103 | 227 | 344 | 2.9 | 2.6 | 3.0 | 6.4 | 9.1 |
| TOTAL | 28,991 | 30,638 | 32,422 | 34,213 | 37,093 | 2,229 | 1,647 | 1,784 | 1,790 | 2,879 | 8.3 | 5.7 | 5.8 | 5.5 | 8.4 |

Source: Central Bank of Trinidad and Tobago

APPENDIX B

Macroprudential Surveillance Indicators Results and Heat Map, 2019

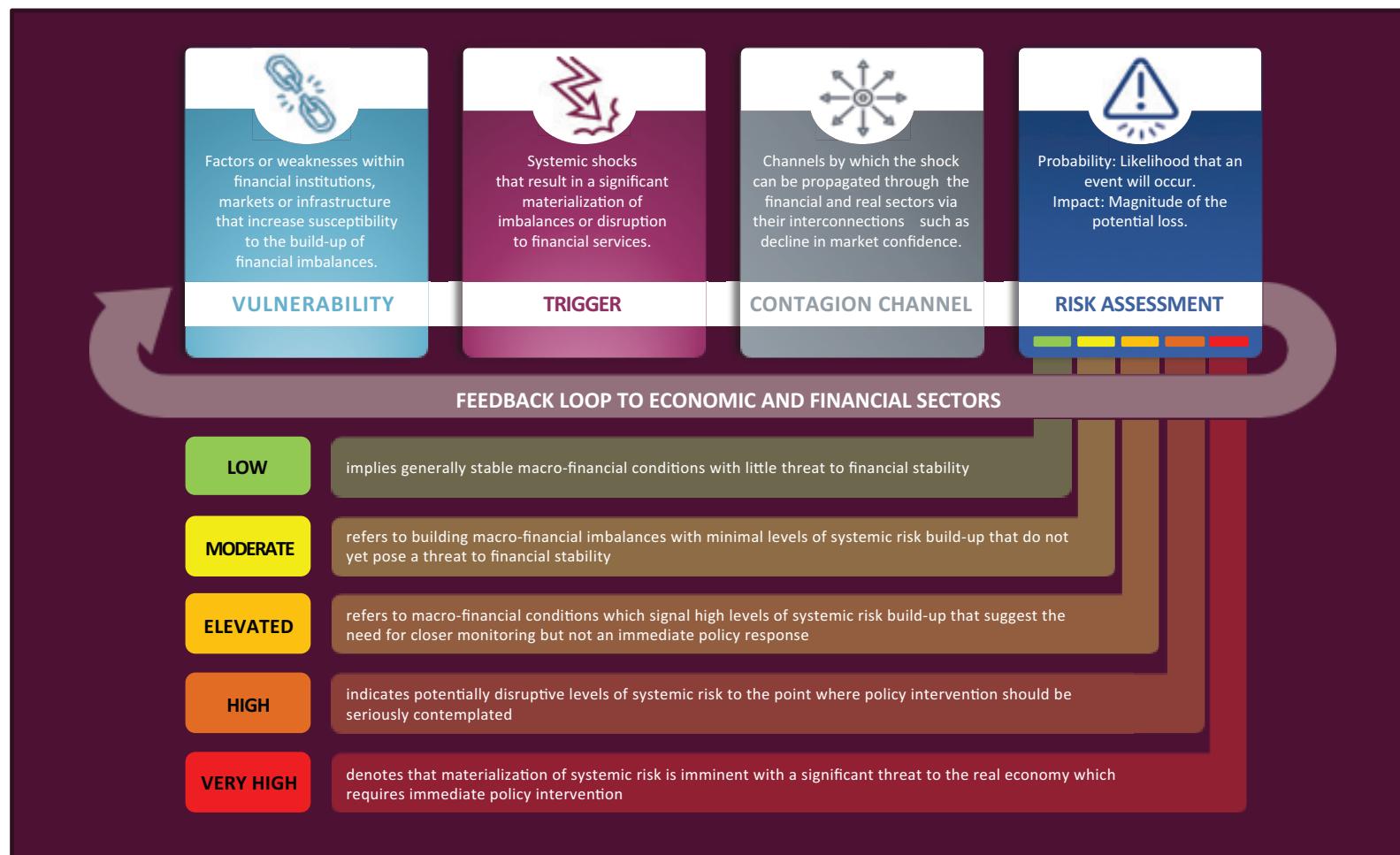


Source: Central Bank of Trinidad and Tobago

Note: Risk summaries for each index are based on end of period values. A negative Credit-to-GDP gap does not suggest evidence of systemic risks. Instead, it implies that there is room for additional borrowing.

APPENDIX C

Vulnerabilities and Risks Assessment and Overall Risk Rating Framework



Source: Central Bank of Trinidad and Tobago

APPENDIX D

Commercial Banking Sector Stress Testing Results, 2018 – 2019

| | Dec-18 | Mar-19 | Jun-19 | Sep-19 | Dec-19 | |
|---------------------------------------|---|--------|--------|--------|----------------|------------------------------------|
| Pre-Shock CAR | 20.9 | 21.9 | 21.4 | 23.8 | 21.2 | |
| Pre-Shock CAR Adjusted for Provisions | 19.9 | 20.9 | 20.1 | 22.6 | 19.9 | |
| SINGLE FACTOR TESTS | | | | | | |
| | | | | | Post-Shock CAR | Change from Pre-Shock Adjusted CAR |
| Interest Rate Risk | Interest Rate ↑ 700 basis points | 10.3 | 9.6 | 8.4 | 10.3 | 8.4 |
| | Interest Rate ↓ 100 basis points | 21.2 | 22.4 | 21.7 | 24.2 | 21.5 |
| Foreign Exchange Risk | TT Dollar depreciates 40 per cent | 21.4 | 22.1 | 21.2 | 23.8 | 21.0 |
| Credit Risk | Credit Portfolio worsens on account of 20 per cent decline in GDP | 17.8 | 18.7 | 17.9 | 20.3 | 17.8 |
| Credit Risk + Property Prices | Property Prices ↓ 30 per cent | 17.7 | 18.6 | 17.9 | 20.3 | 17.7 |
| | | | | | -11.5 | 1.5 |
| | | | | | -2.1 | -2.2 |
| SCENARIO TESTS | | | | | | |
| | | | | | Post-Shock CAR | Change from Pre-Shock Adjusted CAR |
| Energy Price Shock | Price ↓ 50 per cent - No Policy Response | 11.8 | 11.4 | 10.2 | 12.3 | 10.3 |
| | Price ↓ 50 per cent - Policy Response | 20.6 | 21.5 | 20.6 | 23.2 | 20.4 |
| Local Disaster Scenario | Local Natural Disaster | 18.3 | 19.1 | 15.1 | 20.9 | 18.4 |
| Regional Disaster Scenario | Regional Natural Disaster | 18.7 | 19.6 | 18.9 | 21.2 | 18.6 |
| DAYS UNTIL ILLIQUID | | | | | | |
| Liquidity Risk | Bank Run | 64 | 63 | 62 | 65 | 64 |

Source: Central Bank of Trinidad and Tobago

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