

## Financial Sector Development and Economic Growth in Namibia

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### Abstract

The main objective of the study was to determine the nature of the nexus between financial sector development and economic growth with specific reference to the Namibian economy. The reason why I carried out this study is that no similar study has yet been carried out in Namibia and the nature of the relationship between financial development and economic growth is still not known. This study, therefore, is the first step in attempting to provide literature that could be useful to policy makers and academics in Namibia. We used the Granger causality tests to establish the relationship among the financial sector indicators and economic growth indicators after having carried out the unit root and co integration tests. The results show that the Granger causality between financial development and economic growth is by and large bidirectional. In other words, this means that when the economy grows the financial sector may respond positively and vice versa. We also found that the financial sector variable, the logarithm of the ratio of private sector credit to gross domestic product (GDP), Granger caused the real variables, logarithm of real GDP, and logarithm of real income per capita. This is in line with the conclusion above that real variables could respond favorably to financial variables. So causality in this case is running from financial variables to real sector variables. The article ended with a cautionary statement on the size of the sample used and the general availability of statistical data on the Namibian economy, which could have negatively affected the authenticity of the results.

**Keywords:** Namibia, financial indicators, growth indicators, granger causality

### INTRODUCTION

In this study, we will explore the nexus between financial development and economic growth for the Namibian economy. The Namibian economy, with a population of slightly over two million is very small. Namibia is one of the few countries in Africa that are well governed and because of this, its average growth rate for the period 1999 to 2008 is about four (4) percent. Much as this growth rate of four percent appears to be impressive, it is a fact that Namibia has one of the highest unemployment rates in the world. The unemployment figure currently stands at about fifty (50) percent and this is unimaginable for a small country with such a small population, which boasts of many natural resources like minerals, vast tracts of agricultural land etc.

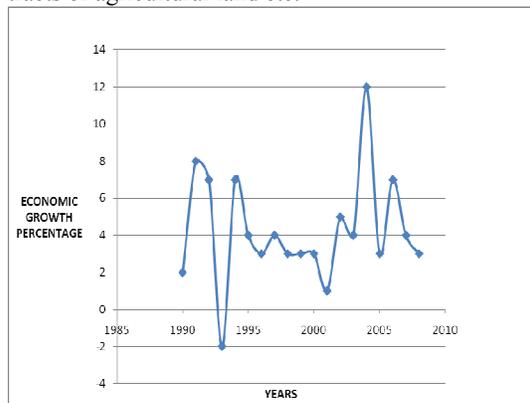


Figure 1: GDP Growth Rate for Namibia (%)

It has been argued that Namibia has enjoyed some foreign direct investment (FDI) mainly in mining in

the last few years; however, this investment has been capital intensive and this has not helped to alleviate the unemployment situation in the country. Namibia's financial services sector has not been growing as expected ever since it gained its independence in 1990. It is a fact that a growing economy spurs development of the financial services sector and vice versa. There are a number of reasons why the financial services sector for Namibia hasn't grown. Firstly, as mentioned above the population of Namibia is small and cannot sustain a big number of banks. So if new institutions enter the financial services sector they are not likely to enjoy huge profits because of the size of the market. So the investors are not prepared to invest their money in the economy where the demand of their services is low. They will definitely not be able to make much profit as they would want. Secondly, it appears that upon realizing that the economy cannot sustain a big number of banks the government took a stance to protect the existing financial institutions, especially, banks. A number of banks have expressed interest about wanting to invest in the Namibian economy but all that has not come to fruition mainly because of the government's stance on the issue. Thirdly, it is a fact that Namibia is a drought prone country and during the years when the country experiences drought, both crop agriculture and animal husbandry do not do very well and this automatically leads to a fall in the demand for goods and services in the economy. Investors are skeptical about investing in such an environment. These could be some of the reasons why the financial services sector especially

the banking sector has grown for such a long time. Since 1990 Namibia has been having four commercial banks and it appears as if the situation is not going to change any time soon. These four commercial banks provide the commercial banking services, building society services, and merchant banking services, among others. Because of the fact they are protected they may not be efficient in the discharge of their functions. In line with this there have been complaints that the service fees charged by the Namibian banks are very high which could be a sign that instead of competing, the banks are colluding in the determination of prices. Studying the relationship between financial development and economic growth is critical for Namibia considering the continued lack of growth of the financial services sector for twenty years.

This article therefore focuses on the following two important issues:

- The relationship that exists between financial and economic growth indicators in a country where the number of banks has not been increasing.
- The likely effects of lack of financial services sector development on economic growth in Namibia.

#### **LITERATURE REVIEW**

Bagehot (1873), Schumpeter (1912) and Hicks (1969) are the people who did ground breaking work on the relationship between financial development and economic growth. Schumpeter (1912) discusses the finance growth relationship as a supply leading relationship where the financial sector leads economic growth by successfully identifying profitable projects that could be funded. This should not be surprising because it is argued that a well functioning financial system would spur technological improvements because it has the ability to select and finance businesses that are expected to be successful. Hicks (1969) and Bagehot (1873) also argued that industrialisation in England was mainly financed by funds from the financial sector which was at the time developing in leaps and bounds.

The other contributors of note to this relationship are: Levine (1991), Saint Paul (1992) Levine and Zervos (1996), Tsuru (2000), Rajan and Zingales (1996) among others. The views regarding the relationship between financial development and economic growth are controversial both from the theoretical and empirical perspectives. As mentioned above, some economic researchers argue that finance precedes economic growth while on the other hand some argue that economic growth leads to financial development. Levine (2004) argued that the costs of processing and acquiring information are greatly reduced by financial intermediaries and this

improves resource allocation in the economy. This argument reinforces what Schumpeter (1912) said about the same relationship. This line of thinking was also investigated by Blackburn and Hung (1998), etc. Greenwood and Jovanovic (1990) came up with a formal dynamic model for the relationship between finance and growth. Their results illustrated that financial development and economic growth actually reinforce each other. Furthermore, King and Levine (1993) and Levine and Zervos (1998) empirically examined the nexus between economic growth and finance by estimating cross country regressions and they found that initial financial development level is a close predictor of the subsequent economic growth. They therefore concluded that finance causes growth. Other researchers who found a similar relationship are: Garretsen, Lensink and Sterken (2004), etc. It is not our intention to dwell much on the literature review because a lot of work has already been done on that; and what we are mainly interested in are the empirics that relate to the Namibian economy. So that is where we are going to put great emphasis in.

Many different studies have been carried out on how financial development and economic growth relate using individual countries, groups of countries (developed and developing) etc. Furthermore, various econometric methods, economic indicators, model specifications and data sets have also been employed in a bid to come up with an explanation that is globally acceptable, but despite all these efforts, there is still no agreement about the exact nature of the relationship. Our intention in this paper is not to come up with a novel estimation technique but to use the technique that has already been employed in other countries to test the same relationship in Namibia. This is because no similar studies have yet been carried out in Namibia and the results from this study will be compared with similar studies carried out elsewhere. We used the Granger causality test to do the analysis in this article. So we want to establish whether the nexus between financial sector development and economic growth in Namibia is finance led, growth led or both.

#### **MATERIALS AND METHODS**

This study is going to make use of the Granger causality approach. In the situation where two variables X and Y are employed the Granger causality is unrelated to the normal use of the term since it measures precedence and information given by X as an argument of the current values of Y. In line with this view, Y is Granger caused by X if X helps in the forecast of Y. Alternatively this means that the lagged values of X are statically significant.

A bivariate Vector Autoregressive (bVAR) time series representation for two variables X and Y has the following form:

$$\begin{pmatrix} Y_t \\ X_t \end{pmatrix} = \begin{pmatrix} c_1 \\ c_2 \end{pmatrix} + \begin{pmatrix} b_{11}^1 & b_{12}^1 \\ b_{21}^1 & b_{22}^1 \end{pmatrix} \begin{pmatrix} Y_{t-1} \\ X_{t-1} \end{pmatrix} + \dots + \begin{pmatrix} b_{11}^m & b_{12}^m \\ b_{21}^m & b_{22}^m \end{pmatrix} \begin{pmatrix} Y_{t-m} \\ X_{t-m} \end{pmatrix} + \begin{pmatrix} \epsilon_{1t} \\ \epsilon_{2t} \end{pmatrix} \quad 1$$

Where  $t$  is the subscript for time,  $b_{ij}$  are the coefficients of the matrices associated with the VAR

$\sum \epsilon_t = \epsilon_{1t}, \epsilon_{2t}$  is a vector of uncorrelated disturbances, and,  $c_1$  and  $c_2$  are constants

The superscripts show the order of the matrix

If we use a system of equations equation above becomes:

$$Y_t = C_1 + \sum_{i=1}^m \alpha_{11} Y_{t-i} + \sum_{j=1}^m \alpha_{12} X_{t-i} + \epsilon_{1t} \quad 2a$$

$$Y_t = C_2 + \sum_{i=1}^m \alpha_{21} Y_{t-i} + \sum_{j=1}^m \alpha_{22} X_{t-i} + \epsilon_{2t} \quad 2b$$

According to Gujarati (2003) Granger causality testing between variables X and Y involves examination of the significance of the  $b_{12}$  and  $b_{22}$  coefficients. This implies that if the vector  $(X_{t-1}, X_{t-2}, \dots, X_{t-m})$  does not have power in forecasting X, Y is therefore not Granger caused by X. Each of the equations represented by [2] has to be estimated individually when testing for Granger causality. The null hypothesis we test is that X does not Granger cause Y and also that Y does not Granger cause X. It is important that the test statistics for the Granger causality in this system of equations conforms to the standard distributions. This implies determining if the variables in the system that have unit roots, and if so, we also determine whether they are cointegrated or not. In this case there is nothing more that we can do because the size of the sample is very small. We only consider nineteen (19) observations from 1990 to 2008; and before this period, the data is not available.

**Data Sources and Measurement**

Diverse measures of financial development and economic growth have been used by the previous researchers on the nexus between economic growth and financial sector development. All the indicators employed in this study have been employed in previous studies done elsewhere. The intention is to show how all these variables are related in the case of Namibia and whether the results are the same as those of other countries at the same level of development done elsewhere. The indicators that we therefore use to measure financial institution indicators are: the lending rates (LRATES), ratio of liquid assets to GDP (RLLY) and the ratio of private credit to GDP (RPY). In the same vein, the indicators that we use to measure economic growth are: level of real GDP (RY), level of real GDP per capita (RYC) and the ratio of investment to GDP (RIY). The statistical data used in this study was sourced from the International Financial Statistics (IFS), The Bank of Namibia, and the Bureau of Statistics. Let me hasten to state that finding the

statistical data for Namibia is a very difficult task and the data that is available is data for the period after independence (1990). Even after independence there are many gaps in the data, especially, in the period between 1990 and 1995. It is only from 1995 onwards that the data is complete. This could be the reason why very few or no similar studies have been carried out on the Namibian economy

**DISCUSSION**

We used the Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) unit root tests to establish if the variables are stationary or non stationary. The null hypothesis ( $H_0$ ) is that the variable is non stationary (has a unit root) and the alternative hypothesis ( $H_1$ ) is that the variable is stationary (has no unit root). In the case where the calculated statistic is greater than the McKinnon critical value,  $H_0$  is not rejected, in other words the variable is not stationary. From the results that we got we found that all the series were non stationary and we therefore could reject  $H_0$ . However, the first differences of all the series were stationary.

After establishing the stationarity of the series the next step was to execute the co integration tests. The bVAR framework was utilised to test for co integration using a technique developed by Johansen in 1988. In this paper, we use the bivariate VAR mainly because of the size of the sample which is small. The null hypothesis ( $H_0$ ) is that the variables are not co integrated and the alternative hypothesis ( $H_1$ ) is that there is no more than one co-integrating factor. Table 1 below shows the results of the co integration analysis. The null hypothesis ( $H_0$ ) of no co integration cannot be rejected for all the pairs implying that there is no long run association between the various indicators of financial development and economic growth.

Table 1: Johansen co integration tests (1990-2008)

| Variable            | Eigenvalue | Likelihood ratio |
|---------------------|------------|------------------|
| LNRY and LNRLLY     | 0.409215   | 2.422889**       |
| LNRY and LNRPY      | 0.037259   | 0.607541**       |
| LNRY and LNL RATES  | 0.007721   | 0.124011**       |
| LNRYC and LNRLLY    | 0.125139   | 2.139044**       |
| LNRYC and LNRPY     | 0.063574   | 1.050960**       |
| LNRYC and LNL RATES | 0.029575   | 0.480335**       |
| LNRIY and LNRLLY    | 0.589972   | 1.026446**       |
| LNRIY and LNRPY     | 0.124956   | 2.135697**       |
| LNRIY and LNN RATES | 0.315202   | 3.058099**       |

\*(\*\*) denotes rejection of the hypothesis at 5% (1%) significance level. Likelihood ratio rejects and co integration at 5% (1%) significance level whose critical values are 3.76 and 6.65 respectively.

We carry out Granger causality tests with first differenced vector auto-regressions (VARs) for each of the two pairs of variables since no co-integrating relations were found. We should take note of the fact that the Granger causality technique measures the information given by one variable in explaining the

latest value of another variable. In addition, it also says that variable Y is Granger caused by variable X if variable X assists in predicting the value of variable Y. If this is the case, it means that the lagged values of variable X are statistically significant in explaining variable Y. The null hypothesis ( $H_0$ ) that we test in this case is that the X

variable does not Granger cause variable Y and variable Y does not Granger cause variable X. Table 2 below summarises the results of the Granger causality tests.

Table 2: Pairwise Granger Causality tests

| Null Hypothesis:                      | Obs | F-Statistic | Probability |
|---------------------------------------|-----|-------------|-------------|
| LNRPY does not Granger Cause LNRY     | 17  | 0.92846     | 0.42178     |
| LNRY does not Granger Cause LNRPY     |     | 3.31471     | 0.07143*    |
| LNRLLY does not Granger Cause LNRY    | 17  | 1.57594     | 0.24677     |
| LNRY does not Granger Cause LNRLLY    |     | 0.24753     | 0.78461     |
| LNLRATES does not Granger Cause LNRY  | 17  | 1.83591     | 0.20154     |
| LNRY does not Granger Cause LNLRATES  |     | 1.59272     | 0.24351     |
| LNRPY does not Granger Cause LNRIY    | 17  | 0.49144     | 0.62353     |
| LNRIY does not Granger Cause LNRPY    |     | 1.86011     | 0.19785     |
| LNRLLY does not Granger Cause LNRIY   | 17  | 0.25174     | 0.78145     |
| LNRIY does not Granger Cause LNRLLY   |     | 0.68417     | 0.52314     |
| LNLRATES does not Granger Cause LNRIY | 17  | 2.61847     | 0.11385     |
| LNRIY does not Granger Cause LNLRATES |     | 0.54992     | 0.59087     |
| LNRPY does not Granger Cause LNRYC    | 17  | 0.81278     | 0.46662     |
| LNRYC does not Granger Cause LNRPY    |     | 3.41081     | 0.06717*    |
| LNRLLY does not Granger Cause LNRYC   | 17  | 0.89394     | 0.43461     |
| LNRYC does not Granger Cause LNRLLY   |     | 0.02563     | 0.97475     |
| LNLRATES does not Granger Cause LNRYC | 17  | 3.10127     | 0.08209*    |
| LNRYC does not Granger Cause LNLRATES |     | 1.08130     | 0.37002     |

a)The Schwartz criterion was used to determine the order of the lags on the bivariate (bVAR) relationships. The number of observations is the one that restricted us to two lags.

b)The estimates were achieved by using the integrated variables first differences. \*(\*\*) denotes significance at 5 (10) percent level.

The above results generally show that causality is bidirectional for the majority of the pairs of variables except three where it is unidirectional. Two financial development indicators are not Granger causing the economic growth indicators and two economic growth indicators are not Granger causing financial development indicators. The following pairs of variables are the ones that exhibited unidirectional causality: LNRY and LNRPY, LNRYC and LNRPY, and LNLRATES and LNRYC. In two of the cases of the pairs of variables which show unidirectional causality LNRPY (financial variable) Granger causes LNRY and LNRYC (real variables) and in the other case a real variable (LNRYC) Granger causes a financial variable (LNLRATES). If we consider all the other cases considered we find that the direction of causality between financial development indicators and economic growth in Namibia is generally bidirectional (causality runs in both directions).

## CONCLUSION

Various studies both theoretical and empirical have been used to analyze the relationship between financial sector and economic growth indicators. In

addition, various econometric methodologies have also been used to prove this relationship. Some studies showed that the direction of causality runs from economic growth to financial development while others found that the opposite is true. This study is the first on the economy of Namibia and this could be because of the non availability of statistical data that span over a long period of time. Statistical data for Namibia starts from the year 1990 when Namibia became independent. Before 1990 there is only data for some selected variables and data on financial variables is nonexistent mainly because there was no Central Bank in Namibia and all financial issues were dealt with in South Africa which of course controlled, and still controls (in terms of ownership) the financial services sector of Namibia. The results we got generally show that there is a bidirectional relationship between financial sector development and economic growth in Namibia, although there were also three cases of unidirectional causality. In two of the cases, the financial sector variable (LNRPY) Granger caused the real variables LNRY and LNRYC; and in the other case the real variable LNRYC Granger caused LNLRATES. What these results show is that the

growth of the economy can spur the growth of the financial services sector and vice versa. This is what the majority of the pairs of variables considered in Table 2 above show. However, in the two cases where causality runs from the financial sector to economic growth this suggests that the development and growth of the financial sector in Namibia could make the economy grow faster than it is currently doing. As mentioned earlier, the number of commercial banks and the other players in the financial services sector in Namibia has not increased significantly over the last twenty (20) years and this could lead to inefficiencies which could be costly to the economy. In such a situation the banks and other financial services providers make huge profits because of their monopolistic or oligopolistic nature at the expense of the welfare of the nation. According to Sherbourne (2010) just less than fifty (50) percent of the Namibian population has access to banking services. This implies that if access to banking services is improved either through an increase in competition (by increasing the number of players) or by increasing the number of branches of existing banks; this could unlock the growth potential of the Namibian economy. So steps should be taken to increase the accessibility, depth and sophistication of the financial services market. The growth and development of the financial sector should comprise the diversification of financial instruments and this will subsequently avail more funds for the development of Namibia. Findings of this article support the concept that countries which have a less developed financial systems tend to experience a demand following relationship where economic growth causes the financial sector to develop. However, the reverse causality tends to suggest that financial sector development may also influence financial sector development positively. The results of this article should be taken cautiously because the size of the sample used is small and a specific set of financial services sector and economic growth indicators were used. It is likely that if different indicators were used they could probably yield different results. With data availability in future, the extensions of this empirical investigation could incorporate the bond and stock market indicators.

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