European Journal of Accounting, Auditing and Finance Research
Vol.5 No.5, pp.18-28, May 2017
Published by European Centre for Research Training and Development UK (www.eajournals.org)

The Relationship of the Capital Structure and Financial Performance: Empirical Evidence of Listed Banks in Thailand

Tran Binh Dai
Ph.D Candidate

ABSTRACT: *This paper aims to determine the relationship between capital structure and banks' performance in Thailand. We utilize the quarterly data set containing firm-specific characteristics and profitability from 1997 to 2016. By employing the random effect model and robustness check to tackle the endogeneity problem, the result proves that capital structure is significant and negatively correlated with profitability which implies that pecking order theory is valid in data set used. Moreover, credit risk and liquidity risk significantly decrease the financial performance. Based on the result and the theoretical background, this paper would like to suggest that governments and banks should focus on controlling the credit process to reduce the non-performing loans. Moreover, they should pay attention to the fund allocation to avoid the shortage of funding which may be costly to banks. Also, while improving banks' financial performance, banks' managers should be aware of over utilizing debt which reduces banks' profitability.*

KEYWORDS: Capital structure, Financial performance, Thai Banks

INTRODUCTION

The most recent financial crisis in 2008 first started in America and quickly spread to many countries all over the world. This remarkable event is still an attractive topic to the policy makers and scholars. During the crisis, banks which play a crucial role in the economy suffered most. Thus, it observes that a developed further interest of research papers tend to focus on banks. Before the crisis, people need banks as a channel to grow the economy because the most valuable function of banks is to allocate the exceeded funding to where needed. Moreover, they are payment channel and a tool for the governments to impose their monetary policies. Therefore, when banks suffer from the crisis, almost the whole economy is affected. Afterward, governments try to control banks by setting more laws and regulations regarding various mergers and acquisitions of banks, new policies such as BASEL framework and credit rating focus. On the other hand, banks are entities which are different from companies from the operation perspective; they make the profit through providing loans (lending) and receive deposits from customers (deposits). Many previous papers show that there is a relationship between capital structure and their financial performance. Thus, it is needed for banks to figure out their level of optimal capital structure to maximize their profitability.

For a firm, capital structure is defined as the combination of debt and equity used to finance its operation. According to Modigliani and Miller (1958), capital structure has become a significant topic in corporate finance. It becomes a great concern to all managers of all companies. Some classical theory of corporate finance proposed that there is a trade-off when a firm determines a level of capital structure. Thus, a wrong

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

choice would lead to a decreasing financial performance and even the going concern matter of the company.

However, although many research papers on this subject show that this relationship exists; when we apply to banks which have a different mechanism, will it apply to these particular entities? This paper would like to contribute to the relationship of capital structure and financial performances of banks. In particular, the paper would like to clarify the mechanism of applying capital structure theories to banks in general and whether they have the correlation or not in Thailand. Previous papers analyzed the relationship between the capital structure and the financial performance of particular countries. However, almost all the studies need further insights on the mechanism of banks and the applicability of capital structure theory. Otherwise, it would reduce the reliability because of the unpersuasive based literature. Moreover, some papers estimated the coefficient without noticing the endogeneity problem which leads to biased and inconsistent estimates (Wooldridge, 2002). Furthermore, Thailand was the first country to suffer from the Asian financial crisis in 1997 which hurt their banking system. Thus, there is a need for research papers on Thailand banking system which may help them to understand and maintain their sustainability.

To sum up, this study not only suggests explaining the mechanism about banks to see its compatibility of corporate finance theories but it also identifies whether the relationship between the capital structure and the financial performance exists. Berger and Bonaccorsi di Patti (2002) had proposed that there is a possibility of Reverse Causality between the capital structure and returns which result in simultaneity bias. In their paper, they used two hypotheses of reverse causation: efficiency-risk hypothesis and franchise-value hypothesis which implies that it is possible for the capital structure to impact on performance rather than performance influencing capital structure. Thus, this paper also focuses on solving this endogeneity problem.

The paper is motivated to fill these gaps in the literature. Although there are many publications about the capital structure for firms, only several studies have been written on the capital structure of banks. Firstly, this paper tries to explain further the application of corporate finance theories for banks. Secondly, we seek to address the endogeneity problem which might be ignored by some previous papers. Lastly, banks in Thailand are chosen because no much work is done on this issue yet and Thailand was the first country that experiences the financial crisis in July 1997 before spreading to other Asian countries. In conclusion, the primary objective of this paper is to examine whether the relationship between capital structure and bank performance exists in Thailand. The next part mentions about the Literature review, and then the methodology and models are described. Lastly, results and discussions are at the end of this paper.

THEORETICAL LITERATURE REVIEW ON CAPITAL STRUCTURE

Trade-off Theory of Capital Structure

Kraus and Litzenberger (1973) suggested that there is a trade-off between the benefits of tax shield and the cost of financial distress in a choosing corporate capital structure. When firms increase their borrowings, they can be beneficial by reducing the tax

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

payables because the interest payables are excluded before calculating the corporate income tax. Moreover, the after-tax cost of debt using to measure the Weighted Average Cost of Capital (WACC) is lower when firms increase their borrowings which lead to the decreasing WACC. Thus, the value of enterprises maximized when WACC used as a discount factor is minimized. However, the side effect of borrowings is increasing their financial distress cost which means firms are supposed to pay more interest and face bankruptcy problem if they borrow more than what they can repay. Thus, when the bankruptcy cost equals to the tax benefit, the optimal level of capital structure is formed. However, it's hard to measure the exact level and optimal level of capital structure. Many researchers found that most firms do not have optimal capital structure. (Simerly& Li, 2002).

Agency Theory of Capital Structure

Jensen and Meckling (1976) stated that managers and shareholders sometimes don't share the same interests. This idea would cause the principal- agent problems. Debt financing is used as a method to reduce the conflict between them which decreases the agency cost. When a firm starts borrowing from banks, managers have to comply with the debt discipline which can increase the transparency and sustainability which somehow align their goals with the shareholders. Thus, shareholders can use debt as a method to control managerial behavior (Boodhoo, 2009). At last, higher leverage can lower the agency cost, reduce the administrative inefficiency and improve firm's performance (Jensen, 1986).

Pecking Order Theory of Capital Structure

According to this theory, there is a hierarchy of financing: retained earning known as the internal source of funding, borrowings and issuing new equity. It says that the internally generated funds are preferred because the cost of using this source is lower than the others and then come to the debt usage before issuing new equity. The implication of this decision is that debt is a signal of its need for the external source of finance and it is less likely to send a signal to investors compared to issuing new equity. The pecking order theory is suggested by Myers and Majluf (1984). They stated that when a firm issues new equity, it shall send a signal to investors that share prices are overvalued because it makes managers issue new equity. Then, investors will sell their shares and eventually makes the stock price drop. Thus, firms prefer to use debt rather than equity if they need external financing.

Capital Structure Theory Application to Banks.

Although there are a lot of theoretical foundations for capital structure for firms, the question is whether this is justified for the banking system. It is noticeable that banks raise capital using deposits which are differently from non-financial companies. However, deposits are considered as a vital source of funding for banks for all countries. In general, almost all the financial statements of banks show that the proportion of deposits is significant. The charter capital of banks is much lower than that or just to meet the regulation of minimum charter capital. Several papers have shown that deposits are often the optimal form of financing for banks (e.g., Diamond and Dybvig, 1983; Diamond, 1984). In other words, this literature tends to treat deposits simply as

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

another form of debt. Gropp and Heider (2010) found that the determinants of bank capital structure are similar to those for non-financial firms. Mehran and Thakor (2011) documented a positive relation between bank value and capital in the cross section.

In this paper, we would like to treat deposits as debts because of the following reasons: the deposits from customers are on the right-hand side of the balance sheet which means that they are a liability of the banks. Moreover, the banks have to pay interest on those deposits. Finally, the banks can use that source of finance for lending activities to earn the profit while firms use debt to fund new projects or working capital. It is noticeable that the whole process is similar to the borrowings of companies. Next, we would like to apply three theories as mentioned above to see the mechanism of the capital structure of banks. If we treat deposits as debts, we can say that the rational of the three theories remain.

Trade-off Theory of Capital Structure suggests that when the banks have more deposits, they can use that amount to lend more to make the profit because lending is the most important operation of banks. Thus, it may increase the profitability. However, if the deposits are over accumulated compared to the loan amount (credit constraints), the banks can face some difficulties because of the liquidity risk: the deposits will mature, and it cost the banks more to repay the deposits to customers. Thus, in general, there is a trade-off of using deposits.

The Pecking order Theory is still applicable in the case of banks. Compared to the issuing new equity, increasing deposits are still much easier because it is a function of banks. Moreover, issuing new equity can send a negative signal to the existing investors that the shares are overvalued, and even their voting rights may be diluted. Thus, the investors will value the issuing new equity less than using deposits.

In general, shareholders consider using debt as a mean to control managerial behavior to reduce the agency cost as in Agency Cost Theory. When a firm starts to use borrowings, they have to comply with lender's regulation. Thus, they have to increase their transparency to meet the requirements which may reduce the principal-agent problem. However, this mechanism is more complicated for banks. The bank must maintain its good reputation for safety to attract more customers. Thus, they need to improve their management first. When banks have more deposits (increasing leverage) which mean they have more customers, their exceeded funding will be bigger; they need to improve their corporate governance to maintain its operation. These improvements can lead to a decrease of moral hazard to improve its profitability. To be more specific, deposits can be separated in deposits from customers and deposits from other institutions (Vostro account). For the second type, it works the same as a firm in term of transparency. In conclusion; the capital structure theories apply to banking systems. Thus, we can perform further tests to investigate which theory will be dominated in the case of Thai banking system.

Empirical Literature Review

There are relatively few empirical studies of bank capital structure. Flannery and Rangan (2008) investigate how US banks' capital structure varied, and Mehran and Thakor (2011) illustrate a positive relationship between bank value and capital in the

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

cross section. Furthermore, Mercado-Mendez and Willey (1995) examine agency theory in the banking industry by using four variables to represent for agency cost: earnings volatility, managers' portfolio diversification losses, bank size, and standard deviation of bank equity returns on the three financial policy variables of stock ownership, leverage, and dividend yield. They found out that bank size and managers' portfolio diversification have an impact on three financial policy variables. A.M. Goyal (2013) reveals the positive relationship of short-term debt with profitability as measured by ROE, ROA and EPS for listed banks in India which may confirm the agency theory existing in the sample and Meero (2015) performs analysis on the relationship between capital structure and performance in Gulf countries. He distinguishes the conventional banks and Islamic banks, but both banks show a similarity in term of capital structure. His results show that ROA has a significant negative relationship with financial leverage and a positive correlation with equity to assets ratio. However, Anarfo (2015) indicates that he found there is no statistically significant relationship of capital structure in Africa. Thus, with these complicated and controversial results, the debate on the relationship between capital structure and financial performance are still going.

RESEARCH METHODOLOGY

Data

This paper applies an unbalanced panel data of quarterly financial information of all listed banks in Thailand from 1997 to 2016. After the crisis of 1997, many regulations in controlling banks have been applied. Thus, the number of banks varies over these years in unbalanced panel data. Moreover, we only use the separated financial statements because the consolidated reports may include some subsidiaries such as real estate or securities companies which may cause bias in term of the nature of banks. The data is collected from Thailand Stock Exchange website.

Model Specification

This paper uses the ROA (Return on Assets), ROE (Return on Equity) as dependent variables to measure the financial performance of banks. We are using accounting profit as a measurement of financial performance instead of stock price because of two reasons. First, we obtain the independent variables from audited financial data of banks; we should use the accounting profit to make it consistent. Secondly, if we use stock price, we may include many uncontrolled market factors such as exogenous shocks which may make the results complicated. However, regarding capital structure, we use the Borrowings, Deposits and Vostro account (Interbank and Money Market Items)/ Total Assets which represents the leverage level of banks (CAP variable). We obtain these three accounts because they reflect the nature of borrowings process which banks pay interest to use these source of finance. Other liabilities items on the balance sheet do not reflect the same nature. However, their proportion is small compared to the deposits. As a unique institution, there are some controlled variables used in this model: Tangibility, Size, Growth rate which represent the characteristic of banks and Loan/ Deposit Ratio and Allowance/ Loan as risk measurements of banks.
The model is specified as:

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

$$Y_{it} = \beta_{it} + \beta_{it} CAP_{it} + \beta_{it} \sum_{i=1}^{n} Z_{it} + e_{it}$$

Where:
Y_{it} - The dependent variables ROA and ROE for bank i in time t
CAP_{it} - The independent variable which is Capital Structure Ratio for Bank i in time t
Z_{it} - The controlled variables including Tangibility, Size, Growth Rate, Loan/ Deposit Ratio and Allowance/ Loan for bank i in time t.

Variable Definition and Measurement

CAP: Borrowings, Deposits and Vostro account / Total Assets
TANG: Fixed Tangible Assets divided by Total Assets
SIZE: The natural logarithm of Total Assets
GROWTH: The growth rate of Total Assets
LDEPOSIT: Loan/ Deposit which indicates the liquidity risk
ALOAN: Allowance for Doubtful Debt/ Loan which represents the credit risk

EMPIRICAL RESULTS AND DISCUSSION

Descriptive statistics

Table 1 presents the summary of the quarterly financial performance, characteristics and risk exposure of Thai's banking system over the time window 1997-2016. It can be inferred that the quarterly ROA is 0.11% and ROE is -1%. One possible explanation for the negative ROE over the period is that some banks have significant negative equity especially after the crisis in 1997. On the other hand, the borrowing, deposit and interbank item account for average 78% of the total asset which represents that most banks are highly leveraged which emphasizes the importance of capital structure in the banking industry.

Table 1: Descriptive statistics

	Variables	Obs.	Mean	Std. Dev.	Min	Max
1	ROA	877	0.0011524	0.0147907	-0.1285598	0.1280985
2	ROE	860	-0.0100657	0.1350361	-0.9849181	0.8256121
3	CAP	880	0.7796980	0.2588424	0.0000000	1.2148050
4	TANG	880	0.0184543	0.0088976	0.0000000	0.0556006
5	Size	880	19.725620	1.3640600	15.580900	21.768140
6	Growth	863	0.0154427	0.0695734	-0.2301166	0.7909139
7	Ldeposit	880	0.8740771	0.5085003	0.0000000	4.4160910
8	Aloan	880	0.0685228	0.0875495	0.0000000	0.7117558

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Table 2: Correlation Matrix

	ROA	ROE	CAP	TANG	Size	Growth	Ldeposit	Aloan
ROA	**1.0000**							
ROE	0.6326	**1.0000**						
CAP	-0.3781	-0.0927	**1.0000**					
TANG	-0.1382	-0.1621	0.3828	**1.0000**				
Size	-0.1987	0.0897	0.6499	0.1192	**1.0000**			
Growth	0.1377	0.0986	-0.0311	-0.0800	-0.0034	**1.0000**		
Ldeposit	-0.2710	-0.0798	0.2222	0.0071	0.2439	0.0102	**1.0000**	
Aloan	-0.0801	-0.1474	-0.1643	-0.0980	-0.1161	-0.0734	-0.1736	**1.0000**

However, we observed high growth rate of total assets of banks by 1.5%. Finally, Thai banking system shows that the allowance for doubtful debt is 6.8% and on average, banks can only lend 87% over the total deposits. The correlation matrix is presented in Table 2.

Regression Results

Table 3: Results from random effects model

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
CAP	-0.0247406	0.0044268	-5.59	0.000	-0.0334169	-0.0160642
TANG	-0.0289378	0.0915889	-0.32	0.752	-0.2084488	0.1505731
Size	0.0024969	0.0009201	2.71	0.007	0.0006935	0.0043004
Growth	0.0325914	0.0064947	5.02	0.000	0.0198621	0.0453207
Ldeposit	-0.0068619	0.0014161	-4.85	0.000	-0.0096375	-0.0040864
Aloan	-0.0283652	0.0062910	-4.51	0.000	-0.0406953	-0.0160351
_cons	-0.0209887	0.0166760	-1.26	0.208	-0.0536731	0.0116956

Number of obs = 860
Number of groups = 16

ROE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
CAP	-0.1174726	0.0339087	-3.46	0.001	-0.1839323	-0.0510128
TANG	-1.8577710	0.7390832	-2.51	0.012	-3.3063480	-0.4091946
Size	0.0271259	0.0066661	4.07	0.000	0.0140606	0.0401913
Growth	0.1581158	0.0639949	2.47	0.013	0.0326881	0.2835434
Ldeposit	-0.0356625	0.0113695	-3.14	0.002	-0.0579464	-0.0133787
Aloan	-0.2903980	0.0577849	-5.03	0.000	-0.4036542	-0.1771417
_cons	-0.3743052	0.1183015	-3.16	0.002	-0.6061719	-0.1424386

Number of obs = 843
Number of groups = 16

Table 3 report estimation results for the model using random effect panel data. We perform panel data regression for both fixed effect and random effect models. However,

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

based on Hausman test, the suitable choice is random effect model. Therefore, random effect model is chosen consistently for both ROA and ROE. The most important result of this table is that the capital structure has a significant negative correlation with the financial performance which is measured by ROA and ROE. Thus, this result illustrates the validity of pecking order theory for capital structure. On the other hand, tangibility shows inconsistent correlation with financial performance; it can be explained that banks don't utilize the fixed assets to earn the profit, unlike the manufacturing companies. Both size and growth positively correlate with the ROA and ROE, which is the same as expected: the bigger the banks are the higher profit they make. Lastly, Loan/ Deposit ratio and Allowance for doubtful debt show that there is a trade–off between the bank's liquidity, credit risk, and the financial performance. Thus, if the banks are exposed to too much credit and liquidity risk, they will reduce their profitability. Although the model proposed in this paper is widely used in the literature before, we perform an additional examination to control the endogeneity such as reverse causality between dependent and independent variables which may cause bias in our results. Robustness check is implemented by using one time lagged independent variables. The result of robustness check is shown in Table 4.

Overall, as shown in Table 4, the results are consistent and in line with those in Table 3. In particular, Capital structure coefficient has a negative sign and is highly significant. Similarly, Size is significantly positive and correlated with financial performance. Finally, the credit exposure and the bank's liquidity negatively correlated with profitability.

Table 4: Results from random effects model - Robustness check

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
LAGCAP	-0.0188822	0.0046223	-4.09	0.000	-0.0279417	-0.0098226
LAGTANG	-0.0742877	0.0962557	-0.77	0.440	-0.2629454	0.1143701
LAGSize	0.0017719	0.0009589	1.85	0.065	-0.0001075	0.0036512
LAGGrowth	-0.0038884	0.0067431	-0.58	0.564	-0.0171047	0.0093279
LAGLdeposit	-0.0058957	0.0014759	-3.99	0.000	-0.0087884	-0.0030030
LAGAloan	-0.0184613	0.0066081	-2.79	0.005	-0.0314130	-0.0055096
_cons	-0.0113904	0.0173727	-0.66	0.512	-0.0454402	0.0226594

Number of obs = 844
Number of groups = 16

ROE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
LAGCAP	-0.1034496	0.0349106	-2.96	0.003	-0.1718731	-0.0350261
LAGTANG	-1.0659730	0.7653153	-1.39	0.164	-2.5659640	0.4340172
LAGSize	0.0238856	0.0068340	3.50	0.000	0.0104911	0.0372800
LAGGrowth	0.0814647	0.0669646	1.22	0.224	-0.0497834	0.2127129
LAGLdeposit	-0.0359740	0.0117898	-3.05	0.002	-0.0590816	-0.0128664
LAGAloan	-0.1934057	0.0604796	-3.20	0.001	-0.3119434	-0.0748679
_cons	-0.3402877	0.1212805	-2.81	0.005	-0.5779931	-0.1025823

Number of obs = 827
Number of groups = 16

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

CONCLUSION

In this study, we have examined empirical evidence regarding the relationship between capital structure and financial performance, using the Thai listed banks as an experimental setting. The study was conducted on the quarterly data of 16 Thai listed banks from 1997 to 2016. Two dependent variables representing the financial performance are ROA and ROE. Five independent variables were chosen to reflect the characteristic of banks including Tangibility, Size, Growth Rate, Loan/ Deposit ratio and Allowance for doubtful debt/ Loan ratio. Hausman test applied and the results show that random effect model is more appropriate since the p-value of the Hausman tests are statistically insignificance.

The result illustrates that the capital structure of banks in Thailand is statistically adverse significance with the financial performance. Thus, it implies that pecking order theory is valid in this sample, banks prioritize their internal generated funds which are their retain earnings first and if this source of finance is used up, they will use the debt capital. Thus, this paper suggests that the more efficient banks use less debt (more equity). The result is also confirmed by robustness examination.

Our analysis may have important implications for policy makers and Thai banking system. While improving banks' financial performance, banks' managers should be aware of over utilizing of debt which reduces banks' profitability. Moreover, credit risk and liquidity risk are also the matters. After the crisis, Thai banks are likely to recover. However, a careless lending process may cause the non-performing loans are increasing. Thus, banks should focus on controlling the credit evaluation to prevent the default risk. Lastly, the banks should allocate the funds appropriately to avoid the short of funding which may be costly to banks.

REFERENCE

A.M. Goyal (2013). "Impact of Capital Structure on Performance of Listed Public Sector Banks in India". International Journal of Business and Management Invention, Volume 2, Issue 10 October. 2013, PP.35-43.

Berger. A. N. , and Bonaccorsi, P.E.(2006). "Capital Structure and Firm Performance: A New Approach to Testing Agency Theory and an Application to the Banking Industry". Journal of Banking and Finance 30, 1065-1102.

Boodhoo, R (2009):"Capital structure and ownership structure: a review of literature."The Journal of Online Education, January Edition, pp1-8.

Diamond, D., (1984). "Financial intermediation and delegated monitoring". Review of Economic Studies 60, 393-414.

Douglas W. Diamond; Philip H. Dybvig (1983). "Bank Runs, Deposit Insurance, and Liquidity". The Journal of Political Economy, Vol. 91, No. 3. (Jun., 1983), pp. 401-419.

Ebenezer Bugri Anarfo (2015). "Capital Structure and Bank Performance – Evidence From Sub-Sahara Africa". European Journal of Accounting Auditing and Finance Research Vol.3, No.3, pp.1-20, March 2015.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Flannery, M., Rangan, K., (2008). "Market forces at work in the banking industry: Evidence from the capital buildup from the 1990s". Review of Finance 12, 391-429.

Gropp, R., Heider, F., (2010). "The determinants of capital structure: Some evidence from banks". Review of Finance 14, 587-622.

Jensen (1986): "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers". The American Economic Review, Vol. 76, No. 2, Papers and Proceedings of the Ninety-Eighth Annual Meeting of the American Economic Association (May 1986), pp. 323-329

Jensen, M. and Meckling W. (1976). "Theory of the firm: Managerial behavior, agency costs, and ownership structure". Journal of Financial Economics, 3: 305–60.

Kraus, A.; Litzenberger, R.H. (1973). "A State-Preference Model of Optimal Financial Leverage". Journal of Finance: 911–922.

Meero (2015), "The Relationship between Capital Structure and Performance in Gulf Countries Banks: A Comparative Study between Islamic Banks and Conventional Banks". International Journal of Economics and Finance; Vol. 7, No. 12; 2015.

Mehran, H., Thakor, A., (2011). "Bank capital and value in the cross-section". Review of Financial Studies 24, 1019-1067.

Mercado-Mendez, J., & Willey, T. (1995). Agency costs in the banking industry: An examination of ownership behavior, leverage, and dividend policies. Journal of Economics and Finance, 19(3), 105–117.

Modigliani, F. and Miller M..(1963). "Corporate income taxes and the cost of capital: A correction". American Economic Review, 53: 443–53.

Myers, S.C. and Majluf N.S. (1984). "Corporate financing and investment decisions when firms have information those investors do not have". Journal of Financial Economics, 13: 187–221.

Simerly, R. L & Li, M. (2002). "Re-thinking the capital structure decision: Translating research into practical solutions". Journal of Applied Topics in Business and Economics.

Wooldridge, J. M. (2010). Econometric analysis of cross section and panel data (2nd edition). Cambridge, Mass.: MIT Press.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)