

Chapter 10

MORTGAGE FINANCE AND CONSUMER CREDIT – PAPUA NEW GUINEA

By
Boniface Aipi¹

1. Introduction

Financial systems are crucial in channeling household savings to firms and investment funds from one firm to another, enabling households and firms to diversify risks. It is through the process of financial intermediation that the savings of an individual and corporation can be turned into investment funds.

Financial system in a country includes institutions such as banks, superannuation funds, securities exchanges, regulatory bodies, the central bank, etc. These firms provide a framework for transactions, monetary policy and channel for savings to be converted to investments. An effective financial system encourages savings to be transferred to investment and provides a framework for transactions and monetary policy transmission.

The recent global financial crisis prompted financial analysts, market players and regulators around the world to objectively appraise their financial system. The aftermath of the 1997 Asian financial crisis induced countries to review their financial systems by giving prominence to supervision and regulation of the financial systems, by establishing regulatory institutions and by expanding the scope of regulation to other financial institutions that were formally never regulated. The subprime mortgage crisis in the United States in 2008/2009 also prompted regulators and players alike to examine the financial system, particularly the financial products which were offered in the financial system with their associated risks and how these risks were packaged and traded.

The Asian financial crisis spurred the strengthening of the supervisory responsibility of the central banks, while the recent subprime mortgage crisis in the US provoked supervisors and regulators to identify the trading of risks involving new financial products in the financial system.

1. Manager, Projects Unit, Research Department, Bank of Papua New Guinea.

The negative impact of the Asian financial crisis on the economy of Papua New Guinea (PNG) in 1997, which had a spill-over effect into the years 1998 and 1999, compelled the government to pass two bills, specifically, the Central Banking Act (CBA) 2000, and the Banks and Financial Institutions Act (BFIA) 2000. The first act empowered the central bank to independently (without political interference) formulate monetary policy, with the main objective of achieving price stability, while the second act gave regulatory powers to the central bank to supervise all the licensed financial institutions in the country. With the enactment of the BFIA 2000, the central bank set up a supervisory department which carries out the regulatory functions of the financial system. This department is tasked in carrying out both on-site and off-site supervision.

The recent subprime mortgage crisis in the United States had minimal impact on the country and could be attributed to the strengthening of its regulatory aspects. With regular on-site and off-site supervision, the systemic risks were mitigated for any domestic or external shocks to permeate the domestic financial system. The other reason why the recent crisis had a minimal impact on the economy could have been due to the shallowness of the financial system, trading mostly traditional financial products with no secondary markets. Without a secondary market, risk-averse individuals or businesses are restricted from trading their risks, minimising information asymmetry.

With the expansion of the economy as a result of major developments taking place in the economy, such as the billion-dollar PNG Liquefied Natural Gas (LNG), the potential for expansion and development of the financial system in PNG is imminent. Consequently, this paper will be forward-looking and will highlight the possible developments, especially addressing the increase in household debt in mortgage and consumer credit in PNG. The paper is organised as follows: the next section looks at the definitions and current trends in consumer lending, which is followed by a discussion on the cause of the rise in household debt. The final section of the paper will be centered upon the discussions of the stress test results.

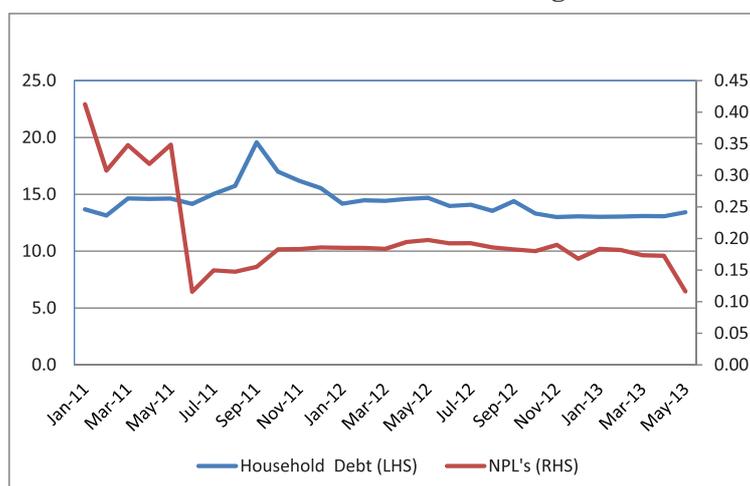
2. Mortgage Finance and Consumer Credit: Developments and Trends in Papua New Guinea

Except for commercial banks, the other regulated financial institutions of PNG's financial system, report aggregate private sector credit. Therefore it is difficult to determine the household debt figures from the total private sector credit extended by the financial system. Commercial banks in PNG play a dominant role in the financial system, retaining more than 65% of total financial

system asset, while more than 90% of formal total household debt is sourced from the commercial banks. Mechanically, commercial banks whose monthly reports are meticulous, demarcating household debt from total private sector credit, take precedence in this analysis, while the other regulated financial institutions are excluded. Household debt in this paper therefore is defined as credit extended to the household sector by the commercial banks.

Household debt in PNG comprises of mortgage loans and other personal loans extended to households by commercial banks. Other personal loans will include credit card, school fee loans, car loans, individual small business financing, and other personal consumer credits.

Graph 1
Household Debt and NPLs as a Percentage of Total Loan



Source: Bank of Papua New Guinea.

Household debt as a percentage of total loans average around 13% over the period January 2011 to May 2013, peaking at 19% in September 2011 and falling back to its period average as shown in Graph 1. Household debt compared to total loans is quite small compared to the other SEACEN economies, like South Korea, Taiwan, Singapore and Malaysia. In recent times, the household debt has remained stable and at a manageable level. Non-performing loans (NPLs) as a percentage of total loans declined from 0.4% in January 2011 to as low as 0.11% in May 2011, remained steady at around 0.19% in the recent

past, declining further down to 0.11% in May 2013, which is very low compared to other neighbouring economies. Even though in percentage terms, the household debt has remained stable, the absolute numbers show an increase in consumer credit and household debt over the past few years. This could imply a proportional increase in lending to other sectors of the economy as well as household debt.

Household debt and consumer credit have remained stable proportionally. However, in absolute terms, the household debt has increase steadily over the past years. What has been the major driving force behind the increase in mortgage finance and consumer credit in PNG? In order to highlight the fundamental factors influencing the increase in mortgage finance and consumer credit, both the demand and supply side factors will be examined to provide definitive explanations for the developments in the credit market.

2.1 Demand-side Factors behind the Increase in Mortgage Finance and Consumer Credit

Demand-side factors have played a pivotal role in the increase in household debt and consumer credit. These factors are discussed at length henceforth to highlight the market fundamentals.

2.1.1 Sound Macroeconomic Fundamentals

a. High GDP growth

PNG's economy has been growing rapidly over the years since 2007. Growth averaged at 8% between 2007 and 2013. The rapid growth experienced by the country was spurred by two defining factors, the construction of the LNG project and high international commodity prices.

Graph 2
Real GDP Growth

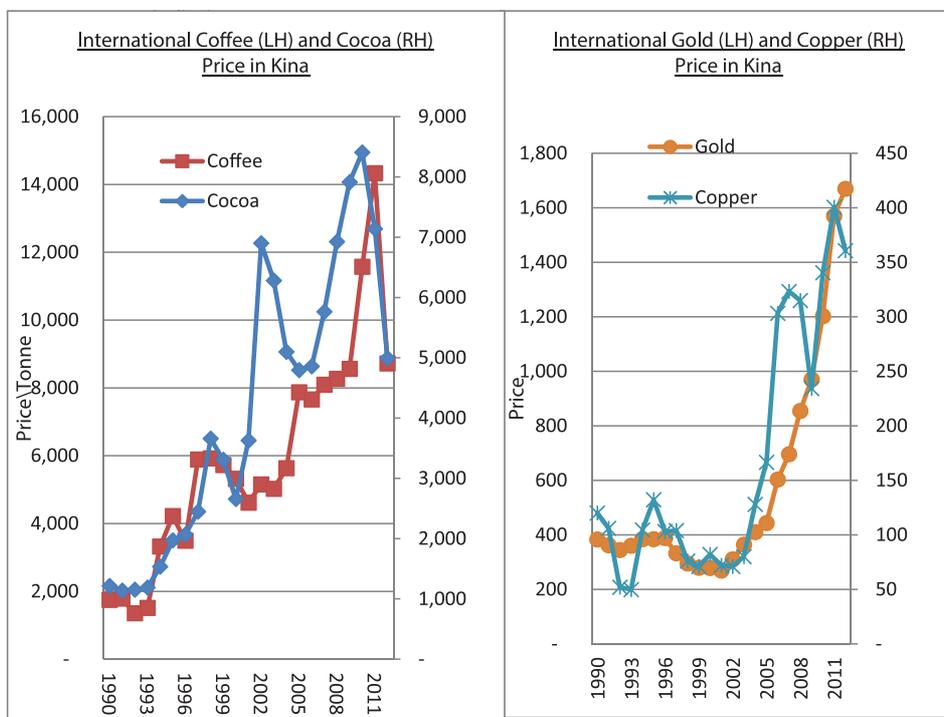


Source: Bank of Papua New Guinea.

The billion dollar cost of construction of the LNG project in PNG over the recent years have stimulated growth in other sectors of the economy, as these sectors align themselves to profit from the spillover effects. The laying of both on-shore and off-shore pipeline, the construction of the Hides and NapaNapa processing plants and construction of a world-class airport, to mention a few, has spurred spillover benefits to other sectors of the economy. Growth is projected to slow down in 2013 as a result of the winding down of the construction phase and subsequent production of LNG in 2014.

Between the years 2005 to 2009, the international prices of PNG's major export commodities increased, resulting in high tax revenue for the government. The government continuously ran budget surpluses, while at the same time the extra monies collected were parked in trust accounts earmarked for various projects. From the trust accounts that were created, the government assisted landowners from the LNG project with large sums of start-up capital to go into business in order to benefit from the spin-offs of the LNG projects. Landowners who virtually had no start-up capital were boosted by the government to involve in fruitful business ventures, which have resulted in high employment growth, and hence enhancement of their living standards. Ultimately, this contributed significantly to growth in GDP.

Graph 3
International Commodity Prices



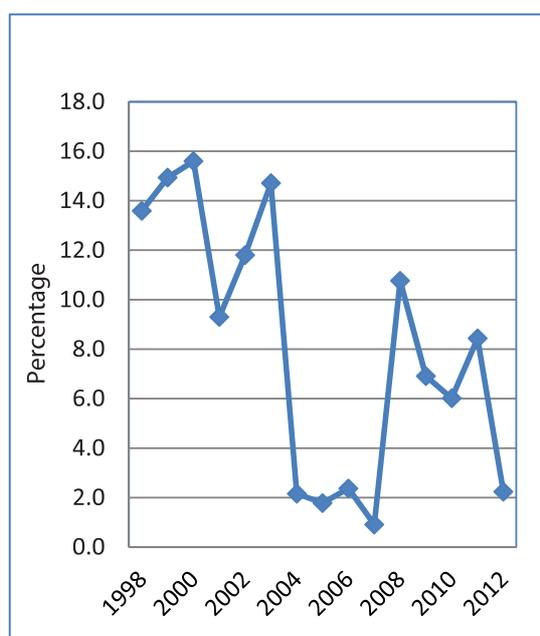
Source: Bank of Papua New Guinea.

Since 2005, there has been an increase in the international prices of PNG's major export commodities. Rising export prices lead to a surge in government revenues. These revenues were largely spent by the government on infrastructure development. The windfall revenue generated from the rising international commodity prices were not only spent on infrastructure development, but also a large portion of these were saved both in the form of trust accounts at commercial banks, and indirectly as foreign reserves at the Bank of PNG. The increase in trust account funds held at the commercial banks resulted in high financial system liquidity, which apparently was not inflationary, as most companies had adequate funds for their operations during the construction phase of the LNG project.

b. Low Inflation

The linkage between high financial system liquidity, real GDP growth and inflation was inarticulate as credit growth was apparent, but not significant to stimulate demand-driven inflation in the economy. The traditional interest rate channel if properly working would mean increased financial system liquidity coupled with low interest rates, would instinctively lead to high credit growth, and hence increased demand for investment and consumption leading ultimately to GDP growth, and hence high inflation. This has not been the case in PNG. Though the GDP was growing, there was high liquidity in the banking system and credit growth was not sufficient, as the big companies involved in the LNG project were able to adequately fund their operations.

**Graph 4
Domestic Inflation**



Source: Bank of Papua New Guinea.

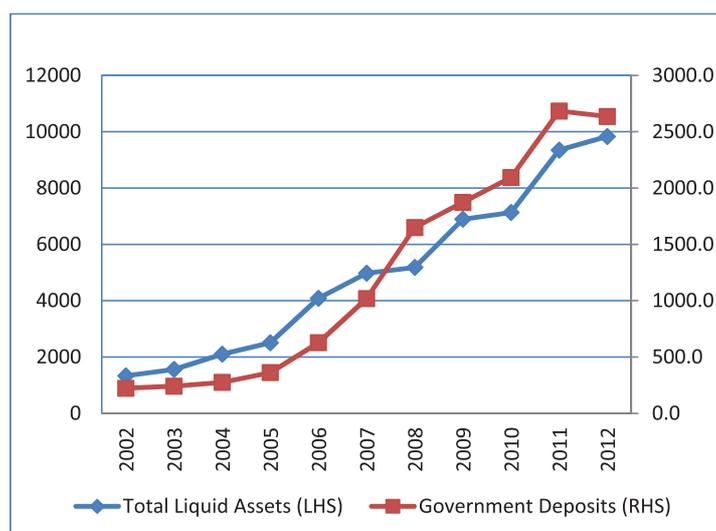
From a high of 15.6% inflation in 2000, inflation averaged 4.6% between 2004 and 2012. The effect of high build-up of liquidity in the banking system between 2004 and 2012, and the growth experienced by the PNG economy does not seem to translate into inflationary outcomes, because most businesses

were able to fund their operations during the construction phase of the LNG project. Inflation was maintained at single digits during the period

c. Increased Bank Deposits – Main Source of Funding for Banks and High Liquidity in Banks

High international commodity prices translated into increases in the coffers of the government, resulting in government spending money on the maintenance of the existing infrastructures and on development projects. The windfall tax revenue from the high international commodity prices were deposited with commercial banks in trust accounts, exacerbating the problem of high liquidity in the banking system.

Graph 5
Government Deposits in K million and Total Liquid Assets of Financial System



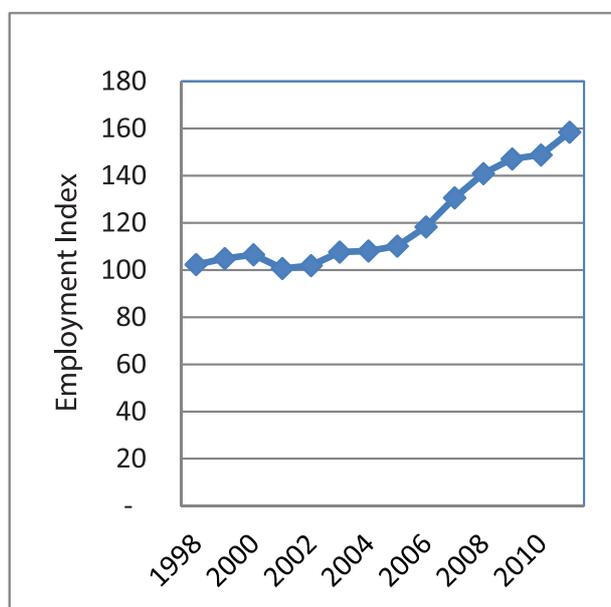
Source: Bank of Papua New Guinea.

Graph 5 shows that government deposits increased from 2003 onwards as excess funds from windfall revenue collected from taxes rose. As can be seen from Graph 5, a perfect correlation between total liquid assets of the financial system and government deposits exists, implying that the increase in system liquidity during this period was driven primarily by the government deposits in trust accounts with the commercial banks in PNG.

d. General Improvement in Wages, Employment and Income Opportunities, Especially from the Mining Sector, Permeating to Other Sectors of the Economy

Starting from 2003, the level of employment has increased steadily in PNG, as depicted by Graph 6. Though there is no data available for wages and salary, anecdotal evidence shows that wages and salaries have also increased. This was stimulated by the LNG project which had a spillover effect on most of the related sectors, such as building and construction, hospitality, travel, etc.

Graph 6
Employment Index for PNG



Source: Bank of Papua New Guinea

The incentives provided by the LNG project sub-contractors stimulated competition for skill labour within the country. However, job security and minimal wages or salary increases ensured minimal labour mobility between the different sectors, especially from other sectors of the economy to the LNG sector.

d. Expectations of Increase in Real Estate Prices as a Result of Higher Demand for Housing in Anticipation for the LNG Project

There is no data available to measure the real impact of the expectations driving real estate demand. However, anecdotal evidence shows that the real estate industry has seen a boom. There is widespread construction of new office complexes and residential buildings in all the major cities and towns. Port Moresby has seen an increase in building and construction, with shortage of registered government land, resulting in land grabbing at the peripheries of the city to build residential blocks. Real estate prices and rentals have gone up substantially. According to reliable investors within the real estate industry, the construction of new large office complexes and residential blocks has been funded by two large superannuation funds in PNG. These two superannuation funds have decided to invest more in real estate in anticipation of an increase in business activity as a result of the large LNG project.

3. Review of Related Literature

According to the Macprudential Oversight and Financial Stability Report of September 2012 by the International Monetary Fund, PNG has seen significant development opportunities as investments in the mineral sector increased at an unprecedented pace. The risk of such unprecedented growth of investment in the mineral sector to financial stability is real.

The mission analysed the main risks to financial stability and how these influences the analytical tools and macroprudential policy measures to be used for mitigating the risks. The mission found that the main risks lie in: (i) the reliance on the LNG project and mining proceeds; (ii) the small number of banks operating in PNG and the disproportionate size of one of them; (iii) the interconnectedness of the financial system as a whole through state ownership, bank subsidiaries, and investment; (iv) the lack of a reliable real sector and inflation data; and (v) excess liquidity largely because of deposits by the state in banks.

The report did not highlight any risks to the financial system driven by consumer credit and household debt. Most of the growth that is experienced in the country is expectation-driven, as a result of the construction of the LNG project which has also stimulated the government's counterpart funding, resulting in an expansionary fiscal policy to assist land owner companies with start-up capital.

A report by the Oxford Business Group in November 2012 on the property development boom in PNG observed high-end residential and commercial properties market take off in the recent past. According to industry sources, most of these high-end residential and commercial properties are developed by the two large pension funds that have enough cash to finance investment properties. Therefore, middle-class Papua New Guinean consumers are pushed to the smaller suburbs and settlements where they can afford the price of accommodation. Data collected from the banks and stress-test run on the banking system shows that household credit defaults do not seem to be a problem as households are pushed to the peripheral properties market which is affordable.

4. Mortgage Finance and Consumer Credit: Implication on Financial Stability

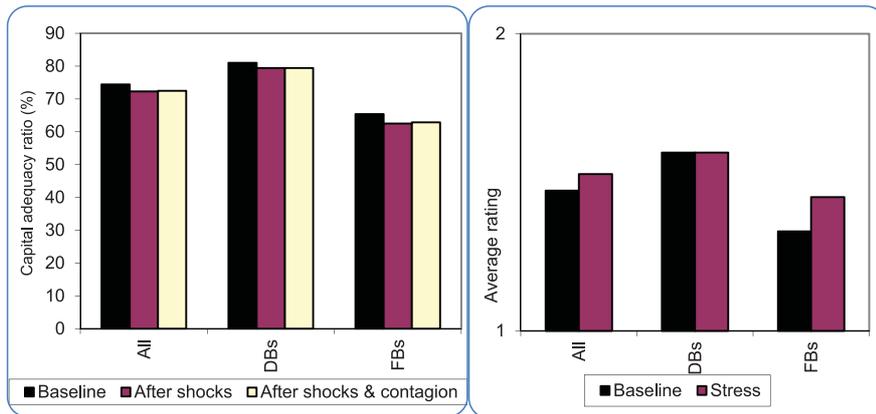
This section highlights the need for central banks or regulatory institutions to be vigilant in identifying the key risks associated with mortgage finance and consumer credit that may have contagious effect on the financial system. Most central banks or regulatory institutions run stress test on the financial system to test the stability of the financial system, while others run econometrics model and shock the financial system with certain associated risks. Running such models and stress test is crucial for a financial supervisory institution, as it will highlight the effects of such shocks on the financial system. This paper runs a simple stress test of the PNG banking system which, as a component, makes up more than 50% of the financial system asset. The stress test model used is taken from Cihak, et al. (2007).

1. Credit Risk			
Sectoral Shocks to NPL's	Baseline Scenario (%)	Scenario 1 (%)	Scenario 2 (%)
Agriculture/Fish/Forest	0.0	10	30
Manufacturing	0.0	5	15
Building & Construct.	0.0	5	15
Wholesale & Retail	0.0	5	15
Household	0.0	35	100
Real Estate	0.0	20	90
Others	0.0	10	30
2. Interest Rate Risk			
Nominal interest Rate: assumed % change	1.5	2.5	4.5
3. Exchange Rate Risk			
Assumed Exchange Rate Change	55	55	65

Source: Author's Calculation.

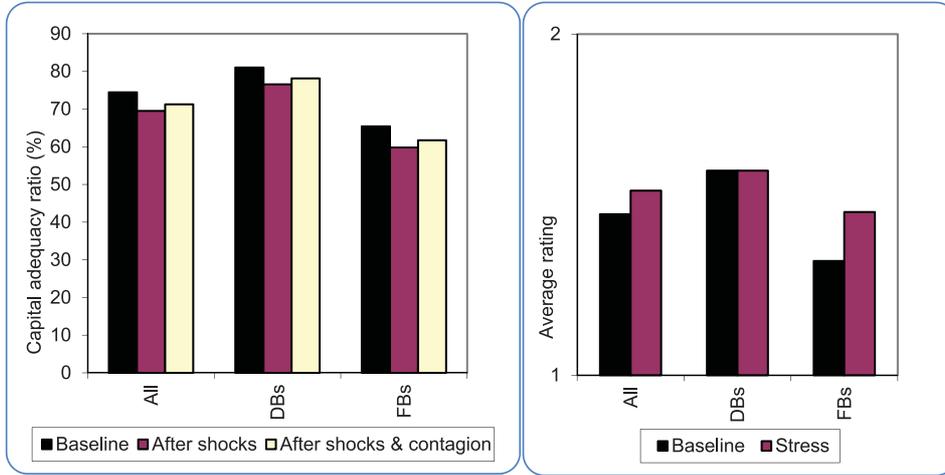
Stress Test Results

Baseline



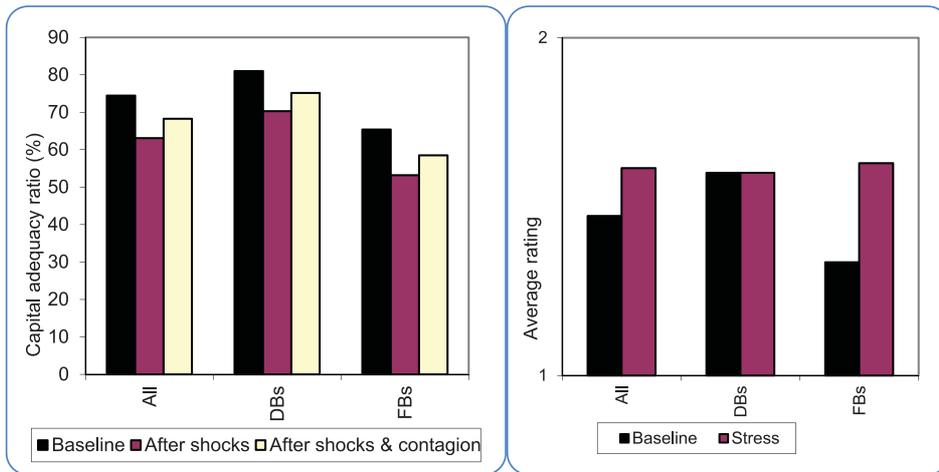
Source: Author's Calculations.

Scenario 1



Source: Author's Calculations.

Scenario 2



Source: Author's Calculations.

According to the stress test results, the financial system is sound as banks are well capitalised to withstand any pressure stemming from the household sector. Even an extreme scenario of the household sector defaulting on 100% of its performing loans does not seem to have any major effect on the overall performance of the banking system. The CAR values of the banking system after shock and contagion are above 60% and the Average rating which measures

the probability of default of the commercial banks remains at less than 0.1 % for all the shock scenarios. This could be because of the fact that household debt as a percentage of total loan is less than 15% in the country and default on household debt would not have any major impact.

Apparently the spiraling real estate and property prices in the market and the boom in construction of new homes in the country have been driven by real demand rather than by property price bubbles, as the stress test results show minimal impact from private household debts, while most properties newly built in the country were fully funded by the two major retirement savings funds in the country.

Adding to that, only 3% of land in PNG is owned by state, hence spike in house prices nationwide was demand driven as people's income levels improved over time. The LNG project and the increase in commodity prices in the past improved the people's income levels, as evident with double-digit GDP growth. Shifts in the income levels of the people have increased the general consumption patterns, and hence the high demand for housing in the country, resulting in genuine demand driven high house prices.

Banks concentrate on lending to the people who want to build or purchase houses built on 3% of the land in the country. The potential for commercial banks to expand mortgage lending to the household sector is constrained by limited land belonging to the government. As a result, most of the deposits of the commercial banks are either used to purchase government bonds or Central Bank Bills to generate income for depositors. Stress test results show that the banks are well capitalised because most of their assets are locked in zero risk bonds, while stringent screening procedures are applied to screen household borrowers.

5. Policy Recommendations

Content	Policy Taken	Policy Gaps	Recommended Policy
Real Estate Pricing Information	There is no policy in place to regulate the industry. Consequently compiling real estate price movements is difficult.	The industry is not regulated, and there is no proper policy that guides the industry.	<ul style="list-style-type: none"> Regulate the industry. Compile an industry index. Encourage banks to translate the Central Bank's views on household mortgage credit.
Central Information Bureau for Creditors.	Currently, there is no central information database for creditors to validate outstanding liabilities of individual households.	No central data collection point for all creditors to cross-check outstanding liabilities of household debtors. With no consolidated debt updates of individual households, some households live beyond their means.	<ul style="list-style-type: none"> Encourage the setup of a Credit bureau to collect credit information for all households and companies from all sources of credit in the economy.
Growth of Informal Creditors and Loan Sharks.	There is no policy in place to align informal creditors to complement formal creditors.	Growth of informal creditors results in individual households over burdening themselves.	<ul style="list-style-type: none"> Relaxing of lending policies by commercial banks and other formal lending institutions. Ensure competitive lending market . Encourage informal creditors to enter the formal lending market.
Stress Testing the Model	There is currently no model used at the Central Bank to stress test the banking system.	With no stress testing model, banking system stress cannot be identified in advance for corrective measures to be taken. Currently the Supervision Department of the Bank uses the CARMEL framework to assess the banking system.	<ul style="list-style-type: none"> Set up formal stress testing model within the Bank.
Compile a Financial Stability Index (FSI)	Currently, the Financial Stability Index is not calculated in the Bank.	There is a need to compile a Financial Stability Index to measure the stability of the financial system. Early warning signs can be gauged from such an index to give authorities enough time to cull eminent financial crises.	<ul style="list-style-type: none"> Compile Financial Stability Index.

6. Conclusion

Mortgage finance and consumer credit in PNG is diminutive compared to other economies in the region, averaging around 13% of total loans. The small size of the household debt does not pose any threat to the financial system. However, the rising price of real estate in the country may be a concern. Without proper data it is difficult to assess the real estate market, as such it appears to commentators as a mystery. The price increases could be driven by real demand or speculative buying which may pose a threat to the financial system.

The financial system in PNG does not seem to have any issues as the stress test results show that the financial system is stable. Banks are well capitalised to fund their own operations and the results from the different test scenarios show that banks are capable of withstanding any shocks. However, the high liquidity levels in the banking system and the concentration risk of one major commercial bank in the country does pose threat to the financial system. In order to monitor these, a formal stress test model is needed in the Bank.

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