



# **Financial Stability Report**

**October 2019**



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## FOREWORD

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The Bank of Mauritius is issuing its second edition of the Financial Stability Report in 2019 which covers developments over the period January 2019 up to June 2019. Unless otherwise stated, this edition relies on information and financial data available up to the end of June 2019.

In line with its mandate\*, the Bank of Mauritius' assessments of risks to financial stability with a view to identifying and mitigating vulnerabilities in the domestic financial system are underlined in this Report. The analysis provides insights into the resilience of the domestic financial system and financial market infrastructure to developments on both the domestic and international fronts.

This Report is available on the Bank of Mauritius' website at <https://www.bom.mu>.

The Bank of Mauritius welcomes feedback from readers. Please forward comments and suggestions to [communications@bom.mu](mailto:communications@bom.mu).

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*\*As prescribed at Section 4(2)(b) of the Bank of Mauritius Act 2004, one of the other objects of the Bank of Mauritius is to ensure the stability and soundness of the financial system of Mauritius. A stable and sound financial system is a prerequisite for proper intermediation and allocation of funds in the economy, thereby being conducive to economic and financial development.*



# 1. Executive Summary

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The global growth momentum in the first half of the year (2019H1) was soft. Inflationary pressures seemed to have taken a back seat among the world's advanced and emerging economies. Recent global Gross Domestic Product (GDP) projections by international institutions such as the International Monetary Fund (IMF) point towards a weaker-than-anticipated global economic activity in 2019. The July 2019 World Economic Outlook (WEO) projects growth rate for 2019 to stand at 3.2 per cent, 0.1 percentage point below the April 2019 projection. Although economic activity is set to recover in 2020 to 3.5 per cent, this still represents a 0.1 percentage point downward revision compared to April 2019 projection. Behind these rather subdued figures lies different growth trajectories for the major world economies. Growth performance has been rather good in the advanced economies but less so in emerging and developing economies. Notable among headwinds that have stalled further recovery prospects in the latter category of countries are the ongoing tensions between the two economic giants, namely the US and China on the trade and technology fronts, as well as increasing uncertainty on Brexit on the financial market and trade fronts.

Risks of stalled recovery in Europe and bleaker global trade prospects are pertinent factors to consider for open economies such as Mauritius whose key economic sectors including tourism, textile and sugar still remain '*euro centric*' in nature, despite attempts over recent years to accelerate diversification of markets and products. Thus, domestic growth rate in Mauritius is inexorably tied to developments taking place elsewhere. Given that banks in Mauritius are relatively exposed to key economic sectors such as manufacturing (about 8 per cent of total loans as at end-June

2019) and tourism sectors (about 6 per cent of total loans as at end-June 2019), their performance would be undermined if these sectors entered a recessionary cycle, following potential adverse developments from abroad. The United Kingdom's (UK) exit from the European Union have been viewed by many as an opportunity for Mauritian exports as existing access privileges will be maintained and offer Mauritian exports an important competitive advantage over competitors in Europe and in the Far East. However, uncertainty about the shape and nature of Brexit could affect economic prospects for the UK economy, going forward, and constitute headwinds for the export sectors.

So far, economic performance in Mauritius has been broadly resilient. Statistics Mauritius estimates growth rate for the second quarter of the year (2019Q2) to stand at 3.4 per cent, an improvement over the situation that had prevailed in the last six months of 2018 (2018H2) thanks to favorable performance in sectors such as construction, financial services and retail trade. Nonetheless, attention needs to be paid to developments taking place in other key sectors since they could affect banks' performance prospects by undermining the quality of their loans and assets.

So far, the Mauritian banking system has been resilient to developments taking place in the GBC sector, especially in the aftermath of the 2016 announcement of the revision brought to the Double Taxation Avoidance Agreement (DTAA) with India. Going forward, competition may become tougher for the sector as many rival international financial centers crop up and attempt to lure flux of GBC flows away from traditional jurisdictions. Mauritius has already embarked upon a transformational journey to mitigate any risks that this revision may pose



by signing a number of DTAA agreements with African countries.

On the asset side, the evolution of an important financial deepening ratio, namely the private sector credit-to-GDP ratio and its corresponding gap measure, where gap is measured relative to ratio's underlying trend, should be monitored for any potential excesses since these could signal overheating with attendant financial stability risks. Private sector credit has been on the rise during 2019H1. The private sector credit-to-GDP gap has moved into positive territory in 2018Q3 and has been on the rise since then to settle at about 3.0 per cent as at June 2019. This situation is however viewed as manageable at present and should not raise concerns since the gap has not yet trespassed the 5 per cent threshold, which is viewed by the IMF as a necessary (but not sufficient) statistic to sounding an alarm bell. Underlying the expansion of private sector credit has been increased borrowings by, both, households and corporates, to take advantage of the low interest rate environment in Mauritius and benign economic conditions. Corporate bond market deepening in Mauritius has been another factor rationalizing the expansion for corporates. Although the indebtedness situations of households and corporates appear to be under control, as reflected by their ability to pay and the resulting stable figures for the debt-to-disposable income ratios, the growing share of total bank assets accounted for by household and corporate credit could make banks potentially vulnerable to the unfolding of any event that could undermine income. This lends further credence to the need and importance of monitoring external developments that could potentially affect the turnover of leveraged corporates that have overseas exposure.

The concurrent soundness indicators indicate that the Mauritian financial system is currently

resilient. Overall, the banking sector has remained sound and well capitalized over the six-month period ended June 2019. The capital adequacy ratio (CAR) for the sector increased from 18.4 per cent as at end-December 2018 to 19.2 per cent as at end-June 2019. The Capital Conservation Buffer (CCB) is being phased in and should provide an extra cushion against materialization of shocks. Banks which are assessed as systemically important are subject to a capital surcharge. Stress testing results show that banks in Mauritius continue to remain resilient, capital-wise, to severe but plausible shocks engineered to macroeconomic variables such as GDP growth, interest rate and exchange rate. The ratio of non-performing loans to total gross loans dropped from 4.6 per cent as at end-December 2018 to 4.0 per cent as at end-June 2019. Moreover, stress testing results when applied to loan quality – therefore modeled as shocks affecting the quality of loan exposures, and thereby showing increases in non-performing loans either on a stand-alone basis or at the sectoral level - show encouraging results since banking sector capital appears to be well shielded in general against these severe but plausible shocks. Other ratios, namely large credit exposures and net foreign exchange positions, are well within the regulatory limits. Although there has been an improvement on asset quality, the coverage ratio – measured as the ratio of specific provisions to non-performing loans – has slightly deteriorated. Overall, banking sector profitability has improved over the period under review. Banks are also assessed to be liquid and hold enough high-quality unencumbered assets to withstand a 30-day stressed cash outflow scenario.

Excess liquidity continues to be a hallmark characterizing the Mauritian banking system. The rupee excess liquidity hovered around Rs11.5 billion during 2019H1, slightly higher than the average of Rs11.2 billion registered



during the 2018H2. Excess liquidity is usually a common feature of the banking systems of small island economies with growing debt markets and whose policymakers often have to establish an appropriate balance between building reserve buffers as contingency against terms-of-trade shocks or any external balance shocks and allowing the domestic currency to move in line with fundamentals while eliminating any excessive fluctuations. While it may not be a financial stability risk per se, it may nonetheless undermine the smooth transmission of policy impulses through the financial system.

The BOM has maintained the excess reserves to a level that would not distort short-term interest rates in the money market and, thus, that would not hamper the effective implementation of monetary policy. The BOM issued, both, shorter term securities to absorb excess liquidity from maturing securities and to align market yields with the policy rate, and medium-term securities to remove structural excess liquidity. The end result was that the 91-Day yield and the overnight rate began moving within the interest rate corridor of the Key Repo Rate – policy rate. As at close of business on 30 June 2019, total outstanding amount of instruments issued for liquidity management purposes attained Rs115.9 billion, of which Rs72.4 billion were securities maturing within one year. A notable feature observed during the period under review was the shortening of maturity profile of outstanding Bank instruments. Activity on the interbank market remained relatively low.

The payment system has operated smoothly during the period under review. Risks affecting the operation of the mechanism are being monitored on a systematic basis and the BOM has a robust control system as bulwark against materialization of these risks.





## 2. Understanding Macro-Financial Linkages

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A stable and solid financial sector provides the basis for supporting economic growth. Developments in the domestic and global macroeconomic environment may impact on the safety and soundness of the financial system and, ultimately, undermine its resilience. This section provides an overview of the global and domestic economic developments and sheds light on how they may affect financial system resilience in Mauritius.

### 2.1 Updates on Global Growth

Global growth momentum in 2019H1 remained somewhat soft and subdued. GDP releases pointed towards a weaker-than-anticipated global economic activity, against a background of tame inflationary pressures. Several events characterized the global economic landscape and grabbed the headlines in leading newspapers and periodicals, namely: increasing tensions between the two economic giants, namely the US and China, on the trade and technology fronts, as well as increasing uncertainty on Brexit (Britain withdrawing from the European Union(EU)). Worldwide, economic performance has been heterogeneous. The economic outturns have been more encouraging in the advanced economies, but less so among emerging markets and developing economies alike. What has broadly been a common denominator across many of the world's economies has been the subdued performance of investment and demand for consumer durables, with the result that global trade performance has been sluggish. The IMF's July 2019 WEO Update projects 2019 growth at 3.2 per cent, accelerating to 3.5 per cent in 2020. Both figures were 0.1 percentage point below the forecast made in the April 2019 WEO edition.

The downward projection for, both, 2019 and 2020, has been vindicated along a number of grounds. Prominent among those included the decision by the US government to increase tariffs on \$200 billion of Chinese exports from 10 to 25 per cent in May 2019. This added to the continuing series of US tariff policies or policy hikes against China as Chinese technology companies have also witnessed the prospect of facing protectionism from the US. In parallel, the US threatened to levy tariff walls against Mexico in the absence of measures to address the cross-border migration issue. Taking into consideration the possible retaliation of partner economies, business confidence and financial market sentiment have taken a hit. To conclude, uncertainty about the UK's withdrawal from the EU has contributed towards denting sentiment and undermining global investment. The loss of growth momentum can be gauged from weakening coincident or leading indicators such as global manufacturing which witnessed a slowdown during the 2019H1. Trade volume has taken a hit after dropping to around 0.5 per cent year-on-year (y-o-y) in 2019Q1. Although this decline was lower than in 2018Q4, it could nonetheless be synonymous with slower pickup in consumer purchases of durable goods.

Scenarios built by the IMF to support the growth acceleration to 3.5 per cent in 2020 included a supportive and positive financial market sentiment, recovery in Europe, and better growth prospects in emerging market economies against a backdrop of more dovish tilts of central banks in an era characterized by muted inflation and mitigated trade tensions. It is also expected that the uncertainty to global growth prospects currently surrounding Brexit will disappear.



Worldwide, the slower global growth in 2019H1 was not equitably distributed among advanced economies, emerging market economies, and developing economies. Advanced economies such as the US and Japan experienced positive impulses to growth, while economic activity was less stellar than expected in emerging markets and developing economies. In the US, there are doubts about whether good performance in 2019H1 could be sustained through to the end of 2019 in view of growing inventory accumulation of unsold goods during the 2019H1. The IMF July 2019 edition of the WEO revised up its 2019 growth projection for the US economy by 0.3 percentage point relative to its April 2019 projection, but still maintains that the growth momentum would stall in 2020 by moderating to 1.9 per cent. The Japanese economy continues to leverage on positive impulses to consumption and net exports and growth for 2019 is set at slightly below 1 per cent. The IMF has revised down its estimate for 2019 growth by 0.1 percentage point relative to its April 2019 projection on the back of continuous inventory accumulation in Japan. Furthermore, an important part of the economic stimulus comes from declining imports.

Growth performance in Europe has depicted a more heterogeneous picture during the period under review. Germany has experienced weaker-than-expected external demand which has contributed towards the sluggishness of its export industries. In addition, investment performance has been subdued. In France, the balance of risks to growth has been broadly neutral. Fiscal impulses have been neutralized by sluggish external demand conditions, but may help reinforce growth in 2019H2. In Italy, domestic demand including investment has been hampered by uncertain fiscal outlook. The IMF expects growth in the euro area to hover at 1.3 per cent in 2019 before accelerating to 1.6 per cent in 2020 (0.1 percentage point higher than in April 2019 WEO projection). The

UK economy performed well during 2019H1, despite headwinds in the form of uncertainty surrounding Brexit which could stall investment and affect operations of foreign firms operating in the UK. The good outturn in the 2019H1 could be attributed to pre-Brexit accumulation and stockpiling. The IMF's 2020 projection for the UK economy was contingent upon an orderly Brexit scenario.

Among emerging market economies, growth performance in China was good during 2019H1 and was stronger than expected in 2019Q1 before gradually stalling in 2019Q2. In the wake of international trade developments, it is questionable as to whether this growth could be sustained through the second half of the year. The impact of US tariffs on trade and investment has already begun to wear down on external demand. The Indian economy continues to thrive on positive growth territories, despite potential impediments that could stall domestic demand. The IMF expects India to grow at 7.0 per cent in 2019, before picking up at 7.2 per cent in 2020. The IMF projects growth for emerging and developing Asia at 6.2 per cent for 2019, 0.1 percentage point below the April WEO 2019 projection. Elsewhere, in Latin America, performance during 2019H1 has not been so good. The IMF has revised moderately downwards its growth projections for emerging and developing economies in general for 2019 and 2020, to reflect these disparities. Growth is projected at 4.1 per cent in 2019, before accelerating to 4.7 per cent in 2020.

In Sub-Saharan Africa, strong growth in several non-resource intensive economies has been offset by subpar performance of the region's largest economies. Although some oil-producing countries fared well during 2019H1, this good outturn could be beset by more volatile prospects in 2019H2. A weaker 2019Q1 characterized by unexpected strikes, energy bottlenecks and weak outturn for agriculture.



These negative domestic shocks could have spillover effects on the economic performance of other countries in the region, given their trade and investment dependence on South Africa. Growth in sub-Saharan Africa is expected at 3.4 per cent in 2019 and 3.6 per cent in 2020. The IMF has lowered its July WEO projection for both years downwards by 0.1 percentage point compared to its April WEO edition, mainly on account of potential spillover effects that a sub-par performance of the South African economy could engender.

The IMF's latest WEO reports that the principal risk factor to the global economy includes a deeper and more entrenched unwinding of events already identified as main risk areas such as US-China tariffs, geopolitical tensions and a no-deal Brexit which, altogether, would contribute towards weakening trade and investment, dislocating the smooth operation of global supply chains and sowing the seeds for lower medium growth prospects than under the baseline scenario. In addition, the muted inflationary environment together with lower expectations may contribute towards accentuating the debt service difficulties for borrowers by raising real interest rates. This may constrain space central banks have to pursue counter-cyclical policies, thereby undermining the effectiveness of monetary policy actions to help the global economy weather the storm and assuage its severity. The IMF reports that downside risks have intensified in 2019H2. Risk sentiment may also have accentuated as financial conditions and monetary stance have become easier in the US and in the euro area. This can be seen by the shift in gears towards embracing a more dovish stance in monetary policy-making among major central banks. Indeed, the US Federal Reserve has embarked on a new path of monetary accommodation, citing muted inflation and sluggish growth prospects as main reasons. The European Central Bank (ECB) has extended its forward guidance by keeping

its policy rates low until 2020. The dovish stance has been adopted by central banks in other countries as well. Financial markets may receive much-needed boost as a result, and risk-taking behavior may well escalate. This could be an issue for small economies which depend on short term capital flows.

These global developments matter for financial stability in Mauritius. As shown in Table 2.1, there are various conduits through which macro-financial and geopolitical developments elsewhere could impact on Mauritius. Being a small open island economy whose trade, investment and tourism are still *'euro centric'*, the Mauritian economy may take the hit if an economic slowdown materializes in Europe. Over 2019H1, exports to Europe accounted for 45.3 per cent of total exports. Cumulative tourist arrivals from Europe stood at 60.3 percent of total cumulative arrivals. Similarly, direct investment inflows from Europe took the lion's share of total investment inflows (50.2 per cent), with countries such as France topping the list of source countries during 2019Q1. Given that banks in Mauritius are exposed to export sectors such as manufacturing (about 8 percent of total loans as at end-June 2019) and tourism sectors (about 6 percent of total loans as at end-June 2019), their performance could be undermined if these sectors embark on a recessionary cycle, following adverse developments taking place in our partner economies. The UK's exit from the European Union have been viewed by many as an opportunity for Mauritian exports as existing access privileges will be maintained and offer Mauritian exports an important competitive advantage over competitors in Europe and in the Far East. However, uncertainty about the shape and nature of Brexit could affect economic prospects for the UK economy, going forward, and constitute headwinds for the export sectors.



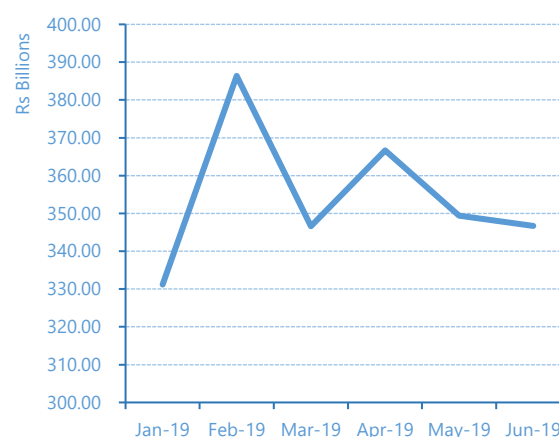
So far, liquidity / funding stress testing results have shown that the Mauritian banking system has been very resilient to developments taking place in the GBC sector. A look at the evolution of GBC deposits in the banking system during 2019H1 shows that inflows peaked twice in February 2019 and April 2019, before stabilizing post-April 2019 (end of the transition period that followed the 2016 announcement of the revision to the DTAA treaty), as illustrated in Chart 2.1. The future evolution of GBC deposits might be gauged from developments taking place post-transition, and a plan to sustain the jurisdiction's appeal beyond fiscal advantages is being implemented. Mauritius has already embarked upon a transitional journey to mitigate any potential risks that follow from the revision by strengthening its footprint in the African continent.

## 2.2 Updates on Domestic Growth

According to Statistics Mauritius, real GDP growth stood at 3.4 per cent in 2019Q2 and is expected to stand at 3.8 per cent in 2019. Compared to 2018H2, the momentum seems to pick up, thanks to favorable growth performance in sectors such as construction, financial services and retail trade. On the demand side, consumption continued to account for the lion's share of aggregate demand and contributed favorably towards growth. Private investment accounted for a larger share of overall investments than public investment. Ongoing infrastructure-related works such as the Metro express, have provided a fillip to public investment over the period under review.

The current account situation showed a deterioration from 6.3 per cent of GDP in 2018Q4 to 3.9 per cent of GDP in 2019Q2, mainly on grounds of a deteriorating balance of trade situation. Indeed, as Mauritius is gradually embarking upon the next stages of

**Chart 2.1: GBC Deposits**



Source: Bank of Mauritius

its developmental process and intends to graduate towards achieving high-income status in a few years, imports have increased. This can be explained by the growing number of infrastructure-related projects with a relatively high import element, as well as growing propensity to import certain consumption items, namely durables. The export sector spearheaded by cyclical industries such as sugar, manufacturing and tourism is facing headwinds stemming from outside, namely sluggish performance in Europe. Since banks are exposed to these economic sectors, a slowdown could affect banks' prospects and undermine their quality of loans.

Inflation appeared to be well contained during the period under review, in part, due to the unchanged international oil prices. Headline inflation stood at 1.4 per cent as at end-March 2019, before declining to 1.0 per cent as at end-June 2019. Unemployment rate has dropped thanks to a number of labor market reforms undertaken during recent years. The BOM has projected the 2019 growth rate at 3.8 per cent.

Developments in the global and domestic macroeconomic environment have important implications for the domestic banking system whose assets accounted for about 80 per cent



of total financial system assets as at December 2018 and about 278 per cent of GDP.

explanation with respect to the derivation of the indicator.

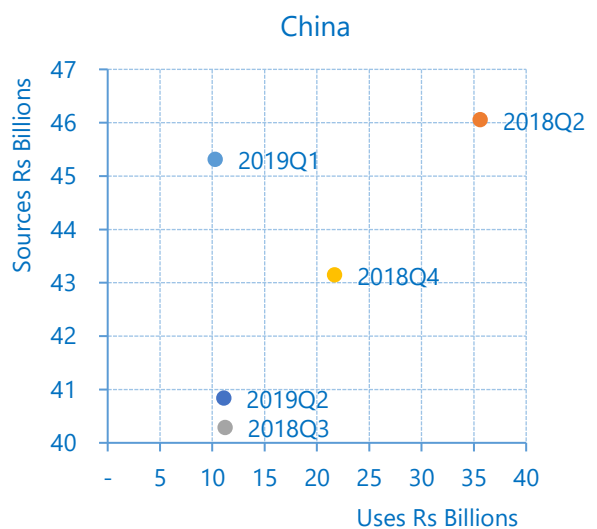
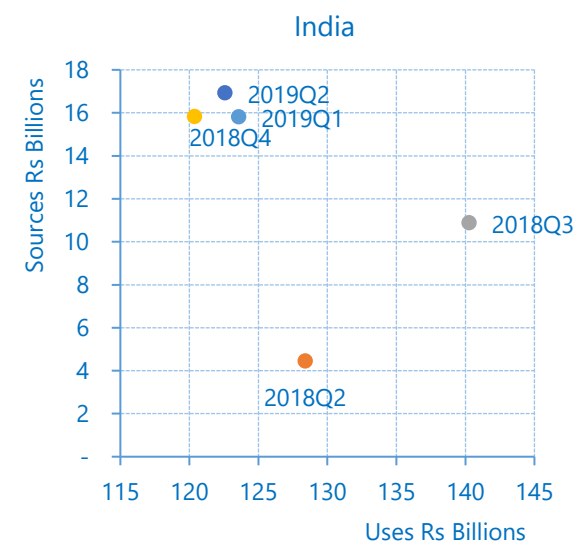
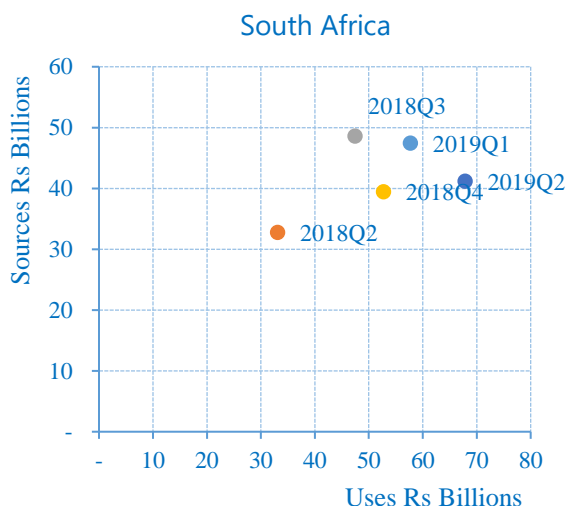
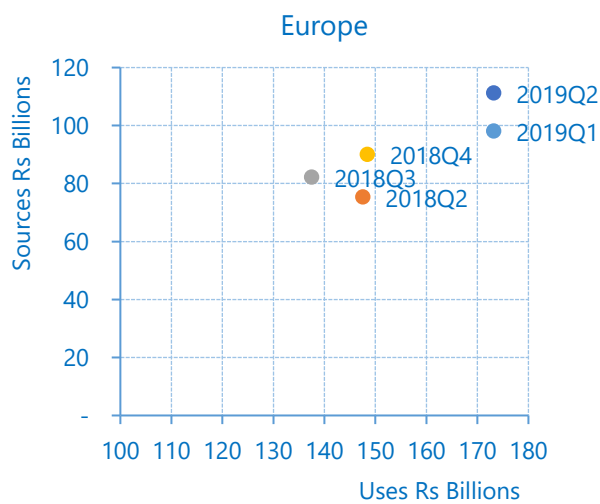
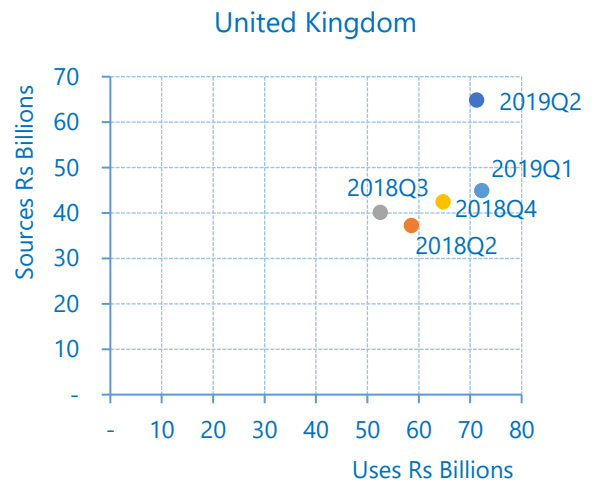
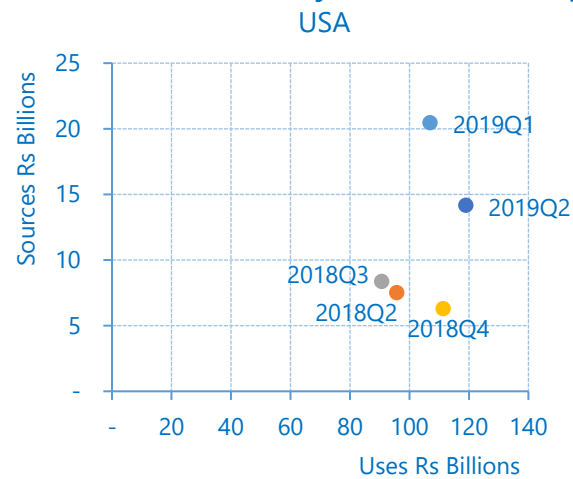
As per Chart 2.2, Mauritian banks are exposed to developments taking place overseas as funds are received from abroad, routed from the banking system, and find their way to other destinations abroad. Furthermore, banks lend to sectors that have a relatively heavy outward orientation, e.g., tourism, manufacturing, trade, financial services.

Charts 2.3 and 2.4 show the relative proportion of banks' loan portfolios accounted for by various sectors. Given the importance of bank credit in funding our main economic sectors, a weaker-than-expected performance of our trading partners may, by undermining our key sectors, affect the quality of lending portfolio of our banks.

Chart 2.5 underscores the relative importance accounted for by the sectoral Non-Performing Loan (NPL) and by bank lending ranked by sector. Developments overseas may also affect the global interest rate cycle, as well as the pattern of exchange rates of some of the major currencies. These developments will impact on performance of our banking system since a sizeable chunk of their activities, especially those in non-resident segment, is priced in dollars and carry yields in foreign currencies. The GBC sector remains an important source of funding for banks in Mauritius.

As illustrated in Chart 2.6, GBC deposits (inclusive of non-resident deposits) accounted for around 38.6 percent of banking sector assets as at December 2018 (71.2 percent of GDP) and around 33.6 per cent of banking sector assets as at June 2019 (68.3 per cent of GDP).

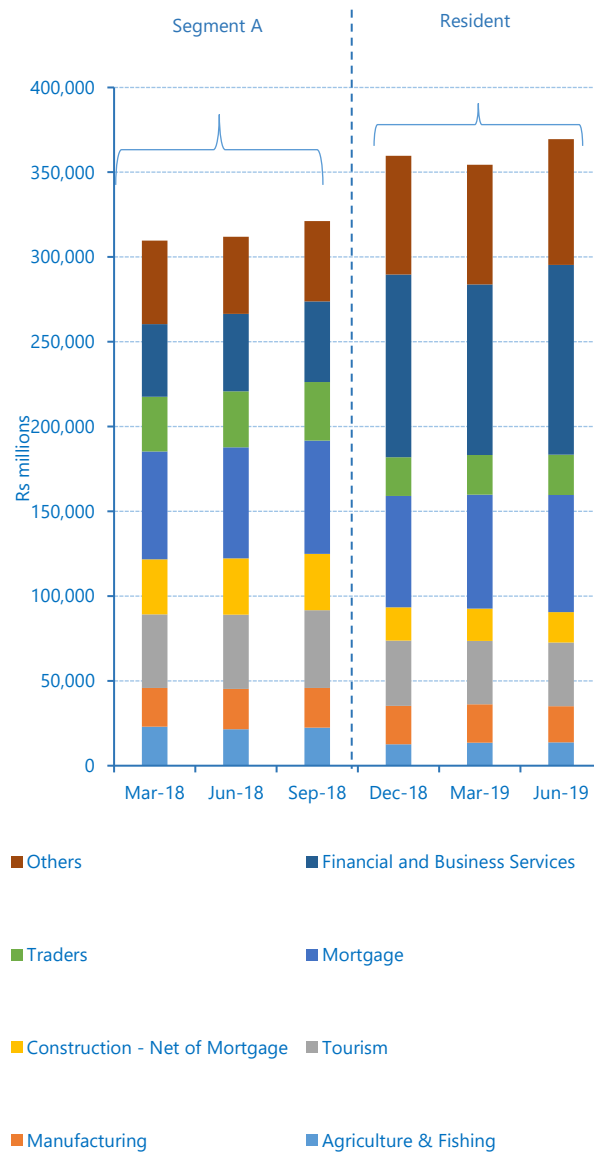
Chart 2.7 illustrates the evolution of systemic risk indicator component and index for the last three quarters ended June 2019. Box 1 provides

**Chart 2.2: Cross-country credit facilities exposure (June 2019)**

Source: Bank of Mauritius

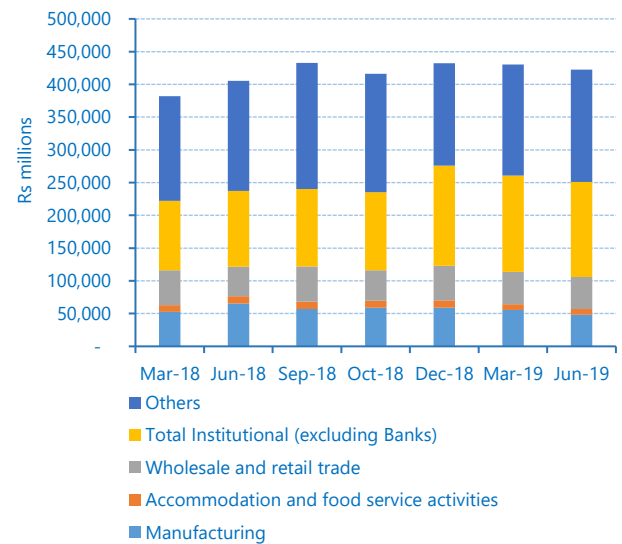


**Chart 2.3: Sector-wise credit distribution (Segment A/Resident)**



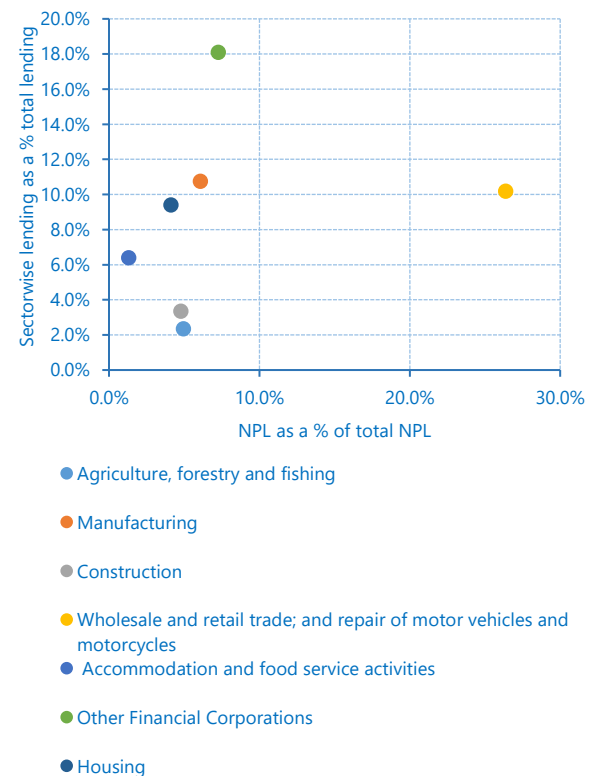
Source: Bank of Mauritius

**Chart 2.4: Sector-wise credit distribution (Non-resident)**



Source: Bank of Mauritius

**Chart 2.5: Sector-wise lending and NPL**

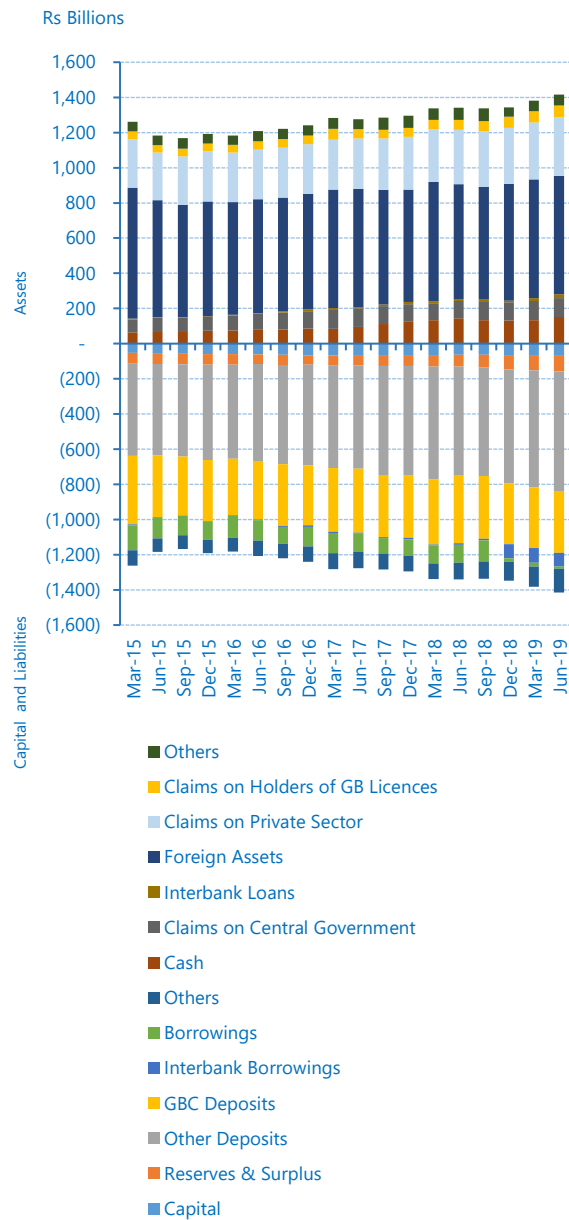


Source: Bank of Mauritius



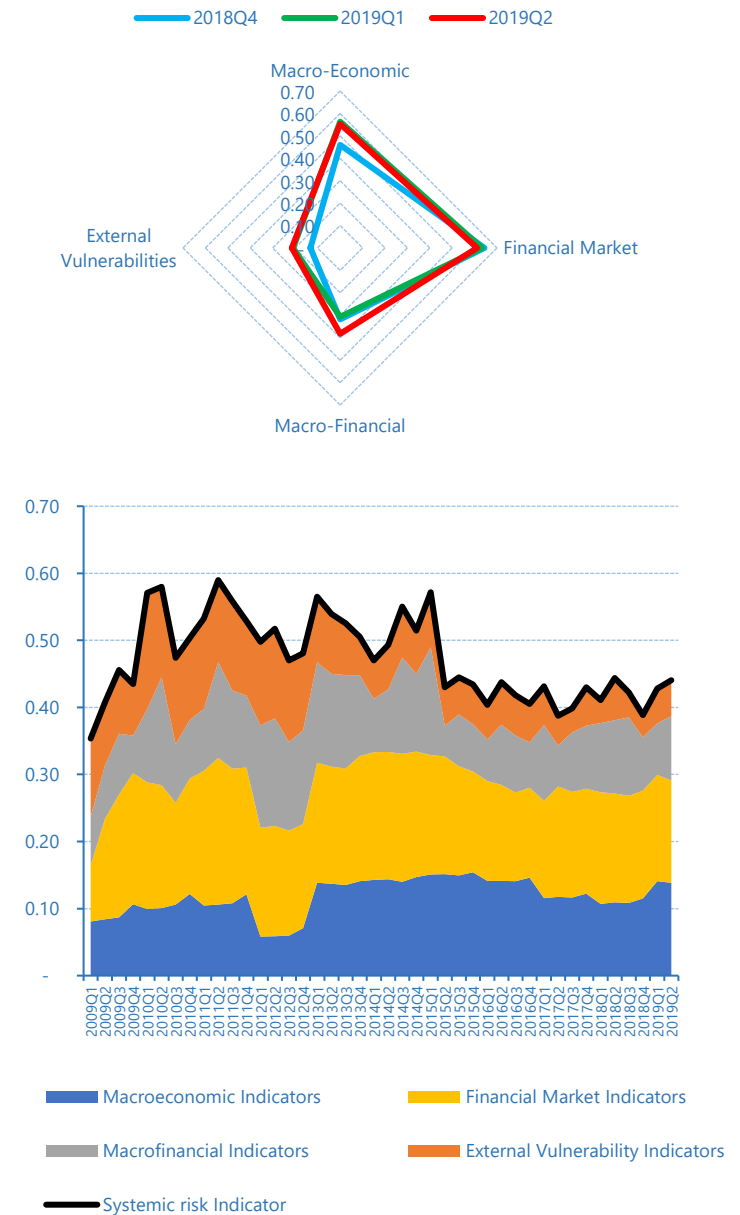


Chart 2.6: Asset allocation of banks



Source: Bank of Mauritius

Chart 2.7: Systemic Risk Indicator



Source: Bank of Mauritius





Table 2.1 summarizes the nature and source of risk that are relevant for banks in Mauritius.

**Table 2.1: Macro-Financial Risk Assessment Matrix for Mauritius**

	<b>Nature and Source of Risk</b>	<b>Variables to watch out for</b>	<b>Relevance for Financial Stability in Mauritius</b>
<b>External Macro Financial Risks</b>	<b>Potential Trade tensions between China and USA</b>	Global trade flows, economic growth in China, new orders of manufacturing firms in Mauritius	Growing protectionist sentiment following trade tensions between these two economies could affect global trade and growth, and may affect economies that trade with the US and/or China.
	<b>Disorderly BREXIT</b>	New orders for manufacturing, investment inflows from UK, tourist arrivals, Sugar sector turnover, exchange rate between Rupee and Pound, and between Pound and major currencies	Although <i>Brexit</i> can create, both, opportunities and threats for small economies such as Mauritius, uncertain economic prospects in UK economy, following materialization of prolonged uncertainties, may affect industries that export to the UK.
	<b>Protracted slowdown in Europe (excluding Britain)</b>	Tourist arrivals, New orders for manufacturing, exchange rate between Rupee and Euro, and between Euro and major currencies	Export oriented industries may experience difficulties in repaying their debt vis-à-vis banks in case their earnings take a hit.
<b>Domestic Macro-Financial Risks</b>	<b>Slower Domestic Growth</b>	Domestic GDP growth rate, sectoral growth rate	The current and projected short-term growth rate for Mauritius should not be a source of worry for financial stability. However, should headwinds appear and downside risks materialize, financial conditions of economic sectors that are dependent on domestic prospects and which have borrowed locally (e.g., Small and Medium Enterprises) may take a hit and impact on banks.
	<b>Shocks in Financial Services Sector post Indo-Mauritius DTAA</b>	Net flows of GBC deposits	Banks in Mauritius derive an important source of their funding from the Global Business sector. They are subject to sound system of regulation and supervision (e.g.,



			<p>Basel III Liquidity Coverage Ratio (LCR) requirements). They have so far remained largely resilient to changes in the DTAA regime. Various liquidity stress tests that have been conducted confirm their resilience to plausible liquidity runoffs. This risk is viewed as manageable.</p>
	<p><b>Idiosyncratic sectoral difficulties (e.g. Manufacturing, Textile, Sugar, Tourism)</b></p>	<p>Sectoral growth rates, profitability figures of underlying sectors, indebtedness situation of underlying sectors</p>	<p>Linked to domestic economic growth prospects and to developments taking place in the main markets for exports, as well as to productivity challenges and cost escalation. Based on the relative importance of these sectors in banks' loan portfolio, this risk appears to be contained but should nonetheless be duly monitored.</p>

Source: Bank of Mauritius

**Box 1: Systemic Risk Indicator**

The Systemic risk indicator provides an overall assessment of changes in the underlying risk indicators relevant to the macro stability of the banking sector over a sample period from March 2009 to June 2019. Four key risk indicators, detailed in Table 2.2, have been used namely: Macroeconomic indicators, Financial market indicators, Macro-financial indicators and External vulnerability indicators.

**Table 2.2: Ratios used for constructing the Systemic Risk Indicator**

<b>Macroeconomic Indicators</b>	<b>Macro-Financial Indicators</b>
Output Gap growth rate <sup>1</sup>	Credit to GDP Gap <sup>2</sup>
Fiscal deficit as a percentage to GDP*	Year on year growth in bank credit
Forex reserves as a percentage to GDP	Year on year growth in bank deposits
External debt as a percentage to GDP	Bank credit as a percentage to bank deposits
<b>Financial Market Indicators</b>	<b>External Vulnerability Indicators</b>
Key REPO rate	Real effective exchange rate
Logarithmic return on stock market (SEMDEX)	Exchange rate growth of Rs vs US\$
Logarithmic return on Top 10 companies on stock market (SEM10)	Current account deficit as a percentage to GDP*
	Foreign investment as a percentage to GDP
<sup>1</sup> Output Gap is worked out as the difference between actual output (output is proxied with GDP) and potential output. Potential output is reckoned by using HP filter.	
<sup>2</sup> Credit to GDP Gap is calculated as the difference between credit to GDP ratio and its trend. Trend in Credit to GDP Ratio is estimated by using HP filter.	

Source: Bank of Mauritius

It should be noted that all the ratios marked with an \* are negatively related with risk.

Each ratio is normalized using the following formula:

$$\frac{(\text{Ratio at a given quarter} - \text{Minimum value in the sample period})}{(\text{Maximum value in the sample period} - \text{Minimum value in the sample period})}$$

As the indicators move farther from the center (approach a score of 1), the risk increases. As per Chart 2.8, increase in the overall Systemic risk indicator value shows lower systemic risk and the width of each risk indicator signifies its contribution towards risk.



### 3. Debt Indicators of Households and Corporates<sup>1</sup>

The level of indebtedness of households and corporations incorporated domestically is an important factor to monitor for financial purposes. The exposure of banks to households and corporates accounts for an important share of their total assets and of GDP. As at end-June 2019, this share stood at around 25 per cent and 71 per cent respectively, and both ratios were slightly higher compared to December 2018. Since January 2019, credit facilities availed by households and corporates have remained on an upward trend. This has led to higher indebtedness ratios for both households and corporates. The growth in economic activity and the abolition of the limit on Loan-to-Value (LTV) in July 2018 supported credit expansion over the period under review but the BOM has maintained the cap on household debt service to disposable income with a view to containing build-up of vulnerabilities in the household sector. In addition, borrowing cost has remained low with the weighted average rupee lending rate hovering at around 6.2 per cent in June 2019.

Growth of bank credit to the private sector (excluding GBCs) increased to 9.5 per cent y-o-y in June 2019 from 7.5 per cent in December 2018, as illustrated in Chart 3.1. Credit extended by banks to households increased from 8.0 per cent in December 2018 to 10.9 per cent in June 2019, while credit extended to total corporates rose from 7.4 per cent to 8.8 per cent over this period.

Excluding public corporations, the annual growth rate of corporate credit increased to 11.2 per cent as at end-June 2019, from 9.6 per cent as at end-December 2018.

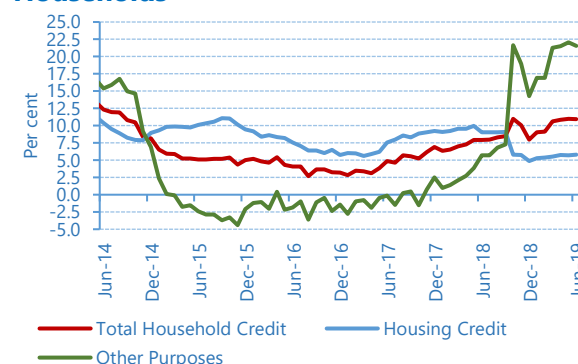
**Chart 3.1: Contribution to y-o-y Growth of Credit to the Private Sector**



*Note: Credit extended to corporates include Public Corporations.*

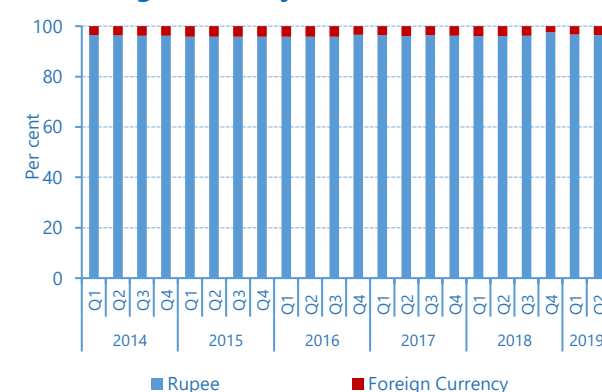
*Source: Bank of Mauritius*

**Chart 3.2: Y-o-y Growth of Credit to Households**



*Source: Bank of Mauritius*

**Chart 3.3: Household Borrowing in Rupee and Foreign Currency**



*Source: Bank of Mauritius*

<sup>1</sup> Analysis in this chapter is based on data as reported by banks, unless stated otherwise.



The growth in credit facilities availed by households and corporates outweighed the nominal GDP growth and has led to higher private sector credit-to-GDP ratio<sup>2</sup> which increased to 70.5 per cent as at end-June 2019, from 68.9 per cent as at end-December 2018. Household credit-to-GDP ratio rose to 21.8 per cent as at end-June 2019, from 20.9 per cent in December 2018, while corporate credit-to-GDP ratio went up from 46.7 per cent to 48.3 per cent over the same period. Household credit accounted for 31.1 per cent of total private sector credit as at end-June 2019, compared to 30.4 per cent in December 2018. The share of corporate credit in total credit extended by banks to the private sector declined to 68.9 per cent as at end-June 2019, from 69.6 per cent as at end-December 2018.

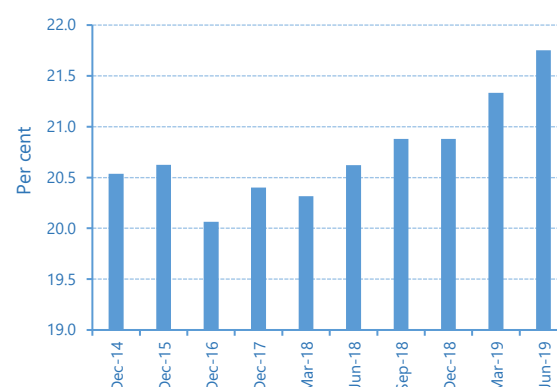
### 3.1 Households

Credit extended by banks to households grew on the back of increasing housing credit and credit granted to households for other purposes<sup>3</sup>, as illustrated in Chart 3.2. Household borrowing continued to be positively influenced by the low interest rate environment during the period under review and by the abolition of the LTV limit. Banks are now free to apply their own LTV limits based on their risk appetite as an integral part of their credit risk management policy. Whilst the share of housing credit in total household credit declined from 65.3 per cent in December 2018 to 64.6 per cent in June 2019, the share of credit availed by households for other purposes went up from 34.7 per cent to 35.4 per cent over this period. Credit extended by banks for housing purposes grew by 5.8 per cent y-o-y as at end-June 2019, up from 4.4 per cent as at end-

<sup>2</sup> Exclusive of facilities extended to the GBC sector.

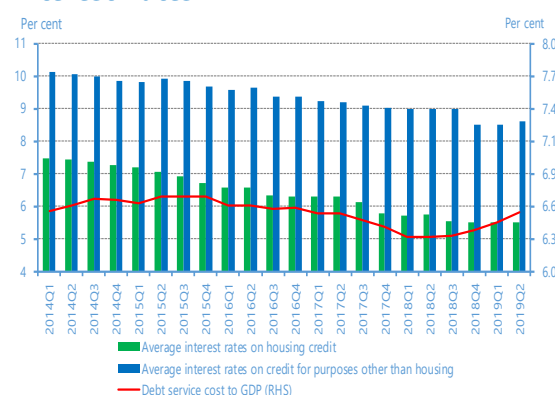
<sup>3</sup> Credit extended to households for other purposes include purchase of other consumer durable goods, purchase of land, purchase of motor vehicles, education purposes, medical purposes, investment

**Chart 3.4: Household Debt-to-GDP Ratio**



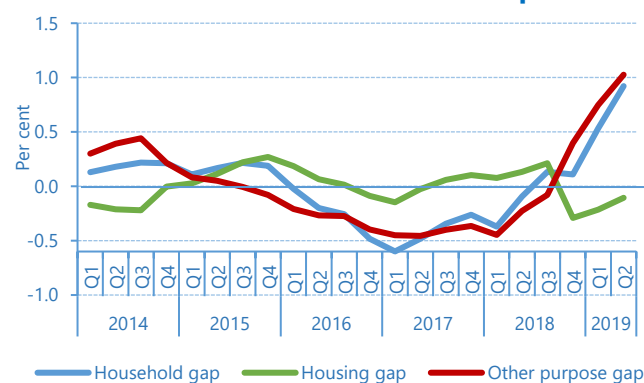
Source: Bank of Mauritius

**Chart 3.5: Household Debt Service Cost and Interest Rates**



Source: Bank of Mauritius

**Chart 3.6: Household Credit-to-GDP Gap**



Source: Bank of Mauritius

purposes (working capital and longer-term funds for proprietorships, purchase of equity, purchase of other financial assets) and other unspecified purposes.



December 2018. Y-o-y growth in credit to households for purposes other than housing, went up from 14.3 per cent as at end-December 2018 to 21.5 per cent as at end-June 2019.

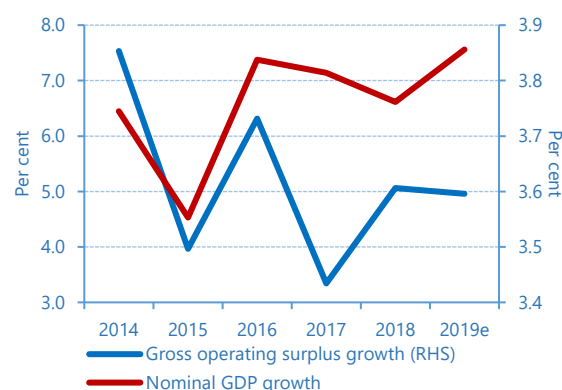
Households mostly borrow in the domestic currency. Therefore, foreign exchange risk that may arise from banks' foreign currency exposure to households is minimal. The share of rupee credit in total household credit fell slightly, from 96.7 per cent in December 2018 to 96.5 per cent in June 2019, as illustrated in Chart 3.3. The household sector does not rely much on short-term financing, as overdraft facilities granted to households account for about less than 5.0 per cent of total household credit. As at end-June 2019, overdraft facilities represented 3.7 per cent of total household debt compared to 4.7 per cent as at end-December 2018.

Indebtedness of households, as measured by the ratio of household credit to GDP, edged up to 21.8 per cent as at end-June 2019, from 20.9 per cent as at end-December 2018, but did not warrant any cause for concern, as illustrated in Chart 3.4. This increase can be explained by a higher expansion in household credit relative to GDP, and was congruent with sustained expansion in domestic economic activity. When household debt from banks, NBDTIs, insurance and leasing companies are aggregated, the measure of household indebtedness fell slightly to 33.4 per cent as at end-June 2019, from 34.2 per cent as at end-December 2018.

The household debt service ratio ticked up during the period under review mainly reflecting higher servicing cost relative to GDP, as illustrated in Chart 3.5. The household debt service-to-GDP ratio was estimated at 6.5 per

<sup>4</sup> The credit-to-GDP gap is estimated as the percentage deviation between the credit-to-GDP ratio

**Chart 3.7: Growth of Gross Operating Surplus and GDP**



e: estimate.

Source: Statistics Mauritius.

cent as at end-June 2019 compared to 6.4 per cent as at end-December 2018. While average interest rates on credit for other purposes was a tad higher, those on housing credit remained on a general downward trend.

### 3.1.1 Household Credit-to-GDP Gap

Higher credit facilities availed to households relative to GDP over the period under review also helped explain the increase in household credit-to-GDP gap<sup>4</sup> during the period under review, as illustrated in Chart 3.6. Positive credit-to-GDP gaps in housing credit and household credit other than housing (other purposes) coalesced into a positive household credit-to-GDP gap which increased to 0.5 per cent as at end-March 2019. The credit-to-GDP gap increased further to 0.9 per cent as at end-June 2019 as a result of further expansion in household credit.

## 3.2 Corporates

The exposure of banks to domestic corporates accounts for around 69 per cent of total private sector credit and 17 per cent of banks' total assets. Gross Operating Surplus (GOS), which

and an estimate of its trend using the Hodrick-Prescott filter.





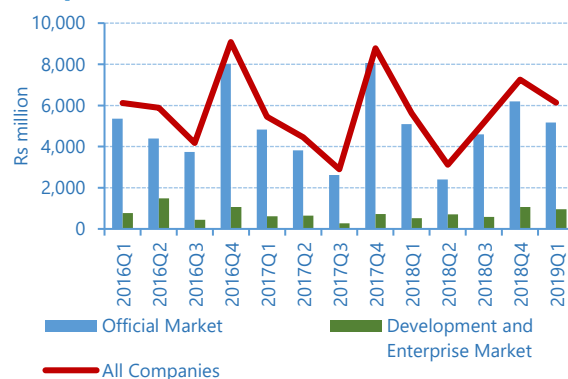
may be used as a proxy for the value added provided by the operating activities of incorporated enterprises after deducting for labour input costs, appears to corroborate with nominal GDP growth. For 2019, growth of GOS is estimated to be rather flat at around 5.0 per cent, reflecting sustained expansion in economic activity which would add to higher internal sources of investment, as illustrated in Chart 3.7.

Profit after tax of selected companies on the domestic stock market increased by 9.0 per cent for the year ended March 2019, following an increase of 3.1 per cent for the year ended March 2018, as illustrated in Chart 3.8. The rise in profits was mainly attributed to the positive performances of companies listed on, both, the Official Market and the Development and Enterprise Market (DEM). On a sector-wise basis, improved performance of operators within the 'Tourism', 'Manufacturing', 'Traders' and 'Finance and Business Services' sectors contributed to the increase in profits which dwarfed the mitigated performance of operators in the 'Sugar-linked' and 'Transport' sectors.

Total corporate debt was higher by 7.7 per cent compared to end-June 2018, reflecting higher domestic debt while external debt of corporates was rather flat. Domestic debt of corporates grew by 8.5 per cent as at end-June 2019, higher than the increase of 7.0 per cent recorded as at end-December 2018. Short term external debt increased by 0.9 per cent while long term external debt contracted by 0.2 per cent. The corporate debt-to-GDP ratio was higher at 54.4 per cent as at end-June 2019 compared to 54.2 per cent as at end-December 2018.

Domestic debt of corporates accounted for around 91.8 per cent of total corporate debt as at end-June 2019. As a ratio to GDP, it stood at

**Chart 3.8: Profit after Tax of Selected Listed Companies on the Domestic Stock Market**



Sources: Stock Exchange of Mauritius and Bank of Mauritius staff estimates.

50.0 per cent as at end-June 2019 compared to 49.6 per cent as at end-December 2018.

External debt of corporates, which accounted for around 8.2 per cent of total corporate debt, fell slightly as a ratio to GDP from 4.6 per cent as at end-December 2018 to 4.5 per cent as at end-June 2019. The rather flat external debt stock contributed towards an improvement of the external debt to Gross Official International Reserves ratio from 10.1 per cent as at end-December 2018 to 8.7 per cent as at end-June 2019. External debt of corporates as a ratio to total export proceeds increased slightly from 11.2 per cent to 11.3 per cent.

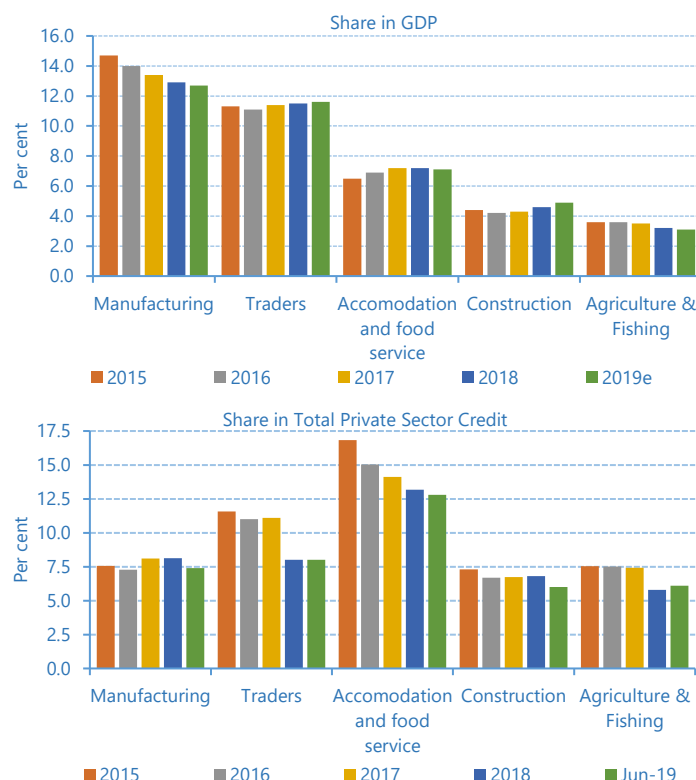
Domestic debt of corporates grew by 8.5 per cent as at end-June 2018 and reflected expansion of credit to operators in almost all key sectors of the economy including construction, tourism, distributive trade, manufacturing as well as financial and business services. With buoyant construction activity, the share of the construction sector in GDP has increased but its share in credit has remained more or less unchanged. In 2019, the construction sector is estimated to account for 4.9 per cent of GDP, while operators in the sector availed of credit facilities which represented 6.0 per cent of total private sector



credit as at end-June 2019. As regard the accommodation and food service sector, though it still accounted for the highest share in total private sector credit as at end-June 2019, its share in credit has dwindled over the past years, reflecting deleveraging from bank credit by operators in the sector. Nevertheless, sustained growth of tourism activities has resulted in a higher share of the sector in GDP which is estimated at 7.1 per cent in 2019. This contrasts with the share of GDP represented by operators in the manufacturing sector which has declined over the years but this decline was not fully reflected in their share in total private sector credit, as illustrated in Chart 3.9.

The credit-to-GDP gap measure provides an indication of potential vulnerabilities in lending activities. If it is systematically above the underlying trend, it warrants attention as it can indicate overheating in credit markets. With the improvement in credit extended by banks to operators in the private sector in Mauritius, the credit-to-GDP gap has improved and moved into positive territory in 2018Q3, as illustrated in Chart 3.10. Private sector credit-to-GDP gap has continued to increase in 2019H1 and was estimated at 3.0 per cent in June 2019. The higher credit-to-GDP gap points to higher leveraged corporates and may point to the building up of vulnerabilities, the more so, as some large corporates have had recourse to the capital market to raise funds. Corporate credit-to-GDP gap has increased consistently for four consecutive quarters ending 2019Q2.

**Chart 3.9: Share of Selected Sectors in GDP and in Total Private Sector Credit Market**

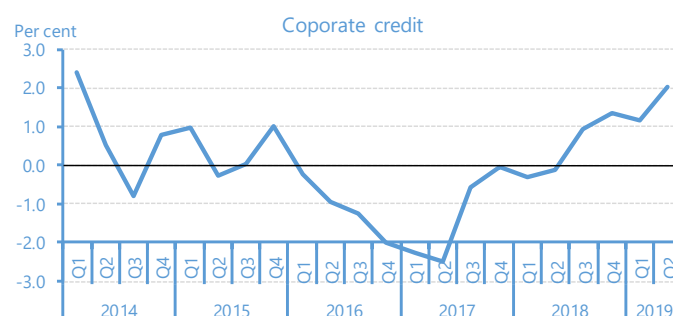


e: estimate.

Note: Data on the sectorwise distribution of credit as from October 2018 is based on a new reporting template as per the United Nations International Standard Industrial Classification (ISIC) of all economic activities and thus may not be strictly comparable.

Sources: Statistics Mauritius and Bank of Mauritius.

**Chart 3.10: Credit-to-GDP gap**



Source: Bank of Mauritius




**Table 3.1: Domestic and External Corporate Debt**

	2014	2015	2016	2017	2018				2019	
					Q1	Q2	Q3	Q4*	Q1	Q2
	<i>Rs Million</i>									
<b>Total Corporate Debt</b>	<b>233,263</b>	<b>240,896</b>	<b>221,660</b>	<b>238,368</b>	<b>245,112</b>	<b>249,892</b>	<b>256,685</b>	<b>261,347</b>	<b>262,380</b>	<b>269,151</b>
Corporate External Debt	31,638	31,598	15,864	14,742	21,737	22,124	22,054	22,023	22,284	22,134
Short Term <sup>1</sup>	4,269	4,733	5,568	5,596	5,018	5,027	5,036	5,046	5,062	5,075
Long Term <sup>2</sup>	27,369	26,865	10,297	9,146	16,719	17,097	17,018	16,977	17,223	17,059
Corporate Domestic Debt <sup>‡</sup>	201,625	209,298	205,796	223,626	223,375	227,769	234,631	239,325	240,096	247,017
	<i>Per cent of total corporate debt</i>									
<b>Total Corporate Debt</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Corporate External Debt	13.6	13.1	7.2	6.2	8.9	8.9	8.6	8.4	8.5	8.2
Short Term <sup>1</sup>	1.8	2.0	2.5	2.3	2.0	2.0	2.0	1.9	1.9	1.9
Long Term <sup>2</sup>	11.7	11.2	4.6	3.8	6.8	6.8	6.6	6.5	6.6	6.3
Corporate Domestic Debt <sup>‡</sup>	86.4	86.9	92.8	93.8	91.1	91.1	91.4	91.6	91.5	91.8
	<i>Per cent of GDP</i>									
<b>Total Corporate Debt</b>	<b>59.5</b>	<b>58.8</b>	<b>51.0</b>	<b>52.1</b>	<b>53.0</b>	<b>53.2</b>	<b>54.0</b>	<b>54.2</b>	<b>53.8</b>	<b>54.4</b>
Corporate External Debt	8.1	7.7	3.6	3.2	4.7	4.7	4.6	4.6	4.6	4.5
Short Term <sup>1</sup>	1.1	1.2	1.3	1.2	1.1	1.1	1.1	1.0	1.0	1.0
Long Term <sup>2</sup>	7.0	6.6	2.4	2.0	3.6	3.6	3.6	3.5	3.5	3.5
Corporate Domestic Debt <sup>‡</sup>	51.4	51.1	47.3	48.9	48.3	48.5	49.3	49.6	49.2	50.0

\* First estimates.

<sup>‡</sup> Culled from banks' sectorwise distribution of credit.

1. Refers mainly to trade credit as recorded in balance of payments statistics.

2. Excluding loans of Global Business Companies.

Sources: Mauritius SDDS country page and Bank of Mauritius.



## 4. Financial Market Development

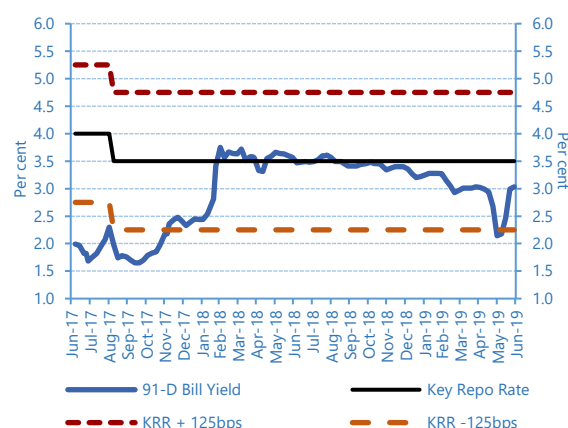
### 4.1 Financial Markets Updates

The banking sector remained very liquid with all banks maintaining cash balances above the regulatory liquidity requirement of 9 per cent on rupee deposits for the fortnightly average. The rupee excess liquidity hovered around Rs11.5 billion during 2019H1, slightly higher than the average of Rs11.2 billion registered during 2018H2.

The BOM consistently pursued its Open Market Operation strategy to effectively maintain the rupee excess liquidity prevailing in the banking system to a level that would not hinder its monetary policy transmission mechanism and cater for any demand. The BOM issued its own securities both at the shorter end of the yield curve to absorb excess liquidity stemming mainly from maturing securities and issued medium term securities to remove the structural excess rupee in the banking system. The BOM also intervened to steer short term rates within the corridor. The end result was that the 91-Day yield began moving within the interest rate corridor, as illustrated in Chart 4.1. Sterilized foreign exchange interventions were conducted to limit the injection of additional rupee into the system. Furthermore, the BOM renewed the maturing special deposits for a further period of up to two years.

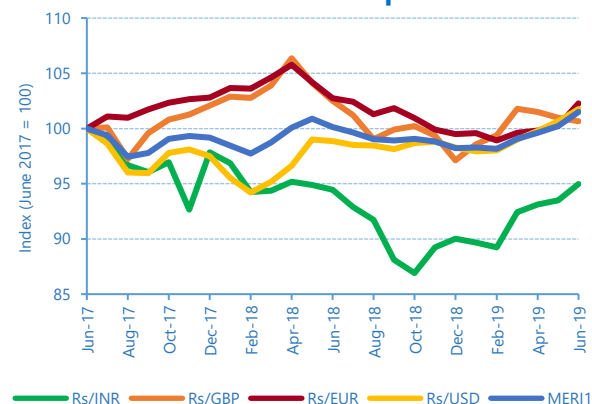
As at close of business on 30 June 2019, total outstanding amount of instruments issued for liquidity management purposes stood at Rs115.9 billion, of which Rs72.4 billion were securities maturing within one year. The maturity profile of BOM outstanding instruments continue to shorten, with instruments maturing in less than one year representing more than 54 per cent of the total outstanding debt. Activity on the interbank

**Chart 4.1: Monetary Policy Framework**



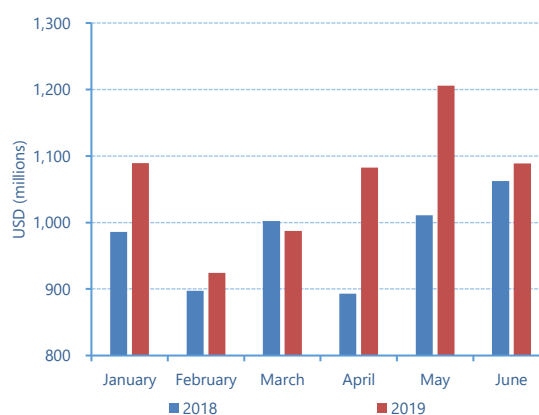
Source: Bank of Mauritius

**Chart 4.2: Evolution of the Rupee and MER1**



Source: Bank of Mauritius

**Chart 4.3: Monthly foreign exchange turnover**



Source: Bank of Mauritius



market remained relatively low. Given, the prevailing low interest rate environment, retail investors took advantage of the investment opportunities offered to them by investing in risk free assets, which further boosted the volume of transactions carried out on the secondary market. Secondary market activity picked up significantly during the 2019H1, with trading in Government/ BoM securities totaling Rs114.4 billion, as compared to Rs42.6 billion during 2018H2.

## 4.2 Exchange Rate Developments

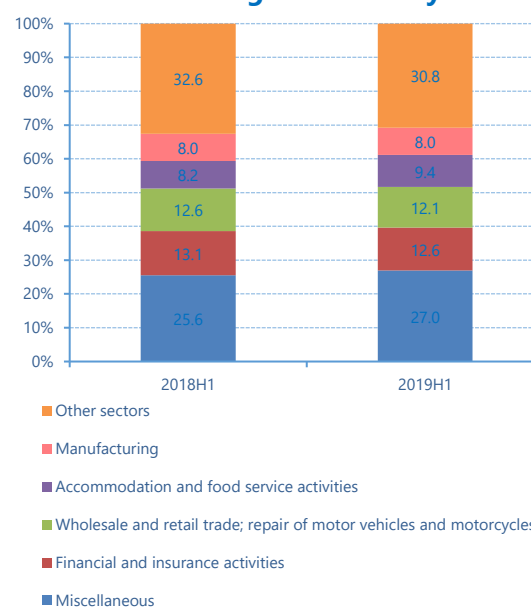
The rupee remained influenced by movements of major currencies on the international markets and by the forces of domestic demand and supply. During 2019H1, the domestic nominal effective exchange rate lost some ground on the back of stronger currencies of major trading partners. On a point-to-point indicative selling rate basis, the rupee depreciated against the currencies of our main trading partners, namely the US dollar, Euro and the Pound sterling by 3.4, 2.7 and 3.5 per cent respectively as at end-June 2019 compared to end-December 2018.

The currency-weighted nominal exchange rate (MERI1) depreciated in 2019H1, as illustrated in Chart 4.2. The BOM will continue to monitor risks emanating from global economic and financial developments and strive to ensure that the rupee correctly reflects macroeconomic fundamentals.

## 4.3 Foreign Exchange Turnover

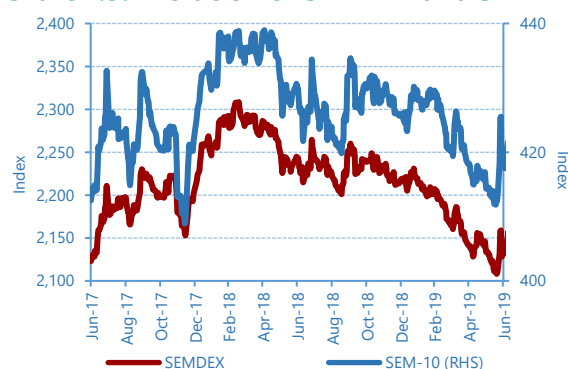
Foreign exchange turnover, i.e. spot and forward purchases and sales of foreign currencies against the rupee and derivatives by banks with their customers, was around 9.0 per cent higher in 2019H1 than 2018H1. The highest turnover was recorded at USD1,206 million in May 2019, representing an increase of 19.2 per cent compared to May

**Chart 4.4: Percentage turnover by sector**



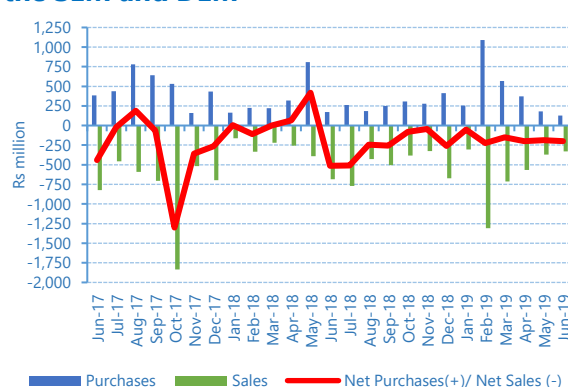
Source: Bank of Mauritius

**Chart 4.5: Evolution of SEMDEX and SEM-10**



Source: Bank of Mauritius

**Chart 4.6: Investment by Non-residents on the SEM and DEM**



Source: Bank of Mauritius



2018, as illustrated in Chart 4.3.

Chart 4.4 illustrates the composition of turnover of main sectors in 2018H1 and 2019H1. The Accommodation, Manufacturing, Financial and insurance activities, and Wholesale and retail trade sectors registered an increase of 25.9, 9.3, 5.3 and 4.8 per cent, respectively, during 2019H1 in comparison to 2018H1.

#### **4.4 Domestic Stock Market Developments**

The negative momentum of the domestic stock market continued throughout 2019H1, albeit showing some signs of recovery at the end of the period, as illustrated in Chart 4.5. All sectors suffered setbacks with hotel stocks being particularly volatile. Along with emerging stock markets, the Stock Exchange of Mauritius (SEM) was also impacted by global uncertainty which led to an underperformance in comparison to more developed equity markets. The domestic index recorded a negative 6-months return and closed the period at 2,128. The SEM-10, comprising the 10 most capitalised stocks on the Official Market, closely tracked the movements of the SEMDEX.

The monthly net sales by non-residents is illustrated in Chart 4.6. Cumulative, net sales by non-residents amounted to Rs1,009 million over the six months ended June 2019.



## 5. Deposit-Taking Financial Institutions

The banking sector remained resilient during the period under review, with total assets of banks expanding at a faster pace than in the preceding six month period. As at end-June 2019, 20 banks were licensed to carry out banking business in Mauritius, of which nine were domestic-owned, eight were foreign-owned subsidiaries and three were branches of foreign banks. Banque des Mascareignes Ltee changed its name to BCP Bank (Mauritius) and a new Banking Licence in the name of BCP Bank (Mauritius) Ltd was issued to the institution on 28 March 2019.

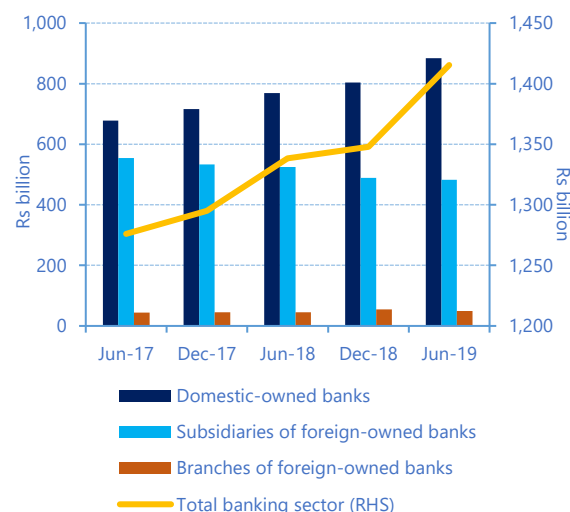
The banking sector continues to play a significant role in the economy. As at end-June 2019, the total assets of the sector represented around 278.7 per cent of GDP slightly down from 279.5 per cent of GDP as at end-December 2018<sup>5</sup>. The banking landscape remains relatively concentrated with the two largest banks accounting for over 40 per cent of market shares for total deposits, advances and assets.

As at end-June 2019, Non-Bank Deposit Taking Institutions (NBDTIs), comprising leasing companies and finance companies, held assets equivalent to 15.9 per cent of GDP.

### 5.1. Banking Sector Overview

Total assets of the banking sector grew by 5.0 per cent during 2019H1, compared to a growth of 0.7 per cent during 2018H2, and stood at Rs1,415.4 billion as at end-June 2019, as illustrated in Chart 5.1. The growth in banks' assets reflected mostly an increase of 10.0 per cent in total assets of domestic-owned banks mainly on account of an increase in investment in Government/Central Bank Securities and

Chart 5.1: Banking Sector Assets



Source: Bank of Mauritius

advancement of loans, while the total assets of subsidiaries of foreign-owned banks and branches of foreign owned banks contracted by 1.5 per cent and 10.3 per cent, respectively, over the same period. The growth in total assets was mostly funded by an increase of 3.6 per cent in deposits and 51.1 per cent in loan capital.

Over 2019H1, domestic-owned banks contributed 6.0 per cent to the growth in total bank assets. This was partly offset by the contraction of 0.5 per cent and 0.4 per cent in asset growth recorded by subsidiaries of foreign-owned banks and branches of foreign owned banks respectively. An analysis of the distribution of total bank assets as at end-June 2019 showed that domestic-owned banks held the largest share of assets, which stood at 62.5 per cent up from 59.6 per cent as at end-December 2018; followed by subsidiaries of foreign-owned banks which held 34.1 per cent as at end-June 2019 down from 36.3 per cent as at end-December 2018. Branches of foreign-

<sup>5</sup> Revised figures



owned banks held the remaining 3.4 per cent of total banking assets as at end-June 2019, down from 4.1 per cent as at end-December 2018.

During 2019H1, domestic assets increased by 8.3 per cent. As detailed in Table 5.1, subsidiaries of foreign-owned banks contributed much towards this growth, with assets growing at 9.5 per cent over the period. This was followed by growth of assets of

domestic-owned banks at 8.2 per cent. Branches of foreign-owned banks recorded the lowest asset growth at 6.1 per cent. Overall foreign assets rose by 1.6 per cent. Foreign assets held by domestic-owned banks increased by 13.5 per cent as at end-June 2019. This expansion was partly outweighed by a contraction of 5.2 per cent and 33.1 per cent in foreign assets held by subsidiaries of foreign-owned banks and branches of foreign-owned banks respectively.

**Table 5.1: Banking Sector Assets**

Growth rates of assets (per cent)						Assets (contribution to asset growth) (per cent)					
I. Foreign assets											
	Jun-17	Dec-17	Jun-18	Dec-18 <sup>6</sup>	Jun-19		Jun-17	Dec-17	Jun-18	Dec-18	Jun-19
Domestic	7.1	6.4	2.3	12.9	13.5	Domestic	1.2	1.1	0.4	2.3	2.8
Subsidiary	0.9	(11.1)	2.0	(8.1)	(5.2)	Subsidiary	0.3	(3.8)	0.6	(2.4)	(1.4)
Branch	(20.6)	(1.2)	18.8	73.4	(33.1)	Branch	(0.2)	(0.0)	0.2	0.7	(0.6)
Total	2.5	(5.1)	2.4	1.4	1.6	Total	1.3	(2.7)	1.2	0.7	0.8
II. Domestic assets											
	Jun-17	Dec-17	Jun-18	Dec-18	Jun-19		Jun-17	Dec-17	Jun-18	Dec-18	Jun-19
Domestic	3.7	8.2	7.0	0.6	8.2	Domestic	1.3	2.9	2.6	0.2	3.2
Subsidiary	1.3	12.4	(2.4)	(2.8)	9.5	Subsidiary	0.1	1.1	(0.2)	(0.3)	0.9
Branch	4.4	4.2	(8.5)	1.8	6.1	Branch	0.1	0.1	(0.2)	0.0	0.1
Total	3.3	8.8	4.3	0.0	8.3	Total	1.5	4.2	2.2	0.0	4.2
III. Total assets											
	Jun-17	Dec-17	Jun-18	Dec-18	Jun-19		Jun-17	Dec-17	Jun-18	Dec-18	Jun-19
Domestic	4.8	7.6	5.4	4.5	10.0	Domestic	2.5	4.0	3.1	2.6	6.0
Subsidiary	1.0	(6.1)	0.9	(6.8)	(1.5)	Subsidiary	0.5	(2.6)	0.4	(2.7)	(0.5)
Branch	(3.4)	2.8	(1.8)	23.0	(10.3)	Branch	(0.1)	0.1	(0.1)	0.8	(0.4)
Total	2.8	1.5	3.4	0.7	5.0	Total	2.8	1.5	3.4	0.7	5.0

Figures may not add up to totals due to rounding

Source: Bank of Mauritius

<sup>6</sup>Effective October 2018, the reporting balance sheet template was enhanced and harmonized with the requirements of the new Monetary and Financial

Statistics Manual and Compilation Guide 2016. Hence, data are not strictly comparable with those prior to December 2018.



The changes in banks portfolio composition and shifting composition between domestic and foreign securities held explained much of the changes in domestic and foreign assets depicted in Table 5.1. The uptrend in foreign assets held by domestic banks is partly explained by a growth in placements made abroad and an increase in investment in foreign sovereign securities to meet the LCR requirements in significant foreign currencies. The decrease in foreign assets held by subsidiaries and branches of foreign-owned banks was mainly due to a fall in placements made abroad.

The growth in domestic assets was mainly due to increases in investment in BOM bills and corporate bonds by domestic banks. For subsidiaries of foreign-owned banks, the growth was due to an increase in interbank loans while for branches of foreign-owned banks, the growth was mainly on account of an increase in investment in BOM bills and securities.

#### 5.1.1 Market Concentration

Measures of market concentration namely the Herfindahl-Hirschman Index (HHI) for total banking assets indicated an increase from 1,387 as at end-December 2018 to 1,501 as at end-June 2019 and a corresponding rise from 1,471 to 1,510 for total deposits over the same period, reflecting a moderately concentrated market structure.

The share of total assets held by the four largest banks rose from 61 per cent as at end-December 2018 to 64 per cent as at end-June 2019.

#### 5.1.2 Capital Adequacy

Banks remained sound and well capitalized over the six month period ended June 2019. As

per the Guideline on Scope of Application of Basel III and Eligible Capital, banks are phasing in the Basel III capital framework incorporating CCB ranging from 0.625 per cent to 2.5 per cent over a four-year period which began in January 2017. Banks are required to keep a minimum CCB of 1.875 per cent as at end-June 2019, over and above the minimum 6.5 per cent Common Equity Tier 1 (CET1) capital ratio, in order to ensure the buildup of capital buffers outside periods of stress. Capital charges for Domestic Systemically Important Banks (D-SIBs), which were applicable as from 1<sup>st</sup> January 2016, have already been fully phased in on 1<sup>st</sup> January 2019 as per the Guideline for dealing with Domestic-Systemically Important Banks. The five D-SIBs were required to hold, as at end-June 2019, over and above the CCB, an additional capital surcharge ranging from 1.0 per cent to 3.5 per cent of their risk-weighted assets depending on their systemic importance.

The CAR for the banking sector in Mauritius increased from 18.4 per cent as at end-December 2018<sup>7</sup> to 19.2 per cent as at end-June 2019. The level of capital maintained by banks in Mauritius as at end-June 2019 remained comfortably above the current regulatory minimum of 11.875 per cent, inclusive of CCB, and above the imposed capital surcharge in case of the five D-SIBs. The capital base of the banking sector has followed an upward trend and increased by 6.5 per cent over 2019H1 to reach Rs151.1 billion as at end-June 2019, explained by 8.7 per cent and 6.6 per cent increase in Tier 2 and CET 1 capital respectively. CET1 Ratio, which is indicative of the strength of banks' core capital structure, stood at 17.0 per cent as end-June 2019, up from 16.3 per cent as at end-December 2018. As at end-June 2019, branches of foreign-owned banks posted the highest CET1 ratio at 22.8 per cent which was higher than the ratio

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<sup>7</sup> Revised figures





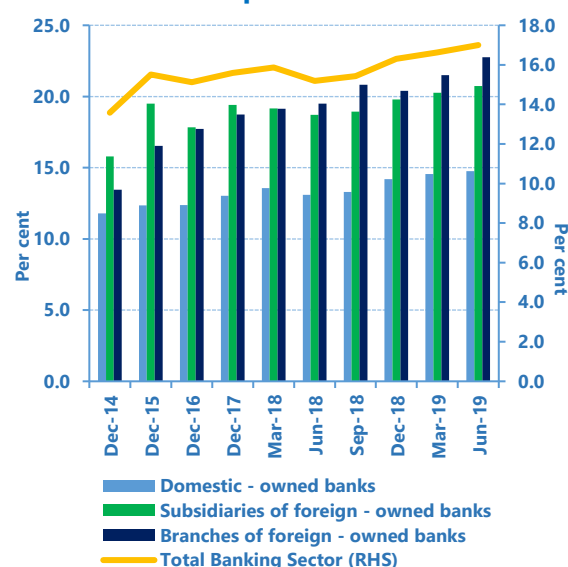
of 20.7 per cent registered by the subsidiaries of foreign banks, while the CET1 capital ratio for domestic-owned banks stood at 14.8 per cent, as illustrated in Chart 5.2.

### 5.1.3 Asset Quality

As at end-June 2019, gross NPL in the banking sector stood at Rs40.4 billion down from Rs42.3 billion as at end-December 2018. The overall NPL ratio for the banking sector declined to 5.5 per cent as at end-June 2019 from 5.9 per cent as at end-December 2018. An improvement was observed in the NPL ratio for credit extended within Mauritius, which dropped from 4.6 per cent as at end-December 2018 to 4.0 per cent as at end-June 2019. The NPL ratio for credit extended outside Mauritius contracted slightly from 7.3 per cent as at end-December 2018 to 7.2 per cent as at end-June 2019. The BOM has issued a revised Guideline for the write-off of non-performing assets which could partly account for the drop in the NPL amount.

The construction, agriculture and manufacturing sectors had the highest NPL ratios for credit extended within Mauritius over the period under review. The NPL ratio of the construction sector improved from 11.4 per cent as at end-December 2018 to 10.6 per cent as at end-June 2019. For agriculture, the NPL ratio improved from 9.0 per cent to 7.9 per cent over the same period. Loan quality for the manufacturing sector also improved with the NPL ratio declining from 8.9 per cent to 7.5 per cent over the same period. On the other hand, NPL ratio for the ICT and transportation sectors worsened, moving from 1.6 per cent and 11.2 per cent, respectively, as at end-December 2018 to 22.3 per cent and 17.9 per cent, respectively, as at end-June 2019.

**Chart 5.2: CET1 Capital Ratio**



Source: Bank of Mauritius

### 5.1.4 Coverage Ratio

While overall credit quality improved over the period under review, coverage of impaired credit declined. The coverage ratio, which is measured as the ratio of specific provisions to gross NPL, dropped from 54.0 per cent as at end-December 2018 to 53.6 per cent as at end-June 2019. The coverage ratio for credit granted in Mauritius also declined from 50.8 per cent as at end-December 2018 to 50.5 per cent as at end-June 2019. The same trend was noted in coverage ratio for credit granted outside Mauritius, which declined from 56.2 per cent as at end-December 2018 to 55.5 per cent as at end-June 2019.

### 5.1.5 Profitability

Profitability of the overall banking sector improved during 2019H1 as reflected by the higher pre-tax ROA realised by the banks. From end-December 2018<sup>8</sup> to end-June 2019, the pre-tax ROA increased marginally from 1.5 per cent to 1.7 per cent. Likewise, there was a rise in the post-tax ROE from 11.9 per cent to 13.4

<sup>8</sup> Revised figures





per cent. The cost to income ratio of the banking sector decreased slightly from 40.2 per cent to 39.0 per cent, over the period under review.

#### *5.1.6 Banks' Liquidity and Foreign Exchange Open Positions*

Generally, the banking sector in Mauritius has remained liquid over 2019H1. The LCR for the banking sector increased from 185.1 per cent as at end-December 2018 to 246.0 per cent as at end-June 2019, following LCR requirements which are being phased in. Taken together, the LCR of banks in, both, Mauritian rupees and other major currencies stayed above the regulatory requirements.

Banks are subject to a daily overall foreign exchange exposure limit of 15 per cent of their Tier 1 capital. The overall net foreign exchange exposure limit stood at 3.1 per cent as at end-June 2019, representing an increase of 0.8 percentage point compared to end-December 2018 and is mainly explained by a more than proportionate increase in aggregate net foreign exchange position relative to the increase in Tier 1 capital of the banking sector.

Based on the balance sheets of banks, the banking sector remained well funded and liquid with fairly low currency mismatches and banks appeared to be resilient against both liquidity risk and foreign exchange stresses.

#### *5.1.7 Concentration of Credit*

The ratio of large exposures moved from 310.7 per cent as at December 2018 to 294.9 per cent as at June 2019. The ratio of aggregate large exposures to total credit increased from 46.2 per cent as at end-December 2018 to 47.4 per cent as at end-June 2019. Altogether, the credit concentration ratio remained within the regulatory limit.

## **5.2. Non-Bank Deposit Taking Sector**

There were eight NBDTIs licensed as at end-June 2019. The main activity of NBDTIs relates to the mobilisation of deposits from the public and the granting of leasing and loan facilities to individuals and corporates. Cim Finance Ltd and Mauritian Eagle Leasing Company Limited have ceased the business of deposit-taking with effect from 18 April 2019 and 19 April 2019 respectively and are in the process of surrendering their non-bank deposit-taking licence.

### *5.2.1 Capital Adequacy*

The Non-Bank Deposit Taking sector was assessed as sound and adequately capitalized during 2019H1. The aggregate CAR of NBDTIs contracted slightly to 32.6 per cent as at end-June 2019 from 33.9 per cent as at end-December 2018 mainly on account of a more than proportionate increase in risk-weighted assets compared to the increase in capital base. With the current level of capitalization, NBDTIs continue to have robust capital adequacy position.

### *5.2.2 Assets and liabilities*

The ratio of total assets of NBDTIs to total assets of the banking sector decreased by 0.2 percentage point from end-December 2018 to reach 5.7 per cent as at end-June 2019. The growth rate of total assets of NBDTIs stood at 2.0 per cent over the first half of 2019, an improvement compared to the growth rate of 1.5 per cent recorded during 2018H2.

As illustrated in Chart 5.3, deposits mobilized by NBDTIs experienced a contraction of 6.7 per cent as at end-June 2019, in comparison to a growth of 1.9 per cent registered as at end-December 2018. Loan and leasing facilities as a percentage of total assets of NBDTIs decreased by 0.3 percentage point to 79.2 per cent as at



end June 2019. Total deposits as a ratio of total assets decreased from 60.3 per cent as at end-December 2018 to 55.1 per cent as at end-June 2019, mainly on account of repayment of deposits by the two non-banks which are in the process of surrendering their banking licences.

### 5.2.3 Profitability

The consolidated profitability figures for NBDTIs are based on the audited results for the financial years ended June, September and December. The aggregate annualized profit after tax of NBDTIs rose to Rs2,103 million as at end-June 2019, from Rs391 million as at end-December 2018. The pre-tax return on average assets and post-tax return on equity stood at 3.2 per cent and 12.0 per cent, respectively, as at end-June 2019 compared to 3.0 per cent and 2.4 per cent as at end-December 2018.

### 5.2.4 Liquidity

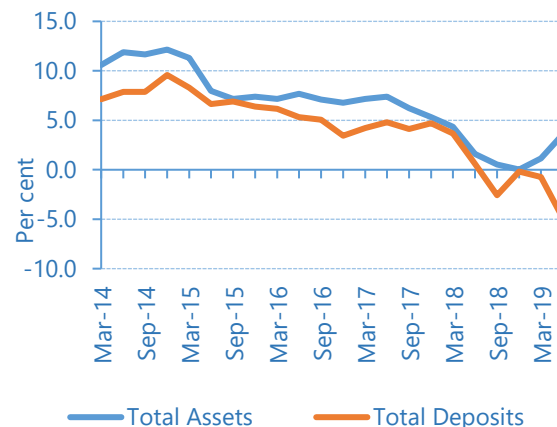
During the six-month period ended June 2019, NBDTIs experienced an increase in liquid assets as well as in total assets. As such, all NBDTIs maintained liquidity ratios above the statutory minimum of 10 per cent. The ratio of liquid assets to total deposits stood at 26.0 per cent as at end-June 2019 compared to 22.6 per cent as at end-December 2018.

## 5.3 Banking Sector Stability Indicator

As the five risk indicators move farther away from the center (approach a score of 1), the composite measure of riskiness increases. The banking stability index, as represented in panel Chart 5.4, showed that, barring liquidity<sup>9</sup>, all indicators namely asset quality, profitability, efficiency and soundness have improved. Panel Chart 5.5 shows that when the liquidity indicator is measured through the LCR, all indicators show an improvement. This could be

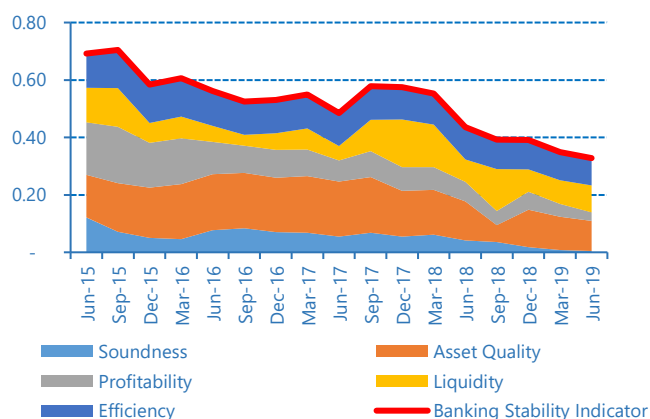
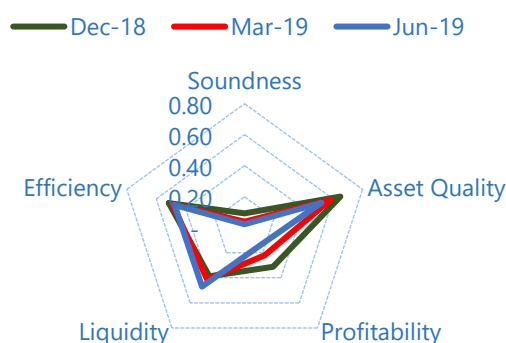
<sup>9</sup> Liquidity indicator is exclusive of treasury bills

**Chart 5.3: Assets and deposits growth of NBDTIs**



Source: Bank of Mauritius

**Chart 5.4: Banking Stability Map and Indicator (Liquidity ratios)**



Note: Liquidity ratios utilized in the Banking Sector Stability Indicator derivation may not match to other sections in the report.

Source: Bank of Mauritius



explained with the fact that banks may be structuring their liquid assets in order to be in line with the BOM's guideline on Liquidity Risk Management.

## 5.4 Z-score

A z-score approach has been devised for the further monitoring of banks, as depicted in Chart 5.6. The basic principle of the z-score measure is to relate a bank's capital level to the variability in its returns. The Z-score has been derived through the following formula:

$$Z - score = \frac{\left( \frac{Capital}{Asset} + ROA \right)}{Std Dev (ROA)}$$

The z-score of the banking sector improved from 6.92 as at 2018Q4 to 8.68 as at 2019Q2, and stood well above its mean of 6.1, indicating an improvement in the banking sector performance.

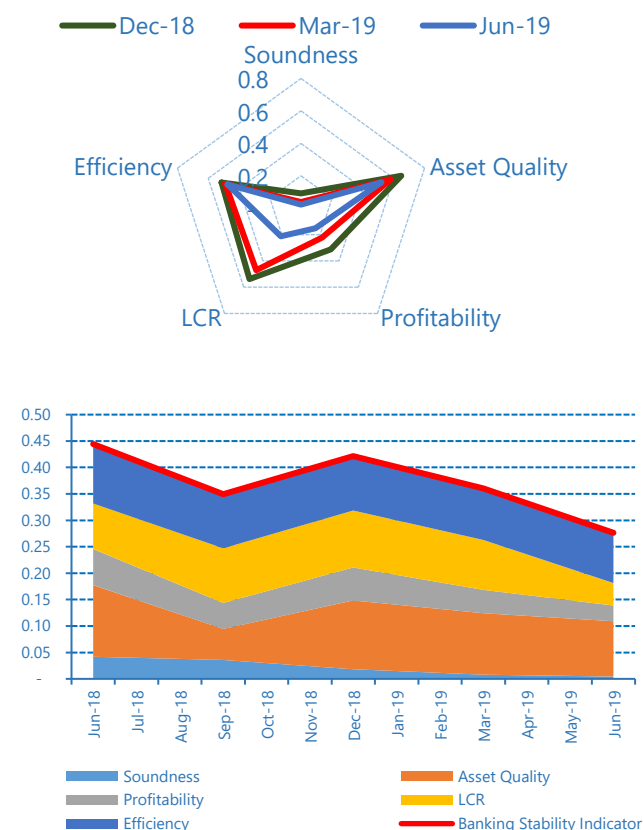
## 5.5 Financial Soundness Indicator<sup>10</sup>

The deposit-taking institutions<sup>11</sup> had a healthy growth in their capital positions with an increase in CAR from 19.2 per cent as at end-December 2018 to 19.8 per cent as at end-June 2019. An improvement in several components of the capital base of the banking sector namely, CET1, capital conservation buffer and D-SIBs buffer explain this growth.

The gross NPL ratio improved by 0.5 percentage point over 2019H1 and stood at 6.0 per cent as at end-June 2019.

<sup>10</sup> FSIs are calculated on a domestic consolidation basis using the Financial Soundness Indicators Compilation Guide (2006) of the International Monetary Fund. Figures in this section may not match those provided in other sections.

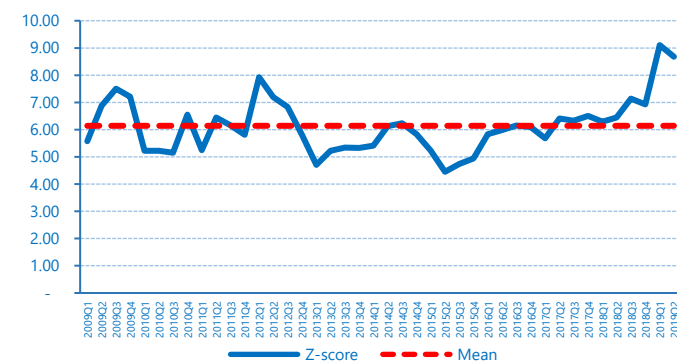
**Chart 5.5: Banking Stability Map and Indicator**



Note: LCR has been adopted since November 2017.

Source: Bank of Mauritius

**Chart 5.6: Z-Score for banks**



Source: Bank of Mauritius

<sup>11</sup> These comprise 20 banks and 8 non-bank deposit taking institutions, and are all regulated by the Bank of Mauritius.



The banking sector experienced an increase in overall profits during the period under review. Rising interest income and decline in loan loss provisioning can explain this improvement. The pre-tax ROA and pre-tax ROE recorded an improvement of 0.4 percentage point and 2.6 percentage points respectively over 2019H1, and stood at 2.1 per cent and 17.4 per cent respectively as at end-June 2019.

As for the liquidity in the system, a slight contraction was noted in currency and deposits held during 2019H1. Based on IMF's FSI compilation guide definition, liquid assets as a ratio of total assets fell by 1.5 percentage points whilst liquid assets as a ratio of short-term liabilities fell by 1.7 percentage points over 2019H1, and stood at 21.0 and 23.9 as at end-June 2019, respectively.

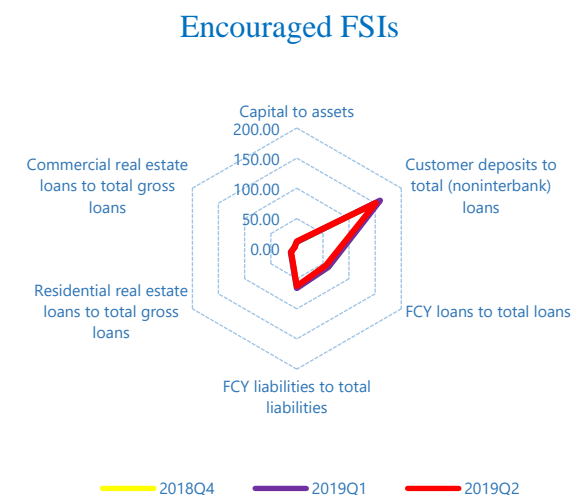
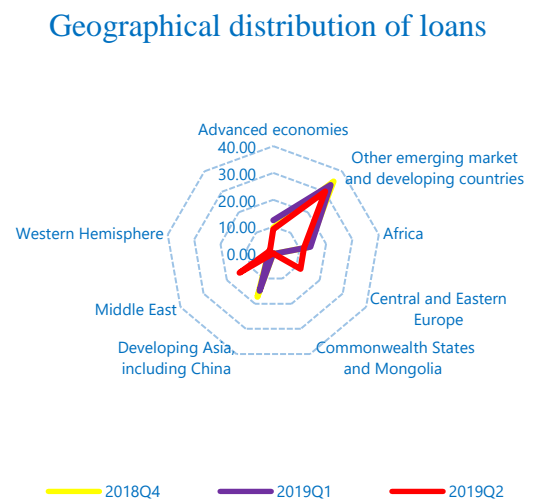
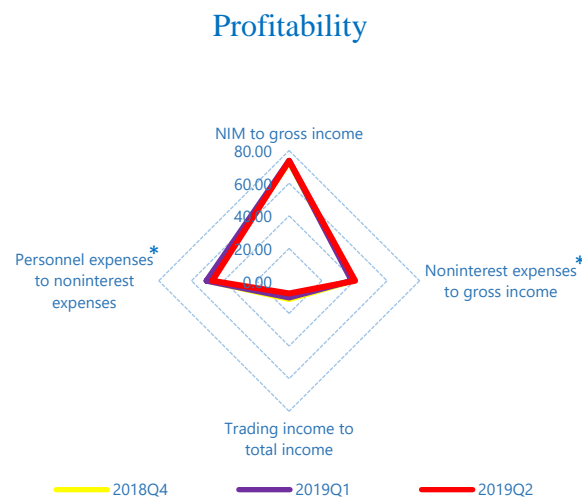
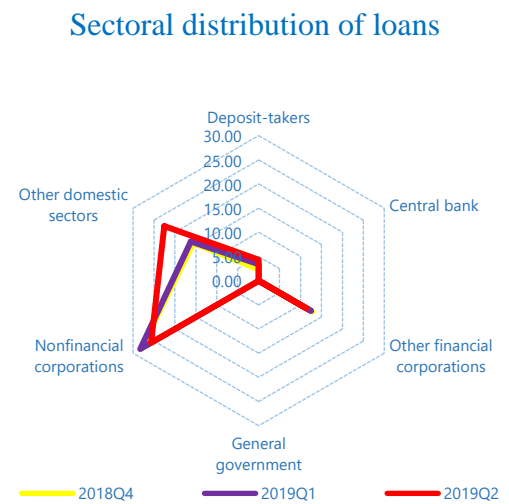
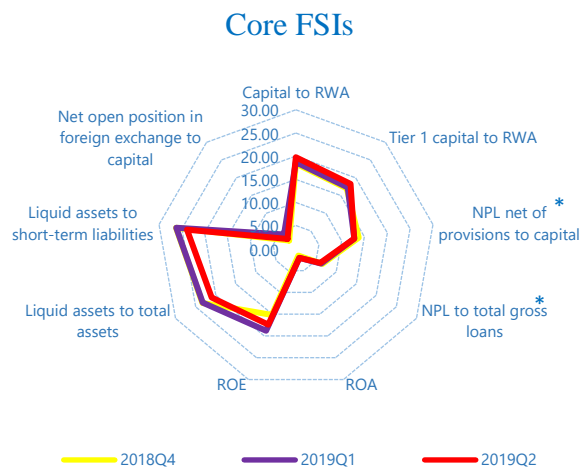
Chart 5.7 illustrates the position of the key Financial Soundness Indicators during 2019H1. The indicators have been grouped in five distinct categories and each color coded line indicates the position of these indicators over the successive quarters under review.

The principle of the chart is that, the farther away the indicators are from the center, the better positioned are the depository corporations; except for those indicators, marked with \*, which flow in the opposite direction.

Almost all indicators remained quasi-stable during 2019H1. The largest share of loans was still attributed to Non-Financial Corporations. As for the geographic distribution of loans, India remained the main cross border destination for credit facilities originating from banks in Mauritius.



Chart 5.7: FSI Radar Panel



Source: Bank of Mauritius



## 6. Non-Bank Financial Institutions<sup>12</sup>

### 6.1 Long-Term Insurance Sector

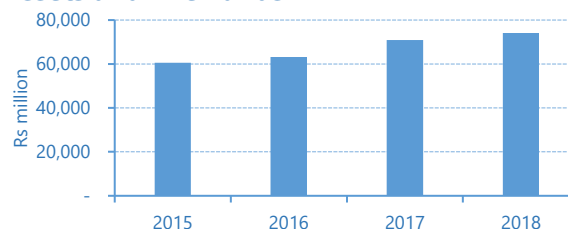
As at start of 2019, the local long-term insurance industry comprised seven Life Insurers and three General Insurers servicing their run-off long-term policies. Analysis in this sub section is exclusive of one life insurer which has not yet provided its financial statements for the financial year ended 2018. It is observed that the value of assets<sup>13</sup> of Life Insurers has increased by 5 per cent to reach Rs74 billion in 2018 compared to Rs71 billion in 2017, as illustrated in Chart 6.1. This performance is mainly attributed to investment in debt securities which progressed by 28 per cent in one year, inclusive of new acquisitions. It should be further noted that debt securities investment in 2018 represented the largest share of life insurers' assets at 33 per cent of the total followed by local equity investment at 25 per cent and overseas equity investment at 12 per cent, as illustrated in Chart 6.2. Capital and Reserves witnessed an increase of 14 per cent to reach Rs8 billion in 2018 compared to Rs7 billion in 2017. During the same period, number of policies under the long-term insurance business grew by 7 per cent to reach 343,486 and gross-premiums increased by 22 per cent to reach Rs12.7 billion in 2018.

### 6.2 Life Insurers

#### 6.2.1 Interconnectedness with other Institutional Sectors

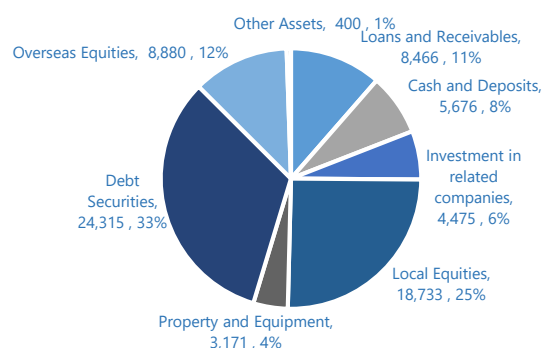
Life Insurers have close inter-linkages with other institutional sectors of the economy.

**Chart 6.1: Long Term Insurance - Value of Assets and Life Funds**



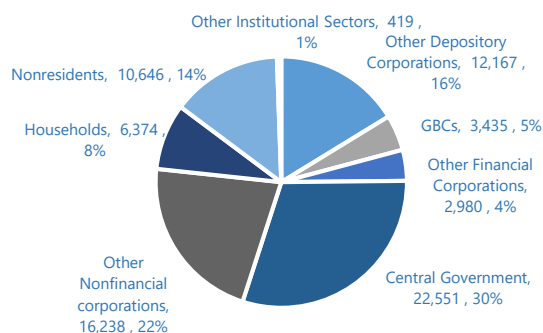
Source: FSC

**Chart 6.2: Distribution of Assets 2018 (Rs million)**



Source: FSC

**Chart 6.3: Exposure of Monetary and Financial Assets of Life Insurers by International Sectors, March 2019 (Rs million)**



Source: FSC

<sup>12</sup> This section has been contributed by the Financial Services Commission (FSC). Analysis for this section covers year 2018, unless otherwise specified.

<sup>13</sup> Assets of life insurers are now analysed exclusive of the portion which pertained to private pension schemes under management.



Monetary and financial statistics pertaining to 31 March 2019, as illustrated in Chart 6.3, demonstrates the extent of this interconnectedness. As at end-March 2019, the largest exposure of Life Insurers, at 30 per cent of the total financial assets, was vis-à-vis the Central Government in the form of debt securities. On the same date, Life Insurers had a gross claim of Rs16 billion on Non-Financial Corporations and Rs12 billion on Other Depository Corporations (inclusive of banks), representing respectively the second and third largest exposures. These investments principally related to the holding of listed equity on the local stock markets. Life Insurers, being primarily financed by the premiums collected from policy holders, are remotely exposed to corporates on the liabilities side.

## 6.2.2 Credit Evolution

Credit extended by Life Insurers, exclusive of one life insurer, declined by 5 per cent to reach Rs7.1 billion in 2018 compared to Rs7.5 billion in 2017, as illustrated in Chart 6.4. On a larger time-span, it was observed that the value of loans granted by Life Insurers pursued its downward trend at an average annualised contraction of 5 per cent.

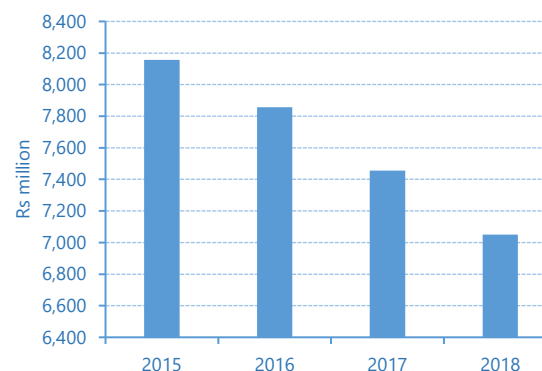
## 6.2.3 Solvency Position

A risk-based minimum capital, also referred to as 'solvency margin', is required to be maintained by life Insurers. In 2018, all the six Life Insurers which submitted their financial were solvent. As observed in Table 6.1 and in line with previous years, bigger companies tend to maintain larger solvency margins in terms of gross premiums,

## 6.3 General Insurance Sector

At the start of 2019, there were 15 companies operating in the local General Insurance business. Analysis on this segment is exclusive

**Chart 6.4: Evolution of Credit Extended by Life Insurers**



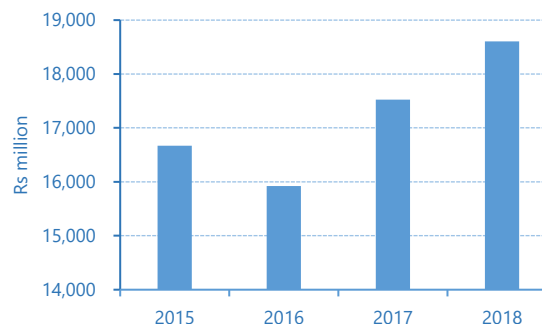
Source: FSC

**Table 6.1: Capital available as a percentage of minimum capital required**

Solvency Position of Life Insurers	CAPITAL AVAILABLE AS A % OF MINIMUM CAPITAL REQUIRED FALLING BETWEEN:		
	100% - 130%	130% - 250%	Above 250%
Large Companies (Gross Premiums > Rs1 billion)	0	1	2
Medium Companies (Gross Premiums > Rs300 million, < Rs1 billion)	1	1	0
Small Companies (Gross Premiums < Rs300 million)	1	0	0

Source: FSC

**Chart 6.5: Assets of General Insurers**



Source: FSC

of one company whose first set of audited accounts is yet to be filed. In 2018, total assets of General Insurers grew to reach Rs18.6 billion, as illustrated in Chart 6.5; representing a y-o-y





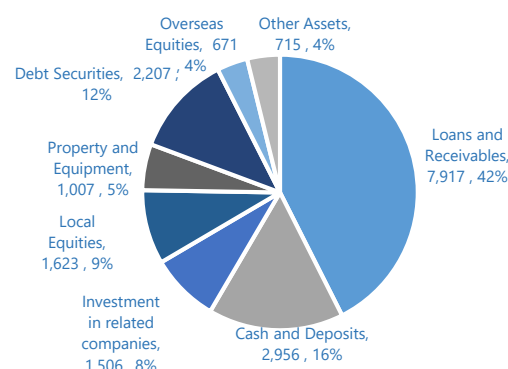
growth of 6 per cent. Investment in securities has been in general less flourishing than in 2017, save for debt securities which progressed by 9 per cent in 2018.

Assets allocation remained roughly the same in 2018, as illustrated in Chart 6.6, with Loans and Receivables representing the largest share at 42 per cent followed by Cash and Deposits at 16 per cent and Debt Securities at 12 per cent. It is important to note that only 6 per cent of the Rs7.9 billion in Loans and Receivables pertain to loans facilities given by General Insurers. The large chunk of this amount relates to premiums and other receivables.

In 2018, gross premiums earned by General Insurers grew at 4 per cent while gross claims increased by 12 per cent. Claims ratio on a gross basis marginally deteriorated compared to last year but remained within the range observed in the past four years. Chart 6.7 illustrates the absolute trend of the General Insurers' gross premium and gross claim over the last four years. Operating profits of General Insurers experienced a y-o-y growth of 5 per cent to reach Rs711 million in 2018. Underwriting profits and investment income grew respectively by 2 per cent and 7 per cent in 2018 compared to 2017, as illustrated in Chart 6.8.

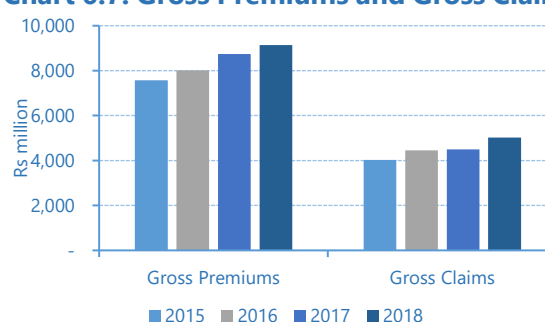
The number of policies in force under general insurance activities dropped to 547,728 in 2018, as illustrated in Chart 6.9; representing a contraction of 5 per cent compared to 2017. Chart 6.10 provides the breakdown of policies in force. Motor insurance policies, which at 74 per cent, accounted for the largest share of general insurance contracts, experienced a near-zero growth rate in 2018. On the other hand, non-motor policies witnessed a y-o-y contraction of 18 per cent principally due to the drop in contracts falling under the caption of Transportation and Miscellaneous.

**Chart 6.6: Assets breakdown of General Insurers 2018 (Rs million)**



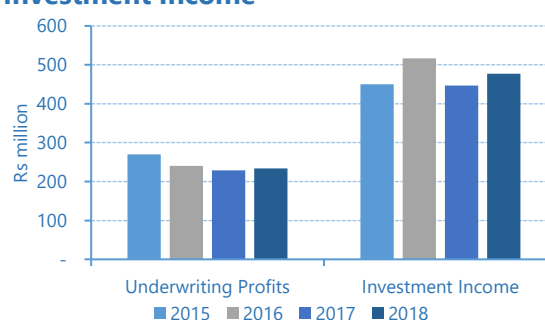
Source: FSC

**Chart 6.7: Gross Premiums and Gross Claims**



Source: FSC

**Chart 6.8: Underwriting Profits and Investment Income**



Source: FSC

### 6.3.1 Solvency Position

All the 14 General Insurers, which reported their audited financial statements with year ending 2018, had a solvency position above the minimum required level, as detailed in Table 6.2. Average solvency position of companies generating gross premiums above





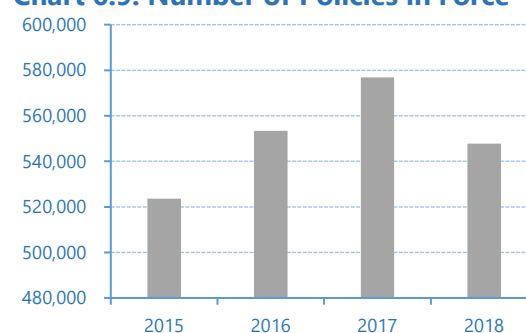
Rs300 million in 2018 has been almost at par with the level observed in 2017. Smaller companies improved their solvency position by 44 basis point to 293 per cent in 2018.

## 6.4 Monitoring of Private Pension Schemes

It is a requirement in terms of section 21 of the Private Pension Schemes Act (2012) that all schemes should be funded and such funding requirements are further detailed in the Private Pension Schemes (Technical Funding Requirement) Rules 2013. Given that more than 60 per cent of defined benefit/hybrid schemes are presently under-funded and that the process of on-boarding defined benefit schemes under a legal structure has proven to be a highly complex one owing to specific characteristics of those schemes, the FSC, as a prudential regulator of private pension schemes, considers the under-funding systemic and views it necessary to develop a framework to permanently resolve such under-funding.

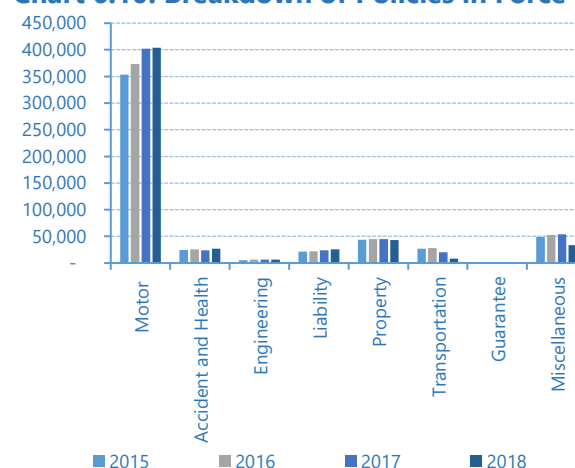
In light of the foregoing, in September 2018, the FSC appointed an external pensions consultant to advise on the current challenges in the private pensions sector. This special assignment included determining a macro approach to dealing with underfunded pension schemes and voluntary shifts from defined benefit to defined contribution. A consultative meeting amongst the consultant, the FSC and representatives of the private pensions industry was held in November 2018 at the seat of the FSC. The aim was to come up with a resolution framework which covered how to deal with different underfunding levels of the private pension schemes and the respective supervisory intervention levels which were based on the latitude and discretion that the FSC was empowered to exercise in terms of section 21 of the Private Pension Schemes Act (2012).

**Chart 6.9: Number of Policies in Force**



Source: FSC

**Chart 6.10: Breakdown of Policies in Force**



Source: FSC

**Table 6.2: Capital available as a percentage of minimum capital required**

Solvency Position of General Insurers	CAPITAL AVAILABLE AS A % OF MINIMUM CAPITAL REQUIRED:	
	Average for 2017	Average for 2018
Large Companies (Gross Premiums > Rs1 billion)	238	238
Medium Companies (Gross Premiums > Rs300 million, < Rs1 billion)	395	391
Small Companies (Gross Premiums < Rs300 million)	239	293

Source: FSC



## 7. Payment System Developments

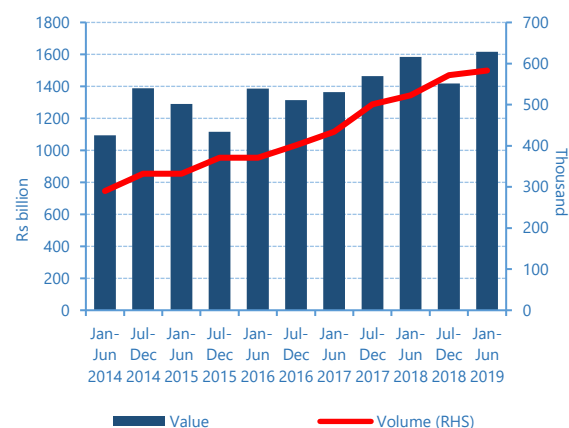
A strong payment system plays a key role in achieving stability in a financial system. To support this vital role, payment systems need to be resilient so that there are no disruptions with significant financial stability repercussions to the rest of the economy. They also need to be risk-robust in that they do not transmit and intensify crises that have started elsewhere.

Given the increasing demand for rapid, immediate and secure payments and the importance to comply with its mandate, the BOM needs to preserve the sound management of its payment infrastructures. Overseeing payment system stability entails adherence to a number of prudent norms, including adoption of: security measures, adequate consumer protection, appropriate risk management and suitable operations as outlined in the Principles for Financial Market Infrastructures (PFMI) issued jointly by the Bank for International Settlements (BIS) Committee on Payments and Market Infrastructures and the International Organization of Securities Commissions (IOSCO).

### 7.1 Financial Market Infrastructures

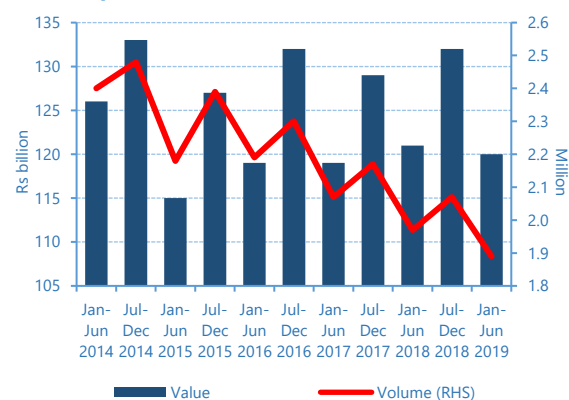
The two important financial market infrastructures (FMIs), which are owned and operated by the BOM are: the Mauritius Automated Clearing and Settlement System (MACSS) and the Bulk Clearing System (BCS). Being a systemically important payment system, MACSS is designed to operate along the core principles of the BIS Systemically Important Payment Systems (SIPS) to minimize risks of disruption. BCS is the clearing engine of the Port Louis Automated Clearing House (PLACH) for the clearing of cheques and low value payments. During 2019H1, both FMIs operated without any major downtime confirming their robust capacity to process

**Chart 7.1: Transactions on MACSS**



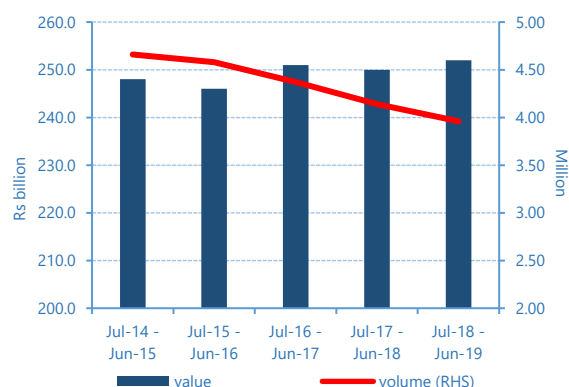
Source: Bank of Mauritius

**Chart 7.2: Cheques Cleared (cumulative six months)**



Source: Bank of Mauritius

**Chart 7.3: Cheques Cleared (cumulative twelve months)**



Source: Bank of Mauritius



large volume of transactions.

### 7.1.1 Mauritius Automated Clearing and Settlement System

Throughput, measured in two ways namely, terms of volume and value of transactions through the MACSS over the year, is an indicator of performance of the payment system. In 2019H1, a total of 582,592 transactions was settled for a total value of Rs1.6 trillion, representing an increase of 11.5 per cent in volume terms and 2.1 per cent in value terms compared to 2018H1, as illustrated in Chart 7.1.

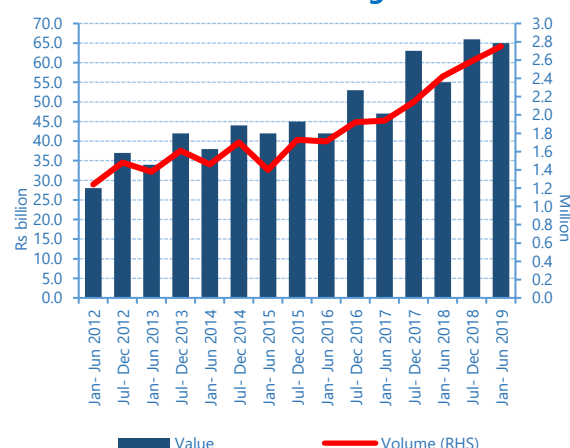
The value of Direct Debit cleared through the BCS during 2019H1 stood at Rs859 million for 52,502 transactions. The Direct Debit Scheme is mostly used by the Mauritius Revenue Authority (MRA) for the collection of taxes as well as contribution for the National Pension Fund and other social contributions.

### 7.1.2 Bulk Clearing System

During 2019H1, 1.9 million cheques were cleared for a total value of Rs120 billion, as illustrated in Chart 7.2. This represented a fall of 4.1 per cent and 0.8 per cent in terms of volume and value respectively, compared to 2018H1. Over the last five years, the evolution of the volume of cheques cleared when aggregated over a six-month period, has broadly mirrored the evolution in the aggregate value of cheques cleared over the same period<sup>14</sup>, as illustrated in Chart 7.2.

<sup>14</sup> However, when aggregated on a one-year basis ending June of a given year, total volume of cheques cleared has trended downwards while total value cleared appears to have increased over the past five years. This can be explained by the increasing usage of high value cheques and use of Electronic Fund

**Chart 7.4: Electronic Clearing Transactions**



Source: Bank of Mauritius

As illustrated in Chart 7.4, in 2019H1, the total value of EFTs amounted to Rs64.6 billion for 2.8 million transactions cleared. This represented an increase of 13.6 per cent and 18.2 per cent in terms of volume and value respectively, compared to 2018H1. Moreover, over the last five years, the volume and value of EFTs increased by 41.9 per cent and 34.4 per cent respectively, indicating a significant rise in the usage of electronic payment modes.

## 7.2 Management of Key Risks

### 7.2.1 Liquidity Risk and Settlement Risk

The effective implementation of monetary policy, for example, depends on both the orderly settlement of open market operations and the efficient movement of funds throughout the financial system via the financial markets and the FMI that support those markets.

Transfers (EFTs). The BOM is monitoring this situation given the risks that high value cheques may pose to the system, should their clearing fail.



MACSS has served as an efficient risk reduction initiative in eliminating the build-up of settlement exposure between financial institutions as a result of the exchange of high-value payments and securities settlements.

### 7.2.2 Operational Risk

Internal control systems are robust and procedures are continuously improving. The BOM strongly focuses on the resilience of large value payment system infrastructure against cyber threats. As at end-December 2018, the BOM had completed the implementation of the sixteen mandatory enhancements recommended by the Society for Worldwide Interbank Financial Telecommunication (SWIFT) under the Customer Security Programme for the year 2018. The BOM is also following up on the implementation of the controls by banks which are connected to the MACSS which operates through SWIFT messages. The last survey of MACSS-related activities on participants' side revealed that there was no major downtime at banks' level and no fraud incident reported.

With rapid technological change, payment systems are more exposed to cyber vulnerabilities. The BOM has hence embarked on cybersecurity requirements for licensing of payment systems and payment service providers, in accordance with the National Payment Systems Act.

### 7.3 Business Continuity Procedures

Due to the interconnection between financial market integration and systems, risks can migrate from one system to another with possibility of contagion. Systems Continuity is important for the smooth-functioning of payment systems.

The BOM hence supervises and ensures that there is no "gap" between normal and emergency situations. Fallback tests and full-day operations are carried out on a quarterly basis on the contingency arrangements of the MACSS, the BCS and SWIFT at the BOM's Disaster Recovery site with the objective of testing operational procedures as well as the systems' capability to switch to and run from another environment. These operations were successful and no slowness or disruption occurred. After switch over, operations started successfully at the main site without any data loss.

### 7.4 Oversight of payment systems

Payment system oversight consists of monitoring systems, participants and instruments with the main aim of ensuring that systems are adequately protected against potential risks and allowing funds to flow between individuals, business and financial markets efficiently and safely. In that line, the BOM has set up an oversight framework<sup>15</sup> for the national payment system as mandated under the National Payment System Act 2019.

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<sup>15</sup> The framework will be published shortly.



## 8. Stress Testing the Mauritian Banking System

The resilience of the Mauritian banking system against macroeconomic shocks was assessed through several stress testing exercises. The model developed by the BOM also enables sensitivity analysis to be performed, i.e., an assessment of how banks fare with shocks administered to their credit portfolios, interest rate, exchange rate and liquidity. Appropriate plausible scenarios have been designed to assess the resilience and soundness of the banking sector. The stress testing framework has been applied to all the 20 banks operating in the Mauritian jurisdiction.

In the following sub-sections, scenario analysis results will be presented first, followed by sensitivity analysis capturing specific risks that are germane to the banking system.

### 8.1 Scenario Analysis: Solvency Risk

Banks in Mauritius have continued to strengthen their capital position during the period under review. The CAR at system level has followed a positive upward trend during 2019H1, standing at 19.2 per cent as at end-June 2019.

To assess the resilience of banks to macroeconomic shocks, three scenarios have been built: a historical and two (medium and severe) adverse macroeconomic risk scenarios. These scenarios have further been investigated through four case studies as detailed in Table 8.1.

The historical shock scenario was based on the truncated downward standard deviations derived from the historical values of each of the aforementioned macroeconomic variables, spanning a period from 2009Q1 to 2019Q2. The medium and severe scenarios were both based on hypothetical shocks. To better reflect the constraints and realities of the Mauritian macroeconomic situation, a Vector Auto-Regression (VAR) model in its various formats, reduced-form, recursive-form and structural-form, was executed to provide basis for the statistical relationships between macroeconomic variables. Based on these findings, the directions of macroeconomic shocks as applicable to the stress testing exercises under medium and severe scenarios were worked out. The magnitudes of the proposed shocks were all hypothetical.

**Table 8.1: Credit risk – Scenarios**

Stress scenarios	Historical (p.p.)	Medium Shock (p.p.)	Severe Shock (p.p.)
<i>Case Study 1 shocks</i>			
Interest rate	-0.7	-0.9	-1.2
Exchange Rate	-4.4	-5	-10
<i>Case Study 2 shocks</i>			
NPL Shocks	2	8	11
<i>Case Study 3 shocks</i>			
Interest rate	0.7	0.9	1.2
Exchange Rate	4.4	5	10
<i>Case Study 4 shocks</i>			
Interest rate	0.7	0.9	1.2
Exchange Rate	4.4	5	10
NPL Shocks	2	8	11

Source: Bank of Mauritius



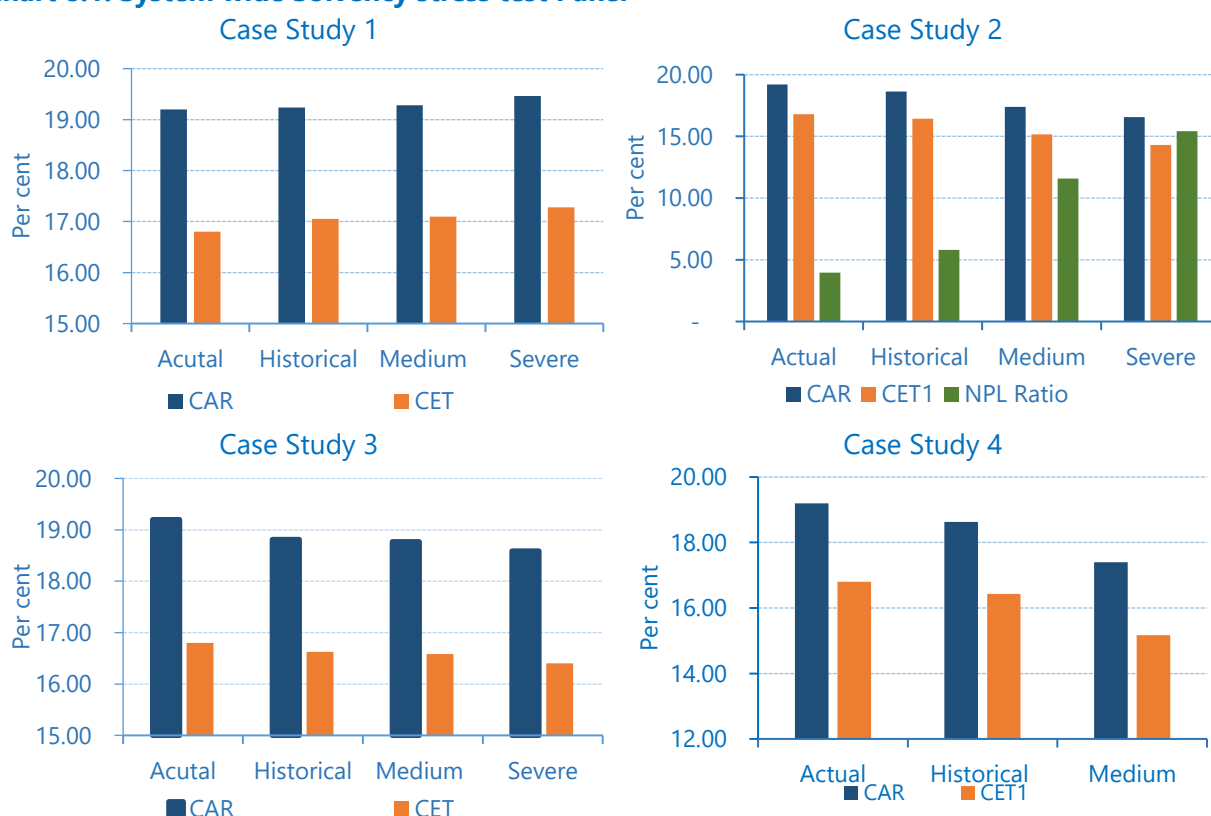
Table 8.1 provides an overview of the magnitude and direction of shocks that were applied to the framework. Panel Chart 8.1 further provides a synopsis of the outcomes on banks' CAR and CET1 ratio, following the materialization of combined shocks for each given scenario and case study.

As is apparent, notwithstanding the magnitude of the impact, the Mauritian banking sector remained resilient, and a reflection of the improved CAR in recent years. Case studies two, three and four indicate a decline in system-level CAR under the severe stress scenarios as follows: from 19.2 per cent to 16.6 per cent (case study two), from 19.2 per cent to 18.6 per cent (case study three) and from 19.2 per cent to 16.3 per cent (case study four). In all three cases, banks were nevertheless still complying with regulatory minimum of 11.875 per cent (10 per cent

minimum plus phased-in 1.875 per cent CCB) for 2019. In contrast, case study one indicated positive impact in the banking system CAR and CET1, whereby the system-level CAR rose from 19.2 per cent to a maximum of 19.5 per cent, under the severe scenario. This is tributary to the fact that banks in Mauritius are better off in a low interest rate environment that is also characterized by a depreciated domestic currency, given their positive net foreign exchange positions,

Panel Chart 8.1 also illustrates the impact of the combined macroeconomic shocks on the CET1 ratio under each of the four case studies and three shock scenarios that were applicable to the CAR. The outcome demonstrated that banks displayed resilience even in the harshest scenario.

**Chart 8.1: System wide Solvency stress test Panel**



Source: Bank of Mauritius





## 8.2 Sensitivity Analysis

A number of single-factor sensitivity stress tests based on June 2019 data, were carried out on the Mauritian banks to assess their vulnerabilities and resilience under various scenarios. Their resilience with respect to credit, interest rate and liquidity risks was studied through a top-down sensitivity analysis using the micro model. Stress tests to banks' credit portfolios include shocks to sectoral advances (i.e., shocks are administered to credit quality of specific economic sectors, namely, Agriculture, Manufacturing, Construction (excluding Mortgage), Mortgage, Trade, Tourism and Non-bank financial services), and large borrowers (i.e., it is assumed that a given percentage of large borrowers have defaulted on their loans). As for liquidity stress tests, the impact of hypothetical deposit run-offs on banks' overall liquidity situation has been assessed, as well as the LCR of banks under stressed scenarios other than the one prescribed by Basel III LCR requirements.

### 8.2.1 Sectoral-Credit risk

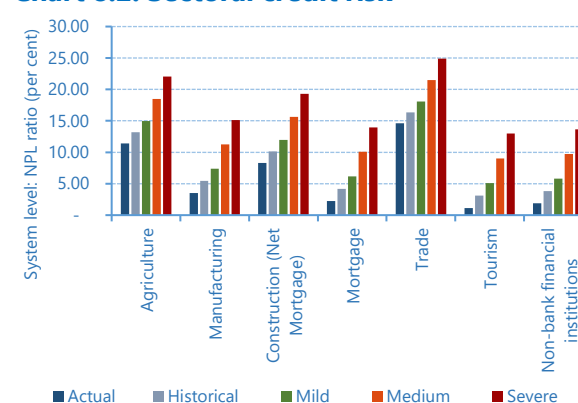
Sensitivity stress tests have been conducted on the system-wide sectoral gross NPLs as at end-June 2019, to ascertain the sectoral credit risks to the banks in Mauritius. Two sets of shocks were studied, namely (a) historical and (b) hypothetical. The hypothetical shocks have been detailed in Table 8.2. Chart 8.2 illustrates that *Trade* sector registered the highest sector wise NPL ratio at 24.9 per cent under the severe stress scenario, building on its already high NPL ratio of 14.6 per cent. Nevertheless, the results of the exercise demonstrated that the highest proportion rise in the NPL ratio was for credit given to Tourism which rose by 11.9 percentage points. The Mortgage and Non-bank financial institutions sectors followed closely, with 11.8 percentage points deterioration in the NPL ratio of each sector.

**Table 8.2: Credit risk – sectoral shocks**

Hypothetical shocks	Mild	Medium	Severe
Shock on sector wise performing loans (per cent)	4	8	12

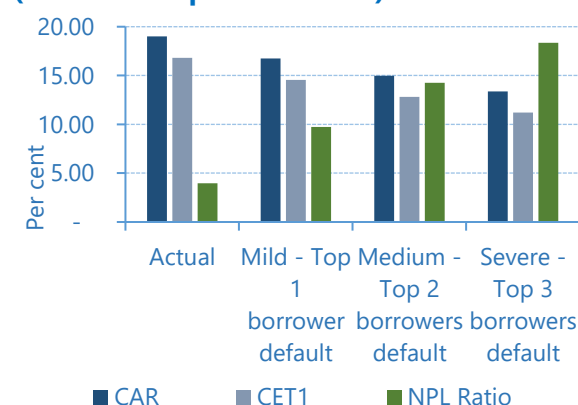
Source: Bank of Mauritius

**Chart 8.2: Sectoral credit risk**



Source: Bank of Mauritius

**Chart 8.3: Credit Concentration Risk (default of top X borrowers)**



Source: Bank of Mauritius

### 8.2.2 Credit concentration risk

Credit concentration risk was examined by considering the falling out of the top individual borrowers according to their non-exempt advances (after set off) over their respective 20 operational banks in the system.





The stress test exercise showed that both the bank-wide CAR and CET1 ratios, as illustrated in Chart 8.3, remained resilient above their regulatory minimum, even under the severe assumed scenario of default by the top three borrowers in each of the 20 banks. Individual banks were impacted differently.

### 8.2.3 Liquidity risk: Impact of deposit run-offs on liquid shocks

Many banks, especially the foreign banks, have higher proportion of GBC deposits in their balance sheet. Liquidity stress tests have been performed to assess whether banks were in a position to withstand increasing GBC deposit withdrawals with their adjusted high quality liquid assets (HQLA, as per LCR definition, plus interbank placements held). In these tests, a bank was considered as having 'failed' if its adjusted HQLA turned negative under stressed conditions.

Chart 8.4 depicts liquidity risk analysis with the adjusted HQLA, incorporating interbank placements, i.e., banks were allowed to draw from their foreign placements to support their existing stock of high quality liquid assets, when faced with a sudden and unexpected deposit withdrawal. Results showed that all banks have successfully been able to withstand liquidity shocks under all the three stress scenarios.

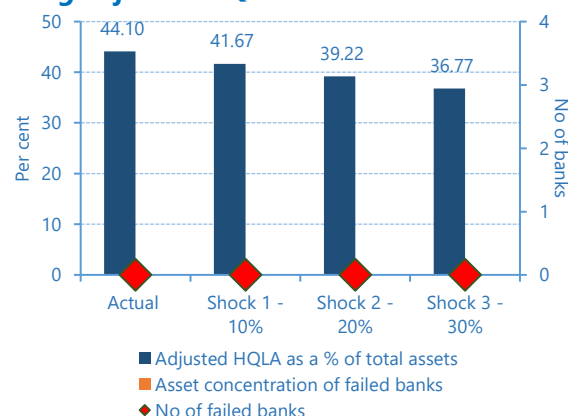
Under the Basel III LCR – which is a stress test on its own - all banks have remained resilient, with their consolidated LCR above the minimum requirement of 80 per cent. A stressed scenario was assumed, whereby a 46.2 per cent weightage (6.2 percentage points higher than under Basel III LCR) was considered for “Nonfinancial corporates, sovereigns, central banks, multilateral development banks, PSEs - Not fully covered by deposit insurance”, whilst keeping all other assumption same as under

**Table 8.3: Liquidity risk – GBC Deposit withdrawals**

Hypothetical shocks	Shock 1	Shock 2	Shock 3
Percentage withdrawal of GBC Deposits	10	20	30

Source Bank of Mauritius

**Chart 8.4: Liquidity risk – shocks and impacts using adjusted HQLAs**



Source: Bank of Mauritius

**Table 8.4: Basel III Liquidity stress testing**

	Number of banks	% of sample
	Under Basel III LCR	
Passing	20	100
Not passing	0	0
	Under Stress Scenario	
Passing	20	100
Not passing	0	0

Source: Bank of Mauritius

the Basel-III LCR. The above figure of 6.2 was based on the findings of a recent work conducted by the FSC in which they classified deposits into relevant risk bucket categories, based on the likelihood that deposits may leave the jurisdiction and on the degree of severity the impact could be. Deposits that are very likely to withdraw and whose impact is likely be severe accounted for about 6.2 percent of total deposits. Assuming that these deposits all fled,



the banking system was found to be resilient liquidity-wise.

On the same note, the overall liquidity position (as measured by HQLA) of the banking system was tested through an aggregate deposit withdrawal in all banks. The impact of such stress situation was determined through two scenarios, as detailed in Table 8.5.

Chart 8.5 depicts the results from the above two shock scenario. The average HQLA of the banking sector declined from 18.9 per cent to 11.9 per cent in shock 1 and to 9.0 per cent in shock 2. The HQLA of the majority of banks remained in the positive territory, with only three banks (which hold less than 5 per cent of total market share), having their HQLA move into negative territory. Nevertheless, when the adjusted HQLA was utilized in the same exercise, it was noted that all banks maintained their HQLA in the positive territory.

#### 8.2.4 Reverse stress test

In order to provide more substance to the stress testing framework, a reverse stress test exercise was performed. The reverse stress test investigated the percentage increase in NPLs that each bank had to experience, for their CAR to decline to the minimum regulatory limit. The implied increase in NPL was based on each banks' performing loans.

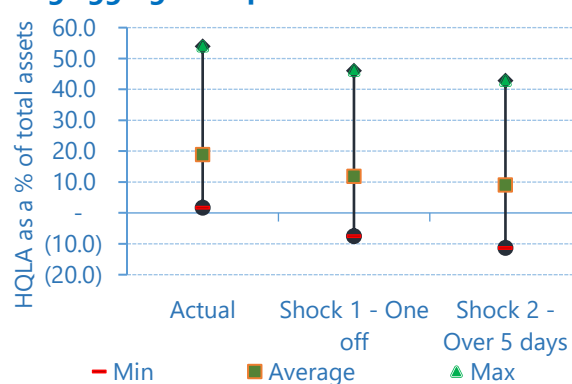
As depicted in Chart 8.6, as end-June 2019 eighteen banks would have to experience more than 15 per cent increase in their NPL for their CAR to fall to the regulatory minimum. The two banks that were in the '5 to 15 per cent bucket' accounted for 13 per cent of the market share.

**Table 8.5: Liquidity risk – GBC Deposit withdrawals**

Hypothetical shocks	Percentage withdrawal of aggregate Deposits
<b>Shock 1</b>	One off 10 per cent withdrawal over 1 day
<b>Shock 2</b>	3 per cent withdrawal on a reducing balance basis over a 5 day period

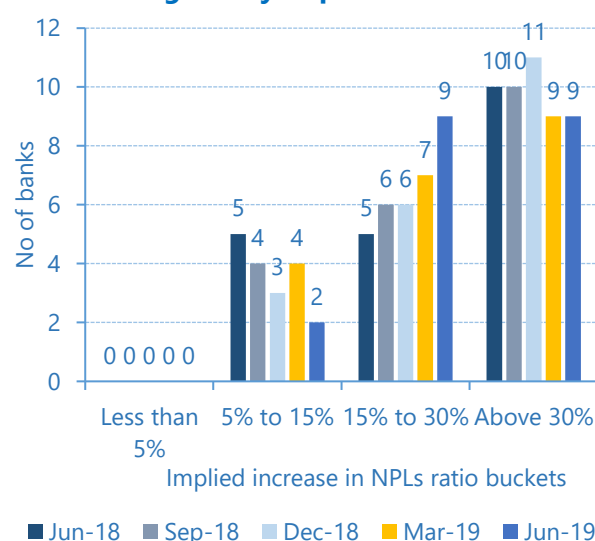
Source Bank of Mauritius

**Chart 8.5: Liquidity risk – shocks and impacts using aggregate deposit**



Source Bank of Mauritius

**Chart 8.6: Reverse stress test – Implied increase in NPL ratio for CAR to be at minimum regulatory requirement**



Source Bank of Mauritius



# Annex A: Financial Stability Indicators

## Financial Soundness Indicators<sup>a</sup> of Other Depository Corporations<sup>b</sup>

Per cent

Core Set of Financial Soundness Indicators	Dec-16	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19
<b>Capital-based</b>								
Regulatory capital to risk-weighted assets	18.2	18.6	18.6	18.0	18.4	19.2	19.5	19.8
Regulatory Tier 1 capital to risk-weighted assets	16.7	17.3	17.2	16.7	17.1	17.8	18.1	18.3
Non-performing loans net of provisions to capital	18.7	16.6	15.6	14.3	9.9	13.9	13.0	12.8
<b>Asset Quality</b>								
Non-performing loans to total gross loans <sup>c</sup>	7.7	7.0	7.2	6.9	5.3	6.5	6.3	6.0
Sectoral distribution <sup>d</sup> of loans to total loans <sup>c</sup>								
<i>Interbank loans</i>	0.4	1.6	1.8	2.4	3.6	2.2	3.1	4.3
<i>Central bank</i>	-	-	-	-	-	-	-	-
<i>General Government</i>	-	-	-	-	-	-	-	-
<i>Other financial corporations</i>	2.3	3.8	3.9	4.0	3.9	11.8	11.4	11.4
<i>Non-financial corporations</i>	35.6	33.1	33.0	33.3	32.9	26.7	26.8	25.7
<i>Other domestic sectors</i>	22.0	21.8	21.9	21.8	21.6	22.0	22.6	22.6
<i>Non-residents</i>	39.5	39.7	39.3	38.6	38.1	37.3	36.0	36.0
<b>Earnings and Profitability</b>								
Return on assets	1.4	1.6	1.5	1.5	1.7	1.7	2.2	2.1
Return on equity	13.9	16.0	14.9	14.6	15.7	15.0	18.4	17.4
Interest margin to gross income	71.5	69.6	66.9	71.5	71.3	72.9	73.7	73.7
Non-interest expenses to gross income	45.8	42.9	41.1	40.5	41.5	39.6	38.9	40.4
<b>Liquidity</b>								
Liquid assets to total assets	27.8	22.1	23.2	25.4	21.6	22.5	22.4	21.0
Liquid assets to short-term liabilities	33.8	28.9	30.0	28.8	24.6	25.6	25.5	23.9
<b>Sensitivity to Market Risk</b>								
Net open position in foreign exchange to capital	0.1	3.3	4.8	3.1	2.6	2.1	3.6	2.8



Encouraged Set of Financial Soundness Indicators	Dec-16	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19
Capital to assets	10.6	10.1	10.0	11.6	11.8	11.6	11.9	12.0
Value of large exposures to capital	159.7	224.4*	228.3*	235.3*	262.2	249.7	232.5	250.6
Customer deposits to total (non-interbank) loans	149.8	153.4	159.3	155.2	148.3	147.7	151.5	151.4
Residential real estate loans to total loans <sup>c</sup>	9.4	10.2	10.3	10.3	10.3	10.5	10.7	11.0
Commercial real estate loans to total loans <sup>c</sup>	4.6	3.9	4.1	4.4	3.9	4.6	4.3	4.2
Trading income to total income	9.5	10.2	12.5	8.2	11.5	10.2	9.3	7.7
Personnel expenses to non-interest expenses	47.3	49.5	49.3	49.4	46.2	49.3	49.0	47.2

<sup>a</sup> FSIs are calculated on a domestic consolidation basis using the Financial Soundness Indicators Compilation Guide (2006) of the International Monetary Fund.

<sup>b</sup> Other Depository Corporations refer to Banks and Non-Bank Deposit-Taking Institutions.

<sup>c</sup> Total gross loans include commercial loans, installment loans, hire-purchase credit, loans to finance trade credit and advances, finance leases, repurchase agreements not classified as a deposit, and overdrafts.

<sup>d</sup> Following adoption of ISIC codes for sectoral definition in October 2018, the corresponding sectoral figures have changed. Hence, data are not strictly comparable with those prior to December 2018.

\* As from December 2017, the measurement of credit concentration ratio has been revised to aggregate large credit exposure (above 10 per cent of Tier 1 capital) as a percentage of aggregate Tier 1 capital. Based on previous Guideline, the corresponding ratio for large exposures would have been 171.8 per cent, 178.3 per cent and 186.1 per cent for the quarters ended December 2017, March 2018 and June 2018, respectively.

Note: Figures may not add up due to rounding.

Source: Bank of Mauritius



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## Acronyms

2018H2	last six months of 2018
2019H1	first half of the year
2019Q1	first quarter of the year
BCS	Bulk Clearing System
BIS	Bank for International Settlements
BOM	Bank of Mauritius
CAR	Capital Adequacy Ratio
CCB	Capital Conservation Buffer
CET1	Common Equity Tier 1
DEM	Development and Enterprise Market
D-SIBs	Domestic Systemically Important Banks
DTAA	Double Taxation Avoidance Agreement
ECB	European Central Bank
EFTs	Electronic Fund Transfers
EU	European Union
FMI	financial market infrastructures
FSC	Financial Services Commission
GBC	Global Business Corporation
GDP	Gross Domestic Product
HHI	Herfindahl-Hirschman Index
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions (IOSCO)
LCR	Liquidity Coverage Ratio
LTV	Loan-to-Value
MACSS	Mauritius Automated Clearing and Settlement System
MER1	currency-weighted nominal exchange rate
MRA	Mauritius Revenue Authority
NBDTIs	Non-Bank Deposit Taking Institutions
NPL	Non-Performing Loan
PFMI	Principles for Financial Market Infrastructures
PLACH	Port Louis Automated Clearing House
SEM	Stock Exchange of Mauritius
SIPS	Systemically Important Payment Systems
SWIFT	Society for Worldwide Interbank Financial Telecommunication
UK	United Kingdom
US	United States
WEO	World Economic Outlook
y-o-y	year-on-year



## Glossary

*Credit-to-GDP gap* is the percentage deviation between the credit to GDP ratio and an estimate of its trend.

*GBC1s* are resident corporations which conduct business outside Mauritius. The law has recently been amended to allow them to transact with residents provided that their activities in Mauritius are ancillary to their core business with non-residents.

*Herfindahl-Hirschman Index* is a measure of the average size of firms in relation to the industry and an indicator of the amount of competition among them. It is a commonly accepted measure of market concentration.

*Key Repo Rate* is the key policy rate used by the Bank of Mauritius to signal changes in its monetary policy stance.

*MER11* is the Mauritius Exchange Rate Index, a nominal effective exchange rate introduced in July 2008, based on the currency distribution of merchandise trade.

*ROA* is the annualised pre-tax return on assets and is measured by the ratio of pre-tax profit to average assets.

*ROE* is the annualised pre-tax return on equity and is measured by the ratio of pre-tax profit to average equity.

*Percentage point* is the arithmetic difference of two percentages.

*SEM-10* is an index launched by the Stock Exchange of Mauritius on 02 October 2014. It is designed to meet international standards and provide a larger and more attractive investible benchmark for both domestic and foreign market participants and comprises the ten largest eligible shares of the Official Market, measured in terms of average market capitalization, liquidity and investibility criteria.

*SEMDEX* is an index of prices of all listed shares on the Stock Exchange of Mauritius wherein each stock is weighted according to its share in the total market capitalisation.

*Tier 1 capital* is a term used to qualify eligible capital of a bank and is constituted of the components having the highest loss absorbing capacity.

*Y-o-y change* compares the value of a variable at one period in time compared with the same period the previous year.