Financial Sector Development and economic growth: Evidence from Zimbabwe

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Introduction and overview

- The debate dates long, (Bagehot ,1873 ; Hicks 1969, Schumpeter 1934)

- The role of financial markets in economic development has attracted and received increased attention from both academia and policy makers and over the past decades, focus on this area has increased, with mixed findings, - and it still remains a theoretical and empirical controversy (Boulika and Trabelisi, 2002).

Four Views have emerged

1. No Relationship at all

- Lucas (1988), Stern, (1989), suggest there is no relationship between financial system development and economic growth. According to Lucas (1988) finance is an **'over-stressed'** determinant of economic growth.

- Therefore, any strategies aimed at promoting financial system development would be a waste of resources, as it diverts attention from more relevant policies such as labour and productivity improvement programs, implementation of pro-investment tax reforms, encouragement of exports; amongst others.

2. The financial system develops in response to improved economic growth- *demand-following hypothesis*

- According to Robinson (1952) 'where enterprise leads finance follows'. As an economy grows the financial sector responds to the demands of the economy.

- A number of studies suggest a unidirectional causality from growth to finance(Patrick 1966,Gurley and Shaw,1967; Goldsmith,1967; Jung,1986; Pentcost, 2000; Boulika and Trabelisi, 2004;Isalam, Habib and Khan, 2004 , Guryay, Safakli and Jazel 2007)

- Countries whose economies grow faster, are forced to devote more investment on improving the financial system, in order to stabilize their economic environment (Padilla and Maye, 2002).

- Thus development in the financial systems comes as a response to economic growth

3. Bi-directional causality between finance and growth

- For example Demetriades and Hussein (1996), Greenwood and Smith (1997); Al-Yousif (2002).
- There is an existence of a feedback relationship between the two

4. Finance leads to growth- *supply-leading hypothesis*

- According to Bagehot (1873) and Hicks (1969) development in the financial system played a critical role in industrializing England by facilitating the mobilization of capital. Schumpeter (1934) harnesses the importance of the banking system in economic growth; financial institutions support innovation and creativity and thus enhance future growth by identifying and funding productive investments. Therefore, it facilitates the creation of wealth, trade and the formation of capital (Ahmed, 2006).

- Services provided by the financial intermediaries are important for innovation and development.

- Interventions to impose restrictions, on the banking system, such as credit ceilings and high reserve requirements have a negative impact on the development of the financial sector, which ultimately reduces economic growth - Fry (1978,1980) and Galbis (1977)

- Financial development can reduce the cost of acquiring information and thus enhance resource allocation and accelerate growth.

- By aiding risk management, improving liquidity and reducing transaction costs, financial system development encourages investments - Jung (1986); Levine(1997), Calderon and Liu, (2003)Apergis, Filippidis and Economidou, (2007).

- Some researchers however, believe the relationship it **'too obvious to warrant serious discussion'** (Miller, 1988

- So what is the relationship between Finance and growth?

- In seeking to understand the relationship, different approaches have emerged

1. Cross Country Comparisons

- Some have used cross section analysis or panel data techniques for example, Jung (1986), Rubini and Sala-iMartin (1992), King and Levine (1993), Levine (1999), Luintel and Kan(1999), Levine et al (2000), Aghion et al (2005). They seek to come up with a measure of financial development and make a cross country comparison.

- However, these have been blamed for failure to fully capture the unique characteristics of each country and thus not fully showing the relationship

2. Country Specific studies

- Through implementation of econometrics time series; researchers have began to appreciate the need to understand direction of causality on a country level basis, and focus has shifted to country-specific studies,

- For example, Ghali (1999)-Ghana, Boulika and Trabelisi (2002)-Tunisia, Lee (2005)-Canada, Eita and Jordan (2007)-Botswana, Banda (2007)-Zambia, Guryay, Safkli and Tuzel (2007)-Northern Cyprus, Odhiambo, (2008)-Kenya, Kilimani (2009)-Uganda, Nowbustinget al (2010)-Mauritius, Johannes et al (2011)-Cameroon, and many others

Objectives of this study

- In-line with other country-specific studies, this study seeks to assess the cointegration and causal relationship between financial system development and economic growth, from a Zimbabwean perspective, for the period 1980-2006.

- The study uses Granger causality test, to establish the relationship between the two and thus assess effectiveness of financial intermediation and institutional reforms in promoting sustainable economic growth.

- Bearing in mind that, whichever way findings and conclusions may lead, they have profound implications implications

Overview of Zimbabwean Financial system

- The Zimbabwean financial system dates back to the 19th century,
- The first bank was established in 1872 under a free banking system, which was replaced by a currency board in 1940, and later replaced by the central banking system.
- The sector is regulated by the Ministry of Finance through the Reserve Bank of Zimbabwe (RBZ), however there is the Ministry of Economic Planning and Development and the Ministry of Industry and International Trade as well.
- The stock exchange was established in 1946 (years before independence), by 1963 it had 98 quoted shares and 13 brokers, treasury bills were in circulation by 1952, the central bank was set-up in 1956; amongst others.
- 1960 -financial system well developed with a variety of financial institutions, and established markets in government paper and equities
- According to Makina (2009) though during this period the country had a wide range of financial institutions (stock exchange, discount houses, accepting houses and a Postal Bank), it did not translate into improvement in financial development, as financial depth (ratio of money supplied to GDP) declined from 27% to 21% between 1954 and 1963 (Makina, 2009, Harvey 1996).
- Bank lending as a percentage of GDP increased from 9% to 11% during the same period.
- In 1980, the financial depth ratio increased to 35%.

Zim Financial sector

- Up to the 1990s, the financial sector had a sound history (Harvey, 1996) consequently financial sector reforms were not part of economic reforms,

- Little attention was given to the financial sector in government economic and policy plans, for example, in 1982 and 1983 a Money and Finance Commission was proposed, but was never implemented, and by 1986, there was no mention of financial sector reforms; 'they were no longer part of government agenda' (Harvey, 1996)

- Financial sector liberalization was introduced in the 1990s as part of the broad strategy of improving resource allocation and thus increase bank credit to the private sector, this led to an average growth of 3%per annum in the financial sector; despite the economic contraction in others sectors

- Over the past decade, there has been a pervasive economic collapse in Zimbabwe. The financial sector faced many challenges, due to macroeconomic imbalances and policy inconsistencies.

- Specifically, the Central Bank presided over quasi-fiscal activities, which subsequently fuelled hyperinflation. This undermined financial intermediation, resulting in the public losing confidence in the banking sector, leading to a further deterioration in the robustness of the financial system

Current status

- Following a period of economic contraction ,1998-2008, and the ultimate adoption of multi-currencies, there has been, reportedly, an improvement in real economic growth, amid a myriad of economic challenges emanating from the continuing socio-political uncertainty which has led to infrastructural and regulatory deficiencies, leading to closure of a number of financial institutions and a near collapse of the sector.

- In addition, current pressure on indigenization and policy uncertainty is a threat to economic growth. It is therefore, imperative to understand the relationship between financial system development and economic growth, especially before the multi-currency era, as this has profound implications for regulatory and policy makers, researchers and other economic participants as they seek to develop short-term and long-term strategies to improve economic growth,

- As at January 2012, there were 17 –Commercial banks, 4 –Merchant Bank, 4-Building Societies, 1-Savings bank, 16-Asset Management Companies, 157-Microfinace Institutions (RBZ- MPS, January 2012); all discount houses and Finance houses have been closed

Methodology

- To test for causality between economic growth and financial development, the Ganger causality test is used.

- According to Granger (1969) a variable *X* causes *Y* if the predictability of *Y* increases when *X* is taken into consideration. Therefore *X* "Granger causes" *Y* if past values of *X* can help explain Y. However, if Granger causality holds this does not guarantee that *X* causes *Y*. But, it suggests that *X* might be causing *Y*.

Data analysis and interpretation of results

- The study uses data gathered, online from the World Bank Database, for the period 1980-2006, it would have been ideal to use data up to 2011, however due unavailability of some data over the period 2007-2009, the above was adopted.

- **Economic Growth:**

- The study uses real growth in GDP per capita as a measure of economic growth, this therefore becomes the dependant variable; a widely used indicator of economic growth in most studies. If growth rate of GDP is higher than the population growth rate, average household income would increase and thus more resources would be allocated for investment and development

Financial system development.

- Financial system development is determined by the value of financial assets as a ratio of GDP, however because of missing data for some years this measure was not used. Instead, the study uses four indicators of financial system development:

- **Domestic credit to private sector (DCPVT):**it is a very common measure of allocative efficiency in the financial sector, as the financial system develops allocative efficiency is expected to improve. This private credit as a ratio of GDP a true indicator of volume of funds to the private sector (De Gregorio and Guidotti, 1995). Therefore it indicates development in financial intermediation.

- **Liquid liabilities to GDP ratio(LLY):** this is generally considered as the main indicator of financial depth; it shows the proportionate size of the financial sector to the whole economy.

Financial system development measures

- **Broad money to GDP ratio(M2):** widely used measure of financial development (World Bank, 1989; King and Levine, 1993). However this may mislead; especially if the currency consists of a high proportion of broad money

- **Stock Market capitalization ratio to GDP(MKTCAP):** price times the number of shares outstanding. Listed domestic companies are the domestically incorporated companies listed on the stock exchange at the end of the year. A good proxy for stock market development

- **Bank Deposits to Bank Assets Ratio:** Ratio of deposit money bank claims on domestic nonfinancial real sector to total financial claims on nonfinancial real sector

- **Control variables:**

- Inflation- expected to have a negative influence on GDP

- Real ,Interest rate-expected to have a positive influence on GDP

Correlation amongst the variables

	GDP	LBDAR	LDCPVT	LINFL	LLLY	LM2	LMKTCAP	LRIR
GDP	1							
LBDAR	-0.15765	1						
LDCPVT	-0.41137	0.361757	1					
LINFL	-0.64327	0.051442	0.4122	1				
LLLY	-0.31273	0.562818	0.722077	0.316302	1			
LM2	-0.55394	0.494693	0.690486	0.625668	0.836104	1		
LMKTCAP	-0.31663	0.078108	0.557263	0.83917	0.305925	0.551087	1	
LRIR	-0.46901	-0.21825	0.235212	0.828862	0.033638	0.332955	0.644724	1

Unit Root Test

- All measures of financial development were expressed in logarithm to smoothen the data, except for GDP -due to existence of negative numbers, (thus were changed to LDCPVT, LLLY , LM2 etc)

- To ensure the variables used in the model are stationary, they were all tested for unit root using the Augmented Dickey-Fuller (ADF) and Philips Perron (PP) test.

- In the existence of a structural change in the mean of a stationary variable, Perron (1989, 1990), has proven that the ADF tends to be biased towards non-rejection of alternative hypothesis of a unit root.

- Since financial sector liberalization was introduced in the 1990s, there may be a break in the variables; therefore both ADF and Phillips-Perron (PP) tests were used. Both test are used to check test the null hypothesis that a series has no unit root (non-stationary) against the alternative hypothesis of stationarity.

- If the calculated test statistic value is lower than the McKinnon's critical value the null hypothesis is rejected, and the variables are considered to be stationary

Table 1: Unit Root test results

Variable	ADF	PP	Stationarity
GDP	-5.436789*	-6.989130*	Stationary
LDCPVT	-4.956947*	-4.412234*	Stationary
LLLY	-4.684000*	-4.159313*	Stationary
LM2	-5.886060*	-3.311136**	Stationary
LBDAR	-3.267202**	-6.564295*	Stationary
LMKTCAP	-5.837308*	-5.459765*	Stationary
LINFL	-4.103411*	-5.283715*	Stationary
LRIR	-3.066901*	-4.778855*	Stationary

Notes: 1. */**/*** indicates stationary at 1%/5%/10% levels

2. MacKinnon Critical values are used for unit root test

3. Critical values for ADF at 1%/5%/10%; -3.7343/-2.9907/-2.6348

4. Critical values for PP at 1%/5%/10%; -3.7204/-2.9850/-2.6318

Cointegration Test

- Since all variables are integrated with order one, i.e. I(1), the Johansen cointegration, test can be applied,

- Cointegration implies existence of long-run equilibrium relationship; thus help predict stable long-run relationship between indicators of financial development and economic growth.

- According to Granger (1986) testing for cointegration helps to avoid spurious regression. Non-stationary variables can lead to spurious regression unless at least one cointegrating vector is present (Nowbutsing, Ramsohok and Ramsohok, 2010).

- Test for cointegration was conducted using the maximum likelihood method (Jahansen, 1988).

- Two intergrating equations were found

- Based on the Eigen value statics, we reject the null hypothesis of no cointegrating vectors, the test indicates two long-run relationships among the variables.

Granger causality test

- In testing for Granger causality, the null hypothesis is rejected if the probability of the F-statistics is less than 5%.

- A quick test for existence of short relationship

Granger causality Tests Results

Null Hypothesis:	F-Statistic	Probability	Conclusion
LBDAR does not Granger Cause GDP	0.08488	0.91895	no causality
GDP does not Granger Cause LBDAR	0.40929	0.66956	
LDCPVT does not Granger Cause GDP	0.25633	0.77639	no causality
GDP does not Granger Cause LDCPVT	1.24786	0.30853	
LLLY does not Granger Cause GDP	0.3606	0.7017	Unidirectional causality from GDP to LLLY
GDP does not Granger Cause LLLY	3.59284	0.04644	
LM2 does not Granger Cause GDP	0.93582	0.40878	no causality
GDP does not Granger Cause LM2	1.20736	0.31986	
LMKTCAP does not Granger Cause GDP	0.75093	0.48477	no causality
GDP does not Granger Cause LMKTCAP	0.83677	0.44771	

Summary of Findings

- Based on the results above we cannot reject, the null hypothesis of no Granger causality and conclude there is no short run causality relationship between indicators of financial system development and economic growth in Zimbabwe.

- However, the Granger tests indicates possible existence of growth led financial development. Causality runs from Economic Growth (GDP) to Liquid liabilities to GDP (LLLY); implying existence of demand following development in finance. Therefore economic growth leads to increased financial deepening .

- Domestic Credit to Private Sector(DCPVT), is also indirectly caused by GDP, through LLY (there is a bi-causality between the two).

- Therefore, based on this results we can reject the assertion that causality runs from financial development to growth(the supply-leading relationship) and conclude the demand-leading hypothesis holds for Zimbabwe.

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Variance Decomposition -GDP

Period	S.E.	GDP	LBDAR	LDCPVT	LINFL	LLLY	LM2	LRIR	MKTCAP
1	3.318608	100	0	0	0	0	0	0	0
2	4.22892	61.72233	10.72842	5.632628	11.89711	2.923342	4.976831	2.037057	0.082284
3	4.84432	50.80718	8.916992	11.24744	10.05713	6.294226	6.540224	5.936678	0.200127
4	5.310753	46.58691	14.59387	9.363685	10.80686	7.346784	5.987635	5.124871	0.189391
5	6.505622	31.95584	10.33257	9.408806	10.57415	19.94627	4.013017	13.36763	0.401721
6	7.834193	24.70777	7.234618	9.770758	10.96409	20.0743	2.960431	23.7528	0.535235
7	9.243743	18.30555	14.94122	7.100449	12.37376	20.23861	3.444429	23.08174	0.514243
8	11.28583	12.31972	20.04943	13.38165	9.477149	16.21324	2.504101	25.64324	0.411479
9	14.43693	7.738115	14.42851	11.21002	7.919625	17.14073	1.586722	39.45781	0.518463
10	17.96819	6.586556	14.18052	7.405779	11.70128	20.03886	2.368295	37.15919	0.559514

Conclusions

- According to Habib and Khan (2004), developing countries have their own socio-economic, political and institutional history which make them different from each other as well as their developed counterparts, and thus the existence of a reverse causality between finance and growth. Financial system development is a passive reaction to economic growth; it comes as a pressure for institutional development and introduction of modernized financial instruments brought by economic growth.

- There are several possible reasons for this reverse causality:

Possible reasons for reverse causality

- The political and regulatory ambiguity, could be hindering the financial sector from contributing significantly to economic growth.

- The government has not implemented effective financial reforms, or the interventions have been sub-optimal and thus the sector has failed to have a positive contribution to economic development.

- The underdevelopment of financial/capital markets in Zimbabwe makes it very difficult for the finance sector to employ modernized financial instruments, which would reduce information and transaction costs and thus improve financial deepening; which will subsequently improve economic growth.

- This may imply that the financial sector is fragile(for example due to non-performing loans), and thus financial intermediation may be very low

- This may suggest that short-term policy initiatives should shift towards trade liberalization, employment creation and other related activities to spur economic growth; instead of focusing on financial sector development