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Solomon Islands' banking sector: A 40-year depth and efficiency analysis on a regional scale

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Contents

Abstract

The performance of the financial sectors in the Pacific Island Countries remains largely understudied. This paper contributes to filling that gap in the literature by carrying out the first comprehensive analysis of Solomon Islands' banking sector on a regional scale over the 1980-2020 period. Findings show that the country's banking sector remains among the shallowest and least efficient regionally. This study provides the impetus for deeper investigation into the depth, efficiency and overall performance of the banking sector and for formulating appropriate policies to support the country's financial development aspirations in a digital era.

Keywords: Financial development, banking sector, depth, efficiency, Solomon Islands

1. Introduction

The debate on the finance-growth nexus is now relatively settled—a large body of literature shows that finance, effective leadership and planning processes, along with the adoption and implementation of right public policies and the dissemination of technological know-how, matter for economic growth and development, and that these effects are causal. Financial institutions and markets do have the capacity to exert a powerful influence on economic development, poverty alleviation, and economic stability (Godfrey, 2022; Erlando, Riyanto, & Masakazu, 2020; Dewi et al., 2018; Takeshi & Hamori, 2016; Levine, 2005). For example, in the process of screening borrowers and identifying firms with the most promising prospects, banks predictably play a key role in efficient resource allocation and consequently in facilitating economic expansion and growth. Similarly, banks' savings mobilisation and intermediation processes advance growth and development. Once funds are invested, banks' additional key roles in monitoring their use as well as in scrutinising managerial performance further boost the efficiency of corporations and reduce waste and fraud by corporate insiders (Cihak et al., 2012; Levine, 2018).

Equity, bonds, and derivative markets play crucial roles in the finance–growth process, too—diversification of risk by these markets encourages investment in higher risk-return projects that might otherwise be avoided. Financial systems also facilitate trade and specialisation via their constant endeavours to lower transaction costs, which in turn provide key ingredients for technological innovation (Levine, 2005). Conversely, if the performance of financial systems—defined to include financial institutions, financial infrastructures and financial markets—is poor or substandard, economic growth may be hindered, economic opportunities curtailed, and the overall economy destabilised. If banks, for example, are simply mobilising savings and channelling them to cronies, the wealthy, and the politically connected, then economic growth is likely to be slower, potential entrepreneurs and households are likely to be shunned from realising economic opportunities, and poverty and prosperity might deteriorate (Cihak et al., 2012).

Similarly, in the absence of effective corporate governance measures and monitoring of funded firms, principal-agent problems are likely to be widespread, with managers pursuing self-rewarding projects to the detriment of the firm and the wider economy (Cihak et al., 2012). Finally, complex instruments created and sold by financial institutions to unsophisticated investors in the absence of proper oversight might boost the bonuses of financial engineers and executives, but they are also likely to distort the allocation of society's savings, thus impeding economic prosperity.

With the above far-reaching potential benefits and challenges in mind, the literature has exploded on the subject of measuring and understanding the performance of financial institutions and markets—numerous countries and regions have now been covered. Measures have been developed and fine-tuned—the 4 x 2 matrix[1] is now in common use—to estimate the depth, access, efficiency and stability of an economy's financial system. While these might not fully capture all features of financial systems, they do reflect aspects on which much of the empirical literature has been concentrating.

More recently, cross-country time-series data covering well over 200 countries and going as far back as the 1960s have been made publicly available for analysis. But despite all these significant developments, the performance of financial systems of Pacific Island Countries (PICs) remains little known. Ironically, at the same time, the PICs are among the world's most

scattered, remote, socio-economically and geo-politically disadvantaged and vulnerable small open island economies.

The foregoing lays the motivation for the current study. How have the financial sectors of the PICs developed and performed over the years? Have they become deeper, more accessible, efficient, and stable? How have they fared against comparative economies? In filling these gaps in the financial development literature, this study focusses on the context of Solomon Islands. Like most other PICs, the depth, access, efficiency and stability of Solomon Islands' financial system is severely under-studied in the literature; this paper is also motivated by a desire on the part of the Solomon Islands Central Bank to improve its understanding of the performance of the domestic financial sector, particularly the banking sector, so that appropriate policies may be formulated to support financial development in the country.

Like financial sectors in most other PICs, Solomon Islands' is heavily bank-centric; financial markets, including stock markets, are non-existent. Financial infrastructures too remain either underdeveloped or lagging in growth relative to regional peers. Thus, this study naturally focusses on the banking sector, which, nevertheless, happens to have been undergoing gradual but notable reform. Starting from the 1970s, the Solomon Islands banking sector has been the target of legislative reform aimed at providing a legal foundation for banking businesses, enhancing banking supervision and regulation and strengthening capital and disclosure requirements. Other areas of reform in the banking sector relate to state ownership, shareholding, acquisitions, expansions, and corporate governance and the promotion of the financial inclusion agenda.

Comparative and time-series data allows us to focus only on the depth and efficiency of the Solomon Islands banking sector. This study also aims to frame the performance of Solomon Islands financial sector, particularly its banking sector, on a regional scale. Selected financial depth and efficiency indicators in the 4 x 2 matrix are used to gauge the performance of the country's financial sector, spanning a forty-year period from 1980 to 2020. The data used in this study was sourced from the World Bank's Global Financial Development Database and complemented by data from the IMF's International Financial Statistiscs (IFS), as well as from the CBSI's Financial Stability Reports. Results show that Solomon Islands' banking sector is among the shallowest and least efficient financial sectors in the region.

The remainder of the paper is organised as follows. Section 2 provides the study's context. Section 3 presents a literature review, followed by the paper's results in section 4. Finally, the conclusion and policy implications are presented in the final section.

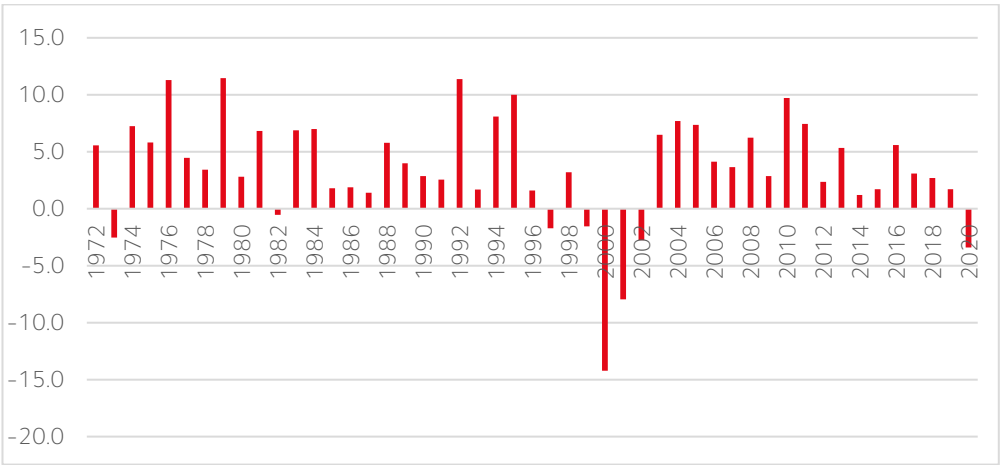
2. Study context: Solomon Islands' macroeconomy and financial sector

2.1 The macroeconomy

Solomon Islands is a small open island economy with a population of around 686,878 in 2020.[2] It is classified as a Lower Middle-Income Country as per the latest World Bank income classification, with an estimated Real Gross Domestic Product per-capita income of $US 1,632 in 2020.[3] Since its independence from Britain in 1978, the country's economic growth trajectory has been volatile at best (**Figure 1**). From the 1980s through to the 1990s, growth averaged 3.8 per cent pa. Growth in the 1980s was supported mainly by the primary industries of agriculture and fishing, while growth in the 1990s was broadly fuelled by the logging and fishing sectors.

In 1999, domestic political instability resulted in the closure of key economic actors, namely Gold Ridge Mining Limited and Solomon Islands Palm Oil Limited on the island of Guadalcanal and Solomon Taiyo Limited in the Western Province. According to Hou (2002), the period of waning business confidence and economic contraction continued until 2002, with economic growth dipping to negative 14 per cent in 2000. It was only with the help of the Australian-led Regional Mission Assistance to the Solomon Islands (RAMSI)[4] in 2003 that law and order was properly restored. As a result, the economy rebounded and reached a growth rate of 6.5 per cent in 2003, following increased public and business confidence, resulting in boosted foreign inflows and domestic economic activities.

Figure 1: Solomon Islands economic growth rate, 1972–2020 (%)

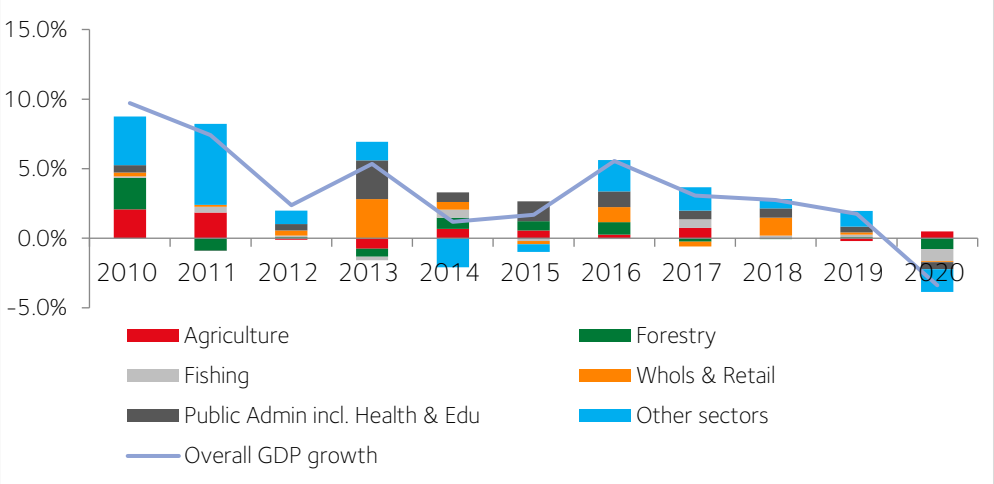


Source: Solomon Islands National Statistics Office (SINSO).[5]

Growth remained positive, albeit volatile, from 2004 to 2008, buoyed by the forestry, fisheries, agriculture, wholesale and retail sectors. In 2009, economic growth contracted by 2.9 per cent as a result of the Global Financial Crisis (GFC). In recent years, economic growth continued to pick up progressively, averaging at 3.5 per cent over the period 2011–2019. In 2020, growth contracted sharply to negative 3.4 per cent owing to the adverse impacts of COVID-19 on the economy and its associated spill over effects, following the closure of international border travels, which affected tourism and the export industries significantly.

Figure 2 shows the major sectors that contributed to economic growth during the 2010–2020 period. Expansion has largely been driven by the primary industry, comprising of forestry, agriculture, and fishing sectors; these sectors have been instrumental in generating foreign exchange revenues and employment and in attracting other supply services. Equally important drivers of economic growth are the services industry, especially the wholesale and retail sectors as well as public administration and defence[6], which reflect the government's operations. The wholesale and retail sectors remain vital to the economy by linking private and public consumption as well as by stimulating private sector activities.

Figure 2: Solomon Islands sectoral economic growth, 2010–2020



Source: SINSO.

In this context, the Solomon Islands' financial sector is an important engine for mobilising financial resources between productive sectors in the economy—for instance, commercial banks are the main source of formal funding for domestic activities. However, relative to the economy's sectoral contribution to GDP, the financial sector[7] contributed on average a mere 0.2 per cent of Real GDP over the period 2004–2020.

2.2 Chronological evolution of the financial system

In Solomon Islands, the financial sector or system—regulated by the Central Bank—is predominately made up of Other Depository Corporations (ODCs), comprising of commercial banks and credit institutions regulated under the Financial Institutions Act 1998. The financial sector also features Other Financial Corporations (OFCs) such as the Solomon Islands National Provident Fund (SINPF), insurance companies, foreign exchange dealers and the Development Bank of Solomon Islands (DBSI). The financial system has evolved over time but remains heavily bank-centric to this day.

Financial services during the colonial era

Formal financial services commenced in the country in 1931, with the Commonwealth Bank of Australia (CBA) establishing branches in two locations in the country—one in Tulagi, Central Province and the other in Faisi, Shortland Islands, Western Province. Through these, residents were able to operate long-distance banking transactions through Suva and Sydney (British Solomon Islands Protectorate, 1931). However, this financial service was short-lived, as both branches were discontinued after World War II.

Inception of banking business in Solomon Islands

Nonetheless, the CBA re-established its Solomon Islands branch in 1951, with banking facilities initially in Honiara, and subsequently in Auki, Gizo, Kira-kira, Lata, Taro, and Yandina (Russell Islands). Australia's second bank soon arrived in the country, with Australia and New Zealand Bank (ANZ) opening its first branches in 1966, followed by the Hong Kong and Shanghai Banking Corporation (HSBC) in 1973 (Solomon Encyclopaedia, n.d; ANZ, 2020).

Legislative reforms supporting the establishment and development of the financial sector in Solomon Islands

Following the advent of the banking business in the country, a Banking Act (precursor to Financial Institutions Act 1998) was enacted in 1976 resulting, among others, in the formation of the Solomon Islands Monetary Authority (SIMA, precursor to the present-day Central Bank) and SINPF. Then came the country's first state-owned domestic bank—DBSI—in 1978. This was followed by the establishment of the National Bank of Solomon Islands (NBSI) in 1981, with 51 per cent foreign (CBA) and 49 per cent state ownership.

A Credit Union Act was enacted in 1986, paving the way for the formation of the Solomon Islands Credit Union League (SICUL) in 1987. Next, the country witnessed the arrival of yet another foreign bank and the beginning of mergers and takeovers in the country when Westpac Banking Corporation acquired the operations of HSBC in 1988. In 1994 CBA sold its shares in NBSI to Bank of Hawaii. In 2004, DBSI came under a court-appointed administration due to its insolvency and in order to protect the stability of the domestic financial system.

In the meantime, the financial sector continued to expand, with Credit Corporation of Solomon Islands Limited (CCSIL), a subsidiary of Credit Corporation Papua New Guinea (PNG), starting operations in 2005 followed by another PNG institution—Bank of South Pacific (BSP)[8]—making entry in 2007 with the 49 per cent takeover of state shares in NBSI. Closer to the present day, Pan Oceanic Bank (POB) became the first locally incorporated bank in 2014, although with total foreign ownership, with shareholders from Malaysia, Singapore and Sri Lanka. A year later, BSP acquired the operations of Westpac Banking Corporation in Solomon Islands. In 2017, BRED Bank (a subsidiary of BRED Bank Vanuatu) and BSP Finance (SI) Limited (subsidiary of BSP Financial Group Limited (SI branch)) were granted licenses to operate in the country.

In July 2020, the Solomon Islands Government re-opened DBSI as the nation's development financing institution, providing financial services to all Solomon Islanders engaged in the development of rural areas and supporting micro, small and medium enterprises and industries. Recently, in December 2021, the country's third credit institution, Solomon Finance Limited (SFL), was granted full banking license to operate a banking business as a credit institution in the country. SFL, which is wholly owned by SINPF, commenced operations in 2022 and offers competitively priced financial products to all its eligible members.

Table 1: Evolution of Solomon Islands' financial system

Year	Financial System Developments
	Birth of banking business
1951	CBA opened its first full branch in SI
1966	First ANZ Banking Group branch established in SI
1973	HSBC established in SI
1976	Banking Act
1976	Establishment of SIMA and SINPF
1978	Government created DBSI
1981	Establishment of NBSI (with 51 per cent by CBA and 49 per cent share owned by the government)
1986	Credit Union and Insurance Act passed in Parliament
1987	Expansion in other Financial Institutions
1987	Formation of Credit Union league following the passing of Credit Union Act in 1986
1988	Acquisition of HSBC by Westpac in mid-1988
1994	CBA sold its shares (51 per cent) in NBSI to Bank of Hawaii
1998	Financial Institution Act replaces the Banking Act 1976
	• Allows for formulation of new prudential guidelines • Based on the latest prudential guideline 1, the ratio of Total Capital-to-Risk Weighted Assets (RWA) is not less than 15 per cent and Tier 1 to RWA is 7.5%. • SINPF & DBSI were brought under CBSI supervision
2002	Bank of Hawaii transferred its 51 per cent shares in NBSI to the government
2005	Establishment of CCSIL in Solomon Islands
2007	BSP takeover of NBSI
2012	New CBSI Act enacted by Parliament
2014	POB was established – first locally incorporated bank with foreign ownership
2015	BSP takeover of Westpac Banking Corp. SI Branch, which closed down its operations in SI
2017	BRED Bank (branch of BRED Vanuatu) and BSP Finance (SI) Limited opened their doors in SI
2020	Revival and reopening of DBSI
2021	BSP changed its name to BSP Financial Group Limited (SI branch) and SFL granted license to operate as Credit institution in December.

2.3 Current structure and size

There are currently four banks operating in Solomon Islands—all with some foreign ownership: two branches (ANZ and BSP Financial Group Limited (SI branch)), one subsidiary (BRED Bank Solomon) and one locally incorporated with foreign ownership (POB). The first domestic bank in Solomon Islands' banking history, NBSI, was established in 1981, when it purchased 49 per cent of CBA's shares. It later became the Government's fully-fledged state bank in 2002 after buying 51 per cent shares from the Bank of Hawaii. However, in 2007, 100 per cent of NBSI's shares were acquired by PNG's BSP.

There are also three credit institutions—two of which foreign-owned, namely CCSIL and BSP Finance (SI) Limited, and one locally owned, SFL. These provide different products from banks, such as financial leases, business loans, equipment finance, insurance premium funding and ready credit.

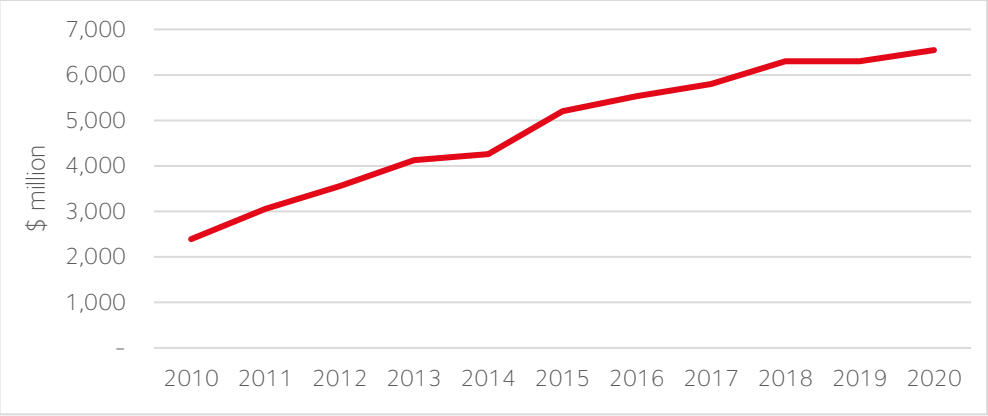
The size of the banking sector in Solomon Islands has evolved significantly over the past four decades, starting with total assets worth $39.2 million in 1980 to a value of around $6.5 billion at the end of 2020 (**Table 2**). In measuring the banking size of the country, total assets of all the financial institutions were used, which captures the gross nominal volume of banking activity. **Figure 3** shows that the total assets of all the licensed banks in the country have grown steadily over the last decade, except in 2014 and 2019 where they remained unchanged.

Table 2: Changes in banking structure, 1980–2020

	1980	1990	2000	2010	2020
Banks	3	3	3	3	4
State					
Foreign	2	2	2	3	4
State/Private[9]	1	1	1		
Total Assets ($million)	39.2	160.6	496.2	2,390.0	6,545.3

Source: CBSI Annual Reports (1980, 1990, 2000, 2010, 2020).

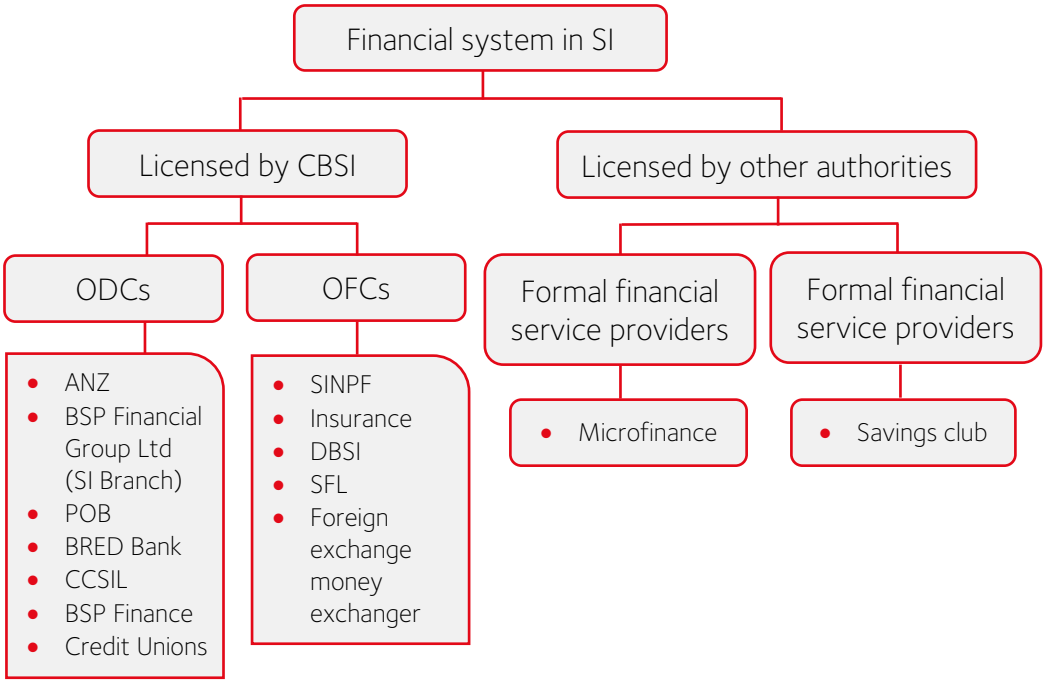
Figure 3: Total Assets of ODCs in SI, 2010-2020



Source: CBSI.

Figure 4 shows the current financial structure of the Solomon Islands' financial system[10]. In this study, we will focus only on the banking sector.

Figure 4: Solomon Islands' current financial structure



2.4 Banking sector reforms

Early financial sector reforms in the country were geared towards the banking sector. These have been broad-based and comprehensive, commencing with the implementation of several legislative reforms in the 1970s and since encompassing regular revisions to banking acts, inclusion of monetary policy tools, adoption of recommended international standard policies and prudential guidelines as well as the advancement of the financial inclusion agenda via the promotion of digital financial services in the country.

The Central Bank tightened monetary policy in the 1980s due to rising inflation and deterioration in the country's balance of payments (BOP). In 1983, the Central Bank abandoned its monetary policy instrument of directly controlling commercial bank interest rates and adopted an indirect tool, called the Liquid Asset Ratio (LAR) [11], to influence the reserve money (Sterne, 1996). The LAR was introduced at 15 per cent and later raised to 25 per cent in 1984 as part of the Bank's efforts to reduce free liquidity in the banking system and to administer its role as a banker to the government. Furthermore, a Special Deposit facility was introduced in 1984 to enable liquidity to be stored without adding pressure on the Bank's costs and thus on the interest rates. In 1989, liquidity tightened following a worsening BOP, thus affecting the customers of the banking system. Consequently, the CBSI began issuing its Open market operations (OMO) tool, Bokolo Bills[12] during the year so as to protect the foreign exchange reserves, minimise inflationary pressures and sterilise any growth in excess liquidity in the banking system.

In the early 1990s, CBSI's monetary policy revolved around financing the government's deficit while defending domestic prices and the external reserves. The large fiscal deficit was financed by the domestic debt market via the sale of government securities and borrowing from the banks and SINPF (CBSI, 1996). Thus, the LAR was raised to a record 35 per cent to

facilitate the sale of government securities to the banks and to reduce the monetisation of the government deficit by the Central Bank (CBSI, 1991). However, the LAR was reduced to 7.5 per cent in 1991 following the redefinition of the LAR, which now excluded Treasury-Bills (T-bills) and only consisted of cash and bank deposits with CBSI. Meanwhile, the T-Bills were sold to the banks to shift the excess government credit from CBSI to the commercial banks. Consequently, borrowing from the financial system was curtailed in 1995 as the Government securities market developed into a crisis and eventually collapsed following the government's failure to meet its debt obligations, which resulted in huge debt restructuring.
In 2010, CBSI embarked on a programme of strengthening the governance of banks by issuing new Prudential Guidelines and Returns in order to align its supervisory approach and practice with the international supervisory standards in the wake of the 2008 GFC. This led to changes in commercial banks reporting requirements and revisions to the financial soundness indicators (CBSI, 2011). These subsequently fed into the latest CBSI Act of 2012, which defined the Bank's primary objective to be the maintenance of price stability in addition to ensuring financial-system stability and continued support for the economic policies of the government (CBSI, 2014).

Financial inclusion and innovation in a digital era

It is also worth highlighting that financial institutions have also begun venturing into offering products aimed at improving financial access and promoting financial inclusion in the country. For example, existing commercial banks are aiming to provide financial services and products to the wider population via mobile banking (e.g. POB Purse, BSP mobile banking). Recently, the SINPF have introduced youSave—a new voluntary saving scheme for the self-employed whereby those in the informal sector make contributions for their retirement. This new and inclusive scheme give savers between 16 and 51 years of age the flexibility to save any amount they wish for their future retirement and needs.

3. Literature review

Abundant literature shows that financial development can act as a catalyst for promoting a country's economic growth, either through the development of a well-functioning financial system or via its intermediating role facilitating savings mobilisation, an efficient allocation of resources, and risk diversification (see, for example, Beck et al., 2007; Levine, 1997; Beck et al., 2000). Financial development is defined in Kagochi (2019) as the "improvement in the quality, quantity and efficiency of financial intermediary services for the benefit of financial institutions and all individuals." Hence, the banking sector plays a critical role in a country's financial intermediation, in both developed and developing countries.

The level of financial development and its role in the growth process varies significantly from country to country. According to Huang (2011), the level of financial development is contingent on three factors, namely the quality of institutions, economic policies such as trade openness, and other variables, particularly economic growth, level of income, and population size, among others. Evidence shows that strong institutions, adequate implementation of financial reforms, higher levels of income, and low inflation, among other factors, collectively have a positive impact on financial development (Huang, 2011; Slesman, Baharumshah, & Azman-Saini, 2019; Aluko & Ajayi, 2018).

On the other hand, studies have also pointed out that financial development – or, more specifically, banking sector development – can be hindered by financial liberalisation, political climate, and macroeconomic factors (Andrianaivo & Yartey, 2009; Ataullah & Le, 2006; Akinloye, Emilie, & Kinfack, 2014). According to Ahmed (2013) and Fowowoe (2010), high levels of financial liberalisation tend to make the banking sector prone to crisis; moreover, some countries in the sub-Saharan Africa (SSA) region continue to be under-developed, despite series of reforms (Aluko & Ajayi, 2018; Kagochi, 2019). It can thus be seen that the banking sector can be hindered by the political climate of the country, high inflation, and government debt due to its crowding out effect (Andrianaivo & Yartey, 2009; Ataullah & Le, 2006; Akinloye, Emilie, & Kinfack, 2014).

3.1 Financial depth and related studies

Financial depth has been widely studied in financial growth and development literature (Mousa, 2018). When measuring the performance of the financial system, assessing its depth is one of the four key characteristics to consider, as it reflects the size of the financial sector relative to the economy (Cihak et.al, 2012). In developed countries, financial development is typically measured by the banking system and stock market relative to the economy. In the case of small, developing economies like the PICs, the size of the banking system is the main proxy used due to a virtually non-existent financial market. Financial depth is typically measured by credit to private sector and stock market capitalisation (Bui, 2020; Mousa, 2018).

Studies have highlighted the deepening of global financial systems over the years, marked by the growth in financial depth indicators, with some growing more rapidly than others. A study by Muyambiri and Odhiambo (2016) analysed the financial development trends in Mauritius using a range of financial depth and efficiency indicators for the period 1960–2010. Their study finds that the financial depth indicators used to proxy financial development—namely, M2 to GDP, the deposit money bank assets to GDP ratio, and the domestic credit to private sector to GDP ratio—have all exhibited an exponential growth pattern over the past decades. Moreover, Muyambiri and Odhiambo (2015) examined the financial evolution of Bostwana's financial sector from the 1970s up to the 2010s. Their study finds increased financial

development over the years due to financial sector liberalisation, as measured by increases in interbank competition, access to credit facilities and the growth in the bank deposits to GDP ratio. Improved financial development in Bostwana was further supported by increased banking sector stability and performance.

Conversely, the financial sectors of most SSA countries remain under-developed (Aluko & Ajayi, 2018). Despite undergoing various strands of financial sector reform in a similar vein to other developed and developing countries, these countries continue to face constraints to the daily operations of their financial markets. Kagochi (2019) notes that the features of SSA countries' banking systems reflect a combination of factors including small absolute size of banks and banking systems, low income levels, large informal sectors and low levels of financial literacy, weak contractual frameworks for banking activities – including weak creditor rights and judicial enforcement mechanisms – as well as heightened political risk (Andrianaivo & Yartey, 2009; Beck et al., 2010).

3.2 Financial efficiency and related studies

Financial efficiency refers to the improvements in performance from the perspectives of the banking system and stock market (Bui, 2020). Paulet and Mavoori (2021) define banking efficiency as "the way a bank uses its resources (inputs) to generate business transactions (outputs)." Improvements in financial efficiency entail greater benefits to households and firms when they use financial services. It is frequently measured by interest-rate spread and stock market turnover ratio, banks' net interest margin, return on assets and return on equity (Mousa, 2018; Kaban, 2010).

Countries that have higher financial development are associated with higher banking efficiency outcomes: for instance, Barros et al. (2018) argue that size and the degree of development contribute to efficiency and returns to scale in the sector. Similarly, the earlier work of Demirguc-Kunt and Huizinga (2000) found that the greater the development of a country's banking system, the tougher the resulting competition, the greater the efficiency and the lower the banks' margins and profits. On the contrary, countries with underdeveloped financial systems have significantly higher levels of bank profit margins.

The determinants of banking efficiency have been discussed extensively in the literature, which concluded that market concentration, competition, and financial reforms are key determinants of efficiency (Phan, Daly, & Akhter, 2016; Ataullah & Le, 2006). Phan, Daly, and Akhter (2016) point out that market concentration is negatively related to banking efficiency as market power gives banks freedom from competition, which consequently reduces banks' efforts to maximise their efficiency. Instead, competition is pertinent in driving efficiency in the banking industry (Claessens, 2009). Ataullah and Le (2006) find a positive relationship between competition and efficiency in the case of India's banking industry, as competition in the banking sector leads to the introduction of new technology aimed at reducing costs, thereby improving efficiency. Moreover, financial reforms such as the removal of entry restrictions has been found to be significant in improving banks' efficiency in the case of Ghana (Dadzie & Ferrari, 2019).

Additionally, the presence of foreign banks has been influential in introducing more efficient banking techniques that domestic banks can replicate (Ataullah & Le, 2006). Hasan and Marton (2003) argue that foreign banks operating in Hungary's banking sector appear to be less inefficient than their domestic counterparts, as they usually take advantage of local market conditions and exploit their comparative advantages into lower costs, causing lower inefficiency. On the other hand, various studies have argued that macroeconomic factors in the host country are ultimately the decisive factors in influencing banking efficiency (Chen & Wang, 2015; Dadzie & Ferrari, 2019). Lensink and Hermes (2004) argue that the positive relationship between the presence of foreign banks and the efficiency of banks is contingent

on the level of economic development of the host developing country. At a lower level of economic development, banking markets are generally less developed, which means implementing new techniques by foreign banks raises costs in the short run.

Empirical studies on banking efficiency have emerged from both developed and developing countries with mixed results. Kaban (2010) examines how efficient banks are in SSA countries, what determines their degree of efficiency and what factors could explain the low levels of financial development in the region. By using the stochastic frontier analysis to measure efficiency, their results show that SSA banks are cost-efficient, although areas that could be improved include the strengthening of the credit environment via the improved functioning of the judicial and legal environment processes, and an amelioration of the moral hazard problem. Consequently, stable macroeconomic policies, coupled with the competitive banking industry, are likely to improve financial development in SSA countries. A study by Ataullah and Le (2006) that examines the relationship between India's banking industry and elements of economic reforms finds that fiscal deficits are negatively related to banks operating efficiently. This implies that fiscal deficits would discourage banks from exerting greater effort in improving their resource allocation and would instead weaken the financial intermediation process in India.

A study by Shayanewako and Tsegaye (2018) examines the impact of interest-rate spread on banking system efficiency in South Africa and finds that economic growth and the real exchange rate are significant factors that positively influence efficiency in the local banking system, which is however slowed down by the presence of non-performing loans. Chaluvadi, Raut, and Gardas (2018) conducted research on the efficiency performance of 18 banks in India, finding that banks that were privately owned are more efficient than state-owned banks.

4. Document and methodology

This study adopts the now-standard 4 x 2 Matrix of Financial System Characteristics by Cihak et al., (2012) to map the development of Solomon Islands' financial sector over the 1980-2020 period. Data used in this study was sourced from the World Bank's Global Financial Development Database and complemented by data from the IMF's International Financial Statistiscs (IFS) as well as from the CBSI's Financial Stability Reports.

In analysing Solomon Islands' financial development, we are constrained by two factors: first, the limited availability of time-series data for Solomon Islands and comparator countries; second, the presence of a heavily bank-centric financial sector in the country in the absence of a stock market. Hence, this study focuses on the depth and efficiency of the Solomon Islands banking sector only.

5. Solomon Islands' depth and efficiency on a regional scale

5.1 Depth

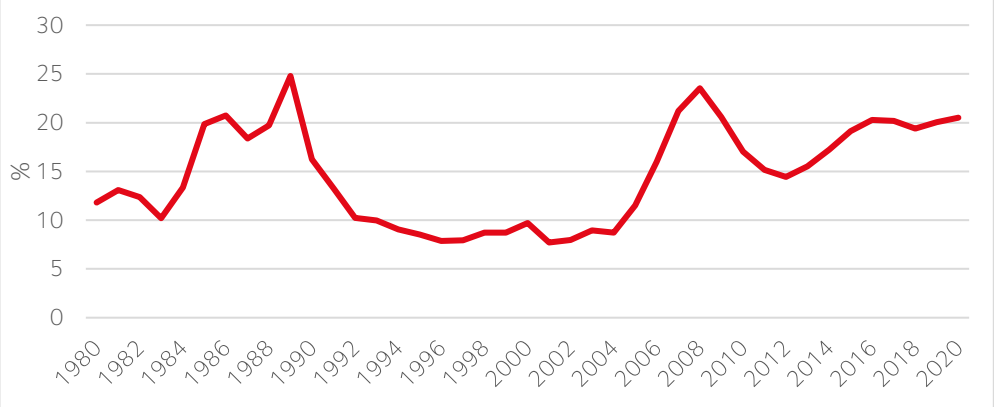
Financial depth measures have gained prominence in the finance - growth nexus literature for their role in facilitating the gauging of the overall extent of services provided by the financial system (Calderon & Liu, 2003; Seetanah, Ramessur, & Rojid, 2009). A well-functiong financial system plays a critical role in the mobilising of savings and in facilitating an efficient allocation of resources.

As noted in literature, financial depth indicators can be categorised into two main streams, those relating to the bank's liabilities and those on the bank's assets (Beck et al., 2010). Depth measures on the liabilities side include monetary aggregates in the banking sector—namely, liquid liabilities as a share of GDP, and commonly used proxies include M2 to GDP, deposits to GDP, financial institutions assets to GDP and gross value-added of the financial sector to GDP (see Cihak et al., 2012). On the asset side, private sector credit as a share to GDP is frequently used as a proxy to capture the credit allocation function of the bank. Other typical measures include money bank credits to the private sector to GDP (excluding credit to the private sector by non-money banks and financial intermediation) and gross claims on the private sector to GDP (which includes credits issued by the monetary sector and government agencies). Compared to the monetary aggregates, there is a strong argument for the role of credit as a more accurate representation of funds channelled to the private sector (Calderon & Liu, 2003).

Private sector credit to GDP

The financial sector plays a vital role in channelling funds to the private sector to undertake investment activities and to enhance economic growth and development in the country. A high level of private sector credit to GDP indicates a greater level of financing services, therefore more sophisticated financial intermediary development, and vice versa. A widely used economic measure is credit to private sector by deposit money banks as a share of GDP[13].

Figure 5: Private sector credit by deposit money banks (% of GDP) in Solomon Islands, 1980–2020



Source: Global Financial Development Database, World Bank.

Growth in private sector credit (per cent of GDP) in Solomon Islands appears to have gradually increased from 1980 to 2020, even though several fluctuations can be observed over the period, largely reflecting developments in the economy, banking sector as well as monetary policy interventions. As Figure 5 shows, the ratio averaged 16.4 per cent in the 1980s, before declining to a low of 10 per cent in the 1990s and thereafter rebounding to 13.6 per cent in the 2000s – before peaking at an average of 18.1 per cent in the 2010s.

The 1980-1990s period witnessed volatility in bank lending to the private sector, reflecting the demand for credit by the country's productive sectors – namely agriculture and fishing – amid volatile external conditions as well as domestic economic developments. Scott and Browne (1989) note that the weak fiscal and external position of the country in the early 1980s prompted the government to redirect policies towards supporting economic recovery through investments in the export sector and increased public expenditure on infrastructure. As such, it is likely that the decline in private sector credit in 1983 was driven by the improved BOP position of the country following the increase in export earnings of many businesses and households, which resulted in the reduced demand for credit from businesses (CBSI, 1983; 1984). The turn-around seen in the growth in credit to private sector in 1984 was supported by the recovery in the export market, which triggered a trade surplus from businesses, whereby a significant component was used to finance investment (CBSI, 1985). The notable decline in 1987 mirrors the commercial bank's inability to find bankable lending projects in the private sector (CBSI, 1988) and the prolonged negative effects of the 1986 Cyclone Namu on the economy (Scott & Browne, 1989). The rebound in bank credit from 1988 to 1989 reflects the strong demand in credit by the private sector following expanding economic activity (CBSI, 1989; 1990).

In the 1990s, the slow-down in credit to the private sector reflects the crowding out of the private sector from access to domestic savings which stemmed from the rise in net credit to the government to finance its budget deficit, along with the fall in reserves (CBSI, 1991; Sterne, 1996). The downturn in credit to the private sector in 2000-2002 was driven by the deteriorating law and order situation in the country, which weakened business confidence due to an extended period of political instability and social unrest (CBSI, 2001). However, bank credit to the private sector rebounded in 2005 following the arrival of RAMSI in 2003, which helped to restore stability and thus increase business confidence. Consequently, the expansion in credit to the private sector between 2005 and 2008 reflects increasing investment opportunities and improved commercial bank confidence in the stability of the economic and political environment (CBSI, 2007); in particular, bank credit went largely to the personal sector, reflecting developments in the real estate and property investments (CBSI, 2007).

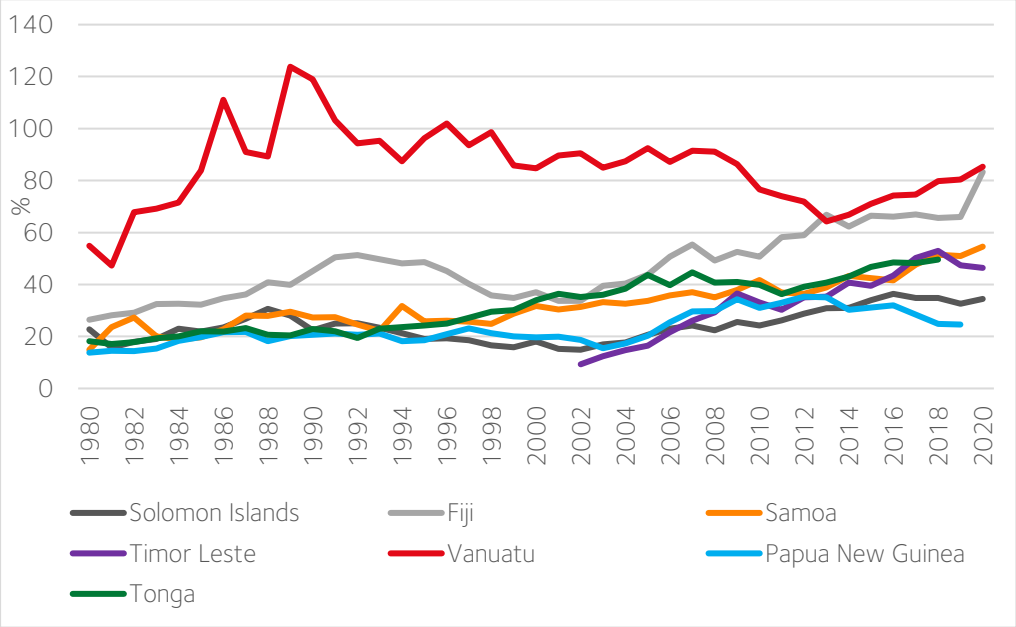
The contraction in private sector credit observed in 2009 is attributable to demand- and supply-side weaknesses in the market due to subdued domestic and external conditions. This resulted in the withholding of credit to the market due to the increased risk aversion from banks following the GFC, coupled with weak economic activity due to depressed demand (CBSI, 2011). Meanwhile, the continuation of the downturn into 2010 was due to two large one-off loan repayments made during the year (CBSI, 2011), while the pickup in private sector credit from 2013 onwards stems from increased demand for long-term loans (CBSI, 2014).

The expanding domestic credit to the private sector in 2014 may be due to the entry of POB into the financial sector, which provided domestic residents, in particular households and corporate forestry sector customers, with alternative financing options. The entry also helped to avert what could have become a catastrophic economic disaster for Solomon Islands following the exit of Westpac Banking Cooperation and the reluctance by the two other domestic foreign bank branches to onboard forestry sector customers. Similarly, the entrance

of a new bank (BRED Bank) in 2017 may have also contributed towards the growth in credit to the private sector during the year.

Solomon Islands' private sector credit to GDP by deposit money banks is amongst the lowest in the Pacific region, as observed in **Figure 6.** This is reflective of the country's relatively small formal sector, which is limited primarily to the urban areas and thus covers only 20 per cent of the population. According to the Asian Development Bank (ADB), the majority of adults in Solomon Islands remain excluded from the formal finance sector (ADB, 2019). This is consistent with a survey conducted by CBSI in 2015, which showed that 31 per cent of the adult population in Solomon Islands did not have access to any type of financial services; 35 per cent had access to informal financial services such as shop credit, moneylenders, or savings clubs; while only 26 per cent of the adult population had a bank account, and only 8 per cent had an account in another formal financial institution such as SINPF or a credit union.

Figure 6: Private sector credit by deposit money banks (% of GDP) in the Pacific region, 1980–2020



Source: Global Financial Development Database, World Bank.

Financial Systems Deposit to GDP

The financial systems deposit to GDP ratio refers to the cumulative amount of checking, savings, and time deposits in banks and bank-like financial institutions as a share of economic activity (Beck et al., 2010). It evaluates the value of deposits of the whole financial system relative to the economy, and it is a stock indicator of deposit resources available for lending activities by the financial sector. A high ratio indicates a greater pool of financial resources that can be mobilised to domestic borrowers undertaking productive investments in the economy. Therefore, an increase in financial systems deposit would indicate financial deepening in the economy.

Deposits in the financial system grew at a slow pace in the 1980s and declined in the 1990s, before rebounding in the 2000s and gathering momentum in the 2010s, as shown in **Figure 7**.

Figure 7: Financial system deposits (% of GDP) in Solomon Islands, 1980-2020

Source: Global Financial Development Database, World Bank.

Financial system deposits as a per cent of GDP broadly increased during the 1980s and were largely influenced by developments in an external sector marked by highly volatile terms of trade and the government's budget deficits in the late 1980s. In 1980-1981, the country's terms of trade fell sharply due to less favourable global economic conditions, which had a profound impact on the country's large export sector and contributed towards a large current account deficit (Scott & Browne, 1989). This triggered a withdrawal of deposits, particularly time deposits, from the financial system following the fall in foreign reserves, thus prompting the need to finance imported inputs at higher price levels in order to sustain economic activity (SIMA, 1982).

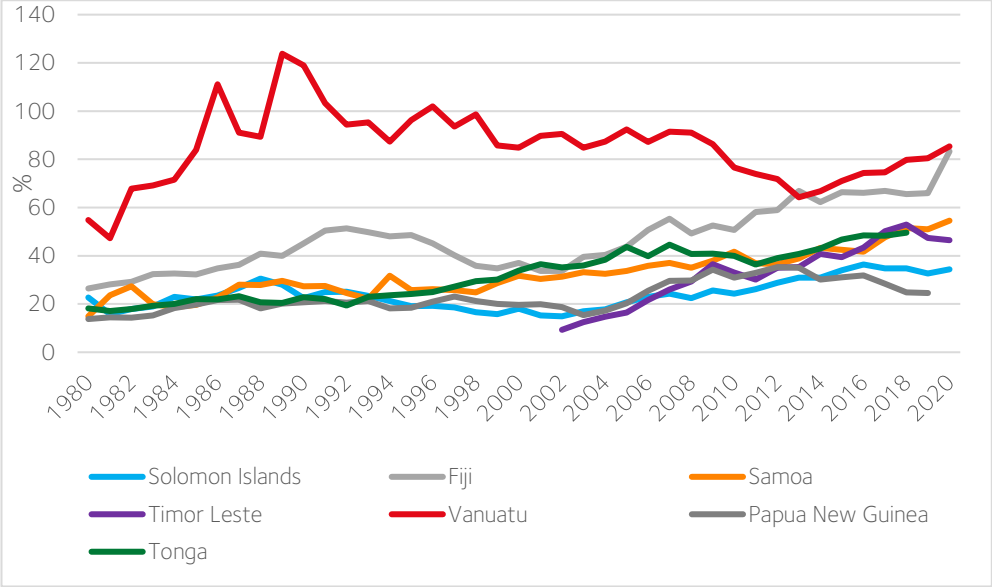
Conversely, the increase in deposit rates in mid-1983 encouraged depositors, causing the uptick in the deposit to GDP ratio during the period. Also, the export recovery registered in late 1983 and 1984 led to an inflow of deposits into the financial system, following the increase in net foreign assets from higher export earnings due to higher commodity prices (Scott & Browne, 1989; CBSI, 1984). On the other hand, the slow-down in deposits to GDP in 1989 reflects the country's deteriorating terms of trade due to declining commodity prices, leading to lower export earnings and a fall in reserves which caused businesses to withdraw financial resources from banks to finance higher imported inputs (CBSI, 1990).

In the 1990s, deposits to GDP declined as a result of tightening monetary policy on the back of the government's expansionary fiscal policy and a deteriorating external position (Sterne, 1996). The government was borrowing excessively from the banking sector to finance its large fiscal deficit, a fact which can be evinced from an extremely high interest rate on the Government's treasury bill of around 13 percent in the first part of 1990s, compared to 8 per cent in the early 1980s (Sterne, 1996).

The decline in deposits to GDP in early 2000s is partly attributable to the damaging effects of the spell of socio-political instability that started in late 1999. The deteriorating law and order situation resulted in a decrease in the willingness of commercial banks to lend; banks were thus incentivised to reduce interest rates on deposit accounts in order to reduce costs in the resulting high-liquidity environment (CBSI, 2001; 2002). This resulted in the low uptake of deposits observed in Figure 7.

However, post-2003, deposits to GDP rebounded, while increased economic growth resulted in improving investment avenues as well. The ratio enjoyed a period of steady increase post-2010 on the back of rising national income, coupled with the entrance of POB in 2014 and BRED Bank in 2017 further boosting the deposits available for credit in the financial system.

Figure 8: Financial system deposits (% of GDP) in the Pacific region, 1980-2020



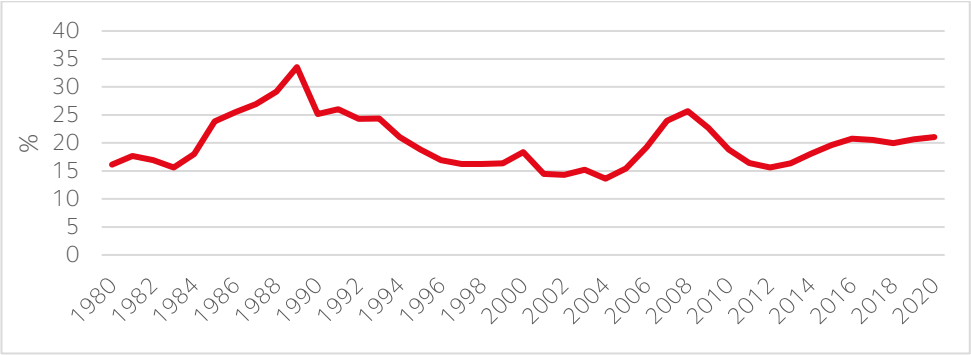
Source: Global Financial Development Database, World Bank.

Figure 8 compares financial systems deposits across the Pacific region. Generally, all countries experienced an upward trend over the period, except for Vanuatu in the later years. Solomon Islands' financial systems deposits have increased at a much slower pace relative to its peers, with a performance close to that of PNG and slightly above that of Timor-Leste. This outcome reflects the relatively small size of the Solomon Islands' formal sector, with limited access to financial services for a large proportion of the rural population as commercial banks are heavily located in urban centres.

Deposit money banks asset to GDP

Deposit money banks' assets to GDP[14] is a bank sector size indicator that measures the banking sector's activity with respect to the rest of the economy. It captures the importance of financial services relative to the size of the economy (Myuambir & Odhiambo, 2016). A positive relationship is expected between GDP and deposit money banks' assets, implying that as the economy grows, the higher the demand for loans by businesses and the higher the banking sector's activity are.

Figure 9: Deposit money banks' assets (% of GDP) in Solomon Islands, 1980-2020



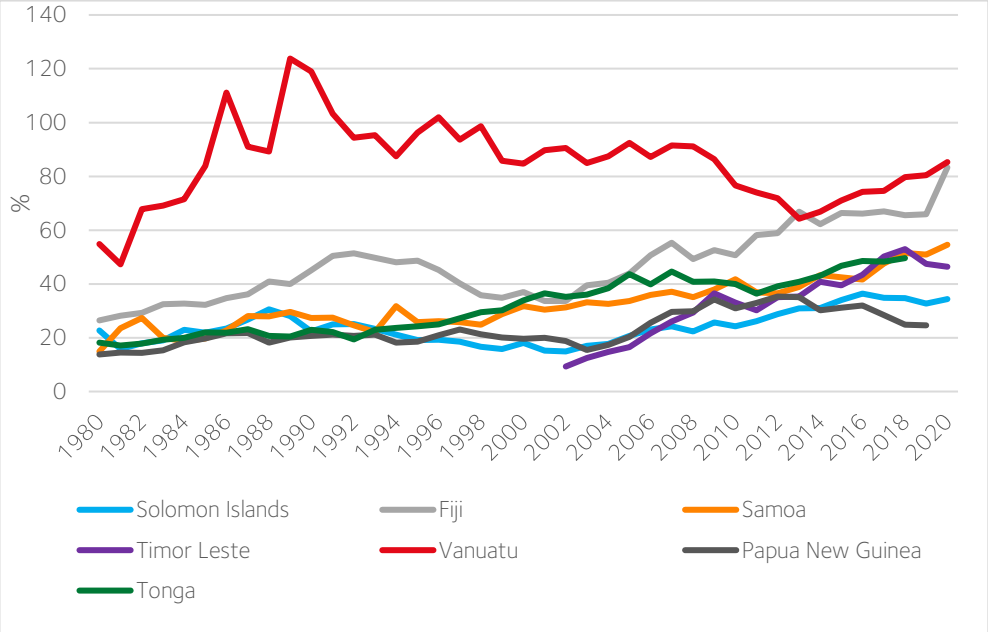
Source: Global Financial Development Database, World Bank.

Deposit money banks' assets to GDP in Solomon Islands have been volatile during the period 1980–2020. In the 1980s, the deposit money banks' assets increased from 16 per cent at the beginning of the decade to 34 per cent in 1989, reflecting an increase in demand for loans from the private sector, particularly towards the agriculture, fishing and forestry sectors. From the early 1990s, the ratio trended downwards to reach 16 per cent in 1998 as a result of the government's inability to service the interest payments on commercial bank holdings of government debt since September 1996, which caused a substantial fall in the cash flow and profitability of commercial banks (CBSI, 1997).

The ratio eased further down to 14 per cent in 2002, the lowest for the sample period. The slow-down in bank lending over the 2000-2002 period reflects the outbreak of political instability in the country, which led to a general rise in the risk-averse appetite of banks and a contraction in economic activity. From 2006, the deposit money banks' assets rose sharply, reaching 26 per cent in 2008 by building on from the positive spill-over effects from RAMSI's intervention in restoring law and order and improving business confidence in the economy. Thereafter, the ratio plunged again, to 16 per cent in 2011, before steadily increasing to 21 per cent in 2020. The trends observed in the ratio over the year indicates that growth in bank assets has not surpassed the growth in GDP.

Figure 10 compares deposit money banks' assets to GDP for countries in the Pacific, whereby a generally upward trend in the ratio has been observed for most countries. In the case of Solomon Islands, the ratio has increased at a much slower pace relative to most of its peers, alongside PNG.

Figure 10: Deposit money banks' assets (% of GDP) in the Pacific region, 1980-2020

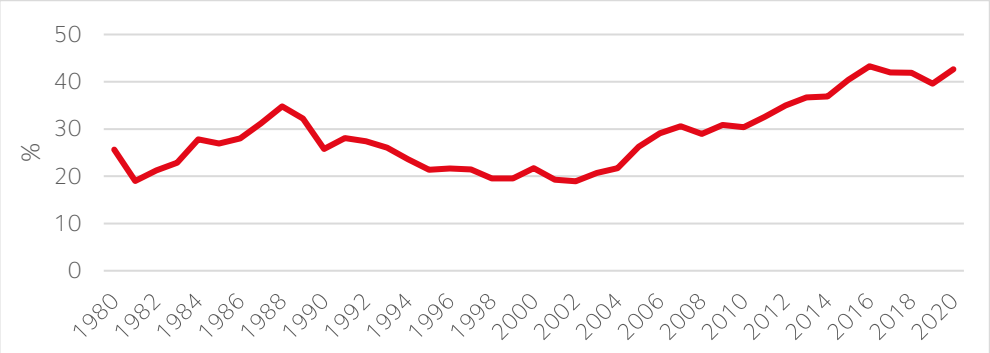


Source: Global Financial Development Database, World Bank.

Broad money to GDP

Broad money to GDP shows the real size of the financial sector development in a country and is a measure of money supply in relation to the size of the economy. The higher the ratio, the larger the financial sector and the greater the prevalence of financial intermediation. An increase in broad money may indicate an improvement in financial deepening.

Figure 11: Broad money (% of GDP) in Solomon Islands, 1980–2020



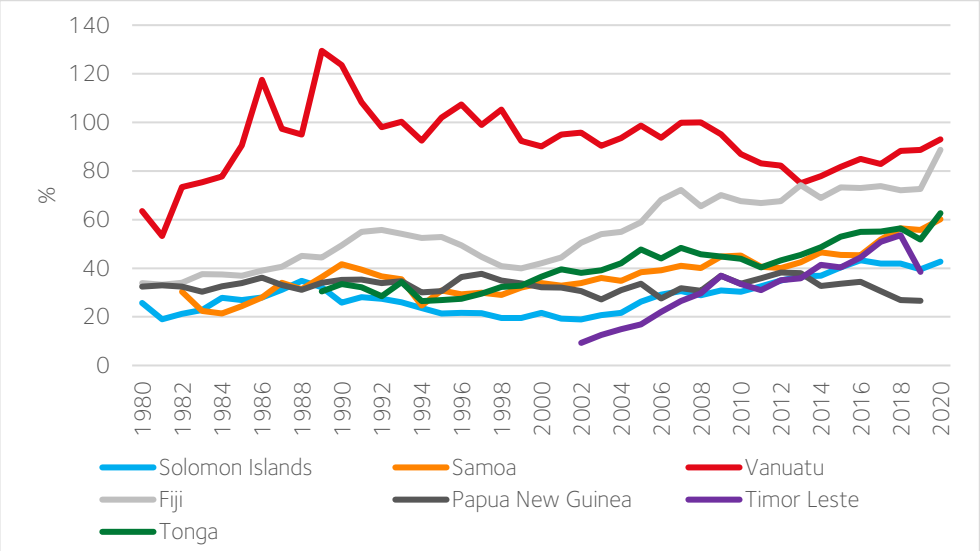
Source: Global Financial Development Database, World Bank.

The broad money to GDP ratio in Solomon Islands has increased overall between 1980 and 2020, even amidst the several downturns observed in early 1981 and in the 1990s as shown in Figure 11. During the 1980s, movements in the external sector marked by highly volatile terms of trade and the government's increased borrowing weighed heavily on the country's monetary situation. The decline in the broad money to GDP ratio in 1981 reflects a widening BOP deficit, which led to an increased withrawal of time deposits from the banking system to finance the imported goods set at higher price (CBSI, 1982). Conversely, the rebound in the ratio in 1983 followed by the sharp increase in 1984 was the result of nascent BOP surpluses, which flowed into the financial system as deposits of exporters and traders benefited from copra, palm oil, cocoa, and timber earnings (CBSI, 1984; 1985). Moreover, the surge in the ratio in 1988 was driven by an expansion in domestic credit on the back of increased economic activity and the government's borrowing using deposits in the financial system (CBSI, 1989).

However, the ratio fell sharply in the early 1990s due to a substantial net increase in government borrowing (Sterne, 1996), in addition to a worsening BOP position of the country as commercial banks were focussed on meeting the credit needs of many exporting enterprises due to the adverse terms of trade. Furthermore, the sharp decline in the broad money to GDP ratio in 2001 can be attributed to the substantial fall in net foreign assets, which resulted from a weak BOP, coupled with the fall in credit to the private sector following the lack of new investment arising from the prevailing law and order situation that dampened business confidence and new investment (CBSI, 2002).

From 2003 onwards, the arrival of RAMSI helped restore order, resulting in improved business confidence and translating into an uptick in the broad money to GDP ratio. The increase in broad money between 2005 and 2007 reflects the increase in Net Foreign Assets and private sector credit made over the period (CBSI, 2009); the broad money to GDP ratio has then increased steadily from 2008 to reach a peak of 43 per cent in 2016, before easing slightly to 42 per cent in 2020.

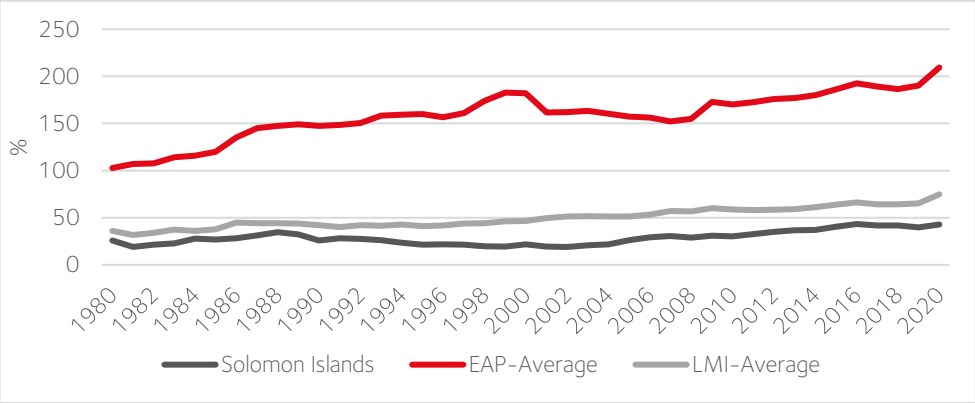
Figure 12: Broad money (% of GDP) in the Pacific region, 1980-2020



Source: Global Financial Development Database, World Bank.

On a regional scale, Figure 12 compares the ratio of broad money to GDP in Solomon Islands against comparator countries in the region. In Solomon Islands, the ratio of broad money to GDP is relatively low, and it has increased at a slower pace in comparison to Fiji and Vanuatu, whose ratios have been expanding over the years. Figure 13 shows that Solomon Islands' broad money to GDP ratio has been consistently below the World Bank's Lower Middle Income (LMI) and East Asia Pacific (EAP) countries' average over the sample period. This implies a lower level of financial development in Solomon Islands in comparison to its income and regional grouping.

Figure 13: Broad money (% of GDP) across the EAP region and LMI countries, 1980-2020



Source: Global Financial Development Database, World Bank.

5.2 Efficiency

Efficiency measures the cost of intermediating credit (Cihak et al., 2012) and is seen as a profitability indicator for the banking sector. The banking sector must remain profitable in order to operate effectively by ensuring that quality loans are dispersed and adequate earnings are attained. However, the literature has shown that high profitability does not always translate into more efficient financial institutions: according to Nguyen, Roca, and

Sharma (2014), banking efficiency depends on the appropriateness of a country's policy and its economic development.

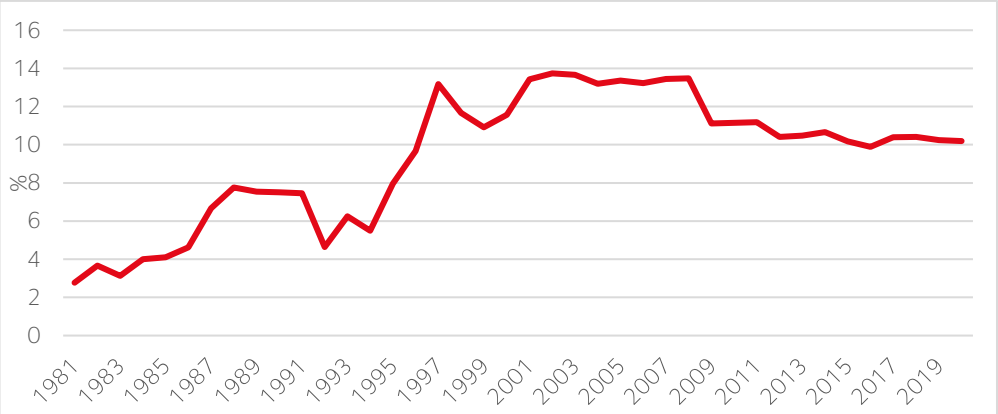
Commonly used efficiency measures of the banking sector include the overhead costs to total assets ratio, the net interest margin, the lending-deposit spread and the non-interest income to total income ratio (Cihak et al., 2012). Additionally, indicators such as Return on Assets (ROA) and Return on Equity (ROE) are regarded as close proxies for measuring the profitability of banks. Given the availability of data, efficiency measures used in this study are the lending-deposit spread, banks' net interest rate margin, ROA and ROE.

Banks' lending-deposit spread

The lending-deposit spread measures the spread between the interest rate banks charge on loans and the interest rate on deposits. As such, it can be said to provide a crude measure of efficiency (Cihak, et al., 2012). A higher ratio indicates that financial institutions are charging high interest rates on loans but low interest rates on deposits, thus implying higher profitability for the financial sector. Very high interest rate spreads could also indicate a lack of competition in the banking industry, largely evident in countries that are less economically and financially developed (Feyen & Zuccardi, 2020). In contrast, low ratios indicate that there is a narrow gap between the interest charged on loans and that on deposits.

The level of interest charged can be determined by the regulatory regime. In countries where the interest rate is regulated, the greater the spread, the more profitable the financial institutions are, and vice versa. The level of liquidity in the financial market may also determine the lending-deposit spread in any financial intermediaries such as banks.

Figure 14: Banks' lending-deposit spread in Solomon Islands, 1981-2020 (%)

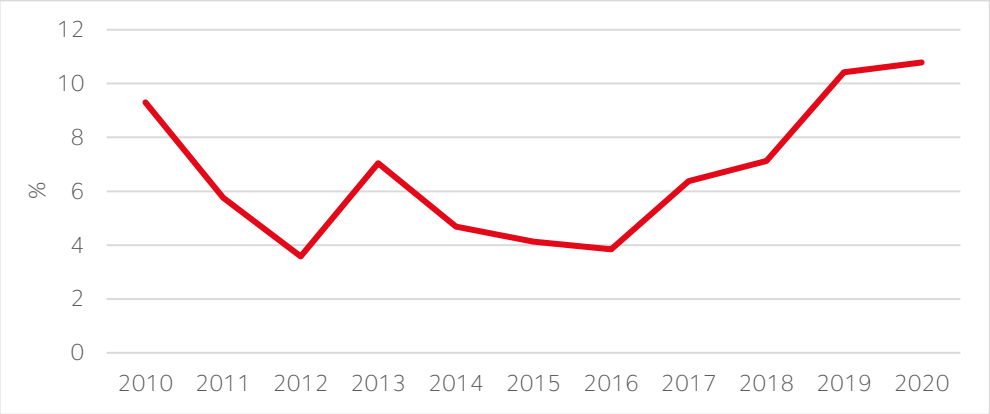


Source: Global Financial Development Database, World Bank.

The banks' lending-deposit spread in Solomon Islands has widened overall during the period from the 1980s to 2008, thereafter gradually declining to an average of 10.8 per cent between 2008 and 2020. Figure 14 shows that the average interest rate spread was relatively low in the 1980s, at 4.9 per cent, before increasing to 8.5 per cent in the 1990s and rising further to 13 per cent in the 2000s. Higher interest rate spreads over the 2002–2008 interval can be said to be reflective of the post ethnic-tension economic recovery period, whereby commercial banks became more risk averse due to security concerns in the economy and as a result did not participate in the secondary market. This gave rise to a surge in excess liquidity in the banking system as well as a reluctance of banks to lend (CBSI, 2002). Consequently, the average bank's deposit rates fell to 0.64 per cent in 2002, causing a rise in the interest rate margin (CBSI, 2003).

Since 2010, the average interest rate spreads have eased to 10.5 per cent. The marginal decline in the banks' lending-deposits spread from 2014 to 2015 is attributable to a new bank entering the market, as the new entrant, POB, embarked on a strategy of attempting to grow its lending portfolio and acquire sources of funding by lowering its interest rates on loans and increasing its interest rate on deposits. However, the spread increased again in 2016, largely a reflection of the continuing banking dominance factor. This refers to a state in which dominant banks dictate the level of interest rates determined in the market, being influenced to a large extent by business targets set by the parent company and less by the local context. Hence, demand is typically inelastic to the lending rates set by the dominant banks, despite elements of competition. Another determinant of the bank lending-deposit spread is the direction of the non-performing loans (NPLs) to total gross loans ratio, which in Figure 15 is shown to have been increasing from 2016 onwards.

Figure 15: NPLs as a per cent of Total Gross Loans in Solomon Islands, 2010-2020 (%)

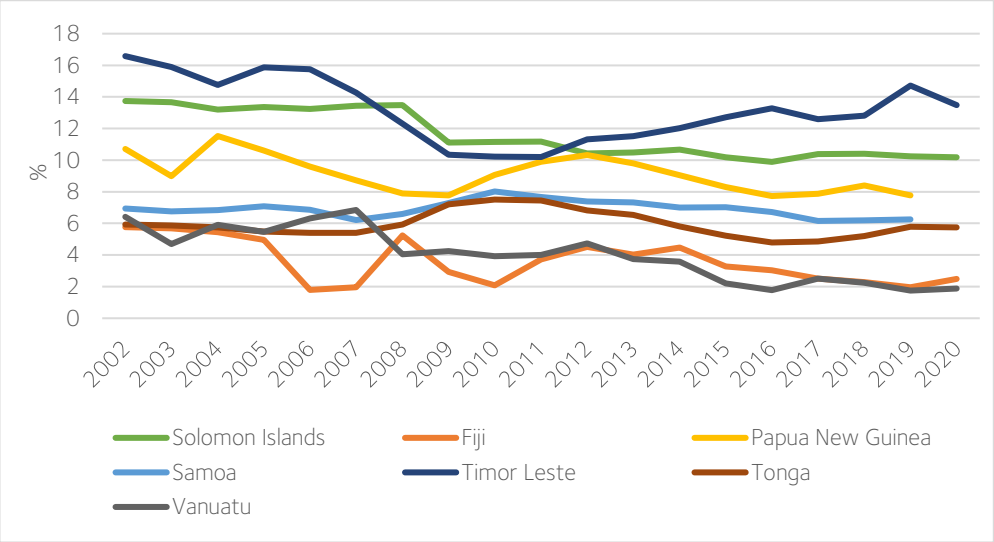


Source: CBSI.

Figure 16 shows a comparison of the bank deposit-lending spreads for selected countries in the Pacific region. The Solomon Islands' interest rate spread is found to be of the highest besides Timor-Leste, with an average of 11.6 per cent over the sample period. This is followed closely by PNG, which registered an average bank lending-deposit spread of 9.2 per cent.

The higher value of the lending-deposit spread may be attributed to the large degree of liquidity in the financial system of Solomon Islands, implying that banks have sufficient sources of funding to continue the banking business in the country as opposed to being incentivised to lower the lending interest rates. Another contributing factor to the high level of spread may be the environmental risk, whereby banks argue that the local environment is highly risky and therefore that interest rates charged on loans are by necessity comparatively higher than other countries in the region (Rebei, 2014).

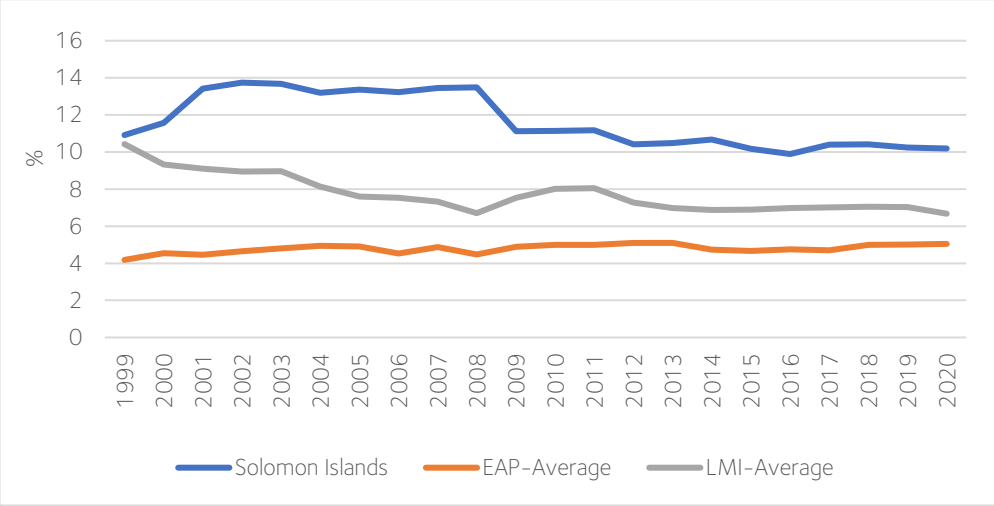
Figure 16: Bank lending-deposit spread in the Pacific region, 2002-2020 (%)



Source: Global Financial Development Database, World Bank.

Similarly, the bank lending-deposits spread for Solomon Islands is significantly higher compared to the EAP region and LMI countries, as seen in Figure 17. This outcome reflects the small size, high costs and risks of doing business as well as the low level of competition in the country's financial sector (CBSI, 1997).

Figure 17: Bank lending-deposit spread across the EAP region and LMI countries, 1999-2020 (%)

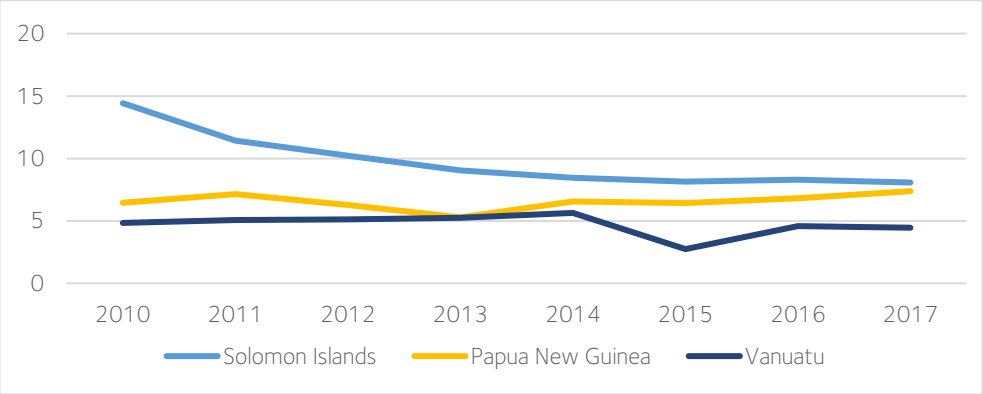


Source: Global Financial Development Database, World Bank.

Banks' Net Interest Rate Margin

Banks' net interest rate margin measures the difference between the interest income produced by a bank's earning assets and its major expenses, particularly interest paid to depositors. It is an indicator of a bank's profitability and growth. The lower the value, the more efficient the bank, although it may also imply low profitability (Lakštutienė, 2008). In contrast, the larger the value, the higher the profit-making potential of the bank, although this could also be an indication of lack of competition in the banking sector.

Figure 18: Banks' Net Interest Margin in other PICs, 2010-2017



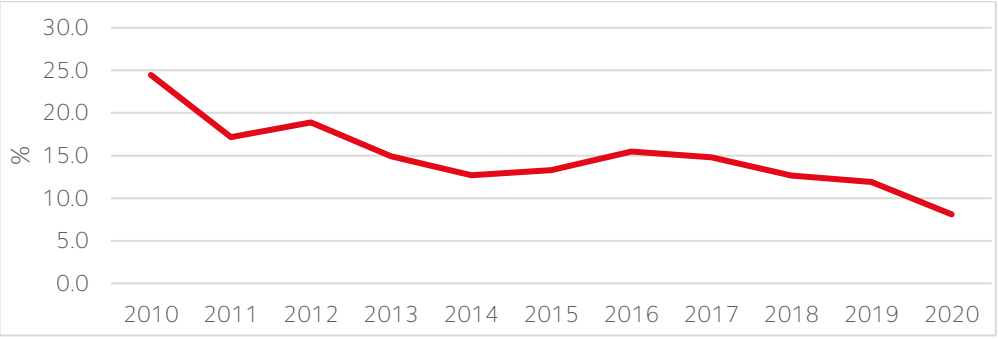
Source: Global Financial Development Database, World Bank.

Figure 18 compares the banks' net interest margin for Solomon Islands to other countries in the Pacific, and shows that Solomon Islands consistently featured the highest margin in the region from 2010 onwards, although it has been gradually declining in recent years. This could be ascribed to the underdeveloped nature of the country's financial system, which is prone to asymmetric information between lenders and borrowers, and the small size of the financial system, which results in high fixed costs of providing financial services. Given that foreign-owned banks are the primary vehicles of loanable funds for the formal sector in Solomon Islands, and that the number of banks has remained relatively unchanged over the years, it may be concluded that banks have been comfortable with high economic rents due to low competition.

Return on equity

Return on equity (ROE) is an indicator used by firms to measure the profitability and efficiency of financial institutions. It shows the return of what shareholders had invested in a firm. In the context of the banking sector, a higher ratio indicates that the financial institutions are performing better and maintaining higher profits.

Figure 19: Banks' ROE (after tax) in Solomon Islands, 2010-2020 (%)

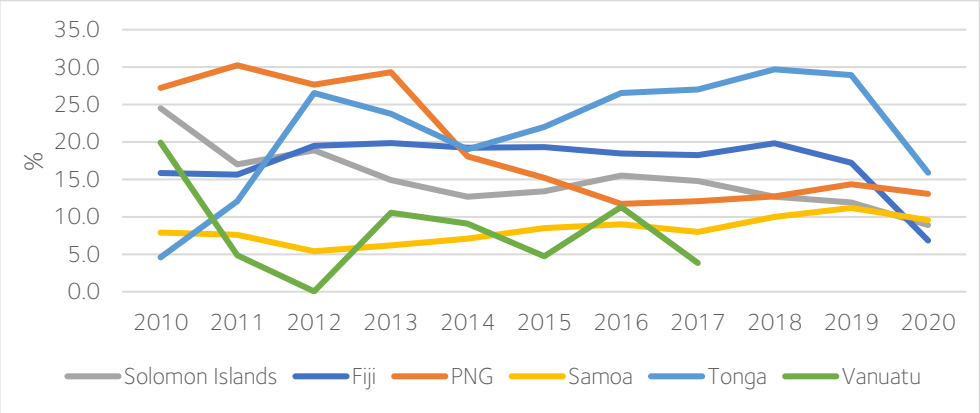


Source: IMF Financial Soundness Indicators.

Figure 19 shows that ROE (after tax) in Solomon Islands' banks declined gradually from 2010 to 2020. This outcome can be attributed largely to the subdued growth in profitability of the banking sector over the period, as a result of high operating costs—particularly for the new entrants, POB and BRED Bank—as well as sluggish growth in income due to rising NPLs. Also contributing to the fall in ROE was the increased competition in the banking sector resulting from the entry of POB and BRED Bank, in 2014 and 2017 respectively.

An examination of banks' ROE among selected countries in the Pacific region is presented in **Figure 20.** It shows that banks in Solomon Islands are among the highest in the region, hovering alongside Fiji in recent years, while it can be noted that Tonga's ROE has risen considerably post-2011.

Figure 20: Banks' ROE (after tax) in other PICs, 2010-2020 (%)

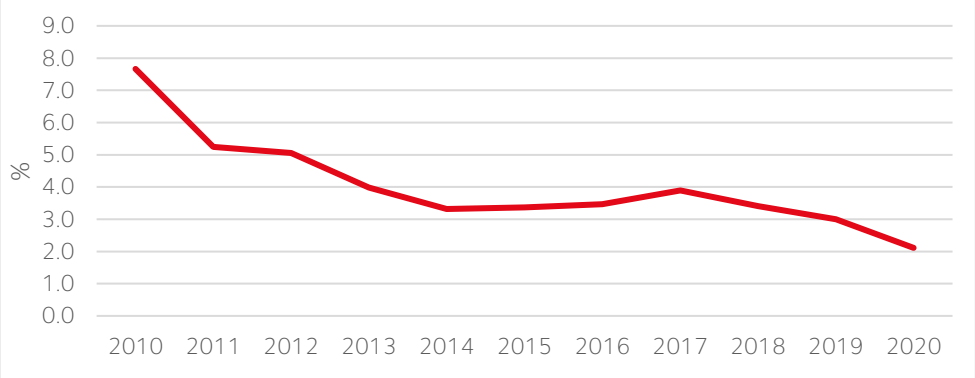


Source: IMF Financial Soundness Indicators.

Return on Assets

Return on assets (ROA) measures the return on total assets, including shareholders' capital and liabilities. ROA is also an indicator for profitability in the banking sector: the higher the ratio, the more profitable the bank. However, a higher ratio may also indicate inadequate market competition or monopolistic power and a largely inefficient financial intermediation process. In contrast, a declining ratio may indicate emerging efficiency and a profitability problem.

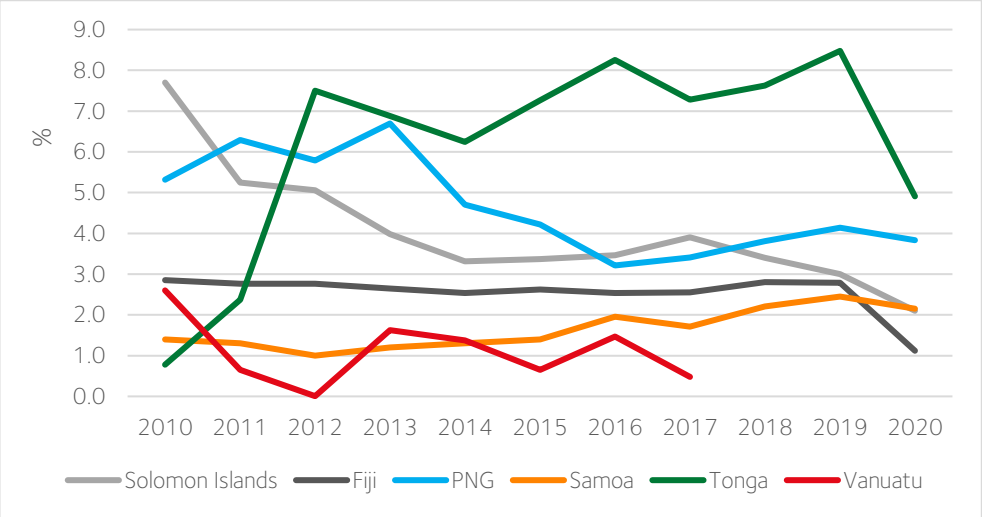
Figure 21: Banks' ROA (before tax) in Solomon Islands, 2010-2020 (%)



Source: IMF Financial Soundness Indicators and CBSI.

Figure 21 shows that the banks' ROA in Solomon Islands decreased overall between 2010 and 2020. At a regional level, Solomon Islands has one of the highest ROA in comparison to its regional peers, besides PNG and Tonga, as seen in **Figure 22**. From 2010 onwards, it the rate has gradually declined, picked up slightly in 2014 but began declining again starting in 2017. This indicates that the banking sector in Solomon Islands is amongst the highest profit earning banking sectors in the region.

Figure 22: Banks' ROA (before tax) in other PICs, 2010–2020 (%)



Source: IMF Financial Soundness Indicators and CBSI.

6. Conclusion and policy implications

This study provides some of the first known insights into the depth and efficiency trends in the Solomon Islands banking sector by using available financial depth and efficiency indicators as per the 4 x 2 financial development matrix indicators, and covering the 1980-2020 period. We benchmark Solomon Islands against other PICs and averages of the regional and income groups to which Solomon Islands belongs. The data is sourced from the GFDD of the World Bank, the IMF's FSI as well as data from CBSI.

Results show that the pace of financial deepening in the Solomon Islands has been slow, highlighting the underdeveloped nature of the country's financial system relative to its regional peers and income groups. The country's financial depth indicators—namely, private sector credit to GDP, financial systems deposit to GDP, deposit money banks assets to GDP, and broad money to GDP—are amongst the lowest in the region. Examining the banking efficiency indicators as per the 4 x 2 Matrix of Financial System Characteristics, Solomon Islands features relatively high interest rate spreads, high net interest rate margins, ROE and ROA compared to its regional peers. These are likely to keep potential borrowers and investors away from the formal financial sector. Although this outcome is favourable to commercial banks, which have been highly profitable over the years, this comes at the cost of efficiency in the provision of financial services in the economy.

Timeseries data availability and reliability issues limit the scope of our study. While deeper investigation is required to better understand banking efficiency in Solomon Islands and glean trends and implications more fully, these findings highlight the need for a more collaborative approach among all stakeholders in addressing the depth and efficiency challenges confronting the Solomon Islands banking sector.

There are several emerging policy implications from this study. First is the need to review the current Financial Institutions Act of 1998 and consider setting up a Financial Sector Development Plan to guide policy actions geared towards developing the country's financial sector. Secondly, policymakers may promote the role of non-bank institutions, such as micro-finance and credit unions, in servicing the informal sector so as to extend banking services to the unbanked population in the rural areas. The government could play an important role in allocating funding into these institutions and offer direct lending towards key productive sectors at a reasonable rate to stimulate economic activities for rural residents. As seen over the years, commercial banks have mostly serviced people employed in the formal sector, while the majority of the population in rural areas have limited or no access to financial services.

Thirdly, there is a need to encourage banks to move towards providing digital financial services in par with the newly launched Solomon Islands National Financial Inclusion Strategy 2021–2025. Fourthly, one of the critical infrastructures for the country's financial sector would be the establishment of a credit information and credit reporting bureau. Its role would be to collect information about the credit worthiness of lenders and borrowers and thus help in reducing the asymmetric information that exists in the credit market. Lastly, stable macroeconomic policies, especially from the government, would be critical in supporting financial development, particularly the growth of the banking sector.

Notes and references

Ahmed, AD, 2013, 'Effects of financial liberalization on financial market development and economic performance of the SSA region: An empricial assessment', Economic Modelling, vol. 30, pp. 261-73. https://doi.org/10.1016/j.econmod.2012.09.019

Akinboade, AO and Kinfack, EC, 2014, 'Financial Sector Development Indicators and Economic Growth in Cameroon and South Africa', *Social Indicators Research*, vol. 115, No. 2, pp. 813-36, https://www.jstor.org/stable/24720381.

Aluko, OA and Ajayi, MA, 2018, 'Determinants of banking sector development: Evidence from Sub-Saharan African countries', *Borsa Istanbul*, vol. 18, No. 2, pp. 122-39, https://ideas.repec.org/a/bor/bistre/v18y2018i2p122-129.html.

Andrianaivo, M and Yartey, CA, 2009, 'Understanding the growth of African financial markets', *IMF Working Paper*, WP/09/182, pp. 1-40, https://www.imf.org/external/pubs/ft/wp/2009/wp09182.pdf.

ANZ Bank, 2020, 'ANZ in the Solomon Islands', *About us*, Retrieved from ANZ: https://www.anz.com/solomonislands/en/about-us/anz-solomon-islands/.

Asia Development Bank, 2019, *Pacific finance sector brief: Solomon Islands*, Sydney: ADB.

Ataullah, A and Le, H, 2006, 'Economic reforms and bank efficiency in developing countries: the case of the Indian banking industry', *Applied Financial Economics*, vol. 16, pp. 653-63.

Barros, C, Tsionas, MG, Wanke, P and Azad, MA, 2018, 'Efficiency in banking of developing countries with the same cultural background: A novel distance function frontier model', *Journal of Economic Studies*, vol. 3, pp. 638-59.

Beck, T, Deirguc-Kunt, A and Levine, R, 2010, 'Financial Institutions and Markets across Countries and over Time: The Updated Financial Development and Structure Database', *The World Bank Economic Review*, vol. 20, no. 1, pp. 77-98.

Beck, T, Deirguc-Kunt, A and Levine, R, 2007, 'Finance, inequality and the poor', *Journal of Economic Growth*, vol. 12, pp. 27-49.

Beck, T, Levine, R and Loaya, N, 2000, 'Finance and the sources of growth', *Journal of Financial Economics*, vol. 58, pp. 261-300.

British Solomon Islands Protectorate, 1931, *British Solomon Islands Protectorate Annual Reports (AR) 1*, British Solomon Islands protectorate.

Bui, TN, 2020, 'Financial development in Vietnam: An overview' *Journal of Asian Finance, Economics and Business*, vol. 7, no. 9, pp. 169-78.

Calderon, C and Liu, L, 2003, 'The direction of causality between financial development and economic growth', *Journal of Development Economics*, vol. 72, pp. 321-34.

Central Bank of Solomon Islands, 1982, *Annual Report 1981*, Honiara: CBSI.

Central Bank of Solomon Islands, 1983, *Annual Report 1982*, Honiara: CBSI.

Central Bank of Solomon Islands, 1984, *Annual Report 1983*, Honiara: CBSI.

Central Bank of Solomon Islands, 1985, *Annual Report 1984*, Honiara: CBSI.

Central Bank of Solomon Islands, 1989, *Annual Report 1988*, Honiara: CBSI.

Central Bank of Solomon Islands, 1990, *Annual Report 1989*, Honiara: CBSI.

Central Bank of Solomon Islands, 1991, *Annual Report 1990*, Honiara: CBSI.

Central Bank of Solomon Islands, 1996, *Annual Report 1995*, Honiara: CBSI.

Central Bank of Solomon Islands, 1997, *Annual Report 1996*, Honiara: CBSI.

Central Bank of Solomon Islands, 1999, *Annual Report 1998*, Honiara: CBSI.

Central Bank of Solomon Islands, 2001, *Annual Report 2000,* Honiara: CBSI.

Central Bank of Solomon Islands, 2002, *Annual Report 2001,* Honiara: CBSI.

Central Bank of Solomon Islands, 2003, *Annual Report 2002,* Honiara: CBSI.

Central Bank of Solomon Islands, 2007, *Annual Report 2006,* Honiara: CBSI.

Central Bank of Solomon Islands, 2008, *Annual Report 2007,* Honiara: CBSI.

Central Bank of Solomon Islands, 2009, *Annual Report 2008,* Honiara: CBSI.

Central Bank of Solomon Islands, 2011, *Annual Report 2010,* Honiara: CBSI.

Central Bank of Solomon Islands, 2014, *Annual Report 2013,* Honiara: CBSI.

Central Bank of Solomon Islands,1998, *Central Bank of Solomon Islands*, Retrieved from Financial Instituions Act 1998: http://www.cbsi.com.sb/wp-content/uploads/2016/06/financial-institutions-act-1998.pdf.

Chaluvadi, S, Raut, R and Gardas, BB, 2018, ‚Measuring the peformance efficiency of banks in a developing economy: The case study of Indian public sector vs private sector', *Benchmarking: An International Journal*, ol. 25, no. 2

Chen, Y and Wang, Y, 2015, 'The effiiciency of China's banking industry and determinants', *International Economic Journal*, vol. 29, no. 4, pp. 631-53.

Cihak, M, Demirguc-Kunt, A, Feyen, E and Levine, R, 2012, 'Benchmarking financial systems around the world', *Policy Research Working Paper No.89*, pp. 748-73.

Claessens, S, 2009, 'Competition in the financial sector: Overivew of competition policies', *International Monetary Fund WP/09/45*, pp. 1-35.

Dadzie, JK and Ferrari, A, 2019, 'Deregulation, efficiency and competition in developing banking markets: Do reforms really work? A case study for Ghana', *Journal of Banking Regulation*, vol. 20, pp. 328-40.

Development Bank of Solomon Islands, 2021, The Development Bank of Solomon Islands' History. Retrieved from DBSI: https://dbsi.sb/about-us/our-brief-history.html.

Demirguc-Kunt, A and Huizinga, H, 2000, 'Financial structure and bank profitability', *The World Bank Policy Research Working Paper, No. 2430*, https://openknowledge.worldbank.org/handle/10986/21368.

Dewi, S, Majid, MS, Aliasuddin, A and Kassim, SH, 2018, 'Dynamics of financial development, economic growth and poverty alleviation: The Indonesian experience', *South East European Journal of Economics and Business*, vol. 13, no. 1, pp. 17-30. https://sciendo.com/article/10.2478/jeb-2018-0002.

Erlando, A, Riyanto, FD and Masakazu, S, 2020, 'Financial inclusion, economic growth, and poverty alleviation: Evidence from Eastern Indonesia', *Heliyon*, vol. 6, pp. 1-13.

Godfrey, OU, 2022, ‚Impact of micro finance banks on developing economies - Evidence from Nigeria', *Journal of Economics, Finance and Management Studies*, vol. 5, no. 4, pp. 1147-58, https://ijefm.co.in/v5i4/Doc/23.pdf.

Feyen, E and Zuccardi, I, 2020, 'Bank lending rates and spreads in EMDEs: Evolution, drivers and policies', *World Bank Blogs*, 2 November, https://blogs.worldbank.org/allaboutfinance/bank-lending-rates-and-spreads-emdes-evolution-drivers-and-policies

Fowowe, B, 2010, 'Financial liberalisation and financial fragility in Nigeria', *Economic and Financial Review*, vol. 48, no. 1, pp. 71-92.

Hasan, I and Marton, K, 2003, 'Development and efficiency of the banking sector in a transitional economy: Hungarian experience', *Journal of Banking & Finance*, vol. 27, pp. 2249-71.

Hou, R, 2002, 'The Solomon Islands economy: Recent developments and the impact of ethnic tensions', *Pacific Economic Bulletin*, vol. 17, no. 2, pp. 15-32.

Huang, Y, 2011, 'Determinants of financial development' in Y Huang, *General determinants of financial development*, London: Palgrave Mcmillion, pp. 10-63.

Kaban, S, 2010, 'Banking efficiency and financial development in Sub-Saharan Africa', *International Monetary Fund WP*, pp. 3-20.

Kagochi, J, 2019, 'Inflation and financial sector development in Sub-Saharan African countries', *Journal of Economic Studies*, vol. 46, no. 4, pp. 798-811.

Lakštutienė, A, 2008, 'Correlation of the indicators of the financial system and gross domestic product in European Union countries', *Engineering Economics*, vol. 58, pp. 7-18.

Lensink, BW and Hermes, CLM, 2004, The short-term effects of foreign bank entry on domestic bank behaviour: Does economic development matter? Journal of Banking and Finance, 28 (3), 553-568.

Levine, R, 1997, 'Financial development and economic growth: Views and agenda', *Journal of Economic Literature*, vol. 35, no. 2, pp. 688-726.

Levine, R, 2005, 'Finance and growth: Theory and evidence', in P Aghion and S Durlauf, *Handbook of Economic Growth*, The Netherlands: Elsevier Science, pp. 865-934.

Levine, R, 2018, 'Finance, growth and economic prosperity', *Macroeconomic Review*, vol. 17, no. 1, pp. 82-8. https://faculty.haas.berkeley.edu/ross_levine/Papers/2018_MAS_Macro_Review.pdf.

Mousa, N, 2018, 'The impact of financial development on the profitability of the banking sector in Lebanon', *BAU Journal - Health and Wellbeing*, vol. 1, No. 3, pp. 1-11.

Muyambiri, B and Odhiambo, N, 2016, 'The sequencing of financial reforms and bank-based financial development in Mauritius', *Journal of Accounting and Management*, vol. 6, no. 1, pp. 89-114.

Muyambiri, B and Odhiambo, NM, 2015, 'The evolution of the financial system in Bostwana', *African Journal of Business and Economic Research*, vol. 10, no. 2, pp. 87-113.

Nguyen, TPT, Roca, E and Sharma, P, 2014, 'How efficient is the banking system of Asia's next economic dragon? Evidence from rolling DEA windows', *Applied Economics*, vol. 46, no. 22, pp. 2665-84.

Paulet, E and Mavoori, H, 2021, 'Cross-regional analysis of banking efficiency drivers', *Applied Economics*, vol. 53, no. 18, pp. 2042-65.

Phan, HT, Daly, K and Akhter, S, 2016, 'Bank efficiency in emerging Asian countries', *Research in International Business and Finance*, vol. 38, pp. 517-30.

Prasad, K, Alam, MS and Sharma, P, 2018, 'Finance and socio-economic development in Fiji: Some stylized facts', *Griffith University–South Pacific Central Banks Joint Policy Research Working Paper No.5*, pp. 1-32. https://www.griffith.edu.au/__data/assets/pdf_file/0031/479218/JPRWP5-web.pdf

Rebei, N, 2014, 'Determinants of interest rate spreads in Solomon Islands', *IMF Working Paper 14/105*, pp. 1-24.

Scott, DA and Browne, C, 1989, 'Solomon', in DA Scott and C Browne, *Economic Development in Seven Pacific Island Countries*, Washington DC: IMF, pp. 109-134.

Shayanewako, VB and Tsegaye, A, 2018, 'The impact of interest rate spread on the banking system efficiency in South Africa', *Cogent Economics & Finance*, vol. 6, no. 1, https://www.tandfonline.com/doi/full/10.1080/23322039.2018.1546417.

Seetanah, B, Ramessur, ST and Rojid, S, 2009, 'Financial development and economic growth: New evidence from a sample of island economies', *Journal of Economic Studies*, vol. 36, no. 2, pp. 124-34.

Solomon Islands National Statistics Office, 2018, 'Gross Domestic Product 2003-2016', *Statistical Bulletin: 2/2018*, Honiara: SINSO.

Slesman, L, Baharumshah, AZ and Azman-Saini, W, 2019, 'Political institutions and finance-growth nexus in emerging markets and developing countries: A tale of one threshold', *The Quarterly Review of Economics and Finance*, vol. 72, pp. 80-100.

Solomon Encyclopaedia, n.d., *Solomon Islands Historical Encyclopaedia 1893-1978*, https://www.solomonencyclopaedia.net/biogs/E000022b.htm

Solomon Islands Monetary Authority, 1977, *First Annual Report 1976*, Honiara: SIMA.

Solomon Islands Monetary Authority, 1982, *Solomon Islands Monetary Authority Annual Report 1981*, Honiara: CBSI.

Sterne, G, 1996, 'Monetary policy in Solomon Islands', *Pacific Economic Bulletin*, vol. 11, no. 2, pp. 70-90.

Takeshi, I and Hamori, S, 2016, 'Financial access and economic growth: Evidence from Sub-Saharan Africa', *Emerging Markets Finance and Trade*, vol. 52, no. 3, pp. 743-53.

Notes

1 The 4 x 2 Matrix is a framework that captures the overall broad structure of the financial sector, in particular (a) the relative sizes of financial institutions and markets (financial depth), (b) degree to which individuals can and do use financial services (access), (c) efficiency of financial intermediaries (efficiency), and (d) stability of financial institutions and markets (stability) (Cihak et al., 2012).

2 The World Bank World Development Indicators, 2021.

3 World Bank World Development Indicators, 2021.
4 RAMSI is an Australian-led partnership with 15 Pacific Island Countries requested by the Solomon Islands Government to restore law and order in Solomon Islands following the period of ethnic tension between 1999 and 2003.
5 Solomon Islands RGDP percentage change at 2012 as base year.
6 Public administration and defence relate to the government's fiscal operations and includes expenditure on health and education.
7 The financial sector includes both financial intermediation and insurance services.
8 Later renamed to BSP Financial Group Limited (SI branch).
9 From 1980 to 2000, NBSI comprised of foreign and government shares. In 2002, foreign shares in NBSI were sold to the government. In 2007, BSP (now renamed BSP Financial Group Limited (SI branch)) took over the government-owned NBSI.
10 Savings clubs and microfinance institutions are not licensed or supervised by the central bank.
11 LAR is now known as the Cash Reserve Ratio (CRR).
12 Bokolo Bills is an OMO tool issued by the Central Bank mainly to mop up excess liquidity in the financial system.
13 Private sector credit by deposit money banks to GDP refers to financial resources provided to the private sector by deposit money banks as a share of GDP. This measure does not distinguish between banks of different ownership types. Also, it does not include securitised loans, as it refers only to loans on the balance sheet of the bank (Beck et al., 2010).
14 Deposit money banks' assets to GDP refers to claims on the domestic real non-financial sector by deposit money banks as a share of GDP. These assets include claims on the domestic real non-financial sector, i.e. central, state, and local governments, non-financial public enterprises, and the private sector. Deposit money banks comprise commercial banks and other financial institutions that accept transferrable deposits such as demand deposits.

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