Do Banks Steer Economic Growth in Emerging Markets? Empirical Evidence from Zimbabwe

Tafirei Mashamba (Corresponding author) Faculty of Commerce, Department of Banking & Finance, Great Zimbabwe University, PO Box 1235, Masvingo, Zimbabwe E-mail: cfamashamba@gmail.com

Rabson Magweva Faculty of Commerce, Department of Banking & Finance, Great Zimbabwe University, Zimbabwe PO Box 1235, Masvingo, Zimbabwe E-mail: rmagweva@gzu.ac.zw

Abstract

Tests of the finance-growth nexus to date have not been conclusive on the nature & direction of the relationship between economic growth and financial sector development. A number of studies on the role played by banks in economic development have shown considerable variation across countries. In this paper we empirically examine the causal and nature of relationship between financial sector development and economic growth in Zimbabwe for the period 1980 to 2006; using time series analysis namely Granger Causality tests in a Vector Autoregressive (VAR) framework. All variables were tested for stationarity using the Augmented Dickey–Fuller (ADF) Test and became stationary in levels, 1st difference and 2nd difference. A general uni-directional relationship was found to exist running from banking sector development to economic growth in Zimbabwe hence the supply-leading hypothesis is supported. The study recommends that policy makers should come up with policies that steer continuous growth of the banking sector. In this regard the government could reduce its borrowings from the domestic money market, promote a savings culture by encouraging banks to increase their deposit rates (through moral suasion) and attract more deposits for onward lending to the private sector and improve the country's low credit risk rating to lure foreign investors.

Keywords: Banks, Economic Growth, Unit root Tests, Granger Causality, VAR

1. Introduction

The finance-growth nexus spans from the early works of Nurkse (1952), Gurley & Shaw (1955) and Gerschenkron (1962). Cameroon (1972), McKinnon (1973) & Shaw (1973) made significant contribution to this paradigm by exploring the interactions between Monetary Policy and Credit and the role of banks in an economy. Recent studies by Taghipour (2008), Beck & Levine (2004) and Levine (2004) conclude that financial sector development enhances economic growth.

In his 1962 publication, Gerschenkron persuasively argued that economically backward countries can rely on bank finance for industrialisation. In his study he showed that backward economies like Germany relied heavily on the banks' finance to steer her growth. However, in Neo Classical growth models economic growth is treated exogenously to the financial system. In these models financial variables only influence income level rather than the growth of income. This is due to the presence of diminishing return to capital. On the other hand, in Endogenous growth models (such as Gerschenkron Economic Backwardness Theorem) it is widely believed that financial development does influence economic growth.

Tests of the finance-growth nexus to date have not been conclusive on the nature and direction of the relationship between economic growth and financial sector development. A number of studies on the role of banks to economic development have shown considerable variation across countries. Studies by Amoah et al (2012), Taghipour (2008), Sergent (2001) found significant and positive relationships between banking sector variables and economic development, while, Ekpenyong & Acha (2011), Koivu (2002), & Sufran (1999) identified a weak or no relationship between financial development and economic growth. On the other hand studies by Luintel & Khan (1999) and Odedokun (1992) found bidirectional causality between finance and economic growth. However, Galindo & Micco (2004) and Lucas (1988) believe that finance is not important at all. These studies have drawn three possibilities on the nature and direction of the causal relationship between finance and growth;

- Supply-Leading hypothesis (Financial development determines economic growth)
- Demand-Following hypothesis (Financial development follows economic growth)
- Bidirectional Causality (in the short run financial development determines economic growth and in the long run financial development follows economic growth).

This study is carried out to provide more insights on the topic by empirically examining the nature and direction of relationship between banking sector development and economic growth in Zimbabwe.

We employ the Granger Causality test in a Vector Autoregressive (VAR) framework to test for short run relationship between bank growth and economic development.

The rest of the paper is organised as follows. Section 2 presents an Overview of the Zimbabwe Banking sector and review related literature. Sections 3 allude to the Research Methodology, while Section 4 Presents and analyse the results. Section 5 draws Conclusion and makes Recommendations.

2. Literature review

2.1 Overview of the Zimbabwe banking sector

2.1.1 Developments before 1980 (Pre-Independence)

Prior to independence (1980), (the now) Zimbabwe had a free banking system which was replaced by the currency board in 1940 (Hanke, 2008). During the period the economy fared very well with the growth rate in GDP averaging 8% per annum (Makina, 2009). The financial sector was broad compared to other Sub-Saharan economies with a range of financial institutions (stock exchange, discount houses, commercial banks, accepting houses and a Postal bank) (Makina, 2009). However, the financial depth as measured by (M2/GDP) ratio was low. The ratio declined from 27% in 1954 to 21% in 1963, while commercial bank lending (as a percentage of GDP) rose slightly from 9% to 11% in the same period (Brownbridge & Harvey, 1998). However, from 1963 financial deepening has been on a steady increase, with the ratio reaching 35% by 1980 (Makina, 2009).

2.1.2 Post Independence Developments (1980-2008)

Throughout the 1980s the financial sector was tightly controlled and highly oligopolistic, with foreign banks (Barclays and Standard Chartered Bank) dominating the sector, barriers to entry were prevalent, inhibiting competition (Makina, 2009). Operations were distorted by ceilings imposed on lending and deposit rates, portfolio restrictions, government-directed lending programmes, and exchange controls (Brownbridge & Harvey, 1998). Insurance and pension funds were essentially captive government-debt markets through the prescription of assets. Small firms and low-income groups had limited access to credit. Those with small savings in the rural areas could only invest with the Post Office Savings Bank (POSB), which used the funds for on-lending to government. Lending window for these savers was nonexistent (Makina, 2009).

When the economy was liberalised in 1991 following recommendations from the IMF and World Bank, numerous domestic banks opened doors to the public. Among the early birds were Intermarket Banking Corporation (now ZB Building Society), NMB and Kingdom Bank (now AfriAsia Bank). Liberalisation of the economy in the 1990s was perceived by the Reserve Bank of Zimbabwe (RBZ) to improve efficiency, increase competition, lower lending rates ultimately leading to financial sector depth and breadth.

The government bought majority shareholding in one of the foreign commercial banks (Nedbank). According to Brownbridge & Harvey (1998) this move was meant to alter the structure of bank lending, with the objective of increasing lending to previously marginalised African owned businesses. The government went on to buy a 47% stake in the newly established Zimbabwe Commerce & Credit Bank (ZCCB) in partnership with the Asian BCCI (Brownbridge & Harvey, 1998). Upon the collapse of BCCI in 1991, government took over the remaining 53% stake (wholly owning the bank) and the bank was subsequently renamed to Commercial Bank of Zimbabwe (CBZ).

Reforms introduced in the 1990s initially led to growth of the financial sector at 3% per annum (Makina, 2009). Foreign banks still dominated the market with more than 50% of the deposits being held by the four foreign banks (Stanbic, MBCA, Standard Chartered and Barclays bank). On the contrary, these reforms did not bring about total financial inclusion. Banks continued to serve "prime" clients. Moreso, the new entrants favoured merchant and discount banking to commercial banking to exploit trading of risk free government securities. Studies by Boyd et al (2001) has shown that financial sector reforms in Zimbabwe did not brought total financial deepening and financial breadth, largely as a result of unfavourable macroeconomic conditions especially on the inflation front. The high inflation rates crippled industrial production making it difficult for the bankers to fund the untapped small scale sectors. As concurred by Makina (2009), the reforms did not improve access to credit for the poor and marginalised groups and did little to steer development. Moreso, the FinScope Consumer Survey Zimbabwe of 2011 found that 40% of adults are financially excluded with only 3% borrowing from banks.

Such market failures induced the government to come up with a number of subsidised schemes such as the establishment of Small Enterprise Development Corporation (SEDCO), the Capital Guarantee Corporation and the current Youth Fund (run by the Ministry of Youth, Development & Employment Creation in partnership with three banks). Ironically, such schemes violate the principle of market orientation resulting in the failure by the government to secure funding for these initiatives (Makina, 2009). Regrettably in 1998, the financial sector came under great stress following the collapse of an indigenous bank United Merchant Bank (now BancABC). The government responded by rising capital adequacy ratios way above the 8% internationally accepted. The year 2003/4 made history in terms of bank failures. A number of locally owned banks were under, much to the detriment of savers. Weaknesses in locally owned banks were exposed. Four banks were liquidated and nine

were placed under the intensive care of curators. Poor corporate governance practises and inadequate supervision and regulation by the central bank were sighted as the major culprits.

Table 1: Architecture of Zimbabwe Banking sector				
Type of institution	Number			
Commercial Banks	16			
Building societies	3			
Merchant Banks	1			
Savings Banks	1			
Total	21			
Asset Management companies	16			
Microfinance Institutions	146			

2.1.3 Current status of the Banking Sector (Multicurrency Era-2009 to date) Table 1: Architecture of Zimbabwe Banking sector

Source: RBZ Monetary Policy Statement January 2013

As at 31 December 2013, there are 21 operating banking institutions made up of 16 commercial banks, 3 thrifts, 1 accepting houses and 1 Savings bank as shown in Table 1 above.

Entry barriers are currently low (serve for the \$100 million minimum capital threshold). This makes market differentiation to be based on customer segmentation rather than price. This has led to a focus by a majority of the banks on the relatively wealth class and blue chip corporate. On a positive note, the sector is generally sound and safe despite a multiplicity of challenges it is facing; from liquidity challenges to absence of the lender of last resort. Since 2009 (multicurrency era), two formally collapsed banks (during the 2003/4 banking crises) were relicensed. Regrettably, the bankers do not seen to learn from past mistakes. Financial indiscipline resurged. In 2011 Renaissance Merchant bank (RMB) now (Capital Bank) was placed under curatorship for more than a year, and another bank (Interfin) is still under curatorship. These developments signify deep rooted corporate governance weaknesses in local banks, a practice common in many transitional economies.

Despite these sad developments, deposits gradually rose between 2009 and 2013. From \$1,4 billion in December 2009, deposits have been growing significantly to peak close to \$4,7 billion by the end of 2013 (RBZ MPS, January 2014), reflecting a rise of more than 300%. This reflects the general confidence the public is restoring to the banking sector. Moreso, these developments are attributed to the adoption of multiple currencies in 2009. In the same vein, loans and advances rose by over 500% (from \$0,6 billion to \$3,7 billion) in the same period. The loans to deposits ratio has been on a steady rise from 37.33% in June 2009 to 78.29% as at 31 December 2014 (RBZ MPS, January 2014). It is worth noting that loans and advances remain largely short term (90%) and has been channelled towards working capital (Mverecha, 2011).



Source: RBZ Monetary Policy Statement January 2013

As at 31 December 2013, 23.80% of total loans & advances (Figure 1) were channelled towards individuals. This could be explained by a cautious approach bankers are taking to manage credit risk in light of obtaining very high Non Performing Loans (NPL) as most of these loans are salary based with minimal default. However, DR. C.L. Dhliwayo (former acting RBZ governor) is of the opinion that such lending behaviour is not

health for the economy as it leads to deindustrialisation and it reflects structural fragilities in the banking sector.

Lending rates remain relatively high (above 20% per annum), largely as a result of the obtaining liquidity crunch, limited access to offshore credit lines and deteriorating Balance of Payment position (RBZ, 2013). The average deposit and lending rates for 2012 are shown below.



Source: RBZ Monetary Policy Statement January 2013

Deposit rates have averaged 4% per annum in 2012 reflecting the misalignment of deposits rates and borrowing rates. These developments led the Ministry of Finance in collaboration with the central bank to come up with a raft of measures to address these disparities. Among the measures taken, banks are now compelled to offer interest on deposits above \$1000,00, charging lower rates on loans (below 15% per annum) and to lower bank charges (Ministry of Finance, 2012). The central bank also instructed banks to realign their lending portfolios to priotise the Small to Medium Enterprises (now to receive 30% of total funds) to revamp the sector as it is believed to be the major source of employment presently.

2.2 Role of banks in an economy

Commercial banks do play a pivotal role in the transformation of transitional economies. A greater part of industrial support is derived from banks. In Zimbabwe, since dollarization (2009) the industrialists have been relying on bank credit to fund CAPEX (Capital Expenditure) and working capital requirements (Muchemwa, 2012). Commercial banks also provide the link in which the government transmit its economic policies (especially Monetary Policy). For example, if interest rates are too high, the cost of credit will be also high embedding borrowing. This has adverse effects on the productive sectors of the economy as they are forced to cut down expenditure, ultimately retrenching excess labour. This leads to unemployment and civil unrests. The government through the central bank can remedy this by increasing its money supply, thus lowering the cost of funds. It is noteworthy, that bank deposits represent the greater component of the money supply and any changes in money supply growth leads to changes in the prices of goods and services. Sergeant (2001) observed that about 40% of the aggregate resources of the financial sector are held by commercial banks.

Besides the transmission of government policies, banks do mobilise deposits and extend loans to the general public and corporate entities. As noted by Ekizie (1997) deposit mobilisation is one of the major functions of banks in an economy. They do so by offering a wide range of products such as checking accounts, savings accounts and fixed deposits. The taking of deposits and loan extension to deficit units enables banks to create money through credit creation. This ability to create money distinguishes banks from other financial intermediaries. In the loan contracts banks also solve the problem of asymmetric information, which can lead to moral hazards and adverse selection. Upon extension of a loan, banks have the responsibility to monitor the activities of the borrower. This ensures that the money is put to good use. In this regard Diamond (1984) developed a model of delegated monitoring, whereby the borrower and the monitor are both monitored.

Apart from these primary functions banks issue letters of credit (LC), provide custodian services, facilitate the payment and clearing of transactions and provide information on the credit worthiness of the borrowers.

2.3 Empirical literature

From the earlier works of [Bagehot (1873), Schumpeter (1912), Nurkse (1952), Goldsmith (1955), Gurley and Shaw (1955) and Gerschenkron (1962)] it can be stressed that banks accelerate economic growth. They do so through;

i. Channelling investment to firms.

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ii. Savings promotion.

iii. Enhanced capital productivity.

Under the endogenous growth model Pagano (1993) suggests that banks enhance economic growth in three basic ways;

- i. Increasing investment productivity.
- ii. By reducing transaction costs banks increase savings which can be channelled towards productive ventures.
- iii. Promoting savings.

These views are concurred by Mohamed (1999) who observed that well-functioning financial markets can pool resources effectively, efficiently allocate resources, pool risks, induce market liquidity and reduce transaction costs.

Interestingly, studies to date have not been consistent in explaining the role of banks in steering economic growth hence the divergent views regarding the link between finance and development. Studies by Schumpeter (1912), Gerschenkron (1962), Levine (1993) and later on Capasso (2004), Senbet & Otchere (2005) and Taghipour (2008) support the supply-leading hypothesis; thus a positive correlation between finance and growth.

Contrary to the above supply-leading hypothesis, studies to date disagree on the existence, sign and causality of the relationship. While cross country and panel data studies show a positive link, time series analysis support opposite results (Amoah et al, 2012). In the study by Robinson (1952), the author did find a causal relationship between finance and growth. Rather, a demand following hypothesis was proved to hold, whereby financial development follows economic development as economic agents demand financial services. The same view is shared by (Christopoulos & Tsionas, 2004), who argued that economic output rise, there would be increased demand for investment and funding.

On the other hand, other writers claim that the causality between finance and growth is bi-directional (Demetriades and Hussein, 1996). Also Arestis and Demetriades (1997) determine that the long-run causality between financial sector and economic growth may vary across countries. Patrick (1966) observed that in the short run the supply leading hypothesis is true for economic growth with the direction being reversed in the long-run (demand following holding). It is upon these divergent views that we employed the Causality-Testing framework proposed by Granger (1969) to examine the nature and direction of relationship between banks and economic growth.

3. Methodology

The study examines causality and nature of causality between financial sector development and economic growth using time series econometric methodologies. Causality was tested using the Granger Causality test in a Vector Auto Regressive (VAR) framework. According to Haron & Azmi (2006) if the variables are cointegrated we use Vector Error Correction Model (VECM) and if they are not integrated of the same order we employ the VAR methodology. In this study the variables were not cointegrated of the same order hence the adoption of VAR. The paper adopts Haron & Azmi (2006) VAR model specified as;

$$Y_t = \sigma + \sum_{j=1}^{\kappa} A_j Y_{t-j} + V_t$$

The model shows current values of the endogenous variables as a function of lagged values for all the endogenous variables in the system (Haron & Azmi, 2006). Granger causality imply that if past values of X can forecast the future values of Y, then X is said to Granger cause Y. Gujarati (2004) identified the following possible causal relationships between X and Y.

Unidirectional causality

X is said to Granger cause Y if the coefficients on the lagged X values are statistically significant from zero as a group (i.e. $\sum \alpha_i \neq 0$) and the pair of estimated coefficients on the lagged Y is not statistically different from zero (i.e. $\sum \delta_j = 0$).

On the other hand;

A unidirectional relationship from Y to X exists if the set of lagged X coefficients is statistically different from

zero (i.e. $\sum \alpha_i \neq 0$) and the pair of the lagged Y coefficients is not statistically different from zero (i.e. $\delta_j = 0$). • Bidirectional causality

Exists when the pair of X and Y coefficients are statistically significant from zero in the two regressions.No causality

Exists when the pair of X and Y coefficients are not statistically significant in the two regressions.

To avoid spurious regression the variables were tested for stationarity using the ADF test (Gujarati,

2004). The lag length selection for the model was done using Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC). For the purpose of this research the following variables were used as in the studies of other scholars;

GDP per Capita in USDollars as a proxy for economic growth (GDP)

[Based on the inflationary pressures experienced in Zimbabwe during the study period the researchers decided to use the GDP per Capita in USD. This variable was assumed to be the best proxy to measure *economic development in Zimbabwe*]

- These variables were used as proxies for financial sector growth.
- Liquid liabilities (M3)
- . Domestic Credit by the banking sector (DC) [Kularatne (2001), Koivu (2002) Acaravci et al (2007)] [Koivu (2002)]
- Interest Rate Spread (IRS)
- Domestic Savings (DS)

[Makina (2009)]

[our own variable]

[Levine & Beck, (1999)]

 $M^{2}/_{GDP}$ as a measure for financial deepening (FD) All data was obtained from IMF CD Rom on Zimbabwe for the period 1980-2006. The authors chose this period because it is the period with all the statistics needed for the study.

4. RESULTS & THEIR INTERPRETAION **4.1 UNIT ROOT TESTS**

Variable	ADF statistic	Critical Values	Order o	of Decision	Significance
			Integration		Level
LogDC	-3.2699	-2.9862	I(0)	Stationary	5%
LogDS	-4.7874	-4.5716	I(2)	Stationary	1%
LogFD	-9.1556	-4.3743	I(1)	Stationary	1%
LogGDP	-4.5408	-4.5326	I(1)	Stationary	1%
LogIRS	-4.2002	-3.6584	I(1)	Stationary	5%
LogM3	-3.4605	-2.9862	I(0)	Stationary	5%

Table 1 shows the results of unit root tests. Financial deepening, Gross Domestic Product and Interest Rate Spread become stationary at the first difference, while liquid liabilities (M3) and Domestic Credit were stationary in levels. Only domestic savings became stationary at the second difference. All variables are stationary after differencing.

4.2 PAIRWISE GRANGER CAUSALITY TEST RESULTS 4.2.1 Model 1 results: Dependent Variable LogGDP

H₁:Independent variable does not Granger cause GDP

				-
Regressors	Chi-Square Test Statistic	p-value	æ	Decision
LogM3	8.2027	0.0042	0.05	Reject
LogDC	9.7872	0.0018	0.05	Reject
LogDS	4.0684	0.0437	0.05	Reject
LogFD	0.1095	0.7407	0.05	Accept
LogIRS	0.8085	0.3686	0.05	Accept

4.2.2 Model results: Dependent Variable LogM3

H₂:Independent variable does not Granger cause M3

Regressors	Chi-Square Test Statistic	p-value	æ	Decision
LogGDP	0.4875	0.4851	0.05	Accept
LogDC	0.4979	0.4804	0.05	Accept
LogDS	3.6223	0.0570	0.05	Accept
LogFD	0.0848	0.7710	0.05	Accept
LogIRS	1.4875	0.2226	0.05	Accept

Regressors	Chi-Square Test Statistic	p-value	a	Decision
LogGDP	0.0615	0.8042	0.05	Accept
LogDC	0.3505	0.5538	0.05	Accept
LogDS	2.0548	0.1517	0.05	Accept
LogFD	0.0004	0.9846	0.05	Accept
LogIRS	1.5041	0.2200	0.05	Accept
4.2.4 Model 4 re	sults: Dependent Variable LogDS			
H ₄ :Independ	ent variable does not Granger ca	use LogDS		
Regressors	Chi-Square Test Statistic	p-value	a	Decision
LogGDP	0.7219	0.3955	0.05	Accept
LogDC	2.2150	0.1367	0.05	Accept
LogDS	1.1826	0.2768	0.05	Accept
LogFD	0.0426	0.8365	0.05	Accept
LogIRS	2.9286	0.0870	0.05	Accept
4.2.5 Model 5 re	sults: Dependent Variable LogFD			
H ₅ :Independ	ent variable does not Granger ca	use LogFD		
Regressors	Chi-Square Test Statistic	p-value	a	Decision
LogGDP	6.0610	0.0138	0.05	Reject
LogDC	10.2197	0.0014	0.05	Reject
LogDS	10.8125	0.0010	0.05	Reject
LogFD	5.6159	0.0178	0.05	Reject
LogIRS	5.3328	0.0209	0.05	Reject
4.2.6 Model 6 re	sults: Dependent Variable LogIRS			
H ₆ :Independ	ent variable does not Granger ca	use LogIRS		
Regressors	Chi-Square Test Statistic	p-value	a	Decision
LogGDP	0.8522	0.3559	0.05	Accept

Regressors	Chi-Square Test Statistic	p-value	æ	Decision
LogGDP	0.8522	0.3559	0.05	Accept
LogDC	1.0359	0.3088	0.05	Accept
LogDS	0.2987	0.5847	0.05	Accept
LogFD	3.5479	0.0596	0.05	Accept
LogIRS	1.0927	0.2959	0.05	Accept
The regults show that four unidirectional relationships exist running from M2 to CDP, DC to CDP.				

The results show that four uni-directional relationships exist running from M3 to GDP, DC to GDP, DS to GDP and GDP to FD. On the other hand no causal relationship was identified between IRS and GDP. From these results a general uni-directional relationship is found to exist running from banking sector development to economic growth. These results are consistent with the findings of [Schumpeter (1912), Gerschenkron (1962), Levine (1993), Capasso (2004), Senbet & Otchere (2005) and Taghipour (2008)].

5. CONCLUSION AND RECOMMENDATIONS

The study tested the existence and nature of relationship between banking sector development and economic growth. Domestic Credit by the banking sector (DC), Interest Rate Spread (IRS), Liquid liabilities (M3), $M2/_{r=1}$

Domestic Savings (DS) and ^{M2}/*CDP* as a measure for financial deepening (FD) were used as proxy variables to measure banking sector development while GDP per Capita (USD) was used as the proxy for economic growth. The study found a uni-directional relationship between banking sector development and economic growth hence the supply-leading hypothesis is supported.

Based on the above findings and conclusions it can be recommended that policy makers should come up with policies that steer the continuous growth of the banking sector. In this regard the government should reduce their borrowings from the domestic money market, promote a savings culture by encouraging banks to increase their deposit rates (through moral suasion) to attract more deposits for onward lending to the private sector and improve the country's low credit risk rating to lure foreign investors.

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