

Determinants and Effect of Commercial Bank Profitability in Zimbabwe (2009-2013).

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Abstract

With the objective to establish determinants and effects of profitability in Zimbabwean commercial banks for the period 2009 to 2013 a Generalized Least Squares method was used on pooled panel data of 11 commercial banks over 5 years to solve for heteroskedasticity. Employing RoA as a proxy for profits, Net interest Income and Expenses are highly significant at the 1% level of significance with positive and negative coefficients respectively implying that operational efficiency and product diversification are vital for profitability. Inflation, Liquidity, Financial Structure and Asset Composition are weakly significant at the 10% level of significance while Deposit Composition was found to be statistically insignificant. Legislators have well vested interest in implementing policies aimed at stabilisation and efficiency in the banking sector. For one to formulate an effective policy that strikes a balance between the two there's need to understand the determinants of bank profitability so as to adopt policies that promotes a sustainable and stable banking sector for economic growth.

Keywords: Profitability, Zimbabwean Banking Sector, Generalized Least Squares.

1. Overview of the study

When the banking sector is not performing competently, it positions the economy in a risky and unstable situation as banks are strongly linked to economic sectors such as mining, manufacturing and agriculture through channelling of investors' funds. Despite efforts by the central bank to stabilise the capital base of financial institutions, several commercial banks have been closed put under curatorship and some are on the brink of closure, raising the question, what determines a profitable and stable commercial bank? The collapse of Interfin Bank, Genesis Investment Bank and Royal Bank around 2011 to 2012 raised alarm and caution in the market due to its vulnerability and fragility arising from the 2008 economic instability. The efforts of this study are to explore the possible determinants of bank profits in Zimbabwe so as to recommend sustainable policies which counter challenges that be-devil our financial sector.

The determinants of bank profitability have been widely studied theoretically and empirically in other Sub-Saharan African countries for example Nigeria, Kenya and Ethiopia. The findings suggest that bank profitability determinants vary across countries, regions and time frames, guided by the already existing body of literature the study seeks to establish the determinants of bank profitability pertaining to Zimbabwe. Several studies have been conducted in order to ascertain factors that affect banks' return on assets and there has been some empirical debate in the findings. Smirlock (1985), Demircuc-Kunt and Huizinga (1999) and Athanoglou *et al.* (2005) discovered a positive connection between internal factors and bank profitability. The position was further supported by Demircuc-Kunt and Huizinga (1999), Bikker and Hu (2002) and Goddard *et al.* (2004). However, some researchers propose that increasing the size of a banking firm (internal) is insignificant to profitability levels as diseconomies of scale will eventually set in thus negatively impacts profitability levels, (Berger *et al.* 1987). Thus empirical literature is not unanimous about the factors that affect commercial bank profitability

According to Aburime (2009), at the macro level, a profitable financial sector is better equipped to withstand negative shocks and contribute to the growth and stability of the economic system thus bank profitability is vital for a sound economy. Commercial banks directly affect the growth, efficacy and the stability of the economy. They function as resource allocators as they link investors and depositors and to do so they need to generate enough income that covers their operational costs in the long run. Saunders and Cornett (2004) postulates that commercial banks are depository institutions whose major assets are loans and major liabilities are deposits, hence their ability to generate income can be observed through Return on Assets (RoA).

One may be of the view that in order to pass sustainable policies aimed at the banking sector, there is a need to outline not only the possible factors that influence profits of banks but also their effect thereon. Hence, the objective of this study is to empirically seek the possible determinants of commercial bank profitability in Zimbabwe. The study will make use of pooled panel data for the period 2009 to 2013 and employing the Ordinary Least Squares method for data analysis.

The rest of the study is in the following sequence. The next section will look at the body of literature available and the contributions previous studies conducted on this issue while section 3 gives the methodology that will be used in analysing the collected data. In addition, section 4 will present, interpret and provides policy implications of the results obtained from the econometric estimations and the conclusions comes last.

2. Literature review

This section examines the literature on determinants of bank profitability *with the focus on both theoretical and empirical analysis. Since literature, which is both empirical and theoretical, is used to support the arguments we amalgamated the two so as to do away with the problem of false dichotomy.* The determinants of profitability in the banking sector are generally acknowledged among scholars; however, the point of departure is pertaining to their individual effects on profits. Having a list of the variables but little insight into their effects on bank performance would be like owning a toothless bulldog hence the need to unveil what literature has to offer so as to aid policy makers in making informed decisions.

In most if not all of the studies, variables were separated into two main categories that are either internal [ownership, capitalisation, reserves] or external [economic growth, inflation] that is those within and beyond an organisation control respectively. The variable categorisation is almost unanimous among researchers; divergence results only became evident when answering the question, what is the effect on these variables on bank profitability? Hence we borrow from literature (both empirical and theoretical) to support the possible effects of these variables.

Gross domestic product (GDP) is the widely used proxy for economic growth, Ongore and Kusa (2013) closer home argued that the variable had no effect on the determination of the level of profitability on commercial bank in Kenya. While Vong and Chan (2009) are of the view that the variable negatively impact profitability, Flamini *et al.* (2009) and Trujillo-Ponce (2013) argues that the impact is positive, drawing support from Patrick's (1966); Demand-Pull hypothesis of economic growth posits that a developed economy is followed by development in the financial sector. However the hypothesis would be incomplete without a contradictory one, thus Supply-Leading hypothesis implies that the financial sector has a pivotal role in the economy as its development leads to growth in the economy possibly through investments. The latter is beyond the scope of this study but their relevance is widely debated in other studies of the financial sector development.

The effect of Inflation on profitability is still open to debate and the overall conclusion is yet to be drawn. [Naceur (2003), Alper and Anbar (2011), Ongore and Kusa (2013)] in Tunisia, Turkey and Kenya respectively, are all of the view that inflation is not statistically different from zero for the determination of bank profitability. In Spain the effect is found to be positive as with Trujillo-Ponce (2013), while Sufian and Chong (2008), and Pasiouras and Kosmidou (2007) held negative effect of the same variable. This alone provide evidence that generalisation of external factors is far from the truth but rather a contextual case would be acceptable.

The Structure-Performance Conduct (SCP) Hypothesis developed by Bain (1951) is one of the most employed frameworks of analysing the performance of the banking industry. Though its theoretical basis is well established in the industrial organisation its application to banking has not always been scrupulously justified. Its application to the banking industry forecasts that profits, interest rates on loans and service charges would be higher in a more concentrated market, whilst deposit rates offered would vary inversely with concentration (Gilbert 1984). However, Vong and Chan (2009) concluded that structure has no effect on profitability while Demircuc-Kunt and Huizinga (1999) observed a positive effect, some researchers argue that the differences in significance could be a result of the time frames under study or/and the location of the study.

The Efficient Structure Hypothesis (ES) which was propounded by Demsetz (1973) is a contesting hypothesis to the SCP paradigm which argues that only the efficiency of firms can be accountable for the positive relationship between profits and market share. The perception behind the ES theory can be divided into two hypotheses, the X-Efficiency hypothesis (ESX) and Scale-Efficiency Hypothesis (ESS).

ESX proposes that banks with superior administration or production technologies fully employ their assets thus lowering costs and increase profits. The Scale Efficiency argument proposes that firms may produce at a more efficient scale than others through efficiencies of scale, thus they have lower overhead costs and higher unit of returns. Such firms are expected to attain greater market shares, which might result in increased levels concentration. In this setup, efficiency indirectly drives profit and market structure.

The efficiency hypotheses posits that the larger a bank is, the more effective it is as compared to smaller ones hence more profitable as a result of this efficiency on the other hand the SCP hypothesis is of the view that the level of concentration a market has, affects a firm's conduct. The SCP paradigm ignores the relationship between concentration, market share and efficiency. While subtle, the hypotheses differ in the fact that the Efficiency Hypothesis proposes that only large banks benefits from increased consolidation, whereas the SCP hypothesis advocates that all banks benefit—regardless of market share or firm size.

In the same vain, mismanagement of expenses and poor expense management are the chief contributors to poor returns [Sufian and Chong (2008) Pasiouras and Kosmidou (2007)]. In the Philippines bank size, credit risk and expense management were negatively related to bank performance while capitalisation had a positive impact. The negative coefficient for bank size suggests that larger banks tend to achieve smaller profits as compared to their smaller counterparts, though it is interesting to note that the coefficient loses its explanatory

power when other macroeconomic and financial indicators are controlled for. Therefore it is not clear about the weight each factor has in determining bank performance thus the debate remains unresolved.

Basic economic theory would tell you that banks create money through loans (inside money). This economic assertion is supported by Zhang and Dong (2011), who found loan, to asset ratio to be a positively related determinant to bank profitability after employing Ordinary Least Squares estimation (OLS) in the United States of America for the period 2000 to 2008. The same are held by Naceur (2003) and Trujillo-Ponce (2013). However, Alper and Anbar (2011) fixed panel results showed otherwise (negative) for commercial banks in Turkey. The possible explanation to these divergent results ranges from methodology, country specific factors to time frame. Non-Performing Loans were found to be negative and statistically indifferent from zero by Vong and Chan (2009), Zhang and Dong (2011) respectively. The same can be said of liquidity which was found not to be statistically different from zero in the studies by [Alper and Anbar (2011), Ongore and Kusa (2013)] while a positive effect is perceived by Naceur (2003) and Flamini *et al.* (2009)

Deposit composition, Capitalisation, Bank reserves are among some of the variable that are agreed to have an impact or effect on commercial bank profitability with relatively consistency effect of positive, while bank reserves is the only old one out with negative effects. Literature is in support of the argument is held by [Naceur (2003), Zhang and Dong (2011), Demirguc-Kunt and Huizinga (1999) and Trujillo-Ponce (2013)]. Ownership is one of the debated variables as evidence showed that, foreign ownerships can either positive or negative affects bank profitability levels as with Naceur (2003) and Flamini *et al.* (2009) in that order.

Various estimation methods have been employed from the traditional Ordinary Least Squares [Zhang and Dong (2011)] to the recent Generalised Method of Moments [Athanasoglou *et al.* (2005)] and the Two Stage Least Square regression analysis. These debates and inconsistencies leave one with more questions than answers of not only what determines but also effects of profitability commercial banks in a country or region and the most suitable methodology to adopt. The study will be closely following the model formulation adopted by Zhang and Dong (2011). For the study to be best suited for Zimbabwean economic structure set we decided to adopt Return on Asset as our dependent variable [see Pasiouras and Kosmidou (2007), Zhang and Dong (2011)] and instead of using interest rate we will adopt inflation as one of our macroeconomic variable and to incorporate ownership structure we will make use of an ownership dummy variable. The study will employ a Pooled Ordinary Least Square regression on panel data for analysis and the next section builds the methodology based on the literature.

3. Methodology

The study will adopt a linear regression model. Although there have been no specification tests, it is apparent that the linear functional form is extensively used in the empirical literature by Zhang and Dong (2011), Naceur (2003) Demirguc-Kunt and Huizinga (1999) and Athanasoglou & *et al.* (2005) and yields worthy results. The study will be closely following the model specification by Zhang and Dong (2011) and the model is as follows:

$$\pi_{it} = \beta_1 + \beta_2 LC_{it} + \beta_3 EXP_{it} + \beta_4 NM_{it} + \beta_5 AC_{it} + \beta_6 DC_{it} + \beta_7 LIQ_{it} + \beta_8 RGDP_{it} + \beta_9 INFL_t + \varepsilon_{it}$$

Where:

π_{it} = profitability of bank *i* at time *t*, β_1 = the slope intercept, LC_{it} = the liability composition of bank *i* at time *t*, EXP_{it} = the total expenses of bank *i* at time *t*, NM_{it} = non-interest income for bank *i* at time *t*, AC_{it} = the asset composition of bank *i* at time *t*, DC_{it} = the deposit composition of bank *i* at time *t*, LIQ_{it} = the liquidity of bank *i* at time *t*, $RGDP_{it}$ = the financial structure faced by bank *i* at time *t*, $INFL_t$ = the Inflation at time *t*, ε_{it} = the error term where *i* is the cross sectional and *t* is the time identifier.

The profitability of a commercial bank can be reflected either by *Return on Assets (RoA)* which is a ratio of net income to asset or *Return on Equity (RoE)* measured by the income to equity ratio. See also [(Pasiouras and Kosmidou, 2007), Zhang and Dong (2011), Goddard & *et al.* (2004)].

Variable Description and Data Sources

Deposit composition (DC) indicates the funds accessible to use by the firm in investment undertakings that may expand the bank's RoA. In this study the deposit composition variable will be defined as total deposits from customers to total assets ratio. Naceur and Goaid (2001) argued *ceteris paribus* DC positively impact profit.

Asset composition (AC) is a measure of the general structure of firm's assets. Trujillo-Ponce (2013), adopted this variable proxy by loan to assets ratio however, this study will follow Demirguc-Kunt and Huizinga (1999) argument thus adopt cash and cash equivalents as the proxy and negative effect is excepted.

Liquidity (LIQ) in this context the variable is measured by the loan to deposits from customer's ratio as by definition it shows the capability of a bank to fulfil its obligations to depositors. [Ongore and Kusa (2013), Dang (2011) and Flamini *et al.* (2009)] used loan to deposit ratio to measure the liquidity level. The expected impact on profits is ambiguous as dependent on the repricing timeline of loans since deposits are usually short term in nature.

Expenses (EXP) reflects the operating efficiency of bank management. [Sufian and Chong (2008), Vong and Chan (2009)] used of non-interest expenses over assets to represent the expenses ratio. Operating expenses

are proxied by expenses to assets ratio, the study will employ this ratio and it was used by. This ratio is expected to negatively impact the profit levels.

Inflation (INFL) the annual year on year price increases as a measure of inflation although there are other measures of inflation such as the consumer price index. [Sufian and Chong (2008) and Flamini *et al.* (2009)] argued that its impact on profit is ambiguous since it depends on managerial anticipation.

Financial Structure (RGDPR) measures the general competitiveness of the banking sector. The Lerner Monopoly Index (LMM), Logs Gross Domestic Product, Business Cycle Fluctuations and real Gross Domestic Product ratios are some of the most frequently used variables. However, this study will employ individual bank assets averaged by real gross domestic product to proxy for the financial structure, this is in line with [Demirguc-Kunt and Huizinga (2000) and Vong and Chan (2009)]. A positive impact is expected between the variables.

Vong and Chan (2009) and Zhang and Dong (2011) made use of deposits over assets as their proxy for source of funds. The ratio of deposits relative to total liabilities will indicate *Liability Composition (LC)* the contributions of the source of funds to profits this was also adopted by Trujillo-Ponce (2013) though he termed it capital structure. Though deposits are possibly the cheapest and chief source of funds for commercial bank lending, the expected effect on profit is indistinct as it is dependent on the efficiency of the financial market.

Non-Interest Income (NM) is generated from net service fees and commission incomes; it reflects the various functions of banks such as non-lending activities, securities and brokerage service. Vong and Chan (2009) make use of the non-interest income to gross income ratio as a proxy for non-interest income and so is this study while a positive impact on profit is anticipated.

The study will make use of panel data and the OLS estimation technique to analyse the effects of Deposit composition, liquidity, expenses, NM, Asset composition, Liability composition, RGDPR and Inflation on Return on Assets. Panel data enables us to enjoy the advantages of both cross-sectional and time series data. Diagnostic tests will assess the feasibility of OLS, in the event that the variance of the standard errors is not constant or there is autocorrelation the GLS technique will be employed to estimate the model. A linear model is estimated and coefficients are interpreted as elasticities in next section. Elasticity¹ is a unit less measure hence it enables one to view the degree of responsiveness of a variable to a percentage unit change in the explanatory variable as compared to linear coefficients which represent marginal changes.

This study will make use of a balanced panel of secondary data from the published annual reports of 11 commercial banks that were operating in Zimbabwe over the period 2009 to 2013 to compute the relevant ratios mentioned above. Data on macroeconomic variables was obtained from the World Bank (2013) and the Reserve Bank of Zimbabwe (2014). Panel data captures individual variability (cross-section) and dynamic adjustments (time-series) and it is preferred over pure time-series or cross-sectional data because it can control for individual heterogeneity and there is a less degree of multicollinearity between variables (Baltagi, 2005).

4. Estimated Model

Due to the presence of heteroskedasticity, GLS was employed and the model estimated is shown in table 1. We initially employed OLS for model estimation and the R-squared is 0.7706 whereas the adjusted R-squared is 0.7182. The R-squared value indicates that the model is a good fit as 77% of variations in Return on Assets are explained by variations in the explanatory variables. Additionally, the F test probability has a value of 0.0000 which is less than 0.01 hence the whole model is valid at the 1 % level of significance. After conducting model diagnostic tests, at the 0.1% level of significance we failed to accept the null hypothesis that the errors have a constant variance and we concluded that the data suffers from heteroskedasticity (Breusch-Pagan tests was used). Heteroskedasticity is a clear violation of the standard least squares assumptions hence GLS² was employed using Stata12.

Table 1: GLS Regression Results

ROA	Coef.	Std. Err.	Z	P value
Constant	.1633133	.0457062	3.57	0.000
DC	.0029378	.0059037	0.50	0.619
AC	-.0593094	.0308247	-1.92	0.054
LIQ	-.032768	.0168822	-1.94	0.052
EXP	-.8761572	.0809482	-10.82	0.000
INFL	.0015244	.0007779	1.96	0.050
RGDPR	-7.35e-07	4.17e-07	-1.76	0.078
LC	-.0709208	.03242	-2.19	0.029
NM	.5837422	.1163222	5.02	0.000

Coefficients: Generalised least squares

¹ Elasticity of Y w.r.t X is the % change in Y for a given % change in X. Elasticity of Y w.r.t X is measured at the mean values of X and Y, Gujarati (2004 p183-190)

² GLS merely transforms the original variables in such a way that the transformed variables satisfy the assumptions of the CLRM and then applying OLS to them. Gujarati (2004p 396)

Correlation: no autocorrelation	Wald chi2 (8)	=	147.82
Panels: homoscedastic	Prob > chi2	=	0.0000
Log likelihood = 105.7689			

With the use of the GLS regression method autocorrelation and heteroskedasticity are accounted for but the model has to pass model specification tests before we can interpret the results. The Wald test shows that the model is a good fit with a Chi-squared statistic of 147.82. The Chi-Squared probability (0.0000) is less than 0.05, thus the whole model is correctly specified and relevant at the 1% level of significance.

As outlined from the *a priori* expectation, Non-interest Income (NI) exhibited a positive relationship with profits at the 1% level of significance. The relationship is highly elastic with a 5.83 percentage change in profits being accounted for by a percentage change in NI. Hence, it posits that diversification and innovation in banking activities will lead to higher levels of returns. By extension these findings support the SCP paradigm which forecasts higher service charges (Non-Interest Income) and profits in more concentrated markets thus alluding to the possibility of high concentration in the Zimbabwean banking sector. Alper and Anbar (2011) also found similar results.

Hence there is a call for commercial bank managers to be innovative and incorporate information and communications technology to banking products such as, Internet Banking, Fingerprint access accounts, an expansion of financial instruments and markets (financial derivatives) all impacts non-interest income.

Empirical findings showed that Liability Composition (LC) has a probability value of 0.029 which is relatively less than 0.05 hence the findings implies that LC negatively impact on return on assets with a percentage increase in LC results in a 6% decrease in returns thus RoA is elastic to changes in liability composition, thus the findings are consistent with the *a priori* expectation. Trujillo-Ponce (2013) found a positive relationship, thus in the case of Zimbabwe the negative impact indicates that the loan market is inefficient and possibly ridden by high levels of non-performing loans since deposits are the major source of funds for commercial bank lending. These findings imply that banks that rely heavily on deposits for funding are less profitable, because deposits entail high branching network and this raises costs.

The results are alluding to the possible fact that the nature of deposits being received by commercial banks are of a short term nature and these kind of deposits negatively distorts the intermediary function of financial institutions as these funds have to be available for the customers' day to day transactions. Thus banks may offer lucrative kinds of securities such as higher interest rates on deposits and lowered costs of borrowing for long term depositors.

The coefficient of RGDP, was found to be negative although weakly statistically significant at the 10% level of significance. From this study, holding other things equal, a percentage increase in the values of real gross domestic product will result in an approximately smaller percentage decrease in profits of 0.0213%. This negatively inelastic response is inconsistent with the *a priori* expectations and it is paradoxical to the Demand-Pull hypothesis which posits that a development in the economy is followed by development in the financial sector. This may possibly be due to the fact that the number of people banking with the financial sector is low as most people favour holding cash as compared to banking it. Hence a growth in the economy will not necessarily be reflected in bank profits. Demircug-Kunt and Huizinga (1999) also found similar results. The study presents evidence that for Zimbabwe a move towards a more developed financial system will result in a reduction in bank profits as the number of banks is large relative to the bankable populace.

The coefficient of EXP was found to be negative and statistically significant with a p-value of 0.0000. It shows that increased expenses lead to a reduction in profits, these findings supports the views of the ESX hypothesis. From the estimated model, a change in expenses by one percent will lead to 12.18% change in RoA, thus profits are highly elastic to changes in the level of expenses at 1% level of significance. These results are in line with the expected sign and findings by Sufian and Chong (2008). At 5% level of significance INFL has a statistically significant positive effect but a fairly inelastic relationship with RoA. A percentage change in INFL leads to a 0.1371% increase in profits. Flamini *et al.* (2009) and Trujillo-Ponce (2013) also found inflation to have a positive and highly significant contribution to profits. AC is negatively related to profits and with a p-value of 0.054, it is statistically significant at 10% level of significance and this empirical view is similar to that of Demircug-Kunt and Huizinga (1999). The relationship between profits and asset composition is fairly elastic with a percentage increase in assets resulting in a 1.78% change in profits. The results show a negative relationship between LIQ and RoA with a negative coefficient that is statistically significant at 10% level of confidence. This implies that a percentage change in LIQ will result in a 2.78% change in RoA. Thus returns on assets are elastic to LIQ changes. The negative relationship implies that loans take longer to reprice, this creates a negative causation between past equity and returns. DC was the only variable that was statistically insignificant at all conventional levels.

The financial structure variable was found to be negatively related to profitability, according to Demircug-Kunt and Huizinga (2000) this negative relationship reflects intense interbank competition implying that the Zimbabwean population is over banked or there are a few number of bankable individuals relative to the number of banks present hence the government can rectify this problem by calling for mergers and acquisitions

in the financial sector so as to come up with stronger and more resilient banking institutions with higher levels of assets. In addition, encouragement of the use of plastic money as compared to cash holdings may improve the number of people banking with the financial sector due to convenience and flexibility hence enabling economic growth to be reflected in bank profits.

5. Conclusion

From the results, Non-interest income, Liquidity composition and the Financial Structure were both statistically significant and had a positive, negative relationship respectively with RoA. All the control variables Liquidity, Expenses, Asset Composition and Inflation were found to be statistically significant and deposit composition which was insignificant at all conventional levels. RoA presented inelastic responses to macroeconomic variables, alluding to the possible presence of adjustment lags between profits and changes in the economy. The major limitation of this study was data constraints due to unpublished financials, closure of banks during the study period and some relevant information was withheld citing confidentiality reasons hence this may have compromised the quality of the information gathered.

Reference

- Aburime, U. T., 2009, "Impact of Political Affiliation on Bank Profitability in Nigeria", *African Journal of Accounting, Economics, Finance and Banking Research*, 4 (4), 61-75.
- Alper, D., Anbar, A., 2011, "Bank Specific and Macroeconomic Determinants of Commercial Bank Profitability: Empirical Evidence from Turkey", *Business and Economics Research Journal*, 2 (2), 139-152.
- Athanasoglou, P. P., Brissimis, S.N., & Delis, M.D., 2005, "Bank-Specific, Industry -Specific and Macroeconomic Determinants of Bank Profitability", *Journal of International Financial Markets, Institutions and Money*, 18 (2), 121-136.
- Bain, J. S., 1951, "Relation of Profit Rate to Industry Concentration", *Quarterly Journal of Economics*, 65, pp. 293-324.
- Baltagi, B. H., 2005, *Econometric Analysis of Panel Data (3rd edition)*, John Wiley and Sons, Chichester
- Bikker, J. A., & Hu, H., 2002, "Cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements", *BNL Quarterly Review*, 221, 143-175.
- Demirguc-Kunt, A., & Huizinga, H., 1999, "Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence", *The World Bank Economic Review*, 13 (2), 379-408.
- Demirguc-Kunt, A., & Levine, R., 2001, "Financial Structure and Bank Profitability in Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development", MIT Press.
- Demsetz, H., 1973, "Industry structure, market rivalry, and public policy", *Journal of Law and Economics*, 16, pp. 1-9
- Flamini, V., McDonald, C., & Schumacher, L., 2009, "The determinants of commercial bank profitability in Sub-Saharan Africa", *IMF Working Paper African Department International Monetary Fund WP/09/15*
- Gilbert, R. A., 1984, "Bank Market Structure and Competition: A Survey", *Journal of Money, Credit, and Banking*, 16, 617-645
- Goddard, J., Molyneux, P., & Wilson, J., 2004, "The profitability of European Banks: A cross-sectional and dynamic panel analysis". *The Manchester School*, 72(3), 363-381.
- Gujarati, D., 2004, *Basic Econometrics*, New Delhi: Tata McGraw-Hill Publishing Limited.
- Naceur, S. B., 2003, "The Determinants of the Tunisian Banking Industry Profitability: Panel Evidence," Universite Libre de Tunis Working Papers.
- Ongore, V. O., & Kusa, G. B., 2013, "Determinants of Financial Performance of Commercial Banks in Kenya", *International Journal of Economics and Financial Issues*, 3 (1), 237-252.
- Pasiouras, F., & Kosmidou, K., 2007, "Factors influencing the profitability of domestic and foreign commercial banks in the European Union", *Research in International Business and Finance*, 21, 222-237.
- Patrick, H., 1966, "Financial Development and Economic Growth in Underdeveloped Countries", *Economic Development and Cultural Change*, 14, pp. 174-189, (<http://dx.doi.org/10.1086/450153>)
- Reserve Bank of Zimbabwe, 2014, (www.reservebankofzimbabwe.com) accessed March 2015
- Saunders, A., & Cornett, M.M., 2004, *Financial Markets and Institutions: A modern Perspective (2nd edition)*, Tata McGraw-Hill, New Delhi.
- Smirlock, M., 1985, "Evidence on the (none) relationship between concentration and profitability in banking", *Journal of Money, Credit and Banking*, 17, 69-83
- Sufian, F., & Chong, R. R., 2008, "Determinants of Bank Profitability in a Developing Economy: Empirical Evidence from Philippines", *Asian Academy of Management Journal of Accounting and Finance*, 4 (2), 91-112.
- Trujillo-Ponce, A., 2013, "What determines the profitability of banks? Evidence from Spain accounting and finance", *Journal of Accounting Association of Australia and New Zealand*, 53, Richmond Vic.: Wiley-Blackwell.
- Vong, A. P. I., & Chan, H. S., 2009, "Determinants of bank profitability in Macao", *Macau Monetary Research Bulletin*, 12(6), 93-113.
- World Bank (2013): World Development Indicators
- Zhang, C., & Dong, L., 2011, "Determinants of bank profitability: evidence from the USA banking sector", Master of Financial Risk Management, Beedie School of Business, Simon Fraser University. (summit.sfu.ca/system/.../FRM%202011%20Liyun%20Dong%20and%20), Accessed 25/02/2013