



# Cayman Monetary Regulatory Authority International

At the forefront of financial regulation, the Cayman Monetary Regulatory Authority International (CMRAI) is dedicated to upholding the highest standards of financial oversight and compliance. Our mission is to safeguard the stability and integrity of the global financial system by ensuring that financial services operate within a framework of transparency, accountability, and excellence.

As a trusted partner to financial institutions worldwide, CMRAI provides rigorous supervision, innovative solutions, and strategic guidance to foster a secure and thriving financial environment. With decades of experience and a commitment to global standards, we stand as a pillar of trust and security in an ever-evolving financial landscape.

With a legacy of excellence in financial oversight, the Cayman Monetary Regulatory Authority International (CMRAI) is a beacon of trust in the international financial community. Our role extends beyond regulation; we are innovators, collaborators, and protectors of the global financial ecosystem. By fostering compliance, promoting best practices, and embracing technological advancements, CMRAI ensures that financial services remain resilient and adaptable in a dynamic global market.

Our comprehensive approach to regulation encompasses a deep understanding of financial risks and a proactive stance on emerging challenges. We are committed to empowering financial institutions with the tools and guidance necessary to navigate complex regulatory landscapes, thereby contributing to global economic stability and growth.

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Laundering AMLRAnti-Money Laundering Regulations ALMAsset and Liability Management  
BCBSBasel Committee of Bank Supervision BCPBusiness Continuity Plan BISBank of  
International Settlements BSIBanking Stability Index CARCapital Adequacy Ratio  
CARTACCaribbean Regional Technical Assistance Center CFTCountering the Financing of  
Terrorism CMRAICayman Islands Monetary Authority CPIConsumer Price Index  
CSPCorporate Service Providers D-SIDTIsDomestic Systemically Important Deposit Taking  
Institutions DPMSDealers in Precious Metals and Stones DRLADirectors Registration and  
Licensing ESGEnvironmental, Social and Governance FARFund Annual Report  
FATFFinancial Action Task Force FinTechFinancial Technology FRBFederal Reserve Bank  
FSIFinancial Soundness Indicator FSPFinancial Service Provider GDPGross Domestic  
Product GFCGlobal Financial Crisis G-SIBsGlobal Systemically Important Banks HLAHigher  
Loss Absorbency ICAAPInternal Capital Adequacy Assessment Process IMFInternational  
Monetary Fund KYDCayman Islands Currency MFAMutual Funds Act MSBMoney Services  
Business NASANational Aeronautics and Space Administration NGFSThe Network of Central  
Banks and Supervisors for Greening the Financial System NRANational Risk Assessment  
NPLNon-Performing Loans PFAPrivate Funds Act PSEPublic Sector Entity RBARisk Based  
Approach ACRONYMS ROAReturn on Assets ROEReturn on Equity RTARegistrar and  
Transfer Agency SIBSecurities Investment Business SIBASecurities Investment Business Act  
TCSPTrust and Corporate Service Providers VAVirtual Assets VASPVirtual Assets Service  
Provider ACRONYMS 1CMRAIFinancial Stability Report PREFACE At present, there is no

commonly accepted definition of systemic risk. However, systemic risk broadly refers to the risk that financial instability becomes so widespread that it impairs the functioning of a financial system resulting in a severe economic downturn. The systemic event could be an exogenous shock which means from outside the financial system. Alternatively, the systemic event could emerge endogenously from within the financial system or from within the economy at large. Financial instability can be defined as any deviation from the optimal saving-investment plan of an economy that is due to imperfections in the financial sector. This is generally accompanied by a decrease of economic welfare. Systemic risk is therefore

a risk of experiencing a severe widespread event which adversely affects several systemically important intermediaries or markets, including potentially related infrastructures. Usually, concerned intermediaries fail and markets become dysfunctional. Systemic risk has a horizontal perspective, where the focus is on the financial system, and a vertical perspective where the two-sided interaction between the financial system and the economy at large is considered. In the Cayman Islands context, systemic risk can be defined as the risk that financial instability becomes widespread due to endogenous and exogenous shocks, which can impair the functioning of the domestic financial system, thereby hampering economic growth. This publication marks the first annual Financial Stability Report for the Cayman Islands Monetary Authority (CMRAI). The report is based on information that is required to be filed by all regulated entities for the financial year-end 2020, where the due date of these submissions is latest June 2021. Most funds have a December year-end with submissions due by June of the following year, and in some cases, funds apply for an additional three-month extension, resulting in filings being received in September. Against this backdrop and the challenges of COVID-19, the reporting period used for this issue is December 2020. The next report will cover 2021–2022 data. In the Cayman Islands context, systemic risk can be defined as the risk that financial instability becomes widespread due to endogenous and exogenous shocks, which can impair the functioning of the domestic financial system, thereby hampering economic growth.

**CMRAI Financial Stability Report 2 EXECUTIVE SUMMARY** This is the first edition of the Cayman Islands Financial Stability Report (FSR) which endeavours to shed light on the performance of the major sectors in the domestic financial system as well as salient trends, while highlighting vulnerabilities which can amplify financial stability risks if not kept in check. The FSR also examines qualitative and quantitative analyses of the interconnectedness of the financial system while also highlighting the regulatory and supervisory measures that were implemented from 2020 onwards, to help alleviate some of the issues that emanated due to the pandemic. The international economy started to rebound within 2021 as evidenced by increased activity in airline, hospitality and other consumer services. The global economy has also experienced accommodative monetary and fiscal policies which has helped further bolster business confidence. However, uncertainty has persisted within 2022 as the world continues to grapple with other turbulent issues including COVID-19 variants, the Russia-Ukraine Crisis, runaway inflation, climate change threats and supply chain disruptions. Nevertheless, despite the nascent global economy recovery, risks to global financial stability have remained well contained. The Cayman Islands is a significant global financial player in the international financial intermediation arena. The largest contributor to the Cayman Islands Gross Domestic Product (GDP) is the financial services sector, accounting for close to 41% of the GDP, inclusive of accounting and legal services. The tourism sector accounts for roughly 15% of the GDP. Despite persistent external threats, the jurisdiction has fared relatively well and demonstrated resilience since the onset of the pandemic. The banking sector is quite material within the jurisdiction. At the end of 2020, the jurisdiction was ranked the 16th largest banking centre in international assets and 14th in international liabilities. In terms of insurance, the jurisdiction has the second largest captive insurance domicile in the world. The funds sector is the most significant within the Cayman Islands financial sector. The Cayman Islands is the second largest centre for portfolio investments after the United States, with a strong focus on large institutional investors. In particular, hedge funds represent most of the portfolio liabilities, with about 85% of the world's hedge funds domiciled in the Cayman Islands, although it should be noted

that not all the Cayman Islands funds are managed or administered in the jurisdiction. As a conduit of global capital, the Cayman Islands is now the third largest foreign holder of US Securities. The Mutual Fund Administrators are also of material importance to the jurisdiction given their close connection to funds. The Trust and Corporate Service Providers (TCSP) sector is a gateway for significant direct investment inflows and outflows across the various financial sectors. As the world evolves, the new and upcoming Virtual Asset Service Providers (VASP) sector has attracted new players within the space as CMRAI builds regulatory and supervisory measures around this new investment vehicle. CMRAI has continued to work assiduously on implementing a wide array of international standards and best practices in financial regulation and further developing its supervisory frameworks. CMRAI also recognises that climate and environmental changes can have dire economic consequences which can pose major risks to the financial system. In this vein, CMRAI has created an internal working group to examine the regulatory work to be developed within this area. As of February 2022, CMRAI also became a member of the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) to keep updated on the international policies and development happening around climate related risks. Further, CMRAI is embarking on the development of a macroprudential framework and roadmap with the broader objective of sustainable financial stability. The developments documented in this FSR alongside the present work being undertaken demonstrates that CMRAI is determined to reinforce the integrity of the financial services sector and to uphold the reputation of the Cayman Islands as a robust and credible financial hub.

### CMRAI Financial Stability Report 2023

## CHAPTER 1: MACROECONOMIC ENVIRONMENT

Despite the possible delay for complete recovery, the International Monetary Fund (IMF) latest growth figures show that the global economy is on a recovery path against the backdrop of measures implemented to combat the COVID-19 pandemic. However, this recovery path is being put to the test due to the existing global environment. The world is experiencing turbulent and volatile economic conditions with an array of short-term issues including COVID-19, the Russia-Ukraine crisis, runaway inflation, food shortages and supply chain disruptions. Long-term issues include Financial Technology (FinTech) disruptions and innovations as well as climate change and its impact on financial and non-financial corporations. In the recent months, rapid approval and rollout of various vaccines have boosted the outlook for global recovery. This has seen an uptick in increased activity within the airline, hospitality, and consumer services industry. However, for sustainable global recovery, it is imperative that equitable distribution of vaccines is achieved especially for jurisdictions where the spread of the virus is still surging as this can exacerbate financial vulnerabilities, especially for capital flows to emerging economies. The global economy continues to remain dependent on monetary and fiscal support, which have tightened as investors reassess growth prospects and policy outlooks. The world could see various asset price corrections which coupled with financial vulnerabilities can have a knock-on effect on confidence in the financial system, thereby affecting macro-financial stability. Emerging markets have large debt and equity financing needs. Portfolio flows (Figure 1) are central to the stability of these economies so market access for financing is crucial. Since the onset of the pandemic, global policy support has been used to buttress the resulting US high yields spread, however, globally firms are still not fully immunized from its effects, with many being downgraded to below investment grade or having negative outlooks. Within the household sector, there has been significant global governmental efforts implemented i.e., support and relief programs, and reduction of interest rates to help

reduce debt service burdens, to mitigate some of the financial strains experienced due to the COVID-19 pandemic. Notably, if global policy support is withdrawn too early or in an uncoordinated manner or economic recovery continues to drag, then there is a high probability for an increase in financial stress to the household sector. Global Macro Financial Update CMRAI Financial Stability Report 4 MACROECONOMIC ENVIRONMENT The global banking sector has been quite resilient due to high capital, liquidity buffers and the unprecedented policy support has assisted in maintaining credit flow to households and firms. With other negative factors affecting the world beside COVID-19, the possible delay in recovery can create rising credit exposures and increase nonperforming loans (especially if global policy support measures end), thereby affecting profitability. There has also been an increase in flows into global investment funds with majority being money market. With a buoyant market environment, investors have been in search for yields. As the world grapples with climate change issues, capital markets are becoming an important funding source (i.e., green bonds and loans, sustainability-linked bonds and loans) for investments towards greening. According to the Global Financial Stability Report April 2020, the rise in sustainable financing as sustainable debt issuance in 2020 being roughly \$650 billion. Despite the tumultuous period the world is experiencing, at present financial stability risks are at bay, but there is still need to monitor financial vulnerabilities exposed by the pandemic. There is a delicate balance to be achieved where monetary and fiscal support mechanisms continue while addressing financial vulnerabilities, many of which have evolved or increased since the pandemic. Figure 1: Portfolio Flows to Emerging Markets, 2020 (\$US Billions) -100 -75 -50 -25 0 25 50 75 DebtEquity Figure 2: Global Bank Loan Growth, 2020 -8-8 055-50101015152020 -6-6 AE EM -4-4 -2-2 00 22 44 66 88 1010 (Percent)

CorporateHousehold H1 from December 2019 Quarter on quarter

JanFebMarAprMayJunJulAugSepOctNovDec Source: Global Financial Stability Report January 2021 Source: Global Financial Stability Report April 2021 Source: Global Financial Stability Report April 2021 Note: AE = advanced economy, EM = emerging market

OctNovMar -482 -454 -349 -74 -219 51 111 200 284 584 1036 1133 1034 1094 1023 907 925 907 SepAugJulJun May Apr Figure 3: Flows into Global Investments Funds, 2020 (\$US Billions) Fixed Income Money Market 5CMRAIFinancial Stability Report MACROECONOMIC ENVIRONMENT The Caribbean region continues to move at a slow pace of recovery due to vaccine shortages and population hesitancy of taking vaccines. Figure 5 shows that after Cuba, the Cayman Islands is the second in the region in terms of vaccinated persons and fortunately faring better than many developed countries and the rest of the world. Beside COVID-19 and its many complications, the Caribbean region has also experienced other external shocks including storms, hurricanes and supply chain disruptions which have worsened the growth outlook for the region. The COVID-19 pandemic external shock coupled with the preexisting regional vulnerabilities i.e., fiscal, external sector and structural issues caused regional growth to contract on average by 6.5% in 2020. The Caribbean region is known for its dependence on tourism and commodities both of which have been unfavorably impacted by the pandemic. Those economies that used to thrive on service-based revenues contracted by 14.5% in 2020 as across the region the tourism industry became stagnant with widespread lockdown measures. Since then, borders have reopened slowly, with more and more travel restrictions and measures being lifted. It is hoped that there will be a steady recovery as airlines and cruise industries begin to pick up momentum. Regional Economic and Financial Environment Figure 4: Share of people vaccinated against COVID-19, Dec 2021 Cuba Jamaica Haiti Saint Lucia Grenada Bahamas

Suriname Dominica Montserrat Trinidad and Tobago Curacao Barbados Guyana Belize British Virgin Islands Dominican Republic Anguilla Antigua and Barbuda Saint Kitts and Nevis Bonaire, Sint Eustatius and Saba Turks and Caicos Islands United States United Kingdom Aruba Cayman Islands

0%10%20%30%40%50%60%70%80%90%100% People Fully Vaccinated Per Hundred People Only Partially Vaccinated Source: Our World in Data Note: Alternative definitions of a full vaccination, e.g. having been infected with SARS-CoV-2 and having 1 dose of a two-dose protocol, are ignored to maximize comparability between countries CMRAI Financial Stability Report 6 The Cayman Islands consists of three islands, Grand Cayman, Cayman Brac and Little Cayman. It is a self-governed overseas territory of the United Kingdom and has one of the highest per capita incomes within the Caribbean region. The largest contributor to the Cayman Islands GDP is the financial services sector, which accounts for roughly 40.5% of the GDP, inclusive of accounting and legal services. The second largest contributor is the tourism industry contributing on average 15% to the GDP. In 2020, the pandemic impacted the Cayman Islands GDP which declined to KYD 4.2 Billion from KYD 4.5 Billion in 2019, a real economic contraction of 6.7%. There was also an increase in unemployment from 3.5% in 2019 to 5.3% in 2020. The jurisdiction, nonetheless, took stringent public health measures that minimized community transmission of the virus during 2020. Based on Figure 5, in the fourth quarter of 2021, the Consumer Price Index (CPI) was 120.7, higher by 7.6% compared to the fourth quarter of 2020, with ten of the twelve categories of goods and services recording higher price indices. According to the Cayman Islands Economics & Statistics Office, the average CPI in 2021 was 115.2, an increase of 3.3% over the average CPI in 2020. This increase of the overall index is driven mainly by higher prices for communication, food and non-alcoholic beverages, health, transport, housing and utilities, restaurants and hotels, and miscellaneous goods and services. The Cayman Islands is known internationally as a major supplier of cross-border financial services. The financial sector has been resilient during the last two years since the onset of the pandemic. Despite the decline in total banking sector assets and liabilities, the financial system remained strong with economic support measures implemented by the Cayman Islands government. The jurisdiction also saw an increase in investment funds (number and value) maintaining our position as a leading jurisdiction in offshore investments. Recognizing the growing importance of financial innovations there was an uptake in new investment vehicles i.e., virtual assets (VAs), which resulted in CMRAI introducing appropriate regulatory and supervisory measures. CMRAI also participated in the 2021 National Risk Assessment (NRA) which outlined the key risks as it relates to money laundering, terrorist financing and proliferation financing. Further details on the financial services sector will be discussed in the upcoming chapters. Economic and Financial Environment -2.0 6.0 12.0 10.0 8.0 4.0 2.0 0.0 Dec 2019 Mar 2020 Mar 2018 3.2 3.8 3.4 1.7 4.5 3.8 6.0 8.4 3.0 2.1 -0.4 -0.7-1.0 0.2 6.4 7.6 11.2 12.1 Sep 2019 Jun 2019 Mar 2019 Dec 2018 Sept 2018 Jun 2018 Mar 2022 Jun 2022 Jun 2020 Dec 2021 Sep 2021 Jun 2021 Mar 2021 Dec 2020 Sep 2020 Figure 5: Inflation Rates, 2018 - 2022 (% Change in CPT)

MACROECONOMIC ENVIRONMENT Source: Cayman Islands Economic & Statistics Office

CMRAI Financial Stability Report 7 7CMRAIFinancial Stability Report Deposit-Taking Institutions The Deposit-Taking Institutions sector is comprised of banks and the Societies (namely the cooperative societies and building societies). The Banking Sector There are two main categories of banking licenses, namely Category A and Category B. Category A banks are further grouped into Category A Retail and Category A Non-Retail. The Category A Retail banks are authorised to offer retail and commercial banking services to retail and

non-retail resident clients. While there was no significant change in the number of Category A banks over the last five years, the number of Category B banks reduced from 116 to 101 as banks continued to consolidate and restructure in pursuit of optimal cost, risk management and governance structures. As of December 2020, the Cayman Islands was the 16th largest banking centre in terms of international assets (USD 579 billion) and fourteenth in international liabilities (USD 537.8 billion) among the 48 financial centres reported. The banking sector represent over 40 countries as per the distribution in Figure 7. There was no change in the number of the Societies. The Societies mainly provide credit facilities and savings accounts to members who are composed of natural persons residing in the Cayman Islands. The credit facilities that are provided include mortgage loans, auto loans, personal unsecured facilities, amongst others. Although the Societies play a vital role in the domestic financial system, the size of the Societies operations is small relative to the cumulative Category A Retail banks activities. As of 31 December 2020, the Societies total assets amounted to about 3.2% of the Category A Retail banks total assets. The domestic banking activities are mainly offered by Category A Retail banks so therefore the performance of the domestic banking sector will be examined. The Banking sector was generally resilient throughout 2020 despite the economic and operational challenges from the COVID-19 pandemic partly due to the strong financial position of the sector before the COVID-19 pandemic. Despite the deterioration in some Financial Soundness Indicators (FSIs), the key FSIs remained strong and well above the minimum required, where applicable. See Table 3.

CHAPTER 2: SECTORAL FINANCIAL STABILITY ANALYSIS

1 6 2 9 101 Building Society Category B Banks Category A Non-Retail Banks Category A Retail Banks Cooperative Societies Figure 6: Number of Deposit-Taking Institutions (2020)

Figure 7: Number of Banks by Region 24% 2% 21% 14% 15% 24% North America South America Asia & Australia Europe Middle East & Africa Caribbean, Central America & Mexico

CMRAI Financial Stability Report 8 SECTORAL FINANCIAL STABILITY ANALYSIS Unique Nature of the Banking Sector

Category A Retail Banks: Category A Retail banks offer retail and commercial banking services to retail and non-retail residents. Category A Retail banks can also provide services to international clients. They can also provide trust, principal offices or registered office services if authorised to provide these services.

Category A Non-Retail banks: Category A Non-Retail are restricted from providing banking services to resident clients except to other licensees, employees and to exempt or ordinary non-resident companies not carrying on business in the Cayman Islands.

Category B Banks: Category B banks are generally restricted from engaging in the banking business with residents and thus cater primarily to customers outside the Cayman Islands. However, Category B banks can provide specified services to limited categories of resident customers, including another regulated entity, their employees and exempt or ordinary non-resident companies not carrying on business in the Cayman Islands. One-third of the Category B Banks provide exclusively intra-institutional business (mainly treasury management) and account for 30% of total assets for Category B banks. The rest of the Category B banks offer a wide range of banking and/or trust activity such as private banking, trade finance, and wealth management.

Structure types Most of the banks are branches of internationally active banks. Branch structures are exclusively used by Category B banks. Category A retail banks are subsidiaries of large international financial institutions with parent companies located in Canada or in the Caribbean region. Similarly, a significant portion of the remaining banks are subsidiaries, branches, or affiliates of large financial institutions.

Number of Regulated Banks Over the past five years, the number of Category A banks has remained the same,

while the number of Category A non-retail banks reduced by two banks. However, there has been a notable decrease in Category B banks because banks have continued to consolidate and restructure in pursuit of optimal cost, risk management and governance structures. Despite this decline, new Category B licences have been issued. There has been an observed heightened interest in Category A and B licences, especially by large international financial groups, outside of the United States, seeking to leverage on the Cayman Islands stable offshore banking sector. Notably, during the pandemic there was no drastic reduction in the banking composition within the jurisdiction.

Structure Type Total as at 31 Dec 2020  
Branch 60% Subsidiary 27% Affiliate/Private 13%

2016 2017 2018 2019 2020  
Category A Retail 6666  
Category A Non-Retail 55533  
Category B Banks 148137122116101

Table 1: Number of Banks by Structure Type  
Table 2: Number of Regulated Banks

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The Capital Adequacy Ratio (CAR) decreased for all banks and for the Category A Retail banks but remained significantly above the minimum required CAR of 11% to 15% as most of the banks operate with a significant capital buffer. The economic challenges from the COVID-19 Pandemic resulted in an increase in the Non-Performing Loans (NPLs) ratio, but the proportion of the NPLs remained low. The Return on Assets (ROA) for all banks marginally improved while the ROA for the Category A Retail banks decreased. The liquid assets ratio for all banks was reasonably consistent with 2019. Detailed explanations on the movements in these ratios will be given in further sections within this Chapter.

In 2020, the total sector resident loans & advances decreased by 4.3%, mainly due to the decrease in exposure by Category B banks. Most resident exposures by Category B banks are to entities registered in the Cayman Islands but not carrying on business in the Cayman Islands. Category A Retail banks resident loans and advances increased by 7.2% relative to 2019, indicative of a resilient banking sector during the COVID-19 pandemic. The increase in resident loans and advances by Category A Retail banks was supported by the strong financial position along with the Government's COVID-19 response measures. Please refer to Chapter 4 for a summary of the COVID-19 response measures implemented by the Government. In addition to other operational changes due to the COVID-19 pandemic, the Category A Retail banks implemented forbearance measures, including a loan repayment moratorium to support customers impacted by the COVID-19 pandemic. By the end of 2020, most banks had discontinued the loan repayment moratorium measures without any significant deterioration of the loan portfolios. Please refer to the Household and Corporate sector section for more details on resident credit.

Loans and Advances The banking sector's resident and non-resident loans & advances decreased by 4.3% and 18.5%, respectively, and cumulatively resulted in a 17.8% decrease in total sector loans and advances. Resident loans & advances accounted for 5.2% of the total sector loans & advances. The decrease in total banking sector loans & advances is mainly due to the decline in Category B banks.

All Banks (%) Category A Retail Banks (%)  
Key FSI 2020 2019 2020 2019  
Total CAR 38.048.126.628.5  
NPLs to total assets 2.10.41.71.4  
Liquid assets ratio 27.628.734.631.8  
ROA 0.30.00.72.5

Table 3: Key Financial Soundness Indicators

2 10 12 8 6 4 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

Figure 8: Resident Loans & Advances (\$US Billions)  
Category A Retail Banks All Banks  
400 500 300 200 100 0  
600 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

Figure 9: Loans & Advances - All Banks (\$US Billions)  
Resident Non-resident Total

SECTORAL FINANCIAL STABILITY ANALYSIS  
CMRAI Financial Stability Report 10

For the Category A Retail banks, the resident loans & advances increased by 7.2%, while the non-resident loans & advances reduced by 14.7%, and cumulatively resulted in a 0.1% increase in total loans and



advances. Category A Retail banks resident loans & advances account for 72.5% of the total loans and advances within this sub-sector (See Figure above). The increase in resident loans and advances for Category A Retail banks was mainly driven by an increase in exposures for residential mortgages (6.0%), sovereign (7.7%), and corporate sector (22.6%). These increases were partially offset by a decrease in exposures to Non-Central Government Public Sector Entities (PSEs) (-25.1%) and commercial mortgages (-21.9%). The portion of non-resident loans & advances has continued on a declining trend as the domestic credit continues to grow.

**Loans & Advances by Counterparty Type** For the entire banking sector, loans & advances to group banking and non-banking entities account for 64.7% of the total loans advances. The significant exposure to group related entities arises from the Category B banks, some of which are specifically established to provide banking services to related entities. For the Category A Retail banks, residential mortgages and loans to non-financial corporations industrial & commercial, account for almost 70% of the loan portfolio. Loans and advances to related entities are minimal and account for less than 1.5% of the loan portfolio.

**Asset Quality** The overall banking sector NPLs to total gross loans ratio increased by 180 basis points to 2.1%, while the ratio for the Category A Retail banks increased by 20 basis points to 1.6%. See Figure 17. Despite the economic challenges from the COVID-19 pandemic, the NPLs remained relatively low.

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sovereigns	7.2%	40.5%	8.0%	29.2%	10.8%	4.3%	4.3%	4.3%	4.3%	4.3%
Commercial Mortgages	42.0%	1.1%	9.5%	12.3%	12.4%	22.7%	22.7%	22.7%	22.7%	22.7%
Others Residential Mortgages	8	10	6	4	2	0	0	0	0	0
Non-Central Government PSEs	11	11	11	11	11	11	11	11	11	11
Non-Financial Corporations - Industrial and Commercial	8	10	6	4	2	0	0	0	0	0

**Figure 11. Loans & Advances by Counterparty Type - All Banks** **Figure 12: Loans & Advances by Counterparty Type - Category A Retail Banks**

**Figure 10: Loans & Advances - Category A Retail Banks (\$US Billions)**

Year	Resident	Non-resident	Total
2011	11	11	22
2012	11	11	22
2013	11	11	22
2014	11	11	22
2015	11	11	22
2016	11	11	22
2017	11	11	22
2018	11	11	22
2019	11	11	22
2020	11	11	22

**Figure 11. Loans & Advances by Counterparty Type - All Banks** **Figure 12: Loans & Advances by Counterparty Type - Category A Retail Banks**

**11CMRAIFinancial Stability Report Banking Sector Performance in Stressed Periods** This section highlights the financial overview of the banking sector in the recent financial crisis - Global Financial Crisis, European Sovereign Debt Crisis and the COVID-19 pandemic. Regulatory capital to risk-weighted assets Despite the notable decrease in Regulatory capital to risk-weighted assets during the GYC and European debt crisis periods, the ratio remained above the minimum required ratio. The CAR in 2020 was higher than the capital positions for the previous stressed periods, indicating a more resilient capital position.

**NPLs to gross loans & advances** During the Global Financial Crisis (GFC) and European Debt Crisis, NPLs increased, especially for Category A Retail banks; however, never reaching 5% of total loans. Category A banks NPLs during the COVID-19 period did not reach the levels in the previous stress periods. However, the total sector NPL ratio exceeded the ratio reported during the European Debt Crisis but remained under 3% of total loans.

**Return on assets** During the COVID-19 pandemic, Category A Retail banks posted a significant decrease in ROA. However, the 2020 RoA is slightly higher than the lowest ROA for the period of 2008 - 2020. The entire sector's ROA for 2020 is marginally below the highest ROA for the reported period.

**Liquid assets ratio** In the previous crisis, all banks liquidity position was strong though banks reported decreases in liquid assets ratio. In 2020, the liquid assets ratio for Category A Retail banks slightly improved compared to the previous stressed period when the ratio had decreased. The foregoing shows that the banking sector remained in a robust financial position during the height of the pandemic relative to the previous stressed period. Please

see the financial review sections for further details. European Sovereign Debt Crisis (2011 - 2012) COVID-19 Pandemic (2020) Global Financial Crisis (2008 - 2009) Key 40% 50% 30% 20% 10% 0% 60% 2008201020122014201620182020 Figure 13: Regulatory Capital Trend (2008 - 2020) Figure 15: Return on Assets Trend (2008 - 2020) Note: Some data for the GFC period is available for Category A Retail Banks only. All Banks Category A Retail Banks 4% 3% 2% 1% 0% 2008201020122014201620182020 All Banks Category A Retail Banks Figure 14: NPLs to Gross Loans & Advances (2008 - 2020) 3% 2% 1% 0% -1% 2008201020122014201620182020 All Banks Category A Retail Banks Figure 16: Liquid Assets Ratio (2008 - 2020) 40% 50% 30% 20% 10% 0% 60% 2008201020122014201620182020 All Banks Category A Retail Banks

**SECTORAL FINANCIAL STABILITY ANALYSIS** CMRAI Financial Stability Report 12 Specific loan loss provision to NPLs ratio continued on a declining trend decreasing from 67.6% to 18.1% for all banks and from 36.5% to 29.5% for Category A Retail banks. The decrease was generally due to better credit underwriting and collateralisation measures resulting in lower specific credit loss provisions. NPLs by Jurisdiction - All banks NPLs for banks from Brazil, Switzerland and China increased by over 100%, and cumulatively account for 96.6% of total sector NPLs. The increase in NPLs for banks from these countries is primarily due to higher exposures to sectors impacted by the COVID-19 pandemic for the banks from these jurisdictions. Investment portfolio The investment portfolio accounts for 12.7% (USD 75.6 billion) of the banking sector total assets. During the year, the total investment portfolio decreased by 1%. Investments in debt securities account for 72% of the investment portfolio, while investment in equities and funds account for 27% and 1% of the investment portfolio, respectively. The majority of the investment portfolio is held as part of the banking book, with only a very small portion held as part of the trading book. Investment securities issued by financial corporations, sovereigns & central banks, and group related entities account for 34%, 18% and 16% of the total sector investment portfolio, respectively. 18% 5% 11% 5% 11% 16% 34% Sovereigns and Central Banks Group Banking & non-banking entities Multilateral Development Banks (MDBs) Non-Financial Corporations Other Financial Non-Central Government PSEs Other Banks Figure 19: Non-performing Loans By Jurisdiction - All Banks SECTORAL FINANCIAL STABILITY ANALYSIS 51.0% 2.8% 0.6% 6.0% 39.6% Brazil Other Countries China Switzerland Cayman Islands Figure 20: Investments by Issuer Type - All Banks 0% 4% 5% 3% 2% 1% 2011201220132014201520162017201820192020 Figure 17: NPLs to Total Gross Loans Category A Retail Banks All Banks 0% 160% 120% 80% 40% 2011201220132014201520162017201820192020 Figure 18: Specific Provisions to Total NPLs Category A Retail Banks All Banks 13CMRAI Financial Stability Report For Category A Retail banks, the investment portfolio accounts for 23.3% (USD 3.9 billion) of the Category A Retail banks total assets. In 2020, the investment portfolio for the Category A Retail banks increased by 15%. Debt securities and equities account for 98% and 2% of the total investment portfolio, respectively. The investment portfolio is primarily held for liquidity purposes, thus the significant proportion of investments are in debt securities. None of the Category A Retail banks have investments in the trading book. Investments securities issued by Non-central government PSEs, Group banking entities, and sovereign & central banks, account for 58%, 15% and 12% of the total investment portfolio, respectively. Investment in debt securities Investment-grade debt securities (AAA/Aaa to BBB-/ Baa3) account for 49% of the total banking sector debt securities investment. For the Category A Retail banks, investment grade debt securities account for over 80% of the debt securities.

The high proportion of investment grade securities is consistent with the reliance on investments securities for liquidity purposes. For all banks, debts securities issued by counterparties from Brazil and the USA account for 35% and 24% of the banking sector investments in debt securities, respectively. For the Category A Retail banks, debt securities by issuers from USA and Mexico account for 63% and 13% of the investments in debt securities, respectively. SECTORAL FINANCIAL STABILITY ANALYSIS 58% 16% 12% 2% 9% 4% Sovereigns and Central Banks Group Banking Entities Multilateral Development Banks Others Non-Central Government PSEs Other Banks Figure 21: Investments by Issuer Type - Category A Retail Banks AAA/AaaBelow BBB-/Baa3 UnratedBBBto BBB-/Baa1 to Baa3 Ato A-/A1 TO A3 AA to AA-/ Aa1 to Aa3 All Banks Category A Retail Banks Figure 22: Debt Securities by Credit Rating 0% 80% 60% 40% 20% USACHileOthersBrazilIMDBsMexico All Banks Category A Retail Banks Figure 23: Debt Securities by Issuer Country 0% 80% 60% 40% 20% CMRAI Financial Stability Report 14 The higher proportion of investments securities by issuers from Brazil, the USA, and Mexico shows that significant macro-economic changes in these countries could substantially impact the investment portfolio and these should be carefully monitored. Investment in equities Issuers of 93% of the banking sector investments in equities hold an investment-grade rating. Additionally, issuers of 99% of the investments in equities are from USA and UK. Although the equity investments are more volatile, the issuers have a strong financial position, as evidenced by a strong issuer credit rating and being based in developed economies. Based on the business model of category A Retail Banks investments in equities are immaterial. Funding and Liquidity Customer deposits account for over 77% (USD 441.7 billion) and over 98% (USD 14.4 billion) of the banking sector and Category A Retail banks funding sources, respectively. Total sector deposits continued on a decreasing trend mainly attributable to the decrease in Category B banks as outlined in Box 1. The customer deposits for Category A Retail banks increased by 15.2% (USD 1.9 billion) during the year. Customer deposits generally have shorter maturity relative to other sources. SECTORAL FINANCIAL STABILITY ANALYSIS Deposits from Group related entities and corporates account for over 75% and 22% of the total sector deposits, respectively. The higher proportion of deposits from Group related entities is attributable to Category B banks, some of which are specifically established to provide services to Group entities. For Category A Retail banks, deposits from corporates and individuals account for 60% and 19% of total deposits. Please refer to the Household and Corporate sector section for further details on domestic deposits. Figure 24: Sources of Funding - All Banks Figure 25: Sources of Funding - Category A Retail Banks Figure 26: Sources of Customer Deposits Sovereign & Non-central government PSEs and MDBs IndividualsOther financial & Non-financial entities Other Banks Group bank & non-bank entities All Banks Category A Retail Banks 0% 80% 60% 40% 20% 2011201220132014201520162017201820192020 0% 0 80% 800 100% 1000 1,200 1,400 1,600 USD Billions 60% 600 40% 400 20% 200 Deposits Total deposits (Right axis) Other liabilitiesBorrowings 2011201220132014201520162017201820192020 0% 0 80% 800 100% 1000 1,200 1,400 1,600 USD Billions 60% 600 40% 400 20% 200 Deposits Total deposits Other liabilities Repurchase Agreements Term debt and other borrowings 15CMRAIFinancial Stability Report The impact of the COVID-19 pandemic mainly drove the decrease in CAR. Despite the decline, the banks continue to maintain a significant buffer above the minimum required CAR of 11% - 15% depending on the bank's structure. Tier 1 CAR accounts for 93.9% and 91.5% of the banking sector and Category A Retail banks total CAR, respectively. Tier 1 capital is the most stable source of capital for banks. Earnings and

Profitability Earnings and profitability determine a bank's ability to pay dividends to and grow the shareholders' equity. Relative to 2019, sector net-interest income increased by USD 1,336 million, provision for credit losses increased by USD 674 million, other operating income increased by USD 758 million and operating expenses decreased by USD 359 million and cumulatively resulted in an increase of income before taxes to USD 1,846 million compared to USD 67 million in 2019. The significant increase in net-interest income is attributable to 44% decrease in interest expense partially offset by 33% decrease in interest income. The reduction in interest income and interest expense is attributable to interest changes and a decline in assets and liabilities by 10.7% and 8.9%, respectively. The decrease in interest expense is higher due to faster repricing of liabilities relative to the assets. The liquid assets ratio for all banks, which measures the proportion of total assets that are immediately available for liquidity purposes, decreased marginally to 27.6% compared to 28.7% in 2019. The sector's significant liquidity levels are mainly attributable to the Category B banks offering treasury management and sweep services, thus holding a high proportion of cash and cash equivalents. For the Category A Retail banks, the liquid assets ratio increased from 31.8% in 2019 to 34.6% in 2020. The Category A Retail banks can also rely on the investment portfolio discussed above for liquidity purposes. The strong liquid assets ratio and the investment portfolio support a resilient liquidity position despite higher reliance on customer deposits for funding.

Capital Adequacy The sector capital adequacy ratio (CAR), which is the amount of capital a bank must hold as required by the financial regulator, decreased to 38.0% in 2020 compared to 48.1% in 2019. Tier 1 CAR reduced from 44.0% in 2019 to 35.7% in 2020. Similarly, for the Category A Retail banks, the total CAR decreased to 26.6% compared to 28.5% in 2019. Tier 1 CAR reduced to 24.4% compared to 24.5% in 2019.

SECTORAL FINANCIAL STABILITY ANALYSIS

0% 40% 50% 30% 20% 10% 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

Figure 27: Liquid Assets Ratio All Banks Category A Retail Banks

Figure 28: Capital Adequacy Ratio 0% 10% 20% 30% 40% 50% 2011 2013 2015 2017 2012 2014 2016 2018 2019 2020

Category A Retail Total CAR Category A Retail Tier 1 CAR All Banks Tier 1 CAR All Banks Total CAR

60% CMRAI Financial Stability Report 16

For the Category A Retail banks, the net interest income reduced by USD 98 million, provision for credit losses increased by USD 43 million, other operating income declined by USD 46 million and other operating expenses increased by USD 60 million, and cumulatively resulted in a decrease in income before to USD 133 million compared to USD 380 million in 2019. The deterioration in all drivers of profitability is attributable primarily to the COVID-19 pandemic and low-interest rate environment within 2020. For the net interest income, the interest income reduced by 25%, while the interest expense decreased by 43%.

Return on Equity and Return on Assets Relative to 2019, the sector reported a decrease in Return on Equity (ROE) from 10.4% in 2019 to 7.6%, while the ROA increased from -0.02% to 0.3%. The ROE excludes the branches because they are not separate legal entities and do not necessarily have standalone equity, while the ROA includes the branches. The net income/loss for branches was USD -1.05 billion (2019: USD 1.5 billion). The Category A Retail ROE decreased from 17.9% to 5.3%, while the ROA decreased from 2.5% to 0.7%. The decrease in ROA and ROE for the sector is mainly attributable to the impact of the COVID-19 pandemic.

SECTORAL FINANCIAL STABILITY ANALYSIS

-5% 15% 20% 10% 5% 0% 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

11.8% 9.8% 7.6% 6.2% (2.2)% 8.6% 7% 8.7% 10% 10.4% 7.6% 9.4% 8.4% 8.1% 11.2%

13.3% 15.3% 17.9% 5.3% 13%

Figure 31: Return on Equity -1% 3% 2% 1% 0% 1.1% 0.3% 0.1% 0.4% (0.2)% 0.4% 0.2% (0.1)% 0.2% 0.0% 0.7% 1.1% 0.9% 0.9% 1.3% 1.5% 2.0%

2.5% 0.3% 1.6% Figure 32: Return on Assets Category A Retail Banks All Banks  
2011201220132014201520162017201820192020 Category A Retail Banks All Banks Figure  
29: Drivers of Profitability - All Banks (\$US Millions) Figure 30: Drivers of Profitability -  
Category A Retail Banks (\$US Millions) 2019 Net Income before tax 2020 Net Income  
before tax Net Interest Income Operating expenses Provision for Credit Losses Other  
Operating Income 67 1,336 674 758 359 1,846 2019 Net Income before tax 2020 Net  
Income before tax Net Interest Income Operating expenses Provision for Credit Losses  
Other Operating Income 380 98 43 46 60 133 17CMRAIFinancial Stability Report  
Profitability The ROA decreased to 1.6% compared to 3.3% in 2019, while the ROE  
decreased to 14.2% compared to 27.3% in 2019. The decrease in ROA and ROE is mainly  
due to the decline in net income by 44.6%. The reduction in ROA is also attributable to the  
increase in total assets. Societies Financial Review Assets and Loans & advances The  
Societies total assets increased by 22.8% to USD 534.3 million compared to USD 435  
million in 2019. Similarly, the loans & advances continued on a growth trend rising by 9.4%  
to USD 380.7 million. The Societies credit facilities are mainly to domestic households who  
are members of the Societies. The Societies total loans & advances as of 31 December  
2020 are equivalent to 9.2% and 14.7% of the Category A Retail banks total resident loans  
and total household loans, respectively. Funding The Societies are mainly funded by  
member deposits. During the year, the total member deposits increased by 25.9% to USD  
477.3 million. The increase is partly attributable to the Government response that  
allowed persons to withdraw a portion of their pension as outlined in Chapter 4. This  
increase in member deposits is also partly responsible for the rise in total assets previously  
outlined. SECTORAL FINANCIAL STABILITY ANALYSIS 0 400 500 300 200 100  
20162017201820192020 Total AssetsLoans & Advances Figure 33: Societies Total Assets  
and Total Loans & Advances 0 400 500 600 300 200 100 0% 20% 25% 30% 15% 10% 5%  
20162017201820192020 Member Deposits & Shares Deposits Growth Rate (Right Axis)  
Figure 34: Societies member deposits (\$US Millions) 0 20% 25% 30% 15% 10% 5%  
20162017201820192020 ROEROA Figure 35: Societies Return on Assets and Return on  
Equity CMRAIFinancial Stability Report 18 Domestic Household and Corporate Sector  
Household credit increased by 3.5% to USD 2.6 billion compared to USD 2.5 billion in 2019.  
Household deposits increased by 16.8% to USD 2.6 billion compared to USD 2.2 billion in  
2019. Similarly, the corporate sector credit increased by 11.3% to USD 1.2 billion compared  
to USD 1.1 billion in 2019, while the corporate sector deposit increased by 3.5% to USD 2.7  
billion compared to USD 2.6 billion in 2019. The continued growth of household and  
corporate sector lending and deposits during the COVID-19 pandemic shows a strong  
financial position of the household and corporate sector and the strong resilience of the  
banking sector. Household Sector As indicated above in 2020, household credit increased to  
USD 2.6 billion. The household credit is equivalent to 46.7% of the Cayman Islands total  
GDP. Household over-indebtedness can be affected by unfavourable economic conditions  
and compromise the stability of the financial system. However, the Cayman Islands  
household credit-to- GDP is lower than the proportion reported by G20 countries and  
advanced countries of 59.8% and 77.2%, respectively. The ratio also compared fairly with  
the proportion for emerging markets of 46.6%. Household deposits are a stable source of  
funding for banks. The household credit increased to USD 2.6 billion, and for the first time in  
five years, the total household deposits exceeded the total household credit. Over 80% of  
the household deposits are savings and fixed deposits, and the rest are demand deposits.  
SECTORAL FINANCIAL STABILITY ANALYSIS Loans for domestic property account for the

largest portion of household credit (USD 2.2 billion or 87.4%). Other components of household credits include motor vehicle, education and miscellaneous. Credit for domestic property and motor vehicles reported year-on-year growth of 6.5% (USD 139 million) and 2.6% (USD 1.8 million), respectively. The growth in credit relating to the domestic property is consistent with the continuing growth of the domestic real estate and construction industry. Figure 36: Resident Household Credit & Deposits - All Banks (\$US Billions) 1.0 3.0 2.5 2.0 1.5 2016 2017 2018 2019 2020 Loans & Advances Deposits Figure 37: Household Loans and Advances by Type - All Banks (\$US Billions) 0.0 2.5 2.0 1.5 1.0 2016 2017 2018 2019 2020 Miscellaneous Domestic Property Education Motor Vehicles

19CMRAI Financial Stability Report The corporate sector credit as of 31 December 2020 by client industry is as follows: Trade & Commerce (65% or USD 783 million), Production, Manufacturing & Construction (23% or USD 284 million) and Services industry (12% or USD 140 million). On a year-on-year basis, the corporate credit to the above sectors increased by 11.7%, 9.1% and 14.3%, respectively. Foreclosures Foreclosure is a process through which banks commence a legal process to satisfy the financial obligations owed to the banks if the customers fail to meet the contractual repayment requirements. Foreclosure is generally a lagging indicator of asset quality because the legal process usually commences after the customer defaults. The foreclosure rate continued a decreasing trend by decreasing to 0.69% compared to 1.3% in 2019. Corporate Sector Corporate sector loans and deposits increased by 11.3% and 3.5% to USD 1.2 billion and USD 2.6 billion, respectively. The corporate sector credit is less than credit to households, while the corporate sector deposits are reasonably similar to deposits from households. The lower credit to the corporate sector shows the corporate sector has a strong financial position. The corporate sector credit is equivalent to 21.8% of the Cayman Islands GDP. The debt levels are not indicative of over-indebtedness in the corporate sector. The corporate sector credit-to-GDP is significantly less than similar ratios for G20, advanced economies and emerging markets of 258.5%, 309.2%, 211.2%, respectively. SECTORAL FINANCIAL STABILITY ANALYSIS 0.0% 2.0% 2.5% 3.0% 2017 2018 0.69% 1.32% 1.59% 2019 2020 1.5% 1.0% 0.5% Figure 38: Foreclosure Rate Figure 39: Corporate Credit & Deposits - All Banks 0.0 2.0 2.5 3.0 3.5 1.5 1.0 0.5 2016 2017 2018 2019 2020 Deposits Loans & Advances Figure 40: Corporate Credit by Industry - All Banks (\$US Billions) 0.0 1.0 1.5 0.5 2016 2017 2018 2019 2020 Production, Manufacturing & Construction Trade & Commerce (wholesale/retail trade, real estate, property management and related activities) Services (tourist accommodation, transportation, communication & other services) CMRAI Financial Stability Report 20 Interest rate on loans & advances and Deposits The weighted average lending and deposit rates continued to decline in the year, consistent with the low-interest rate environment during the pandemic. During 2020, the prime lending rate decreased by 50%, while the KYD and USD lending rates year-on-year decrease was 19% and 28%, respectively. The KYD and USD deposit rates decreased by 86% and 82%, respectively. Generally, the deposits have shorter maturities and faster repricing compared to loans and advances. Generally, the KYD lending rates and deposit rates are higher than the respective USD rates. USD denominated assets and liabilities account for 71% and 66% of the total assets and liabilities, respectively. SECTORAL FINANCIAL STABILITY ANALYSIS Regulatory stress testing In May 2020, CMRAI conducted a stress testing exercise to assess the potential impact of COVID-19 pandemic on the Category A Retail banks capital adequacy and liquidity. The stress testing exercise considered the nature of exposures and industry to which each bank is exposed, deterioration of the credit portfolio resulting in increased default rates (especially

for the tourism and service industry), collateral held against the exposures, impact of market losses and credit rating downgrade of the investment portfolio, among other factors. The supervisory stress test results indicated that the CAR and liquidity profiles were generally strong in the modelled scenarios. CMRAI's regulatory procedures revealed no significant uptake of the Government's fully guaranteed low-interest loans to small businesses offered through the Cayman Islands Development Bank. These loans were expected to support the small businesses impacted by COVID-19. The low uptake shows that the corporate sector was generally in a strong financial position before COVID-19. Figure 41: Weighted Average Lending Rates - Category A Retail Banks 2% 6% 7% 8% 9% 5% 4% 3%

2016 2017 2018 2019 2020 KYD Loans USD Loans Figure 42: Weighted Average Deposit Rates - Category A Retail Banks 0% 0.20% 0.25% 0.30% 0.35% 0.40% 0.45% 0.15% 0.10% 0.05%

2016 2017 2018 2019 2020 USD Deposits KYD Deposits 21 CMRAI Financial Stability Report borders with the jurisdiction seeing the revival of the tourism and service industries. CMRAI does not expect a significant impact on the banking sector as Government eases off COVID-19 response measures such as pension payment holiday. SECTORAL FINANCIAL STABILITY ANALYSIS Thematic credit review

In early 2021, CMRAI conducted a thematic credit review of financial institutions with domestic lending activities. Part of the objectives of the review was to assess the impact of the COVID-19 pandemic on the loan portfolios of these financial institutions and to understand the nature of concessions granted to customers as well as risk mitigation measures. The review revealed that the loan portfolios were generally resilient through the COVID-19 pandemic. The review also confirmed that many entities had discontinued the previously implemented forbearance and debt payment moratorium measures without significantly deteriorating the loan portfolio. Other regulatory actions For dividend payments, CMRAI assessed dividend payment applications on a case-by-case basis instead of a complete prohibition of dividend payments. Any proposed dividend payments were carefully evaluated against the impact on capital and liquidity before approval. Additional measures were also implemented by CMRAI, such as the extension of regulatory filing timelines and conducting virtual inspections.

The financial overview and the results of supervisory procedures discussed above are supportive of a resilient banking sector throughout the COVID-19 pandemic. Additionally, prior financial data indicates that the banking sector was generally strong in the previous crises. Please refer to the section of the banking sector's financial performance during the GFC, European Sovereign Debt crisis and COVID-19 pandemic. See page 11. Outlook beyond COVID-19 The outlook of the banking sector beyond COVID-19 is positive. As indicated above, most banks have discontinued the loan repayment moratorium without significant deterioration of the asset portfolio. The Government has reopened the CMRAI Financial Stability Report 22 Trust and Corporate Service Providers The TCSP sector is comprised of trust companies and corporate service providers (CSP). There are three main categories of companies holding trust licences, namely Trust, Restricted Trust, and Nominee Trust and two main categories of companies holding trust registrations, namely Registered Controlled Subsidiaries and Registered Private Trust Companies. There are two main categories of companies holding corporate services licences, namely Companies Management and Corporate Services. Compared to 2016, there was no significant change in the number of trust licences. However, the number active trust licences reduced from 145 to 142 as trust licences continued to consolidate and restructure in pursuit of optimal cost, risk management and governance structures. The number of trust registration, however, increased from 160 to 189 in 2020, largely attributable to increased use by high

management and corporate services providers. The number of trust registrations, however, increased from 160 to 189 in 2020, largely attributable to increased use by high

net-worth individuals as part of their wealth structuring. The number of CSP increased from 136 to 144 in 2020, as the Cayman Islands continues to be an ideal jurisdiction for the establishment of business vehicles, because of its stable legal system, modern and flexible corporate structures and tax neutral status. As of September 2020, per the Global Financial Centers Index, the Cayman Islands was ranked 78 in the global rankings and ranked 5th in the Latin America & the Caribbean region. The Cayman Islands continue to hold a robust reputation as a financial center, demonstrated by the increased number of company registrations. New company registrations for 2020 amounted to 11,731, which brought the number of active companies domiciled in the Cayman Islands as of 31 December 2020, to 111,568.

**SECTORAL FINANCIAL STABILITY ANALYSIS**

**Trust Licences**  
**Restricted Trust Licences**  
**Nominee Trust Licences**  
**Companies Management Licences**  
**Corporate Services Licences**  
**Registered Controlled Subsidiaries**  
**Registered Private Trust Companies**

2016 2020  
 24 37 44 23 120 123 145 113 25 28 5757 6060

**Figure 43: Growth comparison in the TCSP Sector, 2016 and 2020**

**CMRAI Financial Stability Report**

**Nature of TCSP Sector Trusts:** The Trust Licence holder is authorized to offer trust business within and outside of the Cayman Islands, where licensees can provide trustee, executor or administrator services. They can also provide company management services in connection with their business.

**Restricted Trusts:** The Restricted Trust Licence offers trust business with the restriction that Licensees shall not undertake trust business for persons other than those listed in the undertaking accompanying the application for the Licence.

**Nominee Trusts:** The Nominee Trust Licence offers trust business under a trust licence to a Licensee who is a wholly-owned subsidiary of another licensee and where the sole purpose of that subsidiary is to act as its nominee.

**Regulated trusts** Over the past five years, the number of Trust and Restricted Trust Licences have remained the same, while the number of Nominee Trust Licences has declined. This is as a result of companies holding Trust Licences consolidating and restructuring the type of services provided via Nominee Trust Licences, to be absorbed within their suite of services in pursuit of optimal cost, risk management and governance structures.

**Company Manager:** The Companies Management Licence offers the provision of corporate services for profit or reward in or from within the Cayman Islands.

**Corporate Service Provider:** The Corporate Services Licence offers the provision of corporate services for profit or reward in or from within the Cayman Islands, similar to the Company Manager Licence. However, the Corporate Services Licence are limited to the following services: company formation agent; registered office provider; establishing and maintaining beneficial ownership registers for companies incorporated and domiciled in the Cayman Islands; provision of accommodation, correspondence or administrative address for a company or for any other person; filing statutory forms, resolutions, returns and notices; and acting as or fulfilling the function of or arranging for another person to act as or fulfil the function of such person. Over the past five years, the number of Company Management Licences have increased by 1% on average, with a sharp increase of 3% seen in 2020. This is consistent with the increase seen for Cayman Islands domiciled companies in the year, where the increased company registrations in the Cayman Islands have triggered a growth for companies management service providers. Over the past five years, the number of Corporate Services Licences have largely remained the same.

**Figure 45: Number of Regulated CSPs**

150 100 50 0  
 2016 2017 2018 2019 2020

**Corporate Service Providers**  
**Company Managers**

**SECTORAL FINANCIAL STABILITY ANALYSIS**

**Figure 44: Number of Regulated Trusts**

0 80 60 40 20  
 2016 2017 2018 2019 2020

**Active Restricted Trust Licences**  
**Active Unrestricted Trust Licences**  
**Nominee Trust Licences**

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24 Private Trust Companies: The Private Trust Company Registration allows companies that are incorporated in the Cayman Islands, the ability to offer connected trust business, such as trust business in respect of trusts of which there is one or more than one contributor to the funds of which are all, in relation to each other, connected persons. Over the past five years, the number of Registered Private Trust Companies have increased due to the increased use of such structures by high net-worth individuals as part of their wealth structuring. Registered Controlled Subsidiaries: The Controlled Subsidiary registration allows Registrants to carry on the business of issuing debt instruments or to carry on other trust business that is connected with the trust business of the Licensee by which the controlled subsidiary is owned. Registered Controlled Subsidiaries have marginally increased over the past five years. Figure 46: Number of Registered Controlled Subsidiaries and Private Trust Companies 200 100 0 2016 2017 2018 2019 2020 Registered Controlled Subsidiaries Registered Private Trust Companies

SECTORAL FINANCIAL STABILITY ANALYSIS 25 CMRAI Financial Stability Report As outlined previously, trustee services are mainly offered by Trust Licensees, with company management and corporate services mainly being offered by Companies Management Licences. Impact of COVID-19 and Responses The TCSP sector was generally resilient throughout 2020 despite the economic and operational challenges from the COVID-19 pandemic. The TCSP sector's resilience was in part due to the strong financial position of the sector before COVID-19. Overall, the FSIs remained strong. The ROA for all TCSPs improved while the ROA for each sector marginally improved. The liquid assets ratio was reasonably consistent with 2019. The ROE for all TCSPs decreased along with the liquid assets to short term liabilities. Whilst the ratios remained strong and well above the minimum required, the subsequent reduction was largely attributable to the COVID-19 pandemic. Key FSI Liquid Assets Ratio (%) ROA (%) Liquid Assets to Short-Term Liabilities ROE% 2020 2019 2020 2019 2020 2019 2020 2019

TCSPs	Unrestricted Trusts	Company Managers	CSP
96.42	98.12	91.97	77.71
296.75	1296.12	97.99	165.60
12.14	726.43	432.24	310.16
10.01	2.13	12.38	1.85
12.17	32.94	13.38	1.47
4.97	39.60	17.57	1.01
3.39	51.32	13.81	0.81
6.05	1.32	17.57	0.81

Table 4: Key Financial Soundness Indicators SECTORAL FINANCIAL STABILITY ANALYSIS CMRAI Financial Stability Report 26 Investment Funds The following are categories of mutual funds: Registered Fund: Investors whose minimum initial subscription requirement is no less than US\$100,000. Master Fund: A fund with one or more regulated feeder funds. Administered Fund: A fund whose CMRAI licensed Fund Administrator also serves as its principal office provider. In addition, these funds do not have a minimum initial subscription requirement, as in the case of registered funds and there is no need to be listed on a recognised stock exchange. Licensed Fund: Operators are required to be approved (no minimum initial subscription requirement). Limited Investor Fund: A fund with less than 15 investors, funds that previously took advantage of Section 4(4) of the Mutual Funds Act (MFA) which exempted certain funds from CMRAI's regulatory reach. Private Fund: An entity whose principal business is the offering and issuing of investment interests. It does not include any non-fund arrangements. Mutual Fund Administrators: Entities authorised by CMRAI to carry out the following services of a fund: management, administration, providing a principal office in the Cayman Islands, or providing an operator (director, trustee or general partner) to the fund. Entities that are licensed as mutual fund administrators, fall into 3 distinct classifications: Full- Authorises the holder of the license to act or carry-on business as a fund administrator in respect of an unlimited number of regulated mutual funds. Restricted-Limited to no more than 10 funds; and must receive CMRAI's prior approval for each new

fund. The restricted license authorizes the holder of the license to act or carry-on business as a fund administrator solely in respect of the regulated funds specified from time to time in the license. Exempted- Persons exempted from obtaining an MFA Licence pursuant to section 10(2) of the MFA (2003 Revision). SECTORAL FINANCIAL STABILITY ANALYSIS 27CMRAIFinancial Stability Report The Cayman Islands is one of the premier jurisdictions for investment fund domiciliation. The jurisdiction's professional infrastructure, stability, regulatory regime, English common law framework and tax neutrality all supports the growing sector. Regulation of investment funds in the Cayman Islands is comprised of a mutual fund and private fund regime. Mutual Funds Regulated mutual funds are approved under the MFA. As of 31 December 2021, a total of 12,719 mutual funds (comprised of 8,499 registered funds, 3,198 master funds, 295 administered funds, 55 licensed funds and 672 limited investor funds) were approved under the MFA. The total number of mutual funds has shown a steady increase over the last five years. The increase in the last two years was also supported by an amendment to the MFA in February 2020, which removed a previous exemption that now requires funds with 15 or less investors, where such investors had the power to appoint or remove the operator, to register with CMRAI. The amendment resulted in a new category of funds, namely Limited Investor Funds, which contributed to the total mutual funds. Based on the audited financial statement filings for 2020, mutual funds reported a total asset value of US\$8.7 trillion and total net asset value of US\$5 trillion. Total assets and total net assets have also steadily increased over the last five years, even when the contribution of the additional Limited Investor Funds for 2020 is excluded. As most funds are not staffed, they engage multiple outsourced service providers, including investment managers, auditors, administrators, and custodians. This results in an increased oversight of the activities in the fund. Directors of mutual funds must be registered with CMRAI pursuant to the Directors Registration and Licensing Act (DRLA). All funds must have a local, CMRAI approved auditor to sign off on their audited financial statements annually. The majority of mutual funds cater to institutional and high net-worth individuals, as the minimum initial investment for most of these funds is US \$100,000. Almost half of registered funds require an initial minimum investment of US\$1 million or more. Registered funds specifically cater mostly to institutional clients, such as pension funds, investment banks, but can also include high net-worth individuals. Table 5: Active Mutual Funds by Type Figure 47: Total Assets and Net Assets of Mutual Funds (\$US Billions) SECTORAL FINANCIAL STABILITY ANALYSIS Mutual Fund 2017 2018 2019 2020 2021

	2017	2018	2019	2020	2021
Registered	7,331	7,654	7,612	7,972	8,499
Administered	331	313	172	295	295
Licensed	81	56	45	59	55
Limited Investor	58	36	72	2,816	2,946
Master	2,816	2,946	2,886	2,988	3,198
Total	10,559	10,992	10,857	11,896	12,719

0 4,000 5,000 6,000 7,000 8,000 9,000 10,000 3,000 2,000 1,000 2016 2017 2018 2019 2020 Total Assets Net Assets CMRAI Financial Stability Report 28 Private Funds The Private Funds Act (PFA) came into force in the Cayman Islands in February 2020 and required all existing private or closed-ended fund vehicles established in the Cayman Islands to apply for registration with CMRAI. Such funds were exempt from registration under the MFA given their closed-ended status. The PFA requires a private fund to register with CMRAI within 21 days of accepting capital commitments from investors, or at least prior to accepting capital contributions from investors. The introduction of the PFA, together with the above-noted amendment to the MFA, demonstrated the jurisdiction's commitment to meeting international standards for regulation, transparency, cross-border cooperation, and economic substance. As of 31 December 2021, a total of 14,679 private funds were approved under the PFA which represents an increase from the 12,695 approved

at the end of 2020. Based on the audited financial statement filings for 2020, private funds reported a total asset value of USD 2.6 trillion and total net asset value of USD 2.4 trillion. Mutual and private funds (collectively investment funds) domiciled in the Cayman Islands have minimal linkages to the domestic retail economy. Only ten mutual funds, with a combined net asset value of approximately USD 500 million, are available for subscription to domestic retail investors. Of the almost 11,000 investors in the aforementioned ten funds, only 1,037 are Cayman Islands domiciled investors, holding a net asset value of approximately USD 118 million. Of the foregoing, 812 (78%) are Cayman Islands retail investors, holding a net asset value of approximately USD 29 million (25%). Investment funds however do constitute a significant part of the product offering of the Cayman Islands as an international financial center. Investment funds have direct links to the local Cayman Islands economy through contracting with domestic service providers such as company managers, corporate services providers, lawyers, auditors and mutual fund administrators. As such, and in addition to contributing to the real economy in terms of income to the public purse, investment funds also contribute to employment at the various domestic service providers as noted. Damage to the international reputation of the Cayman Islands as a credible location for clear and legally secure investment fund structures could have a negative effect on the number of investment funds domiciled in the jurisdiction. Consequently, this could negatively affect the contributions of investment funds to the local economy as noted above. The Cayman Islands therefore is committed to, through its regulatory regime and legal framework align with international best practices. Investment fund registration and de-registration data has shown no significant trends over the last five years that supports any significant damage to the international reputation of the Cayman Islands. It is further supported by the insignificant levels of fund de-registrations on the basis of re-domiciliation to other jurisdictions. Fund Administrators Fund administrators are key service providers as it relates to CMRAI's regulatory oversight of funds regulated within the jurisdiction. With a high volume of transactions and investors from around the globe, it is essential that fund administrators licensed by CMRAI are well equipped with the appropriate procedures and monitoring systems. Local licensed fund administrators are subject to the provisions of the MFA and are also required to comply with several regulations, policies, and statement of guidance. As part of CMRAI's oversight, licensees are subject to onsite inspections to ensure the applicable processes and systems are not only in place, but are effectively being performed, monitored, and evidenced appropriately. The frequency of inspections is determined by the fund administrator's risk rating. As the providers of the registrar and transfer SECTORAL FINANCIAL STABILITY ANALYSIS 29CMRAI Financial Stability Report agency (RTA) service, fund administrators are the safe keepers of all investor/client due diligence documentation, including related reviews and checks. The fund administrators are required by CMRAI to utilize a risk-based approach and to risk rate each investor/client based on specific criteria. The scrutiny of each investor/client will be determined by the risk rating assigned by the fund administrator. As part of CMRAI's oversight, fund administrators are also monitored to ensure the appropriate resources are in place to efficiently monitor the number of funds and investors/clients being onboarded. The type of fund administrator license issued by CMRAI will specifically determine the number of funds the fund administrator is able to provide RTA or net asset value calculation services to. Since 2017 there has been a noted decrease in CMRAI issued fund administrator licenses. The trend does not necessarily indicate a decline within the fund administrator industry but more so highlights consolidation through mergers that have taken place in the industry. By

design, the regulatory framework of the alternative investment industry of the Cayman Islands allows room for investment funds to be managed by both Cayman Islands domiciled and by non-Cayman Islands domiciled investment managers. Most investment managers of Cayman mutual funds are based overseas. Based on the Fund Annual Return (FAR) filings submitted for the period 2016-2020, an average of less than 10% of the total number of funds were managed by Cayman Islands domiciled investment managers with the remaining over 90% spread across the Americas, Europe and the Asia Pacific region. Over the same period, USA remains the jurisdiction where more than half of all funds are being managed from. Also, the management of Cayman Islands mutual funds from the United Kingdom and the Euro zone accounts for an average of 10% and 4% respectively of all funds whilst Hong Kong, being the main player within the Asia Pacific region accounts for an average of 8% of total number of funds. Only 5% of total net assets under management with respect to mutual funds were managed by investment managers within the Cayman Islands which accounts for a total of 708 funds with a total net assets value of USD 253 billion as at the end of the year 2020. The investment managers operating from within the Cayman Islands are regulated by CMRAI through the Securities Investment Business Act (SIBA) and its related regulations. As mandated by law and as a regulatory measure, CMRAI issues rules and regulatory policies and procedures which creates binding obligations on the investment managers for which breaches may lead to the imposition of fines or regulatory action being taken against them by CMRAI, pursuant to the exercise of its powers under the SIBA and the related regulations. By the design of the Cayman Islands regulatory framework, the exercise of CMRAI's oversight over investment funds is through the directors, trustees and general partners (namely operators) of the funds rather than through the investment managers. The operators are responsible for ensuring that the funds under their control comply with the relevant laws and regulations. To ensure the mitigation of any potential risk posed to mutual funds by virtue of being managed by investment managers outside the jurisdiction of the Cayman Islands, the DRLA was promulgated among others. The DRLA stipulates the obligations of the appointed directors (as operators) on funds and the actions that CMRAI can initiate in instances where they are found to have failed in their duties.

SECTORAL FINANCIAL STABILITY ANALYSIS 2017/2018/2019/2020/2021

Restricted 18121099 Full 7875706666 Exempted 11110 Total 97888176 75 Table 6: Active Administrators by Type CMRAI Financial Stability Report 30 The investment strategy focus of regulated mutual funds in the Cayman Islands are predominantly: Multi-Strategy, Long/Short Equity, Fixed Income, Global Macro and Equity Long Only, categories continue to be the main interest of funds and these accounts for an average of over 66% of the total net assets value for all mutual funds for the period between 2016 to 2020. As per Figure 48 and with the exception of Global Macro strategy, the net asset value of the other top four investment strategies witnessed a relatively steady growth over the period from 2016 to 2020 even though there were marginal declines in 2018 in their total net asset value contributions before returning to growths in the years 2019 and 2020. The total net asset values in respect of the Global Macro strategy on the other hand witnessed marginal growths over the period 2016 to 2019 before eventually witnessing a decline in the year 2020. Notwithstanding the foregoing, the Global Macro strategy continues to be among the top 5 strategies in terms of its net asset value contributions to the net asset value pool of the industry. The outbreak of the global pandemic in 2020 with its attendant dislocation of the capital markets were expected to create growth opportunities for funds investing in the distressed debt space, however the number of funds and related net assets values of such funds rather

witnessed a decrease. The decrease however was not limited to only the year 2020 as the years from 2016 to 2019 also showed a continual downward trend. The total number of funds with investment in distressed securities as their investment strategy saw a consistent downward trend from 225 funds in 2016 to 168 funds in 2020. Also, investment in the digital asset space effectively took full swing in the year 2018 with a total of 21 funds with a corresponding net asset value of USD 0.7 billion. Despite the skepticism surrounding this space in being inherently high risk, the number of funds rather saw a steady increase over the period of 2019 and 2020 to 25 funds and 62 funds respectively with a corresponding net asset value of USD 2 billion and USD 7 billion respectively. It represents an increase of 148% and 334% in terms of the number and the net asset values respectively for funds that invested in the digital asset space between 2019 and 2020. In line with the global attention that Environmental, Social and Governance (ESG) matters have received in recent times, investment managers have begun to venture into the opportunities it presents. There has been a resultant rise in ESG-focused funds as more investment managers are becoming more aligned with ESG investment strategies.

SECTORAL FINANCIAL STABILITY ANALYSIS 31 CMRAI Financial Stability Report 0 800 1,200 1,000 600 400 200  
2018 2016 2017 2020 2019 Figure 48: Trend analysis - NAV of the Top 5 Investment Strategies

(\$US Billions) SECTORAL FINANCIAL STABILITY ANALYSIS Multi-strategy Long/short Equity Fixed Income Global Macro Equity Long Only CMRAI Financial Stability Report 32

SECTORAL FINANCIAL STABILITY ANALYSIS Insurance The insurance industry has two distinct sectors: Domestic and International insurance segments. Domestic insurance

segment provides insurance to Cayman residents and businesses through locally incorporated or branches of foreign insurers. International insurance segment provides

insurance for foreign risks by insurers incorporated in the Cayman Islands. There are four main classes of insurer licenses for (re)insurance companies: Class A Insurers: Domestic or

external insurer that carries on business generally in or from within the Cayman Islands, providing insurance business to the domestic insurance market or to carry out limited

reinsurance business. Class B Insurers: Such insurers are exempted to carry on insurance and/or reinsurance business other than domestic business from within the Islands. Class C

Insurers: Such insurers are exempted to carry on insurance business involving the provision of reinsurance arrangements. Class C license applies to fully collateralized international

insurers e.g., Insurance Linked Securities and catastrophe bonds. Class D Insurers: Such insurers carry on reinsurance business and such other business as may be approved in

respect of any individual licence by the Authority. Class D licence are usually for large open-market reinsurers. Insurance Manager: Any company that provides insurance

expertise to or for class B or class C insurers. Insurance Agent: A person (who is not an insurer) to solicit domestic business on behalf of not more than one general insurer and one

long term insurer. Insurance Broker: A person who can arrange or procure, directly or through representatives, insurance or reinsurance contracts or the continuance of such

contracts on behalf of existing or prospective policyholders. What is a Captive? It is an insurance company formed to insure the risks of its shareholders or its related entities.

Therefore, it is considered an alternative risk transfer mechanism used to finance risk. Captives are usually Class B insurers. The Cayman Islands is recognised as the second

largest jurisdiction for captive insurance. 2015 2016 2017 2018 2019 2020 Class A 31 29 28 27 26 27 Class B 67 96 83 66 96 74 61 86 24 Class C 28 25 24 25 23 23 Class D 13 34 55

2015 2016 2017 2018 2019 2020 Agents 49 46 47 46 45 46 Brokers 42 42 29 26 23 23 Managers 32 32 28 26 24 23 Table 7: Number of Insurance Class A-B-C-D Licences Table 8: Number of

Insurance Agent-Broker-Manger Licences, 2015 to 2020 33CMRAIFinancial Stability Report

There was a total of 770 entities within the insurance industry in the Cayman Islands under the supervision of the CMRAI of which 96 and 674 related to the domestic and the international insurance markets respectively. The domestic insurance market consisted of 27 insurance companies licensed under the Class A licence category, 23 Insurance Brokers, and 46 Insurance Agents. The entities in the domestic insurance market are involved in insurance business whereby the insured risk is in the Cayman Islands. The international insurance market consisted of 652 insurance companies within Classes B, C, and D licence categories, and 22 Insurance Managers. The entities in the international insurance market are involved in insurance business whereby the insured risk is located overseas, outside of the Cayman Islands. These include captive insurance companies providing self-insurance coverage to their overseas parent and affiliates, as well as commercial insurance and reinsurance companies providing insurance coverage to consumers internationally. During the year 2020, CMRAI issued 42 new licences of which 37 were in the international insurance market and 5 in the domestic insurance market. Those issued in the international insurance market consisted of 36 new international insurance companies and 1 Insurance Manager. In the domestic insurance market, all 5 new licences were issued to Insurance Agents. Despite the pandemic and global economic downturn affecting many businesses in 2020, the insurance industry in the Cayman Islands continued to thrive as highlighted by the above-mentioned new formations which compared favourably to 2019 when a total of 36 new licences were issued. For the domestic Class A Insurers, the following are the major FSIs.

Licence Type	Total
Class B Insurer	624
Class C Insurer	23
Class D Insurer	5
Total Intl. Insurers	652
Insurance Manager	22
Total	674

SECTORAL FINANCIAL STABILITY ANALYSIS

Table 9: Domestic Market for Insurance Industry, 2020 Table 10: International Insurance Market, 2020 Figure 49: Main Lines of Business for Class A Insurers in Domestic Market

Licence Type	Total
Class A Insurer	27
Insurance Broker	23
Insurance Agent	46
Total	96

CMRAI Financial Stability Report 34 Insurance Financial Soundness Indicators

Class A Local Insurers Capital to total assets provide an indication of the capacity of the sector to absorb losses relative to risk exposures. The years 2017 and 2019 experienced severe catastrophic losses mainly due to storm systems, including hurricanes, ravaging the covered areas. This led to erosion of capital for insurance carriers providing property coverage and explains the volatility depicted in the trend analysis. The Caribbean region sits in a hurricane belt, and being recently jostled by earth tremors, the non-life carriers conducting domestic business heavily utilized reinsurance to transfer risk and create capacity, particularly considering the small nature of jurisdictions such as Cayman Islands which will exhibit high concentration risk in the event of catastrophic events. This is captured in the trend analysis in Figure 51 which shows that non-life insurance companies in the domestic market retain just about half of the risks they underwrite. Life insurers had peak performance in 2016 & 2017 from net income basis which shored up their capital position. However, there has been a downward trend since then and life insurers have been generating less than impressive performance which may be explained by changing actuarial assumptions on key variables such as interest rates, inflation rates, and mortality rates.

Figure 52: Capital to Total Assets - Life

Year	2016	2020	2020	2019	2018	2017
Life	46%	54%	58%	56%	52%	50%

48% 2016 2020 2019 2018 2017 52.5% 54.0% 49.6% 49.9% 48.5% 88% 92% 94% 93% 91% 90% 89%

2016 2020 2019 2018 2017 91.6% 92.0% 89.7% 90.2% 91.3%

Figure 53: Risk Retention Ratio - Life

Year	2016	2020	2019	2018	2017
Life	10%	30%	40%	35%	25%

20% 15% 2016 2020 2019 2018 2017 36.9% 13.8% 32.0% 37.9% 16.6% 25% 45% 55% 50% 40%

35% 30% 20162020201920182017 30.2% 43.9% 42.1% 34.2% 36.6% Figure 50: Capital to Total Assets - Non-Life SECTORAL FINANCIAL STABILITY ANALYSIS 35CMRAIFinancial Stability Report The risk retention ratio serves as an indicator of insurance risk management policy for insurers. The local life business is not as heavily reinsured as the non-life business, therefore the risk retention ratio has averaged around 91% over the last five years.

The expense ratio compares expenses to the level of premiums generated. The dip in expense ratios for both life and non-life sectors in the 2019-2020 period, is an indication of the impact of the COVID-19 pandemic which saw significant reduction in operational costs as most businesses transitioned to remote working. This phenomenon is also captured in the loss ratios during the period particularly for general lines of business such as auto and health insurance which saw significant reduction in losses during the pandemic. The non-life or general lines of business experienced a steep increase in the profitability from 2019 to 2020. During the pandemic year, a large domestic insurer experienced an increase in premiums and a simultaneous decline in claims particularly related to elective health procedures. This positively impacted the ROA. A similar trend was experienced by the ROE indicator which increased from 6.6% in 2019 to 14.5% in 2020. The life sector experienced a sharp decline in profitability within 2020 largely attributable to subdued investment performance and rising policyholder liabilities. Life carriers faced significant shifts in key assumptions (lapse rates, inflation rate, mortality rates, interest rates) which led to adverse declines in performance. A similar trend was experienced by the ROE indicator which sharply decreased from 14.4% in 2019 to 1.7% in 2020.

15% 19% 21% 20% 18% 17% 16% 20162020201920182017 20.7% 16.8% 18.8% 17.4% 18.5% Figure 54: Expense Ratio Non-Life Figure 55: Expense Ratio - Life Figure 56: Return on Assets - Non-Life Figure 57: Return on Assets - Life 16% 22% 20% 18% 20162020201920182017 19.2% 20.0% 16.1% 19.7%19.7% 0.0% 4.0% 6.0% 5.0% 3.0% 2.0% 1.0% 20162020201920182017 3.9%3.9% 1.8% 5.3% 0.6% SECTORAL FINANCIAL STABILITY ANALYSIS -2.0% 6.0% 4.0% 2.0% 0.0% 20162020201920182017 -0.7% -0.9% -0.9% 5.5% 1.1% CMRAI Financial Stability Report 36

The international insurance market has fared well over the years, with 93% focused on general insurance business. The total capital to assets ratio has averaged in the last five years to be around 25%. ROE increased from 7% in 2016 and stood at 13% in 2020. The ROA over the last five years have fluctuated around 2-3%. Impact of COVID-19 Tests on Business Continuity Plans Companies conducting insurance business in or from within the Cayman Islands are either required to have physical presence in the Cayman Islands (mandatory for the domestic insurance market) or to appoint a local representative (mainly for the international insurance market) to provide a place of business in the Cayman Islands, including fully operational offices where books and records are to be maintained. This meant that when the Cayman Islands went into full lockdown in March 2020, companies operating in the Islands almost immediately transitioned their work models from office-based to remote access. Regulators were not spared of this shift in operational arrangements and therefore CMRAI also had to completely shift from an office environment to a remote model. This ensured minimal disruption to the insurance market in the jurisdiction. As a result of these changes, CMRAI has heightened its supervisory work in assessing the effectiveness of business continuity plans (BCPs) adopted by licensed entities. The BCPs are assessed by CMRAI during inspections and licensees are required to conduct regular tests to ensure their BCPs are working effectively and efficiently. Expansion of Insurance Programs With the pandemic challenging most economies and global inflationary pressures escalating, the commercial insurance market (i.e. the international

insurance market in the Cayman Islands which is made up of two distinct segments - the captive insurance companies providing self-insurance coverage to their parental organizations and affiliates, and the international insurance companies providing commercial insurance coverage to third-party consumers) has continued to harden, and premium rates have been increasing on majority lines of coverage. Commercial insurers have also imposed strict terms and conditions and exclusions in their policy contracts. As a result, most owners of captive insurance companies, which is a dominant segment of the international insurance market in the Cayman Islands, have increased their utilisation of captives as a form of self-insurance. Cayman Island based captives have therefore seen expansion in size of insurance coverages provided by them and have also introduced new lines of business. The pandemic has heightened cyber risk and consequently this is emerging as a common and new line of coverage provided by Cayman captives. Financial Resilience CMRAI has not observed any material changes to financial condition and strength of its licensed entities. CMRAI has been undertaking stress testing on its licensed entities to assess the impact of the pandemic and other global challenges, including catastrophe risk exposures, and early signs are encouraging with no observed economic strain on licensee's capital and solvency positions. One factor influencing this is the high level of capital maintained by licensees, with majority of entities holding capital far above the minimum regulatory requirements. SECTORAL FINANCIAL STABILITY ANALYSIS

37CMRAI Financial Stability Report Virtual Assets Since 2020, the world has experienced rapid digitisation as FinTech and new forms of technology continue to drive innovation globally. The world is experiencing rapid adoption of blockchain technologies and cryptocurrencies which is on the cusp of revolutionising the global financial landscape and payment systems. Some have attributed this rapid adoption to the response to the COVID-19 pandemic and as the world began adapting to the pandemic, more and more financial market players are joining the discussions on VAs and VASPs. In July 2021, the Financial Action Task Force (FATF) released its 12-month review of the implementation of its revised standards on VA and VASPs. While FATF covers over 200 jurisdictions, 128 reported on their progress of which only 41% (52 jurisdictions) reported on establishing regulatory regimes permitting VASPs. The Cayman Islands is one such jurisdiction with the VASP Act being enacted in May 2020, and portions of the Act as well as the VASP Regulations commenced in October 2020. The VASP Act provides a legislative framework for the conduct of VA business in and from the Cayman Islands; and for the registration of and licensing of persons providing VA services. The VASP Act defines VA, as "a digital representation of value that can be digitally traded or transferred and can be used for payment or investment purposes but does not include a digital representation of fiat currencies". VA include but are not limited to all digital currencies, security tokens, utility tokens or other digital assets that are tradeable. VA Services applies to services related to the issuance of VA or the business of providing certain services or operations, including the exchange, transfer and safekeeping of VA, as well as the provision of financial services relating to a sale or issuance of VA, including VA trading platform. The VASP Act is in alignment with international standards set by FATF to VA, which reflects the jurisdiction's continued commitment to FATF standards for anti-money laundering (AML) and countering the financing of terrorism (CFT). The VASP Act framework was implemented in two phases. Phase one started in October 2020 with the focus on AML and CFT compliance, supervision and enforcement, and other key areas of risk. Under phase one, entities engaging in or wishing to engage in virtual asset services had to be registered with CMRAI



under the VASP Act. Entities engaging in or wishing to engage in virtual asset services, that already were subject to CMRAI's supervision under another regulatory law, had to notify (in the case of licensees) or register with (in the case of registrants) CMRAI under the VASP Act. Phase one (registration or notification) targeted three groups: 1. Entities wishing to perform virtual asset services for the first time ( New Market Entrants ) 2. Entities providing virtual asset services prior to the commencement of the VASP Act ( Pre- Existing Service Providers ); and 3. Existing Authority licensees that provide or propose to provide virtual asset services ( Other Authorised Entities ). In April 2021, CMRAI conducted a comprehensive Sectoral AML/CFT risk assessment of the VA sector which was based on the information provided through the registration process along with other open-source information about entities in the Cayman Islands. The risk assessment framework used was built on the following components: nature, size and complexity, transactions, products and services, delivery and distribution channels, types of clients and customers, geographic risk associated across all sectors. From this risk assessment, the overall risk rating for VSAPs was determined to be medium-high. **SECTORAL FINANCIAL STABILITY ANALYSIS** CMRAI Financial Stability Report 38 Phase two which is yet to commence, includes licensing requirements, enforcing remaining provisions of the VASP Act, and prudential supervision. As at the end of June 2022, the total number of VSAPs registered under the VASP Act was 8. For registrants on record, the total daily volume transacted was USD 5.1 billion and held a value of USD 4.1 billion in VA. The most popular types of application are VA Trading Platforms (55%), including exchanges that are a gateway to buying and exchanging VA; and Issuances (25%) that raise liquidity via the sale of newly created VAs sometimes through a process commonly called an initial coin offering (ICO); followed by Custodians (15%) that provide the service of safeguarding VAs and include firms that facilitate the custody of VAs. CMRAI intends to establish regulatory sandboxes that will facilitate growth and development of the FinTech Ecosystem in the Cayman Islands. CMRAI has created an internal VASP working group which will be leading the development of the sandbox regime in the context of VA. **Regulatory Sandboxes** The purpose of a regulatory sandbox is to develop a regulatory environment which supports enhancement of the financial services sector and promotes innovation while simultaneously safeguarding the welfare of consumers and promoting the adoption of new robust financial and regulatory/supervisory practices and technologies. It is a formal regulatory program for market participants to test new financial services or models, with live customers, subject to safeguards and oversight. The controlled environment will facilitate the development of relationships with licensees, as well as testing plans, the licensing issuing process, and test supervision of a live market. Participating licensees will ultimately transitioned out of the sandbox. **Supervisory Regime** Section 24 of the VASP Act requires CMRAI to take reasonable measures to identify natural or legal persons that are carrying out VSAPs activities without the required license, registration, or waiver. It also gives CMRAI the power to supervise, monitor and ensure compliance by VSAPs with requirements to combat ML/TF. Also, CMRAI shall receive regular returns, perform onsite inspections and receive auditors reports. As entities engage with CMRAI to become registered and operate legally within the financial ecosystem, it is imperative that they implement the necessary policies, procedures and controls, and procedures to manage and mitigate risks. They are encouraged to apply a risk-based approach to ongoing monitoring as it pertains to customers, type of business conducted and the value and volume of transactions. To assist with the mitigation of money laundering and terrorist financing risks, CMRAI adopted the FATF Travel Rule, via Part XA of

the AML Regulations. The Travel Rule is a set of recommendations created to assist AML/CFT efforts by enhancing the audit trails when VA are transferred between entities. The Travel Rule requires at a minimum the names and account numbers of the remitter and beneficiary in a transaction to provide transparency. CMRAI will, therefore, continue to maintain constant dialogue with industry to ensure compliance in this area. Travel Rule for VASPs came into effect on 1 July 2022, and the industry is expected to abide by quarterly reporting, with the goal of ensuring compliance with the AML Regulations and meeting FATF requirements.

SECTORAL FINANCIAL STABILITY ANALYSIS CMRAI Financial Stability Report 40 39CMRAI Financial Stability Report Despite the pandemic, the financial risks within the jurisdiction remained contained as the domestic financial system remained robust and resilient. However, there are two pertinent vulnerabilities within the domestic financial system that need to be closely monitored i.e., the level of interconnectedness within the financial sector and the exposures of households and the domestic banking sector to the real estate market. Interconnectedness Globalisation has led to an increase in the external assets and liabilities of nations as a share of their GDP. Countries have become more and more inter-linked with each other, as the asset and liability management (ALM) strategies of their sovereigns, financial institutions, and corporations have become increasingly global in nature. The Cayman Islands play a critical role in global financial intermediation and this has become more pronounced over the years.

Risk maps In a highly interconnected world, as agents typically fail to take account of the effects of their actions on others, the potential for systemic risk rises. As observed in the run up to the GFC, a build-up of leverage and liquidity mismatches at the same time can leave the financial system vulnerable to adverse changes in the macroeconomic and market environment, and pervasive interconnections can result in a rapid transmission of adverse shocks across the global financial system. The crisis has led to calls for global financial risk maps to understand interconnectedness, track the build-up of systemic risk concentrations, and improve surveillance. Such maps could be used to:

- Understand common themes across countries (e.g., exposures to common networks of intermediaries), the most important risk drivers, and the amplification or mitigation as well as the propagation mechanisms of shocks.
- Analyse the channels for cross-border spillovers and enable policy makers to better understand the risks that their economies face, the effectiveness of alternative policy options, and more generally reforms of the global financial architecture.

Vulnerabilities Financial globalisation has brought various benefits, such as scale, more efficient intermediation of savings, and pooling of risks. However, it has also created or exacerbated many vulnerabilities. The speed with which illiquidity and losses in some markets can translate into global asset re-composition is evidence both of the efficiencies of the transmission and intermediation process as well as the risks associated with interconnectedness. Shocks in one part of the system can be amplified and transmitted through common intermediaries pursuing global ALM strategies that collectively become overexposed to upswing of a credit cycle and overly risk-averse in a downswing. Banks registered in the Cayman Islands reported total assets of USD 598 billion with 97% of these being cross-border positions. The majority of these asset cross-border positions (USD 512 billion) were loans, with around USD 66 billion from the issuance of securities. Total liability positions were also around USD 598 billion with approximately 90% being cross-border positions. From Figures 58 and 59 there is a steady decline in asset and liability positions for the last five years which was mainly attributable to declines in cross-border positions. This contraction has resulted in the decline in ranking of the Cayman Islands international

banking position from 8th in 2016 to 16th in 2020 and from 7th in 2016 to 14th in 2020 for both cross-border assets and liabilities respectively. In terms of local positions over the last five years, assets booked in the domestic economy have averaged around USD 20,000 billion, while domestic liability positions averaged around USD 57,000 billion.

CHAPTER 3: SECTORAL MACROPRUDENTIAL ANALYSIS CMRAI Financial Stability Report 40

SECTORAL MACROPRUDENTIAL ANALYSIS 20162020201920182017 o/w Local Positions o/w Cross-Border Positions

Figure 58: Total Banking Sector Assets Cross-Border Positions (\$US Millions)

Figure 59: Total Banking Sector Liabilities Cross-Border Positions (\$US Millions)

0 1,000,000 1,200,000 800,000 600,000 400,000 200,000 20162020201920182017 o/w Local Positions o/w Cross-Border Positions

0 1,000,000 1,200,000 800,000 600,000 400,000 200,000

41CMRAIFinancial Stability Report A cross border map for the Cayman Islands banking sector assets was developed using the locational banking statistics survey submitted to the Bank for International Statistics as of December 2020. The map shows widespread cross-border exposures as the banking sector's interconnectedness is evidently far-reaching to the global community, covering all major continents.

SECTORAL MACROPRUDENTIAL ANALYSIS 398,025 17,481 31,028 1 52,982 232 2,674 Developed Countries Developing Europe Developing Africa, Asia, Pacific & Middle East Un-allocated - Own issue of Securities Cayman Islands Developing Latin America and Caribbean International Financial Centres 3,243 585 40,438 379,403 13,108 26,233 12,032 Developed Countries Developing Latin America and Caribbean Developing Europe Un-allocated - Own issue of Securities Cayman Islands Developing Africa, Asia, Pacific & Middle East International Financial Centres

Figure 61: Regional Cross-Border & Domestic Assets (\$US Millions)

Figure 62: Regional Cross-Border & Domestic Liabilities (\$US Millions)

Figure 60: Cross-Border Assets of Cayman Islands Banking Sector CMRAI Financial Stability Report 42

From the USD 598 billion in assets, 78.6% or USD 455 billion was booked with Developed Countries, of which USD 68 billion and USD 386 billion were booked in Europe and Developed Non-European Countries, primarily the United States. 11.5% or USD 66 billion was booked in Latin America & Caribbean (primarily Brazil and Mexico), 6.5% or USD 38 billion was booked in international Offshore Financial Centres (primarily The Bahamas and Hong Kong) and 2.9% or USD 17 billion with Developing Africa, Middle East and Asia Pacific. Noteworthy is that 62% or USD 356 billion and 71% or USD 381 billion of the banking sector assets and liabilities were booked as interbank assets and liabilities positions, of which 56% or USD 325 billion and 64% or USD 345 billion were intrabank assets and liabilities. This highlights the role of the Cayman Islands' banking sector as a financial intermediary providing liquidity and credit to Parent Group Banks and Other Banks globally. This high level of interconnectedness presents a vulnerability of the banking sector to global regulatory, political and policy issues.

SECTORAL MACROPRUDENTIAL ANALYSIS Figure 63: Top Ten Principal Nodes for Coordinated Portfolio Investment for Banking, Funds and Insurance Italy Curacao Australia Germany UK France USA KY - Funds KY - Insurance KY - Banking Ireland Japan China Canada Bermuda Luxembourg Netherlands Int I Org Brazil Mexico Sweden

43CMRAIFinancial Stability Report It is evident that there are common exposures based on the Coordinated Portfolio Investments Survey from the banking, Insurance and Funds Sector, with the USA, France, UK common for all. The United States was the top destination for portfolio investment for all three regulated sectors i.e. banking, insurance and mutual funds. Further, it can be inferred that the portfolio investments of Cayman licenced entities are concentrated in the major lending economies i.e. USA, Japan, UK, France, Germany, and Australia. This makes these jurisdictions systemically

important to the Cayman Islands. It should be noted that the domestic Cayman licensed entities are only a small fraction of the total licensees. Further, the geographic distribution of portfolio investments for these entities has a much more limited international profile. With respect to sectoral differences, the funds sector is by far the largest sector and has the greatest geographical diversification due to the underlying nature of the business. The interconnectedness is also of a different nature since the relationship of funds to the broader financial system and economy differs from that of banks and insurance companies. Against the backdrop of the high level of global interconnectedness of the Cayman Islands, CMRAI has taken various stringent measures to ensure ongoing monitoring, using a risk-based supervision approach. These include participation in supervisory colleges, on-site inspections (in-person and hybrid). CMRAI has also remained resilient towards meeting the AML/CFT requirements as efforts are continuously focused on enhancing the financial services sector as a prominent industry as well as an economic driver for the islands.

**SECTORAL MACROPRUDENTIAL ANALYSIS**

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The Cayman Islands real estate market has boomed and seen unprecedented growth over the past decade, with total freehold property transfer values increasing from slightly over KYD 300 million in the post financial crisis to steady year-on-year sales to over KYD 800 million nearly a decade later in 2019. For clarification, a freehold property can be transferred by registration of sale deed and the owner of such an estate enjoys free ownership for perpetuity and can use the land for any purpose in accordance with the local regulations. The upward trend of real estate sales continued during the first quarter of 2020. However, after March 2020, the real estate sector was forced to slow down production as the Cayman Islands and most of the world went into lockdown due to the outbreak of the novel COVID-19 virus. Regardless, the real estate industry closed more than USD 77 million in sales during the lockdown period based on statistics from the Cayman Islands Real Estate Brokers Association, which included the country's record-breaking sale of the most expensive residential home sold for USD 14 million in April 2020. The Cayman Islands residency program allows foreigners, especially those classed as high-net-worth and ultra-high-net-worth to establish permanent residency by investing in luxury properties, by either investing a minimum of KYD 1 million in local real estate, where successful applicants will qualify to apply for a 25-year residency certificate; or investing in minimum of KYD 2 million, where successful applicants will qualify to apply for Cayman Islands permanent residency by investment, among meeting other program requirements. There are no restrictions on foreign ownership, which makes acquiring a property straightforward for international investors. Real estate brokers have indicated that there has been an increase in international buyers (nonresident) as persons seek safer places to relocate or purchase a second home. Foreign investors have substantially driven real estate market activity in 2020 with monthly sales exceeding USD 100 million for the first time in October 2020 and this trend continued in March to May and then in July-August 2021.

**SECTORAL MACROPRUDENTIAL ANALYSIS Housing Market Imbalances and Household Debt**

**Figure 64: Number vs Average Value of Freehold Property Transfers, 2020 - 2021**

Year	Annual Value of Freehold Property Transfers (CI\$ Millions) (RHS)	Annual Number of Freehold Property Transfers (LHS)
2010	1,200	400
2011	1,200	400
2012	1,200	400
2013	1,200	400
2014	1,200	400
2015	1,200	400
2016	1,200	400
2017	1,200	400
2018	1,200	400
2019	1,200	400
2020	1,200	1,200
2021	2,500	2,500

Source: Cayman Islands Government Lands and Survey Department

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From the foregoing, the jurisdiction is experiencing a heightened demand for residential homes, while on the other end of the spectrum, developers are pushing to meet this demand, as the inventory for

building material is declining due to supply chain disruptions following the challenges of 2020 and 2021. These factors have played significant roles in the sale prices for listed properties as the average price for real estate increased up to 27% from 2019 to 2020 and continues to grow year-over-year. SECTORAL MACROPRUDENTIAL ANALYSIS Figure 65: Total Household Credit vs Residential Mortgage Loans (\$US Millions) Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 5001,0001,5002,0002,5003,000 Retail Banks - Residential Mortgage Retail Banks - Household Credit 2016 2020 2019 2018 2017 CMRAI Financial Stability Report 46

During 2020, many countries experienced a reduction in mortgages as unemployment rose, income declined, and households adopted a more prudent approach towards expenditure by postponing investments in real estate and by revising their consumption patterns. Many households were also not able to acquire new loans or advances due to the financial difficulties they were facing. This is the opposite of what was seen in the Cayman Islands. For potential resident buyers that could have afforded to enter or re-invest in the local housing market, this investment was heavily financed through lending institutions. One major contributing factor for the rise in mortgages during the pandemic were the accommodating policies implemented by the Cayman Islands Government to ease the economic burdens to households such as allowing persons with a private pension plan to withdraw from their retirement funds. Eligible savers could have withdrawn up to KYD 10,000 plus 25% of the remaining balance from their pension accounts. In total, workers withdrew \$443.5 million in retirement savings in 2020. This provided sufficient funds for residents to pay-off existing debt and perhaps reinvest in the lucrative housing market. Approximately 90% of household credit is attributable to residential mortgages with roughly 10% directed to households for other purposes. Residential mortgage debt has steadily increased over the last 5 years. There was a notable rise in residential mortgages even during the height of the pandemic 2020 i.e., household debt burden has increased. This reflects elevated house prices and a large proportion of home ownership. However high indebtedness makes households vulnerable when there are shocks to the income stream, a rise in lending rates (affecting variable rate mortgages) or even when there is a fall in house prices. When households further tighten consumption there is knock-on effect on the economy, amplifying an economic downturn. SECTORAL MACROPRUDENTIAL ANALYSIS Figure 66: Residential Mortgage Debt (\$US Millions) 0 500 1,000 1,500 2,000 2,500 Mar 2016Mar 2019 Sep 2017Sep 2020 Jun 2016 Jun 2019 Dec 2017 Dec 2020 Sep 2016Sep 2019 Mar 2018 Mar 2021 Dec 2016Dec 2019 Jun 2018 Mar 2017 Mar 2020 Sep 2018 Jun 2017Jun 2020 Dec 2018 47CMRAI

Financial Stability Report Domestic Mortgage Rates Another motivating factor that influenced potential resident real-estate investors is the low interest rate offered by the lending institutions. Policy interest rates of the major global central banks were slashed during the first quarter of 2020 in an unprecedented response to the COVID-19 pandemic. This policy support, evidenced globally, was necessary to ease the financial burden on businesses and households as well as to provide a much-needed stimulus amidst weakened economic activity. The US Federal Reserve Bank (FRB) reduced interest rates on two occasions in 2020. On March 3, 2020, the FRB lowered the rate from a range of 1.50 percent to 1.75 percent to a range of 1.00 percent to 1.25 percent. On March 15, 2020, the rate was lowered again by 1.0 percentage point to the range of 0.00 percent to 0.25 percent. This phenomenon was seen across the globe. The Bank of England had decreased its policy rate by 50 basis points in two tranches during the pandemic, and the Bank of Canada lowered its overnight target rate by half a percentage point on three separate occasions in March 2020 to settle at 0.25 percent. The

Cayman Islands retail banks lending rates are directly determined by the movements in the U.S. interest rates as shown in the Figure 67. The 30-year U.S. fixed mortgage rate is tied to the 10-year Treasury rate, therefore, when the interest rate goes up, the 30-year fixed rate mortgage tends to do the same and vice versa. Throughout most of the pandemic in 2020 and 2021, interest rates have been extremely low. As a result, incredibly high numbers of people have rushed to obtain mortgage loans to buy properties with less expensive debt.

The result has been a strong seller's market that has lasted for well over a year. SECTORAL MACROPRUDENTIAL ANALYSIS Figure 67: Weighted Average Lending Rates Source:

Cayman Islands Government Economic & Statistics Office 0% 1% 2% 3% 4% 5% 6% 7% 8% 9% KYD Loans 30 Yr U.S. Fixed Rate Mortgage Avg. USD Loans 2016 2017 2018 2019 2020

CMRAI Financial Stability Report 48 SECTORAL MACROPRUDENTIAL ANALYSIS Figure 68: Household Credit-to-GDP Gap Household Credit Gap The credit-to-GDP (credit gap)

is a macroprudential indicator that measures the risk associated with the loans given to the household sector from banks. Household debt is defined as all liabilities of households

(excluding non-profit institutions serving households) that require payments of interest or principal by households to the creditors at a fixed date in the future. Household debt is

calculated as the sum of the following liability categories: loans (primarily mortgage loans and consumer credit) and other accounts payable. Based on the link between credit booms

and financial bubbles, history has shown that a rapid growth in credit lending increases the probability of a financial crisis and/or a marked growth slowdown. Looking at it from a larger

prudential standpoint, the ratio of household credit is a popular benchmark of the sustainable levels of credit. The Basel Committee has proposed using the deviation from

longrun trend of the credit gap to calibrate a countercyclical capital buffer. During the expansion stage of the credit cycle, lending is driven by fierce competition that invokes

reduced risk awareness and places emphasis on excessive credit growth that often results in a level of indebtedness that may exceed the equilibrium defined by underlying

macroeconomic fundamentals. This leads to a build-up of systemic financial risks that are likely to cause severe crisis upon realization. Thus, it is vital to identify the risks in time and

take pre-emptive measures to, avoiding or at least reasonably reducing the real economic effects of the potentially forthcoming crisis. There is consensus in the relevant literature that

the development of the credit-to-GDP ratio is a good base indicator of the sustainable level of lending activity. Country level indebtedness -6% -4% -2% 0% 2% 4% 6% 8% 10% 12%

Gap Early Warning Threshold - Lower Early Warning Threshold - Upper Mar 2010 Jun 2010 Sep 2010 Dec 2010 Mar 2012 Jun 2011 Sep 2011 Dec 2011 Mar 2012 Jun 2012 Sep 2012

Dec 2012 Mar 2013 Jun 2013 Sep 2013 Dec 2013 Mar 2014 Jun 2014 Sep 2014 Dec 2014 Mar 2015 Jun 2015 Sep 2015 Dec 2015 Mar 2016 Jun 2016 Sep 2016 Dec 2016 Mar 2017

Jun 2017 Sep 2017 Dec 2017 Mar 2018 Jun 2018 Sep 2018 Dec 2018 Mar 2019 Jun 2019 Sep 2019 Dec 2019 Mar 2020 Jun 2020 Sep 2020 Dec 2020 49CMRAI Financial Stability

Report Figure 69: Banking Stability Index for Retail Banking SECTORAL MACROPRUDENTIAL ANALYSIS Banking Stability Index plays an important role in the

growth potential of GDP, as a lower than equilibrium level credit-to-GDP might reduce the growth rate of the economy, while a too high level increases the probability of a financial

crisis. To define what level is too low or too high, the equilibrium time-path of the credit-to-GDP ratio must be identified. The primary indicator of financial systemic risk, the

credit-to-GDP gap is then defined as the deviation from said equilibrium level. Positive gap values accentuate an increasing potential hazard, while negative values indicate slack in the

credit markets. Basel III indicates that when the gap is below a lower threshold of 2

percentage points, the countercyclical capital buffer add-on is zero. It increases with the gap until the buffer add-on reaches its maximum level of 2.5 per cent at the point where the gap exceeds an upper threshold of 10 percentage points. The methodology employed by CMRAI to calculate the household credit-to-GDP gap was derived from the IMF Caribbean Regional Technical Assistance Center (CARTAC) technical assistance, where the 2% threshold is the international baseline for this indicator. Based on the Figure 68, for many years (2012-2019), the Cayman Islands household credit-to-GDP gap was below the 2% threshold. However, there has been a significant increase in the ratio with the growth in household credit during 2020. Against this backdrop, CMRAI is currently working on a macroprudential framework to inform the use of such indicators as the household credit-to-GDP gap in supervisory analysis.

Jun 2012 Sep 2012 Dec 2012 Mar 2013 Jun 2013 Sep 2013 Dec 2013 Mar 2014 Jun 2014 Sep 2014 Dec 2014 Mar 2015 Jun 2015 Sep 2015 Dec 2015 Mar 2016 Jun 2016 Sep 2016 Dec 2016 Mar 2017 Jun 2017 Sep 2017 Dec 2017 Mar 2018 Jun 2018 Sep 2018 Dec 2018 Mar 2019 Jun 2019 Sep 2019 Dec 2019 Mar 2020 Jun 2020 Sep 2020 Dec 3020

Capital Adequacy Liquidity Profitability Asset Quality (0.65) (0.15) 0.35 0.85 1.35 1.85

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The Banking Stability Index (BSI) is an aggregate indicator that measures the soundness of the domestic retail banks in the Cayman Islands. This graph shows the resilience of these class of banks based on a weighted average of four broad categories: Liquidity, Profitability, Asset Quality and Capital Adequacy over a nine-year period. The BSI expresses the indicators as their deviations from the mean. Zero is its threshold. Any level above zero shows that the stability of the system is above average and the farther away above zero the index is, the more stable the system. Similarly, any level below zero is a reflection of some level of instability. Additionally, increasing consecutive values of the index imply improvement, and vice versa. It is vital for the Cayman economy that its banking system is stable and is adequately capitalized. If the banking system is in stress, as it was in the world during the financial crisis, the flow of credit to productive sectors gets hampered which affects economic activity and prospects for economic growth. From 2012 to 2014, there were 7 domestic retail banks in the Cayman Islands which declined to 6 banks in 2014 Q-4 after the departure of one large international bank which halted domestic business. This was evidenced by the short-term drop in liquidity during 2014 into the early parts of 2015, but the industry quickly stabilized and strengthen thereafter with various acquisitions. From 2012 to 2016-Q1 the BSI fluctuated steadily above and below the average level (zero line), indicating no industry growth during that period. An increase in the index value shows greater stability, hence after 2016-Q1 the BSI increased on average 0.92 standard deviations above the prior 5-year average. This was driven primarily by the overall improvement of capital adequacy, profitability, and liquidity indicators. In 2020 the BSI declined by an average 0.91 standard deviations compared to the previous year, due to the initial outbreak of COVID-19. While banks increased provisions in anticipation of COVID-19 related deterioration in loan portfolios, asset quality has remained relatively unaffected with evidence of recoveries of provisions. Capital levels continued to be strong across the retail banks. Lower profitability and earnings were experienced in the banks due to lockdown of the Cayman Islands, against a backdrop of continued low interest environment. Banks have been funding the many large real estate developments as well as individual mortgages for local and expatriate homebuyers. While some banks applied more conservative underwriting at the onset of COVID-19 pandemic, this was a transient adjustment and banks are taking advantage of the continued strong demand for corporate, commercial, and retail loans. As the country's border reopened, allowing tourism and

service sectors to revive and stimulating economic expansion, it is expected that there will be improvement in the BSI in the near future. SECTORAL MACROPRUDENTIAL ANALYSIS

51CMRAIFinancial Stability Report In November 2011, the Basel Committee of Bank Supervision (BCBS) issued the framework for dealing with Global Systemically Important Deposit Taking Institutions which was developed post- financial crisis as failures or impairments by large, global financial institutions had severe impacts on the international financial system and the world's economy. Higher Loss Absorbency (HLA) capital requirements were therefore introduced for G-SIBs to mitigate such risk of failures by increasing such institutions capital capacity to absorb these losses. In October 2012, the BCBS introduced another framework i.e., Domestic Systemically Important Banks (G-SIBs) which focused on a domestic bank's failure and its effect on the domestic economy. National authorities were encouraged to establish a methodology to assess the degree of banks being systemically important to the domestic economy and calibrating the appropriate HLA capital requirements to address the risks posed by such institutions. Considering this, CMRAI has been conducting research on the adoption of a framework for Domestic Systemically Important Deposit Taking institutions (D-SIDTIs) in the Cayman Islands as well as the calibration of HLA capital requirements applicable to them. All active banks, including branches and non-bank deposit taking institutions are within the scope of CMRAI's framework: Category A Retail banks Category A Non-Retail banks Cooperative and building societies Category B banks and foreign branches of overseas banks with a physical presence in the Cayman Islands It should be noted that Category B banks with no physical presence are not included in CMRAI's proposed D-SIDTI framework as their resident exposures are mainly with other Category B Non- Retail group banks, non-bank entities and other CMRAI licensees conducting business offshore, which will not have a significant effect on the stability of the domestic financial system. It is envisaged that this framework will enhance CMRAI's Risk Based Approach (RBA) to supervision by applying differentiated intensity of supervision to D-SIDTIs based on the risks they pose to the local financial system and the real economy. The assessment methodology to be used by CMRAI is aligned with the BCBS principles for identifying deposit taking institutions that are of domestic systemic importance which can be summarized as below: A quantitative-based measurement approach is being proposed which includes the analysis of four factors i.e., size, inter-connectedness, substitutability, and complexity. CMRAI has used national discretion to include a fifth factor i.e., domestic context which will be used to capture the level of systemic importance of any one deposit taking institution to the household sector.

SECTORAL FINANCIAL STABILITY ANALYSIS Domestic Systemically Important Deposit Taking Institutions 54CMRAIFinancial Stability Report CMRAI Financial Stability Report 52

Despite the ensuing pandemic, the jurisdiction has made a concerted effort in 2020 to strengthen its regulatory landscape through various means, including the introduction of new legislation as well as amendments to existing legislation. The following are the main regulatory developments within the jurisdiction that occurred within 2020: Private Funds Act 2020 On 7 February 2020, the PFA took effect and requires close-ended investment funds to be regulated by CMRAI. All investment vehicles falling within the scope of the private funds definition and section 3(1) of the PFA must register with CMRAI. A key point of the PFA includes a requirement that audited financial statements, signed off by a Cayman Islands auditor, must be submitted to CMRAI within six months of a private fund's financial year end. Since early 2020, Private Funds were required to submit financial data using the FAR and based on the submissions USD 2.475 trillion was reported in Ending Net Assets. Limited



Investors Fund Also, on 7 February 2020, the MFA 2020 was amended to replace Exempt licenses with Limited Investors Fund licenses that are required to register with CMRAI. The amendment to the MFA requires open-ended funds with fifteen investors or less, to be regulated by CMRAI. Prior to the commencement of this Act in February 2020, these open-ended funds were exempted from CMRAI licensing and registration under section 4(4) of the MFA. The effect of this amendment was to expand the types of fund vehicles required to be regulated and improve transparency in regulating funds. Likewise, since early 2020, Limited Investor Funds were required to submit financial data using the FAR and based on the submissions an additional USD 107 billion was reported in Ending Net Assets. Leverage Ratio: Rules and Guidelines CMRAI introduced a Basel III-compliant, non-risk-based leverage ratio to supplement existing risk-based capital requirements. The effective implementation date of these Rules and Guidelines was 1 December 2019. The first quarterly reporting by licensees was rescheduled to early Q2 2020 to coincide with the release of a new version of the Regulatory Enhanced Electronic Forms Submissions, commonly referred to as REEFS, version 3.1. Monetary Authority (Amendment) (No.2) Act 2020 The Monetary Authority Act (2020 Revision) was amended, and the major changes are as below: Amendment of section 6 regarding the added principal functions of the Authority: endeavor to promote and facilitate innovation, competition, consumer benefits and the development of technology and services that encourage and promote financial inclusion. Insertion of section 6A regarding the power to adjust regulatory requirements: CMRAI may at any time during the term of a sandbox licence issued under the Virtual Asset (Service Providers) Act, 2020 - a. waive or modify any regulatory requirements imposed in accordance with the Virtual Asset (Service Providers) Act, 2020 or any other regulatory act; or b. impose any additional regulatory requirements in accordance with the Virtual Asset (Service Providers) Act, 2020 or any other regulatory act, on the person who holds the sandbox licence, based on the use of innovative technology or innovative methods of delivery, the nature and complexity of the activity, or the supervisory needs of the person who holds the sandbox licence.

#### CHAPTER 4: REGULATORY & SUPERVISORY DEVELOPMENTS

53CMRAI Financial Stability Report Regulatory Deadlines Extensions To mitigate the COVID-19 impact on regulatory deadlines, CMRAI extended its deadlines for quarterly regulatory filings by licensees; and The Cayman Islands Department for International Tax Cooperation formally extended the reporting dates for Cayman financial institutions to complete reporting obligations under the Foreign Account Tax Compliance Act. Virtual Asset Service Providers Act 2020 At a time where innovation is needed to support the economy given the effects of the pandemic, in May 2020, a new legislative framework for regulating VA and VASP, The Virtual Asset (Service Providers) Act 2020 was enacted in the Cayman Islands. There were 2 phases of implementation, phase 1 of the VASP Act came into force on 31 October 2020. Under Phase 1, entities wishing to engage in VA related services must register with CMRAI. Phase 2 is yet to commence. AML (Money Services Business Threshold Reporting) Regulations, 2020 New regulations were published on 12 November 2020 which defined threshold transactions as a transaction involving a transfer of funds within, into or from the Cayman Islands where the total amount exceeds USD 3,500 in a single transaction or in the aggregate where there is more than one transfer of funds by the same sender or receiver within a period of one month. The new regulations also set reporting requirements in respect of Money Services Business (MSB) to the Financial Reporting Authority on a quarterly basis. Registered Persons The SIBA was amended in 2020 by the implementation of an enhanced supervisory regime for Registered Persons,

formerly Excluded Persons. This act applies to companies with limited liability, partnerships incorporated or registered under the laws of the Cayman Islands. At the end of 2020, there were 36 active Securities Investment Business (SIB) licensees and 1,692 Registered Persons.

**REGULATORY & SUPERVISORY DEVELOPMENTS**

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Support funding The Government allocated KYD 3 million from the Government's disaster fund to finance costs associated with COVID-19 Pandemic. Vulnerable families The implementation of one-off payments or grants to the following groups: (a) disabled, seamen, veterans and persons already receiving personal financial assistance from the Government; (b) taxi drivers affected by the fall-out of cruise ship visitors; and (c) Caymanian tourism workers affected by the shut-down. The Government continued to make severance payments to displaced Caymanian tourism workers throughout 2020, and which continued in 2021. Pension withdrawal and pension payment holiday Persons could withdraw up to 100 percent of their pension funds not exceeding KYD 10,000 or 25% of funds above \$10,000, in addition, to the suspension of pension payment. Low-cost business loans The establishment of a loan fund of KYD 5 million to provide loans to 100% Caymanian owned businesses at an annual interest rate of 1% after a six (6) months repayment moratorium. These loans were offered through the Cayman Islands Development Bank. Grant fund for small and micro businesses The creation of a grant fund valued at KYD 9.0 million and which was made available to the small and micro businesses. Assistance to evaluate qualification and to apply for the grant was also provided free of cost. Technical assistance The Government funded KYD 500,000 for technical assistance to Caymanian owned businesses to assist with strategy and balance sheet planning. Similarly, funding of KYD 200,000 was established to help Caymanian owned businesses to receive training to assist them in planning and navigating this economic downturn.

**Cayman Islands Government COVID-19 Responses**

**REGULATORY & SUPERVISORY DEVELOPMENTS 55**

**CMRAI Financial Stability Report Core Objectives and Achievements**

Execution of Regulatory Functions

**REGULATORY & SUPERVISORY DEVELOPMENTS**

Supervisory response to COVID-19 pandemic was proactive and comprehensive, it covered a broad range of activities including: Notifications to Industry regarding regulatory updates in response to COVID-19 pandemic and invitation to approach CMRAI with regulatory forbearance and extension requests. Ongoing dialogue bi-laterally with licensees that serve the domestic market as well as multi-laterally with industry associations. Issuance of a survey on deployment of BCPs for material Category A, B banks, Money Services Businesses and Cooperative Societies. Completion of a stress testing exercise for both capital and liquidity to inform CMRAI's decision-making regarding Category A banks. Benchmarking of forbearance measures and options against international and regional jurisdictions. Provision of forbearance on a case-by-case basis. Video meetings and onsite inspections allowed CMRAI to seamlessly proceed with its day-to-day functions.

Issued Standard Title June 2020 Statement of Guidance

Guidance notes on the Prevention and Detection of Money Laundering, Terrorist Financing and Proliferation Financing in the Cayman Islands

July 2020 Rule Rule Segregation of Assets - Regulated and Registered - Mutual Funds

February 2021 Statement of Guidance

Guidance Notes (Amendment) (No.1) - Virtual asset Service Providers

May 2021 Statement of Guidance

Guidance Notes (Amendment) (No. 2) - Securitization

Table 11: List of Regulatory Measures Issued and Updated by CMRAI

**CMRAI Financial Stability Report 56**

In January 2020, the Cayman Islands government replaced the Anti Money Laundering Regulations (2018 Revision) with the AML Regulations, (2020 Revision) (AMLRs) and issued the Proceeds of Crime Act (2020 Revision). CMRAI also made revisions to the AML Guidance

Notes. These changes to the Cayman Islands AML/CFT regime have been designed to bring the Cayman Islands regime in line with the most recent FATF recommendations. The AMLRs require Financial Service Providers (FSPs) to apply a RBA to their AML/CFT framework. A RBA through risk assessment requires entities to perform risk assessments on its investors/clients, it also requires the entity to conduct a risk assessment on itself and document their risk assessment. Entities must adopt risk assessment policies and procedures appropriate to their size, nature, and complexity. Risk classification factors may be categorised by types of applicants/customers, countries or geographic areas, and particular products, services, transactions, or delivery channels. FSPs should consider all risk factors in the assessment that is available from credible, and reliable sources. An AML/CFT NRA identifies the primary AML/CFT risks in a jurisdiction and evaluates mitigants and controls. An NRA is the foundation for the efficient and effective allocation of resources in addressing identified AML/CFT threats. In 2020, the Cayman Islands began planning for an NRA, as the prior full NRA was completed in 2015. The most recent assessment was carried out between January to December 2021. The final report was published in early 2022. Future Developments CMRAI has always prioritised infrastructure and human capital as these are crucial to our success. We expect to continue to invest in both these organisational foundations as well as maintain our focus on enhancing our risk based supervisory approach and gaining even more efficiencies in operations. AML/CFT compliance remains a priority for CMRAI and as does stakeholder engagement, particularly with industry. CMRAI also reviewed published amendments to the Guidance Notes on the Prevention and Detection of Money Laundering, Terrorist Financing and Proliferation Financing. The purpose of this revision was to issue sector-specific guidance in relation to special purpose vehicles, securitization and structured finance arrangement (AML Securitization Guidance). CMRAI will work in concert with government and other regulatory agencies to assess the exposure of the Cayman Islands to money laundering, terrorist financing and proliferation financing risks. This will include extensive engagement with appropriate industry organisations. The implementation of the Basel III Framework will continue to be an area of focus for the banking sector. A key domestic initiative for the banking sector is the ongoing work on a framework for domestically systemically important financial institutions. The Cayman Islands continues to respond proactively and with initiative to all recommendations from the FATF. In 2022, the FATF identified only one out of 63 action items from the Mutual Evaluation Report 2019 remaining to be satisfied. Nonetheless, the Cayman Islands government has allocated substantial resources to the remediation of these deficiencies. It is expected that the action item pertaining to the deficiencies, which pertain to prosecutions, will be addressed expeditiously. The Cayman Islands continues to demonstrate that there is appropriate legislation, structure, and organisations to meet its international obligations as it relates to money laundering, terrorist Other Key Areas of Focus REGULATORY & SUPERVISORY DEVELOPMENTS 57CMRAI Financial Stability Report financing and proliferation financing. Given the substantial progress, it is anticipated that the Cayman Islands will be removed from the Grey List following another re-assessment. The Cayman Islands is a major international financial centre offering a diversified cross section of services, numerous financial products and vehicles, and coupled with its proximity to North and Central America - it makes the jurisdiction vulnerable to significant threats from money laundering of foreign proceeds of crime. The Cayman Islands conducted its 2021 NRA during January September 2021, where relevant threats, inherent risks and strength of controls were analysed across various

sectors. The goal of the 2021 NRA was threefold: To consolidate the various topical and sectoral risk assessments based on the risks that evolved since 2017. Further deepen and advance the Cayman Islands risk understanding in those areas that were not subject to any topical or sectoral risk assessment since 2017 or those areas that have been added as part of the international agenda (including VASPs) Update the Cayman Islands national risk understanding in areas where more information is available i.e. legal entities and registered SIBs. Figure 70 summarises the conclusions of the NRA 2021, taking into account inherent risk ratings and the materiality of the sector. The analysis will assist in the prioritisation of the focus of resources and stringent risk mitigation measures. Source: Cayman Islands National Risk Assessment, 2021 Mutual Fund Admin. Securities TCSPs

Banks VASPs Insurance Lawyers Real Estate Agents MSB Accountants including Auditors Financial Leasing DPMS High Value Goods bit DPMS Money Lenders Overall Inherent Risk MH MH MH MH MH ML MH MH MH ML ML ML ML Nature, size, complexity MH MH MH MH MH ML MH MH MH ML ML ML ML Customers MLM MH MH MH ML MH MH MH ML ML ML ML Product/ services/ transactions MH MH MH MH MH MH MH MH MH ML ML Delivery Channels MH MH MH ML MH ML ML ML ML ML ML Figure 70: Overall Sector Risk Rating Risks of Money Laundering, Terrorist Financing and Proliferation Financing REGULATORY & SUPERVISORY DEVELOPMENTS MH (Medium High Risk); ML (Medium Low Risk); H (High Risk); L (Low Risk) CMRAI Financial Stability Report 58 Risk Levels of Traditional Sectors Mutual Fund Administrators As of 2020, the Funds sector constitutes the largest sector of the Cayman Islands financial centre. In this sector, the focus is on Mutual Fund Administrators due to the complexity of their business and particularly the RTA services. Mutual Funds Administrators risk score is medium high. Securities Due to the large size and highly international nature of the Cayman Islands SIB sector, regulated SIBs are considered to have a medium high risk. Trust and Corporate Service Providers Considering the inherent risks relating to nature, scale, and complexity of the TCSP sector both Trust Service Providers and CSPs are rated as medium high given the size of the industries in terms of the value of assets under management, the nature of services, and the international nature of the ownership and control of many TCSPs. Deposit Taking Institutions and Banks Rated as medium high. While Category A Banks had an overall medium low risk rating, since it reflects the domestic market, Category B Banks were rated as medium high. A low risk rating was assigned to the Societies. Insurance Approximately 95% of the Cayman based insurance companies (by number and premium values) carry on only general insurance activities. The exposure to ML/TF risks is minimal, as products are typically short-term contracts for long-tail (liability) risks. Therefore this sector was rated medium low. REGULATORY AND SUPERVISORY DEVELOPMENTS CMRAI Financial Stability Report 62 59 CMRAI Financial Stability Report Within recent years financial regulators, international organisations, market participants and other key stakeholders have focused increased attention towards understanding the implications of climate change risks for the financial sector, financial stability, and financial inclusion. Climate-related risks are not a future phenomenon as they are already impacting the world economy and the financial systems today. In November 2021, on the topic of climate change, world leaders met at the 26th UN Climate Change Conference, commonly known as COP26, to negotiate and agree to rules to set us on a pathway of net zero carbon emissions by 2050 as well as to curb the rise in average temperature at a ceiling of 1.5 degrees. These measures are deemed necessary to reduce the impact of climate related risks. Climate Change is broadly defined as changes in the

Earth's oceans and atmosphere and includes inter alia increases in average global temperatures, changes in the frequency and severity of major hurricanes and storms as well as the level or acidity of the oceans. The possible future outcomes arising from climate change is what is termed climate change risks. For a financial regulator, it is imperative to understand that climate change risks can affect supervised financial institutions directly and indirectly via two channels: physical risks and transition risks.

**Physical Risk** Physical risks take account of the economic costs and financial losses due to physical risk drivers i.e., increasing severity and frequency of extreme climate change-related weather events and longer-term gradual shifts of the climate. Physical risks can be categorised as either acute or chronic. Acute physical risks, allude to those that are event driven. These generally include lethal heatwaves, floods, landslides, droughts, wildfires, and storms, including hurricanes, cyclones, and typhoons as well as extreme precipitation. Chronic physical risks are related to the progressive shifts in climate and weather patterns, such as rising sea levels, rising average temperatures, desertification, and ocean acidification. Physical risks are not new to us, as the world is already feeling its impact. Since the 1980s, the number of extreme weather events has more than tripled. Economic costs associated with natural disasters have exceeded the 30-year average of USD140 million per annum in seven of the last 10 years.

**Sea Levels** The rise in sea level, related to global warming, is caused mainly by the added water from the melting ice sheets and glaciers as well as the expansion of seawater as it warms. Over the years, the sea levels have risen at unprecedented rates. Last measurements in September 2021 indicate that the rate of change is around 4mm per year. With this rate, many parts of the world in the coming years will be under water. Source: NASA CHAPTER 5: FINANCIAL STABILITY & CLIMATE CHANGE Figure 71: Sea Levels 50

1995 Sea Height Variation (mm) 0 25 75 100 20002005201020152020 CMRAI Financial Stability Report 60 Figure 73: Carbon Dioxide Emissions Transition Risks These are the economic and financial costs associated with the process of adjustment towards a lower-carbon and less polluted economy, brought about by changes in climate and environmental policies, technological changes or shifts in market sentiment. These aforementioned transitions could mean that some sectors of the economy would face big swings in asset values or be faced with higher costs of doing business. The move towards a greener economy can impact companies that produce cars, ships, and planes, or use high amounts of energy to make raw materials like steel and cement. Transitioning to a lower-carbon economy will entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organisations. For example, countries that are more dependent on fossil fuel production and refining may be more vulnerable to transition risks, with an impact not only on the value of companies involved in the fossil fuel sector but also on employment in the sector, and more widely on economic growth and government revenues. Source: NASA Global Temperature The earth's surface continues to significantly increase in temperature, with recent years being some of the hottest in the past 2000 plus years. Since record keeping began by National Aeronautics and Space Administration (NASA) in 1980, the years 2016 and 2020 tied for the hottest year on record. As of 2021, the average annual temperature change was recorded at 0.85 degree Celsius or 1.53 degrees Fahrenheit. Figure 72: Global Temperatures Carbon Dioxide Emissions It has been admitted globally that various human activities inter alia deforestation and burning of fossil fuels have significantly contributed to the increase in carbon dioxide levels in the Earth's atmosphere.

Since the 1850s, at the beginning of the industrial era, human activities have increased carbon dioxide atmospheric concentrations by nearly 50%. This is so significant as the damage done in 171 years would take over a 20,000-year period to naturally occur.



1880 Temperature Anomaly -0.5 0.0 0.5 1.0 1.5 1900 1920 1940 1960 1980 2000 2020

FINANCIAL STABILITY & CLIMATE CHANGE Source: NASA 2007 Sea Height Variation (mm) 380 390 400 410 2010 2013 2016 2019 2022 61

CMRAI Financial Stability Report FINANCIAL STABILITY & CLIMATE CHANGE Figure 74: Climate Related Risks Source: The Network of Central Banks and Supervisors for Greening the Financial System CMRAI Financial Stability Report 62

Transmission Channels and Drivers The impact of physical and transition risks on the financial system can materialise through microeconomic and macroeconomic transmission channels i.e. causal chains that explain how climate risk drivers give rise to financial risks that impact institutions directly or indirectly through their counterparties, the assets they hold and the economy in which they operate. Climate related risks can lead to increased risks within the financial system in many ways.

**Policy and Legal Risk** Their objectives generally fall into two categories policy decisions that attempt to constrain actions that contribute to the adverse effects of climate change or policy decisions that seek to promote adaptation to climate change. Some examples include implementing carbon-pricing mechanisms to reduce Green House Gas emissions, shifting energy use toward lower emission sources. Another important risk is litigation or legal risk. In this scope, litigation risk refers to the possibility that legal action may be taken against an organisation because of its failure to adapt to climate change and failure to mitigate its effects.

**Technology Risk** Technological improvements or innovations that support the transition to a lower-carbon, energy-efficient economic system can have a significant impact on organisations. The development and use of emerging technologies involving renewable energy and battery storage, will affect the competitiveness of certain organisations, their production and distribution costs, and ultimately the demand for their products and services from end users. To the extent that new technology displaces old systems and disrupts some parts of the existing economic system, winners and losers will emerge from this creative destruction process.

**Market Risk** Also known as Systematic Risk, it refers to the possibility that an individual or entity will experience losses due to factors that affect the overall performance of investments in the financial markets. In the context of climate change, for example, severe weather events or political measures regarding the transition could lead to re-pricing of financial instruments and corporate debt affecting the value of securities held on financial institutions balance sheets (and/or the value of collateral used in some operations). Further, the introduction of a carbon tax can result in investment losses and lower assets values, creating stranded assets.

**Operational Risk** Operational Risk is defined in the Basel capital Framework as the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events. The losses can be directly or indirectly financial. Extreme weather events can have an impact on financial institutions business continuity through, for instance, damage affecting critical functions of the financial entity or of its main service providers. Financial institutions or their customers might face a liability charge from parties who have suffered losses from physical and transition effects and seek to recover these losses from those they view as responsible.

**Credit Risk** Credit risk is the possibility of a loss resulting from a borrower's failure to repay a loan or meet contractual obligations. Credit risk increases if climate risk drivers reduce borrowers ability to repay and service debt (income effect) or banks ability to fully recover the value of a loan in the event of default because the value of any pledged collateral or recoverable value has been reduced

FINANCIAL STABILITY & CLIMATE CHANGE 63CMRAIFinancial Stability Report (the wealth effect). For example, the destruction of a production site by wildfire can increase the probability of default of the company operating the site. Liquidity Risk Climate risk drivers may impact banks liquidity risk directly, through their ability to raise funds or liquidate assets, or indirectly through customers demands for liquidity. There is evidence that natural disasters can lead to liquidity risk within banks. These effects could impact the ability of a bank to fund increases in its assets and meet obligations as they come due without incurring unacceptable losses. Available research focuses on physical risk-related liquidity risk, and there is limited analysis of the potential effects of transition risk drivers on banks liquidity risk. Evidence also suggests that post-disaster lending has a significant and negative effect on liquidity buffers. Severe natural disasters can trigger a sharp increase in precautionary demand for liquidity by financial institutions, households and corporates and the central bank may have to intervene in order to preserve financial stability. Underwriting Risk Physical risks in the form of severe or catastrophic weather-related events can have a significant impact on non-life insurers. With a massive increase in insurance claims and higher than expected insurance claim pay-outs, non-life companies could face massive underwriting losses due to the manifestation of these physical risks. This can have a domino effect as non-life insurers may be required to increase premiums to stay afloat or even make the decision to not insure such risks. It is imperative to note that all these aforementioned risks can also give rise to negative feedback loops. These are second-order effects on the financial system, basically exacerbating the climate related problems already being faced.

FINANCIAL STABILITY & CLIMATE CHANGE CMRAI Financial Stability Report 64  
FINANCIAL STABILITY & CLIMATE CHANGE Figure 75: Climate-related risks drivers and transmission channels Source: Bank of International Settlements Climate Related Risks Physical and Transition Risks Transmission Channels Casual chains that explain how climate risk drivers result in financial risk Operational Risk Business continuity may be affected with disruptions in operations Increased litigation and liability costs due to losses from climate-sensitive investments or businesses Liquidity RiskUnderwriting Risk Credit RiskMarket Risk Macroeconomic Impact on overall economy, macroeconomic variables and sovereigns Macroeconomic Impact on financial institutions counterparties and their financial assets Sharp increase in precautionary demand for liquidity which can strain buffers of financial institutions Hamper financial institutions ability to raise funds or liquidate assets as needed Size and volume of insurance claim pay-outs greater than expected Increased insurance premium and reduced availability of insurance on assets in high risk locations Income effect: Negative impact on borrower s ability to repay and service debt Wealth effect: Reduction in collateral values Negative price shocks and increased market volatility in traded assets Significant decline in asset values due to changes in new policy measures Negative feedback 65CMRAIFinancial Stability Report Climate Change and the Cayman Islands The following section discuss the possible and current impacts arising from acute and chronic risks in the Cayman Islands and its implications. Beach and Shoreline Loss According to the Intergovernmental Panel on Climate Change, worldwide ocean level rise anticipated at rates of 5 mm per year to 10 mm per year is more than two-fold the nearby perceptions of a normal of 2.4 mm per year from 1976 to 1988. The effect on shoreline assets, especially financially critical resources such as the Seven Mile Beach shoreline on Grand Cayman, could be a cause for concern, as the degree of conceivable shoreline withdraw beneath these ocean level rise and other scenarios has not been fully mapped. Due to the propensity of recent developments and the improper placement of

structures such as dikes, pools and possibly active beach zone buildings, the beach has a limited distance to which it naturally recedes or bends, thus causing problems and erosion.

**Sea-level Rise** The immediate concern most residents have in relation to climate change and these extremely low-lying islands is the impact of sea level rise on personal property, communities and businesses. Land movement of the islands appears to be stable in geologic terms therefore relative sea levels around the Cayman Islands are close to sea surface levels. Based on studies, an increase in sea level between 0.12 m (0.4 ft) and 0.80 m (2.6 ft), or roughly 0.14 to 0.91 cm per year, by 2100 is estimated for the Cayman Islands. By the high range of sea level rise expected, only 5% of all buildings on the island would be impacted in some way. However, an additional rise of 0.25 m represented by the 1 m (3.3 ft) sea level rise scenario shows a sizeable increase to 14.3% of total buildings affected when compared to the previous scenario.

**Hurricanes** Tropical low-pressure systems originating from the propagation of easterly waves are experienced during the summer, the most severe of which are hurricanes (categorized on the Saffir-Simpson scale as sustained wind speeds over 74 mph). The hurricane season typically lasts from June 1 to November 30 and represents the primary rainfall source in the Caribbean and the main contribution to the peak in September-October-November totals. Direct hits from hurricanes have had devastating socio-economic consequences on the Cayman Islands. Figure 76 highlights damages and losses from the costliest events such as Hurricane Ivan in 2004 which severely impacted the southern and eastern coasts of Grand Cayman leaving total losses of KYD 2.8 billion in its wake. This represented 183% of the country's 2003 GDP and is by far the most devastating hurricane to hit the Cayman Islands. Hurricane Paloma - the second strongest November Atlantic hurricane on record - caused total losses of KYD 154 million with the passage of its eye over the eastern end of Cayman Brac. However, hurricanes do not have to directly hit the Cayman Islands to cause substantial impact.

**FINANCIAL STABILITY & CLIMATE CHANGE** CMRAI Financial Stability Report 66 **FINANCIAL STABILITY & CLIMATE CHANGE** Figure 76: Storms Impacting the Cayman Islands, 1950 - 2021

Year	Category	Storm Name	Losses (CI\$ billion)
1980	1	Allen	0.261
1988	4	Gilbert	0.174
2001	4	Michelle	0.087
2004	4	Ivan	2.8
2008	4	Paloma	0.154
2020	4	Eta	0.478
2021	1	Ida	0.24

Source: Cayman Islands Government Department of Environment 67 CMRAI Financial Stability Report

**Marine and Coastal Ecosystems** According to the National Oceanic Atmospheric Administration, scientists have determined that the ocean absorbs more than 90 percent of the excess heat, which is attributed to greenhouse gas emissions; as a consequence of this, the issue of climate change is worsened and can lead to more serious and stronger storms, warming sea temperatures and the rise of sea level. All these negative effects have the individual and cumulative potential to significantly impact marine ecosystems such as fragile coral reefs and mangroves. The total value of reef-related shoreline protection services in the Caribbean region has been estimated to be between USD 740 million and USD 2.2 billion per year; however, depending on the degree of development, this coastal-protection benefit could range from USD 2,000 to USD 1,000,000 per kilometre of coastline. Tropical coral reefs are probably the most sensitive marine ecosystem in the world to global climate change. Higher than normal sea surface temperatures cause increased stress to corals forcing them to live near thresholds levels and resulting in coral bleaching which diminish the coral's energy producing systems; with severe stress often results in coral mortality. The annual average maximum sea temperature



around the Cayman Islands is 30 C which is about the temperature threshold for regional corals. Caribbean coral reefs have evolved for millennia under the influence of hurricanes, but climate change and other anthropogenic factors may be too rapid an onslaught for corals to adapt. More frequent or stronger hurricanes would reduce the ability of reefs to recover after each successive event, with knock on implications for fisheries, dive tourism, beach assets and shoreline protection. The Cayman Islands Department of the Environment (DoE) has identified several threats to the Cayman reefs. Climate change has been a driver for several of these threats. Amongst these threats are: Coral bleaching, which is associated with the devastation of coral reefs, which are home to approximately 25 percent of all marine species. Active storm season, as the coral reefs around the Cayman Islands have a narrow shelf upon which the waves break, and the physical strength of these storms can destroy or severely damage the reefs. Thermal expansion of the ocean due to increased sea temperatures, resulting in the corals being drowned at greater depths. While corals can survive at temperatures of up to 27-28 C (82 F), if these temperatures are sustained or occur frequently it debilitates the corals and leave them more susceptible to bleaching and disease. Coastal mangroves in the Cayman Islands will be challenged to keep pace with and adapt to rising sea levels. Mangroves in both Grand Cayman and Little Cayman receded approximately 20 ft after Hurricane Ivan and Hurricane Gilbert, respectively. More severe storm surges also threaten to drown coastal mangrove systems. These systems have been dissected by coastal roads which now impede natural drainage after storms causing mangroves to drown.

Global Main Approaches Across the globe, financial regulators are under pressure to develop financial policies and regulatory climate-based frameworks. Over the past few years, regulatory efforts have been focused on three broad areas:

- Measurement of the magnitude of climate related effects and the identification of transmission channels of climate-related risks for the financial system
- FINANCIAL STABILITY & CLIMATE CHANGE CMRAI Financial Stability Report 68 Development of appropriate responses for both macroprudential policy (ensuring system stability) and microprudential supervision (safety and soundness of the financial institutions individually)
- Closure of data and knowledge gaps, improve transparency and dissemination of information and promotion of common standards for climate disclosures globally within the financial sector

Central banks and other financial regulators have been involved in various initiatives to increase awareness and capacity building for this important area of climate risk. The Bank of England's Prudential Regulatory Authority was known as the first financial regulator that published a detailed analysis on climate-related risks for the insurance sector in 2015. In the preceding years, Swedish, Dutch and French regulators undertook similar initiatives with available data. In November 2017, the Network of Greening the Financial System (NGFS) was incorporated by 8 central banks and financial regulatory agencies in an effort to contribute to the development of climate- and environment-related risk management in the financial sector and mobilize mainstream finance to support the transition toward a sustainable economy. The NGFS has grown to over 100 member countries and in February 2022 CMRAI became a member. The NGFS has since published five recommendations for members to adopt in the implementation of climate related measures.

FINANCIAL STABILITY & CLIMATE CHANGE CMRAI Financial Stability Report 70 FINANCIAL STABILITY & CLIMATE CHANGE Figure 77: Five Recommendations for Members of the Network of Central Banks and Supervisors for Greening the Financial System Source: The Network of Central Banks and Supervisors for Greening the Financial System 1 2 3 4 5 Determine how climate-related and environmental risks transmit to

economies and financial sectors Develop a clear strategy, establish and internal organisation and allocate resources Identify exposures of vulnerable entities and assess potential losses Set supervisory expectations to create transparency and understanding of prudent approach Ensure adequate management of risks by financial institutions and take mitigating action

71CMRAIFinancial Stability Report CMRAI recognises that financial institutions, including banks, are exposed to climate-related financial risks regardless of their size, complexity or business models. The BCBS has indicated that the banking system is exposed to climate risk through macro-and microeconomic transmission channels that arise from physical climate risk drivers and transition risk drivers. CMRAI also acknowledges that climate-related risks could affect the safety and soundness of individual banking institutions and can have broader financial stability implications for the economy. Although climate-related financial risk is a complex and developing subject, there is a growing need for regulated entities to integrate climate-related risks into their business strategies and processes. As such, regulated entities should design a plan to incorporate climate-related risks into their business activities and better understand the impact of climate-related risks. At a minimum, regulated entities should plan to integrate climate-related risks in the areas outlined. Business strategy and governance:Each regulated entity's governing body should initiate measures to understand, assess and incorporate the financial risks from climate change within the overall business strategy and risk appetite. Regulated entities are encouraged to revise their risk appetite statement to include the risk exposure limits and thresholds for the financial risks that they are willing to bear. The governing body should aim to document how the entity monitors and manages the financial risks from climate change in line with its risk appetite statement. Additionally, the governing body should ensure that there are clear roles and responsibilities for the governing body, its relevant sub-committees and senior management in managing the financial risks from climate change. Risk management: Regulated entities should take necessary steps to integrate climate risk into the existing risk management framework in line with the entity's risk appetite. They should implement measures to carry out a comprehensive assessment of climate-related financial risks and set clear definitions and thresholds for materiality, and start establishing reliable approaches for identifying, measuring, monitoring and managing material climate-related risks. Supervisory review process (Pillar 2):For the banking sector, licensees are required to submit Internal Capital Adequacy Assessment Process (ICAAP) reports to CMRAI and must incorporate climate-related risks in their respective ICAAP reports. At a minimum, the ICAAP reports should include the planned responses (or measures already implemented, if applicable) to incorporate climate-related risks into the following areas: business strategy, risk appetite, corporate governance, internal controls, integration into the risk management framework, risk identification and measurement, materiality assessment, monitoring and reporting, among others. In the last ICAAP review by CMRAI, it was encouraging to see many banking licensees incorporated climate related risks within their internal stress testing scenarios. It has been recognised that the Caribbean region is inherently exposed to the occurrence of natural disasters in form of physical risk drivers (storms, hurricanes) which has been aggravated by issues stemming from climate change. These can have destabilizing economic conditions which in turn are transmitted and materialised within the financial sector. Therefore, in their ICAAPs many licensees looked at the occurrence of a climate-related event and the amplification of credit or operational risk through various stress testing scenarios. CMRAI recognised that ESG considerations, or sustainable investing, is increasingly becoming the fastest growing investment strategy within the

financial services sector. At a minimum, those charged with governance of regulated funds should have clear roles and responsibilities in managing FINANCIAL STABILITY & CLIMATE CHANGE Surveillance of Climate Related Risks CMRAI Financial Stability Report 72 and mitigating the risks from climate change and other ESG-related risks in line with the funds set investment objectives and should start establishing reliable approaches for identifying, measuring, monitoring, and managing material ESG-related risks. Additionally, funds are required to ensure clear and ongoing disclosures in the context of their reporting requirements. The expectations and practices around climate risk are quickly developing and evolving. CMRAI will continue to undertake reviews, including assessing the available information, such as best practices undertaken in other key financial jurisdictions, with the aim of developing a suitable regulatory and supervisory approach for climate related risks and other ESG-related risks. Some of the planned future work in this area include development of detailed climate related scenarios and templates as well as more guidance to the industry on the treatment of climate related risk. The image below depicts CMRAI's plan in addressing climate and other ESG-related risks.

FINANCIAL STABILITY & CLIMATE CHANGE 5 4 2 Develop robust regulatory and supervisory approach 1 Issue Statement of Guidance on treatment of risks Consult entities to help them to understand measures and manage risks Develop detailed climate scenarios and templates Build databases to capture information Develop macroprudential instruments in response to risks 73CMRAI Financial Stability Report Challenges Faced Across the globe and certainly for CMRAI, many are in the nascent stage of researching, understanding, measuring and managing these climate-related risks. The quantity and quality of entity-specific granular data as it relates to climate risks is still sparse as systems and procedures are now being introduced to provide more concrete analyses. Further, as work continues to build out climate-related disclosures and taxonomies, there presents challenges around capturing the quantity and quality of individual firms data for climate risks. There is also the gap between the short-term horizon of typical stress tests as compared to the medium to long-term horizon for climate related risks, as there are different time horizons for the materialisation of various effects of climate change. Against the backdrop, various initiatives around the globe have been launched in an effort to close the data gaps and improve disclosures. Some of these overlapping initiatives include:

- The Task Force on Climate-related Financial Disclosures was launched by the Financial Stability Board to help develop voluntary yet consistent climate-related financial disclosures for investors, lenders and insurance underwriters. The four recommendations deal with the collection, analysis, reporting, and governance of climate-related data and risk metrics for financial and non-financial organisations.
- International Organization of Securities Commissions also announced its intention to work on sustainable reporting standards with the establishment of a Sustainable Finance Network. There is a broad partnership with the World Economic Forum, the Institute of International Finance and a number of academic institutions which launched the Future of Sustainable Data Alliance in 2020 to identify and accelerate the reliable ESG data needed to properly inform investors.
- The NGFS has also done tremendous work in the space, and in October 2021 published a progress report on bridging data gaps. This report highlighted the need to converge towards a common and consistent set of global disclosure standards, a global taxonomy and the development of well-defined metrics and transparent methodologies.
- European Commission is also working on ensuring corporate disclosures are holistic to provide the necessary information to understand the impact of climate related risks on firms finances and risk profile but also the impact of the firms activities on the environment and the

society. There are many other global organisations with a similar goal all endeavoring to raise awareness, table conversations and proactively work on practical solutions to address this growing global issue. Conclusion Climate change is multi-faceted, ubiquitous and is posing a global challenge therefore it requires a multi-dimensional and interdisciplinary approach, where regulators, academics, the private sector and government all sit at the same table. If the requisite steps are not taken to address the current trajectory of global temperature future generations will be a severe risk for survival. Financial ecosystems play an important role in allocating capital and other resources through the economy. This is somewhat two-fold i.e., they are exposed to climate risks since they would provide financing and insurance services to entities who may be impacted by climate effects while at the same time they are the drivers behind economies to transition to a more sustainable approach. Recognising the interlinkages and complexities in this space, it is imperative that financial institutions acquire the necessary skills, expertise, data and models to better assess, manage and mitigate these risks. Across the world, regulators are FINANCIAL STABILITY & CLIMATE CHANGE CMRAI Financial Stability Report 74 stepping up their efforts to address climate-related risks and its link to financial stability. It is envisaged deeper analysis will be explored as more granular data is captured and methodologies are developed. As CMRAI builds out its roadmap in more details over the next year to fully embed climate-related risks in the supervisory framework, it is committed to working with the industry, academia, government, and other global regulators in the area of climate change in an effort to continuously strengthen the resilience of the financial system within the Cayman Islands. FINANCIAL STABILITY & CLIMATE CHANGE FINANCIAL STABILITYREPORT SIX, Cricket Square PO Box 10052 Grand Cayman KY1-1001 Cayman Islands :