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***Finance and Socio-economic Development in Fiji:
Some Stylized Facts***

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Abstract

This study begins to fill the gaps in the literature on financial development trends in Pacific Island Countries using Fiji as a case study against other Pacific Island Countries and comparable economies since the early 1990s. The study also briefly tests the finance vis-à-vis economic growth, poverty, income inequality and health relationships. Results show that Fiji's financial sector has been developing positively over the last 26 years and the performance has been encouraging against comparable economies. Results also indicate positive relationships of finance with economic growth, poverty, income inequality and health. This study provides a sound basis for further investigations into the finance vis-à-vis various socio-economic relationships, with likely policy outcomes.

Keywords: financial development, growth, poverty, inequality, health, Fiji

The Reserve Bank of Fiji's Policy Research Working Paper Series endeavours to disseminate the findings of work in progress to academics, governments and the public at large to encourage the exchange of ideas relating to the development of Fiji's financial sector and thereby national economic growth and development. Getting the findings out quickly, even if work is still in draft form, is expected to encourage early and wider debate. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors and do not necessarily represent the views of the Reserve Bank of Fiji or the Government of Fiji.

1.0 Introduction

Once merely a footnote in the economic growth and development debate, finance is now widely accepted as a cornerstone for advancing a nation's growth, development, welfare, and poverty alleviation (see, for example, Levine 1997, 2005; Luintel and Kahn 1999; Levine and Zervos 1996; King and Levine 1993a, 1993b). Benefits manifestly abound, especially for the traditionally underserved segments of societies, across both the developed and less developed worlds, including households and small and medium enterprises (SMEs) (see, for example, de la Torre, Martínez Pería, and Schmukler 2010; Beck, Demirgüç-Kunt, and Martínez Pería 2011; Beck and Demirgüç-Kunt 2006). More broadly, deep financial systems provide better resilience to external shocks as well as measured protection from volatility and crises (see, for example, Easterly, Islam, and Stiglitz 2000; Aghion, Banerjee, and Piketty 1999; Acemoglu and Zilibotti 1997). Policy proposals and efforts thus incontestable, involving, among others, improving access to banks (for savings, credit, and financial transactions in general) and developing capital markets as an alternative and competitor to the bank model. The financial development literature, aimed at investigating trends, relationships, and making policy recommendations has expanded exponentially over the last few decades and has spanned numerous countries and regions, both developed and less developed. Financial sector reforms intended to expand scope and depth too have been a commonplace. Reforms have not evaded the small island nations of the Pacific as well. For example, in the case of Fiji, reforms have included major revisions to the banking act and prudential policies, guidelines and directives (Sharma et al. 2015).

Yet, the financial sector of Fiji and the other Pacific Island Countries (PICs) remain anecdotally underdeveloped. Intriguingly, little rigorous academic research is available to systematically understand the trends, status, various relationships and policy recommendations in the PIC context. Thus the intention of the current paper, endeavouring to make a meaningful preliminary contribution towards that end and, using Fiji as a case study, provide some stylized financial development facts. We do this using common measures such as private sector credit to GDP, financial sector deposit to GDP, stock market capitalisation, bank branches per 100,000 adults and bank credit to bank deposit ratio. First, we briefly define the measure and its significance, subsequently, we map the trends for Fiji over the 1990-2016 period. For a more meaningful insight, we then compare Fiji's trends with comparable economies. Fiji is an upper middle income, island economy; comparable economies thus include Guyana, Jamaica, Maldives, Panama as well as Pacific Island countries (PICs). Our sources of data include the Global Financial System Database, International Monetary Fund, World Bank and Reserve Bank of Fiji.

In addition, using the above several measures of financial development, the paper tests a number of finance related relationships for Fiji, including growth, poverty alleviation, income inequality, and health. Previous limited studies have touched on the finance-growth nexus (Sharma and Gounder 2017; Jayaraman, Choong, Ng 2016; Jayaraman and Chen 2015) but that on finance vis-à-vis poverty alleviation, inequality and health appears scantly, if at all available. Among these, the finance-*health* nexus is of keen interest as the literature on this is just beginning to emerge. Thus, preliminary it may be, our study makes useful contributions to the literature, with tentative policy recommendations. Results show that Fiji's financial sector has been developing positively over the last 26 years and the performance has been encouraging against comparable economies. Results also indicate positive relationships of finance with economic growth, poverty, income inequality and health. This study provides a

sound basis for further investigations into the finance vis-à-vis various socio-economic relationships, with likely policy outcomes.

The rest of the paper is structured as follows. Section 2 provides stylised financial development facts for Fiji and provides a comparative analysis. Section 3 tests the finance-growth relationship. Section 4 tests the finance vis-à-vis poverty alleviation and income inequality relationships. Section 5 tests the finance-health nexus. Section 6 concludes with some policy recommendations.

2.0 Financial development, Fiji and comparative countries, 1990-2016

Extant literature has developed various indicators over time to measure the depth, access, efficiency and stability aspects of banking and stock market development i.e. the 4 x 2 matrix (Cihak, et al. 2012); a comprehensive list of this is provided in Appendix 1. In charting Fiji's financial development, two things we are mindful of: (i) availability of time-series data for Fiji as well as comparator countries; and (ii) the financial sector is heavily bank-centric—financial markets, if any, are best resembled by the stock market—money and bond markets are virtually non-existent—and the stock market too, is extremely small and relatively inactive (Sharma and Roca, 2012). Accordingly, the measures we use in this study include private sector credit to GDP, financial system deposits to GDP, bank credit to bank deposits, bank branches per 100,000 adults, and stock market capitalization to GDP to map Fiji's trends over the 1990-2016 period.

2.1 Private Sector Credit to GDP

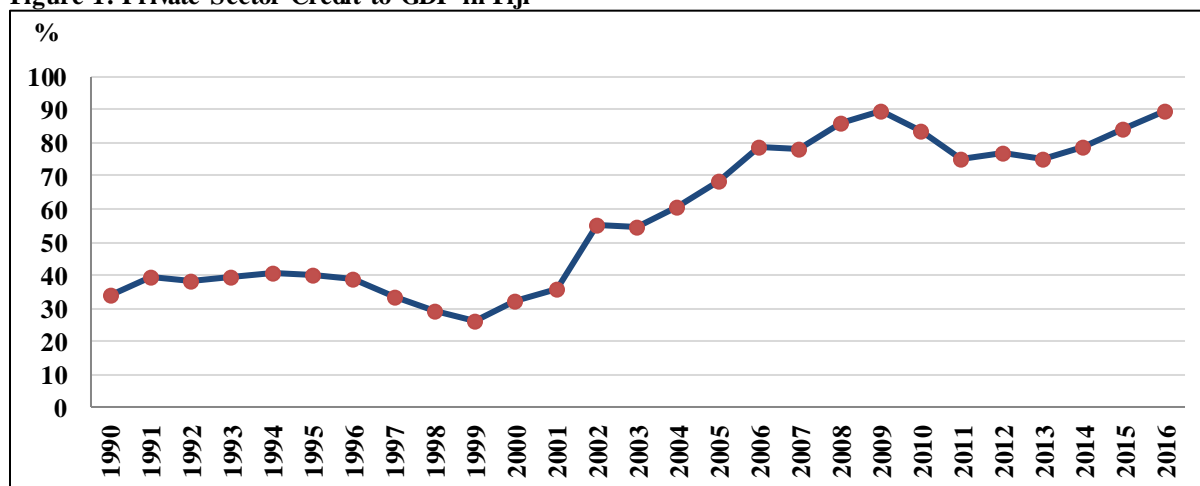
Fiji

Credit is an important link in money transmission; it finances production, consumption, and capital formation, which in turn influences economic activity. Private sector plays a vital role in the economic development and prosperity of an economy i.e. the better the private sector gets, the bigger role it has in the welfare of the overall economy (Hayes and Ebinger. 2011, Khan and Reinhart 1990). The increasing share of private sector is generally a good sign of the health of the financial system and thus the national economy. An economic measure of this is *domestic credit to private sector*. This refers to financial resources provided to the private sector by financial corporations through loans, purchase of non-equity securities and trade of credits and other accounts receivable, that establish a claim for repayment.¹ The higher this measure, the higher financial resources or financing is to private sector in a country and so the greater opportunity and space for the private sector to develop and grow.

Besides economic growth, domestic credit to the private sector is closely linked to poverty reduction and income equality (Jianu 2017). Private markets are the engine of productivity growth, creating productive jobs and higher incomes thus reducing income inequality. While government plays a complementary role of regulation, funding, and service provision, private initiative and investment can help provide the basic services and conditions that empower poor people via improvements to health, education, and infrastructure.

¹ For some countries these claims include credit to public enterprises. The financial corporations include monetary authorities and deposit money banks, as well as other financial corporations where data are available (including corporations that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other financial corporations are finance and leasing companies, money lenders, insurance corporations, pension funds, and foreign exchange companies.

Figure 1: Private Sector Credit to GDP in Fiji



Data Source: Global Financial System Database

With respect to Fiji, domestic credit to private sector appears to have significantly improved over the 1990–2016 period (Figure 1). The ratio domestic credit to the private sector averaged 36.0 percent in the 1990s with noticeable increase to 65.7 percent in the first decade of the 2000s. This increased further to 80.0 percent in the 2011—2016 period.

Firstly, over the years there has been a lot of market development in Fiji’s financial system which saw increase in the number of institutions providing funds to the private sector. As such, increased lending from the commercial banks, licensed credit institutions, Fiji Development Bank and Housing Authority in the review period led to the overall increase in domestic credit to the private sector. Secondly, despite certain unforeseen circumstances along the way such as political instabilities, devastating impact of natural disasters and one off events like the devaluation of the Fiji dollar, the Fijian economy has maintained a good pace of economic growth. In fact, the economy had achieved seven consecutive years of growth by the end of 2016 which in turn leads to increased private sector activities as confidence in the economy improves. This is evidenced by the increase in credit to private sector business entities over the years for substantial investment related projects.

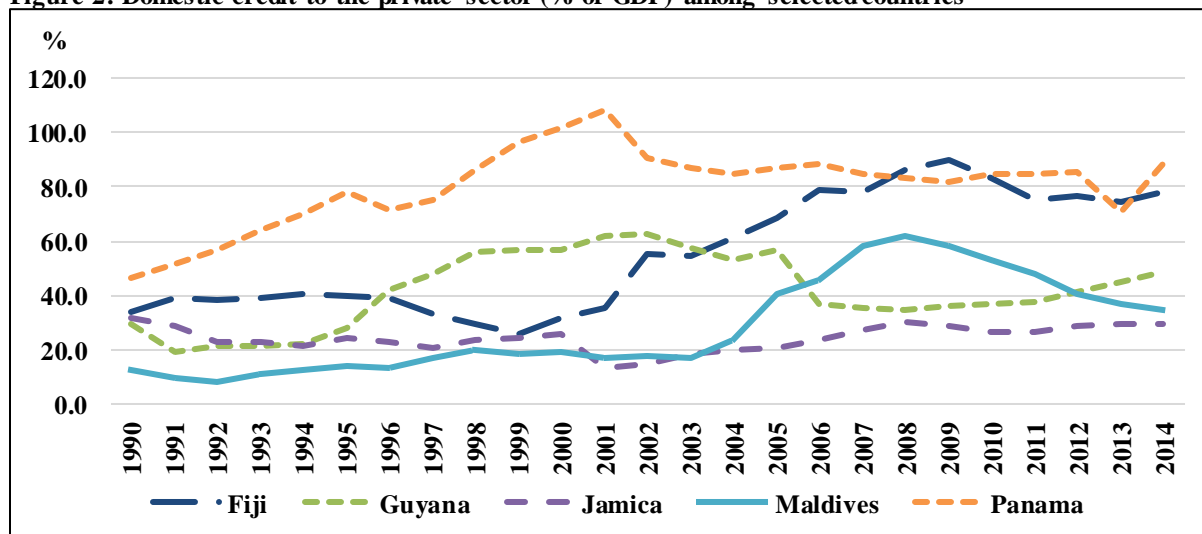
Third, the interest rate changes over the years have also influenced the levels of domestic credit to private sector. While in the 1990s, the interest rate was not an important factor for credit; the effect can be clearly seen in the 2000s. To boost activity in the economy, the Reserve Bank of Fiji (RBF) applied an expansionary monetary policy strategy during post 2000 coup, gradually decreasing the Overnight Policy Rate (OPR) from a high of 5.00 percent to a lower 1.25 percent till 2004. This provided opportunity to the private sector to take advantage of low rates to increase investments thus increasing demand for credit. The RBF increased rates gradually from 2004 to 2006 which somewhat stabilised the private sector credit, while it still grew but at a slower pace. In the recent past, the RBF again decreased rates from 3.00 percent in 2010 to a lowest ever 0.5 percent in 2011 which continues to date. This expansionary policy has kept the lending rates at historically low levels which have boosted demand from the private sector even more. In addition to this, the developments in certain sectors over the years specifically the housing sector in Fiji has boosted domestic credit to the private sector.

Fiji and comparative countries

Figure 2 compares credit to the private sector (% of GDP) among selected countries. When looking at the domestic credit that was advanced to the private sector amongst these countries over the review period, Fiji has the largest growth since 1990. While Panama has the highest level of domestic credit to private sector as per latest available data, its growth when compared to 1990 in comparison to Fiji is slightly lower. This is followed by Maldives and Guyana. Jamaica, however noted a decline in the ratio in comparison to 1990. Looking at the 1990s period alone, all the countries with exception of Fiji noted gradual increase in the ratio. In the early 2000s, Guyana and Panama had higher domestic credit to private sector compared to Fiji while the others noted lower ratio. This changed significantly in the later years as Fiji registered tremendous growth in the ratio and in the 2008 and 2009 period surpassed all the other countries.

Interestingly, post the millennium Fiji and Maldives noted a similar trend for several years and reached their respective peaks at around the same time. At the same time, Fiji has had a contrasting relationship with Guyana throughout the review period. When looking at domestic credit to private sector for Jamaica and Fiji, it is apparent that at the beginning of the review period both countries had similar levels of domestic credit to private sector, however while Fiji gained quite a lot of momentum since then, Jamaica maintained a relatively low ratio. As per latest available data, Fiji has made progress in terms of providing credit to the private sector to facilitate development in the country.

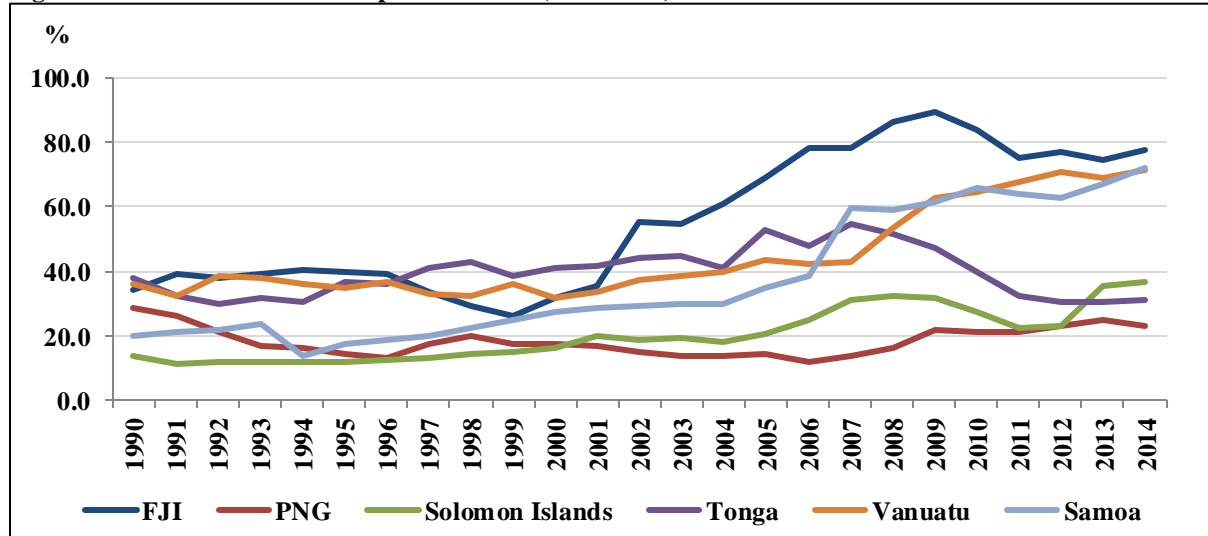
Figure 2: Domestic credit to the private sector (% of GDP) among selected countries



Data Source: Global Financial System Database

In addition to the above, when comparing Fiji's domestic credit to the private sector amongst PICs it is seen that Fiji registered higher ratios (Figure 3) closely followed by Vanuatu and Samoa. This is not surprising given that Fiji compared to other PICs has more banks and a fast evolving private sector which demands more credit.

Figure 3: Domestic credit to the private sector (% of GDP) for PICs



Data Source: Global Financial System Database

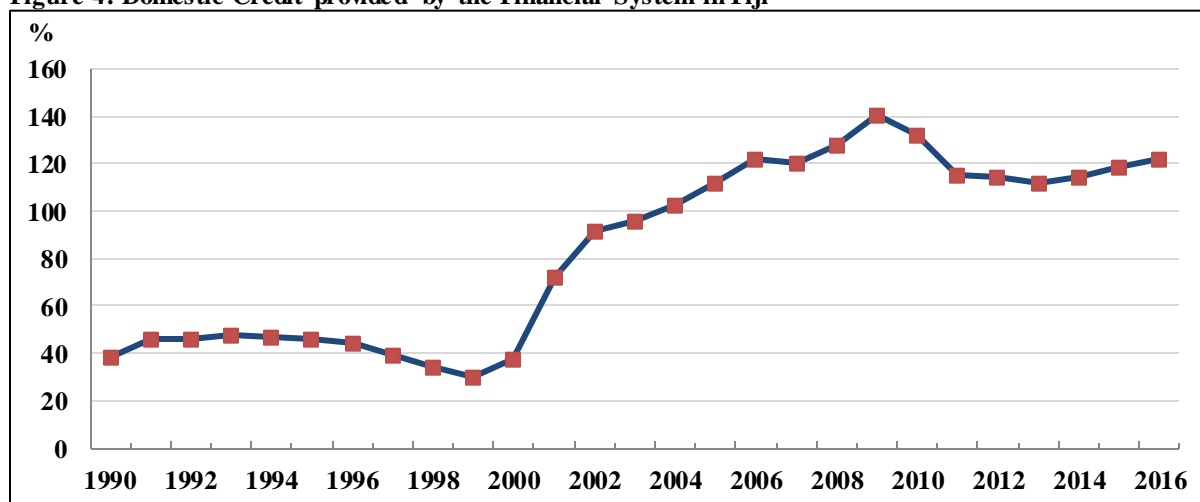
2.2. Financial System Deposits to GDP

Fiji

The growth and development of an economy depends on the finance available to the economic sector to engage in economic activity. The ability to provide relevant financing is dependent on the ability of the financial system to mobilise adequate amount of deposits in the economy and other sources of funding. As such, deposits play a key role in the credit creation process in an economy. These are converted into loanable funds² which are channelled into investments by the private sector which eventually enhances output growth in an economy. The process by which deposits in the financial system is transformed into real productive capital is at the core of financial intermediation. The impact of deposits is usually measured by the *financial system deposits to GDP*. The higher the ratio the better it is for an economy as it shows that deposits are channelled into productive investments which helps improve output.

² Financial system deposits are made up of deposit accounts at a banking institution, including savings accounts, current accounts, and fixed deposits.

Figure 4: Domestic Credit provided by the Financial System in Fiji



Data Source: Global Financial System Database

In the case of Fiji, the deposit to GDP has been on an upward trajectory in the sample period. While deposits in the financial system during the 1990s grew at a slower pace, the momentum picked up in the 2000s (Figure 4).

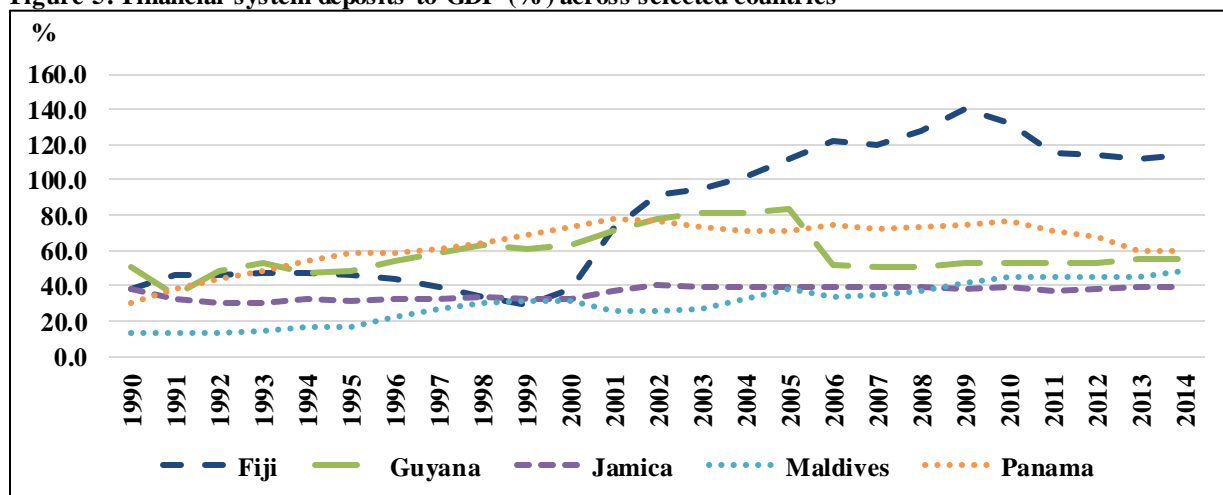
Fiji's financial system has evolved relatively well in the review period particularly in terms of assets, loan portfolio as well as deposits. The boost in these has been due to new market players over the years. During the 1990s, deposit rates trended downwards. For instance, time deposit rates declined from around 7.00 percent in the early 1990s to around 2.50 percent by the end of the decade. Similarly, savings deposit rates declined from around 4.00 percent at the beginning of the period to around 1.00 percent by the end of the decade. The decline in rates discouraged depositors which can be seen in the relatively lower and slowing down financial system deposit to GDP ratio. In the 2000s, while the economy recovered from the two coup d'états and several natural disasters, deposit to GDP improved. The period also saw new entrants in the market that gave rise to the deposit volume while the sustained economic growth in the economy increased investment avenues as well.

As far as deposit available for credit is concerned, this is mainly affected by the liquidity within the financial system. The Fiji dollar has been devalued twice in the review period i.e. in 1998 and 2009 due to liquidity crisis evident from low levels of banks exchange settlement account balances and this is also clear from the graph above that the deposit available for credit creation slowed. Nevertheless, ample liquidity in the financial system in the recent past has kept deposit at high levels and is subsequently reflected in high levels of credit in the financial system. Besides these, the increase in national income over the years and expansion in banking facility in Fiji has also given a boost to deposit available for credit in the financial system.

Fiji and comparative countries

Figure 5 shows financial system deposits to GDP (%) across selected countries which depicts that all five economies registered notable movements in this ratio. In the case of Fiji, despite a series of natural disasters, political uncertainty, severe drought and devaluation of the Fiji dollar in the 1990s and 2000s, the trends are comparable. Looking at recent trends except Panama, all other economies have showed an upward trend in the financial system deposits contribution towards GDP.

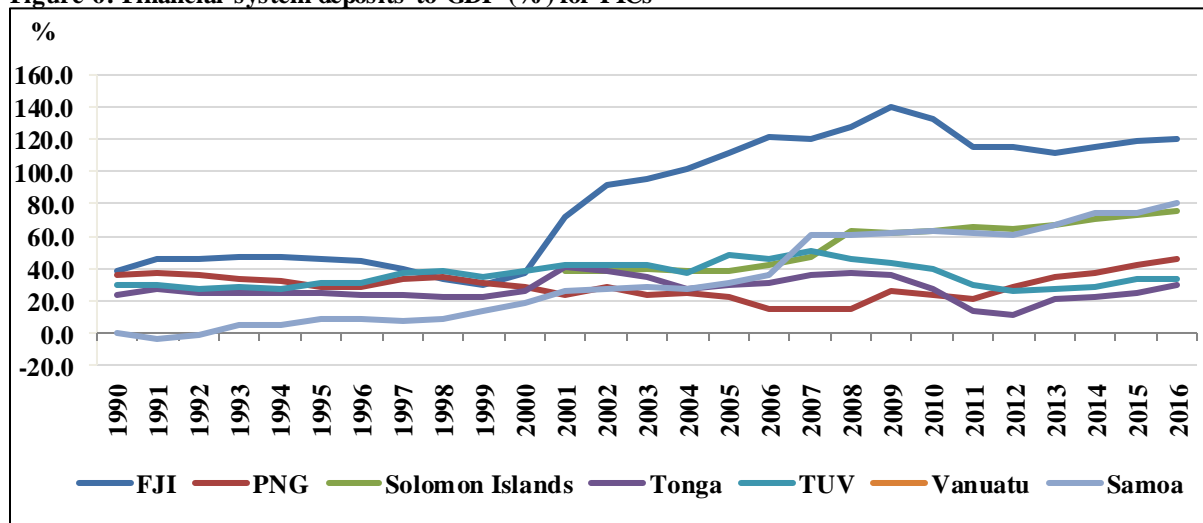
Figure 5: Financial system deposits to GDP (%) across selected countries



Data Source: Global Financial System Database

The financial system deposit to GDP for Fiji in comparison to PICs has also been relatively higher over the years (Figure 6). While in the 1990s, the financial system deposits of all elected PICs were at similar levels, post the millennium despite glitches in the economy, Fiji's financial sector deposit ratio shot up and remains at high levels. This outcome is supported by continuous banking industry development in Fiji. With consecutive growth in the economy over the years also the financial system deposits have increased.

Figure 6: Financial system deposits to GDP (%) for PICs



Data Source: Global Financial System Database

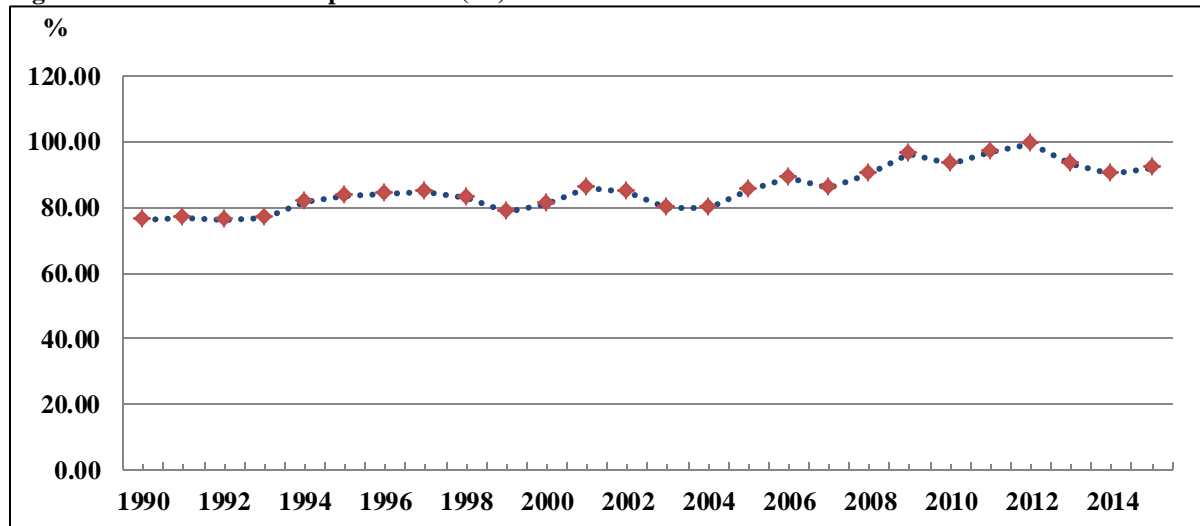
2.3. Bank Credit to Bank Deposits (%)

Fiji

Given the movements in deposits and bank credit, it is important to look at the credit to deposit ratio (LDR), which is a measure for assessing banks' liquidity in order to see if banks' deposits are at sufficient levels to cover for any unforeseen fund requirements. A combination of prudential and regulatory requirements suggests a loan-to-deposit ratio of around 80-90 percent for banks (Van dan end 2013). Domestic money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits. Total deposits include demand, time and saving deposits. Bank credit to bank deposits is an indicator for financial stability. The appropriate level of this ratio is

dependent of the level of development and the efficiency in the financial system. A very high bank credit to deposit ratio indicates that banks might not have enough deposit or liquidity in the system to cover for any unforeseen funding requirements in times of an economic crisis. On the other hand, a relatively low ratio indicates that banks might not be earning an optimal return.

Figure 7: Bank Credit to Deposit Ratio (%)



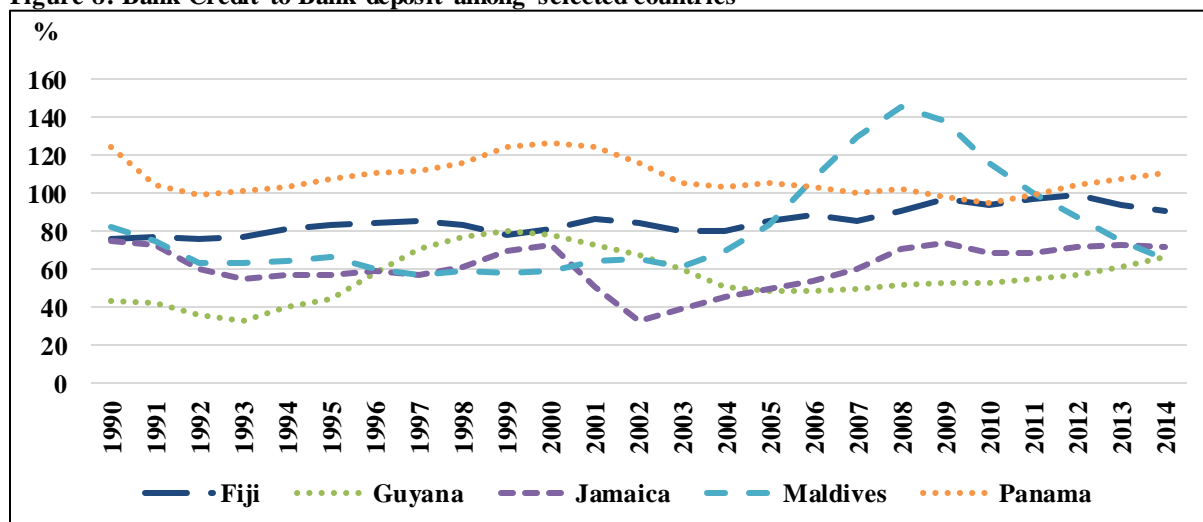
Data Source: Global Financial System Database

Fiji's bank credit to deposit ratio has grown over the review period, mostly due to the expansion in the financial system. The ratio has grown from around 76.0 percent in the early 1990s to around 90.0 percent in recent years. The outcome is due to significant growth in loans and deposits. This suggests that most of its deposits are lent out as loans in Fiji's financial system. Over the review period looking at the upward trend in the ratio, it could be said that loan portfolio in Fiji has grown faster than the deposit base. Going forward this is dependent on the outlook for interest rates in the economy which will eventually affect the pace of growth for deposits and loans.

Fiji and comparative countries

Figure 8 below presents a comparison of bank credit to bank deposit among selected countries. Over the review period, the ratios have ranged from a low of 32.0 percent to a high of 145.0 percent. These can be considered as extreme cases as one could be considered too low to affect bank profitability while the other would be considered too high and riskier. For Fiji, the ratio has always been above 75.0 percent but remained below the 100.0 percent which is considered as within the traditionally acceptable benchmark.

Figure 8: Bank Credit to Bank deposit among selected countries³



Data Source: Global Financial System Database

Comparing this to the other four economies, the ratio is around somewhat at median levels. Guyana and Jamaica has maintained lower ratios than Fiji over the review period with some fluctuations along the way, while Panama has maintained a higher credit to deposit ratio over the same period compared to the other economies. Interestingly, Maldives had lower credit to deposit ratio in the 1990s and the early 2000s compared to Fiji which later surpassed all economies and noted tremendous growth in the 2005 to 2009 period and gradually fell afterwards. As per latest data available, Maldives credit to deposit ratio went below Fiji, Panama and even Jamaica.

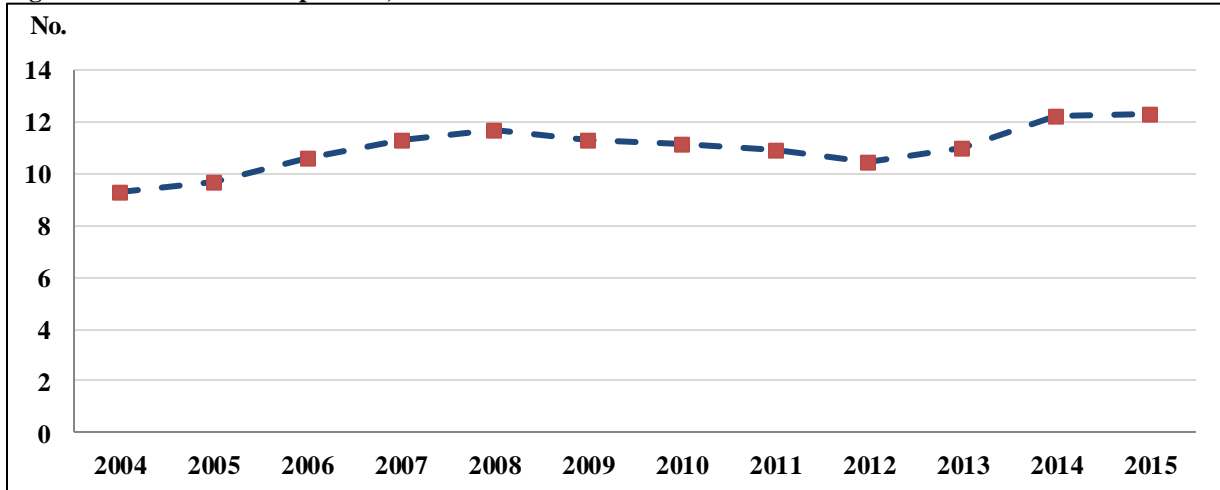
2.4. Bank Branches per 100,000 Adults

Fiji

Financial development is closely linked to the development of financial access facilities which allows for a wider financial access which supports technological progress and innovation. An indicator that is used to capture the depth and access to the financial sector is *bank branches per 100,000 adults*. The demographic access helps in understanding the ease of access to finance for people in a country. Higher number of branches per 100,000 adults indicate wider access.

³ Data is not available for PICs

Figure 9: Bank Branches per 100,000 adults



Data Source: Global Financial System Database

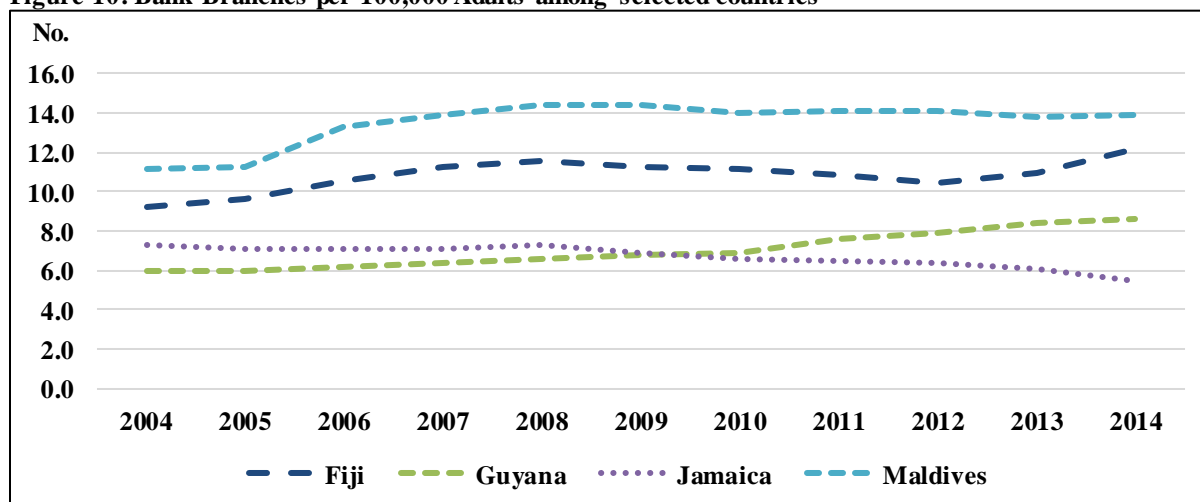
Given a population of just under a million, Fiji has progressed well over the years in terms of providing easier and wider access to finance for its people. Over the course of past decade and a half the number of bank branches per 100,000 adults has increased from 9.3 per 100,000 adults to around 12.3 and given the expansion in economic activity and new entrants in the market, this is expected to further increase in the near to medium term.

Fiji and comparative countries

Figure 10 provides comparison bank branches per 100,000 adults among selected four countries. Due to the data unavailability, we could not include Panama for this part of analysis. Looking across four of these economies, Maldives registered the higher ratio throughout the review period of an average of 13.5 bank branches per 100,000 adults followed by Fiji which averaged around 10.8 branches while Guyana and Jamaica noted an average of around 7.7 and 6.7 branches per 100,000 adults, respectively.

Looking at the progress over the ten year period, Fiji has improved from around 9 branches to around 12 bank branches per 100,000 adults. A similar trend can be seen for Maldives and Guyana over the period as the ratio for both economies gradually improved. Contrary to these, Jamaica noted a slowdown in the ratio in the same period.

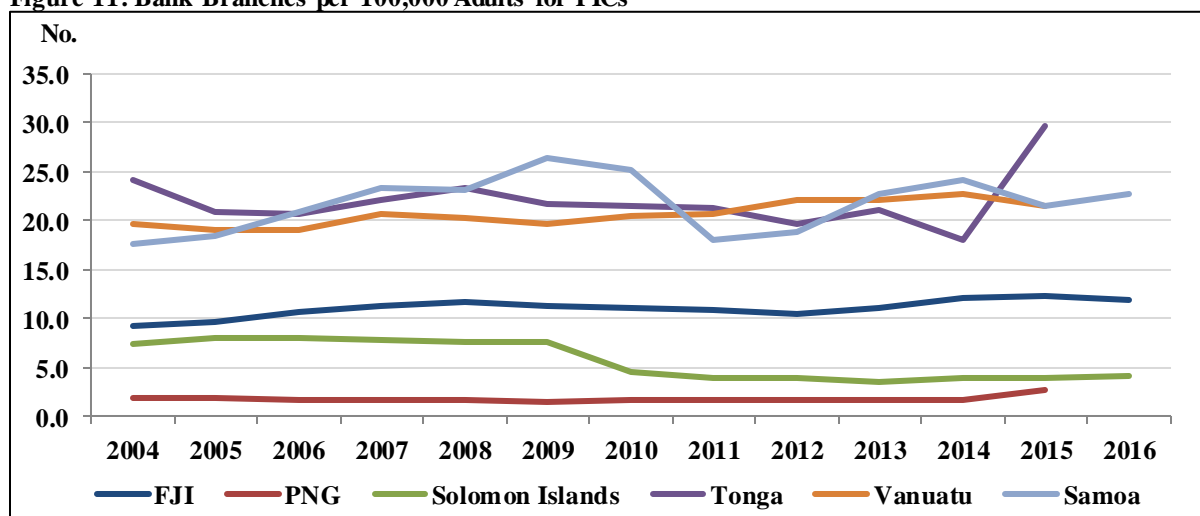
Figure 10: Bank Branches per 100,000 Adults among selected countries



Data Source: Global Financial System Database

While the above shows that Fiji has performed well in terms of bank branches per 100,000 adults for other selected countries, when comparing Fiji to PICs Samoa, Vanuatu and Tonga register higher number of banks per number of adults mainly due to the smaller population compared to Fiji (Figure 11).

Figure 11: Bank Branches per 100,000 Adults for PICs



Data Source: Global Financial System Database

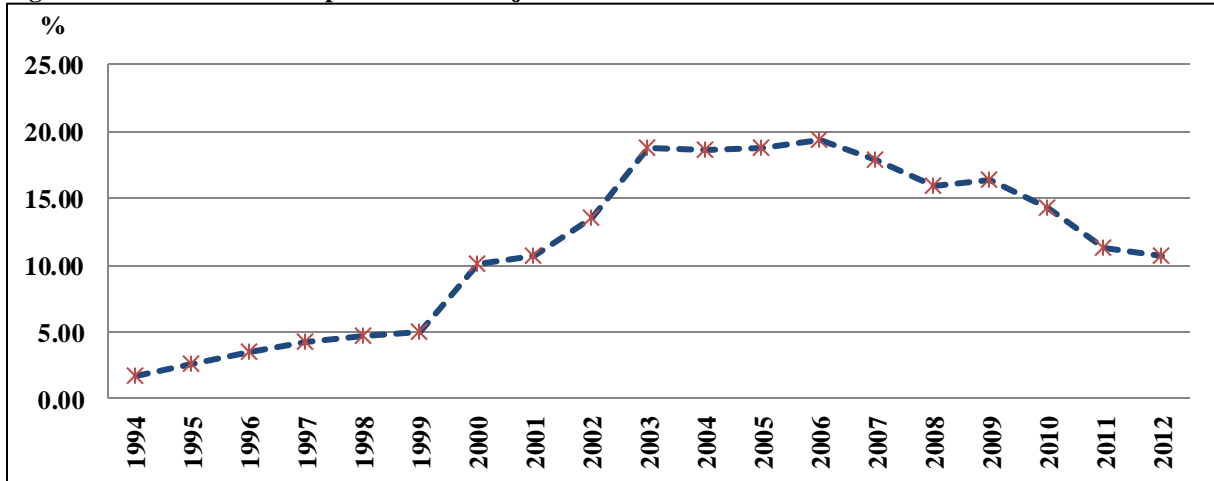
2.5. Stock Market Capitalization to GDP (%)

Fiji

Stock market capitalisation as a percentage of GDP, a measure for *market size*, grew from almost 2.0 percent in 1990s to around 20.0 percent in 2005, but since then, has declined and remained below 15.0 percent (Figure 12).

Several factors could account for this including a highly concentrated market with only a few listed companies dominating the stock market activity. In addition, shareholders may not be willing to sell their shares on expectations they may have to re-purchase at a higher price, indicative of a dominant buy-and-hold strategy rather than a speculative one. A lack of awareness and low financial literacy is a possible factor as savers are traditionally accustomed to placing their money in bank deposits for a sufficiently long period of time, which may apply to buying shares in Fiji as well.

Figure 12: Stock Market Capitalisation in Fiji

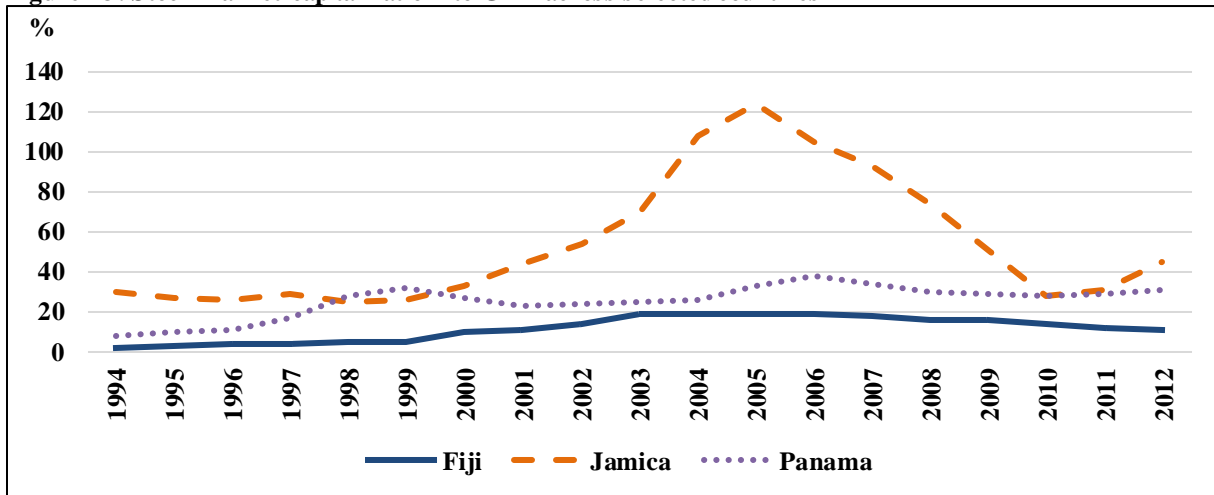


Data Source: Global Financial System Database

Fiji and comparative countries

Additionally, figure 13 below compares stock market capitalization to GDP across selected countries. Data limitations allow us to compare Fiji’s trends with Panama and Jamaica only. Over the sample period, the size of Fiji’s stock market has remained relatively small. This indicates that Fiji as well as these selected economies needs to develop and make their stock market more active in order to increase the depth of the financial system. Making the financial system more competitive will not only make the system to an international standard but also attract foreign investors and have implications on exchange rate development.

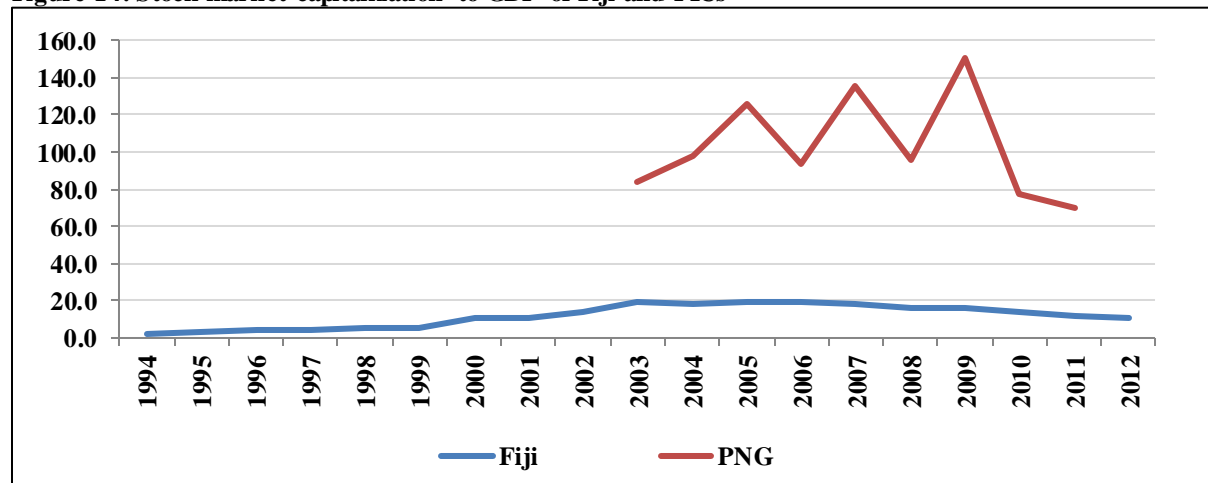
Figure 13: Stock market capitalization to GDP across selected countries



Data Source: Global Financial System Database

Comparing Fiji to PICs (Figure 14), data is only available for PNG. While Fiji has slightly more number of companies listed on the stock exchange, PNG still has a higher stock market capitalisation to GDP ratio. This is mainly because of few larger companies listed on the Port Moresby Stock Exchange.

Figure 14: Stock market capitalization to GDP of Fiji and PICs⁴



Data Source: Global Financial System Database

Taking into consideration the above measures of financial development in Fiji, it could be said that the development in Fiji's financial system, more importantly in the banking industry has been quite substantial. This has come about over the years on the back of favourable reforms and policies that has improved the depth and access of the financial system while a lot of work is still needed to improve the efficiency and stability of the system. Also, in terms of financial market development Fiji has a lot of room for improvement.

In terms of cross country comparison, it is evident that Fiji has made progress in the financial sector development over the past three decades and at par with comparable countries. Fiji remains a high performer when compared to PICs. While Fiji's financial system is increasing its size, depth, efficiency and stability more so in the banking industry, work is needed to make the stock market more competitive compared to other countries.

3.0 Financial Development and Economic Growth in Fiji

The theoretical arguments between financial development and economic growth can be found back to early last century. An important and pioneer study on the significance of finance for economic growth is by Schumpeter (1911). The study suggests that financial services lead to economic growth by encouraging innovation. This is further supported by Patrick (1966) who identified two possible patterns in the causal relationship between financial development and economic growth. The first being supply-leading channel which involves formation of financial institutions and the supply of their financial assets, liabilities, and related services in advance of demand for them, particularly the demand of entrepreneurs in the modern, growth-inducing sectors. This channel has two functions including the transfer of resources from traditional (non-growth) sectors to modern sectors, and to promote and stimulate an entrepreneurial response in these modern sectors. The second one is demand-following channel which suggests that the creation of modern financial institutions, their financial assets and liabilities, and related financial services is in response to the demand for these services by investors and savers in the real economy. This approach implies that in process of growth, the financial system can support and sustain the leading sectors of the economy. At this point, the development of the financial system is induced as a consequence of real economic growth.

McKinnon (1973) and Shaw (1973), provide more rigorous theoretical underpinnings to the relationship between finance and growth. The study observed that in developing countries

⁴ For PICs data is only available for PNG

pervasive financial regulations involving interest rate ceilings and reserve requirements, impede saving-investment decisions and further stressed on how the increase in loanable funds as well as to a more efficient allocation of funds could result from financial liberalization via a deregulation of interest rates.

The renewed interest in the role of financial development in driving economic growth was generated by the emergence of endogenous growth theory (Romer, 1986; Lucas, 1988; Greenwood and Jovanovic, 1990; Bencivenga and Smith, 1991). This literature highlights the positive role played by the financial sector in bolstering growth, in particular by mobilizing savings, allocating resources to the most productive investments, reducing information, transaction and monitoring costs, diversifying risks, and facilitating the exchange of goods and services. This results in a more efficient allocation of resources, more rapid accumulation of physical and human capital, and faster technological progress. For instance, the theoretical work of Greenwood and Jovanovic (1990) show that financial intermediaries promote investment and growth by enabling a higher rate of return on capital, while the growth itself spurs the expansion of financial institutions, implying a two-way relationship between

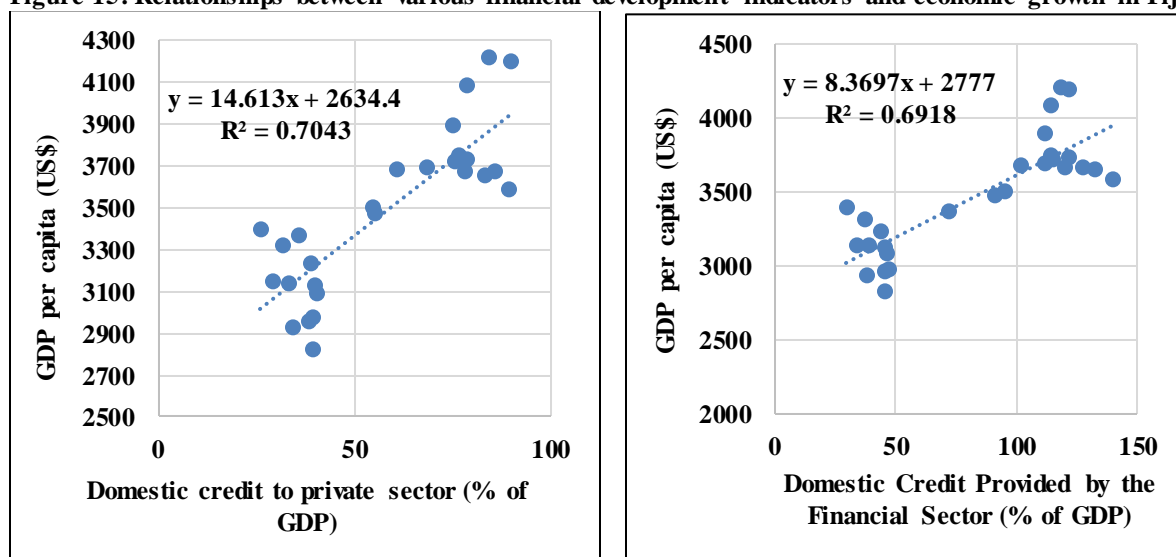
Likewise, Bencivenga and Smith (1991) argue that financial intermediaries allow agents to channel savings into investments with high return which leads to growth; however the intermediaries also allow individuals to hold diversified portfolios to mitigate risks associated with their liquidity needs. Roubini and Sala-i-Martin (1992) suggest that governments may resort to financial repression to raise the inflation-tax base in situations where it is difficult to raise revenue via income taxation which eventually dampens productivity and growth through higher inflation.

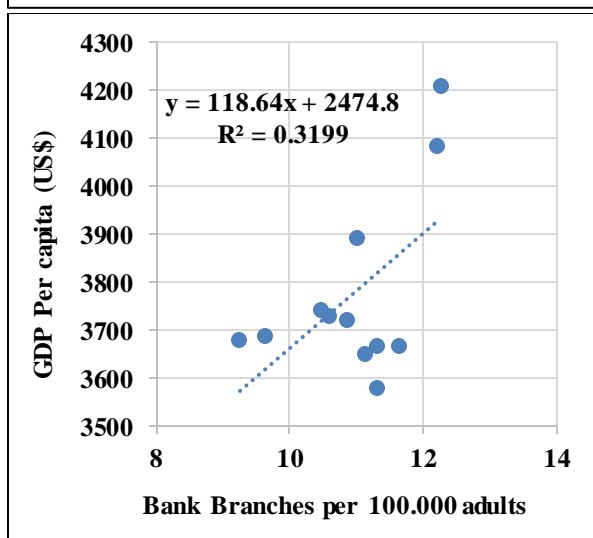
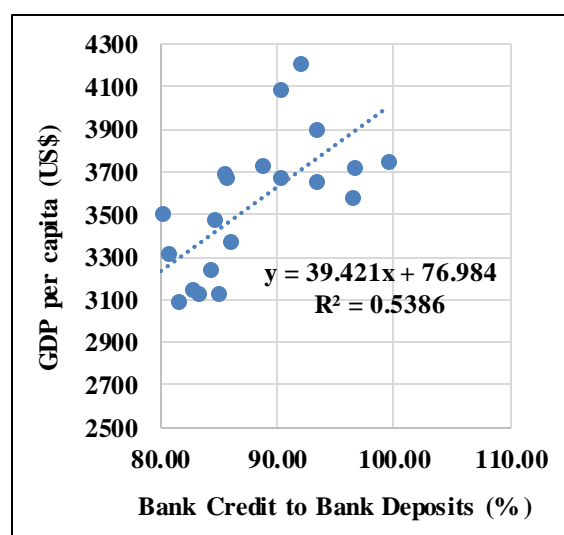
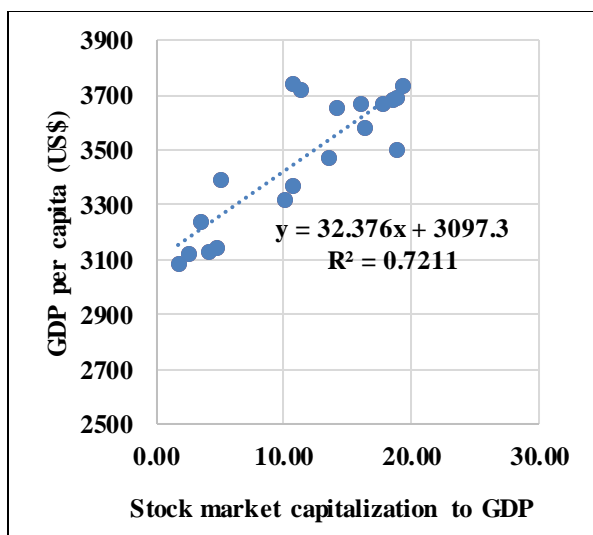
Another group of theoretical studies examine the role of financial development on economic growth by utilizing Neo-classical growth theory. For instance, Atje and Jovanovic (1993) expanded the Mankiw–Romer–Weil (MRW) growth model to include stock market, and with their cross country evidence suggest that a leading indicator for economic growth may be stock market development. Similarly, Cooray (2010) also extends the MRW growth model by decomposing capital into two components, stock market and non-stock market capital whereby both models assume that the stock market is one of the determinants of the steady-state level of per capita growth, which also accords with our theoretical and empirical model. The preceding theoretical discussion makes it clear that financial development promotes economic growth. Considering these theoretical arguments, a number of empirical studies, such as Goldsmith (1969), Berthelemy and Varoudakis (1996) and King and Levine (1993) confirmed the positive correlation between financial development and economic growth. Goldsmith (1969) was the first to document a positive correlation between financial development and growth in his 35-country sample. The majority of subsequent studies used essentially one of two separate measures to measure financial development and its role on economic growth: either credit markets or stock markets. In regard to the former measure, Berthelemy and Varoudakis (1996), and King and Levine (1993b) show that bank development plays an important determinant of economic growth. For the latter measure, using large country samples and cross-sectional and panel methodologies, a number of studies conclude that stock market development is positively associated with economic growth. These studies include Andersen and Tarp (2003), Atje and Jovanovic (1993), Bencivenga et al., (1996), Cooray (2010) and Levine and Zervos (1996).

There are other studies underlining the negative or insignificant impact of financial markets on economic growth, mainly in developing countries including Naceur and Ghazouani (2007), Nili and Rastad (2007), Kar et al. (2011), and Narayan and Narayan (2013). For example, Nili and Rastad (2007) indicate that the higher level of investment of the oil exporting countries can be explained rather by oil revenues, and that financial development in fact has a dampening effect on investment. Similarly, Narayan and Narayan (2013) find no evidence that neither the financial sector nor the banking sector contributes to growth for the Middle Eastern countries. The evidence on heterogeneity in the finance-growth nexus led to the grouping of countries by income level in the analysis of some researchers e.g., Andini and Andini (2014), Henderson, Papageorgiou, and Parmeter, 2013, Odedokun (1996), and Rioja and Valev (2014). In this respect, for example, Rioja and Valev (2014) find that stock markets have not contributed to growth in low income countries, while banks have a sizable positive effect on capital accumulation. However, Gregorio and Guidotti (1995) find that there is a negative relationship between financial development and economic growth in the case for Latin America. The study argues that unregulated financial liberalization and expectations of government bailouts can lead to a negative relationship between the degree of financial intermediation and growth.

From the above discussion, it is evident that empirical studies are divided in their opinion. Hence, it is important to examine how the relationship between financial development and economic growth in Fiji is. In this section, we provide some statistical analysis to investigate the relationship between various financial indicators and economic growth in Fiji. Figure 15 shows the relationship between (1) domestic credit to private sector and GDP per capita (2) domestic credit provided by the sector and GDP per capita; (3) stock market capitalization to GDP and economic growth (4) Bank credit to Bank deposits and GDP per capita and (5) Bank branches per 100,000 adult people and GDP per capita. All of the five graphs below indicate that any development in the financial sector has had a strong positive impact on economic growth. A major implication of our finding is that financial development promotes economic growth in Fiji which implies that policies at enhancing the development of the financial sector can help to spur economic growth.

Figure 15: Relationships between various financial development indicators and economic growth in Fiji





4.0 Financial Development, Poverty and Income Inequality in Fiji

Financial development can contribute to poverty reduction and thereby income inequality in a number of ways. First, this can be done by addressing the causes of financial market failures such as information asymmetry and the high fixed cost of lending to small borrowers, financial development can improve the opportunities for the poor to access formal finance (Jalilian and Kirkpatrick, 2001; Stiglitz, 1998). Different stages of financial development process are prone to financial instability which undermines poverty reduction because the poor are generally more vulnerable than the rich to unstable and malfunctioning financial institutions, and also it leads to macroeconomic instability (for instance growth and inflation volatility) that, in turn, may hurt the poor. Second, according to the Department for International Development (DFID, 2004), financial development enables the poor to draw down accumulated savings or to borrow money to start microenterprises, which eventually leads to wider access to financial services, generates more employment and higher incomes and thereby reduces poverty. The improved access to credit through financial development enables the poor to smooth their consumption, thus reducing their vulnerability and building physical and human capital. A number of studies suggest that financial imperfections (such as information and transaction costs) chiefly bind the poor who lack collateral and credit histories (Banerjee and Newman, 1993; Aghion and Bolton, 1997). Third and finally, given the implied positive relationship between financial development and economic growth there may have trickled down impact on the poor. The trickle-down theory has been widely

supported by studies such as Ravallion and Datt (2002), Mellor (1999), Dollar and Kraay (2002), Fan et al. (2000) and World Bank (1995). On the other hand, if financial markets do not work well, opportunities for growth are missed and inequalities persist. If financial imperfections as mentioned above exist, the least wealthy and the very small enterprises would be most affected by information asymmetries, contract enforcement costs, and transaction costs, namely lack of finance (Galor and Zeira, 1993). As a result, financially constrained entrepreneurs need to rely on their own limited personal wealth or internal resources to invest in their own projects, and thus remain in poverty, perpetuating inequality in the country.

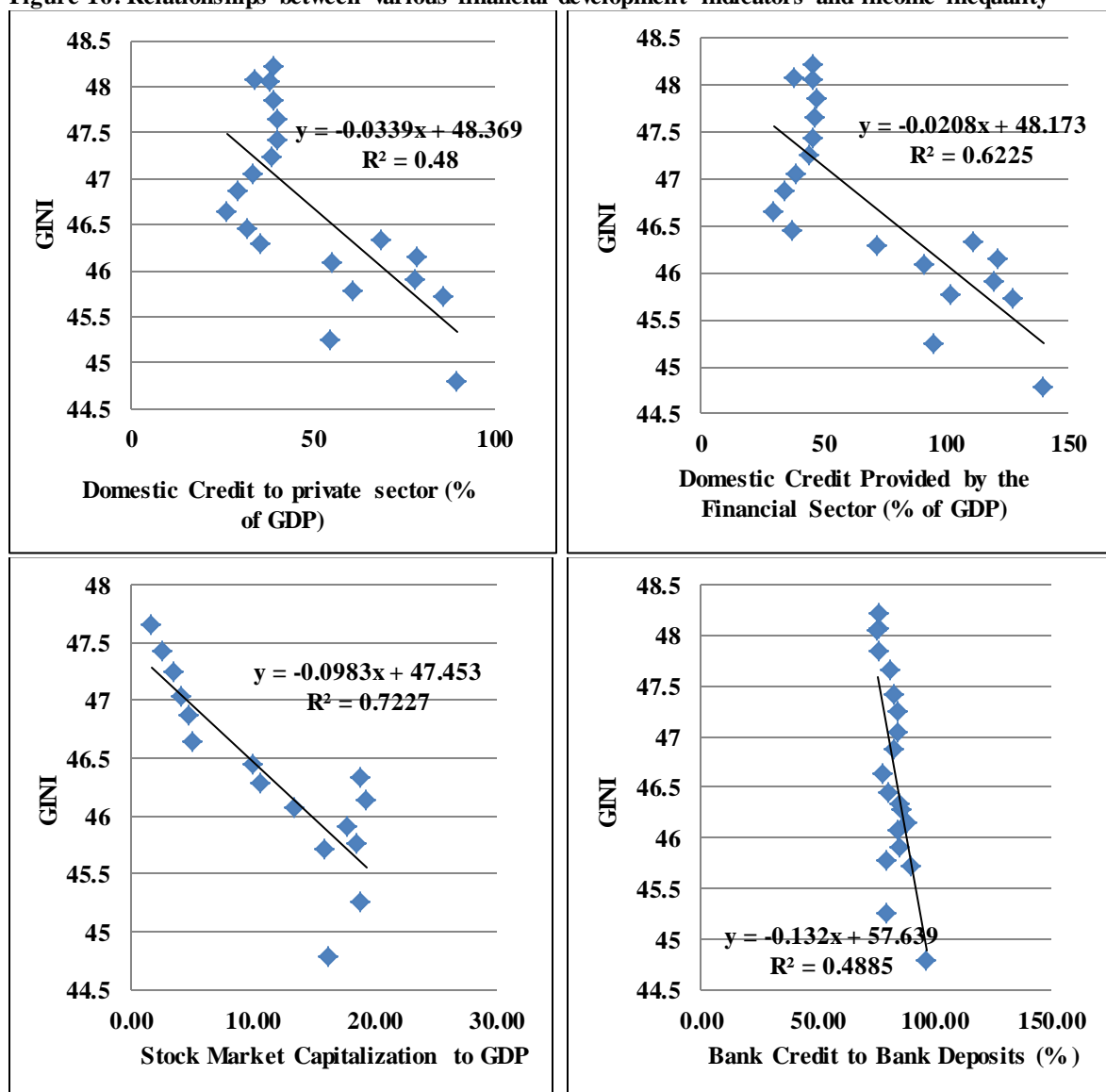
The above theoretical arguments are supported by a number of empirical studies. Li, Squire and Zou (1998) using data for 40 developed and developing countries for the period 1947–1994 found that financial development leads to less income inequality. Likewise, Jalilian and Kirkpatrick (2002) show that financial development makes a clear contribution to poverty reduction. By analysing 47 developing economies from 1984 to 2008, Kpodar and Singh (2011) find that when institutions are weak, bank-based financial systems are better at reducing poverty but, as institutions develop, market-based financial systems become more effective towards this end. Taking into account data for 83 developed and developing countries between 1960 and 1995, Clarke et al. (2006) examined the relationship between finance and income inequality and suggested that in the long-run, inequality is less when financial development is greater. According to Beck et al. (2007), financial development disproportionately raises the income of the poorest quintile and reduces income inequality. They also find that financial development is strongly associated with poverty alleviation. Similarly, White and Anderson (2001) and Ravallion (2001) have explained that finance has a positive effect on poverty reduction. Kappel (2010) finds that financial development can reduce both poverty and income inequality, but the effect of financial development on poverty in particular is not only significant in itself, but also clearly greater than the effect on income inequality. Banerjee and Newman (1993) highlight those countries with greater financial market imperfections such as information asymmetries and transaction costs that limit access to finance, are more exposed to income inequality. That is, there is a potential of a negative relationship between financial sector development and income inequality. According to this view, finance alleviates poverty both by improving the access to finance and by boosting economic growth.

In contrast, other studies predict that financial development may fail to reduce income inequality and poverty. Claessens and Perotti (2007) claim that in countries with historically high levels of inequality, distortion in the institutional environment produces unequal access to finance, and ultimately leads to unequal opportunities, which in turn reinforces any initial economic inequality. These authors believe that limited access to funding and financial services not only reflects economic constraints, but also barriers erected by insiders. Charlton (2008) argues that stock market liquidity does not directly benefit the poor in developing countries. Law and Tan (2009) examine the role of bank and stock market developments on income inequality in Malaysia for the period 1980–2000, finding that developments in banks and stock markets are not significantly associated with income inequality. Furthermore, Jauch and Watzka (2015) using broad unbalanced dataset of up to 138 developed and developing countries between 1960 and 2008 analysed the link between financial development and income inequality. After controlling for country fixed effects and possible endogeneity problems, the authors find that financial development increases income inequality. The rapid financial liberalization without strong political/economic institutions, and lack of prudential regulation and (or) supervision could be another reason for the possible

negative effect of financial sector development on income inequality and poverty which leads to can lead to financial/economic crisis. This frequently experienced scenario widens income inequality/poverty via several channels, such as unemployment and decreasing real income levels.

Considering the inconclusive relationship between financial development and poverty and income inequality, we examine the relationship between (1) domestic credit to private sector and income inequality (2) domestic credit provided by the sector and income inequality; (3) stock market capitalization to GDP and income inequality and (4) Bank credit to Bank deposits and income inequality (see figure 16). We measured income inequality by GINI coefficient and the data is collected from Standardized World Income Inequality Database (SWIID). As can be seen in Figure 16, all of the four graphs below indicate that any development in the financial sector has had a strong positive impact on economic growth. These finding suggests that financial sector development should be taken seriously by the policymakers in order to reduce poverty and income inequality from the society.

Figure 16: Relationships between various financial development indicators and income inequality



5.0 Financial Development and Health

From theoretical perspective, financial development may influence public health both direct and indirect channels which are discussed in this section.

5.1. Direct Effects

A developed financial sector promotes health financing including providing loans, health insurance, clinical care and establishing connections to public and private health providers to facilitate access to health care (Leatherman and Dunford, 2010). Moreover, a number of microfinance institutions from developing countries have expanded their services to health additional to their financial products such as basic health services, health education, or health insurance products (Pronyk et al. 2007). Such integrated health-related services have positive influence directly to public health thorough the improvement of nutritional and immunization status, the encouragement of healthy breastfeeding practice, and better management of sanitation and drinking water (Dunford, 2002). For example, Barnes et al. (2001) have showed that 32% of women receiving education about HIV/AIDS prevention through their microcredit groups tried at least one HIV/AIDS prevention practice, compared to 18% of non-clients. In the case of Dominican Republic, Dohn et al. (2004) have found that the control groups which received both microcredit and health education managed to achieve significant improvements in the treatment of diarrhoeal disease. In Ghana, de la Cruz et al. (2009) have reported that microfinance institutions undertook various initiatives including increasing knowledge and encouraging the use of insecticide-treated bed net which help to control the Malaria spread out.

The experience of a Bangladeshi woman Asea Begum suggests that financial development and health capital accumulation are interconnected. The UNDP web page on poverty reduction narrates Asea's story in an interesting way. Asea and her family ate just one meal a day, consisting of plain rice and a few pieces of chili. Her children were always hungry and her husband, who pulls a rickshaw all day, was continually exhausted. All this changed when Begum received a loan of 6,000 Bangladeshi Taka (about US\$85) from her local community development committee. The loan allowed her to start a small grocery business and thereby significantly increase her income. The financial access has enabled the Begum to replace her house's flimsy bamboo walls with sturdier material and her family now eats three meals per day including vegetables and fish.

While financial development improves public health significantly, financial distress may negatively correlated to population health. An unstable financial system forces households and small firms to undergo severe liquidity constraint in bad times and force millions of people to lose employment during these times. An unemployed mass resulting from the systemic disturbance in the financial system could pose threat to the overall wellbeing of the society through limited affordability to food and medical goods and deprivation of health. For instance, Cutler et al. (2002) provide evidence that mortality rates were about 5%-7% higher in Mexico during the financial crisis of 1995-96 compared to the years just prior to the crisis. Currie and Tekin (2011) find that the 2007/2008 foreclosure crisis has negative impact not only on the health of the U.S. economy but also on the health of the ordinary people. They argue that an increase in the number of foreclosures is associated with increases in medical visits for mental health (anxiety and suicide attempts), for preventable conditions (such as hypertension), and for a broad array of physical complaints that are plausibly stress-related.

5.2. Indirect Effects

The effects of financial development can operate through numerous channels (Claessens and Feijen, 2006; Alam et al. 2015). We discuss these channels under five sub-sections.

Income Mechanism

There is a wide range of literature that provides empirical evidence that financial development spurs economic activities and propels economic growth. Thus, if financial development is positively related to economic growth, then GDP per capita will be increased which helps to improve public health through raising consumption and investment. The increased income helps people to afford better food and nutrition, housing, health care treatment that significantly increase life expectancy. Likewise, increase income helps government to raise its revenue through taxes which can be spent for health infrastructural development. Allocation of more public investment in healthcare infrastructure including hospitals and clinics certainly leads to better health outcomes. Nevertheless, higher income could be negatively related to health if it is associated with longer working hours, less sleep more stress, increased consumption of health-damaging products (such as alcohol and tobacco), and increased consumption of unhealthy foods such as burgers, French fries, sandwiches, and pizza (Dierk, 2014).

Education mechanism

Financial services may contribute to attain the better future health of households through education of their children. Also there could be backward linkage through better health to educational improvement. School returns could go up through better health care and reduced undernourishment.

Risk Management

Finance can contribute to better health and long life through accessibility to credit in times of crisis, and provision of insurance to mitigate future risks. A number of financial instruments such as commodity bonds to minimize the adverse effect of commodity price shocks, weather derivatives, and catastrophe bonds could provide a great cushion to families in bad times. However, financial development may have a negative impact on life expectancy when a poor household needs high collateral to access financial services. To manage the high collateral, a household is forced to sell its productive assets that eventually decreases its income and adversely affects health and life expectancy. Moreover, when financial access is limited to only elite class of society or mismanaged by the users, then financial development may cause a financial crisis and often a long-lasting slowdown in economic growth (Kindleberger, 1978).

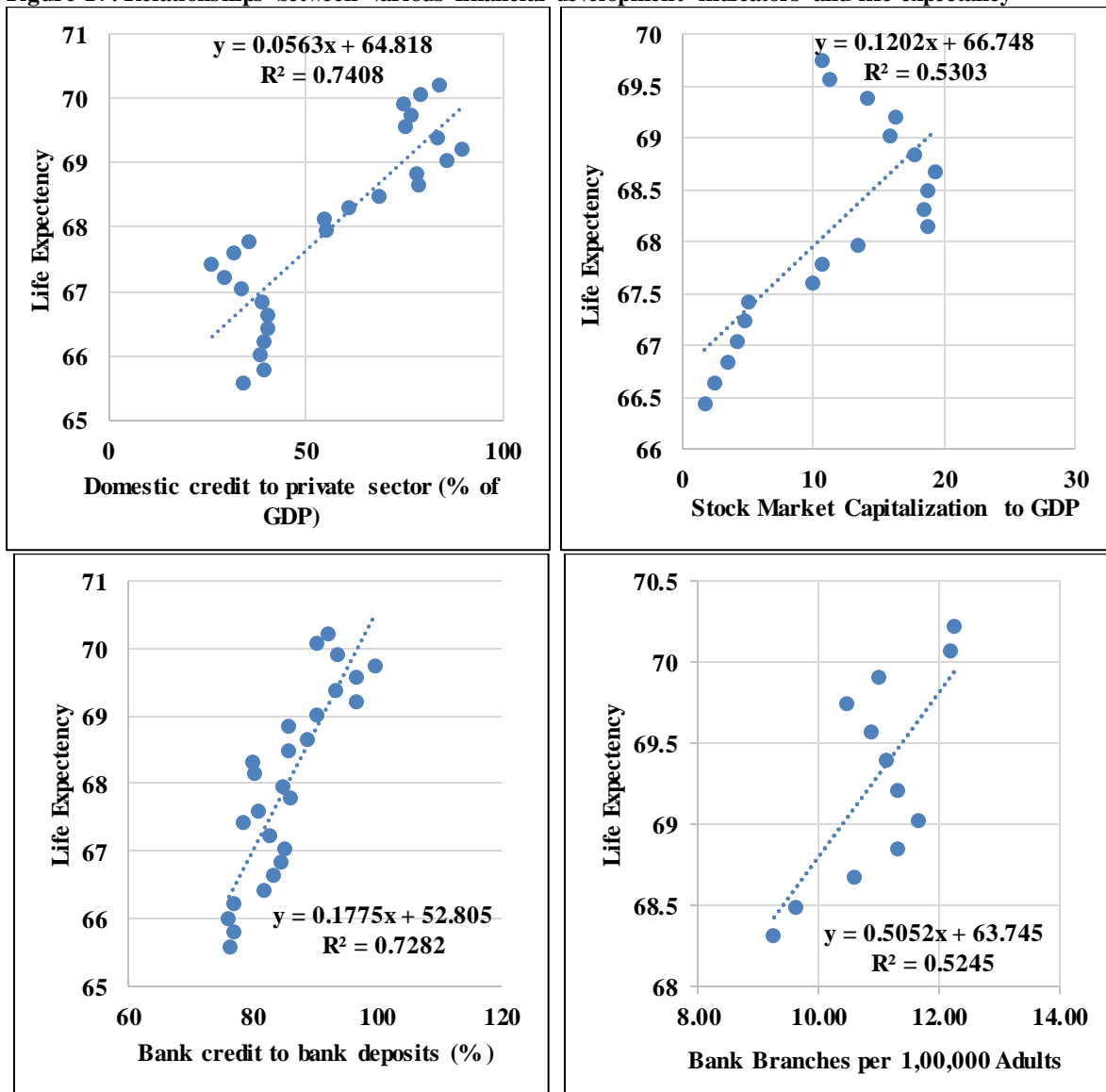
Gender equality mechanism

Financial development helps to empower women in income generating activities. An empowered woman takes better care of her children and spends more on the family welfare than a man does. Therefore, access to financial services by women indirectly improves family health and life expectancy.

While the above theoretical arguments suggest that financial development financial development leads to a better health, there is no empirical evidence on this issue in the case of Fiji. Therefore, we examine the relationship between (1) domestic credit to private sector and life expectancy (2) stock market capitalization to GDP and life expectancy (3) Bank credit to Bank deposits and life expectancy and (4) Bank Branches per 1,00,000 Adults (See Figure 17). Life expectancy is measured by the number of years a newborn infant would live

if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life and the data is collected from World Development Indicators (WDI). As depicted in Figure 17, all of the four graphs below indicate that any development in the financial sector has had a strong positive impact on life expectancy. These findings suggest that financial sector development should be encouraged by the policymakers in order to increase health quality of the mass people.

Figure 17: Relationships between various financial development indicators and life expectancy



7.0 Conclusion

The financial development literature, aimed at investigating trends, relationships, and making policy recommendations has expanded exponentially over the last few decades and has spanned numerous countries and regions, both developed and less developed. Reforms too have been pervasive, including in the small island nations of the Pacific. Yet, the financial sectors in the region remain anecdotally underdeveloped. Intriguingly, little rigorous academic research is available to systematically understand the trends, status, various relationships and policy recommendations in the PIC context. The current paper fills that gap. Using Fiji as a case study and common financial development measures, the study provides some stylized financial development facts. For a more meaningful insight, we then

compare Fiji's trends with comparable economies. Data is sourced from the Global Financial System Database, International Monetary Fund, World Bank and Reserve Bank of Fiji and spans 1990 to 2016.

In addition, the paper tests a number of finance related relationships for Fiji, including growth, poverty alleviation, income inequality, and health. Previous limited studies have touched on the finance-growth nexus but that on finance vis-à-vis poverty alleviation, inequality and health appears scantly, if at all available. Results show that Fiji's financial sector has been developing positively over the last 26 years and the performance has been encouraging against comparable economies. Results also indicate positive relationships of finance with economic growth, poverty, income inequality and health. This study provides a sound basis for further investigations into the finance vis-à-vis various socio-economic relationships, with likely policy outcomes.

References

- Aghion, P., A. Banerjee, and T. Piketty. 1999. "Dualism and Macroeconomic Volatility." *Quarterly Journal of Economics* 114: 1359–97.
- Abhijit V Banerjee and Andrew Newman, (1993), Occupational Choice and the Process of Development, *Journal of Political Economy*, 101, (2), 274-98
- Acemoglu, D., and F. Zilibotti. 1997. "Was Prometheus Unbound by Chance? Risk, Diversification, and Growth." *Journal of Political Economy* 105: 709–51.
- Arestis, P., Demetriades, P., & Luintel, K. (2001). Financial Development and Economic Growth: The Role of Stock Markets. *Journal of Money, Credit and Banking*, 33(1), 16-41.
- Anderson, K. and Smith, S. J. (2001), Editorial: Emotional geographies. *Transactions of the Institute of British Geographers*, 26: 7-10.
- Arusha Cooray, (2010), Do stock markets lead to economic growth?, *Journal of Policy Modelling*, 32, (4), 448-460
- Banerjee, A.V., Newman, A.F., 1993. Occupational choice and the process of development. *24 Journal of Political Economy* 101, 274–298.
- Barnes C, Gaile G, Kibombo R. 2001. Impact of three microfinance programs in Uganda. Washington, DC: US Agency for International Development, 2001.
- Bencivenga, V., & Smith, B. (1991). Financial Intermediation and Endogenous Growth. *The Review of Economic Studies*, 58(2), 195-209.
- Beck, T., A. Demirgüç-Kunt, and M. S. Martínez Pería. 2011. "Bank Financing for SMEs around the World: Drivers, Obstacles, Business Models, and Lending Practices." *Journal of Financial Services Research* 39, 35-54.
- Beck, T., and A. Demirgüç-Kunt. 2006. "Small and Medium-Size Enterprises: Access to Finance as a Growth Constraint." *Journal of Banking and Finance* 30: 2931–43.
- Beck, T., Demirgüç-Kunt, A., Levine, R., 2007. Finance, inequality and the poor. *Journal of Economic Growth* 12, 27–49.
- Chen, H. and Jayaraman, T.K. 2015 "Role of Financial Inclusion in the Remittances and Output Nexus: An Empirical Study of Fiji over 1980-2012", School of Economics Working Paper No. 8, School of Economics, the University of the South Pacific, Suva.
- Čihák, M., A. Demirgüç-Kunt, E. Feyen, and R. Levine, 2012. Benchmarking Financial Systems around the World, Policy Research Working paper 6175, World Bank, Washington.

- Claessens, S., Perotti, E., 2007. Finance and inequality: channels and evidence. *Journal of Comparative Economics* 35, 748–773.
- Claessens, Stijn; Feijen, Erik. 2006. Financial Sector Development and the Millennium Development Goals. World Bank Working Paper No. 89. Washington, DC: World Bank.
- Clarke, G., Xu, L. C., Zou, H., 2006. Finance and income inequality: what do the data tell us? *Southern Economic Journal* 72, 578–596.
- Currie, Janet and Tekin, Erdal, (2011), Is there a Link Between Foreclosure and Health?, No 17310, NBER Working Papers, National Bureau of Economic Research, Inc,
- Cutler, David, Edward Glaeser and Jesse Shapiro. 2003. Why have Americans become more obese. *Journal of Economic Perspectives* 17, no. 3: 93-118.
- David Dollar and Aart Kraay, (2002), Growth Is Good for the Poor, *Journal of Economic Growth*, 7, (3), 195-225
- Daniel Henderson; Chris Papageorgiou and Christopher Parmeter, (2012), Who Benefits from Financial Development? New Methods, New Evidence, No 2013-07, Working Papers, University of Miami, Department of Economics
- De la Torre, A., M. S. Martínez Pería, and S. L. Schmukler. 2010. “Bank Involvement with SMEs: Beyond Relationship Lending.” *Journal of Banking and Finance* 34 (9): 2280–93.
- De la Cruz N, Crookston B, Gray B, Alder S & Dearden K. Microfinance against malaria: Impact of Freedom from Hunger’s malaria education when delivered by rural banks in Ghana. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, December 2009; 103:1229–1236.
- Dohn, AL, Chávez, A, Dohn, MN, Saturria, L & Pimentel, C 2004, 'Changes in health indicators related to health promotion and microcredit programs in the Dominican Republic', *Revista Panamericana de Salud Pública*, vol. 15, no. 3, pp. 185-93.
- Durusu-Ciftci M, D., Yetkinerc, H., & Ispir, S. (2017). Financial development and economic growth: Some theory and more evidence. *Journal of Policy Modeling*, 290-306.
- Easterly, W., R. Islam, and J. E. Stiglitz. 2000. “Shaken and Stirred: Explaining Growth Volatility.” In *Annual World Bank Conference on Development Economics 2000*, edited by B.Pleskovic and J. E. Stiglitz, 191–211. Washington, DC: World Bank.
- Felix Rioja and Neven Valev, (2014), Stock markets, banks and the sources of economic growth in low and high income countries, *Journal of Economics and Finance*, 38, (2), 302-320
- Greenwood, J., & Jovanovic, B. (1990). Financial Development, Growth, and the Distribution of Income. *Journal of Political Economy*, 98(5), 1076-1107.
- Goldsmith, R. W. (1969). *Financial Structure and Development*. New Haven, CT: Yale University Press.
- Hayes, James K. and Ebinger, Charles K. (2011) "The Private Sector and the Role of Risk and Responsibility in Securing the Nation's Infrastructure," *Journal of Homeland Security and Emergency Management*, Vol. 8: Iss. 1, Article 13.
- Herzer, D., Hühne, P. and Nunnenkamp, P. (2014), FDI and Income Inequality. *Review of Development Economics*, 18: 778-793.
- Jason Furman and Joseph Stiglitz, (1998), Economic consequences of income inequality, *Proceedings - Economic Policy Symposium - Jackson Hole*, 221-263
- Jean-Claude Berthélemy and Aristomene Varoudakis, (1996), Economic Growth, Convergence Clubs, and the Role of Financial Development, *Oxford Economic Papers*, 48, (2), 300-328
- Jinau, I. 2017. “The impact of private sector credit on income inequalities in European Union (15 member states).” *Theoretical and Applied Economics* XXIV: 61–74.

- Jose De Gregorio and Pablo Guidotti, (1995), Financial development and economic growth, *World Development*, 23, (3), 433-448
- Jalilian, H., and C. Kirkpatrick, 2002, —Financial Development and Poverty Reduction in Developing Countries, *International Journal of Finance and Economics*, Vol. 7, pp. 97–108.
- Kappel, V., 2010. The effects of financial development on income inequality and poverty. CERETH Working Paper 10/127, ETH, Zürich.
- Kindleberger, C. P., 1978, *Manias, Panics, and Crashes: A History of Financial Crises*, New York: Basic Books, revised and enlarged, 1989, 3rd ed. 1996.
- King, R., & Levine, R. (1993). Finance and Growth: Schumpeter Might Be Right. *The Quarterly Journal of Economics*, 108(2), 717-737.
- King, R. G., and R. Levine. 1993a. "Finance, Entrepreneurship, and Growth." *Journal of Monetary Economics* 32: 513–42.
- King, R. G., and R. Levine. 1993b. "Finance and Growth: Schumpeter Might Be Right." *Quarterly Journal of Economics* 108: 717–37.
- Khan, M., & Senhadji, A. (2000). *Financial Development and Economic Growth : An Overview*. Washington DC: International Monetary Fund.
- Khan, M., & Reinhart, C. (1990). *Private investment and economic growth in developing countries*. World Development. Vol. 18: Iss. 1, 19-27
- Kpodar, Kangni; Singh, Raju Jan. 2011. Does Financial Structure Matter for Poverty? Evidence from Developing Countries. Policy Research working paper; no. WPS 5915. World Bank.
- Levine, R. 1997. "Financial Development and Economic Growth: Views and Agenda." *Journal of Economic Literature* 35: 688–726. 2005. "Finance and Growth: Theory and Evidence." In *Handbook of Economic Growth*, edited by P. Aghion and S. Durlauf, Edition 1, volume 1, chapter 12, 865-934. Amsterdam: Elsevier.
- Levine, R., and S. Zervos. 1996. "Stock Market Development and Long-Run Growth." *World Bank Economic Review* 10 (2): 323–39.
- Levine, R. (1997). Financial Development and Economic Growth: Views and Agenda. *Journal of Economic Literature*, XXXV, 688-726.
- Leatherman S & Dunford C. Linking health to microfinance to reach the poor. Bulletin of the World Health Organization, 2010; 88(6):470–471.
- Li, H., Squire, L., & Zou, H.-f. (1998). Explaining International and Intertemporal Variations in Income Inequality. *The Economic Journal*, 108(1), 26-43.
- Luintel, K. B., and M. Khan. 1999. "A Quantitative Reassessment of the Finance-Growth Nexus: Evidence from a Multivariate VAR." *Journal of Development Economics* 60: 381–405.
- McKinnon, R. I. (1973). *Money and Capital in Economic Development*. Washington, D.C.: Brookings Institution.
- Martin Ravallion and Gaurav Datt, (2002), Why has economic growth been more pro-poor in some states of India than others?, *Journal of Development Economics*, 68, (2), 381-400
- Masoud Nili and Mahdi Rastad, (2007), Addressing the growth failure of the oil economies: The role of financial development, *The Quarterly Review of Economics and Finance*, 46, (5), 726-740
- M. O. Odedokun, (1996), Alternative econometric approaches for analysing the role of the financial sector in economic growth: Time-series evidence from LDCs, *Journal of Development Economics*, 50, (1), 119-146
- Narayan, S & Narayan, P. (2004). Determinants of Demand for Fiji's Export: An empirical Investigation. *The developing Economies*. Page 92-112

- Nouriel Roubini and Xavier Sala-i-Martin, (1992), Financial repression and economic growth, *Journal of Development Economics*, 39, (1), 5-30
- Patrick, H. (1966). Financial Development and Economic Growth in Underdeveloped Countries. *Economic Development and Cultural Change*, 174-189.
- Philippe Aghion and Patrick Bolton, (1997), A Theory of Trickle-Down Growth and Development, *Review of Economic Studies*, 64, (2), 151-172
- Pronyk, PM, Hargreaves, JR, Kim, JC, Morison, LA, Phetla, G, Watts, C, Busza, J & Porter, JD 2006, 'Effect of a structural intervention for the prevention of intimate-partner violence and HIV in rural South Africa: a cluster randomised trial', *The lancet*, vol. 368, no. 9551, pp. 1973-83.
- Ravallion, M. (2001) "Growth, Inequality and Poverty: Looking Beyond Averages", *World Development*, 29-11, 1803-1815
- Raymond Atje and Boyan Jovanovic, (1993), Stock markets and development, *European Economic Review*, 37, (2-3), 632-640
- Romer, Paul M., 1986, Increasing returns and long-run growth, *Journal of Political Economy* 94, 1002-1037.
- Robert Lucas, (1988), On the mechanics of economic development, *Journal of Monetary Economics*, 22, (1), 3-42
- Sami Ben Naceur and Samir Ghazouani, (2007), Stock markets, banks, and economic growth: Empirical evidence from the MENA region, *Research in International Business and Finance*, 21, (2), 297-315
- Sharma, P. and Gounder, Neelesh N. (2012) Does finance matter for growth in small, open Pacific island countries? Department of Accounting, Finance and Economics, Griffith University.
- Sharma, P., E. Roca, V. Dakai and S. Manoa 2014, An assessment of Fiji's Banking Sector on a global scale: 2000-2011.
- Shaw, E. S. (1973). *Financial Deepening in Economic Development*. New York: Oxford University Press.
- Schumpeter, J.A., 1911. *The theory of economic development*. Cambridge, MA: Harvard University Press.
- Thomas Barnebeck Andersen and Finn Tarp, (2003), Financial liberalization, financial development and economic growth in LDCs, *Journal of International Development*, 15, (2), 189-209
- Van den End, J.W 2013. "A macroprudential approach to address liquidity risk with the Loan-to-Deposit ratio", De Nederlandsche Bank.

Appendix 1: The 4x2 matrix of financial system characteristics

	Financial Institutions	Financial Markets
DEPTH	Private credit to GDP Financial institutions' assets to GDP M2 to GDP Deposits to GDP Gross value added of the financial sector to GDP	Stock market capitalization plus outstanding domestic private debt securities to GDP Private debt securities to GDP Public debt securities to GDP International Debt Securities to GDP Stock market capitalization to GDP Stocks traded to GDP
ACCESS	Accounts per thousand adults (commercial banks) Branches per 100,000 adults (commercial banks) % of people with a bank account % of firms with line of credit (all firms) % of firms with line of credit (small firms)	Percent of market capitalization outside of top 10 largest companies Percent of value traded outside of top 10 traded companies Government bond yields (3 month and 10 years) Ratio of domestic to total debt securities Ratio of private to total debt securities (domestic) Ratio of new corporate bond issues to GDP
EFFICIENCY	Net interest margin Lending-deposit spread Non-interest income to total income Overhead Cost (% of total assets) Profitability (return on assets, return on equity) Boone indicator (or Herfindahl or H-statistics)	Turnover ratio (turnover/capitalisation) for stock market Price synchronicity (co-movement) Private information trading Price impact Liquidity/transaction costs Quoted bid-ask spread for government bonds Turnover of bonds (private, public) on securities exchange Settlement efficiency
STABILITY	Z-score (or distance to default) capital adequacy ratios asset quality ratios liquidity ratios Other (net foreign exchange position to capital etc.)	Volatility (standard deviation average) of stock price index, sovereign bond index skewness of the index (stock price, sovereign bond) Vulnerability to earnings manipulation Price/ earnings ratio Duration Ratio of short-term to total bonds (domestic, international) Correlation with bond returns (German, U.S.)

Adopted from Cihak, et al., 2013, p21