

THE EFFECTS OF SHADOW BANKING ON THE TRADITIONAL BANKING SYSTEM IN ZIMBABWE

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Abstract

The growth of shadow banks changed the face of banking in Zimbabwe. Their inconsistent product nature and complexity of form has been a cause for concern to regulatory authorities. The interrelationship between their financial intermediary role and that of formal banks has made them good substitutes to formal banking. This study conducts a statistical analysis of the country's monetary aggregates and the total formal bank loan-to-deposits balances. The findings of this analysis show that the shadow banking system has always been a critical element of the formal banking sector which resulted from market needs and it completes the banking system. The shadow banking system does not pose direct threat to the formal banking system but it was a result of failure to attract savers who found shadow banks as a good alternative.

Keywords: Financial Intermediaries, Substitutes, Monetary Aggregate and Threat

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1 Introduction

Globally, shadow banks are defined as non-depository institutions that survive on short-term funding provided by asset-backed commercial paper and the repo market, in which borrowers offer collateral as security against a cash loan and then sell the security to a lender and agree to repurchase it at an agreed time in the future for an agreed price. Shadow banks, which are often based in tax havens, invest in long-term loans like mortgages, providing credit across the financial system by matching investors and borrowers individually or by becoming part of a chain involving numerous entities, some of which may be mainstream banks themselves. This usually rises to be a threat to the formal banking system since shadow banks were subject to little prudential regulatory and supervisory authorities.

In Zimbabwe, the Central Bank has been struggling to formally delineate the shadow banking limits as well as controlling their operations through a number of policy initiatives that has been aimed at improving monitoring and regulation. The formal banks also took a stance in response to these shadow banks to shield themselves from these threats. However regardless of the monitoring recommendations, policy shift and formal banking response, shadow banks' disintermediation role seem to be on the rise.

There has been very little analytical study done on shadow banking in Zimbabwe as compared to the growing trend of such study globally. Sketchy literature showed that shadow banks obscure their

shapes and sizes; and many of their entities do not report to government regulators which make it difficult to estimate their sizes and to monitor their development. To contribute to this discussion, this researcher documented the institutional features of shadow banks, analysed their operations as well as their threats to the traditional banking system. Objective of this study is to establish the implications of shadow banking activities on formal the banking system.

2 Review of related literature

As early as the eighteenth century, before the traditional banking system came to maturity, international financial networks that resembled shadow banks were in existence; credit intermediation service was being provided based on collateral. The introduction of the first Basel Capital Accord (Basel I of 1988) set an international minimum capital standard for formal banking operations, introducing more incentives to take risks off banks' balance sheets through securitisation. This led to an extensive financial innovation phase and development of structured products that became a key feature of the current shadow banking system.

Financial intermediation outside the traditional banking system is not a new phenomenon in Zimbabwe though the country had a less developed financial services sector for long since post-independence. As early as 1990, before the regular banking system¹ came to maturity, financial networks

¹ Formal banking system

were in place, with credit intermediation services being provided based on collateral. Zimbabwe has been an important hub of those systematic structures outside the regular banking system that are designed to help circumvent regulations.

The products and services offered by the shadow financial system were mainly appreciated by households who are deprived of creditworthiness because they offer them an opportunity to access credit (Pozsar, 2010). Ricks (2010) argued that these individuals who are perceived to be unbankable by the formal banks are forced by their personal situation to take high-interest loans from shadow banks. The FSB (2011) also echoed that participation of shadow banking entities in liquidity and credit transformation can significantly reduce the cost of lending. In the case of Zimbabwe, the lending gap between formal banks lending rates and shadow banks lending rates has been widening. This can be explained in terms of serious liquidity constraints in the formal banks, there have been very thin new loan portfolios in formal banks, which cited a slowdown in broad money supply growth and growth in the unbanked bracket of the economy.

Barua (2008) concurred with Endut and Toh (2009) on that shadow banks offer numerous advantages for individuals affected by the exclusion from formal banking system. He claimed that these entities provide financing sources for both consumer expenditure and start-up capital for entrepreneurial businesses. The access to loan products facilitates household finance management, such as allowing them to cover temporary financial resources shortages in such circumstances as the primary breadwinner falling on the unfortunate (Barney, 1991). For many of them, small amounts in loans are critical and allow for life quality improvement such as by exchanging pawning their household appliances for cash.

The public view shadow banking as an opportunistic advantage because they are able to take out loans from these alternative financial intermediaries, either formal or informal (Białowolski, 2012). The financially excluded individuals simultaneously borrow from a number of shadow banks resulting in an over-indebtedness situation; this means no possibility to meet repayment deadlines of all contracted debts (Carmichael, 2010). If this is the case, the installments for one entity are paid by means of the loan taken another financial intermediary and therefore the loop of indebtedness keeps escalating because of the high interest charges. The indebted household takes a loan from one shadow bank to pay back another shadow bank's commitments. As the result the problem of financial exclusion becomes even stronger, thereby justifying traditional banks' strict vetting system.

Kappel (2010)² also submitted how excess liquidity available in the shadow banking system has

driven households to high debt incurring because of less stringent conditions for loans. This unrestrained access to financing sources, especially in case of individuals who cannot manage their personal finances satisfactorily, instead of their household economic situation improvement; it results in deeper poverty and bad loans, also draining capacity from the shadow banks.

Carmichael & Pomerleano (2010) examined the factors that drive the growth of shadow banking in both developed and emerging markets. In their conclusion, in developed markets, the growth of shadow banks is mainly driven by the benefits those accrue to specialisation. In the emerging markets; they often play a broader role in deepening financial markets and overcoming legal and regulatory shortcomings. However, in Zimbabwe there is evidence of regulatory arbitrage as a major factor driving the growth of shadow banks. Ineffective or non-existent financial regulation may have led to excessive risk taking by both shadow banking institutions and investors who invest in them.

Acharya et al. (2011) and Plantin (2012) argued that shadow banking boom precede every banking crisis. They bypass banking capital requirements, there by achieving a higher leverage than that permitted by prudential regulation. The main competitors for traditional banks have been specialized shadow banks such as savings and loans clubs and credit societies. The evidence from Zimbabwe led this researcher to argue this assertion that the growth of shadow banks is entirely driven by regulatory arbitrage; if that was the fact, regulators would have already introduced radical measures to get rid of the shadow banks due to potential dangers of systemic stability in the formal banking sector and the costs in terms of financial failures.

Endut and Toh (2009) drew attention to the role of shadow banks in the provision of credit to the people who have been excluded by banks, owing to their insufficient creditworthiness or due to negative history of previously contracted debts repayment. This group often covers low educated individuals, from smaller locations and affected to a greater extent by the job market problems (Białowolski, 2012). In other cases, a person who has low income or who obtains income from an undeclared work (informal entrepreneurs) does not represent a trustworthy partner for formal banks though he/she might have the capacity to repay loan advances. It is this population which constitutes core clientele of shadow banks and sustains them.

²An economic scientist at The University of Zurich, Switzerland

3 Methodology

To explore this problem and possible solutions, the researcher adopted a cross sectional descriptive survey research method. Monetary aggregates and total formal bank assets were used to determine shadow banking intermediation size; these were used for statistical analysis. The researcher used desk research to gather data from academic journals, documents over the internet and business newspapers on the

research area. These sources were preferred because more information was obtained without consuming much time. Given the sensitivity of the research to the regulators, the researcher's conclusions were mainly based on information provided by secondary data sources. Secondary data was comparatively easy to obtain since the monetary data was readily available on the RBZ website.

Table 1. Analysis of Co-linearity

	M1	M2	M3	TBL	TBD	PL	THL	EL	DC	PSC
M1	1.00									
M2	1.00	1.00								
M3	1.00	1.00	1.00							
TOTAL BANK LOANS (TBL)	1.00	1.00	1.00	1.00						
TOTAL BANK DEPOSITS (TBD)	-0.01	-0.01	-0.01	0.01	1.00					
PRESCRIBED BANK LIQUIDITY (PL)	0.00	0.00	0.00	-0.01	0.05	1.00				
TOTAL HELD LIQUIDITY (THL)	0.06	0.06	0.06	0.06	0.05	1.00	1.00			
EXCESS LIQUIDITY (EL)	0.07	0.07	0.07	0.07	0.05	1.00	1.00	1.00		
DOMESTIC CREDIT (DC)	0.80	0.80	0.80	0.80	0.02	0.60	0.65	0.66	1.00	
PRIVATE SECTOR CLAIMS (PSC)	0.80	0.80	0.80	0.80	0.02	0.60	0.65	0.66	1.00	1.00

To explain threats relationships of shadow banks, this research used an Ordinary Least Squares (OLS) regression analysis on the monetary aggregates and total bank deposits to determine the relationships between formal banks' liquidity and that of shadow banks. Though data availability on shadow banks size remained the biggest challenge, this research used RBZ monetary statistics which was published on monthly basis. The full data was only available from 2006 to 2013 which restricted the period of analysis for this research to the 7 years from 2006. Variables that were used were monetary aggregates (M1³, M2⁴, and M3⁵), total bank deposits and total bank loans to determine the monetary size of shadow banks. However GDP nominal growth rate was also included since it was considered as a monetary measure though it was a macroeconomic variable which hypothetically explained broadly the behaviour of both banks and non-bank financial services providers.

A correlation test was done to ensure that there is no multi-collinearity on the independent variables to avoid interdependence and redundancy in related variables. Below is a summary of the correlation analysis between the variables under study.

The perfect positively correlated variables (red) move in the same direction, therefore including all of them in the data analysis model results in variable redundancy.

³ M1 is the country's money supply, the total amount of money in circulation, cash and near cash, only that which can be used as medium of exchange..

⁴M2 is M1 + savings deposits + money market instruments + other time deposits which can easily be converted to cash.

⁵M3 is M2 + M1 + long term deposits + institutional money market deposits + other larger liquid assets. This is the entire money supply in an economy (RBZ report, 2013)

4 Results

Shadow banks evidently make bigger profits from repaid loans rather than disposing defaulters' collateralized assets. The surge in shadow banks in 2006 has been attributed to new customers looking for smaller loans against the backdrop credit tightening stance by many formal banks. Though policy makers keep scrutinizing informal lending, excessive demand for lending services from small business owners and individuals who find it hard to access credit could not resist shadow banks.

From the regression analyses; the shadow banking model, 95% of response variable variation was explained by the model. On the other hand, only 1% of bank deposits were explained by the independent variables in the bank deposits model; which means the data was nowhere close to fitting the multivariate regression. Theoretically, the higher the R the better the model fits the data.

The Residual Mean Square⁶ is essentially the standard deviation of the points around the regression line. The shadow banking model had no standard errors on all variables; this meant that, using the model for prediction was most likely to produce 95% accurate results. For the banking loans and deposits model, the result was very high numerical values. The standard errors on the intercept were also very high, signifying high possibility for errors if the model is used for prediction.

⁶ Measures the average of the squares of the errors; the difference between the estimator and what is being estimated.

Table 2. Formal bank loans output model

<i>Regression Statistics</i>	
Multiple R	0.99988
R Square	0.99975
Adjusted R Square	0.99974
Standard Error	1.93E+14
Observations	96.00000

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	5	1.34E+34	2.69E+33	72138.44	0.00
Residual	90	3.35E+30	3.72E+28		
Total	95	1.34E+34			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	23,991,687,315,456.00	0.00	0.06	0.96	(0.01)	0.01
M3	(2,345,786,791,262,560.00)	8,164,995,605,926,880.00	-0.29	0.77	-1.86E+16	1.39E+16
PBL	(15,855,042.72)	36,554,875.85	-0.43	0.67	-8.85E+07	56767596.88
TLH	2,345,786,793,775,190.00	8,164,995,606,297,880.00	0.29	0.77	-1.39E+16	1.86E+16
DC	0.00	0.00	0.06	0.96	-0.01	0.01
SB	2,345,786,791,311,250.00	8,164,995,605,926,800.00	0.29	0.77	-1.39E+16	1.86E+16

From the analysed data, shadow banking was a product of other variables, it could not have existed on its own; there was no intercept in the model. A 1% increase in M3 resulted in 1% increase in shadow banking growth. Also, a 1% decrease in total liquidity held by formal banks increased shadow banking growth by 1%. Other variables like; total bank loans, total bank deposits, prescribed bank liquidity and domestic credit had no effect on the growth of shadow banks. From this analysis, shadow banks were a result of money supply growth and total liquidity held by formal banks. Shadow banking institutions had a tendency of underestimating the value of the collateralised assets that both parties are normally exposed to unfair pricing and unfair reliance upon possibly wrong information.

About US\$188 trillion that flowed through the formal banks was not affected by changes in the banking variables for the period 2006 to 2013. Above US\$188 trillion, every additional US\$1 increase in formal banks deposits was a result of about US\$18 sextillion decrease in M3, US\$18 sextillion increase in total liquidity held by formal banks and US\$18 sextillion increase in shadow banks growth. However prescribed formal banks liquidity level had a negative effect of approximately US\$116 million on every dollar unit growth in formal bank growth. Bearing in mind that this model was high risk of prediction failure because of its low R Square, domestic credit was irrelevant to the growth of formal bank deposits.

Table 3. Aggregate bank balances in US \$ million

	2006	2007	2008	2009	2010	2011	2012	2013
Prescribed liquidity	462919.33	2840147.30	60238817.91	25879.76	270.48	614.63	857.89	1063.60
Total held liquidity	742712.20	12296395.33	394142200.59	9478.18	929.59	1115.63	1295.63	1408.30
Excess liquidity	279792.87	9456248.03	333903382.68	17024.37	659.12	501.01	437.73	344.70
Total bank deposits	495786.96	12867386.13	10292105921409700.00	304510.64	970111.74	1761002.62	2408522.83	3051447.93
Total bank loans	1061133.75	26677766.15	1283732498935420.00	670855.32	1678743.68	2595450.99	3321821.19	3877593.03

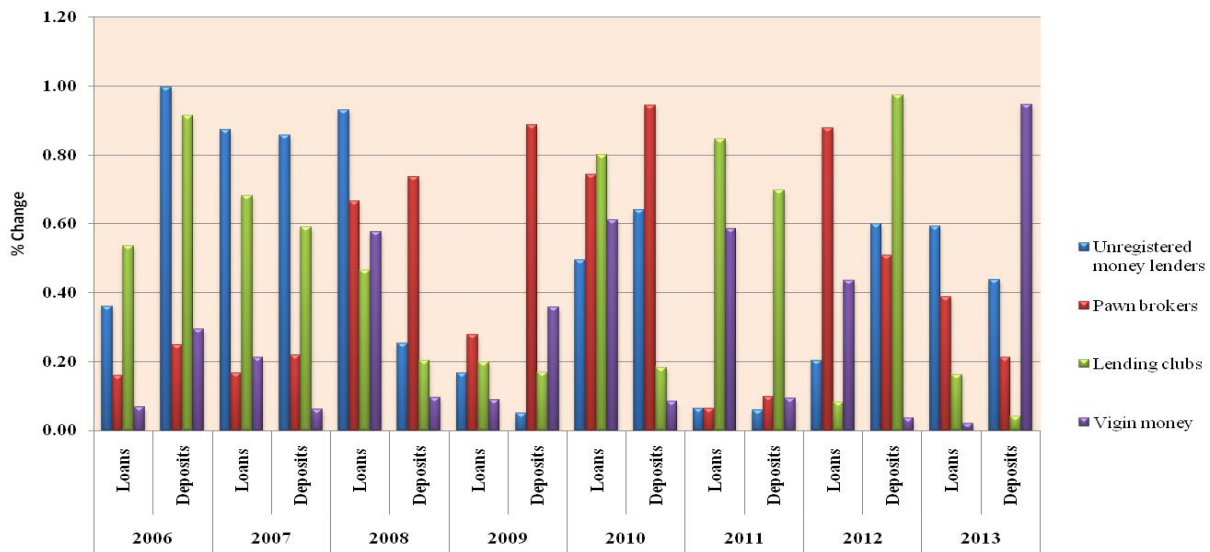
The US\$23 trillion loans that went through the formal banks were independent of other variables effects. Above that, every US\$1 decrease in formal bank loans resulted from about US\$2 sextillion growth in money supply and approximately US\$15 million rise in prescribed bank liquidity. Approximately US\$2 sextillion growth in total liquidity held by formal banks resulted in US\$1 growth in total bank loans. Also about US\$2 sextillion change in formal bank loans was a result of US\$1 increase in formal bank loans. However, from the analysis, domestic credit

was also irrelevant to the growth of formal banks' loan portfolio.

4.1 Changes in shadow banking products

There was no particular pattern or trend in the change of percentage growth in shadow banking products. However an analysis on the fundamental elements of shadow banks would be interpreted. The graph below shows percentage changes in approximate amounts held by major players in the shadow banking system.

Figure 1. % change in shadow banking products



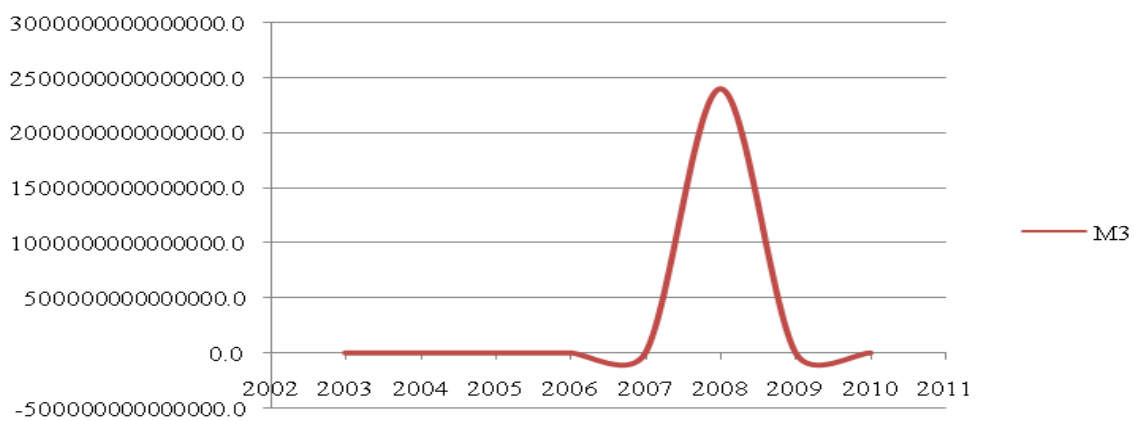
Source: Primary data

There were no negative changes in shadow banking growth on amounts held by the institutions, only slow growth was noticeable in virgin money activities for the whole period. The high risk of default and low disposable income might be an interpretation to this. Unregistered moneylenders took their toll in the 2006 to 2007 period, with growth of upto 100 percent being realised in 2006. Lack of alternative investment options could be the evidence of the 95% boom in virgin money coming into the shadows. Lending clubs remained popular for the whole period as they could have proved to be the best option to raise capital for new or struggling businesses and also a safe way to earn some secured interests for members with surplus

cash. The high interest rates charged by shadow banks averaging 25 % per month attracted more investors into the market to fund these lucrative businesses. However the short term loan durations means high risk borrowers were most likely to default on repayments.

Zimbabwe, the lending gap between formal banks' lending rates and shadow banks' lending rates has been widening. This might be explained in terms of serious liquidity constraints in the formal banks, there have been very thin new loan portfolios in formal banks, which cited a slowdown in broad money supply growth and growth in the unbanked bracket of the economy.

Figure 2. Monetary aggregate (M3): % growth



Source: Primary data

For the shadow banking model, only the effects of M3 and total liquidity held by banks had high values, indicating a low probability that the coefficients could have been obtained by chance. Both, the formal banking deposits and loans models had very small values of *t* indicating that it was likely

to have occurred by chance. This test could also be explained by probability of values (p-values) which gave the numerical probabilities that the estimates obtained could have occurred by chance when their true values were actually zeros. For the formal bank deposits and loans models analysed, the probabilities

were above 50% therefore, there could have been really no relationships between the dependant and independent variables. Only the shadow banking model had very small probabilities on the intercept, M3 and total liquidity held by banks; more confidence that there was a relationship between the variables.

5 Conclusion

The shadow banking system has always been an element of the banking sector intermediation. Empirically, it is a result of almost the same elements that sustains the traditional banking system. The systematic shadow banking structures outside the formal banking system may not have been entirely designed to circumvent regulations, but was a result of market needs to complete the banking system. The research results therefore contradicts the view of Pozsar (2010) that the shadow banking system is a web of specialized unregulated institutions that competes to channel funds outside the formal banking system.

The shadow banking system cannot be perceived as threat to the formal banking system because of its high liquidity maintenance in times when formal banks are facing liquidity crunch. The analysed results showed no significant influence of shadow banks on the formal banking system's deposit growth. The liquidity crisis in formal banks could not have been directly connected to the growth of shadow banks. Other factors like failure to negotiate fresh lines of credit, depleted nostro accounts, lack of confidence both by investors and potential depositors; could have led to decrease in deposit inflows into the formal banking system. Shadow banks only existed as an alternative service provider preferred maybe due to their short term investment tenure and less stringent terms.

Shadow banks threats could be measured in terms of the products and services offered by the traditional financial system. As a marketing tool, the results aligned with Pozsar (2010)'s conclusion that shadow banking products are mainly appreciated by households who are deprived of creditworthiness. This cannot be classified as threat to formal banks since it's a niche market. Though recently banks, like POSB and AfriAsia, has been diversifying into micro lending, posing competition to shadow banks. However threat can be perceived in the size of capital that is slipping through shadow banks, this capital would have still remained unbanked even in the absence of the shadow banking system.

Shadow banks are a necessary element of the banking system; their product invention techniques play a broader role in deepening financial markets. This agreed to the view of Carmichael and Pomerleano (2010) that the growth of shadow banks was mainly driven by the benefits that accrue to specialisation. However the challenging issue was on overcoming legal and regulatory shortcomings. Empirically, they thrived on regulatory arbitrage;

ineffective and/or non-existent financial regulation. The regulators have introduced a new code of conduct for micro lenders and new harnessed microfinance act, still there were regulatory gaps such as the Savings and Credit Co-operative Societies offering the same finance products as microfinance but still falling under the Ministry of Small to Medium Enterprises as an Indigenization and Empowerment tool.

The assertion by Acharya and Plantin (2012) that shadow banking boom precede banking crisis was very subjective. The perceived benefits by shadow banking clients may not have been benefits in real terms but rather costs; after transacting through a shadow bank, defaulting individuals normally loose assets in tune of property or deposits for investor, they normally find themselves in a worse-off position. The advantages of shadow banking are a merely illusive to clients, especially those who do not numerically quantify the costs of transactions.

Dowla and Barua (2006) revealed that shadow banking improves standard of living through provision of productive capital. The quantitative conclusions from this research showed that, the shadow banks actually depletes people's disposable income and worsen their standard of living. The cost of borrowing from shadow banks was too high such that it was very difficult, or almost impossible for borrowers to make a positive real return. Those who deposit their savings in shadow banks are merely enticed by high interests offered on a deposit which in actual fact they don't realise it.

The estimations of the formal banking sector's total deposits increase for the period to December 2013 could not be attributed to be a result of improvements in financial intermediation. Dollarization had positive effects on the improvements of deposit growth because there was evidently high amount of capital flow into traditional banks independent of effects of analysed external elements. The variations of deposit tenure were not significant; this could be explained in terms of huge numbers of small deposits. The formal banking system had no control over shadow banking boom but could only respond to shield themselves from shadow banking liquidity pressure negativities.

The relationship between formal bank loan and shadow banking growth could also have been affected of government indigenization policy. Government, for the past decade, has been aggressively pushing economic stakeholders to support its indigenization and empowerment policy. Formal banks have been caught in the storm, being pushed to lend to high risk sectors and individuals, otherwise they were perceived to be anti-government. This weakened the banking sector in Zimbabwe because the majority of the defaulting client companies and individuals were aligned to the ruling party, who used their political muscle to circumvent loan repayments regardless of banks' aggressive loan recovery strategies.

The development of shadow banking in Zimbabwe was wholly a product of total money supply growth (M3) and total liquidity held by the formal

banking system according to the research results. Shadow banking development had no direct effect on formal banking system growth.

Table 4. Monetary indicators: Zimbabwe

Year	2003	2004	2005	2006	2007	2008	2009	2010
Multiplier	4.8	3.9	4.2	3.5	2.6	5.7	12.9	10.0
Currency/Deposit ratio	13.3	16.5	20.8	22.3	32.5	13.5	0.0	0.0
M3	14.8	10.5	16.7	25.9	5413.9	2405267224035810.0	16.2	4.3

An independent logical analysis of the banking regulation in Zimbabwe showed that, it has been difficult for the authorities to control shadow banks. Evidence showed that, the regulators in fact have not been putting enough effort to establish the operational consensus of shadow banking effort. Their failure to define operational guidelines and classification of the shadow banking system was a baseless excuse. This researcher concluded that, above the cautious approach by regulators to the control of shadow banks, their reaction has been too relaxed and reactive. The RBZ only merged the micro lending acts as a reaction measure to the banking sector manipulation by shadow banks rather than being proactive and avoid the banking crisis that hit the country recently. Also the fact that the Small to Medium enterprises ministry still regulate money lending clubs casted a dark cloud on the commitment of regulators to account for the shadow banking system. The implications of shadow banking growth coupled with failure of regulators to manage their growth are high potential risk. Though shadow banking balances have been on the upward trend, their liabilities were short term while their assets were fairly medium to long term due to rollovers, low repayment rates and loan extensions.

The view against shadow banks as being a threat to the mainstream banks was not justifiable. Rather than treating shadow banking as a threat, this researcher, from the conclusive findings saw it as a complementary element to the formal banking system. In as much as it exerts competitive pressures on the formal banking system, it was an awakening call and necessary signal to the formal banks to improve service delivery and to be innovative. In this researcher's view, though regulators want total control of the financial system elements, their aim on the shadow banking system should be to regulate their risk appetite that could lead to systemic risk that can destabilize the whole financial system.

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