WHAT IMPACTS THE LEVERAGE RATIO OF BANKS IN ALBANIA?

By

Riada Berhani, B.A.

Thesis submitted for the degree of Master of Science of Banking and Finance

Epoka University

September 2015

APPROVAL PAGE

Thesis Title	:	What Impacts the Leverage Ratio of Banks in Albania?
Author	:	Riada Berhani, B.A.
Qualification	:	Master of Science
Program	:	Banking and Finance
Department	:	Banking and Finance
Faculty	:	Economics and Administrative Sciences
Thesis Date	:	1 September 2015

I certify that this thesis satisfies all the legal requirements as a thesis for the degree of Bachelor (BA).

Assist. Prof. Dr. Urmat RYSKULOV

Head of Department

I certify that I have read this study that is fully adequate, in scope and quality, as a thesis for the degree of Bachelor (BA).

Assist. Prof. Dr. Urmat RYSKULOV

Supervisor

EXAM BOARD OF THESIS

Thesis Title	:	What Impacts the Leverage Ratio of Banks in Albania?
Author	:	Riada Berhani, B.A.
Qualification	:	Master of Science
Date	:	1 September 2015

Members

_____ …….

_____ …….

_____ …….

ABSTRACT

Choosing the right amount of the leverage ratio is not an easy task for a firm as well as for a bank. Various determinants impact this ratio according to the type of business and also the market that it operation. The main aim of this paper is to examine the main determinant of leverage ratio in the Albanian banking system.

To determine the short run impact of the determinant, panel data multi regression model where the dependent variable is the leverage ratio. The internal independent variables are profitability, return on assets, size, tangibility, and tax and dividend payment. The external independent variables are Gross Domestic Product annual growth rate and Inflation Growth Rate. In order to examine the long run relationship between leverage ratio and the independent variable Kao Residual Co-integration Test was conducted.

The main results indicate that the negative relationship if found between leverage ratio and the variable of profitability, tax payment and Inflation rate. While the relationship with other variable was positive. Moreover, leverage ratio has a long run relationship with tax payment, tangibility, GDP growth rate and Inflation rate, as well as with all the independent variable taken together.

Key Words: Leverage Ratio, Capital Structure, Banking System, Determinants, Albania

Jel Code: C33, D53, E44, G21, G32,

ABSTRAKT

Zgjedhja saisë së saktë për raportin e të levave nuk është një detyrë e lehtë për një firmë, si dhe për një bankë. Përcaktues të ndryshme ndikojnë në këtë raport sipas llojit të biznesit dhe gjithashtu të tregut që ato operojnë. Qëllimi kryesor i këtij punimi është që të shqyrtojë përcaktuesit kryesoerë që ndikojnë në raportin e të levave të bankave në sistemin bankar në Shqipëri.

Për të përcaktuar ndikimin afatshkurtër të përcaktuesëve kryesorë, është përdorur regresioni i shumëfishtë me të dhëna pane, ku variabli i varur është raporti i të levave. Variablat e bankare të pavarura janë të fitueshtmëria, kthimi mbi aktivet, madhësia e bankave, niveli i aktiveve fikse, dhe pagesa e tatim fitimit dhe dividendit. Variablat makroeconomik të pavarur janë norma e rritjes vjetore të Produkti i Brendshëm Bruto dhe norma e Inflacionit. Gjithashtu, për të shqyrtuar marrëdhëniet afatgjatë në mes të raportit të levave dhe variablave të pavarur është kryer Kao Residual Co-integration Test.

Rezultatet kryesore tregojnë se marrëdhënie negative se gjendet midis raportit të levave dhe variablin e fitueshmërisë, të pagesës së taksës, dhe normën e Inflacionit. Ndërsa marrëdhënia me variabël tjetër është pozitiv. Për më tepër, raporti levave ka një marrëdhënie afatgjatë me pagesën e tatimit, nivelin e aktiveve fikse, normë e rritjes vjetore të PBB-së dhe normën e Inflacionit, si dhe me të gjitha variablat e pavarur të marra së bashku.

Fjalët kryesore: Raporti i të Levave, Struktura e Kapitalit, Sistemi Bankar, Përcaktues, Shqipëria

Kodi Jel: C33, D53, E44, G21, G32

...dedicated to all my loved ones

ACKNOWLEDGEMENTS

The most important acknowledgement and my sincere gratitude goes to my advisor, at the same time the head of Banking and Finance department Assist. Prof. Dr. Urmat RYSKULOV. His continuous support, motivation, recommendation, advises and patient, helped me complete this thesis and added considerably to my academic experience. I also appreciate his tendency to force me search deep within my ability and belief in me in reaching always higher aims.

Besides my advisor I would like to express my gratitude to other member of Banking and Finance department but especially the dean of the faculty Prof. Dr. Güngör Turan for his advices during the B.A. and MSc. Studies as well as for his continues support as one of my advisers. Also, I would also like to thank all my MSc. Studies professors especially Assist. Prof. Dr. Addulmenaf Sejdini for his teaching, encouragement and help to expand my perspectives beyond academic theory while conducting a study.

Last but not the least, I would like to thank my always spiritual supporting team, my family.

DECLARATION STATEMENT

The material included in this thesis has not been submitted wholly or in part for any academic award or qualification other than that for which it is now submitted.

The program of advanced study of which this thesis is part has consisted of:

(i) Research methods course during the undergraduate study
(ii) Examination of several thesis guides of particular universities both in Albania and abroad as well as a professional book on this subject.

Riada BERHANI

September 2015

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AAB: Albanian Association of Bank

BoA: Bank of Albania

EBIT: Eanings before Interest and Taxes

EU: European Union

EUR: Euro

GDP: Gross Domestic Product

M&M: Modigliani and Miller

NCB: National Commercial Bank

NPV: Net Present Value

ROA: Return on Assets

ROE: Return on Equity

RWA: Risk Weighted Asset

WACC: Weighted Average Cost of Capital

LIST OF PUBLICATIONS BY THE CANDIDATE

Author:	Riada BERHANI
Co – Author:	Eglantina HYSA
The Title:	The Economy of Albania Today and Then: The Drivers To Growth
Conference:	The 4th International Conference of European Studies.
Pages:	598-611
Year:	2013
City:	Tirana
Publisher:	EPOKA University
ISBN:	978-9928-135-09-4

Author:	Riada BERHANI
Co – Author:	Urmat RYSKULOV
The Title:	Macroeconomic Determinants of Nonperforming Loans in Albanian Banking System
Conference:	2nd International Conference on Economic and Social Studies
Pages:	309-026
Year:	2014
City:	Sarajevo
Publisher:	International Burch University
ISBN:	978-9958-834-39-4

Author:	Riada BERHANI
Co – Author:	Urmat RYSKULOV
The Title:	European Union Integration: The Impact in Albanian Economy and Life
Conference:	2nd International Conference on Economic and Social Studies
Pages:	289-307
Year:	2014
City:	Sarajevo
Publisher:	International Burch University
ISBN:	978-9958-834-39-4

Author:	Riada BERHANI
The Title:	Economic Growth and Openness in Transition: A Study of Western Balkans
Journal:	Academic Journal of Interdisciplinary Studies (Vol 4, No. 1)
Pages:	423-434
Year:	2015
City:	Rome
Publisher:	MCSER Publishing
ISBN:	2281-3993
DOI:	10.5901/ajis.2015.v4n1p423

Author:	Riada BERHANI
The Title:	The Direction of the Relationship between Money and Price in Albania
Journal:	International Journal of Education and Research (Vol 3, No. 7)
Pages:	73-80
Year:	2015
Publisher:	Contemporary Research Center
ISSN:	2411-5681

LIST OF APPENDICES

INTRODUCTION

Leverage or otherwise known as gearing is the funding made by a firm of its assets with borrowing rather than equity.

Firms, be they financial or non-financial, consider leverage very important for their functioning and survival in the market, thus they consider all the options available for leverage, so that the optimal leverage option can be chosen to fulfill their individual needs.

Yet, in banking sector the leverage is the fundamental element of the functioning of the banks. Since they are thus it can be said that banks are greatly leveraged institutions that in return facilitate leverage for others.

Nonetheless, choosing the right leverage determinants is not an easy task. Since there are various types of leverage determinants, according to the type of firm and the market where it operates, there have been developed many theories regarding this topic.

The aim of this thesis is to examine in details the determinant behind the financial leverage of Albanian bank

The chapter one of this thesis analyses the theoretical approach of the leverage determinants. It shows the difference between various theories developed and used widely until nowadays for the leverage determinants. According to capital structure theory, the best capital structure, which is typically defined by the use of the financial leverage which is the increase on expected Return of Equity (ROE) by the used of relatively low-cost debt, it is the one that minimizes the overall cost of financing, which is measured by the Weighted Average Cost of Capital (WACC).

Another theory is the theory of Modigliani and Miller. According to Modigliani and Miller as debt increases the required return of equity increase in proportion to the debt financing ratio. Thus the addition of low-cost debt is compensated by the increase in the required return on equity, therefore the overall WACC remains constant. Modigliani and Miller extended their theory in 1963 by removing the assumption of no corporate taxes. Accordingly to their theory, taxes increases the firms leverage and the average cost per capital decreases due to the fact that debt financing is advantageous to the extreme.

The pecking order theory states that companies tend to prioritize internal financing to external one and debt to securities if external financing is necessary. Issuing equities is a matter of last resort.

According to another theory, the agency cost theory, the high leverage ratio means higher possibility of a principal – agent problem, which arises when the agents does not act on the best interest of the principal but rather on its own. Thus, a profitable company may tend to lower the incentives of debt financing in order to mitigate the agency cost.

The last theory used in this thesis to analyze the leverage determinants is the Static trade-off theory disproves this assumption. According to this theory, higher debt financing will have higher cost due to the fact that more debt means higher probability to go bankrupt.

Yet, it is important to mention that the decision regarding the amount of financial flexibility that the company is willing to hold has a great important on capital structure and financial leverage decisions of the company. Financial flexibility can be described as the potential of the company to respond by debt financing in a period of financial distress or to undergo a predictable or unpredictable profitable investment.

Chapter two provides comparisons between the thoughts and opinions of various authors regarding the leverage determinants.

The chapter three provides an in-depth explaining and understanding of the Basel III and the banking capital. It begins with explaining that Basel III sets minimum liquidity requirement that a bank on a specific state should fulfill in order to operate in that state. Furthermore, it requires more strict terms in quality and quantity of capital that banks must have by tightening the terms for classification of equity as well as by increasing the ration of capital required to total risk-weighted assets (RWA). Then it carries on by explain the banking capital and its various types, as well as it provides an overview of the mandatory minimum differences between Basel II and Basel III, regarding the banking capital.

The chapter four provides an overview of the Albanian banking system. The transformation it underwent with the collapse of the communism, the Albanian Banks Shareholder's Structure, the value of total assets based of the place of origin and the Albanian Banks' Assets to Total Assets of Albanian Banking System Percentage.

Chapter 5 explains in detail the methodology and data used in the analysis. In order to examine the main determinant of the leverage ratio is use a panel data multi regression model. Leverage ratio represent the dependent variable while the as independent variable are chosen profitability ratio, size of the bank, tangibility ratio, tax payment ratio, return on asset, dividends payout, Gross Domestic Product annual growth rate and Inflation rate. Data are taken form the annual report of the 5 largest bank of Albania which compose 69% of total assets and also of total equity of Albanian banking system. Moreover, in order to examine the long run relationship between the dependent variable and independent variable Kao Residual Co-integration Test is conducted. This chapter also includes an interpretation of the results.

Last but not the least chapter 6 included the conclusion generated by the analysis of the paper regarding the fulfillment of the main aim of the paper and the expected results. The expected results are as follow:

- Hypothesis 1: An increase in the profitability of banks decreases the leverage ratio of the banks.
- Hypothesis 2: An increase in the size of banks decreases the leverage ratio of the banks.
- Hypothesis 3: An increase in the tangibility of the banks increases the leverage ratio of the banks.
- Hypothesis 4: An increase in the tax payment of the banks increases the leverage ratio of the banks.
- Hypothesis 5: An increase in ROA increases the leverage ratio of the banks.
- Hypothesis 6: A dividend payment increases the leverage ratio of the banks.
- Hypothesis 7: An increase in GDP annual growth rate increases the leverage ratio of the banks.
- Hypothesis 8: An increase in Inflation rate decreases the leverage ratio of the banks.

CHAPTER 1
THEORETICAL APPROACH

Banks are companies that are called as financial institutions. They are the only financial institutions that act as deposit receiver. However, being a company, a bank is subject to all the theories relating to capital structure and financial leverage regardless the higher in the leverage ratio that it apply. In these chapter, are included the main theories that explain the decisions regarding the capital structure and financial leverage used.

1.1. CAPITAL STRUCTURE THEORY

The criteria for determining the best capital structure is that the best capital structure is the one that minimizes the overall cost of financing, which is measured by the Weighted Average Cost of Capital (WACC). On other words, the best capital structure is the structure that maximizes the value of the firm. Capital structure is typically defined by the use of the financial leverage which is the increase on expected Return of Equity (ROE) by the used of relatively low-cost debt. Financial leverage is measure by financial ratios such as Debt Financing Ration which is the ratio of debt to asset and the ration of Long-term Debt to Capitalization (the sum of Long-term debt and Equity which defines the permanent capital structure of the firm) (Vernimmen, Quiry, Dallocchio, Fur, & Salvi, 2005).

Figure 1, shows the naïve view of the relationship between the use of leverage and the cost of the financing for the firm or on other words the relationship of leverage and firm value. One of the main assumptions of this view is that Cost of Debt and Cost of Equity are independent of capital structure. On the other words, an increase in debt financing does not change the cost of debt or the cost of equity. The naïve view indicates that due to the cost of debt is lower than the cost of equity as firm increases debt financing by adding debt to its capital structure the overall WACC reduces. In this cause firms shifted from the usage of expenses equity to the usage of low-cost debt. Hence, the usage of the financial leverage and capital structure causes reduction of capital cost and increase the value of the firm while having a constant equity

Figure 1: The naïve view of the relationship between leverage use and financing cost

1.2. MODIGLIANI AND MILLER (M&M) THEORY

1.2.1. M&M THEORY WITHOUT INCLUDING CORPORATE TAXES

The prisoner of the theories of capital structure is the theory of Modigliani and Miller (1958). They showed that in a perfect capital market where no taxes exists the naïve view is incorrect because regardless of the financial leverage the company adopt, the WACC remains the same if there is no optimal capital structure.

In their theory they developed two propositions. In proposition one they assumed a perfect capital market where companies issued only risk-free debt and equity, frictionless financial marker, no corporate or personal taxes, no asymmetric information cost, no bankruptcy and transaction cost and no agency cost. In this type of market, the value of the firm is determined by the value of their assets and not by the right site of the balance sheet. On the other words, this proposition assumes that the value the firm depends on the income generated by the assets and not by the way of assets financing or the division of income. Thus, the value of a leverage company and of an unleveraged company is the same.

Proposition two indicates that the required rate of return on equity is in the right proportion with the ratio of debt over assets or with the financial leverage. The implication of this proposition is that in a perfect capital market there does not exist a perfect capital structure. Hence, to find the best capital structure, market should be imperfect.

Figure 2: The M&M view of the relationship between leverage use and financing cost

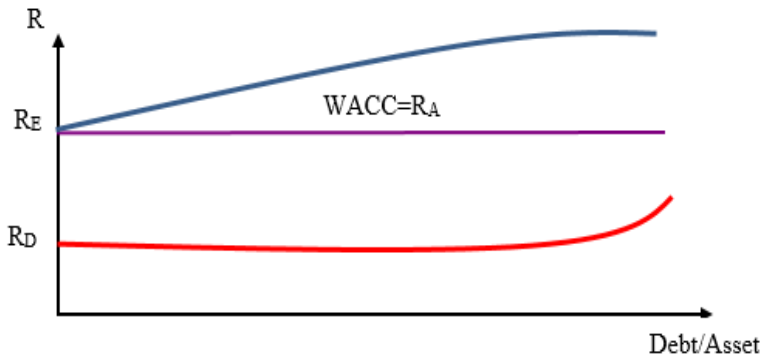
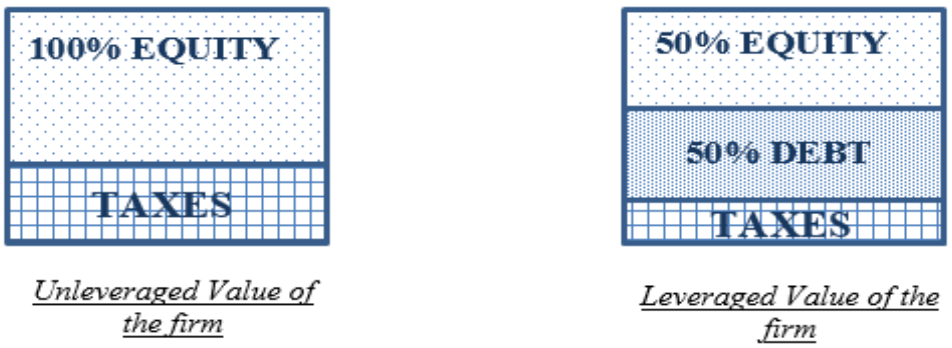


Figure 2, shows the M&M view of relationship between the use of leverage and the cost of the financing. According to Modigliani and Miller as debt increases the required return of equity increase in proportion to the debt financing ratio. Thus the addition of low-cost debt is compensated by the increase in the required return on equity, therefore the overall WACC remains constant.

1.2.2. M&M THEORY INCLUDING CORPORATE AND PERSONAL TAXES

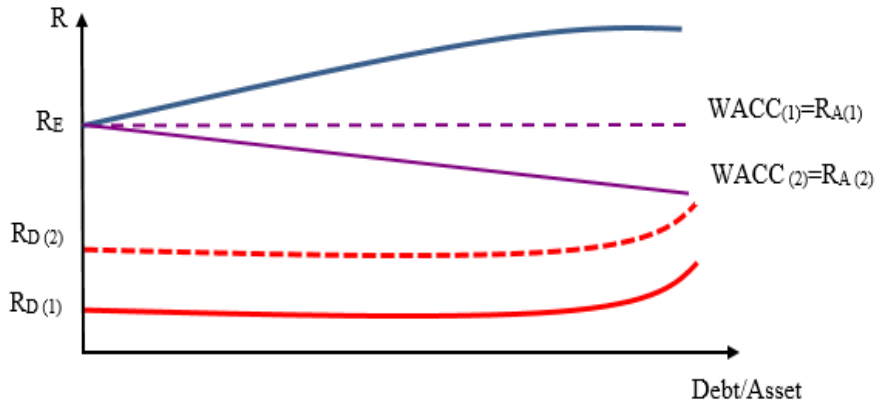
Nowadays, the tax-free world have not existed, thus it would be unwise to ignore the taxations on the corporate as per fact that taxation optimization policy is one of the main concerns of managers. Modigliani and Miller extended their theory in 1963 by removing the assumption of no corporate taxes. Moreover, arguing that cost of debt decreases as per fact that financial expenses of the company but not dividends are tax deductible expenses thus, creating a tax shield. Therefore, they indicated that a deduction of the tax payable increases the net income of the firm.

Figure 3: The M&M theory including corporate taxes.



Accordingly to their theory, taxes increases the firms leverage and the average cost per capital decreases due to the fact that debt financing is advantageous to the extreme. Thus, according to this theory the best capital structure is 100% debt and per fact that there will not be tax on corporate to be paid by the company. The figure 3, illustrates the M&M theory were corporate taxes are included while figure shows the M&M view of relationship between the use of leverage and the cost of the financing when corporate taxes are included.

Figure 4: The M&M view of the relationship between leverage use and financing cost when corporate taxes are included



Personal taxes paid by the investors are not interest deductible, thus the advantages of corporate tax shield is reduced if the personal taxes are to be taken into consideration. Personal tax is an interest income tax which if increased will increase all the total amount to be paid in order to liquidate debt and also will decrease the amount that the shareholders will get out of their investment on the stocks of a company.

In 1977 Miller edited the M&M theory that he and Modigliani conducted on 1958 but adding personal and corporate taxes together in the analysis. He argued that the personal tax paid by investors will cancel the taxes paid by companies, therefore the value of the firm will remain the same.

1.3. THE PECKING ORDER THEORY AND ASYMMETRIC INFORMATION PROBLEM

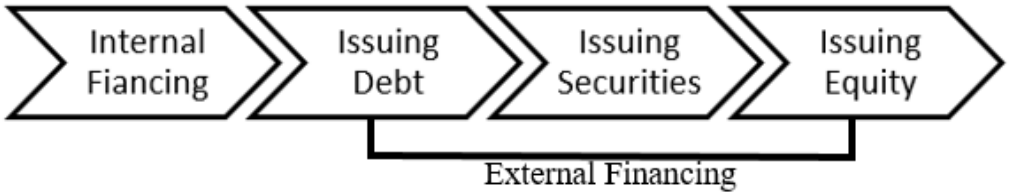
The M&M theory is proven to be flawed in the "real" word as it assumes a perfect capital market. Thus, other theories have arisen by relaxing the M&M assumptions.

Asymmetric Information theory implies that the information regarding the company is not symmetrically distributed to all parties (i.e. managers of the company had more information than the investors) and that the same information, even if it may be symmetrically distributed, is perceived differently by the parties. Thus, the symmetric information assumption of the perfect capital market is unrealistic.

Asymmetric Information causes managers to think twice in increasing the capital of the company because of an undervalued stock by investors. Therefore, many prosperous opportunities are overlook due to the lack of financing or that the shareholders of the company do not invest because they believe that the value of their stock is lowered to a value that is consider unprofitable to invest.

In order to address the asymmetric information problem, on 1964 Donaldson initiated the pecking order theory which later on 1984 was expanded by Myers and Majluf. Accordingly, companies tend to prioritize internal financing to external one and debt to securities if external financing is necessary. Issuing equities is a matter of last resort. The figure 5, explains the pecking order theory with a diagram.

Figure 5: The Pecking Order Theory diagram



1.4. PRINCIPAL – AGENT PROBLEM AND AGENCY COST THEORY

Companies employ agents with the necessary knowledge and skills to run the company. Thus, regarding the information for a respective task, agents will acquire more information that the principal. The principal – agent conflict arises when the agents does not act on the best interest of the principal but rather on its own. Moreover, monitoring the agent is costly due to vary reasons such as the needed knowledge, time and further financing to understand all the decisions of an agent that has an expertise in the specific field is higher due to the expertise he possesses (Vernimmen, Quiry, Dallocchio, Fur, & Salvi, 2005).

The principal – agent conflict is of three types:

- Between nonexecutive and executive shareholders
- Between shareholder and management
- Between creditor to shareholder

Therefore, the principal is represented by the shareholder and/or creditors while the agent is represented by the executives of the company and/or shareholders (if the principal is the creditor) that are entrusted by the shareholders to manage their fund and increase their value. For example, managers do not have the incentives to increase the value of the stock of the shareholders but rather to increase their benefits such as benefits in kinds that are associated with the job. Moreover, managers have an incentive not to increase the value of the shareholder but the value of the process that engineer the company and transfer the profit for their own benefit. Many managers tend to be risk averse due to the fact that a financial distress might cause them their job, payroll or bonuses. While on the other hand shareholders prefer debt because it increases the performance of the company and encourage profit. Moreover, issuing debt means paying out cash on regular basis, cash that managers on other situation might have used it for personal benefits.

Furthermore, an agency problem is the underinvestment problem. Where managers, which are acting on the best benefit of the shareholder, refuse to finance a low risk project by using debt, on the expenses of creditors. For their benefit shareholders might decide to finance the project with their funds therefore increasing the profit of the company. The additional profit might be used to pay off the existing debt thus cutting off the periodic cash flow income of interest of the creditors. Thus, leverage and growth opportunity of a firm have a negative relation between each other.

Other action of the shareholder that may damage the creditor's profit is the risk shifting behavior and the milking property behavior. Risk shifting shareholders tend to invest in high risk project on the expenses of the creditors in order to gain more benefits in the project which results profitable. This behavior is a result of the fact that shareholders of a company are liable for potential losses of the company to a value not higher than the total value of their capital investment on the company regardless to the risk undertaken by the company. Moreover the milking property behavior shareholders tend to sell part of assets-in-place of the company in order to distribute high or extraordinary dividend payouts.

One solution for the conflict of the first and second type of the conflict is the compensation theory. On other words, executive shareholder and managers are compensating if the value of the stock of the company increase thus, their incentive will be align to the objective of their principal. Moreover, many investors or shareholders apply the possibility of corporate takeover action in order to increase the incentive of the executive of the company to work on their best interest and management the shareholders wealth. On other words, the principal will take over the task of agent if it feels that the agent is not working on his best interest. Thus, agents tend to work in the best interest of the principal due to knowledge that a possible takeover will mean losing his job.

Furthermore, creditors might require the company to issue covenants that limit and discipline the decision of the managers and major shareholder. Public authorities may imply a debt concentration limit in order to protect the sector for a possible financial distress of a company which may be significant on its wellbeing. Creditor or public authorities may request a guarantee or lease for the debt issued. In this case, that monitoring cost is reduced due to fact that the agent (manager and/or shareholder) cannot sell the asset used as collateral. Also the losses suffered by the creditor are reduced due to the difference being higher than the liquidation value of the collateral issued in their favor.

Therefore, high leverage ratio means higher possibility of a principal – agent problem, thus, higher agency cost thus a profitable company may tend to lower the incentives of debt financing in order to mitigate the agency cost.

1.5. STATIC TRADE-OFF THEORY AND BANKRUPTCY COST

One of the assumptions of the M&M theory is the nonexistence of the bankruptcy cost. The Static trade-off theory disproves this assumption. Accordingly, higher debt financing will have higher cost due to the fact that more debt means higher probability to go bankrupt. In theory, a bankruptcy of an unprofitable company will act in the best benefit of the maker because it increases the value of the remaining firms and it strengthens the sector where the bankrupted company operated. The mechanism of bankruptcy is used as a tool to make the market more efficient and profitable by removing the poison fruit among the players. Moreover, the bankruptcy of a company is in theory a mechanism that benefits the creditors and per fact that their funds will be taken over by other companies of public authorities for

better management. Thus, if the creditor possess a well-diversified portfolio the capital gains that will be generated by a better management after the bankruptcy of the first company will offset of capital losses during the bankruptcy.

However, on the real word bankruptcy come with some costs. Bankruptcy costs are of two types: direct and indirect. Direct costs include laying-off payments to workers, fees of the lawyers, administrative cost and the cost of efforts of the shareholder for a liquidation dividend. Indirect cost include order cancellation due to the loss of reputation and the fear of not being honored, less credit because of a low possibility for repayment, loss of productivity, less financing access, loss in bargaining power and different incalculable human costs. Therefore, bankruptcy costs have a significant effect on the capital cost thus, it is essential in determining this cost while choosing the best capital structure.

Kraus and Litzenberger (1973) opposed the M&M theory (1963) that indicated that the best capital structure is 100% debt as per fact that interests on debt expenses are deductible and create tax shield. According to the authors their implied that there is a trade-off relationship between the cost of taxes and the benefit of tax shield that affects the decision of debt financing. They argued than an increase on debt will help in saving the funds of the company and as well as of the shareholders at the same time, but on the other hand it increases the likelihood of going bankrupt. While a lower ration of debt financing is directly proportional with the probability of a bankruptcy which is associated with lower bankruptcy costs. On the other hand a high debt level might have a higher bankruptcy cost than the gain generated from the tax shield thus the static trade-off theory imply that the company should borrow debt to that point when the bankruptcy cost is lower to the benefit of tax shield in order for that decision to be profitable.

Moreover, even not going to the bankruptcy point, a financial distress has its costs. It may force the company to lay off a considerable number of workers, to close a branch or department such as the Research and Development (R&D) projects department, to cut off additional expenses on staff such as training, bonuses, which may effect on unsatisfied staff and increasing the transfer of the workforce to another competitor company, cutting off the marketing expenses that in a healthy financing situation will generate funds for debt payment, and difficulty in financing new project that if funded would generate profit for the company.

1.6. THE FINANCIAL INFLEXIBILITY COST

Financial flexibility can be described as the potential of the company to respond by debt financing in a period of financial distress or to undergo a predictable or unpredictable profitable investment. In theory, shareholders tend to benefit from a financial flexibility due to the fact that equity financing in the absence of debt financing has a higher cost or not loss of not financing will be high. However, the benefits of the shareholders remain subject to the agency cost where managers have more incent to have a risk-aversion behavior that willingness to invest.

Moreover, financial flexibility increases the collateral and liquidation value of its assets, therefore its debt financing ability increases with the decrease in the default risk and bankruptcy cost making it more likable toward possible creditors (Mauer and Triantis, 1994). However, financial flexibility may lower the debt financing ability because it increases the possibility to undergo risky investment due to the fact that in a limit liability company it promotes the risk-shifting and milking property behaviors of the shareholders (Mello and Parsons, 1992).

The cost of financial flexibility is difficult to be calculated. It can be a refused profitable investment today for more flexibility in the future toward a more profitable investment or financial distress or vise-versa. Yet, this flexibility even though planned for a profitable future decision may results on a loss that may damage the benefit of creditors and/or shareholders. Therefore, the decision regarding the amount of financial flexibility that the company is willing to hold has a great important on capital structure and financial leverage decisions of the company.

CHAPTER 2
LITERATURE REVIEW

So far, the paper gives a theoretical picture regarding the decision in choosing the best capital structure and what affects it. As per fact that the main aim of this paper is to examine the determinant behind the financial leverage of Albanian bank, in this chapter are included the literature review regarding the existing empirical analysis relating with this topic.

Many structures aimed in explaining the determinants of capital structure are conducted since the introduction of the basic theory of Modigliani and Miller in 1958. Also many studies tried tested the following theories of Modigliani and Miller and other theories included in the previous chapter. According to the eminent study of Rajan and Zingales (1995), growth opportunity has a negative relationship with leverage level. This finding is supported also by the study of Myers (1977) that concludes that companies with high leverage level tend to refuses more investment opportunities with positive NPV due to the asymmetric information problem. Furthermore, the author concluded that growth ration of a company has a negative relationship with the leverage ratio of the company. Therefore, these papers advocate to a negative relationship between profitability of the company and its leverage ratio. Moreover, according to Shyam-Sunder and Myers (1999), Fama and French (2002) and Flannery and Rangan (2006) profitability has a negative relationship with leverage ratio due to the fact that firms with higher profitability generally do not use debt financing or equity financing but rather prefer to use their retained earnings in order to strengthen capital. However, a positive relationship was found on the study of Hovakimian et al. (2004) and Pathak (2005).

The negative relationship of growth opportunities with leverage status can be interpreted as more opportunities to have lower agency cost on equity and thus, being able to limit the usage of debt financing (Hovakimian et al., 2001; Shah and Hijazi, 2004 and Flannery and Rangan, 2006). Yet, a positive impact of the growth opportunities on leverage ratio was found on the studies of Titman and Wessels (1988) who argued that this positive impact is found only when growth opportunities cannot be financed internally rather than externally Accordingly, the most preferred option of external financing is debt financing.

Moreover, size of the company has resulted to be one of the main determinants of the leverage ratio. Fama and French (2002) found a positive relationship between the size of

the company and the leverage level of the company. This finding was supported also by the study of Pathak (2005) and Flannery and Rangan (2006). Still, there are studies such as the one of Kesyer (1986) that opposes the positive relationship between size and leverage ratio. Accordingly, a smaller firm has higher leverage ratio due to the fact that they are more opaque and based to the pecking order theory the adverse selection cost is higher. The negative relationship between size and leverage ratio of the firm was found also on the study of Titman and Wessels (1988).

Another determinant of the leverage ratio of the company is dividend. The positive relation between dividend and leverage ratio was found by Fran and Goyal (2003). They argued that previous dividend payment lower the retained earning resources available for future financing in the company.

Moreover, in case of a default a higher value of the tangible asset means more guarantees for creditors. Due to this reasoning, Titman and Wessels (1998) concluded that firms with a higher tangibility will not limit the usage of debt financing in order to lower bankruptcy cost. In their study they indicated that there is a positive relationship of tangibility of the company and its leverage ratio. The same relation was found in the study of Flannery and Rangan (2006), Shah and Hijazi (2004) and Pathak (2005). However, according to Hart (1987) firms with a high leverage tend to have more assets used as collateral therefore they are generally more controllable by the creditors thus manager will be less likely to issue debt due to the impossibility to use excessive prerequisites. Therefore, it was argued that firm with less collateral value tend to choose a higher leverage ratio implying a negative relationship between tangibility which is use as a proxy of collateral and leverage ratio. The same result was found also in the study of Hovakimian et al. (2001).

Furthermore, taxation is another determinant of leverage ratio. According to Titman and Wessels (1988), companies tend to prefer debt financing other than other funding sources due to the fact that interest payments on debt are deductible. Yet, the rise of the debt as a limit due to the parallel increase of probability of bankruptcy. Therefore, the relationship between taxation and leverage ratio remains unclear.

One of the main macroeconomic determinants of leverage ratio is Inflation. According to Booth et al. (2001) an increase in inflation will lean in a decrease of leverage ratio due to the fact that it forces investors to exchange bonds for stocks. Moreover, Dokko and

Edelstein (1989) advocated that inflation changes cause's wealth redistribution between bondholder and shareholders. The negative relationship was found also by Gajurel (2005). However, Noguera (2001) found a positive relationship between these two variables. This positive relationship was theoretically supported by Corcoran (1976) and Zwick (1977) that indicated that a higher inflation lowers the cost of debt therefore the demand for bond increases.

Another important macroeconomic determinant of leverage ratio is economic growth which is measured by Gross Domestic Product (GDP) growth rate. According to the study of Booth et al. (2001) economic growth is positively related to leverage ratio. This paper is supported also by the finding of Korajaczyk and Levy (2002). Moreover, base of the study of Gajurel (2005) GDP growth rate is negatively related with the total debt ratio and short term debt ratio, however it is positively related with the long term debt ratio. Cook and Tiang (2007) implied that companies target leverage faster during a profitable period than on recession thus, indicated that GDP growth rate plays in important effect on the leverage of the companies.

CHAPTER 3
BASEL III AND BANKING CAPITAL

In order to improve the global surveillance of global banking the Basel Committee on Banking Supervision is created. The Committee provides the possibility of information sharing between supervisory institutions and authorities of various states in order to provide a common approach in surveillance. It also published rules and requirements in various banking supervision area if it deems necessary. The most important publication of this committee is the international standards of bank capital which in the banking world are simple known as the "Basel".

The first issue of the Basel (Basel I)[1] on capital adequacy was published in 1988 followed by Basel II in 2004, and lastly as a consequence of financial crisis Basel III was published on Basel III in 2011. The main aim of Basel III is to improve risk management of banking system and increase the ability of this sector to manage different shocks that may results from future economic or financial crisis. Basel III published firmer requirements than Basel II on capital adequacy as well as set for the first time obligation of liquidity for banking sector. It set minimum liquidity requirement that a bank on a specific state should fulfill in order to operate in that state. The new Basel requires more strict terms in quality and quantity of capital that banks must have by tightening the terms for classification of equity as well as by increasing the ration of capital required to total risk-weighted assets (RWA).

The banking capital is defined as the net worth of the bank or its value to investors. It is divided in various types.

The first type is the regulatory capital. It is defined according to the regulatory framework, according to which the bank operates. It is the minimum capital required by the regulator in order for the bank to stay solvent. The other type is the economic capital. It is an internal measure estimating the amount of the capital needed to cover losses within a certain confidence level. Consequently, in theory the economic capital is chosen by shareholders at initiation of each period, where the possibility of default if losses exceed the initial capital level is taken into account. This implies that any capital above this level is deemed

[1] BIS, Basel Committee Publications, http://www.bis.org/list/bcbs/tid_132/

inefficient and costly capital, as it does not add any value. Thus, economic capital is determined on the basis of a two-front approach taking risk vs. funding costs (depositors) and risk vs. return (shareholders) into account.

The main capital share measure of a bank is Tier I Capital and it represents the basic capital of a bank which includes owner's equity and retained earnings. Basel III excluded some less qualitative capital, such as deferred tax, from being classified as equity Tier I. Moreover, in Basel III non-controlling interest is not part of Tier I. Thus, around 240 billion Euros of Tier I capital in Basel II are excluded from the classification of Tier I in Basel III.

A significant part of the eligible tier 1 capital is the retained earnings, which count with the full amount in tier 1 capital. They are highly sensitive to the state of the economy, since increasing losses will erode earnings, thus lowering the amount available to retain in order to build up the regulatory capital level. Moreover, retaining earnings, as a way of increasing the regulatory capital base, are subject to stakeholder conflicts of interest.

Yet, a more instant way of increasing the regulatory capital base is through the issuance of external equity. However, if the market deems the bank poorly capitalized, it will most likely be forced to issue shares at a significant discount, since the signaling effect will likely be negative. In addition, banks, that are less known by the market, which are generally characterized by illiquidity, will often face problems of gaining full subscription. Issuing new equity is not in the interest of the existing shareholders, since it dilutes their shares. Again, regulators would prefer more to less capital.

Another way for the banks to increase their regulatory capital levels is by issuing hybrid instruments. They are cost-efficient relative to shares, they do not dilute corporate control by granting voting rights to the investor, and they enable a diversification of the capital. Hence, by issuing hybrid securities, banks avoid the diluting mechanisms of an equity issuance, and at the same time they obtain relatively inexpensive capital, which may count as tier 1 capital, although it is subject to various limits of inclusion. Regulators would appreciate hybrid instruments, actually avoiding or at least mitigating the conflicts of interest inherent in capital levels of banks. However, the inability of those instruments to absorb losses at least reduced the potential mitigation effect of conflicts of interests, if not completely eliminated them.

Tier II capital represent as less qualitative capital than the Tier I capital and it included capital such as the unreported reserves, general reserves, subordinated debt, and hybrid capital. The sum of Tier I and II represent the total capital and it must be noted that Tier II should be at all-time less than Tier II.

Same as Basel II, Basel III minimum capital requirement is expressed a ration of capital to total RAW. Risk-Weighted Assets have been used by European commercial banks to actively manage their Tier 1 Capital Ratio. Considering Risk-Weighted Assets it all depends on whether the Risk-Weighted Assets reflect the actual risks of the bank. Assuming they do, and keeping tier 1 capital constant, shareholders would prefer a high figure relative to total assets, since the construction benefit from risky investments and a lower cushion. Bondholders, depositors, and regulators on the other hand, would prefer lower Risk-Weighted Assets following the opposite reasoning, since this leads to a higher cushion against unexpected losses.

In order to calculate the RAW, banks assets are weighted against notional risk where a risk weighting is assigned according to the amount of capital required for their support. In Basel III all the mandatory minimum ration have increased. Moreover, in Basel III has set as a requirement minimum leverage ratio in additional to all the ratios included to Basel II. Table 3 shows the differences between the mandatory ratio requirement of Basel II and Basel III. As it can be seen than all the minimum mandatory requirement have increased with the latest Basel.

Table 1: Mandatory Minimum Differences between Basel II and Basel II

Name	Basel II	Basel III	Change
Tier I Common Ratio	2%	7%	+5%
Tier I Capital Ratio	4%	8.50%	+4.5%
Total Capotal Ratio	8%	10.50%	+2.5%
Leverage Ratio	0%	3%	+3%

According to the press release in February 2012 of the credit rating company Fitch, to satisfy the requirement of Basel III, 29 most important financial institutions will need around 566 billion dollar additional capital shares within 2018, while the European financial institutions will need around 1.1 trillion Euros additional capital share within 2019.

CHAPTER 4
ALBANIAN BANKING SYSTEM

The first developments of the structure of the Albanian Banking System began with the creation of the first two-tier banking system in Albanian in 1992. During that period, banking system of Albania had only 3 state-owned commercial banks: Saving Bank (Banka e Kursimeve), National Commercial Bank (Banka Kombetare Tregtare) and Agrarian Bank (Banka Agrare). While nowadays the banking system is created by 16 privately owned commercial banks. Since 1992, the banking system is Albania is characterized by prominent growth and development in technology and legislation.

Table 2: Albanian Banks Shareholder's Structure

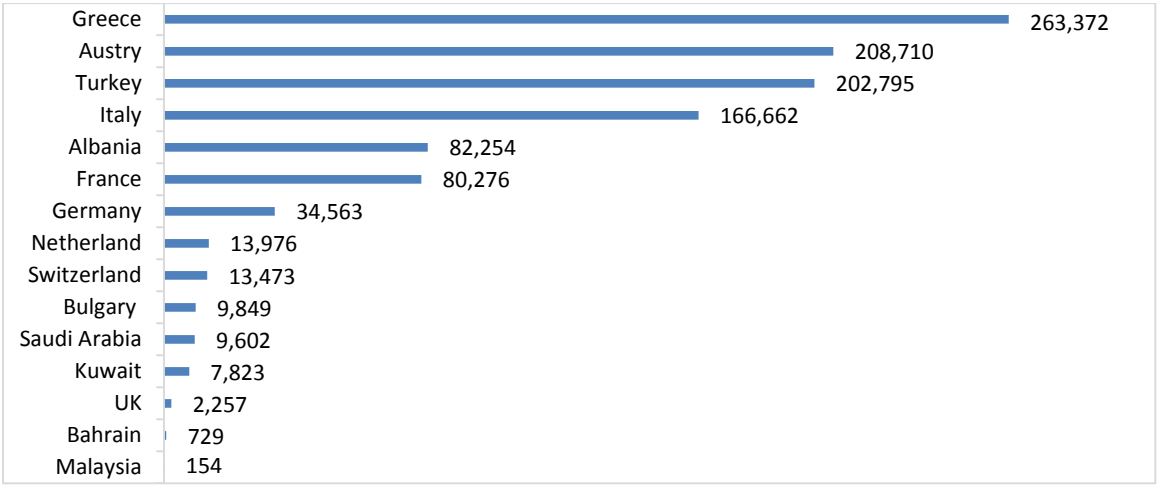
Bank	Shareholder's Structure	% of the shares	Place of Origin
Alpha Bank Albania	Alpha Bank AE	100.00%	Greece
National Commercial Bank	Calik Finansal Hizmetler A.S.	100.00%	Turkey
Credins Bank	Individuals and Unioni SHKK	78.00%	Albania
	B.F.S.E Holding	19.25%	Netherland
	SIFEM AG	2.75%	Switzerland
Credit Bank of Albania	Al-Kharafi Group	100.00%	Kuwait
Credit Agricole	IUB Holding SAS	100.00%	France
Fibank Albania	Fibank AD	100.00%	Bulgary
International Commercial Bank	ICB Financial Holding Group	100.00%	Switzerland
Intesa Sanpaolo Bank Albania	Intesa Sanpaolo S.p.A.	100.00%	Italy
NBG Bank Albania	NBG Group S.A.	100.00%	Greece
ProCredit Bank	ProCredit Holding AG & Co. KGaA	100.00%	Germany
Raiffeisen Bank Albania	Raiffeisen SEE Region Holding GmbH	100.00%	Austry
Societe Generale Albania	Societe Generale	88.64%	France
	Other shareholders	11.36%	Albania
Tirana Bank	Piraeus Bank	98.83%	Greece
	Ioannis Tzivelis	1.17%	
Union Bank	Unioni Financiar Tirane (UFT) Sh.p.k	85.66%	Albania
	Banka Evropiane për Rindërtim and Zhvillim (BERZH)	10.62%	UK
	Indivisuals	3.72%	Albania
United Bank of Albania	Islamic Development Bank	86.70%	Saudi Arabia
	Ithmaar Bank	4.63%	Bahrain
	Dallah Albaraka Holding Co.	2.32%	Bahrain
	Business Focus SDN BHD	1.47%	Malaysia
	other shareholders	4.89%	Saudi Arabia
Veneto Banka	Veneto Banca Scpa	100.00%	Italy

Source: Albanian Association of Banks (aab.al)

Table 1 shows the shareholder's structure of Albanian banks. According to the report of 2014 of Albanian Association of Banks (AAB) banks that have Albanian Capital are Credins Bank 78%, Societe Generale Albania 11.36% and Union Bank 89.38%. While all other 13 banks have foreign capital where 71% of the capital comes from EU. The total value Albanian Banking System is 9,471 million EUR and represent 91,6% of Albanian GDP (4.8% higher than in 2013).

Furthermore, figure 6 graphs the total value in euros of equity from the same place of origin in 2014. Even though the highest Greek bank owned only 7% of the total equity, the total amount of capital from Greece reaches the highs value of 263,372 thousand EUR, followed by 208,710 thousand EUR from Austria, 202,795 thousand EUR from Turkey and 166,662 thousand EUR form Italy. While the Albanian equity comes fifth in line with a value of 82,254 thousand EUR.

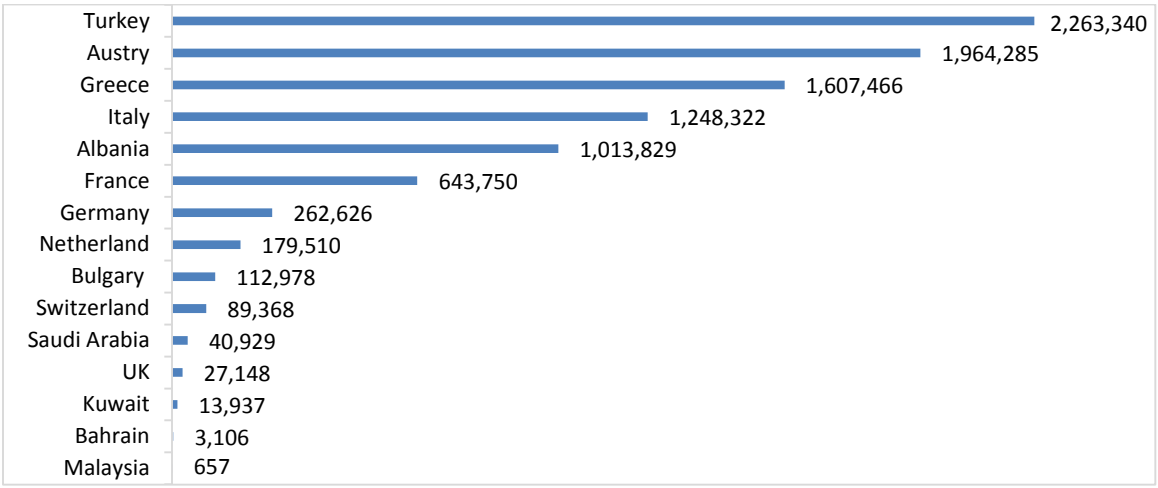
Figure 6: The value of total equity based of the place of origin ('000 EUR) in 2014



Source: Albanian Association of Banks (aab.al)

Figure 7 shows the value of assets of Albanian banks according to the place of origin of the shareholders. The highest amount of the assets is owned by Turkish shareholders (2,263,640 thousand EUR) Calik Finansal Hizmetler A.S. followed by Austrian Capital which has a value of 1,964,285 thousand EUR in assets. The third in line is the Greek Assets with a total value of 1,607,466 thousand EUR in assets. The last ones in the top five are Italian assets with 1,248,322 thousand EUR and Albania assets with 1,013,829 thousand EUR.

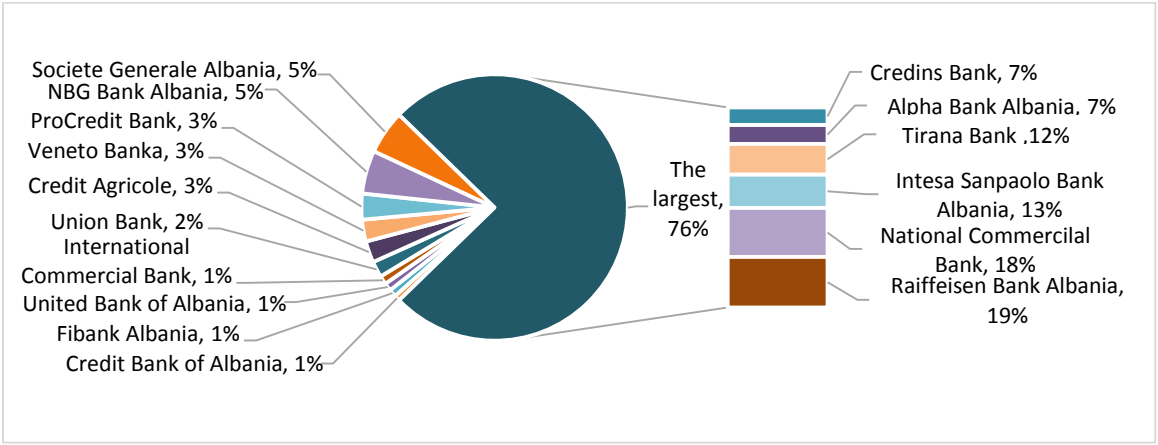
Figure 7: The value of total assets based of the place of origin ('000 EUR)



Source: Albanian Association of Banks (aab.al)

Total Value of the Owner's Equity has increased by 7.4% from 2013 at a value of 1,093 million EUR (AAB, 2014). Figure 8 shows the percentage of the equity of each bank to total equity in Albanian banking system for each bank. Accordingly top five shareholders in the Albanian Banking system are Raiffeisen SEE Region Holding GmbH from Austria (100% owner of Raiffeissen Bank Albania) with 19% of total equity of the sector, followed by 18% of equity of Turkish shareholders, Calik Finansal Hizmetler A.S. (100% owner of National Commercial Bank), 13% of Italian shareholders, Intesa Sanpaolo S.p.A. (100% owner of Intesa Sanpaolo Bank Albania) and 7% of Alpha Bank AE (100% owner of Alpha Bank Albania). Credins Bank represent 7% of the total equity of the sector, however the bank itself is owned by Individuals and Unioni SHKK (78%), B.F.S.E Holding (19.25%) and SIFEM AG (2.75%).

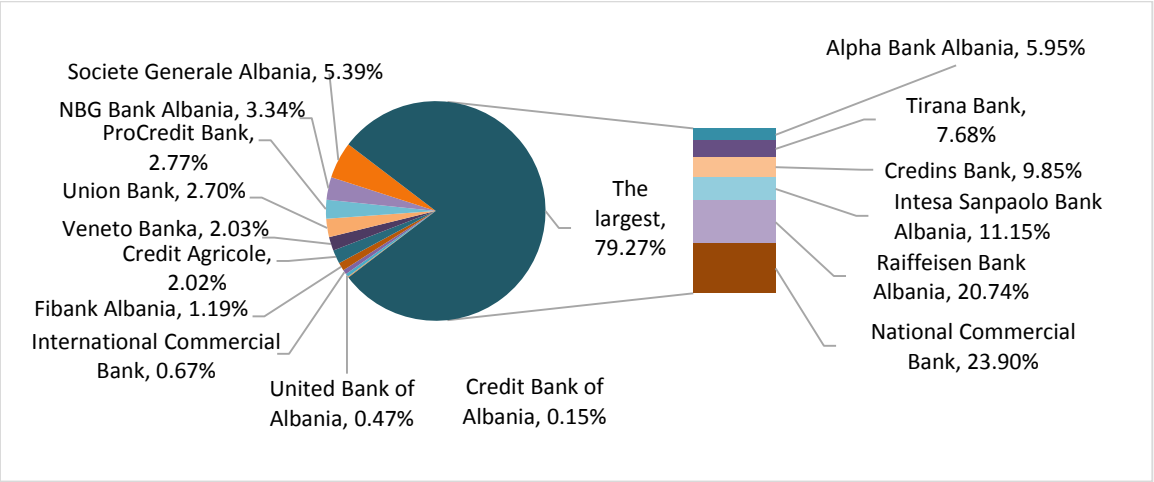
Figure 8: Albanian Banks' Equity to Total Equity of Albanian Banking System Percentage



Source: Albanian Association of Banks (aab.al)

According to figure 9, the highest percentage of the assets of the Albanian Banks is held by National Commercial Bank (23.9%), followed by Raiffeisen Bank Albania (20.74%), Intesa Sanpaolo Bank Albania (11.15%), Credins Bank (9.85%), Tirana Bank (7.68%) and Alpha Bank of Albania (5.59%).

Figure 9: Albanian Banks' Assets to Total Assets of Albanian Banking System Percentage



Source: Albanian Association of Banks (aab.al)

CHAPTER 5
METHODOLOGY AND DATA

In this session is evaluated relation between the determinants of leverage chosen based on the existing literature and dependent variable, Leverage Ratio. The model chosen is based on study of works of Jensen and Mekling (1976) and data is taken from the reports published by the top five bank with the highest amount of equity in the Albanian Banking System.

5.1. DESCRIPTIVE ANALYSIS

This section includes an explanation of the variables included in the regression analysis for the period 2009-2014 for top five banks with the highest equity in the Albanian Banking System. The data is taken from the respective annual reports. The bank included in the analysis are:

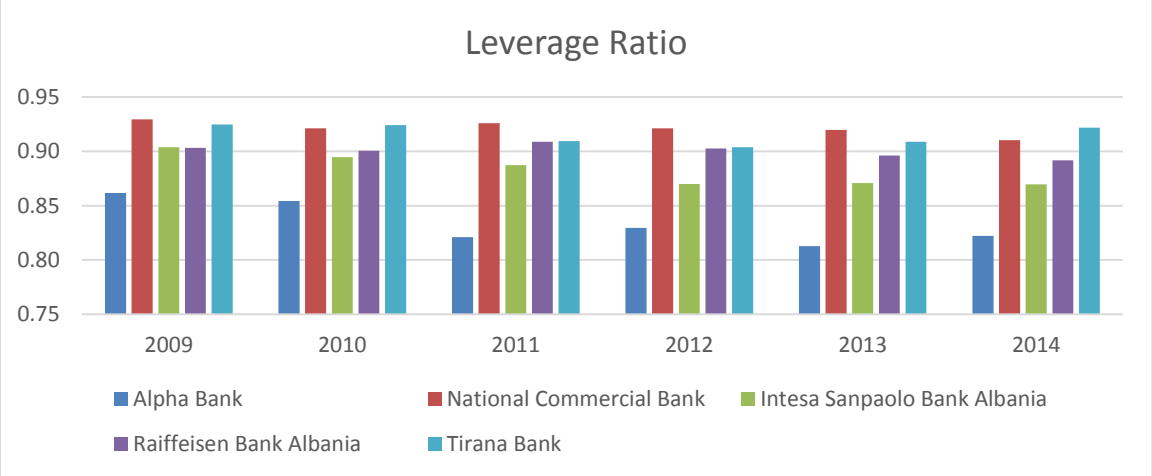
- Raiffeisen Bank Albania sh.a. with license no. 2/1998, date 11.01.1999 and approved by the decision no. 163 of Supervisory Council of BoA date 11.12.1998. Sole shareholder of the Raiffeisen Bank is Raiffeisen SEE Region Holding GmbH from Austria. The bank holds the first place for the value of the equity owned (19% of total banking system) while the second place for the value of total assets (20.74% of the total banking system).
- National Commercial Bank sh.a. with license no. 6/1998, date 11.01.1999 and approved by the decision no. 162 of Supervisory Council of BoA date 11.01.1999. Sole shareholder of the National Commercial Bank is Calik Finansal Hizmetler A.S. from Turkey. The bank holds the second place for the value of the equity owned (18% of total banking system) while the second place for the value of total assets (23.9% of the total banking system).
- Intesa Sanpaolo Bank Albania sh.a. with license no. 11, date 10.08.1998 and approved by the decision no. 105 of Supervisory Council of BoA date 10.08.1998. Sole shareholder of the Intesa Sanpaolo Bank Albania is ICB Financial Holding Group from Switzerland. The bank holds the third place for the value of the equity

owned (13% of total banking system) and also for the value of total assets (11.15% of the total banking system).

- Tirana Bank sh.a. with license no. 07, date 12.09.1996 and approved by the decision no. 9 of Supervisory Council of BoA date 12.09.1996. The bank holds the forth place for the value of the equity owned (12% of total banking system) while the fifth place for the value of total assets (7.68% of the total banking system).
- Alpha Bank Albania sh.a. with license no. 10, date 07.01.1998 and approved by the decision no. 01/03/96 of Supervisory Council of BoA date 27.12.1997. The bank holds the fifth place for the value of the equity owned (7% of total banking system) while the sixth place for the value of total assets (5.95% of the total banking system).

5.1.1. LEVERAGE RATIO

Figure 10: Leverage Ratio for each bank

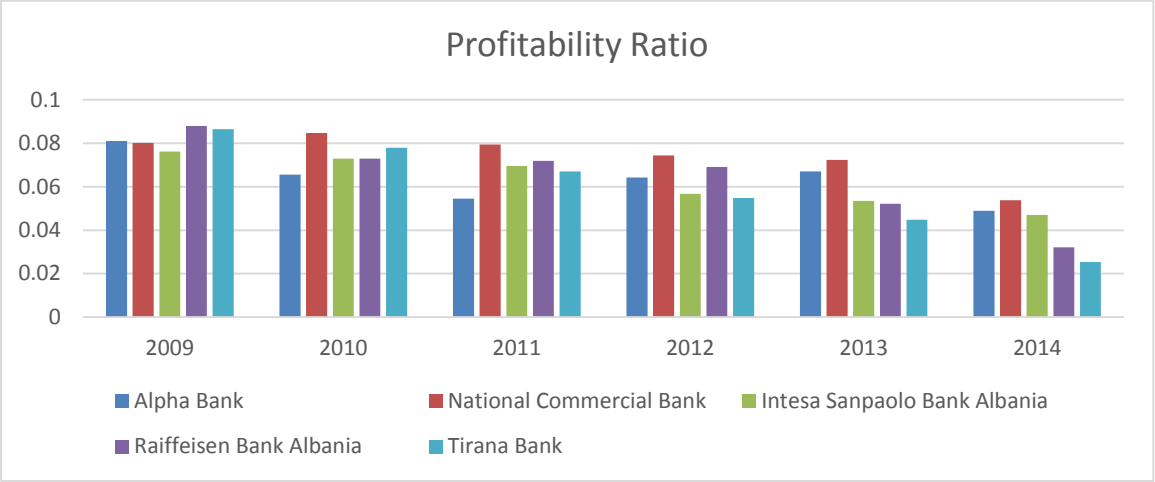


Source: Albanian Association of Banks (aab.al) and author's calculations.

Leverage Ratio is the calculated as the ration of 1 minus the ratio of equity over total assets. Figure 10 shows the leverage ratio of all the bank included in the analysis. As it can be seen that for all the banks leverage ratio to decline. The highest leverage ratio is evidenced at National Commercial Bank during the years 2009, 2011, 2012 and 2013 while on 2010 and 2014 the highest leverage ratio was evidenced on Tirana Bank. Moreover, during all the years included on the analysis Alpha Bank had the smallest leverage ratio.

5.1.2. PROFITABILITY RATIO

Figure 11: Profitability Ratio of each bank

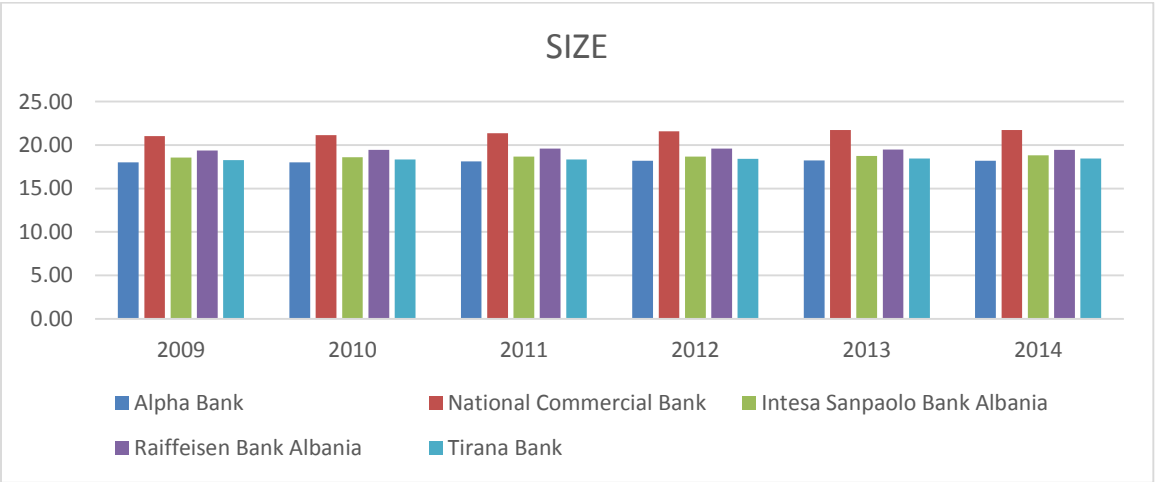


Source: Albanian Association of Banks (aab.al) and author's calculations.

Leverage Ratio is the calculated as the ration of sum of EBIT and interest expenses over Total Assets. Figure 11 shows the profitability ratio of each bank included in the analysis. Accordingly the tendency of profitability ratio of all bank is to decline. Except on 2009 when the highest profitability ratio was recording by Raiffeisen Bank Albania, during the period of 2010-2014 the highest profitability ratio was recording by National Commercial Bank. On 2009, the lowest profitability ratio was recorded by Intesa Sanpaolo Bank Albania, on 2010 and 2011 by Alpha Bank Albania, and on 2012, 2013 and 2014 by Tirana Bank.

5.1.3. SIZE OF BANK

Figure 12: Size Variable of each bank

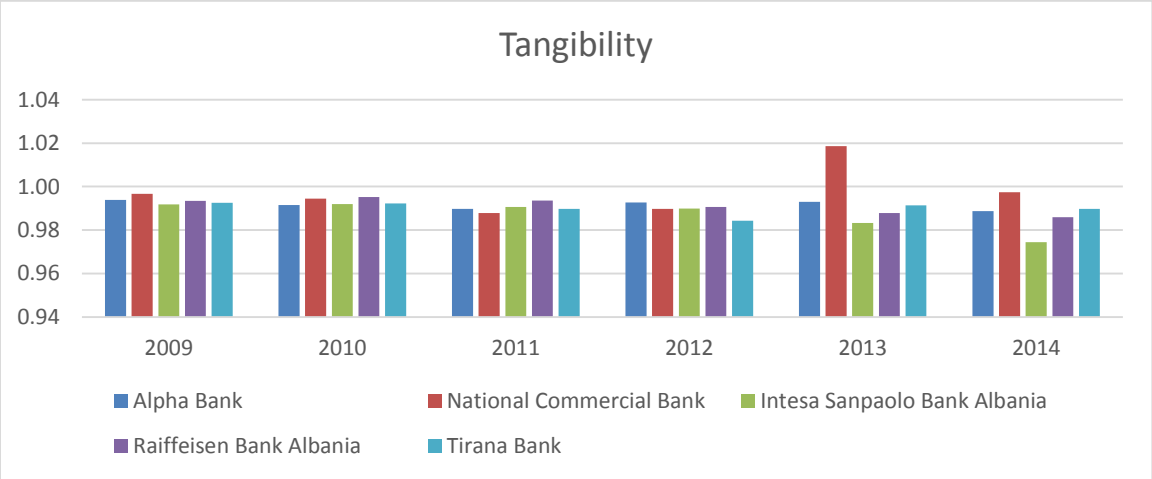


Source: Albanian Association of Banks (aab.al) and author's calculations.

Size of bank is the calculated as the natural logarithm of total assets. Figure 12 shows the variable of the size of all the bank included in the analysis. In this figures is seen that the changes of the size during the years is very small where the highest value was recorded by NCB and the lowest by Alpha Bank.

5.1.4. TANGIBILITY RATIO

Figure 13: Tangibility Ratio for each bank



Source: Albanian Association of Banks (aab.al) and author's calculations.

Tangibility Ratio is the calculated as the ratio of total fixed assets over total assets. Figure 13 shows the tangibility ratio of all the bank included in the analysis. According to the figure the bank that have a tendency to an increasing tangibility ratio is NCB. Alpha Bank and Tirana Bank has a tendency of an unchanging tangibility ratio. Raiffeisen Bank and Intesa Sanpaolo Bank Albania have a decreasing tendency for tangibility ratio.

5.1.5. TAX RATIO

Tax Ratio is the calculated as the ration of Income Tax paid over EBIT. Figure 14 shows the tax ratio of all the bank included in the analysis. As it can be seen that for all the banks tax ratio have a tendency to decline. The highest tax ratio is evidenced at National Commercial Bank during the years 2010 – 2014 while on 2009 the highest tax ratio was evidenced on Raiffeisen Bank Albania. Moreover, during the smallest tax ration was evidence in Intesa Sanpaolo Bank Albania on 2009, in Alpha Bank on 2010 and 2011 and on the last three years in Tirana Bank.

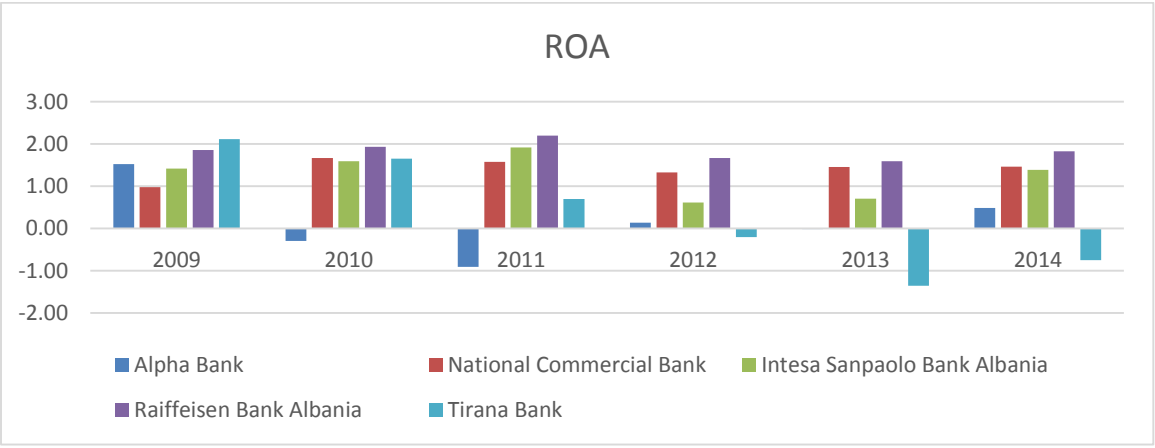
Figure 14: Tax Ratio for each bank

Source: Albanian Association of Banks (aab.al) and author's calculations.

5.1.6. RETURN ON ASSETS

Growth determinant is represent by the variable of Return on Assets. Figure 15 shows the ROA of all the bank included in the analysis. According to the figure the only bank that has an increasing tendency (however almost steady) of ROA is National Commercial Bank while all other banks' ROA have a tendency to decrease, especially for the Tirana Bank where it can be evidence that this variable is decreasing steeply.

Figure 15: ROA of each bank



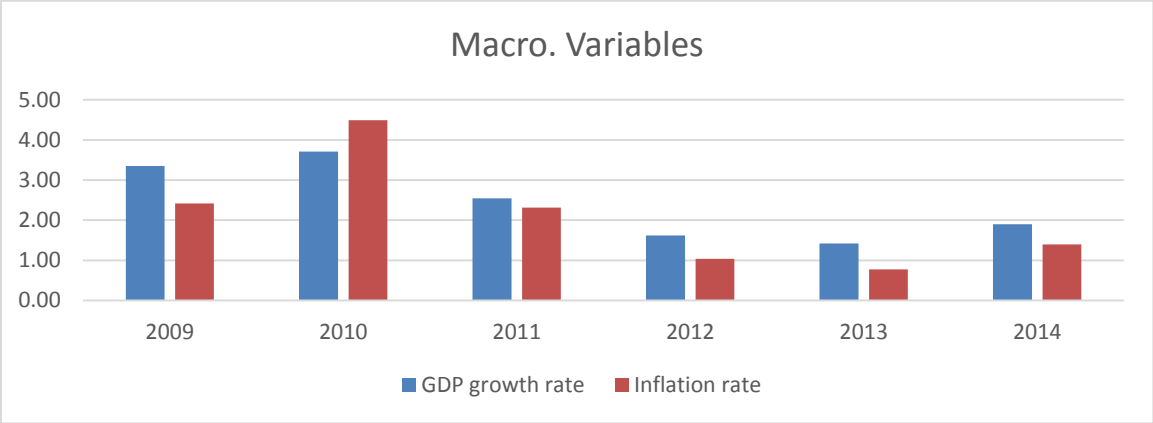
Source: Albanian Association of Banks (aab.al) and author's calculations.

5.1.7. DIVIDENT PAID

During the period of 2009-2014 the banks that paid dividend all the years were Intesa Sanpaolo Bank Albania and Tirana Bank. While other bank did not pay dividends during all the years included in the analysis.

5.1.8. MACROECONOMIC VARIABLES

Figure 16: Macroeconomic Variables



Source: World Bank and author's calculations.

As a macroeconomic determinant are chosen the annual growth rate of Gross Domestic Product and Inflation rate shown in figure 16. The tendencies of both the GDP annual growth rate and Inflation Rate are declining. The smallest value of GDP annual growth rate and Inflation Rate during 2009-2014 was recording on 2013 while the highest on 2010. Both the variables have increased in 2014 by change the declining trend that started in 2010. While

5.2. ECONOMIC ANALYSIS

The main aim of this paper is to determine the main variables that have an impact on leverage ratio of the banks in the Albanian Banking System. Data is taken for 5 important Albanian banks where together their represent 69% of both total equity and total asset of Albanian banking system. The period used in 2009-2014. To fulfill the aim of the paid in used panel data multi regression model where the dependent variable is the leverage ratio while all other variables explained in the descriptive analysis are the dependent variables. The estimated model is as following:

Equation 1:

$$LEV_{b,i} = \beta_0 + \beta_1 PROF_{b,i} + \beta_2 ROA_{b,i} + \beta_3 TANG_{b,i} + \beta_4 SIZE_{b,i} + \beta_5 TAX_{b,i} + \beta_6 DIVD_{b,i} + \beta_7 GrRGDP_i + \beta_8 INF_i + u_{b,i}$$

Where:

- $LEV_{b,I}$ represents Leverage Ratio for bank b at year i
- $PROF_{b,I}$ represents profitability for bank b at year i
- $ROA_{b,I}$ represents Return on Assets for bank b at year i
- $TANG_{b,I}$ represents Tangebility Ratio for bank b at year i
- $Size_{b,I}$ represents Size for bank b at year i
- $Tax_{b,I}$ represents Tax Ratio paid for bank b at year i
- $DIVD_{b,I}$ is a dummy variable that equal 1 if the bank paid dividend to shareholders and 0 if not.
- $GRRGDP_I$ represents Growth Rate of GDP for year i
- INF_I represents inflation rate at year i
- β_0 represents the intercept that equals the leverage ratio is all the other variables equals zero. Moreover β_1 - β_8 represent the coefficient of each dependent variable and it shows their impact on leverage ratio.

Table 3: Estimated regression results of the model

Dependent Variable: LEVERAGE				
Method: Panel Least Squares				
Date: 09/13/15 Time: 16:17				
Sample: 2009 2014				
Periods included: 6				
Cross-sections included: 5				
Total panel (balanced) observations: 30				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
PROF	-0.683599	0.427174	-1.600281	0.1245
ROA	0.009846	0.006018	1.636059	0.1167
TANG	0.255767	0.688211	0.371640	0.7139
SIZE	0.024688	0.004337	5.692698	0.0000*
TAX	-0.308497	0.172983	-1.783401	0.0890**
DIVD	0.039277	0.008836	4.445361	0.0002*
GRRGDP	0.022024	0.013848	1.590393	0.1267
INF	-0.006419	0.008391	-0.764955	0.4528
C	0.152590	0.655960	0.232621	0.8183
R-squared	0.745133	Mean dependent var		0.890670
Adjusted R-squared	0.648041	S.D. dependent var		0.034070
S.E. of regression	0.020212	Akaike info criterion		-4.721727
Sum squared resid	0.008579	Schwarz criterion		-4.301368
Log likelihood	79.82590	Hannan-Quinn criter.		-4.587250
F-statistic	7.674488	Durbin-Watson stat		0.578045
Prob(F-statistic)	0.000085			
*siginificant at 0.05 significance level				
*0siginificant at 0.1 significance level				

Table 3 which show the results for the regression model and the estimated equation is:

Equation 1:

$$LEV_{b,i} = \beta_0 - 0.68PROF_{b,i} + 0.01ROA_{b,i} + 0.26TANG_{b,i} + 0.02SIZE_{b,i} - 0.31TAX_{b,i} + 0.04DIVD_{b,i} + 0.02GrRGDP_i - 0.01INF_i + u_{b,i}$$

Moreover, the p-values of the variables of size and dividend payment are less than 0.05 therefore indicating that at significance level 0.05% there is enough evidence to reject the null hypothesis which predicts that these two independent variables are insignificant (β_4 or $\beta_6$are equal to zero). Also, the p-values of the variable of tax payment is less than 0.1 therefore indicating that at the significance level 0.1% there is enough evidence to reject the null hypothesis which predicts that this independent variables are insignificant (β_5 equals zero). However, the p-values of the other variables are higher than 0.1 therefore, their impact of the leverage ratio is statistically insignificant because there is not enough evidence to reject the hypothesis that predicts that these independent variables are insignificant.

Table 4: Walt Test for the independent variables significance in predicting the model

Wald Test: Equation: EQ01			
Test Statistic	Value	df	Probability
F-statistic	4.941184	(7, 21)	0.0020
Chi-square	34.58829	7	0.0000

Also, in the table is shown that the R-Square of the model is 0.745 indicating that 74.5% of the data is explained by the model. Table 4, shows the Wald Test for the null hypothesis that predict that all the independent variables included in the model are insignificant thus that all betas from β_1 to β_8 taken together are equal to zero. Accordingly, the p-value are lower than 0.05, therefore exists enough evidence to reject the null hypothesis and it can be concluded that all the independent variables together are statistically significant in predicting the model.

In order to determine if a long run relationship between the dependent variable and independent variable Panel Co-integration Test is conducted. However, for this test to be run all the variables included should be stationary at least at 1st difference. Therefore, Unit Root Test is conducted for all the variable expect the Dividend Variable which is a dummy one. Unit Root Test included three methods Levin, Lin and Chin method and Fisher

Methods Type ADF and Type PP. The first method Levin, Lin and Chin method assumes a common unit root process while the other two methods assume individual unit root process. The null hypothesis of all the methods indicate that the variable are not stationary series.

Table 5: Unit Root Tests

	LEV		**PROF**		**ROA**		**TANG**	
	at Level	**at 1. Diff**	**at Level**	**at 1. Diff**	**at Level**	**at 1. Diff**	**at Level**	**at 1. Diff**
Levin, Lin & Chu t	0.0048	N/A	0.0000	N/A	0.1464	0.0000	0.0063	0.0072
ADF - Fisher Chi-square	0.0757	N/A	0.0001	N/A	0.0400	0.0001	0.1255	0.0156
PP - Fisher Chi-square	0.0101	N/A	0.0000	N/A	0.0539	0.0000	0.0617	0.0147
	SIZE		**TAX**		**GRRGDP**		**INF**	
	at Level	**at 1. Diff**	**at Level**	**at 1. Diff**	**at Level**	**at 1. Diff**	**at Level**	**at 1. Diff**
Levin, Lin & Chu t	1.0000	0.0042	0.7033	0.0000	0.0015	N/A	0.0209	0.0000
ADF - Fisher Chi-square	1.0000	0.1186	0.6050	0.0073	0.0615	N/A	0.2797	0.0001
PP - Fisher Chi-square	1.0000	0.0477	0.6701	0.0065	0.0006	N/A	0.3396	0.0002

Table 5 shows the results of the unit root test respectively for the variable of Leverage at level, of profitability at level, of ROA at level and at 1st difference, of tangibility level and at 1st difference, of size level and at 1st difference, of tax payment level and at 1st difference, of GDP growth rate at level and of inflation at level and at 1st difference. Accordingly, unit root test of leverage, profitability and GDP growth rate shows that the variables do not have a unit root at level because the probability of the majority of the methods is lower than 0.05. Therefore, it can be concluded that there exists enough evidence to reject the null hypothesis at significance level 0.05 and to conclude that these three variables are stationary at level. Moreover, the unit root test of other five variables, ROA, Tangibility, size, tax payment and inflation rate, have a unit root at level because the p-values are high. Thus, respective unit root test at 1st difference is conducted. As shown in the table, all the methods have a probability lower than 0.05 thus, it can be concluded that at 1st difference all the remaining variables do not have a unit root. The null hypothesis is rejected at significance levels 0.05

therefore it can be concluded that ROA, Tangibility, size, tax payment and inflation rate are stationary at 1st difference.

Table 6: Panel Cointegration Test Result

	Prob.			
Methods:	**PROF**	**ROA**	**TANG**	**SIZE**
Kao Residual Cointegration Test	0.1052	0.2232	0.0804	0.1014
	TAX	**GRRGDP**	**INF**	**all. Indep. Var.**
Kao Residual Cointegration Test	0.0281	0.0066	0.0001	0.0003

The condition of the stationary of the variables is fulfilled therefore the Kao Residual Co-integration Test can be conducted. The test includes only the method of ADF. Table 6 shows the result of the test. Accordingly, the p-values of the tests that calculates the existence of the co-integration between leverage ratio and tax, between leverage ratio and GDP growth rate, between leverage and inflation and between leverage ratio and all independent variables together are lower than 0.05. Therefore, for these test it can be concluded that there is enough evidence to reject the null hypothesis that predicts no co-integration at significance level 0.05. Moreover, the p-value of the test that calculates the co-integration between leverage ratio and tangibility is lower than 0.1 thus, it can be concluded that at significance level the null hypothesis can be rejected.

5.3. THE INTERPRETATION OF RESULTS

According to the panel regression model profitability had resulted to have a positive impact on leverage ratio in accordance with the study of Shyam, Sunder and Myers (1999), Fama and French (2002) and Flannery and Rangan (2006). One of reasons behind of this result may be explained by the pecking order theory where firms tend to prefer more internal financing to debt financing. Thus a higher profitability means higher earning and higher possibility for internal financing.

The positive impact on ROA can be interpreted as an increase in assets in terms of growth of the firm. The positive impact of ROA is in accordance with the study of Titman and Wessels (1988). One reason behind this result may be the fact that growth opportunities of Albanian bank cannot be financed internally thus, they are forced to use external financing.

The negative impact of tangibility is found also in the study of Hart (1987) and Hovakimian et al. (2001). This result indicate that Albanian banks tend to avoid the usage of their tangible assets as collateral in favor of the creditor and prefer to lower the possibility of their control over the banks.

The positive impact of the size of bank in the leverage ratio is in accordance with the study of Fama and French (2002), Pathak (2005) and Flannery and Rangan (2006). Larger Albanian bank possess higher possibilities in financing therefore they are more preferable by the creditors and thus the usage of external financing is much more frequent. Also larger bank may see it fit to use the external financing to finance in profitability investment, something that a smaller bank may not be able to finance.

According to the results of the regression model indicate that tax payment has a negative impact on the leverage ratio. A reason behind this result may be the possibility that Albanian bank tend to lower the usage of the debt financing in order to lower the burden of the bank and also the bankruptcy cost.

Moreover, the positive dividend payout impact on the leverage ratio was also found by Fran and Goyal (2003). A dividend payout lower the retained earnings therefore it lowers the possibility of the internal financing therefore the banks in case of an investment will have to use the debt financing.

The negative relationship between GDP growth rate was found also by Booth et al. (2001) and Korajaczyk and Levy (2002). Albanain bank tend to be more directed toward debt financing in an expansion period than in a period of recession. While the negative impact of inflation of the leverage ratio was also found on the studies of Both et al. (2001) and Dokko (1989). An increase in inflation tend to distribute the wealth from the bondholder to stockholder as per fact that the stocks become more preferable.

Furthermore, the co-integration test indicated that leverage ratio has a long run relationship with the variable of tax payment, GDP Growth Rate, Inflation rate and tangibility. Moreover, the co-integration test indicate that leverage ratio has a long run relationship with all the independent variables taken together.

CONCLUSIONS

The study examined the determinants of leverage ratio of Albanian Banking system. The study analysis the impacts of the leverage ratio of top 5 largest banks of the country. The main focus was on these banks due to the fact that they constitute 69% of both total equity and total assets of the Albanian banking system, while the remaining part is constituted by the equity and assets of the remaining 11 banks.

The findings of the study indicate that a negative relationship between profitability, tax payment and inflation rate with leverage ratio. Therefore hypothesis 1 and 8 of the thesis is supported while the results oppose the hypothesis 4 of the thesis. Moreover, the findings indicate that the variable of size of bank, tangibility ratio, ROA, dividend payout, and GDP annual growth have a positive relationship rate with leverage ratio. Thus, hypothesis 3, 5, 6 and 7 are supported while hypothesis 2 was not.

In the future studies is recommended to include more macroeconomic variables and/or all the bank in the banking system due to the fact that with passing time the concentration of the bank might be much more competitive. The study contributes in a better understanding of bank managers and financial analysis of Albanian banking system as well as the ones of banking systems of Western Balkan and of developing countries.

BIO-DATA OF THE AUTHOR

Since November 2014, Riada Berhani has been working at the National Commercial Bank sh.a. as an Assistant Specialist of Business Banking of Main Branch. Previous experience she has had as a financier at Ilda Zaja/Frasheri Accounting Office in Shkoder. Also, she is currently continuing her Master Degree studies at Epoka University in Banking and Finance department while she has a Bachelor Degree on the same field. Riada was an active member in the "Entrepreneurs" student club at Epoka University, which offers students' participation in conferences, open forums, workshops, etc. During her undergraduate studies, she has done internships in prestigious Institutions/organization such as Regional Department of Taxation in Shkoder, National Commercial Bank, Albtelecom and Eagle Mobile. Moreover, she had has published many studies of her own. Riada is very passionate for her profession. She inspires a successful administrative and academic career in the field of Banking and Finance.

REFERENCES

AAB. (2014). *Raporti Vjetor 2014*. Albanian Associaton of Banks. Retrieved from http://www.aab.al/al/reports.php

ABAlb. (2015, 5 15). *Raporte Vjetore*. Retrieved from Alpha Bank Albania: http://www.alphabank.al/al/profili/RAPORTEVJETORE/

BKT. (2015, 5 20). *BANKA KOMBETARE TREGTARE*. Retrieved from RAPORTE VJETORE: http://www.bkt.com.al/raporte-vjetore.aspx

Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital Structures in Developing Countries. *The Journal of Finance, 56*(1), 87–130.

Cook, D. O., & Tangb, T. (2010). Macroeconomic conditions and capital structure adjustment speed. *Journal of Corporate Finance, 16*(1), 73–87.

Dokko, Y., & Edelstein, R. H. (1989). How Well Do Economists Forecast Stock Market Prices? A Study of the Livingston Surveys. *American Economic Review, 79*(4), 865-871.

Donaldson, G. (1961). *Corporate Debt Capacity: A Study of Corporate Debt Policy and the Determination of Corporate Debt Capacity.* Cambridge: Graduate School of Business, Division of Research, Harvard University.

Fama, E. F., & French, K. R. (2002). Testing Trade-Off and Pecking Order Predictions about Dividends and Debt. *The Review of Financial Studies, 15*(1), 1-33.

Flannery, M., & Rangan, K. P. (2006). Partial adjustment toward target capital structures. *Journal of Financial Economics, 79*(3), 469-506.

Frank, M. Z., & Goyal, V. K. (2003). Testing the pecking order theory of capital structure. *Journal of Financial Economics, 67*, 217–248.

Gajurel, D. P. (2005). Capital Structure Management in Nepalese Enterprises. *Corporate Finance Journals, Forthcoming* .

Hart, O. D. (1987). Incomplete Contracts and the Theory of the Firm. *Working papers 448*.

Hovakimian, A., Hovakimian, G., & Tehranian, H. (2004). Determinants of target capital structure: The case of dual debt and equity issues. *Journal of Financial Economics, 71*, 517–540.

Hovakimian, A., Opler, T., & Titman, S. (2001). The Debt-Equity Choice. *The Journal of Financial and Quantitative Analysis, 36*(1), 1-24.

ISB. (2015, 5 20). *Intesa Sanpaolo Bank Albania*. Retrieved from RAPORTE VJETORE: http://www.intesasanpaolobank.al/web/Raporte_Vjetore_te_Intesa_Sanpaolo_Bank_Albania.php

Korajczyk, R. A., & Levy, A. (2002). Capital Structure Choice: Macroeconomic Conditions and Financial Constraints. *Kellogg School of Mgmt. Finance Working Paper No. 279* .

Kraus, A., & Litzenberger, R. H. (1973). A STATE-PREFERENCE MODEL OF OPTIMAL FINANCIAL LEVERAGE. *The Journal of Finance, 28*(4), 911–922.

MAUER, D. C., & TRIANTIS, A. J. (1994). Interactions of Corporate Financing and Investment Decisions: A Dynamic Framework. *The Journal of Finance, 49*(4), 1253–1277.

MELLO, A. S., & PARSONS, J. E. (1992). Measuring the Agency Cost of Debt. *The Journal of Finance, 47*(5), 1887–1904.

Miller, M. H. (1977). Debt and Taxes. *The Journal of Finance, 32*(2), 261-275.

Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporation Finance, and the Theory of Investement. *American Economic Review, 48*(3), 261-297.

Modigliani, F., & Miller, M. H. (1963). Corporate Income Taxes and the Cost of Capital: A Correction. *The American Economic Review, 53*(3), 433-443.

Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics, 5*(2), 147–175.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics, 13*(2), 187-221.

Noguera, J. D. (2001). Inflation and Capital Structure. *CERGE-EI Working Paper No. 180* .

PARKER, J. E., & ZIEHA, E. L. (1976). Inflation, Income Taxes and the Incentive for Capital Investment. *National Tax Journal, 29*(2), 179-189.

Pathak, J. (2010). What Determines Capital Structure of Listed Firms in India?: Some Empirical Evidences from The Indian Capital Market. *Social Science and Research Network.*

Rajan, R. G., & Zingales, L. (1995). What Do We Know about Capital Structure? Some Evidence from International. *The Journal of Finance, 50*(5), 1421-1460.

RZB. (2015, 5 20). *RAIFFEISSEN BANKA ALBANIA*. Retrieved from RAPORTE VJETORE: https://www.raiffeisen.al/rreth-nesh/raportet-vjetore/

Shah, A., & Hijazi, S. T. (2004). The Determinants of Capital Structure of Stock Exchange-Listed Non-Financial Firms in Pakistan. *The Pakistan Development Review, 43*(4), 605-618.

Shyam-Sunder, L., & Myers, S. C. (1992). Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics, 51*, 219-244.

TB. (2015, 5 15). *Publikime*. Retrieved from Tirana Bank: http://www.tiranabank.al/c/7/publikime/

TITMAN, S., & WESSELS, R. (1988). The Determinants of Capital Structure Choice. *The Journal of Finance, 43*(1), 1-19.

Vernimmen, P., Quiry, P., Dallocchio, M., Fur, Y. L., & Salvi, A. (2005). Capital structure policies. In *Corporate Finance: Theory and Practise* (pp. 635-697). Jon Willey and Son, Ltd.

Zwick, B. (1977). The Market for Corporate Bonds. *Federal Resource Bank of New York Quarterly, 2*.

APPENDICES

APPENDIX A: UNIT ROOT TEST TABLES

Table 7: Unit Root Test of Leverage Ratio at level

Panel unit root test: Summary
Series: LEV
Date: 09/13/15 Time: 16:54
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.59286	0.0048	5	25
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	16.9380	0.0757	5	25
PP - Fisher Chi-square	23.1897	0.0101	5	25

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 8: Unit Root Test of Profitability at level

Panel unit root test: Summary
Series: PROF
Date: 09/13/15 Time: 16:56
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.35806	0.0000	5	25
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	35.1486	0.0001	5	25
PP - Fisher Chi-square	44.8113	0.0000	5	25

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 9: Unit Root Test of ROA at level

Panel unit root test: Summary
Series: ROA
Date: 09/13/15 Time: 16:57
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.05199	0.1464	5	25
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	19.0232	0.0400	5	25
PP - Fisher Chi-square	18.0608	0.0539	5	25

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 10: Unit Root Test of ROA at 1st difference

Panel unit root test: Summary
Series: D(ROA)
Date: 09/13/15 Time: 16:57
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.77240	0.0000	5	20
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	35.3210	0.0001	5	20
PP - Fisher Chi-square	39.4418	0.0000	5	20

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 11: Unit Root Test of Tangibility at level

Panel unit root test: Summary
Series: TANG
Date: 09/13/15 Time: 16:58
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.49297	0.0063	5	25
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	15.1833	0.1255	5	25
PP - Fisher Chi-square	17.6226	0.0617	5	25

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 12: Unit Root Test of Tangibility at l1st difference

Panel unit root test: Summary
Series: D(TANG)
Date: 09/13/15 Time: 16:58
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.44572	0.0072	5	20
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	21.9103	0.0156	5	20
PP - Fisher Chi-square	22.0823	0.0147	5	20

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 13: Unit Root Test of Size at level

Panel unit root test: Summary
Series: SIZE
Date: 09/13/15 Time: 16:59
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	5.95325	1.0000	5	25
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	0.70038	1.0000	5	25
PP - Fisher Chi-square	0.72698	1.0000	5	25

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 14: Unit Root Test of Size at 1st difference

Panel unit root test: Summary
Series: D(SIZE)
Date: 09/13/15 Time: 20:30
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.63692	0.0042	5	20
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	15.3865	0.1186	5	20
PP - Fisher Chi-square	18.4608	0.0477	5	20

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 15: Unit Root Test of Tax Variable at level

Panel unit root test: Summary
Series: TAX
Date: 09/13/15 Time: 17:00
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	0.53400	0.7033	5	25
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	8.24424	0.6050	5	25
PP - Fisher Chi-square	7.57689	0.6701	5	25

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 16: Unit Root Test of Tax Variable at 1st difference

Panel unit root test: Summary
Series: D(TAX)
Date: 09/13/15 Time: 17:00
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.80407	0.0000	5	20
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	24.1126	0.0073	5	20
PP - Fisher Chi-square	24.4477	0.0065	5	20

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 17: Unit Root Test of GDP growth rate at level

Panel unit root test: Summary
Series: GRRGDP
Date: 09/13/15 Time: 17:01
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.97234	0.0015	5	25
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	17.6301	0.0615	5	25
PP - Fisher Chi-square	31.0922	0.0006	5	25

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 18: Unit Root Test of Inflation rate at level

Panel unit root test: Summary
Series: INF
Date: 09/13/15 Time: 17:01
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.03492	0.0209	5	25
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	12.0802	0.2797	5	25
PP - Fisher Chi-square	11.2331	0.3396	5	25

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 19: Unit Root Test of Inflation rate at 1st difference

Panel unit root test: Summary
Series: D(INF)
Date: 09/13/15 Time: 17:02
Sample: 2009 2014
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.25615	0.0000	5	20
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	36.5131	0.0001	5	20
PP - Fisher Chi-square	34.2076	0.0002	5	20

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

APPENDIX B: CO-INTEGRATION TEST TABLES

Table 20: Co-integration Test Results between Leverage and Profitability

Kao Residual Cointegration Test
Series: LEV PROF
Date: 09/13/15 Time: 21:45
Sample: 2009 2014
Included observations: 30
Null Hypothesis: No cointegration
Trend assumption: No deterministic trend
Automatic lag length selection based on SIC with a max lag of 0
Newey-West automatic bandwidth selection and Bartlett kernel

	t-Statistic	Prob.
ADF	-1.252340	0.1052
Residual variance	0.000104	
HAC variance	0.000110	

Table 21: Co-integration Test Results between Leverage and ROA

Kao Residual Cointegration Test		
Series: LEV ROA		
Date: 09/13/15 Time: 21:46		
Sample: 2009 2014		
Included observations: 30		
Null Hypothesis: No cointegration		
Trend assumption: No deterministic trend		
Automatic lag length selection based on SIC with a max lag of 0		
Newey-West automatic bandwidth selection and Bartlett kernel		
	t-Statistic	Prob.
ADF	-0.761401	0.2232
Residual variance	8.81E-05	
HAC variance	0.000108	

Table 22: Co-integration Test Results between Leverage and Tangibility

Kao Residual Cointegration Test		
Series: LEV TANG		
Date: 09/13/15 Time: 21:47		
Sample: 2009 2014		
Included observations: 30		
Null Hypothesis: No cointegration		
Trend assumption: No deterministic trend		
Automatic lag length selection based on SIC with a max lag of 0		
Newey-West automatic bandwidth selection and Bartlett kernel		
	t-Statistic	Prob.
ADF	-1.402154	0.0804
Residual variance	0.000112	
HAC variance	0.000110	

Table 23: Co-integration Test Results between Leverage and Size

Kao Residual Cointegration Test		
Series: LEV SIZE		
Date: 09/13/15 Time: 21:48		
Sample: 2009 2014		
Included observations: 30		
Null Hypothesis: No cointegration		
Trend assumption: No deterministic trend		
Automatic lag length selection based on SIC with a max lag of 0		
Newey-West automatic bandwidth selection and Bartlett kernel		
	t-Statistic	Prob.
ADF	-1.273660	0.1014
Residual variance	0.000110	
HAC variance	9.99E-05	

Table 24: Co-integration Test Results between Leverage and Tax

Kao Residual Cointegration Test		
Series: LEV TAX		
Date: 09/13/15 Time: 21:48		
Sample: 2009 2014		
Included observations: 30		
Null Hypothesis: No cointegration		
Trend assumption: No deterministic trend		
Automatic lag length selection based on SIC with a max lag of 0		
Newey-West automatic bandwidth selection and Bartlett kernel		
	t-Statistic	Prob.
ADF	-1.908897	0.0281
Residual variance	9.20E-05	
HAC variance	8.52E-05	

Table 25: Co-integration Test Results between Leverage and GDP growth rate

Kao Residual Cointegration Test		
Series: LEV GRRGDP		
Date: 09/13/15 Time: 21:50		
Sample: 2009 2014		
Included observations: 30		
Null Hypothesis: No cointegration		
Trend assumption: No deterministic trend		
Automatic lag length selection based on SIC with a max lag of 0		
Newey-West automatic bandwidth selection and Bartlett kernel		
	t-Statistic	Prob.
ADF	-2.476668	0.0066
Residual variance	9.94E-05	
HAC variance	9.94E-05	

Table 26: Co-integration Test Results between Leverage and Inflation rate

Kao Residual Cointegration Test		
Series: LEV INF		
Date: 09/13/15 Time: 21:51		
Sample: 2009 2014		
Included observations: 30		
Null Hypothesis: No cointegration		
Trend assumption: No deterministic trend		
Automatic lag length selection based on SIC with a max lag of 0		
Newey-West automatic bandwidth selection and Bartlett kernel		
	t-Statistic	Prob.
ADF	-3.704261	0.0001
Residual variance	0.000111	
HAC variance	9.55E-05	

Table 27: Co-integration Test Results between Leverage and all dependent variable taken together

Kao Residual Cointegration Test		
Series: LEV PROF ROA TANG SIZE TAX GRRGDP INF		
Date: 09/13/15 Time: 21:38		
Sample: 2009 2014		
Included observations: 30		
Null Hypothesis: No cointegration		
Trend assumption: No deterministic trend		
Automatic lag length selection based on SIC with a max lag of 0		
Newey-West automatic bandwidth selection and Bartlett kernel		
	t-Statistic	Prob.
ADF	-3.453015	0.0003
Residual variance	5.04E-05	
HAC variance	3.95E-05	