

# GLOBAL JOURNAL

OF MANAGEMENT AND BUSINESS RESEARCH: C

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## Finance

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Discovering Thoughts, Inventing Future

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## If Credit Rating Agencies Provide Inaccurate Analysis of Sovereign Nations, How can Business Schools Effectively Teach Financial Statement Reporting?

By Constance J. Crawford & Raymond Rigoli

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**Abstract-** The premier credit rating agencies, most notably, Standard and Poor's (S & P), Moody's and Fitch, have embarked on an unsolicited ratings downgrade of the European continent. Recently, Greece, Portugal and Ireland have been assigned an unprecedented "junk status" ratings beginning in 2010. (Alessi, Wolverson & Sergie, 2013). In 2012, S&P continued with the downgrade, including such premier euro zone members as France and Austria in their financial analysis aimed at redeeming their credibility issues caused by the 2007 financial debacle. The "Big Three" credit rating agencies have been accused of inflating ratings on questionable debt securities that ultimately led to the subprime prime mortgage crisis. The question being asked by many in the international community, is whether the "Big Three" are being too conservative in their ratings of sovereign nations by ignoring cultural value in an attempt to correct their past mistakes? Can we teach business students effectively if the ratings process is viewed as a failure?

**Keywords:** *cultural illiteracy, effective teaching.*

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# If Credit Rating Agencies Provide Inaccurate Analysis of Sovereign Nations, How can Business Schools Effectively Teach Financial Statement Reporting?

Constance J. Crawford<sup>α</sup> & Raymond Rigoli<sup>σ</sup>

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## I. INTRODUCTION

The purpose of rating a sovereign nation is to provide the international investment community with information regarding the risk associated with that country's debt. The resulting impact of either a positive or negative rating, characterized by a letter grade, has a tremendous bearing on the ability of that sovereign nation to have access to debt in the future. Recently S&P, Moody's and Fitch, or the "Big Three", have embarked on a campaign to provide unsolicited ratings of the euro zone participants much to the dismay of the countries. Some in the international arena have named the credit rating agencies actions as punishing the European continent and calling the process Europe's new plague (AP, 2012). By the time the "Big Three" were done, nine countries in the euro zone had their credit ratings lowered. Only Germany survived the carnage and retained the coveted "triple-A rating". As a result of the credit ratings moves, more than half of the countries using the euro had their ratings slashed by the unforgiving ratings knife (Alessi, Wolverson, Sergie, 2013). Previously highly rated sovereign nations,

including France, Italy, Austria and Spain were all subjected to the downgrade (Schuman, 2012). This downgrading spree was preceded by a similar process in the United States earlier in 2011.

The European countries have continuously blamed the credit rating agencies for causing the debt crisis that roared through Greece, Ireland and Portugal recently. Unfortunately, the euro zone is not only united in currency but also in each other's problems. The downgrading of many of the key participants in the euro zone points to the inherent weakness an integrated economic collaboration causes on the stronger participants. Not only are the countries whose ratings have been downgraded impacted by the "Big Three" but all members of the euro zone feel the resulting aftershock. When diverse countries unite through their monetary policies, the resulting chain formed by this association is sadly only as strong as the weakest links. Therefore, the problems of the weakest euro zone partners become the problems of the healthier euro zone players.

## II. THE RATINGS PROCESS

The ratings process involves an assessment of the future growth, revenue stream, disbursements, debt and the subsequent risk associated with all of these measures. One of the largest stumbling blocks in the process is the requirement that the ratings agencies essentially "guess" what they believe the future will bring. The use of bench marks, prior history and economic forecasts all play a major role in the process. In addition, the current value or net worth of the entity is integrated into the process in order to make an assessment of the future viability of the entity under the ratings microscope. The entities future values or assets are measured against comparable entities to determine their position in the market. In addition, the future debts or liabilities are also examined to determine the degree of leverage or risk associated with the future payable outflow. Eventually, all of these numbers must be analyzed to enable the credit ratings agency to form a prediction about the risk or safety of the entity under investigation.

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The ratings process for a corporation and a sovereign nation take similar concepts into account when making a rating determination. But, can a ratings agency be as effective in rating a sovereign nation as they can when rating a single corporate entity. The sheer size of a sovereign nation compared to the single corporate entity complicates the process ten-fold. The similarities are obvious: both corporate entities and sovereign nations have revenue streams and cash disbursement requirements. So, essentially, the income statement, for both rating subjects, has marked similarities. True, the sources of revenue are disparate, tax revenue as compared to sales or service revenue, but both provide sources of income to the entity. The same is true for the disbursement side of the analysis, different uses with a similar outcome. Therefore, the ratings agencies can reasonably review the prior income and disbursement stream and make fairly reliable predications about the future.

The differences become more apparent when one examines the valuation process of a sovereign nation compared to a corporate entity. The debt side of the valuation process is fairly obvious, as debt has no future valuation uncertainties as a component in the valuation process. The only uncertainty pertaining to debt is associated with the ability of the borrower to repay the debt along with the interest rate variable. It is the future value or the asset side of the valuation process that provides the biggest challenge to a financial analyst. An analyst merely needs to examine the balance sheet of any corporate entity to discover the future value of that company. The assets include both tangible and intangible future values. Some of these assets are valued at fair market and others at historical cost. In essence the analyst compares the corporate assets to liabilities and is able to ascertain net worth. But, does such a process take place when valuing a sovereign nation?

### III. DOES THE RATINGS PROCESS INCLUDE ALL VALUE?

When the financial analyst determines the credit rating for a sovereign nation or corporate entity, the goal is to include all the historical data together with future forecasts. Clearly, the historical data is more reliable and the future valuation component problematic at best. For sovereign nations, the future value component is driven by estimates of GDP growth together with an analysis of fiscal policy. A similar process is undertaken with a corporate entity and both processes include an overall analysis of the general global economy. Regardless of how in-depth a future guesstimate might be, the process is flawed by the uncertainty of the global economy. Therefore, when providing a sound basis for the valuation process, the financial analyst must rely more heavily on the historical component of the

process, in essence the income statement for sovereign nations because their balance sheet is lopsided. What assets are included on a sovereign nation's balance sheet? Is the future value of a sovereign nation properly valued if it lacks many intangible assets that are included on the corporate entity's balance sheet?

An examination of a typical corporate balance sheet will include such vague assets as *Goodwill*, which represents the future benefit the entity will receive from an acquisition. The future earnings potential are, therefore, included in the valuation process of corporations. Unfortunately, a similar process does not take place for sovereign nations. Their balance sheets contain all the debt or negative value but little future assets or positive value. Perhaps, the financial analysts and rating agencies need to revisit the way in which they value sovereign entities.

### IV. IS THE VALUATION PROCESS CULTURALLY ILLITERATE?

In response to Standard & Poor's credit downgrade of their country, Italy claimed the ratings process failed to include their cultural wealth in the analysis. Italy's auditor general decried S & P's overreliance on budget deficits and lack of attention to cultural value (Rankin, 2014). The future value of the plethora of historic treasures infused throughout Italy's country is nowhere to be seen in the ratings valuation process. If corporations are allowed to include the future value of goodwill in their credit ratings process, why is a sovereign nation not afforded the same process? Perhaps, art, museums, churches, monuments and a rich cultural history are, in essence, the goodwill of a sovereign nation? According to Italy's auditor general, the *Corte dei Conti*, the unsolicited credit analysis and resultant downgrading of the credit rating of the country is flawed at best and, perhaps, illegal at worst (Rankin, 2014). In addition, the auditor general stated that the underpinning of Italy's future economic strength is driven by the historical significance of the art, culture and landscape, which was ignored by the credit rating agency (Levine, 2012).

Italy's auditor general believes that S & P's "best guess" as to their country's creditworthiness was inaccurate due to the fact that the rater failed to include the country's participation in the process. The credit agency merely availed themselves of the public information available and in essentially "slapped" a rating on the country according to the auditor general (Levine, 2012). The ratings agency rarely provides unsolicited ratings to sovereign nations. The process is usually undertaken at the request of the country being rated and includes a ratings agreement. Therefore, the unsolicited and unpaid rating provided Italy in 2012 by S & P, which resulted in a downgrade of the country's creditworthiness to BBB+, was problematic from the

inception (Rankin, 2014). How valid can a ratings assessment be without the involvement of the entity being rated? Perhaps, that is why S & P failed to include Italy's rich cultural value in the ratings process. The absence of the value of Italy's culture and art in the valuation process has been labeled "cultural illiteracy" on the part of the ratings agency by the Italian government.

In 2012, when the credit rating agencies downgraded the creditworthiness of the United States, the official response of the US Treasury Secretary focused on the "stunning lack of knowledge about basic US fiscal maths" (Rankin, 2014). Perhaps, the Corte dei Conti is making a similar assertion regarding the credit rating agencies' stunning lack of Italy's cultural value.

## V. THE RATINGS CONUNDRUM

The intrinsic value of a sovereign nation's cultural history, art, museums and landscape are assets that must be included in the ratings process in a similar way intangible assets are included in the valuation process for corporations. S & P stated the reason for the downgrade of Italy was based in part upon an estimated increase in problematic assets as viewed by the raters. But the raters failed to include the cultural assets that are at the core of the future viability of the country, and as such, erred in the ratings conclusion. If S & P based much of their analysis on the possibility of future deterioration of the collateral value of some of Italy's assets, clearly asset values are an essential part of the valuation process. The failure to include the future value of a sovereign nation's cultural assets indicates the problems with the valuation process and the subsequent rating.

Italy has a tremendous amount of debt, and, they are one of the largest euro zone debtors. Debt appears to be more risky when a nation lacks the assets to provide the balance. The failure of the ratings agency to include the cultural assets of Italy under reports value and over reports risk. In order to ascertain the future viability of any entity whether it be corporate based or a sovereign nation, the ratings process must include all the value. Sovereign nations' balance sheets are replete with debt but lack the asset value needed to provide the balance to the net worth equation. Italy, like many of its euro zone neighbors, has a cultural value that must be included in the asset section of the country's balance sheet for the value to be accurate. Italy is a valuable country because of the historical significance of its past and, to disregard the value of the cultural assets is a travesty to the nation.

## VI. HOW TO EFFECTIVELY TEACH FINANCIAL STATEMENT REPORTING

The problem faced by academics attempting to infuse real-life business examples into the learning process includes the disparate business practices as described above. If the "professional" financial analysts have problems determining what are the acceptable assets to include when valuing a company or even a nation, how can a student comprehend the process? Unfortunately, so much of the practical application of business valuation practices has been proven, in hindsight, to be wrong. The plethora of financial reporting restatements, audit failures and now the credit rating kerfuffle has undermined the ability of academics to infuse practice into the theoretical component of business classes.

The financial reporting community is faced with an overwhelming task of trying to integrate the international reporting standards with the US GAAP guidelines while attempting to navigate an ever evolving business environment. The lack of consistency and agreement in the guiding principles embraced by the international business community further complicates both the financial reporting process and the educational component. The failure of the international business community to determine what rules are appropriate for reporting the financial results of large multinational entities only serves to weaken the business education being taught on college campuses around the world. The business community needs to provide the guiding principles that are deemed effective for international reporting purposes so that the academic institutions can more effectively educate the current business students with accurate educational tools. The inaccuracies of the current financial analysis reporting system is not only undermining the credibility of the ratings agencies but is weakening the value of a business degree.

The business curriculum developed by the international business programs has provided an excellent foundation for students and business leaders to apply accounting and valuation theory in a practical application for valuation purposes. Why does the professional credit and business analyst fail to apply the basic components of valuation theory taught in the classroom to the real-world valuation process? Someone is failing...is it the credit rating agencies or are the theories widely accepted and taught in academia not practical in a real-world valuation process? This discussion needs to take place before the entire valuation process is completely categorized as a failure.

## VII. CONCLUSION

Italy is a rich nation and the impact of the downgrade on their economy was senseless. Most

sovereign nations have problems and risks that need to be included when assessing the creditworthiness of the entity. The process requires the analyst to make judgments about the future that are rooted in speculation. The “best guess” process has historical precedence which provides the analyst with a template to follow. Both the revenue generating and future asset values must be compared with the cost flows and debt burdens in order to accurately assess the future viability of the entity. The absence of a sovereign nation’s cultural assets in the valuation process needs to be corrected to ensure the credit ratings assigned reflect the complete story. The lack of transparency in the ratings process has served to undermine the ability of academics to infuse real-life business examples into the curriculum. Currently, the real-life examples are being used primarily as a tool to illustrate a “what not to do” approach rather than as an example of how the international business community succeeds in the reporting process.

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## The Study of Chinese Farmer's Personal Loan

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# The Study of Chinese Farmer's Personal Loan

Xinmin Zhang<sup>α</sup> & Chaoxiang Jia<sup>σ</sup>

**Abstract-** The personal loan between farmers is a kind of personal loans, which is widespread in rural and has a long history. Since three decades of reform and opening-up, the farmers' economic conditions are getting better. Although the formal financial institutions has been covering the whole cities and counties, the farmer's personal loan have never stopped. The motivation of farmers' personal loan has been gradually changed from the living consumer loan to the production operation loan. And the practical application of the use shows a trend of non-agricultural loan. In economically developed areas, the farmers are more willing to borrow money from the informal financial institutions, thus raises many legal issues. Specification the behavior of farmers' personal loan mainly starts with the acquaintance of the loan policy and government regulation.

**Keywords:** *personal loan, registration system, supervision mechanism, lending rate.*

With the deepening of the reform and opening-up, the rural economy is going through tremendous changes. Today, as the financial mechanism is increasingly sophisticated, although the formal financial institutions has provided safe and guaranteed lending channel for the development of rural economy and society, including rural credit cooperatives loan and state-owned commercial bank loan, personal loan between farmers which is ancient and informal is still enduring, so it must has its unique value. From the existing literature, studies of the behavior of farmer's personal loan are more, but further study of the personal loan between farmers is less. Based on the existing literature data, this paper tries to analyze the inevitable reasons, development tendency and countermeasures of long-standing farmer's personal loan.

## I. OVERVIEW OF FARMER'S PERSONAL LOAN

### a) Definition of Farmer's Personal Loan

When defining the concept of personal loan, foreign scholars used to see whether it belongs to the national financial regulatory system as standard. Traherne considers that the key to distinguish between personal loan and formal finance is whether it is necessary to rely on social law system to perform financial activities, which means that personal loan refers to some kind of financial activities without social law system as specification.<sup>1</sup> Domestic academic circles

have different opinions about the definition of personal loan. And most of them use the law or official standard for reference. Some scholars believe that personal loan is all for-profit capital raising activities between individuals, or enterprises, or individual and society, which has always been free from the official regulation and mainstream finance research field.<sup>2</sup> Other scholars believe that personal loan is sort of financial activity which is not recognised by the law and other official forms, including financial activities which have not been officially recognized by law performed by the formal financial body, also some innovative financial activities which are not recognized by the laws and regulations temporarily. Besides some scholars believe that personal loan is a kind of financing behavior which is without legal regulation and lack of legality.<sup>3</sup>

Although among domestic academic circles, the definition of personal loan has no final conclusion, scholars have converged on the connotation that personal loan is kind of informal loan.<sup>4</sup> According to the loan body, it can be divided into the generalized personal loan and narrow personal loan. Narrow personal loan refers to the loan behaviors between natural persons in accordance with the contract. However, generalized personal loan also include loan behaviors between natural person and legal person, natural person and other organizations. It usually refers to the narrow personal loan in the real life. The author thinks that, farmer's personal loan refers to kind of narrow personal loan which is not participated by farmers and not recognized by the law and regulations.

Personal loan is very common in our country. Chinese family financial investigation and research center of Southwest University of Finance and Economics released *The Bank and The Family Financial Behavior* in July this year. It showed that the participation rate of personal loan in our country is high. There are 33.5% of family participating in the activities of personal loan. And the total amount of loan reach 8.6 billion yuan, in which 3 billion yuan is used for agriculture and industry and commerce. Such a large figure also reflects

<sup>2</sup> See Jianjun Zhang, Zhonghong Yuan, Ping Lin, "From Personal Loan to Private Finance: Industrial Organization and Trade Rules", *Financial Research*, 10<sup>th</sup>, 2002.

<sup>3</sup> See Tian Zheng, Longfeng Wang, Yun Xiao, "The Harmonious Development of The Middle and Small-sized Enterprises and Private Financial", *Enterprise Economy*, 3<sup>rd</sup>, 2006.

<sup>4</sup> See Zheng Chen, Yun Li, "Research Review of Modern Chinese Rural Personal Loan in Thirty Years", *The History of Chinese Farmers*, 2<sup>nd</sup>, 2013.

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<sup>1</sup> See Xin Wang, *Financial Law*, China University of Political Science and Law Press, 2007, p.167.

from the side that, formal credit industry can not fully meet people's needs of financing in our country.

#### b) *Nature of Farmer's Personal Loan*

In the legal relation, farmer's personal loan is classified as a loan contract relationship. On the other hand, personal loan contract is practical contract, which means that loan contract goes into effect when lender pay the money as the requirement of validity of contract. In real life, as the custom of personal loan, lender usually pays the money first, then borrower issues IOU(I owe you). Therefore, in determining the effectiveness of personal loan behavior, as long as in case the intention of both parties is real, and the loan behavior is legal and delivered, then it can be considered valid.

There are no uniform legislation about farmer's personal loan in our country, so in practice it is used to apply the relevant provisions of the *General Principles of The Civil Law* and *Contract Law*. *General Principles of The Civil Law* prescribed in article 90: "Legitimate loan relationships shall be protected by law." *Contract Law* stipulated in article 210: "A loan contract between natural persons shall come into force as of the time when the lender extends the loan." *Contract Law* also stipulated in article 211: "If there is no agreement in a loan contract between natural persons as to the payment of interest or such agreement is unclear, it shall be deemed as non-payment of interest. If the payment of interest is agreed in a loan contract between natural persons, the loan interest rates shall not violate the provisions of the State on the restriction on loan interest rates." Thus it can be seen that loan between natural persons have legal nature.

Private financial institution is more prevalent where private economy is more advanced. When farmers encounter cash flow difficulties, they would also lending to such institutions. *Criminal Law* in China definitely stipulate that, without approval of the national authorities, no one will be allowed to set up financial institutions. Even if someone set up a legal financial institution, there still exist risks when conduct loan practice, such as illegal fund-raising, and illegally or in disguised form, absorbs savings deposits from the public, and illegal possession. As a result, the author thinks that the state have reservations about the development of private financial institutions.

#### c) *Characteristic of Farmer's Personal Loan*

The main characteristics of farmer's personal loan are freedom and legitimacy. It also reflects that the constraints of current laws and regulations are quite loose about the personal loan relationship. Principle of autonomy embodies particularly obvious in farmer's personal loan. For example: there are a large number of interest-free loans in farmer's personal loan. But in the formal financial institutions, it is basically interest-bearing loan.

In the terms of loan body, it is usually between farmers, farmers and enterprises (excluding informal financial enterprises), farmers and other financial institutions. The form of loan often appears as written or verbal form. The debtor-creditor relationship is based on equality and voluntary of two sides. But there is no distinction on the loan purposes. Commercial credit and consumer credit are nothingness. The only rule is that it can not be used for illegal purpose. In terms of loan amount and credit, it is completely different from the formal financial institution loan. Farmer's personal loan generally is unsecured, small loan amount, based on rural customs and personal credit, and less than two years.

## II. STATUS QUO AND REASON ANALYSIS OF FARMER'S PERSONAL LOAN IN CHINA

### a) *Basic Situation of Farmer's Personal Loan in Different Areas*

#### i. *The Situation of Farmer's Personal Loan in The Western Region—Take Shaanxi Province as Example*

The needs of farmer's personal loan have always been relatively high. According to the survey, northern Shaanxi, Guanzhong, southern Shaanxi, 11 villages in these 3 regions have 42.58% of farmers who have the intention to get loan from the bank, credit union and private sources.<sup>5</sup> Specific to the survey sample of Xianyang City as an agricultural base in Shaanxi Province, the rate of personal loan between farmers reaches 74.38%. The rate of getting loan from the formal financial institution reaches 12.5%, informal financial institutions accounts for 7%, including interest-free loans which accounts for 85.71%.<sup>6</sup> In the total sample, the proportion of farmer's personal loan is more than half, which means farmers prefer informal loan. Farmers prefer to borrow money from relatives and friends, mostly because farmers lack the confidence of getting loan from formal financial institutions successfully, the low expectation of getting loan, red tape, and higher interest costs. It is worth mentioning that the majority of the sample think that there is no bearing borrowing in the local. However, in fact bearing borrowing between farmers have quietly begun.

#### ii. *The Situation of Farmer's Personal Loan in The Central Region—Take Shanxi Province as Example*

In the central region, it takes six counties in Shanxi as example, including Shanyin County, Yangche-

<sup>5</sup> See Rong Niu, Jianchao Luo, Hang Zhang, "Studies of Shaanxi Farmer's Loan Behavior", *The Agricultural Technology Economy*, 4<sup>th</sup>, 2012.

<sup>6</sup> See Leiling Wang, Jianchao Luo, "Investigation and Analysis of Farmer's Loan Needs: Take Shaanxi Province As Example", *Agricultural Economy*, 1<sup>st</sup>, 2012.

ng County, Jiaocheng County, Dai County, Xia County, Shilou County (take samples according to net income level). Shanyin County got the highest average income of 7,532 yuan, the lowest average income of 1,410 yuan is Shilou County. The results showed that 300 household farmers who were investigated reached 70.33% of lending rate. Farmer's personal loan accounted for 71.43% of the sample, in which getting loan from rural credit cooperatives (formal financial institutions) was 16.71%, from private lenders (informal financial institutions) accounted for 5.57%.<sup>7</sup> In terms of the sample, farmer's personal loan is still much higher than the formal financial institution, in which interest-free loan rate is higher, reaching 62.95% as dominant. Although interest-free loans are common among relatives and friends, at today, as the economic concept is stronger, the author thinks that interest-bearing loan will take the dominant position in the future.

iii. *The Situation of Farmer's Personal Loan in The Eastern Region—Take Fujian Province as Example*

The level of economic development in Fujian Province is relatively high. National Bureau of Investigation Corps Fujian released data shows that rural per capita cash income is 5,671 yuan in Fujian Province in the first half of 2012, up 12.7% from a year earlier. The actual increase is 10.6 % after deducting price factors.<sup>8</sup> But there is still farmer's personal loan. According to the data, which covers the city of Fuzhou, Quanzhou, Zhangzhou, Ningde, Sanming, it shows that the lending rate of farmers is 70.9%, in which farmer's personal loan is top of the list, reaching 49.8%. However, the ratio of getting loans from financial institutions significantly increased, compared with the above-mentioned areas, which reaching 31.5 %, and reaching 18.7 % of getting loan from informal financial institution. But formal financial institutions failed to meet the farmers' loan needs. The survey indicates that the farmers who already borrowed the money, especially large-scale, would get more loan from formal financial institution. The reasons are also diverse, the most important one is the formal lending rate is too high, increasing their repayment pressure.<sup>9</sup> And the interest rate of farmer's personal loan is acceptable. In Fujian district, it has become a widespread phenomenon that farmer's personal loan would charge interest, interest-bearing loan rate reaching 40 % or more basically. Besides, the so-called interest-free loan is basically

occurs only in non-commercial investment loan between friends and relatives, and interest-free loan is often accompanied by "debt of gratitude", which shows in many ways, such as gifts, treat, unpaid workers and other economic benefits help, which could be seen as hidden interests.<sup>10</sup> So, the real interest-free loan is rare.

iv. *The Situation of Farmer's Personal Loan in The Economic Developed Area —Take Wenzhou City in Zhejiang Province as Example*

Wenzhou is a coastal port city, which economic development among the best in the country. So farmers' loan data here have a typical research value. According to the data of Wenzhou Municipal Bureau of Statistics, it shows that in 2012, Wenzhou rural residents per capita net income were 14,719 yuan, and Wenzhou rural residents per capita consumption expenditure are 10,820 yuan.<sup>11</sup> Went around 15 villages in Wenzhou and investigated, only 20.8% farmers made a positive reply to the question of "whether to get loan from the bank or credit union", nearly 80% farmers said they did not apply or get loan from a bank or credit union, in which 47.25% farmers said clearly that they had personal loan, 39.8% farmers participated in the bidding clubs and other informal financial institutions. Interest-free loan still exists, but varying rates of interest-bearing loan is more.<sup>12</sup> It can be seen that, in Wenzhou informal financial organizations (Bidding) are more developed, and farmers are also very willing to participate in this financing. It has become the second form of loan after farmer's personal loan. This phenomenon has something to do with the some reasons such as regional economic and rural social structure. But, it has to admit that, either in developed area or less developed area, there all have a large number of farmer's personal loan.

b) *Comparison of Different Areas of Farmer's Personal Loan*

By the above data, it can be seen that, with the development of the regional economic, farmer's personal loan rate tend to decline gradually, and the lending rate of financial institutions tend to rise gradually. But in the developed area (e.g. Wenzhou), the lending rate of financial institutions decline significantly, and yet the lending rate of non-formal financial institutions rise basically, which is particularly evident in the developed area (e.g. Wenzhou). See table 1.

<sup>7</sup> See Lina Yan, "Study of Factors Affecting Farmer's Loan in Shanxi Province", Master Thesis, Department of Agricultural Economic Management, 2012, p.21.

<sup>8</sup> See Kai Lin, "The Rural Per Capita Cash Income Rose by 12.7% During the First Half", *Fujian Daily*, on July 18, 2012.

<sup>9</sup> See Xingming Zheng, "An Empirical Study of Farmer's Lending Behavior and Its Influencing Factors - Based On the Investigation of the Rural Areas in Fujian Province", *Fujian Agriculture and Forestry University (Philosophy and Social Sciences)* 5<sup>th</sup>, 2011.

<sup>10</sup> See Birong You, "Investigation and Analysis of Farmer's Lending Needs in Fujian Province", *Fujian Agriculture and Forestry University (Philosophy and Social Sciences)* 3<sup>rd</sup>, 2009.

<sup>11</sup> See Wenzhou Municipal Bureau of Statistics, "The City's Per Capita Net Income of Rural Residents are 14,719 Yuan in 2012", January 23, 2013, the last access date: December 26, 2013. [http://www.wenzhou.gov.cn/art/2013/1/23/art\\_3598\\_253599.html](http://www.wenzhou.gov.cn/art/2013/1/23/art_3598_253599.html).

<sup>12</sup> See Shuitu Qian, Hui Lu, "The study of development of rural informal finance and farmer's financing behavior-based on investigation and analysis of rural areas in Wenzhou", *Financial Research*, 10<sup>th</sup>, 2008.

Table 1

|                                  | Western representatives | Central representatives | Eastern representatives | Developed area representatives (Wenzhou) |
|----------------------------------|-------------------------|-------------------------|-------------------------|--|
| Farmer's personal loan           | 74.38%                  | 71.43%                  | 49.8%                   | 47.25%                                   |
| Formal financial institution     | 12.5%                   | 16.71%                  | 31.5%                   | 20.8%                                    |
| non-formal financial institution | 7%                      | 5.57%                   | 18.7%                   | 39.8%                                    |
| Rate of interest-free loan       | 85.71%                  | 62.95%                  | 58%                     | /  |

c) *The Reasons of Farmer's Long-standing Personal Loan*

i. *Loan Cost of Formal Financial Institution is High*

The cost here do not refer only to the cost of capital, but also the time cost, satisfaction cost. It is a hard fact that the lending rate of formal financial institution is high. In the terms of time cost, according to the author's survey of the customer, for most customers, it needs a month or so to get the loan. If in the case of complete procedures, it may be faster. But preparing the the documents that the bank needed is also a extremely time-consuming thing. The author considers the satisfaction cost as the most important cost because it directly related to customers' choices on borrowing. Many customers reflect the bank staff has bad attitude, deliberately making things difficult. For instance, they claim that some businesses can only be dealt with at the opening bank, but in fact it can be dealt with at any sub-branch. Also, there are lots of people standing in line, but there are several business windows closed. Those facts above will make the customers very unsatisfied, paying anxiety cost.

ii. *Farmer's Personal Loan Has Its Own Advantages*

Farmer often has times when money is urgent needed, such as purchase of means of production, purchase of house, seeing a doctor and so on. Due to the structure of rural acquaintance relationship, it is quite convenient to borrow money from relatives and friends. Without almost any time cost, it is very timely, easy procedure, with only a IOU.<sup>13</sup> It is usually interest-free. However, farmer choose their relatives and friends to borrow money not because the interest-free privilege. The main reason is convenience.

iii. *Farmer's Personal Loan Has Reasonable Existence of the Social Environment*

Farmer's loan can be divided into living consumer loan and production operation(investment) loan. Living consumer loan include housing, medical care, weddings and funerals, school, basic living expenses, and so on. Production operation(investment) loan include agriculture, livestock breeding, transportation, product processing, individual business, and so on.

In less developed areas, the main farmer's personal loan is living consumer loan. The survey points out that many farmers are plagued by education expenses, housing, weddings and funerals, medical care. Although these four purpose of loan are essential needs in everyday life, the loan conditions set by the rural credit cooperatives for such purposes are extremely harsh. "Micro-credit" basically does not support this type of loan. Therefore, when they lack of capital accumulation, farmers can only turn to non-formal financial institutions for help. In less developed areas, non-formal financial institutions are rare. So most of the time, farmers choose to borrow money from relatives and friends.

However, in the developed areas, the purposes of farmer's personal loan have some changes. With the adjustment of industrial structure in rural areas showing a variety of features, the tendency of non-agriculturization of the purpose of the loan is increasingly apparent.<sup>14</sup> The author thinks that the non-agriculturization of the purpose of the loan fits the rule of economic development. Traditional agriculture and planting have great risks. It should consider many factors, like natural disasters, personal cultivation management technology, market price fluctuations, personal identification capability about seeds fertilizers pesticides. If any part of it goes wrong, it will be a complete failure. So formal financial institution is very cautious about the loan for farmer's purchase of agricultural production. Therefore, the state introduced a policy, known as "farmers microcredit loans". Nevertheless, because of "information asymmetry" and "financial repression", farmer is often unable to obtain loans from formal financial institutions or has no intention to. However, with respect to loans for business purposes, because the risk is relatively low and the return is relatively high, then probability of farmers to obtain loans is much higher. So the thing is, it is hard for farmer to obtain loan for agricultural purposes. And there is no motivation for formal financial institutions to lend to farmers. Besides, farmers microcredit loan is not common. In the end, farmers cannot but borrow money from informal financial institutions or relatives and friends for agricultural purposes. In the meantime,

<sup>13</sup> See Chaoxiang Jia, Xinmin Zhang, "Legal Strategies of Farmer's Personal Loan Issues", *Chinese Rural Finance*, 5<sup>th</sup>, 2014.

<sup>14</sup> See Birong You, "Investigation and Analysis of Farmer's Lending Needs in Fujian Province", *Fujian Agriculture and Forestry University (Philosophy and Social Sciences)* 3<sup>rd</sup>, 2009.

formal financial institution is negligent in lending money to farmer, which conversely help the informal financial institution to develop.

In the previous section of the paper, the author cited data from different regions of different domestic economic development level, which illustrate that farmer's personal loan happens in various regions, and has dominate position in the rural informal financial markets. The author believes that the root cause of farmer's personal loan is adaptation of the rule of market economy. In less developed areas, the main purpose is still the agricultural production and living consumption. On the other hand, in developed areas, the main purpose is non-agricultural production and operation, because the risk is relatively low with relatively high income. So no matter where farmer is, he struggles to achieve financial freedom. But because of the credit policy of formal financial institution, it is inevitable of farmer to borrow money from informal financial institution or relatives, neighbors, and friends.

Since the reform and opening-up policy, it has emerged some developed regions. While more than half of China are less developed regions. Everything doesn't happen at once. It is a slow process, just like initially the purpose of loan was agricultural production and now non-agricultural production and business has emerged. As a result, farmer's personal loan will exist for a long time.

### III. LEGAL ISSUES OF FARMER'S PERSONAL LOAN

#### a) *Legal Status is Unclear*

In our country, there is no uniform legislation on personal loan. It is scattered in various laws and regulations, which lead to conflict among laws and regulations. And when it happens, it is difficult to choose standard reference. Another big problem is lack of content. Current laws stipulate the body, loan interest rate, guarantee style, and liability of farmer's personal loan here and there. But the rights and obligations of the parties, legal and regulatory measures and other issues are not involved.<sup>15</sup> Even in the lending body, the law should be improved as well. For example: personal loan market has various loan companies, including investment guarantee management companies, investment management companies, investment advisory management companies, real estate investment management companies. Currently the companies which are permitted to set up by the state are investment guarantee corporation and small loan company. The future of small loan company is rural bank. The development direction of investment guarantee company is large-scale and normalization. While other types of companies set up without any

<sup>15</sup> See Guopei Wu, Jianhua Weng, Zhi Geng, "Analysis of Legal Problems of Personal Loan", *Fujian Finance*, 2<sup>nd</sup>, 2009.

policy basis.<sup>16</sup> But if it is only based on the fact above to identify the loan practices invalid, it will lead to market confusion. Chinese academy of social sciences report also called on a clear legal status for personal loan to avoid the embarrass situation today.

#### b) *Form of Behavior is Not Standard*

Personal loan is know as convenience and randomness. And the following problem is that the behavior of loan form is extremely irregular. These problems include: only oral agreement, high interest rate, illegal interest calculation methods, the repayment period not standardized, turn lending issues, illegal fund-raising fraud, non-standard form of contract and other issues.

Even in written form, there are also many nonstandard problem. For example: a IOU with loan agreement as for title. While a loan agreement is just a consensus reached by two sides about loan. To prove the fact of loan, it also need a receipt. In other words, to prove the fact of loan is established, under the condition of a loan agreement, it also must have a loan receipt.<sup>17</sup> In addition, IOU written by creditors, simple remittance documents, accounting IOUs etc, all of above are non-standard. The author believes that such non-standard behavior is due to the lack of unified legislation of personal loan and the lack of loan body's awareness of the law after all. On the other hand, due to the randomness and not normative of personal loan, it would easily lead to regional economic crisis.<sup>18</sup>

#### c) *Government Regulation is Not in Place*

In developed areas, the purpose of farmer's personal loan tend to be non-agricultural. More farmers do business after they obtain the loan. Nowadays, many organizations engaged in personal loan just after registering in the business sector. Farmers are too anxious to choose such institutions. Those kind of organizations, which just register in the business sector and lack of financial license, are able to engage in personal loan because of no laws. In addition, for loans between natural persons, there are laws and regulations. But when participating in personal loan, the parties do not do things in accordance with national laws and regulations. As an example, there is a strict rule of interest rate, but many people do not comply with the rule, then it becomes usury. So in fact, there are laws and regulations. Yet they are not performed well. Therefore, it is necessary to guide and regulate these

<sup>16</sup> See Zihui Li, "The Legal Status of Many Companies in Personal Loan Market", June 7, 2012, last access date: October 20, 2013. <http://www.66law.cn/lawarticle/7766.aspx>.

<sup>17</sup> See Qiang Liu, Yan Feng, "The Identification of Effectiveness of Non-standard Constraints in Personal Loan", December 19, 2011, last access date: January 9, 2014, <http://ylzy.chinacourt.org/public/detail.php?id=2336>.

<sup>18</sup> See Xiaoming Li, Lei Zhao, "Personal Loan of Erdos Conservatively Estimated 2 Billion", *Morning News*, October 18, 2011.

personal loans how to perform in accordance with the law.<sup>19</sup>

#### IV. LEGAL MEASURES OF STANDARDIZING FARMER'S PERSONAL LOAN

Mr. He<sup>20</sup> and Mr. Li<sup>21</sup> whose study found that more than 60 percent of rural lendings are from non-formal financial institutions. And most of them are interest-free loans. In terms of the loan amount, 93.95% of them occurred between relatives, friends, neighbors (farmer's personal loan). Although the survey data was a little more than a year ago, but in previous part of this paper have proven that the rural lending practices in recent years have little change, but it mainly happens among personal loans. Thus, it triggers some legal issues which could not be ignored.

##### a) *Improve Legislation of Personal Loan, Clearly Acknowledge the Validity of Farmer's Personal Loan*

Credit constraints of formal financial institutions make interest-free loans and interest-bearing loans happen more often.<sup>22</sup> The author considers it should loosen the restriction of policy appropriately for farmer's personal loan, with subsidization, meeting the demands of farmers' normal living expenses, reducing the loan for farmer's life consumption. On the other hand, how close the debtor and lender are has the most significant impact on the trust between them.<sup>23</sup> The law does not adjust these relationships directly. However, born of rural acquaintances structure, rotating savings become powerful restriction role for farmers, which is based on geographical and kinship advantage to obtain information and rely on some kind of social capital or social mechanism to ensure the execution of the contract, making the borrower comply with the corresponding specifications. Therefore, the government can be based on the context of rural development, promoting development by innovation, recognizing the legal status of non-formal financial institution and providing them relatively loose platform, which makes formal finance and informal finance to coordinate with each other. Reducing the cost happened during the time when non-formal financial institution avoid regulatory. Try to avoid and reduce the damage that caused by non-

formal finance when it takes unfair means to destroy legal system and moral environment.<sup>24</sup>

The relationship between the informal and formal financial institutions is not a shift, competing and alternative relationship. Due to each advantages of them, it also can be a complementary relationship.<sup>25</sup> Garmaise and Moskowitz's(2002) study showed that even such a country like U.S.A has a perfect capital market, informal financial institutions are widespread as well, playing a very important role.<sup>26</sup> In view of the above research conclusions, combining the reality of life, there will be a very long time that informal financial markets are subsisting. While farmer's personal loan and informal financial institutions occupy the front row in the informal financial markets. Farmer's personal loan rely on rural acquaintance social structure. Interest-free loan has been accepted by the majority of farmers. While informal financial institutions rely on the closeness of farmer's real life, possessing the information advantage, with convenient procedures. The two kinds of loans above are both based on blood relationship and geographical relationship, guaranteed by credit and morality of rural relatives, acquaintances, and friends. So it can be maintained ever since. The author thinks that the government can recognize the legitimacy of rotating savings (similar to third-party organizations such as "Alipay" between the sellers in electronic commerce), making use of their information resources and acquaintances relations to improve economic development in part of rural areas. At the same time, reducing lending disputes by limit rotating savings become monopolies through legislation.

##### b) *Regulate the Behavior of Farmer's Personal Loan*

###### i. *Gradually Realize the Writing Form of Personal Loan*

Since the foundation of farmer's personal loan behavior is "two-love" relationship, so there is almost no IOU.<sup>27</sup> No matter where it is, there are conditions like just oral agreement, without any written form. Because of the acquaintance of social structure, for fear of hurting other's feeling and lack of legal consciousness, generally there is no written evidence at all, which becomes potential problems of future disputes.

<sup>19</sup> See Xijun Zhao, "Strengthen Supervision of Personal Loan and Dispose Responsible Party Legally", October 12, 2011, last access date: October 19, 2013, <http://finance.eastmoney.com/news/72002,20111012168426465.html>.

<sup>20</sup> See Guangwen He, "research on rural financial control and financial deepening from aspect of the behavior of rural residents' loan", *Chinese Rural Economy*, 10<sup>th</sup>, 1999.

<sup>21</sup> See Rui Li, Ningjun L., "Analysis of Farmer's Lending Behavior and Welfare Effects", *Economic Research*, 12<sup>th</sup>, 2004.

<sup>22</sup> See Yongqiang Ma, "Analysis of Chinese Farmer's Financing Situation and Preference-According to the National Farmers' Loan Questionnaire", *The Economist*, 6<sup>th</sup>, 2011.

<sup>23</sup> See Weihua Yang, Rong Kong, "Affecting Factors of Trust of Farmer's Personal Loan", *Northern Economy*, 4<sup>th</sup>, 2011.

<sup>24</sup> See Shuitu Qian, Hui Lu, "The study of development of rural informal finance and farmer's financing behavior-based on investigation and analysis of rural areas in Wenzhou", *Financial Research*, 10<sup>th</sup>, 2008.

<sup>25</sup> See Junhua Yin, "The Financial Gap, Non-formal Finance and Reform of Rural Financial System- Research on Personal Loan in Rural Areas in Shenyang", *Financial Research*, 8<sup>th</sup>, 2006.

<sup>26</sup> See Garmaise Mark J. and Moskowitz, Tobias J., "Informal Financial Networks: Theory and Evidence", NBER working paper 8874, 2002.

<sup>27</sup> See Dongsheng Li, Qinghua Shi, "An Empirical Analysis of Farmer's Household Savings and Lending Behavior in Jianli County in Hubei", *Hubei Agricultural College*, 3<sup>rd</sup>, 2003.

ii. *Establish Registration System of Farmer's Personal Loan*

As can be seen from the data ahead, there are quite a lot of farmers have no IOU on account of various reasons, which set many obstacles to solve the disputes, such as the difficulties of proof, authenticity of IOU. It makes the problem hardly fairly solved. Also, farmers in eastern regions may have some surplus funds. If they are in idle at home, it will be a waste of resources. For this reason, the author believes that to solve such problem effectively, a compulsory loan grading system should be established. Registration authority as mentioned here refers to organizations and institutions established or recognized by the state, registering farmer's personal loans one by one. Similar to the general property registration agency, the registration authority only confirm and register the loan contract. And it is not responsible for specific lending practices. Once the two sides have trouble with the loan, the registered records can be seen as a legal basis, which as a proof and protection within the law for lending practices.<sup>28</sup>

iii. *Implement the Guidance System of Interest Rate*

In 1991, *Civil Law of China* define usury as interest rate is more than bank lending rate four times. However, the People's Bank of China decided to release loan interest rate cap of financial institution in 2004, which made the standard above lose the original significance of restriction due to lack of reference. At present, the judicial practice personnel refers to "simultaneous and congeneric loan benchmark rate", which is published by the People's Bank of China, as a frame of reference to define usury behavior. According to this standard, usury is quite common in urban.<sup>29</sup> While in rural, usury is rare. According to the survey, it found that the rate of farmer's personal loan has no fixed value. In Wenzhou, annual interest rate is range from 0 % to 20 %.<sup>30</sup> Most of farmer's personal loans are interest-free loans. With the regional economy development, the interest-free loan gradually turns into the interest-bearing loan. It is worth mentioning that the legal consciousness of farmers also increased. When lending rate is certain, farmer would consider not only the earnings but also the security. In Fujian Province, the monthly interest rate of farmer's personal loan is 1 cent, which account for 26%, 1-2 cents account for 70 %. The proportion of which is more than the bank interest rates four times over the same period is very small. The truth

is there is usury, but not obvious.<sup>31</sup> China's financial industry is relatively mature. With the development of rural urbanization and economy, the high interest rate of farmer's personal loan will affect China's economic development.<sup>32</sup> Usury disturbs the market order seriously, causing economic bubble seriously, heavy burden on borrowers, even lead to ruin and death. The author believes that the identification of usury should adopt different standards to different subjects, distinguishing productive lending and life lending. Adding moral adjustments when necessary to crack down the interest that is not being recognized by the community and too harsh.

iv. *Unify Interest Calculation Methods*

There are two personal loan interest calculation methods, namely simple interest and compound interest. Compound interest is known as interest on interest. Compound interest formula: principal and interest = principal \* [(1 + interest) the power of n]. There is a view that compound interest calculation is usury and is illegal, which should not be protected by law. Compound interest calculation gets more than simple interest calculation. But just because of that, to define compound interest calculation is illegal, that is contrary to the principle of autonomy. According to "Several Opinions of the Supreme People's Court on Lending Cases" in article 6: "rate of personal loan could be higher than the interest rates of banks appropriately. Local court may be based on the actual situation in the region, but it could not exceed bank lending rate four times (including the interest rate of the number ). Beyond this limit, the exceeding part will not be protected." Next article: "lender shall not seek usury by joining interest in principal. In the trial, if the court found the creditor compute compound interest by joining interest in principal and the interest rate exceeds the limits specified in Article 6, the exceeding part will not be protected." Therefore, the author thinks that, interest should go through a specific calculation. If the final interest is four times more than bank lending rate, the exceeding part shall not be protected, but the rest of it should be valid.

v. *Turn Borrowing Problems*

The information of farmer's personal loan is asymmetric, which gets worse in rural areas. As a result, turn borrowing happens occasionally. For example, one villager want to borrow money from his friend, who has no extra money. So his friend turn to someone else for help. The someone earning price scissors (similar to VAT). With the lending rate increasing, the lender's

<sup>28</sup> See Haiying Liu, Zhoujun Pu, Hanxiao Wang, "Analysis of Sun Path of Personal Loan Based on Registration System", *Shanghai Finance*, 6<sup>th</sup>,2012.

<sup>29</sup> See Huilian Zheng, Xuming Zhao, "Legislative Rules of Personal Loan", *Nanjing Social Sciences*, 8<sup>th</sup>,2012.

<sup>30</sup> See Shuitu Qian, Hui Lu, "The study of development of rural informal finance and farmer's financing behavior-based on investigation and analysis of rural areas in Wenzhou", *Financial Research*, 10<sup>th</sup>,2008.

<sup>31</sup> See Birong You , "Investigation and Analysis of Farmer's Lending Needs in Fujian Province", *Fujian Agriculture and Forestry University ( Philosophy and Social Sciences )* 3<sup>rd</sup>, 2009.

<sup>32</sup> See Yuting Guan, Xiaolan Kang, Bin Liu, "The Impact on Economic and Social Development from the High Interest Rate of Rural Personal Loan", *Business Research*, 10<sup>th</sup>,2011.

repayment pressure increases, along with a corresponding increase in moral hazard. The best solution is build the appropriate lending platform (informal), so that we can obtain unified information, reduce intermediate links, and reduce financing costs.<sup>33</sup>

c) *Establish a Government Guidance Mechanism for Farmer's Personal Loan*

i. *Establish verification system of farmer's personal loan*

The witness agency set up by the government, which is similar to notary office, guarantees the contract of farmer's personal loan is valid as a eyewitness on the scene. Under such system, it will provide security for farmer's personal loan.

ii. *Establish Legal Consulting System of Farmer's Personal Loan*

Setting up the simple and delicate legal consultancy in rural areas, improving farmers' legal consciousness. Fundamentally solving the problem of irregular behavior of farmer's personal loan.

iii. *Establish Dispute Mediation Mechanism of Farmer's Personal Loan*

Intervening by the government or delegating prestigious and credible old man is in charge of coordinating the dispute caused by the farmer's personal loan. This system aims to relieve the contradictions of rural society. It is based on rural acquaintances environment so that it can implement smoothly.

<sup>33</sup> See Li Fang, "The Relationships of Register Service Center and Lending Rates of Personal Loan", *Economic Vision*, 13<sup>th</sup>, 2013.



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# The CAPM, Determinants of Portfolio Flows to Emerging Markets Economics: The Case of Jordanian Financial Crisis

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**Abstract-** The main aims of this study to investigate the impact of the determinant of portfolio return performance during and post financial market crisis based on the most active firms listed on Amman Stock Exchange (ASE) for the period from 2008 to 2012 has been studied. In this study, using the framework of the Capital Assets Pricing Model (CAPM) as considered to be a centrepiece in optimal portfolio determinants. An important contribution of this framework is that it allows to derive optimal portfolio implications for economies in which the degree of correlation across different financial sectors. The test data set is the monthly prices based on 59 samples of the most active companies. This empirical study proposed that this is not a normal cyclical crisis of capitalism but a global crisis, which requires a change in the management policy to be tackled with new regulatory frameworks for financial institutions in order to stimulate economic activities.

**Keywords:** CAPM, portfolio optimisation, correlation coefficient, risk and return, amman stock exchange, financial sector in Jordan, financial crisis.

**GJMBR-C Classification :** JEL Code: G01, A11



*Strictly as per the compliance and regulations of:*



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# The CAPM, Determinants of Portfolio Flows to Emerging Markets Economics: The Case of Jordanian Financial Crisis

Dr. Najeb Masoud<sup>α</sup> & Dr. Suleiman Abu Sabha<sup>σ</sup>

**Abstract-** The main aims of this study to investigate the impact of the determinant of portfolio return performance during and post financial market crisis based on the most active firms listed on Amman Stock Exchange (ASE) for the period from 2008 to 2012 has been studied. In this study, using the framework of the Capital Assets Pricing Model (CAPM) as considered to be a centrepiece in optimal portfolio determinants. An important contribution of this framework is that it allows to derive optimal portfolio implications for economies in which the degree of correlation across different financial sectors. The test data set is the monthly prices based on 59 samples of the most active companies. This empirical study proposed that this is not a normal cyclical crisis of capitalism but a global crisis, which requires a change in the management policy to be tackled with new regulatory frameworks for financial institutions in order to stimulate economic activities. The results show that there is a difference finding during these two periods where risk is negative and significant during financial market crisis period (2008- 2009) but positive and significant after the financial market crisis period (2010-2012). Further results show that when the return on the other factors is inserted in the model, this relation remains significant during and post financial market crisis for asset correlation and investment risk. Furthermore, paper of the proposed model in other emerging countries could be performed in order to raise further explanation of the model and to reveal more generalised findings.

**Keywords:** CAPM, portfolio optimisation, correlation coefficient, risk and return, amman stock exchange, financial sector in Jordan, financial crisis.

## 1. INTRODUCTION

### a) CAPM: An-Overview

The most significant concept in making decisions on investment is the issues of risk and return that has been received a lot of attention in recent decades. Harry M. Markowitz (1952, 1959) was the first to come up with a parametric optimisation model to this problem which meanwhile has become the foundation for Modern Portfolio Theory (MPT) (Dietmar, 2005). Since the late 1940s and in the early 1950s, prior to the development of the Capital Asset Pricing Model (CAPM) by Markowitz (1952, 1959), the reigning paradigm for estimating expected returns presupposed that the return that investors would require or the "cost of capital" of an asset depended primarily on the manner in which that

asset was financed (i.e., Bierman and Smidt, 1966). The CAPM's impact over the decades on the financial community has led several authors inclusive of Fama and French (2004) to suggest that the development of the CAPM marks "the birth of Asset Pricing models".

In recent years, however, before the arrival of the CAPM, the question of how expected returns and risk were related had been posed, but was still awaiting an answer. The global financial crisis, for instance, started to show its effects in the middle of 2007 and into 2008, when the world is shocked by the global markets crisis and large financial institutions collapsed. As a result, governments in even the wealthiest nations have had to come up with rescue packages to bail out their financial systems. On the other hand, many people are concerned that those responsible for the financial problems are the ones being bailed out.

### b) Purpose and Study Objectives

The main purpose and objective of this study is to provide a comprehensive literature review and identifying the main methodologies and research techniques that were used of the standard Markowitz model (CAPM) in order to design an algorithm that is based on optimal portfolio determinants approach during and post financial market crisis based on Jordan listed firms on Amman Stock Exchange (ASE). The model's empirical problems may reflect true failings. The key question arises here as to why Jordan has been selected as the case study. In this respect it is vital to appreciate the fact that, like most developing countries, Jordan possesses a stock market. The stock market was established in order to move Jordan economy from being a bank-based to a market-based economy and to contribute towards the capital-raising and capital-allocating process which is critical to increase the economy's growth. In some market-based economies the stock market is a key means of mobilising saving and reallocating resources, acting as a back-up and an assurance for domestic and foreign investment promotion and a significant source of capital formation and business financing. To answer the study question, the theoretical framework and variables are then empirically modified based on risk, return, beta of individual stock and portfolio, number of stocks, correlation coefficient between the assets in the portfolio and investment risk will be used as units of analysis.

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c) *Jordanian Financial Market*

The public trading in shares is there in Jordan since the 1930's which is the decade of establishing the first shareholding company in Jordan. In 1976, Jordan has officially established Amman Financial Market (AFM) which was converted in 1999 to Amman Stock Exchange (ASE) as a private non-profit institution that is responsible of operating the Jordan securities market.

Table 1 presents the main indicators of Jordan financial market as ASE consists between 243 and 277 companies operate in different market sectors. Financial services companies represent the majority of the market at a stake of 43%. However, the economy after a growth of 7.2% in 2008; witnessed a setback in 2009 as the growth rate declined to 2.3% and then increase to 2.7% in 2012 in real terms.

Table 1 : Jordan Financial Market Main Indicators (In US Dollar; Million)

| Indicators                 | 2008     | 2009     | 2010      | 2011      | 2012      |
|----------------------------|----------|----------|-----------|-----------|-----------|
| Market Capitalisation      | 35,844.1 | 31,889.1 | 30,995.34 | 26,998.88 | 26,714.63 |
| Value Traded               | 13,641.1 | 28,677.3 | 9,349.25  | 3,937.78  | 2,748.21  |
| Shares Traded              | 6,022.5  | 5,442.3  | 6,912.23  | 3,982.29  | 2,338.32  |
| ASE index                  | 2,533.5  | 2,758.4  | 2,373.6   | 1,995.1   | 1,957.6   |
| Turnover ratio (%)         | 42.8     | 80.0     | 4.7       | 2.6       | 2.6       |
| Real GDP Growth (%)        | 7.2      | 5.5      | 2.3       | 2.6       | 2.7       |
| Number of Listed Companies | 262      | 272      | 277       | 247       | 243       |

Source: Arab Monetary Fund (2014), and World Bank (2014).

II. STUDY THEORETICAL FRAMEWORK

a) *Discussion and the Study Background*

A number of theoretical studies have begun to show one of the fundamental tenants in financial theory is the CAPM as developed by Sharpe (1964), Lintner (1965) and Black (1972). The model assumes investors are risk averse and, when choosing among portfolios, they care only about the mean and variance of their one-period investment return. As a result, investors could eliminate some but not all risk by holding a diversified portfolio (Markowitz, 1952). Based on these arguments Nyberg (2008) suggests that assets with a riskier pay-offs pattern should offer higher expected return by cause of higher discounting, therefore, have a lower price, than the assets that are then similar but have less risky pay-offs. Zarif and Ghaemi (2003) have calculated in their empirical study that the asset's return depends on the market return with the linearity relationship between risk and expected return.

The works of Campbell and Viceira (2005) propose an empirical model that the changes in investment opportunities can alter the risk-return trade off of bonds, stocks and cash across investment horizons from the U.S. stock and bond markets. They conclude that the asset return predictability has important effects on the variance and correlation structure of returns followed by Yakob *et al.* (2005) find that the CAPM still holds in explaining the risk-return relationship in China and Malaysia. The significant positive risk parameter coefficient suggests a positive linear relationship, which indicates that investors are

compensated for assuming high risk. From another perspective Perez-Quiros and Timmermann (2002) observed that, additional returns expected from the stocks of exchange companies during recession, are affected significantly; however, the expected additional returns of the companies in the process of growth are not affected. Harris (1987) provides the index of stock market and Brock and Kleidon (1992) identified the limit between buying and selling for the behaviour of the S&P 500 index. In theory, Markowitz showed that, given either an upper bound on the risk that the investor is willing to take or a lower bound on the re-turn the investor is willing to accept, the optimal portfolio can be obtained by solving a convex quadratic pro-gramming problem.

b) *Measurement of Return and Risk*

In order to assess analysing the risk and return relationship, there are several methods being used. In Markowitz' model, an investors are assumed to measure the level of return by computing the expected value of the distribution, using the probability distribution of expected returns for a portfolio. Risk is assumed to be measurable by the variability around the expected value of the probability distribution of returns. The most accepted measures of this variability are the variance and standard deviation.

i. *Return*

Given any set of risky assets and a set of weights that describe how the portfolio investment is split, the general formulas of expected return for n assets are:

$$E(r_p) = \sum_{i=1}^n w_i E(r_i) \quad (i=1,2,3,\dots,N) \quad (1)$$

where:  $r_i, r_p$  the return on  $i^{th}$  security and portfolio  $p$ ;  $n$  the number of securities;  $w_i$  the proportion of the funds invested in security  $i$ ,  $E(r_i)$  the expectation of the variable in the parentheses; and  $\sum_{i=1}^n w_i = 1.0$ . The return computation is nothing more than finding the weighted average return of the securities included in the portfolio.

$$\text{Var}(r_p) = \sigma_p^2 = \sum_{i=1}^n \sum_{j=1}^n w_i w_j \text{Cov}(r_i, r_j) \quad (2)$$

Covariance can also be expressed in terms of the correlation coefficient as follows:

$$\text{Cov}(r_i, r_j) = \rho_{ij} \sigma_i \sigma_j = \sigma_{ij} \quad (3)$$

where  $\rho_{ij}$  = correlation coefficient between the rates of return on security  $i, r_i$ , and the rates of return on security  $j, r_j$ , and  $\sigma_i$ , and  $\sigma_j$  represent standard deviations of  $r_i$  and  $r_j$  respectively.

Therefore:

$$\text{Var}(r_p) = \sum_{i=1}^n \sum_{j=1}^n w_i w_j \rho_{ij} \sigma_i \sigma_j \quad (4)$$

Overall, the estimate of the mean return for each security is its average value in the sample period; the estimate of variance is the average value of the squared deviations around the sample average; the estimate of the

ii. Risk

The variance of a single security is the expected value of the sum of the squared deviations from the mean, and the standard deviation is the square root of the variance. The variance of a portfolio combination of securities is equal to the weighted average covariance of the returns on its individual securities:

covariance is the average value of the cross-product of deviations. The amount to which a two-risky-assets portfolio reduces variance of returns depends on the degree of correlation between the returns of the securities. Suppose a proportion denoted by  $w_A$  is invested in asset A, and the remainder  $1 - w_A$ , denoted by  $w_B$ , is invested in asset B. The expected rate of return on the portfolio is a weighted average of the expected returns on the component assets, with the same portfolio proportions as weights.

$$E(r_p) = w_A E(r_A) + w_B E(r_B) \quad (5)$$

The variance of the rate of return on the two-asset portfolio is:

$$\sigma_p^2 = (w_A \sigma_A + w_B \sigma_B)^2 = w_A^2 \sigma_A^2 + w_B^2 \sigma_B^2 + 2w_A w_B \rho_{AB} \sigma_A \sigma_B \quad (6)$$

where  $\rho_{AB}$  is the correlation coefficient between the returns on asset A and asset B. If the correlation between the component assets is small or negative, this will reduce portfolio risk. In addition, Figure 1 shows the opportunity set with perfect positive correlation a straight line through the component assets. There is no portfolio can be discarded as inefficient in this case, and the choice among portfolios depends only on risk preference. With any correlation coefficient less than 1.0 ( $\rho < 1$ ), there will be a diversification effect, the portfolio standard deviation is less than the weighted average of the standard deviations of the component securities. There are benefits to diversification whenever asset returns are less than perfectly correlated. Furthermore, correlation coefficients range between -1.0 and 1.0. When the correlation is 1.0, the two assets are perfectly positively correlated. While, when the correlation is -1.0, the returns are perfectly negatively correlated meaning that when one asset goes up, the other goes down and in a fixed proportion (plus a constant).

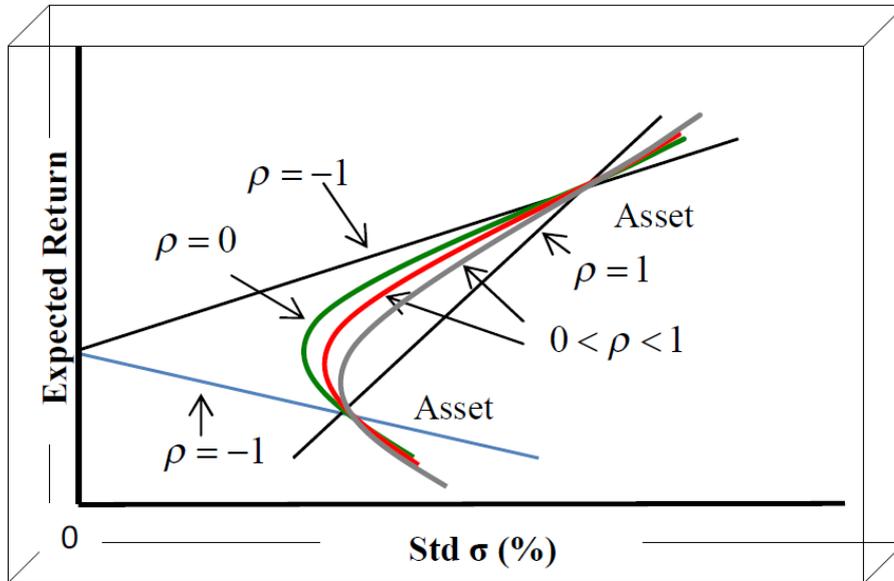


Figure 1 : Investment opportunity sets for asset A and asset B with various correlation coefficients.  
Source: authors, 2014.

Figure 2 displays that investors the entire investment opportunity set, which is the set of all attainable combinations of risk and return offered by portfolios formed by asset A and asset B in differing proportions. The curve DA represents all possible efficient portfolios and is the efficient frontier.

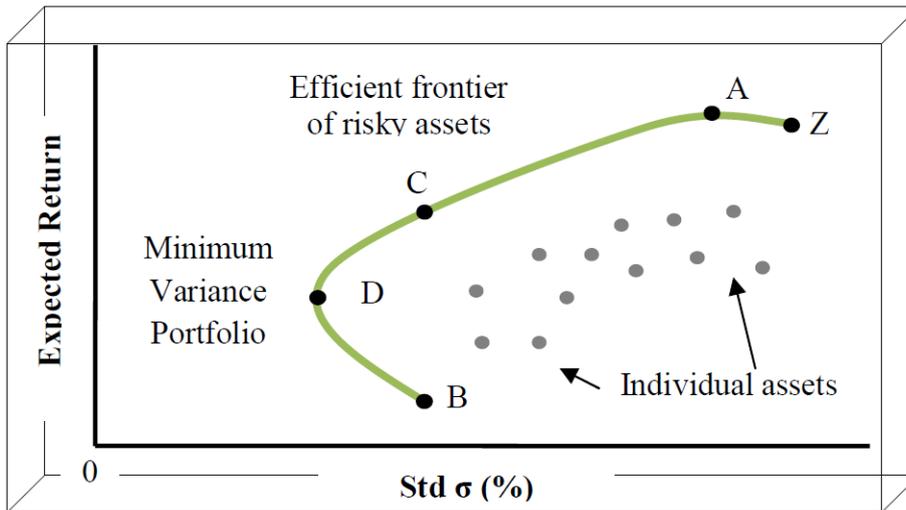


Figure 2 : Investment opportunity set for asset A and asset B.  
Source: authors, 2014.

Considerable research has focused on analysing the risk and return relationship, there are several methods being used. For instance Mosaddegh (2006) studied the relation of risk and size with return under different market conditions of the companies listed on Tehran Stock Exchange. Through their empirical result he found that the variable size could be used under up market conditions to explain the changes in return. That means large companies have higher returns. Basu (1983) finds that low earnings-price ratios (E/P) stocks help explain the cross section of US stocks

returns while high (E/P) stocks experiencing lower returns could be explained by the CAPM. Tang and Shum (2003) indicate that beta does not have significant relation with returns. Upon combining assets with low beta values, Weinraub and Kuhlman (1994) find that this combination could not minimise the portfolio's risk. Rai and Talangi (2004) contend that, stock return volatility means the achievement of real return different from the expectations. This volatility is also known as investment risk.

c) *Study Hypotheses Development*

Considering the transition period in the Jordanian economy in recent years, which resulted in important changes after financial market crisis, such as the emerging of the private sector, allowing the foreign companies to operate in Jordanian financial market and promoting investors to import and export, during which, these changes are expected to increase the local and foreign competition. However, The CAPM uses a stock's beta, in conjunction with the average investor's degree of risk aversion, to calculate the return that investors require, on that particular stock. Based on the above the

Null hypothesis and alternative hypothesis for the significance of the model are as follows:

$$\begin{cases} H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0 \\ H_1 : \beta_i \neq 0, i = 1, 2, 3, 4 \end{cases} \begin{aligned} &= \text{the model is not significant} \\ &= \text{the model is significant} \end{aligned}$$

III. EMPIRICAL METHODOLOGY

In the previous section, the literature review focused on the theoretical consideration "Theoretical Framework" relevant to the research problem, thereby offering a general overview of the literature and assisting in providing a framework for the theoretical and effects of financial development along with the stock market mechanism. With this knowledge, the aim of this section is to explain and justify the methods used in this study of risk, return, beta of individual stock and portfolio, number of stocks, correlation coefficient between the assets in the portfolio and investment risk from which it will be possible to generate empirical evidence and assess the volatility and reliability of findings.

The model draws on the portfolio theory as developed by Markowitz (1952, 1959) takes the form of an (Eq. 7) that predicts the value of outcome variable  $R_{i,t}$

present study aims at examining the following hypotheses.

*H1: Risk is a significant determinant of portfolio performance during financial market crisis.*

*H2: Stock size is a significant determinant of portfolio performance during financial market crisis.*

*H3: Asset correlation coefficient a significant determinant of portfolio performance during financial market crisis.*

*H4: Investment risk is a significant determinant of portfolio performance during financial market crisis.*

from a combination of prediction variables, each multiplied by its own respective coefficient, plus residual term. In its simplest form the CAPM is defined by the following equation:

$$R_{i,t} = \alpha_i + \beta_i X_{i,t-1} + \epsilon_i \tag{7}$$

where  $R_{i,t}$  represents the dependent variable;  $X_{i,t}$  the set of explanatory or predictor variables includes the financial variables (i.e., *risk, stock size, asset correlation, investment risk*),  $\alpha_i$  the constant term;  $\beta_i$  and the beta coefficient; given market clearing asset prices at  $t-1$ , investors agree on the joint distribution of asset returns from  $t-1$  to  $t$  (see Sharpe, 1964; Lintner, 1965); and  $\epsilon_i$  the random error term. If  $\beta_i$  values replace into the equation, the potential framework for this study is as shown in Eq.7 which can be defined as follows:

$$\text{Subject to : } \begin{cases} RETURN = \alpha_i + \beta_1 BETA + \beta_2 SIZE + \beta_3 ASSET + \beta_4 INVEST + \epsilon_i & (8) \\ E(R_i) = R_f + \beta_i [E(R_m) - R_f]; & (9) \\ \rho_{i,m} = \beta_i (\sigma_m / \sigma_i) & (10) \end{cases}$$

where *RETURN* refers to the price level of the stock ( $i$ ) the average return in month ( $t$ ). *RISK* refers to portfolio beta. *BETA* is calculated based on CAPM of each stock which represented as market risk. Furthermore, beta is the indicator for changes in price of stocks that respond to the market force as shown in Eq. 9: where,  $E(R_i)$  is the return on individual stock;  $R_f$  is the risk free rate of the return of the market (also known as the nominal, or quoted) rate;  $R_m$  is the expected return of the market;  $\beta_i$  is the market risk of the stock, where  $\beta_i = \frac{COV(R_i, R_m)}{VAR(R_m)}$ .

*SIZE* refers to the number of the stock; while *ASSET* is the asset correlation coefficient which measures the correlation between the assets in the portfolio according

to Eq. 10. Is utilised since it gives a number between -1 and +1; a correlation of -1 or +1, which indicates a perfect correlation, negative, respectively, between two variables (see Figure 1); where  $\rho_{i,m}$  is the correlation coefficient;  $\sigma_m$  is standard deviation of market or ASEI;  $\sigma_i$  is standard deviation of stock and  $\beta_i$  is the market risk of the stock. *INVEST* refers to stock return volatility known as investment risk.

The argument that the global financial crisis that started in advanced economies spreading to emerging markets and low-income countries has been reviewed, as have various empirical studies which have examined the relationship between CAPM and stock market indicators. The CAPM model assumes a linear

relationship between the expected return in risky asset and its  $\beta$  is an applicable and sufficient measure of risks that captures section of average return, that is, that assets can only earn a high average return if they have a high market  $\beta$ . Furthermore,  $\beta$  drives average returns due to  $\beta$  measures how much the inclusion of additional stock to a well-diversified portfolio increases the inherent risk of volatility from changing values.

#### IV. DATA ANALYSIS

The data were collected by ASE and income statements for the financing choice of firms listed with a market capitalisation, which are analysed from 2008 to 2012. The records were divided to two categories. The first category included the years 2008 to 2009 which existed before the appearance of the international financial market crisis, while the second category included the financial records of the post financial market crisis period from 2010 to 2012. The firm sample contains panel data dynamic framework for 59 sample companies were chosen throughout three different sectors (financial, industrial and services) listed in the ASE for which a continuous data set exists over the sample period. This study uses the secondary data in

term of the stock's daily closing prices of the last day of the month. The data were obtained from two main sources; Jordanian stock market website and the DataStream. Besides, the Amman Stock Exchange Index (ASEI) is chosen as the benchmark in analysing the risk and return for each stock from the different sectors.

##### a) Descriptive Findings

Having outlined the collection and preliminary screening processes in respect of the data in the previous discussion, the study now focuses upon the analysis of that data. In order to discuss the results obtained from the secondary data, Table 2 illustrates that descriptive statistics for the study variables were measured in this research, followed by the *mean* as a measure of central tendency, *standard deviation* as a measure of distribution spread, *minimum* and *maximum* values of all variables for During financial market crisis and Post financial market crisis to check for each variable's normality<sup>1</sup>. In order to generalise the findings from regression analysis, some assumptions have to be met. One of the initial assumptions is the variable type. All variables must be metric or categorical with two categories.

Table 2 : Descriptive Statistics

| Independent Variables | During financial market crisis (simple period 2008-2009) |        |        |        | Post financial market crisis (simple period 2010-2012) |        |        |        | Tolerance 1/VIF | VIF  |
|-----------------------|--|--------|--------|--------|--|--------|--------|--------|-----------------|------|
|                       | Mean   | Min    | Max    | St. de | Mean   | Min    | Max    | St. de |                 |      |
| RISK                  | 0.89   | -0.65  | 1.12   | 0.12   | 0.72   | 0.49   | 1.03   | 0.18   | 0.35            | 1.26 |
| SIZE                  | 179.99   | 122.05 | 292.00 | 102.97 | 201.53   | 145.06 | 305.12 | 113.82 | 0.77            | 2.19 |
| ASSET                 | 0.07   | 0.05   | 0.52   | 0.09   | 0.12   | 0.10   | 0.62   | 0.08   | 0.81            | 2.10 |
| INVEST                | 1.08   | -0.66  | 2.55   | 0.63   | 89.78  | -0.42  | 1.00   | 0.48   | 0.42            | 2.09 |

Source: Data and Summary Statistical Analysis 2014

There are two common tests to assess the existence of the multicollinearity; they are the Variance Inflation Factor (VIF) and its inverse; the Tolerance value. The VIF values range from 1.060 to 1.231, all well below 10, the value suggested by Myers (1990). Tolerance values range from 0.35 to 0.81 (see Table 2). None should be below 0.1, since tolerance = 1/VIF, also, Menard (1995) suggests that values below 0.2 are cause for concern. The average of the VIF values = 1.91. It is suggested by Bowerman and O'Connell (1990) that this should be no greater than 1. Therefore, this is indicating that *multicollinearity* problems may occur in this backward elimination model. As Table 2 shows,

there is no high correlation between any of the independent variables and also from Table 2 it can be seen that the values of VIF do not exceed the acceptable level of 10, with no values of tolerance below the recommended level of 0.1. Accordingly, there is no evidence to be found for the existence of multicollinearity. Such coefficient does not matter since it is less than 0.5 and not significant at conventional levels. Findings from Table 3 illustrate that, *risk* and *asset* correlation were found to be significant and positively correlated to portfolio return. These results imply that portfolio return is higher wherever there is high risk; high asset correlation stock comes from different sectors. However, *size* and *investment* shown a significant and negative effect to return since high number of stock reduces the portfolio risk. This is consistent with Elfakhani and Zaher (1998). This means that a possible explanation for this higher risk-adjusted returns than a portfolio with high volatility equities (like illiquid penny stocks).

<sup>1</sup> Normality provides the degree to which distribution of sample data corresponds to a *normal distribution*, where normal distribution is a theoretical probability distribution in which the horizontal axis represents possible values of variables and the vertical axis represents the probability of those values occurring. Scores on the variables are clustered around the mean in a symmetrical, abnormal pattern known as the symmetrical bell-shaped or frequency curve (Hair *et al.*, 2005: 38).

Table 3 : Correlation Matrixes

|        | RETURN   | RISK     | SIZE   | ASSET  | INVEST |
|--------|----------|----------|--------|--------|--------|
| RISK   | 0.231**  | 1.000    |        |        |        |
| SIZE   | -0.710*  | -0.029   | 1.000  |        |        |
| ASSET  | 0.089**  | -0.264** | -0.290 | 1.000  |        |
| INVEST | -0.144** | -0.098** | -0.019 | -0.023 | 1.000  |

Note: \*\*Significant at  $p < 0.01$  and  $p < 0.05$  [Sig. (2-tailed)].

Source: Data and Summary Statistical Analysis 2014.

b) Hypothesis Testing

The aim of this section is to present the overall multiple regression model and, accordingly, explain the types of financial indicators (independent/predictor variables) and determinant of portfolio return performance (outcome variables). The output of the SPSS test, as depicted in Table 4, reveals very significant information about the model fit under study with those accepted and rejected hypotheses. In this context, the t-test is derived in order to ascertain whether a B value (between brackets) is significantly dissimilar from zero. Consequently, t-tests are considered as measures of whether the predictor is making a significant contribution to the model based on level of significance ( $\alpha$ ). Critical t-values can be expressed based on the type of test used. Therefore, direction relationships are based upon the hypothesis of addressing the effect on predictors as to the extent of compliance with planning standards. For the 0.05 a significant level, the critical t-values are greater than 1.645 for a one-tailed test and 1.96 for a two-tailed test. Indeed, a two-tailed test of significance was utilised for this study.

Results from the multiple regression analysis, as displayed in Table 4, indicated that models were reflecting a significant relationship between independent and dependent variables in most areas. The conclusion from this analysis is that the coefficient of risk during financial market crisis is significant and negative while after the financial market crisis period, the coefficient of risk turn to be significant and positive to portfolio return. The decrease of low stock price occurred after the formal announcement of the crisis in the U.S. after the mid of 2008. Patro *et al.* (2000) expect that companies with high dividend payments maybe less risky. If a company has their value tied to higher future growth, rather than to current dividends, it may be more sensitive to market performance. The result from aftermath financial market crisis is also supported by Bakhshandeh (1990). Thus, these results support hypothesis H1. However, the previous results are inconsistent with this result to that find by Tang and Shum (2003) who indicate that beta does not have significant relation with returns.

Table 4 further shows that the coefficient of size shows that size has a significant negative relationship with determinant of portfolio return performance during and post financial market crisis. The results imply that the

higher number of stock in a portfolio reduce the risk of portfolio. Consistent with the portfolio theory, low risky portfolio results in low portfolio return performance thus size in this study show a significant and negative result to portfolio return performance. This result is supported by the finding by Elfakhani and Zaher (1998). These results, therefore, support hypothesis H2. The results also indicate that the asset factor shows that during financial market crisis it is significant and negative to portfolio return performance. On the other hand, sector gives a significant and positive estimation result to portfolio return performance. These results are consistent during and post financial market crisis for asset correlation and investment risk, therefore, hypothesis H3 and H4 are accepted. Klingebiel *et al.* (2001) found that the stock prices of companies were highly affected due to the Asian financial crisis. Most of stocks of companies dropped due to low exchange in the stock exchange markets. These results are similar to the results found in this research concerning the market stock price of industrial companies. It is interesting that all the different sector in Jordanian financial market, the effect of the international financial crisis was very diminutive because of the limited exporting goods abroad as these companies depend on local market.

Table 4 : Regression Results Analysis

| Independent Variables | t-test   |  | Hypothesis     |        |                      |
|-----------------------|--|--|----------------|--------|----------------------|
|                       | During financial market crisis (simple period 2008-2009) | Post financial market crisis (simple period 2010-2012) |                |        |                      |
| <b>Constant</b>       | 0.189<br>(5.698)**                                       | 0.654<br>(5.722)*                                      | Expected       |        | Comment              |
| <b>RISK</b>           | -0.034<br>(-4.162)**                                     | -0.040<br>(-5.008)**                                   | H <sub>1</sub> | -<br>+ | Rejected<br>Accepted |
| <b>SIZE</b>           | -0.192<br>(-2.542)*                                      | -0.142<br>(-2.052)**                                   | H <sub>2</sub> | -<br>+ | Rejected<br>Accepted |
| <b>ASSET</b>          | -0.145<br>(-1.878)**                                     | -0.196<br>(-2.587)*                                    | H <sub>3</sub> | -<br>+ | Rejected<br>Accepted |
| <b>INVEST</b>         | -0.025<br>(2.427)*                                       | 0.019<br>(2.078)**                                     | H <sub>4</sub> | -<br>+ | Rejected<br>Accepted |
| R                     | 0.563  | 0.671  |                |        |                      |
| R <sup>2</sup>        | 0.389  | 0.415  |                |        |                      |
| F-value               | 4.956**  | 5.592**  |                |        |                      |
| Observations          | 29   | 30   |                |        |                      |

## V. CONCLUSION

The main aim of this paper was to provide a better understanding of the theoretical framework which has been developed from the CAPM that could provide a scientific base for possible causes of impairment application, and presents a conceptual framework showing the determinant of portfolio return performance during and post financial market crisis. Apart from further analysing the findings presented and discussed, this part has considered some significant outcomes of the potential portfolio return performance in the light of various contributions based on prior analysis and the evidence reviewed earlier from the literature. There is reason to believe that risk factor shows a difference pattern to portfolio return performance during these two periods where risk is negative and significant during financial market crisis but positive and significant after the financial market crisis. By employing this empirical methodology, during financial market crisis, risk is more vulnerable. Following this, the higher the portfolio return performance shows a lower risk and this contradicts the risk-return trade-off theory. This could happen due to market players had become over cautious on the market risk and unsystematic risk. Based on the results of this research, the investment risk tolerance asset allocation among the portfolios managed to strike a balance between the risk appetites determined by the investors. Furthermore the investors' maturity and serenity among Jordanian financial market investors help to periodically rebalance the portfolio risk and return despite the sharp decline in share prices.

Further findings of this study provide evidence that determinant of portfolio return performance could vary with the market stability and condition during financial

market crisis, portfolio risk is negative to the return implying that the lower the risk the higher the return but when the market turmoil changed, the risk get back to be positively to return. Furthermore, by being aware of the particular type of risk an investment is exposed to, investors can make better decisions on what is appropriate for their situation and portfolio especially in crucial times. The recession of production in most companies did not appear through decreasing the working labour of these companies or the announcement of bankruptcy of any of the industrial companies in Jordan. Further research is needed in order to provide a clear understanding of the framework that should be conducted to analyse the impact of macroeconomic factors on beta value in the long run. Furthermore, paper of the proposed model in other emerging countries could be performed in order to raise further explanation of the model and to reveal more generalised findings. Using the impact of other financial factors such as; earnings variability, accounting beta and liquidity of the shares (trading volume) on beta value.

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## Measurement of Brand Values of Private Commercial Banks of Bangladesh

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**Abstract-** Brand is the name, associated with one or more items in the product line, which is used to identify the source of character of the item(s). It is important that organizations work hard to create strong brands and nurture them carefully. There are multiple competitive advantages associated with strong brands. So, brands should be valued like any other assets of the company. There are several methods for valuing brands currently in force that range from the simplistic to the sublime. Top-down Approaches, Bottom-up Approaches, Combination Approaches, Economic Value Approach, Formulary Approaches, and Economic Value Added Approaches are some popular methods of brand valuation. The brand values of 28 private commercial banks of Bangladesh and their ranks according to their brand values are discussed in this paper. All the data of this report are secondary data and they have been collected from the Annual Reports of the sample banks.

**Keywords:** bank, brand, value, eav, customer, measurement.

**GJMBR-C Classification :** JEL Code: E50, F65



*Strictly as per the compliance and regulations of:*



# Measurement of Brand Values of Private Commercial Banks of Bangladesh

Md. Ariful Islam <sup>α</sup>, Salahuddin Yousuf <sup>σ</sup> & Proshenjit Ghosh <sup>ρ</sup>

**Abstract-** Brand is the name, associated with one or more items in the product line, which is used to identify the source of character of the item(s). It is important that organizations work hard to create strong brands and nurture them carefully. There are multiple competitive advantages associated with strong brands. So, brands should be valued like any other assets of the company. There are several methods for valuing brands currently in force that range from the simplistic to the sublime. Top-down Approaches, Bottom-up Approaches, Combination Approaches, Economic Value Approach, Formulary Approaches, and Economic Value Added Approaches are some popular methods of brand valuation. The brand values of 28 private commercial banks of Bangladesh and their ranks according to their brand values are discussed in this paper. All the data of this report are secondary data and they have been collected from the Annual Reports of the sample banks.

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## I. INTRODUCTION

Brand plays a strategic role in the success of any business. Relative brand values can be significant in determining the acquisition values. Brands increase consumer willingness to take the risk of buying even premium products if they are convinced that it is from a credible source and they trust the company. Along with a brand name a logo or symbol also help people to recognize the product. It is for this reason that the brand is often registered. Once registered it becomes the property of the company. The trade mark is a very valuable asset of a company and companies spend valuable resources in legal fights to protect themselves when competitors create confusing symbols and trademarks. Consumer decision making is made simpler when the consumer is familiar with the brand because the consumer develops confidence and faith in such brands.

The importance of branding is brought into sharper focus by the fact that in terms of services that banks offer, there is no much scope for differentiation. So the key to acquiring and retaining customers in order to maintain long term profitability and competitive edge

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lies in creating and maintaining a favorable brand image in the minds of the target customers.

## II. OBJECTIVES OF THE RESEARCH

This research is conducted for the following reasons which will contribute to banking business in Bangladesh:

- To find out the variables which affect the brand value of bank.
- To measure brand value of different banks.
- To identify the problems faced by banks in establishing brand.
- To offer some guidelines to extend branding in banking business of Bangladesh

## III. METHODOLOGY

### a) Secondary Source

The data and findings presented in this project paper are mostly taken from secondary sources. The information was gathered from the magazines, literature, books, reports and also journals. In order to update the information for the findings, the Internet was used as an important source.

### b) Sampling and Data Collection

30 private commercial banks including Islami banks of Bangladesh were selected as sample of the research. Among the 30 Private commercial banks, ICB Islami Bank and Bangladesh Commerce Bank were deducted due to unavailability of information.

### c) Tools for Analysis

The following methods will be used in the research:

Economic Value Added Method: is used to measure the brand value of the banks.

Brand Value = (Profit per the Income Statement - Capital Charge) x "Branding Index" x Implied Multiplier.

### d) Spearman's Rank Correlation

Spearman's rank correlation coefficient allows identifying easily the strength of correlation within a data set of two variables, and whether the correlation is positive or negative (whether the slope of the corresponding line is positive or negative). It is calculated by the following formula:

$$r_{franks} = 1 - \frac{6\sum D^2}{n(n^2 - 1)}$$

It ranges from -1 to +1, i.e., -1 indicates that there is perfectly negative correlation and +1 indicates that there is perfectly positive correlation.

#### IV. LITERATURE REVIEW

The central concern of brand building literature experienced a dramatic shift in the last decade. Branding and the role of brands, as traditionally understood, were subject to constant review and redefinition. A traditional definition of a brand was: "the name, associated with one or more items in the product line, which is used to identify the source of character of the item(s)" (Kotler 2000). Before the shift in focus towards brands and the brand building process, brands were just another step in the whole process of marketing to sell products. "For a long time, the brand has been treated in an off-hand fashion as a part of the product" (Urde 1999, p. 119). Kotler (2000) mentions branding as "a major issue in product strategy" (p. 404). As the brand was only part of the product, the communication strategy worked towards exposing the brand and creating brand image. Aaker and Joachimsthaler (2000) mention that within the traditional branding model the goal was to build brand image; a tactical element that drives short-term results. Kapferer (1997) mentioned that "the brand is a sign - therefore external- whose function is to disclose the hidden qualities of the product which are inaccessible to contact" (p. 28). The brand served to identify a product and to distinguish it from the competition. "The challenge today is to create a strong and distinctive image" (Kohli and Thakor 1997).

Literature gives several definitions of the term brand. The common themes are that a brand is more than just a combination of a name, a design, a symbol or other features that differentiate a good or a service from others. (Dibb 1997). It is a unique set of tangible and intangible added values that are perceived and valued by the customer. The American Marketing Association (AMA) definition of a brand is "a name, term, sign, symbol, or design, or a combination of them, intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competitors". Within this view, as Keller (2003a) says, "technically speaking, then, whenever a marketer creates a new name, logo, or symbol for a new product, he or she has created a brand". He recognizes, however, that brands today are much more than that. As can be seen, according to these definitions brands had a simple and clear function as identifiers.

Kapferer (1997) mentions that before the 1980's there was a different approach towards brands.

"Companies wished to buy a producer of chocolate or pasta: after 1980, they wanted to buy KitKat or Buitoni. This distinction is very important; in the first case firms wish to buy production capacity and in the second they want to buy a place in the mind of the consumer" (p. 23). In other words, the shift in focus towards brands began when it was understood that they were something more than mere identifiers. Brands, according to Kapferer (1997) serve eight functions shown in Table 1.1: the first two are mechanical and concern the essence of the brand: "to function as a recognized symbol in order to facilitate choice and to gain time" (p. 29); the next three are for reducing the perceived risk; and the final three concern the pleasure side of a brand. He adds that brands perform an economic function in the mind of the consumer, "the value of the brand comes from its ability to gain an exclusive, positive and prominent meaning in the minds of a large number of consumers" (p. 25). Therefore branding and brand building should focus on developing brand value.

Kapferer's view of brand value is monetary, and includes intangible assets. "Brands fail to achieve their value-creating potential where managers pursue strategies that are not orientated to maximizing the shareholder value" (Doyle 2001a, p. 267). Four factors combine in the mind of the consumer to determine the perceived value of the brand: brand awareness; the level of perceived quality compared to competitors; the level of confidence, of significance, of empathy, of liking; and the richness and attractiveness of the images conjured up by the brand.

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Concerning the brand management process as related to the function of a brand as an identifier, Aaker and Joachimsthaler (2000) discuss the traditional branding model where a brand management team was responsible for creating and coordinating the brand's management program. In this situation, the brand

manager was not high in the company's hierarchy; his focus was the short-term financial results of single brands and single products in single markets. The basic objective was the coordination with the manufacturing and sales departments in order to solve any problem concerning sales and market share. With this strategy the responsibility of the brand was solely the concern of the marketing department (Davis 2002). In general, most companies thought that focusing on the latest and greatest advertising campaign meant focusing on the brand (Davis and Dunn 2002). The model itself was tactical and reactive rather than strategic and visionary (Aaker and Joachimsthaler 2000). The brand was always referred to as a series of tactics and never like strategy (Davis and Dunn 2002).

Kotler.P in his book Marketing Management said, brands identify the maker, simplify product handling, organize accounting, offer legal protection, signify quality, create barriers to entry, serve as a competitive advantage, and secure price premium

Since the late 1990s, the need to establish dollar valuations for Intellectual Capital Assets has driven the development of a handful of valuation methods. These methods are nearing formal recognition by the Financial Accounting Standards Board (FASB), and are headed toward inclusion in the standard repertoire of the Generally Accepted Accounting Principles (GAAP).

Essentially, there are four approaches to valuing a Brand, and one or more of them may be applicable in any individual instance. The (4) four approaches are, Cost Approaches, Market Approaches, Income Approaches, Brand Strength Assessment Approaches. Which method or methods are the right method(s) to use depends greatly upon the individual situation and the perspective from which the valuation is to be addressed. Invariably, Brands must be looked at from all approaches.

Initial research into the valuation of brands originated from two areas: marketing measurement of brand equity, and the financial treatment of brands. The first was pioneered by Keller (1993), and included subsequent studies by Lasar (1995) on the measure of brand strength, by Park and Srinivasan (1994) on evaluating the equity of brand extension, Kamakura and Russell (1993) on single-source scanner panel data to estimate brand equity, and Aaker (1996) and Montameni and Shahrokhi (1998) on the issue of valuing brand equity across local and global markets.

The financial treatment of brands has traditionally stemmed from the recognition of brands on the balance sheet (Barwise et.al. 1989, Oldroyd, 1994, 1998), which presents problems to the accounting profession due to the uncertainty of dealing with the future nature of the benefits associated with brands, and hence the reliability of the information presented. Tollington (1989) has debated the distinction between

goodwill and intangible brand assets. Further studies investigated the impact on the stock price of customer perceptions of perceived quality, a component of brand equity (Aaker and Jacobson 1994), and on the linkage between shareholder value and the financial value of a company's brands (Kerin and Sethuraman, 1998).

Simon and Sullivan (1993) developed a technique for measuring brand equity, based on the financial market estimates of profits attributable to brands. The co-dependency of the marketing and accounting professions in providing joint assessments of the valuation of brands has been recognized by Calderon et al (1997) and Cravens and Guilding (1999). They provide useful alternatives to the traditional marketing perspectives of brands (Aaker, 1991; Kapferer, 1997; Keller, 1998; Aaker&Joachimsthaler, 2000).

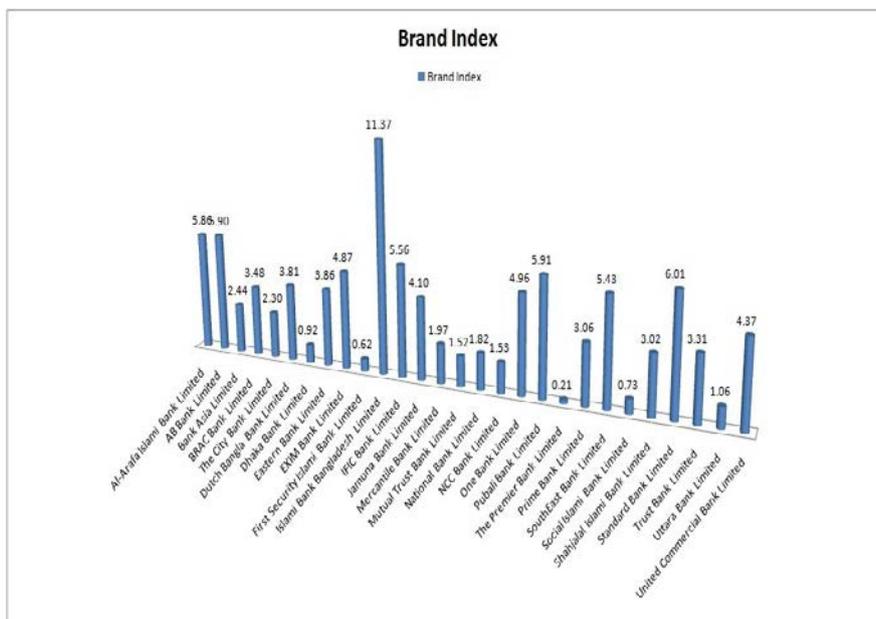
The debate over the appropriate method of valuation continues in the literature (Perrier 1997) and in the commercial world. The commercial valuation of brands has been led by Interbrand, a UK-based firm specializing in valuing brands, Financial World, a magazine which has provided annual estimates of brand equity since 1992, and Brand Finance Limited, a British consulting organization. These organizations utilize formulae approaches, and highlight the importance of brand valuation in the business environment.

## V. DATA ANALYSIS

For calculating the brand value all the financial data are of year 2010. Most of the information is collected from annual reports of 28 banks.

Brand index is an important variable for estimating brand value. The spearman's rank correlation value between brand index and brand value is 0.69, which means there is a strong positive correlation between these two variables. Banks which have higher total revenue have higher brand index. For example, Islami Bank Bangladesh Limited had highest revenue BDT 64850.80 million in 2010 and it had highest brand index 11.37 and The Premier Bank Limited had lowest revenue BDT1185.37 million and brand index is 0.21.

The Following chart shows the brand index of all the banks:



Implied multiplier is another important variable for calculating brand value. But it has less impact on brand value as the values of implied multiplier are very close of all banks.

Net income after tax is also an important variable for determining brand value. The spearman's rank correlation value between net income after tax and brand value is 0.69, which means there is a strong positive correlation between these two variables. For example, IBBL had highest net income after tax BDT 4485.48 million and First Security Islami Bank had lowest net income after tax BDT 548.60 million. The spearman's rank correlation value calculation between net income after tax and brand value is shown in Appendix F.

After calculating the brand values of all the private commercial banks of Bangladesh, it is found that Islami Bank Bangladesh Limited has the highest brand value, which is BDT 33916.52 million. AB Bank Limited and Southeast Bank limited have 2nd and 3rd highest brand values of BDT 14573.25 million and BDT 9515.08 million respectively. On the other hand, The Premier Bank Limited has the lowest brand value of BDT 38.22 million. Social Islami Bank Limited has the 2nd lowest brand value of BDT 50.56 million. Brand value calculation is shown in Appendix.

After calculating the brand value, 28 banks are ranked according to their brand values. It is shown in the following table:

| Name of the bank               | Brand value (million) | Rank |
|--------------------------------|-----------------------|------|
| Islami Bank Bangladesh Limited | 33916.52              | 1    |
| AB Bank Limited                | 14573.25              | 2    |
| SouthEast Bank Limited         | 9515.08               | 3    |
| EXIM Bank Limited              | 7907.67               | 4    |
| National Bank Limited          | 6935.70               | 5    |
| Prime Bank Limited             | 6563.81               | 6    |
| BRAC Bank Limited              | 5726.87               | 7    |
| Al-ArafalIslami Bank Limited   | 4918.61               | 8    |
| Standard Bank Limited          | 4263.59               | 9    |
| Dutch Bangla Bank Limited      | 4038.92               | 10   |
| Eastern Bank Limited           | 3990.46               | 11   |
| Pubali Bank Limited            | 3523.88               | 12   |
| IFIC Bank Limited              | 3507.34               | 13   |
| ShahjalalIslami Bank Limited   | 3261.60               | 14   |
| Jamuna Bank Limited            | 2287.30               | 15   |
| NCC Bank Limited               | 2112.99               | 16   |
| Trust Bank Limited             | 1928.92               | 17   |
| Bank Asia Limited              | 1520.00               | 18   |
| Mercantile Bank Limited        | 1261.17               | 19   |

|                                    |        |    |
|------------------------------------|--------|----|
| Mutual Trust Bank Limited          | 895.45 | 20 |
| One Bank Limited                   | 785.87 | 21 |
| Dhaka Bank Limited                 | 771.39 | 22 |
| United Commercial Bank Limited     | 515.48 | 23 |
| First Security Islami Bank Limited | 285.79 | 24 |
| Uttara Bank Limited                | 167.48 | 25 |
| The City Bank Limited              | 75.27  | 26 |
| Social Islami Bank Limited         | 50.56  | 27 |
| The Premier Bank Limited           | 38.22  | 28 |

*There is a large difference from the brand value of Islami Bank Bangladesh Limited to AB Bank Limited. The brand value of AB Bank Limited is 42.97% of the brand value of Islami Bank Limited. The brand value of The Premier Bank Limited is 11.27% of the brand value of Islami Bank Limited.*

## VI. RECOMMENDATION & CONCLUSION

### a) Recommendation

Customers by nature are cognitive misers. They do not want to do a lot of research and find an out which bank is the best and which one is best suited for their needs. Incredible as it might seem, the choice of banker decision often follows no rational criteria. In such a scenario, any bank will do well to build a strong and highly identifiable brand for it in order to angle the decision making of the consumers in its favor. A strong brand is like an imaginary suggestion in the head of a person who is in need of any type of banking service and simplifies the decision making process for the customer.

There are ways to improve a brand from advertising such as viral campaign (more trustworthy), online ads, print ads and commercials. Another way is to improve a product or services that will reinforce the brand. This is a good way to promote a brand by always being in the cutting edge or "customer's first image".

The qualities of a products and services will reinforce the brand. Advertise as much as possible to spread that message and make it into a picking brand. Branding doesn't only benefit the business but a customer as well. The brand a customer chooses reflects who he is and expresses himself on what he likes to do and be able to join the community of like-minded people. Branding is a win: win situation for both the businesses and the loyal customers. So, all the banks should try to increase their brand values.

### b) Conclusion

The discount rate, growth rate are often the most neglected issues in brand valuation, yet they play an important role in the ultimate valuation of the brand. Most models make use of the discount rate and the growth rate in order to determine an appropriate multiplier that needs to be applied to the estimated annual value of brand earnings.

It is relatively easy to manipulate the results of measuring brand equity in order to deliver any value that

management wishes. The only way to prevent this abuse is to understand the objective of the valuation and to use the appropriate assumptions in order to derive a fair value. No single model will give all the answers to a correct valuation.

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## Impact of Risk on the Degree of Banking Safety in Traditional Jordanian Banks (2000-2011)

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**Abstract-** This study aimed to measure the impact of banking risk which represented "liquidity risk, credit risk, and interest rate risk" on the degree of safety for traditional (commercial) Jordanian banks. A sample of Jordanian traditional banks was used during the period (2000-2011). The methodology which used to analyze the impact of banking risks on the degree of safety in commercial banks is the multiple linear regression. The study hypotheses were tested independently for each type of risk. The results showed a statistically significant relationship between bank risk and the degree of safety for Jordanian commercial banks. The study recommended that the risk management should be subject to a continuous surveillance by the management, with focus on credit risk. Also, sources and usages of funds should be identified and determined, considering the main targets for banks. ( I.e. liquidity, profitability and safety). Developing appropriate mechanisms to deal with the bank risk, the statement of seriousness on banks and continues development of regulatory controls are also recommended.

**Keywords:** bank, risk, safety, traditional banks.

**GJMBR-C Classification :** JEL Code: G21, E59



*Strictly as per the compliance and regulations of:*



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# Impact of Risk on the Degree of Banking Safety in Traditional Jordanian Banks (2000-2011)

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## I. INTRODUCTION

The banking system considers the backbone in the economic life of countries because the important role and vital to support the economy and provide credit facilities for individuals, economic sectors and the government, in addition to its role as a financial intermediary between the various economic sectors, also represents a fundamental objective for conventional banks, like other entities aims to maximize their profits, which maximize the wealth of the owners and increasing profitability, through Bank's investment in assets to generate the greatest return with lowest level of risk, this process leads to maximize the wealth of the owners, but investments are usually exposed to a significant risk like capital losses. Through the functions of traditional banks, they are exposed to banks risk that will affect the achievement of the primary objective of maximizing profitability which was able for conventional banks that contribute some extent to finance investment projects in various sectors of the economy, where funded several development projects, On the other hand there are many obstacles faces banks through financing projects in different sectors, the great risk comes from analyzing the impact of banking risk (capital risk, interest rate risk, liquidity risk, credit risk) on the safety of traditional Jordanian banks.

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The importance of the study comes from the fundamental objective of conventional banks, which seeks to achieve maximizing profitability, the risk is part of traditional banks, and given the importance for banks in the national economy, The study also aims to identify the impact of banking risks (liquidity risk, credit risk and interest rate risk) on the degree of safety for traditional banks, also aims to identify the magnitude of these risks that raised by measuring the impact of these risks on the degree of safety for traditional Jordanian banks, through analysis the annual financial statements for the studying sample during the period (2011-2000). The problem of the study appears through answering the following questions :

- 1 What is the impact of liquidity risk on the degree of safety with conventional banks in Jordan.
- 2 What is the impact of the credit risk on the degree of safety with conventional banks in Jordan
- 3 What is the impact of interest rate risk on the degree of safety with conventional banks in Jordan.

## II. HYPOTHESES OF THE STUDY

The main Hypotheses: No statistically significant effect of the banking risks on the degree of safety for traditional Jordanian banks, that can be subdivided into the following sub-hypotheses

- 1 There is no statistically significant effect of liquidity risk on the degree of safety for traditional Jordanian banks.
- 2 There is no statistically significant effect of the credit risk on the degree of safety for traditional Jordanian banks.
- 3 There is no statistically significant effect of the interest rate risk on the degree of safety for traditional Jordanian banks.

## III. PREVIOUS STUDIES

*study Zaid Aezzki, (2012) entitled: "The impact of banking risks on the profitability for Yemeni commercial banks during the period 1999-2009."* The study aimed to identify the impact of banking risk (capital risk, interest rate risk, liquidity risk and credit risk) on the profitability of the commercial banks during the period (1999-2008) The importance of the study appeared from the objective of the commercial banks that seek to achieve the goal of maximizing profitability through carried out the functions of commercial banks,

measurement and analysis of banking risk, the impact of each bank alone, where application of this study on a sample of commercial banks during the study period, the study sample included five commercial banks were used model Stepwise multiple linear regression to test hypotheses on the level of each bank individually' using time series, and the results showed the presence of traces risks of banking on the profitability of the commercial banks at the level of each bank individually, at the level of banks' combined on different degrees, the capital risk led to decline the profitability of Bank for Reconstruction and Development, while there is no affect of capital risk on the profitability of other banks, either for credit risk, the decline has led to increased profitability at the National Bank of Yemen and Yemen Kuwait Bank and international Bank of Yemen, while contributed to increase credit risk for the commercial Bank of Yemen, as results of the study showed that the increases in interest rate risk led to the high profitability for National Bank of Yemen , while accompanied by an increased risk of high liquidity, profitability of international Bank of Yemen and Yemen Kuwait Bank. Also In a study of Ali Sahin, (2010) entitled: "practical measured of credit risk in Palestine commercial banks as analytical study of application." The aim of this study is to identify the most important variables that affect by risk degree of credit commercial banks in Palestine, the purpose was to measure those risks in accordance the basis of a fair and realistic for all installations of borrowers credit, the problem of the study appeared from Question "What is the proposed framework for measuring risk indicators of credit bank," also the search used the descriptive approach to reach reasonable results which supported the hypotheses, the study reached some results, mainly that the proposed framework to achieve measuring the risk of bank's credit, which serves the objectives of management and shareholders alike, also studying Shaheen, (2008) entitled: "influence of risk Management on the safety degree of the Palestinian banking system. " The study examined the impact of risk management on the safety of Palestinian banking system through analysis of the financial statements for the variables of the study", liquidity risk, credit risk, interest rate risk, capital risk, return on assets and that of a sample of banks", which consists of twelve banks during the period (1997-2008 ), and centered problem of the study proposed framework for measuring the impact of risk management on the banking safety for Palestinian banking system by using method of statistical analysis "panel data" and the application of the equation of appreciation for the safety of banking, the study found a positive relationship between the degree of safety with degree of liquidity, inadequate capital, interest rate fluctuations and the return on assets, also showed an inverse relationship between the degree of safety of banking and credit risk. at the study of al-Atrash, (2005) entitled: "The effect of

banking risks on the market value of shares for commercial banks of Jordan during the period 1989 - 2002. " The study aimed to test the impact of banking risk of (capital risk, interest rate risk, liquidity risk and credit risk) on the market value of shares for commercial banks, also the study applied on a sample from Jordanian commercial banks, which shares traded in Amman Stock Exchange, the study sample included (Arab Bank, Jordan Bank, Cairo Amman Bank, Jordan Kuwait Bank and the Jordan National Bank) during the period (1989 – 2002), the study used the descriptive and analytical method for quantitative data were used multiple linear regression method by Eviews program to test hypotheses on the level of each bank individually by using the time series. The study found a lack of effect for banking risks on the market value of shares for Arab Bank, and there is a variation impact of bank's risk on the market value of shares for other banks, but the interest rate risk increased to lower of market value of shares for National Bank of Jordan, Jordanian Kuwait Bank and Bank of Jordan. As for the credit risk had led to increase the market value of shares for Bank of Jordan. The study of Omer, (2004) entitled: "The banking risks and their impact on the credit facilities to the Jordanian commercial banks for the period 1988-2002." Where the study aimed to identify the impact of banking credit risks for commercial banks in Jordan for the period (1988-2002) an objective and analytical focused on the extent of credit facilities provided by commercial banks, the banking risks in terms of its aims and size, are identify the most important aspects of banking risks, manifestations, and standards, in addition to the identification of foundations for banking risk management, in order to avoid or reduce its negative effects on the operation of credit, and addressed to non-performing loans as a result of the banking risks, the analysis of data used in the study based on each of the descriptive and analytical approach by using the (spss) program, the study sample included four Jordanian commercial banks (Arab Bank, National Bank, Cairo Amman Bank and Arab Banking Corporation), the study results showed that there is a disparity in the impact of the risks on credit facilities, The results indicate that the low liquidity risk leads to increase the size of the total facilities at banks, reducing risk of capital leads to increase the size of credit facilities, the study recommended to improve the level of their risk management. study Khryosh et al (2004) entitled: "The factors affecting degree of safety for Jordanian banks." The study aimed to identify factors that affect degree of safety in Jordanian commercial banks while collecting data by financial statements of banks in addition to the reports issued by the Central Bank of Jordan during period (1992 - 2002), processing data used a regression multiple linear, the results showed the existence of a positive relationship statistically significant between degree of safety and the rate of return on equity, the rate

of return on investment, and also pointed to the existence of an inverse relationship between degree of safety and liquidity risk, either the relationship between degree of safety and credit risk was counterproductive, also required to reduce the proportion of investment in risky assets, while the relationship between degree of safety and credit risk was counterproductive, also showed lower rate of property rights to hazardous assets, low-margin of safety in an interview the investment risks of commercial banks, the study recommended to find a balance between safety and all of the risk, liquidity risk, capital and investment risks through compliance with regulations and laws by central bank, especially with regard to the legal financial liquidity and proportion of credit bank, the proportion of equity divided by total assets to find a balance between safety for each of the rate of return on equity and the rate of return on investment. *Study of Simone Varotto (2011) "Liquidity risk, credit risk, market risk and the capital of banks.* Said the aim of this paper is to examine the relationship between liquidity and credit risk, where they were employing the results of this study to assess the statement is responsible for the additional risks (IRC) and the spin problem of the study focus on the following question: " is there a relationship between liquidity risk, credit risk, market risk and the bank's capital," according to the rules and suggestions of modern Basel Committee, the study showed that there is an agreement between the decisions of the Basel Committee - the second and the value of private capital for commercial banks through sample of the bond's profits, although the credit risk of commercial banks may be significant, it can be absorb capital market risk - related to losses in scenarios aggravating. *Jose, M & Amyuatosh; and Uday Rajan, (2010) "Security, investments and the value of companies".* This study aimed to identify the impact of policy on corporate finance, performance and value of companies, where the study shed light on the environment macroeconomic ticking off during the crisis the local currency of Brazil in

1999, problem of study must answer the following question: " Is there an impact for policies of finance in Brazil on the performance of these companies and their value," then the study examined changes in the exchange rate and its impact on the safety and the study used (fixed effect) as a method used in the analysis, the study concluded that there are significant relationship and positive correlation between market value and the facility's amount, the decisions of operating safety with profit margin, derivative contracts for the currency of Brazil and capital spending, while the results indicated that lack of significant facility size, the sales growth with security decisions, as the study reported that users of derivative contracts and security system invest more users for decades derivative.

a) *The most important characteristic of this study*

The most important characteristic of this study is to measure the impact of banking risks, especially (liquidity risk, credit risk and interest rate risk) on the safety's for the Jordanian traditional banks, the study relied on a sample from Jordanian conventional banks of five banks which possess market share in excess of 50% of the Jordanian banking sector.

b) *Data of the study include*

The period of the study (2000 - 2012), which using data from the annual financial statements to the banks of the study sample Sources of data collection: to achieve the goals of the study by receiving data from books, pamphlets, and periodic reports issued by the Central Bank as well as the financial statements that issued by conventional banks and the Securities Commission for the study period .

c) *Methodology of the study include*

Variables of the study: The study consists of the following variables Independent variables: (liquidity risk, credit risk, interest rate risk).The dependent variable the degree of banking safety.

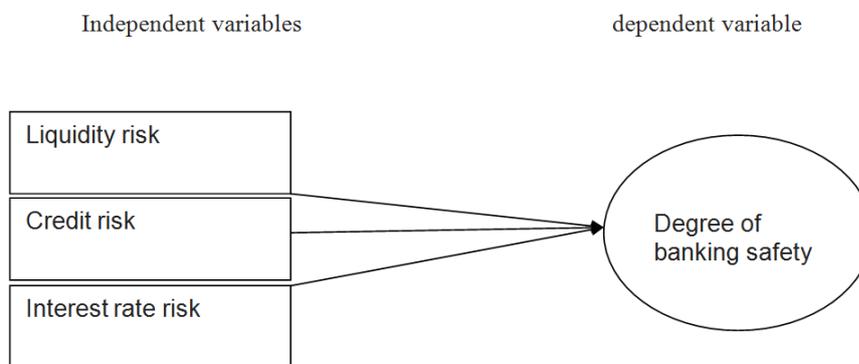


Figure 1 : Model study

Mathematical model study: Depending on the previous model. Was built the following mathematical equation, which was used in the study (Aezzki 0.2012):

$$S_{it} = \alpha + B_1LR_{it} + B_2CR_{it} + B_3IR_{it} + e_{it}$$

Where is :

*S* : refers to the degree of safety in the traditional banks of Jordan.

*i* : refers to the sample of the study (number of banks)

*t* : refers to the time.

*B1* : laboratories of the first independent variable (liquidity risk)

*B2* : laboratories for the second independent variable (credit risk).

*B3* : laboratories for the third independent variable (interest rate risk).

*e* : random error.

The study population consists of local conventional banks operating in Jordan 13 banks. The study sample consists of five traditional Jordanian banks,; (Arab Bank, Jordan Kuwait Bank, the Housing Bank for Trade and Finance, Cairo Amman Bank, and Bank of Jordan).

of independent data variables were together with banking risks through test of normal distribution, there is no problem link multiple linear between the independent variables (multi collierearity) through test inflation variability (VIF) and the allowable variance test (Tolerance) where the following tables shows the tests results.

#### IV. STATISTICAL ANALYSIS AND HYPOTHESIS TESTING

##### a) Test of hypotheses

Before starting the implementation of the linear regression analysis, the researcher ascertain the extent

*Table 8* : The arithmetic mean and standard deviation

| Standard Deviation | Mean     | Banking Risks      |
|--------------------|----------|--------------------|
| 0.121154           | 0.457167 | Liquidity Risk     |
| 0.148947           | 0.526667 | Credit Risk        |
| 0.118850           | 0.321743 | Interest Rate Risk |
| 0.051941           | 0.180667 | Safety Degree      |

*prepared by Researchers*

The above table gives an indication that the credit risk is due account in particular with the relative other risk in terms of impact on safety degree when the arithmetic mean and standard deviation was (0.526667

and 0.148947), respectively, also to know the behavior of the independent variables, allocation of normal in terms of their impact on The dependent variable will be dealt with the following table:

*Table 9* : The results of testing the data independent variables (banking risk)

| Sig.     | k-s Test | Coefficient sprains | Banking Risks      |
|----------|----------|---------------------|--------------------|
| 0.310278 | 0.964275 | 1.083840            | Liquidity Risk     |
| 0.837646 | 0.619368 | 0.536622            | Credit Risk        |
| 0.846724 | 0.612922 | 0.512714            | Interest Rate Risk |

*prepared by Researchers*

Through table ( 9) which shows that the values of transactions may sprains confined between (-0.512714 and 1.083840 ) it considers all these values close to the normal distribution that accepts the values of coefficients sprains to be between - 1 - +1 the coupling data distribution with normal distribution ,this is an important requirement and essential for the application of the linear regression analysis test, this is an indication that the behavior of these risks is distributed naturally in terms of the influence's degree on the credit's degree of banks also the values of the test Kolmejrov - Smirnoff ks)) that test the distribution matching data to the normal distribution of non statistically significant differences between tow distributions, where all values were calculated

significance level greater than 0.05, as shown in the table above .

*The following table shows the values he correlation coefficients between the different variables.*

Table 10 : Matrix correlation coefficients between the independent variables

| Interest Rate Risk | Credit Risk | Liquidity Risk | Banking Risks |                    |
|--------------------|-------------|----------------|---------------|--------------------|
| 0.031072           | 0.361671-   | 1.000000       | correlation   | Liquidity Risk     |
| 0.813683           | 0.004520    | 0.000000       | Sig.          |                    |
| 0.344572           | 1.000000    |                | correlation   | Credit Risk        |
| 0.007018           | 0.000000    |                | Sig.          |                    |
| 1.000000           |             |                | correlation   | Interest Rate Risk |
| 0.000000           |             |                | Sig.          |                    |

prepared by Researchers

Values of correlation coefficients in Table (10) it was weak in addition to that it is not statistically significant (with the exception of the relationship between liquidity risk and credit risk, which was significant relationship because the significance level which calculated was less than 0.05), where notes the lower values of the relationships among independent

variables (Even the significant and the strongest worth .361671), which indicates that the variables are independent with each other, thus conclusion of the study reveals affect for each on safety degree, the following table shows the results of correlation between banking risks.

Table 11 : The results of the test multiple linear correlation between banking risk

| Variance allowed (Tolerance) | Variance inflation factor (VIF) | Banking Risk       |
|------------------------------|---------------------------------|--------------------|
| 0.841688                     | 1.188089                        | Liquidity Risk     |
| 0.742471                     | 1.346854                        | Credit Risk        |
| 0.853381                     | 1.171809                        | Interest Rate Risk |

prepared by Researchers

Table (11) shows that the values of coefficient variability inflation ranged between (1.171809 - 1.346854) These values are considered appropriate and refers to the absence problems of linear correlation between banking risk because all of these values were less than (10) also notes that the allowed values of variation it has ranged between (0.742471 - 0.853381) and all these values are considered greater than (0.10), which helps in the conclusion that there is no problem of multi-linear correlation between banking risks, where it

should not bypass this problem in order to verify the random distribution of the values for residuum in the regression model.

## V. THE RESULTS OF TESTING HYPOTHESES

### a) Test the hypothesis Home

H0: No statistically significant effect of the banking risks on the safety degree of Jordanian commercial banks.

Table 12 : Results of multiple linear regression

| Sig (f)  | F        | R <sup>2</sup> | Independent variables |
|----------|----------|----------------|-----------------------|
| 0.006068 | 4.591417 | 0.197412       | Liquidity Risk        |
|          |          |                | Credit Risk           |
|          |          |                | Interest Rate Risk    |

prepared by Researchers

Table (12) shows that the value of (R<sup>2</sup>) has reached (19.7412%), which indicates that the independent variables was able to interpret the 19.7% of the change or the discrepancy in the dependent

variable, the reason can be attributed to the regulatory measures adopted by the Jordanian Central Bank with commercial banks, which plays a major role in reducing the exposure of commercial banks to risks.

Table 13 : The results of analysis of variance one way ANOVA

| The level of significance | The value of f | Average squares | Degrees of freedom | Sum of squares | Source of variation |
|---------------------------|----------------|-----------------|--------------------|----------------|---------------------|
| 0.006068                  | 4.591417       | 0.010474        | 3                  | 0.031423       | Regression          |
|                           |                | 0.002281        | 56                 | 0.127751       | Residuals           |
|                           |                |                 | 59                 | 0.159173       | Total               |

prepared by Researchers

Table (13) shows that the value of **f** calculated (4.591417), a value statistically significant because the value of the significance level accompanying reached (.006068), which is less than 0.05, which means rejection of the zero hypothesis of the study, which refers to the absence of the impact for banking risks on the safety degree, thus the conclusion accepted the

alternative hypothesis, there is at least one of the banking risks affecting on the safety degree of commercial banks, where it can rely on values of t-test to identify risks that could affect the safety degree of commercial banks, where table (13) shows values of transactions for regression model that has been reached.

Table 14 : The values of the regression coefficients for the prediction model

| Sig(t)   | T         | β         | Elements           |
|----------|-----------|-----------|--------------------|
| 0.000000 | 6.741240  | 0.275680  | The constant term  |
| 0.014543 | 2.521898- | 0.141083- | Liquidity risk     |
| 0.003301 | 3.069803- | 0.148730- | Credit risk        |
| 0.011176 | 2.624076  | 0.148616  | Interest rate risk |

prepared by Researchers

Table (14) shows that the values of multiple regression, which predicts the value of the safety degree through liquidity risk, credit risk and interest rate risk, also as demonstrated by the value of **T** calculated: the importance of all risks of the three in forecasting model, so that the value of significance level facilities to value of **T** calculated be statistically significant if less of 0.05. And inferred on the credibility of the impact for these risks through: values of **T** calculated and the level of significance (-2.521898) with level of significance (.014543) for liquidity risk, and (-3.069803) with level of significance (.003301) to credit risk, and amounted to (2.624076) with level of significance (.011176) for interest rate risk. Since all the values of the significance level was less than 0.05, it indicates the acceptance of the hypothesis " the impact of these risks in predicting the value of the safety degree, and from here we can take advantage to predict the value of the safety degree as follows:

$$Safety\ Degree = 0.275680 - 0.141083 \times liquidity\ risk - 0.148730 \times credit\ risk + 0.148616 \times interest\ rate\ risk.$$

b) *Multiple linear regression results for the variables of the study*

H1: No statistically significant effect of liquidity risk on the safety degree in Jordanian commercial banks.

To test this hypothesis had used multiple regression analysis that described the results in table (14), which is showing the values of **T** calculated (-2.521898) with level of significance of (.014543) and a linear relationship between liquidity risk and safety degree in commercial banks as evidenced value of **β** value of independent variable effect on the dependent variable in the study, if we assume that the value of influence in safety degree of was worth (100%), thus liquidity risk affects by (-0.141083), and this result is rejection of the hypothesis of the study and accept the alternative hypothesis, these results indicate the existence of a negative impact of liquidity risk on the

banking, where the safety degree greater than the degree of liquidity risk.

H2: No statistically significant effect of the credit risk on the degree of safety at commercial banks of Jordan. To test this hypothesis had used multiple regression analysis, to describe the results table (14), shows the values of **T** calculated (-3.069803) while the level of significance (.003301) and a linear relationship between credit risk and the safety degree in commercial banks as evidenced by the value of **β** effect of the independent variable on the dependent variable, so if we assume that the value of influence in the safety degree worth (100%), credit risk affect by (-0.148730), so this result is rejection of the hypothesis, and accept the alternative hypothesis, which refers to the presence of trace credit risk on the safety degree, these results indicate the existence of a negative impact of credit risk on the banking. H3: No statistically significant effect of interest rate risk on the safety degree for commercial banks. To test this hypothesis using multiple regression analysis described the results in the table (14), that showing values of **T** calculated (2.624076) when level of significance (.011176) and a linear relationship between the interest rate risk and the degree of safety in commercial banks as evidenced by value of **β** as effect of the independent variables on the dependent variable, so if we assume that the influence value of safety degree was worth (100%) , interest rate risk affects by (.148616), this result rejected the hypothesis and accept the alternative hypothesis, these results indicate the existence of a positive impact for interest rate risk on the safety degree, and shows that the greater interest rate risk has increased the safety degree.

## VI. CONCLUSIONS

After analyzing the financial statements of the study's sample there is a group of results as follows:

- 1 There is an impact of liquidity risk on the safety degree for Jordanian commercial banks, which is due to repay some of its financial liabilities as a

highest cost Sometimes , usually connected with short-term , through value of  $T$  calculated (2.521898) when level of significance (.014543), which showed an inverse relationship between liquidity risk and the safety degree for the Jordanian commercial banks.

- 2 There is an impact of credit risk on the safety degree, it considered one of the most influential factor on the safety degree for Jordanian commercial banks comparable with other risks, due mainly to the large number of delays repayment of loans (annuities) and interest obligations on time, in addition to sometimes Banks provide some loans to its customers without sufficient guarantees to repay the loan, where earned this factor the highest arithmetic average and standard deviation was (0.526667 and 0.148947), respectively, also through values of  $T$  calculated (-3.068803), and level of significance of (.003301), which means that there is an inverse relationship between credit risk and safety degree in the Jordanian commercial banks.
- 3 There is an impact of interest rate risk on the safety degree for Jordanian commercial banks, due to the intensity of competitiveness among Jordanian commercial banks, which are operating in the domestic market on each "of the interest payable on the granted credit facilities to customers, debit interest on both loans and bonds issued by commercial banks" with volatility of interest rates because of complexities of the economic conditions surrounding, through the values of  $T$  calculated (2.624076) and the level of significance (0.011176), So there is a positive relationship between interest rate risk and the safety degree in the Jordanian commercial banks.

## VII. RECOMMENDATIONS

- 1 The risk management framework should be subject to continuous review, by the administration for Jordanian commercial banks, through reviewing policies and procedures, so as to comply with internal and external variables, that allows for each bank to manage liquidity with efficiently and high preferably identify various commitments by scheduling priority paid to be there prepared in advance to meet various obligations, especially short-term.
- 2 Permanent and advance coordination with the client to remind him dates of repayment of loans and benefits to reach solutions in cases when individual faced financial bust.
- 3 Continuous development and effective regulatory controls and commercial banks needed to ensure proper risk administration, and its impact power on the banking safety.

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## Opacité De L'information Et Gestion Des Résultats

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**Résumé-** L'objectif de cette recherche est d'examiner la relation entre l'opacité de l'information et la gestion des résultats. Plus précisément nous tenons à chercher si la diversification et la déviation de la propriété par rapport au contrôle (à travers l'environnement opaque qu'elles semblent engendrer) constituent des moyens de gestion des résultats, ou au moins un terrain propice à l'émergence de celle-ci.

En utilisant un échantillon de 87 entreprises françaises, les résultats montrent que la diversification fournit un terrain propice à la gestion des résultats. La déviation de la propriété par rapport au contrôle, résultant surtout de l'existence des actions à droit de vote double, peut être exploitée en tant que moyens de manipulation des chiffres comptables.

**Mots clés:** *la gestion des résultats- l'opacité de l'information- la diversification de l'organisation- la déviation de la propriété par rapport au contrôle.*

*GJMBR-C Classification : JEL Code: E60, F65*



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**Résumé-** L'objectif de cette recherche est d'examiner la relation entre l'opacité de l'information et la gestion des résultats. Plus précisément nous tenons à chercher si la diversification et la déviation de la propriété par rapport au contrôle (à travers l'environnement opaque qu'elles semblent engendrer) constituent des moyens de gestion des résultats, ou au moins un terrain propice à l'émergence de celle-ci.

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## I. INTRODUCTION

Dans le respect du cadre réglementaire et des principes comptables généralement admis, les dirigeants peuvent intervenir pour modifier les résultats financiers en profitant des lacunes juridiques et de la flexibilité offerte. Ces interventions délibérées dans la présentation de l'information financière constituent le phénomène de gestion des résultats. Bien qu'elle s'inscrive dans un cadre légal, la gestion des résultats s'apparente à la fraude en partageant avec elle l'objectif de tromper et d'induire en erreur les tiers.

La gestion des résultats a pour longtemps été considérée comme une altération des états financiers en vue d'induire en erreur les 'stakeholders' à propos de la performance économique de la firme ou influencer les relations contractuelles basées sur les chiffres comptables (Healy et Wahlen, 1999).

Dans ce sens, plusieurs études se sont intéressées aux différentes raisons pouvant expliquer l'intérêt derrière la gestion des résultats. Les réponses se sont principalement articulées autour de trois motivations : des motivations induites par les contrats de rémunération des dirigeants (Bergstresser et Philippon (2006)), par les contrats de dettes des entreprises (Teoh et al., 1998 ; Beneish et al., 2001 ; Djama, 2003), et par les coûts politiques découlant de la visibilité politique des entreprises (Bowen et al., 1995 ; Bowen et al., 2007).

A partir des travaux précités, nous pouvons remarquer l'abondance des recherches sur la notion, les

motivations et les mesures de la gestion des résultats. Néanmoins, peu d'études ont essayé de déterminer les éléments sur lesquels se basent les dirigeants pour gérer les résultats. Ainsi, une question mérite d'être posée à ce niveau : sur quels paramètres exactement les dirigeants vont jouer pour manipuler les résultats ?

Plusieurs recherches prouvent que le développement et la propagation de la gestion des résultats dépendent surtout de l'importance de l'asymétrie informationnelle et des conflits d'agence (Dye, 1988 ; Richardson, 2000). Cependant, ces conditions semblent caractériser les firmes diversifiées (Berger et Ofek, 1995 ; Kim et Pantzalis, 2003 ; Lamont et Polk, 2001) et celles se caractérisant par une déviation de la propriété par rapport au contrôle.

En effet, en adoptant des stratégies de diversification, les dirigeants profitent d'une plus grande asymétrie informationnelle leur permettant de retenir l'information et de la rendre plus difficile à appréhender par les actionnaires. Il est donc vraisemblable que plus les activités de la firme se multiplient, plus l'éventail d'informations s'élargit et par conséquent, les dirigeants disposent de plus d'opportunités de manipulation des chiffres.

D'ailleurs, selon la théorie de l'agence avec ses principes de free cash-flows (Jensen, 1986) et d'enracinement (Shleifer et Vishny, 1989), la diversification est entreprise pour augmenter la taille et les avantages pécuniaires et non pécuniaires des dirigeants. Elle permet au dirigeant de développer son capital relationnel et spécifique pour s'ancrer davantage et assurer la sécurité de son emploi. Par conséquent, la diversification disperse les efforts, les compétences et les ressources et elle crée des problèmes d'opacité, de coordination, de conflits et de gouvernance.

De plus, la déviation via le principe une action \_une voix favorise la discrétion managériale et crée une rente informationnelle favorable. Le dirigeant sera incité à gérer les résultats. Belot (2010) a confirmé cette idée et a montré que la concentration ainsi que la déviation propriété – contrôle accentuent la manipulation des bénéfices.

Notre recherche s'intéresse donc à identifier les liens pouvant exister entre l'opacité d'information et la gestion des résultats, et ce en mettant en exergue deux facteurs favorisant l'asymétrie d'information: la diversification de l'organisation et la déviation de la

propriété par rapport au contrôle. Elle souligne la pertinence de lier les pratiques comptables agressives à la stratégie adoptée par la firme qui peut soit les faciliter ou les inhiber. Les relations à dégager auront un intérêt pratique pour les investisseurs et les tiers dans l'évaluation des firmes diversifiées et celles émettrices des actions à droit de vote double.

La France nous a paru un terrain d'investigation privilégié, et cela pour trois raisons. Premièrement, peu d'intérêt a été porté pour l'étude des déterminants de la gestion des résultats dans des pays issus du modèle comptable Euro-Continental tels que la France. Deuxièmement, la structure de propriété et de contrôle type des sociétés françaises cotées (concentration du capital et du contrôle, construction pyramidale et/ou présence d'actions à droits de vote double) conduisent à une séparation de la propriété du capital et du contrôle des droits de vote (Bloch et Kremp, 2001 ; Faccio et Lang, 2002). Finalement, la majorité des grandes entreprises françaises sont diversifiées (Dahya et al. (2008), Djebali et al. (2012)).

Notre étude présente plusieurs intérêts. Premièrement, comparée aux travaux antérieurs, une collecte de données détaillée nous permet d'affiner les variables de propriété utilisées et de prendre en compte l'existence des moyens de déviation de la propriété par rapport au contrôle matérialisée en France par les actions à droit de vote double. Selon le rapport réalisé par Institutional Shareholder Services (ISS) pour la commission européenne en 2007, 44% des entreprises européennes étudiées ont au moins un mécanisme permettant de renforcer le pouvoir. Ce pourcentage s'élève à 72% pour la France. Au niveau européen, les mécanismes les plus utilisés sont la structure pyramidale (27% de des entreprises de notre échantillon), suivie par les actions à droit de vote multiples (24%). En France, les entreprises utilisent majoritairement les droits de vote double (58% de l'échantillon de l'étude) et les pyramides (18%). Deuxièmement, à notre connaissance, c'est la première étude qui a analysé la gestion des résultats à la lumière de l'existence de la séparation de la propriété du capital et du contrôle et la diversification en France.

Ce papier est organisé de la manière suivante : la section 2 décrit le développement des hypothèses de la recherche, la section 3 sera consacrée aux aspects méthodologiques. La section 4 expose et discute les principaux résultats issus de notre analyse empirique. Enfin, des conclusions et des commentaires seront proposés.

## II. REVUE DE LA LITTÉRATURE

Dans cette section, nous cherchons à identifier les contributions à la littérature qui peuvent mettre en relief l'existence d'une relation entre la stratégie de diversification et la gestion des résultats en un premier

lieu. En un second et dernier lieu, nous explicitons la relation entre la gestion des résultats et la déviation de la propriété par rapport au contrôle.

### a) *Gestion des résultats et diversification*

Il existe peu d'arguments théoriques soutenant l'idée que la diversification peut influencer positivement le degré de gestion des chiffres comptables. Ces arguments s'articulent autour du climat interne des firmes diversifiées, se caractérisant par une asymétrie informationnelle forte, des problèmes d'agence considérables et d'importantes opportunités de manipulation des résultats. Un tel climat semble satisfaire les conditions préalables à la gestion des résultats, soulignées par les études antérieures. En premier lieu, les recherches ont signalé que les firmes diversifiées se distinguent par rapport aux firmes à activité unique par des conflits d'agence importants et une forte asymétrie informationnelle. C'est dans ces sens que Berger et Ofek (1995) ont montré que les firmes centrées autour d'une activité unique ne peuvent pas avoir autant d'asymétrie d'information que les firmes diversifiées et par conséquent, peuvent avoir un accès plus facile aux marchés des capitaux externes.

Lamont et Polk (2001) ont trouvé que les firmes diversifiées avec des niveaux d'asymétrie faibles se négocient à des primes importantes alors que le contraire se produit pour les firmes diversifiées avec des niveaux d'asymétrie élevés. D'ailleurs, la diversification a été considérée comme un symptôme de divergence d'intérêts, de dissimulation de l'information crédible, de l'opportunisme managérial dans l'utilisation des free cash-flows et d'un recours exagéré à l'endettement (Denis et al. 1997).

Les firmes diversifiées sont généralement de grande taille, ayant des structures organisationnelles complexes et plus d'opacité et d'asymétrie informationnelle (Kim et Pantzalis, 2003). La masse considérable d'informations qu'elles sont susceptibles de générer offre aux dirigeants l'opportunité d'exercer leur discrétion dans le choix de l'information à communiquer.

Les caractéristiques des firmes diversifiées semblent satisfaire les conditions de la gestion des résultats, définies par Dye (1988) et Richardson (2000) et qui réunissent l'absence d'une communication parfaite avec simultanément une asymétrie informationnelle et des contrats incomplets. Ces caractéristiques tendent à appuyer l'hypothèse suivante à tester :

*H1 : la gestion des résultats augmente avec la diversification.*

### b) *Gestion des résultats et déviation de la propriété par rapport au contrôle*

Plusieurs recherches se sont intéressées à l'examen de l'impact de la propriété managériale sur la

gestion des résultats (Warfield et al. 1995, Dechow et al. 1996 ; Chtourou, 2000 ; Park, 2000...).

Warfield et al. (1995) montrent que les choix comptables sont liés au niveau du capital détenu par les dirigeants. Plus précisément, ils ont trouvé que l'ampleur des accruals discrétionnaires est plus grande dans l'entreprise dont la participation des dirigeants est plus faible. Par ailleurs, Park (2000) a prouvé qu'à mesure que la participation du dirigeant dans le capital augmente, ce dernier agit comme un actionnaire et ceci se reflète, entre autres, au niveau de la production des états financiers plus fiables.

Plusieurs autres études ont pu vérifier la relation négative entre le pourcentage d'actions détenues par les dirigeants et la gestion du résultat (Niehaus, 1989 ; Dempsey et al. 1993 ; Peasnell et al. 2005...). Toutefois, ce rôle actif de la propriété managériale dans le contrôle des dirigeants et dans la réduction de son comportement discrétionnaire n'a pas pu être validé par toutes les recherches. Chtourou (2000) a trouvé que le pourcentage cumulé d'actions détenues par les gestionnaires ne semble pas affecter les accruals discrétionnaires.

En outre, Klein (2002) trouve une relation positive entre la gestion du résultat et le pourcentage d'actions détenu par les dirigeants. Il estime que les dirigeants utilisent la gestion du résultat afin d'augmenter leur participation, ce résultat a été trouvé également par Yermack (1997) et Aboody et Kasznik (2000).

En analysant le contexte français, plusieurs études ont été effectuées pour montrer qu'il se caractérise par la présence des actionnaires de contrôle. Ces derniers utilisent plusieurs moyens pour accroître l'asymétrie de l'information. La déviation de la propriété par rapport au contrôle se présente comme un moyen favorisant l'asymétrie de l'information. Peng and Jiang, (2010) ont démontré que les actionnaires de contrôle exploitent leurs situations pour créer des circuits et bénéficier d'un accès aux informations internes se traduisant en bénéfices privés. Les internes exploitent de leurs situations pour créer des circuits et bénéficier d'un accès aux informations internes se traduisant en gestion des résultats.

Toutefois, les actionnaires puissants peuvent aussi intensifier les pressions du marché des capitaux menant à une focalisation excessive sur les résultats de court terme (par exemple, Dye, 1988 ; Shleifer, 2004 et Bolton et al, 2006.). Ainsi, le renforcement du pouvoirs des actionnaires peut aggraver les conflits entre les actionnaires potentiels et d'autres parties prenantes. L'octroi de plus de puissance via la déviation de la propriété par rapport au contrôle va ouvrir la porte à l'opportunisme actionnaire (par exemple Stout, 2007).

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Dans le même sens d'idée, Ben Saanoun et al (2013) ont utilisé un échantillon de 44 entreprises françaises durant la période 2001-2011. Leurs résultats est en conformité avec la théorie de l'agence. Ils ont conclu que les actionnaires de contrôle, dirigeants et actionnaires majoritaires, accèdent aux mécanismes de gestion et aux informations privés et exploitent leurs efforts pour gérer les résultats.

D'où l'hypothèse suivante :

*H<sub>2</sub>: la déviation de la propriété par rapport au contrôle favorise la gestion des résultats.*

Pour dévier du principe une action-une voix, les actionnaires de contrôle recourent à trois moyens : les structures pyramidales, des participations croisées et les actions à classes différentes.

#### i. *Les structures pyramidales*

Les pyramides sont des organisations dans lesquelles des sociétés sont contrôlées par un investisseur (société mère ou coalition d'actionnaires) par l'intermédiaire d'une chaîne plus ou moins longue (Bianchi et al. (1997)). La longueur de la chaîne et la quantité d'actions détenues par l'investisseur dans chacune des entreprises intermédiaires déterminent l'ampleur de la séparation entre contrôle et propriété (Bebchuk et al. (1999)). En outre, les pyramides comportent parfois plusieurs chaînes enchâssées menant de la tête aux diverses filiales du bas de la structure. Les participations dans une structure pyramidale créent un voile opaque pour les autres actionnaires, ce qui rend possible la gestion des résultats.

#### ii. *Les participations croisées*

Il arrive que deux sociétés soient réciproquement actionnaires l'une de l'autre, c'est-à-dire détiennent chacune des actions émises par l'autre. Plus généralement, on parle de participations croisées dès qu'il existe un circuit fermé dans la structure du capital détenu de plusieurs entreprises. Ce type de "boucles" dans l'organigramme peut se présenter entre sociétés indépendantes mais aussi entre sociétés mère et filiale et entraîne potentiellement des abus comme la fictivité partielle du capital, un manque de transparence des comptes sociaux ainsi que l'entrave au fonctionnement normal des assemblées générales, ce qui explique qu'elles soient sévèrement réglementées dans plusieurs pays.

Selon Faccio et Lang (2000) : "les participations croisées ont lieu quand une entreprise détient une

participation dans une autre entreprise appartenant au même groupe des sociétés, qui possède à son tour une fraction du capital dans une entreprise dans la chaîne de contrôle". Biebuyck et al. (2005) ont étudié les participations croisées et ont souligné qu'elles permettent de limiter le pouvoir des investisseurs externes et de faire perdre la clarté et la transparence des réseaux de pouvoir dans la société. Ce qui favorise la gestion des résultats.

iii. *les classes d'actions différentes*

L'existence de plusieurs catégories d'actions est un moyen qui permet la séparation entre propriété et contrôle et donne la possibilité aux actionnaires de contrôler de maintenir le contrôle surtout en cas de faible protection des investisseurs. Le principe une voix par action est bien respecté par les entreprises en Belgique, tandis que ce principe ne doit pas être obligatoirement respecté avec l'existence des restrictions à une trop forte différenciation tels que Portugal, l'Espagne, la France, le Royaume-Uni, la Norvège, l'Allemagne, l'Italie, la Finlande et la Suède (Faccio et Lang (2002)).

Grossman et Hart (1988) analysent les actions à droits de vote multiples. Ils ont prouvé que toute déviation par rapport au principe d'une action-une voix est nuisible. Ces actions qui confèrent à leurs détenteurs des droits de vote qui dépassent leurs propriétés. Ce type d'actions est motivé par la volonté de créer une asymétrie d'information, environnement favorable aux pratiques de manipulation des chiffres comptables.

En France, les droits de vote doubles est le principal mécanisme qui favorise la séparation de la

propriété par rapport au contrôle. Nous postulons l'hypothèse suivante:

$H_3$ : *l'existence des actions à classes doubles favorise la gestion des résultats*

### III. DONNÉES ET MÉTHODOLOGIE DE L'ÉTUDE

a) *Echantillon et période d'étude*

Notre échantillon est composé de 87 sociétés françaises cotées à la Bourse de Paris et appartenant à la liste des sociétés constitutives de l'indice boursier SBF 250. Les données se rapportant à la composition du conseil d'administration et à la structure de propriété de ces sociétés ont été tirées à partir des rapports annuels de ces sociétés. La période d'étude s'étale de 2001 à 2011, et comme pour les autres études se rapportant à la gestion des résultats, les banques et les autres institutions financières ont été éliminées de notre analyse. En résumé, nous obtenons 87 firmes françaises appartenant à 3 secteurs d'activité : service, industriel et commercial et un nombre total d'observations égal à 957.

b) *Modélisation et variables de l'étude*

Afin de tester la perspective de gestion des résultats pour notre échantillon d'étude, nous allons utiliser le modèle

Rappelons que l'objectif principal du présent travail est d'étudier la relation entre l'asymétrie d'information et la gestion des résultats. Nous avons utilisé deux facteurs explicatifs de l'asymétrie d'information qui sont la diversification de l'organisation et la présence des actions à droit de vote double.

$$ACC_{it} = \beta_0 + \beta_1 DIVER + \beta_2 ADV_{it} + \beta_3 TAIL_{it} + \beta_4 DETTE_{it} + \beta_5 Q_{it} + \epsilon_{it}$$

*Modèle (1)*

Avec :

- ACC* : les accruals discrétionnaires ;
- DIVER* : la diversification de l'organisation ;
- ADV* : les actions à droit de vote double ;
- TAIL* : la taille de l'entreprise ;
- DEBT* : le ratio d'endettement ;
- Q* : le Q de Tobin ;

c) *Mesure des variables*

Au sein de la sous-section suivante, nous allons énumérer les différentes variables utilisées pour tester nos hypothèses.

i. *La variable dépendante*

Pour mesurer les accruals discrétionnaires, une variable proxy de la gestion des résultats, nous

distinguons plusieurs modèles dont les plus intéressantes sont: Jones, 1991, Jones, 1995 et Kothari et al. 2005. Le dernier n'est rien d'autre que la version de Jones, 1991 assortie de la mesure de performance (ROA). Il semble le mieux spécifié et le plus puissant en comparaison à d'autres modèles, et surmonte même les limites de Jones, 1995 à détecter la gestion des résultats pour les entreprises ayant une performance anormale. C'est pourquoi nous retenons le modèle de Kothari et al. (2005) pour mesurer les accruals discrétionnaires.

Il s'énonce comme suit :

$$TACC_{it} / TACC_{it-1} = W_0 + W_1(1/AT_{it-1}) + W_2(\Delta CA_{it} / AT_{it-1}) + W_3(IC_{it} / AT_{it-1}) + W_4ROA_{it-1} + \epsilon_{it} \tag{3.1}$$

- Où-  $TACC_{it}$  : les accruals totaux<sup>1</sup> de l'entreprise i au cours de l'année t ;
- $\Delta CA_{it}$  : la variation du chiffre d'affaire de l'entreprise i entre les années t et t-1;
- $IC_{it}$  : le montant des immobilisations corporelles de l'entreprise i au cours de l'année t ;
- $AT_{it-1}$  : total de l'actif net de l'entreprise i au cours de l'année t-1 ;

- $ROA_{it-1}$  : le ratio rentabilité des actifs de l'entreprise i au cours de l'année t-1 ;

Ainsi, les paramètres obtenus de l'estimation de la régression (1.1) sont utilisés dans la détermination des accruals non discrétionnaires (AND) déflatés par le total de l'actif net de la période précédente :

$$AND_{it} = \hat{W}_0 + \hat{W}_1(1/AT_{it-1}) + \hat{W}_2(\Delta CA_{it} / AT_{it-1}) + \hat{W}_3(IC_{it} / AT_{it-1}) + \hat{W}_4ROA_{it-1} + \varepsilon_{it} \quad (3.2)$$

Ainsi, les accruals discrétionnaires  $ACC_{it}$  sont déterminés par la différence entre  $TACC_{it} / TACC_{it-1}$  et  $AND_{it}$

ii. *Les variables indépendantes*

- La diversification de l'organisation (*DIVER*): elle est mesurée à l'aide d'une variable binaire qui prend 1 si l'entreprise opère dans plus qu'un secteur d'activité ; 0 sinon. Elmîr A. et Seboui S. (2008) ont conclu que la diversification suscite les comportements opportunistes et crée un terrain adéquat à l'émergence de pratiques comptables opportunistes.
- La déviation de la propriété par rapport au contrôle (*DEPC*): c'est le rapport entre les droits de propriété par rapport au droit de vote détenus par l'actionnaire de contrôle. Un actionnaire de contrôle est celui qui détient plus que 20% des droits de propriété de la société. Dans le cas contraire cette variable prendra 0. Nous allons nous attendre à ce que les accruals augmentent avec la déviation de propriété par rapport au contrôle.
- Les actions à droit de vote double (*DOUB*): c'est une variable dichotomique qui prend 1 s'il existe des actions à droit de vote double dans la société à l'année t ; 0 sinon. Nous prétendons que la gestion des résultats distingue beaucoup plus entreprises qui émettent des actions à droit de vote double.
- La taille de la firme (*TAIL*): elle est approximée par le logarithme népérien de l'actif total. En effet, les firmes de grande taille sont susceptibles, de

générer des accruals élevés et tendent souvent à minimiser les coûts politiques.

- les opportunités de croissance notée (*Q*) : elle est définie comme étant le rapport entre (Valeur marchande des actions + valeur comptable des dettes) et (valeur comptable des fonds propres + valeur comptable des dettes). Selon la perspective informationnelle, les entreprises qui présentent des niveaux de croissance élevés gèrent les résultats à la hausse afin de communiquer cette information à leurs investisseurs. Autrement dit, les entreprises qui présentent des perspectives de croissance élevées essayent de se différencier par rapport aux entreprises ayant de faibles opportunités de croissance et ce, en recourant à la gestion des résultats dans sa perspective de communication.
- l'endettement de la firme (*END*) : il est mesuré par le ratio « dettes totales/actif total ». Les firmes fortement endettées, de crainte qu'elles violent les clauses de leurs contrats de prêts, tendent à gérer à la hausse leurs résultats.

<sup>1</sup> Estimation des accruals totaux :

$TAcc_{j,t} = \Delta AC_{j,t} - \Delta cash_{j,t} - \Delta PC_{j,t} - \Delta DAP_{j,t}$  Où :  
 $\Delta AC_{j,t}$  : la variation de l'actif courant de l'entreprise j entre les années t et t-1 ;  
 $\Delta PC_{j,t}$  : la variation du passif courant de l'entreprise j entre les années t et t-1 ;  
 $\Delta cash_{j,t}$  : la variation de la trésorerie de l'entreprise j entre les années t et t-1 ;  
 $DAP_{j,t}$  : la variation de dotation aux amortissements et aux provisions de l'entreprise j entre les années t et t-1 ;

Tableau 1 : Tableau synthétique des différentes variables utilisées :

| Variables                            | Notation | Mesure  |
|--------------------------------------|----------|---|
| Gestion des résultats                | ACC      | Variable mesurée par les accruals discrétionnaires  |
| Diversification                      | DIVE     | Variable binaire qui prend 1 si l'entreprise opère sur plus qu'un segment de produit ; 0 sinon                                |
| Déviaton de la propriété du contrôle | DEPC     | Ratio de déviaton de la propriété par rapport au contrôle de l'actionnaire de contrôle  |
| Actions à droits de vote double      | DVD      | Variable binaire qui prend 1 si il existe des actions à droits de vote double ; 0 sinon                                       |
| Opportunités de croissance           | Q        | (Valeur marchande des actions+ valeur comptable des dettes)/(valeur comptable des fonds propres+ valeur comptable des dettes) |
| Dettes totales                       | DETTE    | Dettes totales/total des actifs   |
| Taille de l'entreprise               | TAIL     | Logarithme népérien du total des actifs   |

#### IV. RÉSULTATS DE L'ÉTUDE

##### a) Résultats descriptifs

L'examen du tableau 2 montre qu'en moyenne, les firmes gèrent d'une manière agressive leurs résultats à la hausse.

D'après les statistiques présentées au tableau (2), nous constatons que le ratio moyen de déviaton de la propriété par rapport au contrôle est de 0.88. Les

entreprises françaises utilisent la déviaton de la propriété par rapport au contrôle pour renforcer le contrôle et détourner le maximum des ressources de l'entreprise.

La taille mesurée par le logarithme népérien du total des actifs affiche une valeur moyenne de 21,78 alors que l'endettement moyen s'élève à 22.17% du total des actifs. Ce taux peut atteindre 87% du total des actifs pour notre échantillon.

Tableau 2 : Statistiques descriptives des variables explicatives expliquées et explicatives quantitatives

| Variables | Observation | Moyenne   | Ecart-type | Minimum   | Maximum  |
|-----------|-------------|-----------|------------|-----------|----------|
| ACC       | 957         | -.0247451 | .0398094   | -.0954016 | .0957107 |
| DEPC      | 957         | .886988   | .1634232   | .497537   | 1.580684 |
| Q         | 957         | 1.819997  | 3.472914   | .0101436  | 49.40819 |
| TAIL      | 957         | 21.70686  | 2.161487   | 16.19441  | 27.31821 |
| DETTE     | 957         | .2211739  | .1648682   | 0         | .8724592 |

Légende1 ACC = les accruals discrétionnaires, DIVE : la déviaton de la propriété par rapport au contrôle, Q= (Valeur marchande des actions+ valeur comptable des dettes)/(valeur comptable des fonds propres+ valeur comptable des dettes), TAIL: logarithme népérien du total des actifs, DETTE = ( dettes long terme/total des actifs).

Tableau 1.3: Statistiques descriptives des variables dichotomiques

| Variables | Observation | Fréquence | Pourcentage |
|-----------|-------------|-----------|-------------|
| DIVE      | 0           | 957       | 242         |
|           | 1           |           | 715         |
| DVD       | 0           | 957       | 535         |
|           | 1           |           | 422         |

Légende2 : DIVE : la déviaton de la propriété par rapport au contrôle, DVD= variable dummy qui prend 1 s'il existe des actions à droits de vote double ;0 sinon, DUAL : variable dummy qui prend 1 s'il existe la cotation duale, AUDI : variable dummy qui prend 1 s'il existe un comité d'audit ;0 sinon, SECT = variable dummy qui prend 1 l'entreprise appartient au secteur de service ou de commerce;0 si elle appartient au secteur de l'industrie ,

À la lumière des résultats nous remarquons que presque 75 % des entreprises françaises composant notre échantillon opèrent dans plus qu'un secteur d'activité, donc la majorité des entreprises Françaises composant notre échantillon sont diversifiées. Concernant les actions à droit de vote double, elles existent dans 45.45% des entreprises.

Après avoir présenté les statistiques descriptives des variables retenues dans notre étude, nous nous intéressons par la suite à l'examen de la corrélation possible entre les variables explicatives du modèle.

Tableau 3 : Matrice de corrélation des variables explicatives

|       | ACC        | DIVE       | DEPC      | DVD        | DETTE      | Q         | TAIL   |
|-------|------------|------------|-----------|------------|------------|-----------|--------|
| ACC   | 1.0000     |            |           |            |            |           |        |
| DIVE  | -0.0906    | 1.0000     |           |            |            |           |        |
| DEPC  | 0.0388     | -0.1015*** | 1.0000    |            |            |           |        |
| DVD   | 0.0591*    | -0.0429    | -0.0026   | 1.0000     |            |           |        |
| DETTE | -0.4883*** | 0.1230***  | 0.2307*** | 0.0989***  | 1.0000     |           |        |
| Q     | 0.0906***  | -0.0918*** | -0.0263   | -0.0004    | -0.1461*** | 1.0000    |        |
| TAIL  | 0.1327***  | -0.1627*** | 0.0355    | -0.0993*** | -0.2834*** | 0.1301*** | 1.0000 |

La lecture du tableau (3) montre que la corrélation entre la plupart des variables explicatives est modérée et ne présente par conséquent aucun risque qui peut générer des biais dans l'estimation du modèle économétrique. Nous constatons une forte corrélation entre les accruals discrétionnaires et l'endettement dans le sens négatif, ce qui nous mène à conclure que les entreprises les plus endettées sont celles qui gèrent moins les résultats. La corrélation entre la variable mesurant la diversification et celle proxy de la gestion de résultat est non significative et contraire à ce qui est attendu, ce qui semble à priori infirmer notre première hypothèse. En ce qui concerne la déviation de la

propriété par rapport au contrôle et les actions à droit de vote double, les deux variables sont corrélées positivement avec les accruals discrétionnaires, ce qui affirme la deuxième et la troisième hypothèse respectivement. De plus, il est à noter que les entreprises de grandes tailles influencent positivement la gestion des résultats.

Après la réalisation des tests économétriques : Matrice de corrélation de Pearson et test des vifs : test de présence d'effet individuel, test d'Hausman et le test d'hétéroscédasticité, il serait judicieux de présenter les résultats de nos modèles.

Tableau 4 : Impact de l'opacité d'information sur la gestion des résultats

| ACC   | Coef.        | z      | P>z   |
|-------|--------------|--------|-------|
| DIVE  | .0009537***  | 2.65   | 0.008 |
| DEPC  | .0010948***  | 10.73  | 0.000 |
| DVD   | !.0009855*** | 7.09   | 0.000 |
| DETTE | -.0010334*** | -26.15 | 0.000 |
| Q     | .0003537     | 0.41   | 0.681 |
| TAIL  | .0000498**   | 2.23   | 0.026 |
| cons  | .0225625***  | 27.04  | 0.000 |
| R2    | 59.56%.      |        |       |

Les résultats obtenus à partir du tableau montrent que notre modèle est bien spécifié avec un R<sup>2</sup> de l'ordre de 59.56%. Sur 6 variables, cinq sont statistiquement significatives à des seuils différents. Seule la variable Q mesure des opportunités des croissances n'est pas statistiquement significative.

Le tableau 4 montre que l'effet de la variable 'DIVE' mesure de la diversification est statistiquement significatif au seuil de 1% et présente le signe attendu, ce qui implique que la gestion des résultats augmente dans les firmes diversifiées. Il importe de signaler qu'une forte diversification peut renforcer les comportements opportunistes. Donc, la diversification semble créer des conditions propices à l'émergence de ce phénomène car elle suscite les conflits d'agence et prolifère les pressions externes sur les dirigeants notamment celles liées aux marchés des capitaux. Dans les firmes diversifiées, les dirigeants vont utiliser les moyens dont ils disposent tels que l'accès aux informations et aux mécanismes de gestion pour gérer les résultats. La gestion des résultats par les actionnaires de contrôle vise à accroître et à exploiter la

situation d'asymétrie informationnelle caractérisant la relation entre ces derniers et les différents partenaires de la firme. Cette situation suppose alors que les détenteurs de pouvoir vont adopter un comportement logique de rétention de l'information en la rendant plus difficile à appréhender par les actionnaires pour se permettre de manipuler les chiffres comptables surtout dans les pays qui se caractérisent par une faible protection des investisseurs.

En ce qui concerne la variable DEPC, ratio mesurant la déviation de la propriété par rapport au contrôle, elle est significative au seuil 1%. Le signe du coefficient de la variable est positif, ce qui traduit une relation positive entre la déviation et la gestion des résultats des entreprises françaises. Ce résultat valide notre hypothèse théorique. Nous constatons que la déviation via le principe une voie –une action favorise l'asymétrie d'information et encourage la manipulation des chiffres comptables. La relation empirique prouvée corrobore les travaux de Ben Saanoun et al. (2013) qui ont démontré que les actionnaires de contrôle exploitent de leurs situations pour créer des circuits et bénéficier

d'un accès aux informations internes se traduisant en gestion des résultats.

La variable stipulant l'existence des actions à droit de vote double (DVD) est significative au seuil 1%, le signe positif du coefficient de cette variable ce qui traduit une relation positive entre la présence des actions à droits de vote double et les accruals discrétionnaires. Ce résultat valide notre troisième hypothèse théorique. Les actions à droit de vote double sont utilisées par les actionnaires de contrôle pour créer une déviation du contrôle par rapport à la propriété. Ceci permettra de créer une opacité dans l'entreprise, environnement favorable à la manipulation des chiffres comptables.

Les résultats constatés dans ce travail viennent, d'une part, confirmer nos interprétations précédentes et d'autre part, montrer notamment l'intérêt de prêter attention dans les recherches futures aux liens entre la stratégie de diversification, le non-respect du principe une voie –une action et la gestion des résultats.

La variable endettement est significative au seuil 1%. Le signe du coefficient est négatif. La relation entre la gestion des résultats et l'endettement est négative. Autrement dit les entreprises les plus endettées sont celles dont les dirigeants gèrent moins les résultats. Ce constat rejoint l'hypothèse de Jensen (1986) soulignant que l'endettement génère une ponction forcée sur les liquidités de l'entreprise qui limite les fonds à la disposition du dirigeant tout en le contraignant à une gestion plus stricte. Ainsi, l'endettement constituerait non pas une incitation à la gestion à la hausse des résultats mais au contraire un frein pouvant conduire les dirigeants à adopter une attitude comptable conservatrice lorsque les dettes augmentent. Pour Piot et Janin (2007), l'importance accordée au principe de prudence dans le cadre normatif comptable français pour protéger les intérêts des créanciers, peut justifier un degré de prudence des dirigeants dans la gestion des chiffres comptables augmentant avec l'intérêt des créanciers dans la société. Selon eux, l'endettement peut donc agir dans le contexte français comme un mécanisme de contrôle destiné à prévenir des pratiques de gestion à la hausse des résultats.

Concernent les opportunités d'investissement, la variable Q est non significative. La gestion des résultats ne semble pas être influencée par les opportunités d'investissement.

La variable taille (TAIL) est significative au seuil 5%, la taille de l'entreprise affecte positivement la gestion des résultats des entreprises françaises. Ainsi, plus l'entreprise est de grande taille, plus ses dirigeants sont incités à adopter des choix comptables discrétionnaires maximisant leurs résultats. Ce constat contredit l'hypothèse des coûts politiques. En considérant la taille de l'entreprise comme un indicateur de la visibilité politique, plusieurs chercheurs (Zmijewski et Hagerman, 1981) trouvent que les entreprises de grandes tailles

préfèrent les méthodes comptables qui réduisent les résultats.

## V. CONCLUSION

Dans le cadre de cet article, nous nous sommes intéressés à l'étude de l'impact de l'opacité d'information. La revue de la littérature théorique a attaqué deux facteurs favorisant l'opacité dans la firme et engendrant la manipulation des résultats. Ces facteurs sont : La diversification de l'organisation et l'utilisation des moyens de renforcement de contrôle telle l'action à droits de vote double, les pyramides et les participations croisées.

En fait, plusieurs études ont eu pour objectifs d'examiner comment, pourquoi les firmes gèrent les résultats. En fait, la gestion des résultats peut affecter les décisions dans la firme : c'est pour cette raison que nous cherchons à identifier l'ensemble des facteurs qui la favorise. Parmi ces facteurs, nous avons focalisé notre attention sur la diversification de l'organisation et la déviation de la propriété par rapport au contrôle. En France, les entreprises ont recours aux actions à droits de vote double pour dévier via le principe une voie-une action. Ces facteurs rendent l'environnement opaque et augmentent l'asymétrie informationnelle, environnement propice à la manipulation des chiffres comptables.

Nos résultats montrent bien la diversification et la déviation de la propriété par rapport au contrôle, matérialisée en France en majorité par l'existence des actions droit de vote double peuvent donc susciter les comportements opportunistes et créer un terrain adéquat à l'émergence de pratiques comptables opportunistes. Ses résultats s'expliquent par le fait que la majorité des dirigeants français opèrent dans des firmes familiales et ont des portefeuilles non diversifiables.

On confirme bien la théorie de l'agence, selon laquelle les dirigeants vont utiliser les moyens dont ils disposent tels que l'accès aux informations et aux mécanismes de gestion pour gérer les résultats et maximiser leurs richesses au détriment des actionnaires externes.

Nous pouvons conclure que les sources de la gestion des résultats restent imprécises au point qu'aucune des théories et des travaux antérieurs n'ont pu les cerner. Avec la complexité de la firme et de la structure de propriété, la gestion des résultats reste et pour toujours un phénomène de plus en plus compliqué et incontrôlable.

C'est dans ce sens que plusieurs autres pistes de recherche restent envisageables. Tout d'abord, la variable dépendante pourrait être mesurée par d'autres modèles d'estimation des ajustements comptables discrétionnaires. Cela permettra de faire des comparaisons et de s'assurer que les résultats de cette étude sont définitifs et qu'ils ne varient pas selon la mesure utilisée.

Ensuite, l'inclusion de nouvelles variables de gouvernance se rapportant à la structure de propriété (Existence d'investisseurs institutionnels, pourcentage d'actions détenu par des blocs d'actionnaires,...) ou à la composition de certains comités (d'audit, de nomination,...) ou à l'enracinement du PDG (Durée du mandat,...) et l'analyse de leur impact sur l'étendue de la gestion des résultats serait aussi intéressant à étudier.

Enfin, d'autres recherches pourraient analyser l'impact de la diversification reliée sur la gestion des résultats ayant lieu dans un contexte particulier de la vie d'une entreprise.

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# The Effect of Demographic Factors on the Behavior of Investors during the Choice of Investment: Evidence from Twin Cities of Pakistan

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**Abstract-** Investor's behaviour is influenced by many factors during investment decision making. Demographic profile of investors is also one of the decision influencing factor among others. The aim of this paper is to examine the effect of demographic factors on investors level of risk tolerance regarding the choice of investment.

100 investors from twin cities of Pakistan (Rawalpindi and Islamabad) were selected as sample, chi square test and correlation was conducted to explore the effect of demographic factors on investor's level of risk tolerance regarding the choice of investment. Result of the paper showed that demographic factors of investors such as academic education, income level, investment knowledge, and investment experience effect the investors level of risk tolerance, while investors gender, marital status, occupation, and family size showed no effect on investors level of risk tolerance. These results are important for managers to advise their clients about better area of investment and risk level according to their demographic profile.

**Keywords:** *demographic factors, investors level of risk tolerance, correlation, pakistan.*

**GJMBR-C Classification :** *JEL Code: G11*



*Strictly as per the compliance and regulations of:*



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100 investors from twin cities of Pakistan (Rawalpindi and Islamabad) were selected as sample, chi square test and correlation was conducted to explore the effect of demographic factors on investor's level of risk tolerance regarding the choice of investment. Result of the paper showed that demographic factors of investors such as academic education, income level, investment knowledge, and investment experience effect the investors level of risk tolerance, while investors gender, marital status, occupation, and family size showed no effect on investors level of risk tolerance. These results are important for managers to advise their clients about better area of investment and risk level according to their demographic profile.

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## I. INTRODUCTION

Behaviour of investors in derivative markets is influence by many personal and situational factors during the choice of investment. Different researches are conducted to determine the behaviour influencing factors and attempt to understand and explain the degree to which these factors influence the decision- making process.

Investment involves the utilization of funds at present with the hope of better return in future. Traditional financial theories presume that investors are rational. People rationally choose between alternatives, they act rationally while making their investment decisions (Von Neumann, and Morgenstern, 1944). Later on it is explored by many researchers that Individual investor sometime make irrational decisions about their investments (Barberis, and Thaler, 2003). Different factors affect the investors behaviour during personal financial management process. Among others factors investor behaviour is also affected by

demographic characteristics. Different research papers are conducted to identify the effect of demographic factors on investment decision and shown contradictory results from country to country and area to area.

The aim of this paper is to investigate the extent to which demographic factors affect an investor's risk tolerance attitude during decision making with the context of Pakistan. This study is primary data based collected from various respondents through a questionnaire. The respondents who were interested in investment were interacted from twin cities of Pakistan i.e. Islamabad and Rawalpindi.

## II. LITERATURE REVIEW

Many studies are conducted to examine the effect of demographic factors on investor's level of risk tolerance during investment decision making. People having different gender, ages, income level, knowledge, marital status and occupation shows different attitudes towards decision making, some are risk seeker and some adverse risk. Brief literature about the effect of demographic factors on investor's behaviour with international evidence is given below.

### a) Gender

Among other demographic factors gender is the first effective differentiating and classifying factor (Bernasek et al. 1996) Because of the role of emotional Variables Risk attitudes differ between men and women (Loewenstein et al.2001) As compared to male investor female investors have wider risk aversion in different activities like financial decision making (Stendardi et al. 2002).

Male's investors are more confident in their investment decisions, they have more financial knowledge and wealth and ability to take risks (Bruce, 1995) (Barber and Odean 2001: 261).When males are investing in their assets due to large income they take greater risks (Parker, and Terry 2002).Some studies shown that there is no significant effect of gender on risk tolerance during financial decisions (Schubert et al. 1999: 384-385).

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b) *Age*

Investment performance or decision making process of individual investor is also based on his /her age. It is explored by researcher risk aversion relatively decreased with the age of people when other variable are held constant (Wang, H. & S. Hanna, 1997).

Older people tolerate more risk as compare to the young investors (Grable and Lytton, 1999b: 7) Young investor can not accurately assess about his work performance as compare to older one. Old people gain investment knowledge and experience, and make better investment Choices (Kumar, and Korniotis, 2011). In contrast some researchers found that increasing age of investors caused decrease in risk tolerance (Jiankopolos and Bernasek 2006). Further some researchers explored that investors age and financial risk tolerance have no significant relationship (Al-Ajmi, 2008: 21) (Anbar and Eker 2010: 505) Gumede (2009).

c) *Education*

Third demographic factor which caused a higher financial risk tolerance during decision making process is education i.e. formal attained academic training (sung, Hanna, 1996). Level of education obtained and risk tolerance have a positive relationship (Kimball et al 2007: 20) (Graham et al. 2009). Contradictory results are also shown by some researchers, which are exploring that no significant relationship is exist between education and risk tolerance whilst the Strydom et al (2009) Gumede (2009: 27).

d) *Marital Status*

Marital status is also an effective factor influencing the decision making of investor. Single individuals are more risk taker than married because married individuals have responsibilities for themselves and dependents (Roszkowski et al. 1993) (Lazzarone, 1996) Barber and Odean (2001: 285). Some studies failed to find significance association between marital status and financial risk tolerance (McInish, 1982).

e) *Income Level*

Income level of investor is also affects its behaviour toward investment. A person with greater wealth takes greater risk (Terry, and Parker, 2002). Persons with upper level of income and millionaires tend to take higher risk as than individual with lower level of income (MacCrimmon, and Wehrung, 1986). Researcher explored that level of risk tolerance increase with the increasing level of income (Blume et al.1994) Investors invest their funds in more volatile portfolio composed of more volatile stocks when they have higher level of income (Barber, and Odean , 2001).

Higher level of income creates the ability of bearing the losses, so wealthier people preferred higher level of risk (bernheim et al, 2001).

In contrast some researchers shown income level has no relationship with financial risk tolerance (Strydom et al (2009: 18)

f) *Occupation*

Occupation means the activity in which people engaged for pay. Those people who generate their income directly from their own business, trade, or profession leads to higher levels of risk taking as compare to the people of straight salary work for others (MacCrimmon & Wehrung, 1985). Occupational status is also affecting the level of risk taking ability; people with higher ranking occupational status are more risk seeker as compare to low ranking occupational status (Roszkowski et al., 1993). People having low risk taking ability choose low ranked professions (Barnewall, 1988).

g) *Family Size*

Investor's family size is also effects their financial risk taking behaviour. Investors having small family size are more risk taker, where increase in family size caused risk aversion (Lease, Lewellen, and Schlarbaum, 1977).

### III. OBJECTIVES OF THE STUDY

Following objectives were framed from the present study:

- Find the effect of demographic factors on investor's decisions.
- Find the nature of association between demographic factors (Education, Age, Gender, Investment knowledge, investment experience, Occupation, marital status, Income level, and family size of investors) and investor's level of risk tolerance.

### IV. RESEARCH METHODOLOGY

This study is primary data based involves to explored the effect of demographic factors on investors level of risk tolerance during investment decision making process. Data is collected from various respondents through a structured questionnaire. The Questionnaire contains open and close ended questions. Only those people were interacted who were interested in investment located in twin cities of Pakistan i.e. Islamabad and Rawalpindi. The total sample consisted of 100 respondents.

Males and females from different occupations and income levels are splits from different age groups and education levels. In this study Risk is consider as a dependent variable, while demographic factors individually checked as independent factors in relation with risk taking attitude of investors. In order to statistically check the results Chi- Square and correlation tests are used. These tests are also used by Jain, D.D. & Mandot, M.N. (2012) for similar study in Rajasthan. In

order to analyze the data statistical package SPSS is used.

*H1:* Demographic Characteristics have an effect on investor's level of financial risk tolerance.

## V. HYPOTHESIS

*H0:* Demographic Characteristics do not have an effect on investor's level of financial risk tolerance.

*Table 1:* Profile of Investors

| Variables                           | Number of Investors      | %Age |
|-------------------------------------|--------------------------|------|
| <b>Gender</b>                       | Male                     | 73   |
|                                     | Female                   | 27   |
|                                     | Total                    | 100  |
| <b>Age</b>                          | Below 30 years           | 42   |
|                                     | 30-40 years              | 26   |
|                                     | 40-50 years              | 18   |
|                                     | 50-60 years              | 12   |
|                                     | 60 or Above 60 years     | 02   |
|                                     | Total                    | 100  |
| <b>Marital Status</b>               | Single                   | 38   |
|                                     | Married                  | 62   |
|                                     | Widow                    | 0    |
|                                     | Divorced                 | 0    |
|                                     | Total                    | 100  |
| <b>Academic Qualification level</b> | Below Graduation         | 11   |
|                                     | Graduation               | 43   |
|                                     | Post Graduation          | 37   |
|                                     | Others                   | 9    |
|                                     | Total                    | 100  |
| <b>Income ( Per annum )</b>         | Below Rs. 160,000        | 33   |
|                                     | Rs. 1,60,000-Rs.3,20,000 | 12   |
|                                     | Rs.3,20,000-Rs.4,80,000  | 25   |
|                                     | Rs.4,80,000-Rs.6,40,000  | 14   |
|                                     | Rs. 6,40,000 and Above   | 16   |
|                                     | Total                    | 100  |
| <b>Occupation</b>                   | Student                  | 09   |
|                                     | Professional             | 18   |
|                                     | Business                 | 14   |
|                                     | Service                  | 46   |
|                                     | Others                   | 13   |
|                                     | Total                    | 100  |
| <b>Investment Experience</b>        | Below 1 year             | 30   |
|                                     | 1-4 Years                | 40   |
|                                     | 4-7 years                | 17   |
|                                     | 7-10 years               | 08   |
|                                     | 10 Years or Above        | 05   |
|                                     | Total                    | 100  |

(DATA FROM QUESTIONNAIRE)

a) Association between investors gender and financial risk tolerance

*H1:* There is significant effect of gender on risk tolerance during financial decisions.

*H0:* There is no significant effect of gender on risk tolerance during financial decisions.

Table 2 : Investors Gender and Financial Risk Tolerance

|        |        | RISK          |         |               |           | Total |
|--------|--------|---------------|---------|---------------|-----------|-------|
|        |        | Below average | Average | Above average | Very high |       |
| GENDER | Male   | 31            | 28      | 10            | 4         | 73    |
|        | Female | 12            | 11      | 4             | 0         | 27    |
| Total  |        | 43            | 39      | 14            | 4         | 100   |

Table 3 : CHI Square Test Summary

|                    | Value | Df | Sig.(2 sided) |
|--------------------|-------|----|---------------|
| Pearson Chi-Square | 1.544 | 3  | .672          |

Table 4 : Summary of Correlation

|        |                     | Gender | Risk  |
|--------|---------------------|--------|-------|
| Gender | Pearson Correlation | 1      | -.063 |
|        | Sig. (2-tailed)     |        | .531  |
|        | N                   | 100    | 100   |
| Risk   | Pearson Correlation | -.063  | 1     |
|        | Sig. (2-tailed)     | .531   |       |
|        | N                   | 100    | 100   |

From Table 3: It is evaluated that the computed value of chi –square is 1.544 .Where tabulated value using 5% level of significance is 7.815.Computed value is less than tabulated value so we accept our H0 (null hypothesis) and concluded that there is no significant effect of gender on risk tolerance during financial decisions. Both male and female have same response toward financial risk tolerance.

Table 4 is revealing that there is a negative correlation between gender and financial risk tolerance.

Increase in investor’s gender caused negative effect on investor’s ability of financial risk tolerance.

b) Association between investors age and *Financial risk tolerance*

*H0*: There is no significant effect of Age on risk tolerance during financial decisions.

*H1*: There is significant effect of Age on risk tolerance during financial decisions.

Table 5 : Investors Age and Financial Risk Tolerance

|       |                    | RISK          |         |               |           | Total |
|-------|--------------------|---------------|---------|---------------|-----------|-------|
|       |                    | Below Average | Average | Above Average | Very High |       |
| Age   | Below 30 years     | 19            | 18      | 5             | 0         | 42    |
|       | 30-40 Years        | 8             | 9       | 7             | 2         | 26    |
|       | 40-50 Years        | 6             | 10      | 2             | 0         | 18    |
|       | 50-60 Years        | 8             | 2       | 0             | 2         | 12    |
|       | 60 Years and above | 2             | 0       | 0             | 0         | 2     |
| Total |                    | 43            | 39      | 14            | 4         | 100   |

Table 6 : Chi Square Test Summary

|                    | Value  | Df | Sig. (2-sided) |
|--------------------|--------|----|----------------|
| Pearson Chi-Square | 21.767 | 12 | .040           |

Table 7 : Summary of Correlation

|      |                     | Age   | Risk  |
|------|---------------------|-------|-------|
| Age  | Pearson Correlation | 1     | -.030 |
|      | Sig. (2-tailed)     |       | .771  |
|      | N                   | 100   | 100   |
| Risk | Pearson Correlation | -.030 | 1     |
|      | Sig. (2-tailed)     | .771  |       |
|      | N                   | 100   | 100   |

From Table 6: It is evaluated that the computed value of chi –square is 21.767 .Where tabulated value using 5% level of significance is 21.026.Computed value is greater than tabulated value so we reject our H0 (null hypothesis) and concluded that there is significant effect of Age on risk tolerance during financial decisions.

Table 7 is revealing that negative correlation is exist between Age of investors and financial risk tolerance. An Increase in age caused negative effect on investor’s ability of financial risk tolerance.

Table 8 : Investors Academic Qualification and Financial Risk Tolerance

|                     |                  | Risk          |         |               |           | Total |
|---------------------|------------------|---------------|---------|---------------|-----------|-------|
|                     |                  | Below average | Average | Above average | Very high |       |
| Qualification Level | Below graduation | 11            | 0       | 0             | 0         | 11    |
|                     | Graduation       | 20            | 19      | 3             | 1         | 43    |
|                     | Post Graduation  | 9             | 18      | 7             | 3         | 37    |
|                     | Others           | 3             | 2       | 4             | 0         | 9     |
| Total               |                  | 43            | 39      | 14            | 4         | 100   |

Table 9 : CHI Square Test Summary

|                    | Value  | Df | Sig. (2-sided) |
|--------------------|--------|----|----------------|
| Pearson Chi-Square | 30.066 | 9  | .000           |

Table 10 : Summary of Correlation

|           |                     | Education | Risk   |
|-----------|---------------------|-----------|--------|
| Education | Pearson Correlation | 1         | .394** |
|           | Sig.(2tailed)       |           | .000   |
|           | N                   | 100       | 100    |
| Risk      | Pearson Correlation | .394**    | 1      |
|           | Sig.(2tailed)       | .000      |        |
|           | N                   | 100       | 100    |

\*\*Correlation is significant at the 0.01 level (2-tailed).

From Table 9: It is evaluated that the computed value of chi –square is 30.066.Where tabulated value using 5% level of significance is 16.919.Computed value is greater than tabulated value so we reject our H0 (null hypothesis) and concluded that there is significant effect of Academic qualification on risk tolerance during financial decisions.

Table 10 is revealing that positive correlation is exist between academic qualification and financial risk tolerance. An increase in Academic qualification caused

c) Association between investors academic qualification and financial risk tolerance

H0: There is no significant effect of Academic qualification on risk tolerance during financial decisions.

H1: There is significant effect of Academic qualification on risk tolerance during financial decisions.

a Positive effect on investor's ability of financial risk tolerance.

d) Association between investors annual income and financial risk tolerance

H0: There is no significant effect of income level on risk tolerance during financial decisions

H1: There is significant effect of income level on risk tolerance during financial decisions.

Table 11 : Investors Level of Income and Financial Risk Tolerance

|        |                          | Risk          |         |               |           | Total |
|--------|--------------------------|---------------|---------|---------------|-----------|-------|
|        |                          | Below average | Average | Above average | Very high |       |
| Income | Below Rs. 160,000        | 23            | 8       | 2             | 0         | 33    |
|        | Rs.1,60,000-Rs.3,20,000  | 6             | 6       | 0             | 0         | 12    |
|        | Rs.3,20,000-Rs.4,80,000  | 7             | 11      | 6             | 1         | 25    |
|        | Rs.4,80,000- Rs.6,40,000 | 3             | 10      | 1             | 0         | 14    |
|        | Rs. 6,40,000 and Above   | 4             | 4       | 5             | 3         | 16    |
| Total  |                          | 43            | 39      | 14            | 4         | 100   |

Table 12 : CHI Square Test Summary

|                    | Value  | Df | Sig. (2-sided) |
|--------------------|--------|----|----------------|
| Pearson Chi-Square | 36.475 | 12 | .000           |

Table 13 : Summary of Correlation

|        |                     | Income  | Risk   |
|--------|---------------------|---------|--------|
| Income | Pearson Correlation | 1       | .442** |
|        | Sig. (2-tailed)     |         | .000   |
|        | N                   | 100     | 100    |
| Risk   | Pearson Correlation | .442 ** | 1      |
|        | Sig. (2-tailed)     | .000    |        |
|        | N                   | 100     | 100    |

\*\* .Correlation is significant at the 0.01 level (2-tailed)

From Table 12: It is evaluated that the computed value of chi –square is 36.475, where tabulated value using 5% level of significance is 21.026. Computed value is greater than tabulated value so we reject our H0 (null hypothesis) and concluded there is significant effect of income level on risk tolerance during financial decisions.

Table 13 is revealing that Positive correlation is exist between income level of investors and financial risk tolerance. An increase in Level of income caused a

positive effect on investor's ability of financial risk tolerance.

e) Association between marital status of investors and financial risk tolerance

H0: There is no significant effect of marital status on risk tolerance during financial decisions.

H1: There is significant effect of marital status on risk tolerance during financial decisions.

Table 14 : Marital Status of Investors and Financial Risk Tolerance

|                |         | Risk          |         |               |           | Total |
|----------------|---------|---------------|---------|---------------|-----------|-------|
|                |         | Below average | Average | Above average | Very high |       |
| Marital Status | Single  | 17            | 14      | 7             | 0         | 38    |
|                | Married | 26            | 25      | 7             | 4         | 62    |
| Total          |         | 43            | 39      | 14            | 4         | 100   |

Table 15 : CHI Square Test Summary

|                    | Value | Df | Sig. (2-sided) |
|--------------------|-------|----|----------------|
| Pearson Chi-Square | 3.423 | 3  | .331           |

Table 16 : Summary of Correlation

|                |                     | Marital Status | Risk |
|----------------|---------------------|----------------|------|
| Marital Status | Pearson Correlation | 1              | .050 |
|                | Sig. (2-tailed)     |                | .620 |
|                | N                   | 100            | 100  |
| Risk           | Pearson Correlation | .050           | 1    |
|                | Sig. (2-tailed)     | .620           |      |
|                | N                   | 100            | 100  |

From Table 15: It is evaluated that the computed value of chi–square is 3.423 .Where tabulated value using 5% level of significance is 7.815. Computed value is less than tabulated value so we accept our H0 (null hypothesis) and concluded that there is no significant effect of marital status on risk tolerance during financial decisions.

Table 16 is revealing that Positive correlation is exist between marital status and financial risk tolerance.

An increase in marital status caused a Positive effect on investor's ability of financial risk tolerance.

f) Association between investors investment knowledge and financial risk tolerance

H0: There is no significant effect of investment knowledge on risk tolerance during financial decisions.

H1: There is significant effect of investment knowledge on risk tolerance during financial decisions.

Table 17 : Investors Investment Knowledge and Financial Risk Tolerance

|           |                     | Risk          |         |               |           | Total |
|-----------|---------------------|---------------|---------|---------------|-----------|-------|
|           |                     | Below average | Average | Above average | Very high |       |
| Knowledge | No knowledge        | 2             | 1       | 0             | 0         | 3     |
|           | Little knowledge    | 30            | 3       | 1             | 0         | 34    |
|           | Moderate knowledge  | 5             | 17      | 3             | 0         | 25    |
|           | Good knowledge      | 3             | 13      | 5             | 1         | 22    |
|           | Very good knowledge | 3             | 5       | 5             | 3         | 16    |
| Total     |                     | 43            | 39      | 14            | 4         | 100   |

Table 18 : CHI-Square Test Summary

|                    | Value  | Df | Sig. (2-sided) |
|--------------------|--------|----|----------------|
| Pearson Chi-Square | 61.381 | 12 | .000           |

Table 19 : Summary of Correlation

|           |                     | Knowledge | Risk   |
|-----------|---------------------|-----------|--------|
| Knowledge | Pearson Correlation | 1         | .592** |
|           | Sig.(2tailed)       |           | .000   |
|           | N                   | 100       | 100    |
| Risk      | Pearson Correlation | .592**    | 1      |
|           | Sig.(2tailed)       | .000      |        |
|           | N                   | 100       | 100    |

\*\* Correlation is significant at the 0.01 level (2-tailed).

From Table 18: It is evaluated that the computed value of chi –square is 61.381, where tabulated value using 5% level of significance is 21.026. Computed value is greater than tabulated value so we reject our H0 (null hypothesis) and concluded that there is significant effect of investment knowledge on risk tolerance during financial decisions.

Table 19 is revealing that Positive correlation is exist between investment knowledge of investors and financial risk tolerance. An increase in knowledge

caused a Positive effect on investor’s ability of financial risk tolerance.

g) Association between investors occupation and financial risk tolerance

H0: There is no significant effect of Occupation on risk tolerance during financial decisions.

H1: There is significant effect of Occupation on risk tolerance during financial decisions.

Table 20 : Investors Occupation and Financial Risk Tolerance

|            |              | Risk          |         |               |           | Total |
|------------|--------------|---------------|---------|---------------|-----------|-------|
|            |              | Below average | Average | Above average | Very high |       |
| Occupation | Student      | 5             | 3       | 1             | 0         | 9     |
|            | Professional | 5             | 10      | 3             | 0         | 18    |
|            | Business     | 4             | 5       | 3             | 2         | 14    |
|            | Service      | 21            | 17      | 6             | 2         | 46    |
|            | Others       | 8             | 4       | 1             | 0         | 13    |
| Total      |              | 43            | 39      | 14            | 4         | 100   |

Table 21 : CHI Square Test Summary

|                    | Value  | Df | Sig. (2-sided) |
|--------------------|--------|----|----------------|
| Pearson Chi-Square | 11.158 | 12 | .515           |

Table 22 : Summary of Correlation

|            |                     | Occupation | Risk  |
|------------|---------------------|------------|-------|
| Occupation | Pearson Correlation | 1          | -.076 |
|            | Sig.(2tailed)       |            | .451  |
|            | N                   | 100        | 100   |
| Risk       | Pearson Correlation | -.076      | 1     |
|            | Sig.(2tailed)       | .451       |       |
|            | N                   | 100        | 100   |

From Table 21: It is evaluated that the computed value of chi –square is 11.158, Where tabulated value using 5% level of significance is 21.026. Computed value is less than tabulated value so we accept our H0 (null hypothesis) and concluded that there is no significant effect of occupation on risk tolerance during financial decisions.

Table 22 is revealing that negative correlation is exist between occupation and financial risk tolerance.

An increase in occupation caused a negative effect on investor's ability of financial risk tolerance.

*h) Association between investors investment experience and financial risk tolerance*

*H0:* There is no significant effect of investment experience on risk tolerance during financial decisions.

*H1:* There is significant effect of investment experience on risk tolerance during financial decisions.

Table 23 : Investors Investment Experience and Financial Risk Tolerance

|              |                   | Risk          |         |               |           | Total |
|--------------|-------------------|---------------|---------|---------------|-----------|-------|
|              |                   | Below average | Average | Above average | Very high |       |
| Experience   | Less than 1 Years | 17            | 9       | 4             | 0         | 30    |
|              | 1-4 Years         | 14            | 19      | 7             | 0         | 40    |
|              | 4-7 Years         | 6             | 8       | 2             | 1         | 17    |
|              | 7-10 Years        | 2             | 2       | 1             | 3         | 8     |
|              | 10 years or Above | 4             | 1       | 0             | 0         | 5     |
| <b>Total</b> |                   | 43            | 39      | 14            | 4         | 100   |

Table 24 : CHI Square Test Summary

|                    | Value  | Df | Sig. (2-sided) |
|--------------------|--------|----|----------------|
| Pearson Chi-Square | 33.569 | 12 | .001           |

Table 25 : Summary Of Correlation

|            |                     | Experience | Risk |
|------------|---------------------|------------|------|
| Experience | Pearson Correlation | 1          | .140 |
|            | Sig. (2-tailed)     |            | .023 |
|            | N                   | 100        | 100  |
| Risk       | Pearson Correlation | .140       | 1    |
|            | Sig. (2-tailed)     | .023       |      |
|            | N                   | 100        | 100  |

From Table 24: It is evaluated that the computed value of chi –square is 33.569, where tabulated value using 5% level of significance is 21.026. Computed value is greater than tabulated value so we reject our H0 (null hypothesis) and concluded that there is significant effect of investment experience on risk tolerance during financial decisions.

Table 25 is revealing that Positive correlation is exist between investment experience and financial risk tolerance. An increase in investment experience caused a Positive effect on investor's ability of financial risk tolerance.

*i) Association between investors family size and financial risk tolerance*

*H0:* There is no significant effect of Family size on risk tolerance during financial decisions.

*H1:* There is no significant effect of Family size on risk tolerance during financial decisions.

Table 26 : Investors Family Size and Financial Risk Tolerance

|             |                     | Risk          |         |               |           | Total |
|-------------|---------------------|---------------|---------|---------------|-----------|-------|
|             |                     | Below average | Average | Above average | Very high |       |
| Family Size | Less than 3 Members | 2             | 4       | 1             | 0         | 7     |
|             | 3-6 Members         | 28            | 20      | 10            | 2         | 60    |
|             | 6-10 Members        | 9             | 13      | 3             | 2         | 27    |
|             | 10 Members or above | 4             | 2       | 0             | 0         | 6     |
| Total       |                     | 43            | 39      | 14            | 4         | 100   |

Table 27 : CHI Square Test Summary

|                    | Value | Df | Sig. (2-sided) |
|--------------------|-------|----|----------------|
| Pearson Chi-Square | 6.285 | 9  | .711           |

Table 28 : Summary Of Correlation

|             |                     | Family Size | Risk  |
|-------------|---------------------|-------------|-------|
| Family Size | Pearson Correlation | 1           | -.040 |
|             | Sig. (2-tailed)     |             | .694  |
|             | N                   | 100         | 100   |
| Risk        | Pearson Correlation | -.040       | 1     |
|             | Sig. (2-tailed)     | .694        |       |
|             | N                   | 100         | 100   |

From Table 27: It is evaluated that the computed value of chi-square is 6.285. Where tabulated value using 5% level of significance is 16.919. Computed value is less than tabulated value so we accept our H0 (null hypothesis) and concluded that there is no significant effect of family size on risk tolerance during financial decisions.

Table 28 is revealing that negative correlation is exist between family size and level of risk tolerance. An increase in family size caused a negative effect on investor's ability of financial risk tolerance.

## VI. CONCLUSION

This study concludes that there is an association between demographic characteristics and investors level of risk tolerance. Result shows that demographic factors like investor's age, academic qualification, income level, investment knowledge, and investment experience have significant effect on the behaviour of investors. There is positive correlation between investor's academic qualification, income level, and investment knowledge and investment experience with their level of risk tolerance during the choice of investments. However investor's age shows slight negative correlation. Increase in age at one point caused a negative effect on risk taking behaviour of investors.

Other demographic factors like investor's gender, marital status, occupation and family size have no significant effect on investor's level of financial risk tolerance.

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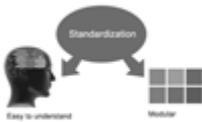




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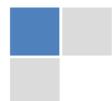


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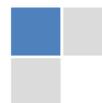
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One must be persistent and creative in using keywords. An effective keyword search requires a strategy and planning a list of possible keywords and phrases to try.

Search engines for most searches, use Boolean searching, which is somewhat different from Internet searches. The Boolean search uses "operators," words (and, or, not, and near) that enable you to expand or narrow your affords. Tips for research paper while preparing research paper are very helpful guideline of research paper.

Choice of key words is first tool of tips to write research paper. Research paper writing is an art. A few tips for deciding as strategically as possible about keyword search:



- One should start brainstorming lists of possible keywords before even begin searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in research paper?" Then consider synonyms for the important words.
- It may take the discovery of only one relevant paper to let steer in the right keyword direction because in most databases, the keywords under which a research paper is abstracted are listed with the paper.
- One should avoid outdated words.

Keywords are the key that opens a door to research work sources. Keyword searching is an art in which researcher's skills are bound to improve with experience and time.

Numerical Methods: Numerical methods used should be clear and, where appropriate, supported by references.

*Acknowledgements: Please make these as concise as possible.*

#### References

References follow the Harvard scheme of referencing. References in the text should cite the authors' names followed by the time of their publication, unless there are three or more authors when simply the first author's name is quoted followed by et al. unpublished work has to only be cited where necessary, and only in the text. Copies of references in press in other journals have to be supplied with submitted typescripts. It is necessary that all citations and references be carefully checked before submission, as mistakes or omissions will cause delays.

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*Tables: Tables should be few in number, cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g. Table 4, a self-explanatory caption and be on a separate sheet. Vertical lines should not be used.*

*Figures: Figures are supposed to be submitted as separate files. Always take in a citation in the text for each figure using Arabic numbers, e.g. Fig. 4. Artwork must be submitted online in electronic form by e-mailing them.*

#### Preparation of Electronic Figures for Publication

Even though low quality images are sufficient for review purposes, print publication requires high quality images to prevent the final product being blurred or fuzzy. Submit (or e-mail) EPS (line art) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Do not use pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings) in relation to the imitation size. Please give the data for figures in black and white or submit a Color Work Agreement Form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

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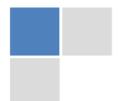
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### Approach

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|-------------------------------|--|---|--|
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| <i>Methods and Procedures</i> | Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads  | Difficult to comprehend with embarrassed text, too much explanation but completed                   | Incorrect and unorganized structure with hazy meaning              |
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| <i>References</i>             | Complete and correct format, well organized  | Beside the point, Incomplete  | Wrong format and structuring                                       |



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