



Radboud University Nijmegen

Faculty of Management

Institutional ownership and performance: An Overview in emerging and developed countries.

Master Thesis

Masters's programme in Economics

Master's specialization in Corporate Finance & Control

2015/2016

Author: Rafael Erik Fehr

Student Number: S4460960

Supervisor: Drs. Martha Gabriela Contreras

Table of Contents

1.	Introduction	3
2.	Literature Review and Hypotheses.....	5
2.1.	Capital Structures and Performance	5
2.2.	Institutional ownership and Performance	8
2.3.	Institutional Environment and Cross-Countries Differences	10
3.	Research Method.....	14
3.1.	Dependent Variable.....	15
3.2.	Independent Variable	16
3.3.	Control Variables	16
3.4.	Model Specification	16
3.5.	Durbin-Wu-Hausman Test and 2OLS Model	18
3.6.	Breusch–Pagan Test and OLS Robust Standard Error Model	19
4.	Results and Discussion	19
4.1.	Summary Statistics	19
4.2.	Multicollinearity	21
4.3.	Hausman Wu Test	22
4.4.	Breusch Pagan Test	22
4.5.	Institutional Ownership and Performance	23
4.6.	Robustness Test	26
5.	Conclusions	27
6.	References	29
7.	Appendix	36

1. Introduction

Corporate problems and opportunistic behaviour arising from the separation of ownership and control of firms have long been described by advocates of the agency theory. Among the most known and cited accounting scandals are the case of Enron, HealthSouth, Tyco and Worldcom. These accounting scandals proved that perverse behaviour triggered by the separation of ownership and control of firms can lead to a decline in equity value, downgrade of credit ratings and most important of all a loss confidence in the financial market (Agrawal & Chadha, 2005). Boston Beer's company is an example of how ownership structures can influence the company. Jim Koch, co-founder of Boston Beer's and holder of 30% of the company, appears in the risk section of the company's report and have decision on the Board of Directors (Popkin, 2014). Therefore, the main research questions to be answered by this paper is: How institutional ownership affects company's performance and to what extent this influence is different between emerging countries and developed countries.

Previous literature provides possible answers to the first question but does not clearly point out to one single direction. McConnell and Servaes (1990) assert that institutional ownership can be either beneficial or harmful for the company's performance. Large institutions can, for instance, have better monitoring skills resulting in higher profitability and fewer earnings management from top management in the companies they monitor (Djankov, 1999; Chung *et al.* 2002). Institutional investors can also have greater incentives to monitor management which in that situation would feel pressured and perform better (Chaganti & Damanpour, 1991; Shleifer & Vishny, 1986). On the other hand, large institutions can also be harmful to company's performance when, for instance, they align their interest with opportunistic manager's interest, exerting their influence to expropriate the wealth of other shareholders (Djankov, 1999). Furthermore, large institutional investors can also expropriate the wealth of small shareholders decreasing the company's performance (Djankov, 1999).

Holthausen (2009) discusses that, unless the underlying economic and institutional factors from different countries converge to become more similar, it will be hard to find the same corporate behaviour among countries. The legal regime and enforcement strength which partially determine the behaviour of the economic agents differs between countries (Mahoney, 2009; North, 1991).

Klapper & Love (2004) states that ownership structure and the cost of external finance change depending on the legal regime and its enforcement power to guarantee investor's protection. La Porta *et al.* (1997) claim that countries having common law have the highest level of legal enforcement and shareholder's protection, countries with German and Scandinavian civil law system have a middle quality level of legal enforcement and shareholder's protection and the countries with French civil law system have the lowest quality level of legal enforcement and shareholder's protection. Furthermore, Lins (2003) highlights that, due to their characteristics, emerging countries show the effect of the ownership structure in the firm valuation more predominantly because of predominant pyramid ownership structure, legal regimes with low quality of enforcement and weak corporate control mechanisms.

Considerable numbers of studies have studied the effect of the ownership structure and the value of the firm or corporate governance (Claessens *et. al.*, 2002; Faccio and Lang, 2002; La Porta *et al.*, 2002; Lins, 2003; Cueto, 2008) in emerging countries. For example, Lins (2003) examined 1433 firms across 18 emerging countries and found a lower value for firms when manager control rights exceed their proportional ownership in countries with a weak legal system. Little prior research has focused on the relationship between the ownership structure and the cost of borrowing in emerging countries. Lin *et al.* (2011) studied the effect of the cash-flow right structure and the control right divergence using data sets with 22 Western European and East Asian countries for the period from 1996 to 1999. However, to this date, the difference in the relationship between ownership structure and cost of debt in emerging countries compared to developed countries is unexplored.

The purpose of this master thesis is to have more insights about the direction of the relationship between institutional ownership and company's performance and to fill the gap from previous literature studying the ownership structure in emerging countries (Claessens *et. al.*, 2002; Faccio and Lang, 2002; La Porta *et al.*, 2002; Lins, 2003; Cueto, 2008; Lin *et al.*, 2011). To do so, this paper follows the methodology used by previous literature studying ownership structures and performance and uses a sample based on the classification of developed and emerging countries made by Claessens & Yortuglo (2013), which separates countries by the level of governance factors. Furthermore, a linear regression model with robust standard errors will be used to include institutional ownership and control variables that measure the effect of the institutional ownership

on company's performance. Lastly, a subsample of data which contains countries with weak governance factors and legal system and countries with strong governance factors and legal system is used to compare the effects of the different ownership structure on company's performance in emerging and developed countries.

This master thesis will contribute adding to the prior literature about the agency problem, corporate governance and the ownership structure theory giving a different perspective. This master thesis will be a unique and innovative study focusing on institutional ownership and company's performance in emerging markets and whether this effect is different or not in emerging countries compared to developed countries. Moreover, prior research studying the effect of ownership structure and the cost of debt in emerging countries has focused on the equity ownership. This thesis will go deeper by analysing also the equity-debt ownership in emerging countries. By showing what is the effect of the different type of ownership to the cost of borrowing in emerging countries this paper expects to have a great contribution to managers and companies. Companies and managers could benefit from this thesis having a better understanding of how the company strategy related to the ownership can affect the company's performance in the future. Thus, this master thesis has great potential to provide practical relevance.

The paper will be organized as follows. In the second chapter, attention will be stressed in the prior literature. The third chapter will describe the sample, data, and variable measures used. The fourth chapter will describe the research design and present the empirical results and the robustness check of our results using alternative measures and specifications. Finally, the fifth chapter will conclude the paper.

2. Literature Review and Hypotheses

2.1. Capital Structures and Performance

Jensen and Meckling (1976) were among the first to challenge the prior idea about the relationship between the capital structure of the company and the value of the firm. Unlike, the capital structure irrelevance theory developed ¹ by Modigliani and Miller (1958), Jensen and Meckling (1976) highlight the influence of the capital structure in the company value and agency

¹ Modigliani & Miller (1963) incorporates the effect of the debt financing in the value of the firm and corrects for the strong assumption made in the capital structure irrelevance theory.

problems². Myers (1977) exemplifies asserting that to a certain point, an increase in the company debt level will provide managers the incentive to avoid profitable projects. Furthermore, companies having high debt level will face a decrease in value because they will be committed to repay debtholders instead of adding value to the company. Additionally, using free cash to repay debt would create new conflicts between shareholders and debtholders (Jensen *et al.*, 1992).

Unlike the various authors who discuss the relationship between the fraction of debt and equity and the agency problem, Anderson *et al.* (2003) highlights that the type of equity ownership can also trigger agency problems. Different ownership structures and owners can have different implications for the performance of the companies. Berle and Means already in 1932 affirmed that manager can use corporate resources for their own interest instead of maximizing shareholder's value when they have significant powers in the company. Himmelberg *et al.* (1999) go further and mention that managers will have the power to use company's assets in their own benefit when monitoring mechanisms are weak to prevent such behaviour. Managerial ownership can increase or decrease firm performance whether the ownership level is optimal, below or above the optimal level³. Himmelberg *et al.* (1999) explain that managers need a certain level of equity in the company in order to have their interests aligned with shareholder's interest and if the levels of ownership are below the optimal level, managers will have incentives to consume perquisites. Thus, The relationship between managerial ownership structure and company's performance is regarded as non-linear (Morck *et al.*, 1988; McConnell and Servaes, 1990).

Companies are not always private, being sometimes owned totally or partially by Governments. In the context public versus private ownership, the agency problem appears because the government has social and welfare goals which are not always in line with the profit maximization goal of the companies (Wilson, 2002; Lin *et al.*, 2011). In general, investor's perception of the company's value when offering initial public offerings (PIPOs) changes depending on the level of government ownership which suggests that the proportion of government ownership has an impact on firm's value (Wilson, 2002). Despite the agreement toward the agency

²The problems arising from the separation of the ownership and controllership are the main topic being discussed by the agency theory. More information about the agency theory can be found in Eisenhardt (1989), Berle & Means (1932), Jensen (1983) and Harris & Raviv (1978).

³ When the stake of company owned by the manager is high and the optimal level this will create incentives to act in their own interest instead of shareholder's interest (Morck *et al.*, 1988 & McConnell and Servaes, 1990).

problem with government ownership, the literature does not lead to one conclusion about the influence of the government ownership for company's performance. Some authors argue that state-owned firms are less efficient than private firms. Politicians can have significant influence in state-owned companies and can, for instance, act to preserve jobs in the company when firing employees is necessary because of political interest (Megginson et al., 1994). Sapienza (2004) and Shleifer (1998) goes further claiming that because of political interest state-owned companies allocate more resources where there is more political interest such as friends and supporters of politicians. On the other hand, Caves and Christian (1980) found that when Government-owned companies have competitors in the market such as the Canadian National Railroad in Canada, they perform as efficient as private companies such as the Canadian Pacific Railroad. Wilson (2002).

Djankov (1999) discusses the role of the employee ownership on the company performance. Although there is a scarcity of studies about the role of the employee ownership in the company's performance, Djankov (1999) claims that employees, in general, do not own a considerable amount of the company and, then, cannot influence company's performance by monitoring. This statement is also confirmed by Lin *et al.* (2010) who mentions that in China employees usually hold a small proportion of the company's share and, consequently, they do not monitor management performance nor they are worried about the risk of a takeover.

In contrast to the role of a small investor in monitoring management performance mentioned by Djankov (1999), Shleifer and Vishny (1986) asserts that individuals with a high stake in the company (blockholders) have a strong incentive to monitor management performance because they have significantly more to lose than small investors. However, the relationship between individual ownership concentration and firm performance depends on the benefits from active monitoring and the costs of other types of ownership structures. It means that there are situations where an investor with a high concentration of shares in one company will benefit more when they do not monitor management's performance. (Coase, 1988; Demsetz and Lehn, 1985).

Although, Shleifer and Vishny (1986) discuss the benefits of monitoring for individual investors with a stake in one company, Grossman and Hart (1980) specifies that, in general, only big institutional investors⁵ can benefit from monitoring management performance. Shleifer and

⁵ Pension funds and financial institutions such as large banks are regarded as institutional investors by Djankov (1999) and Chaganti & Damanpour (1991).

Vishny (1986) claim that institutional incentives to monitor management performance is even higher than for the board of directors. Furthermore, the institutional stake in companies has grown significantly to a point where even if the ultimate decision lies upon the top management of the companies, institutions can constrain or influence strategic decisions (Chaganti & Damanpour, 1991). Mintzberg (1983) and Dye (1985) additionally asserts that institutions can also promote pressure campaigns, manage to have a representative person in the board of directors and exert market pressure by selling and buying which give them also power to influence strategic decisions. Thus, following the body of research mentioned above highlighting the importance of the institutional ownership for the strategic decisions of the companies, this paper will focus on the relationship between institutional ownership and company's performance.

2.2. Institutional ownership and Performance

Indeed, institutional investors have the chance, know-how, skills and resources to influence the performance of the companies (Cornett *et.al*, 2005). Maug (1998) points out that whether institutions influence strategic decisions or not is relatively a function of their stake or ownership in the company. Institutions with a high stake in the company have less marketable number of shares and likely will hold them for longer, which exposes institutions to the performance of the company and will give them incentives to actively monitor and try to influence strategic decisions. Moreover, Gillan and Starks (2000) describe that institutional proposals are more likely to receive votes to support the decision that individual proposals, for example. Despite the fact that institutions can influence the decisions and performance of the companies they partially own, institutional ownership can be either beneficial (The efficient-monitoring hypothesis) or harmful (The conflict-of-interest hypothesis and the strategic-alignment hypothesis) for the company's performance (McConnell and Servaes, 1990).

Large outside institutions can have better access to information, better assessment⁸ and skills which they use to incorporate in their evaluation and to increase the company's value. One example is provided by Bethel et al. (1998) who pointed out that institutional investors often acquire a high stake of diversified and bad performer companies to divest and split them, turning them into profitable again. Large outside institutions also can have better monitoring skills

⁸ Foreign investors are one the examples of outside owners with better access to information and ability to assess companies they own (Djankov, 1999).

⁹resulting in a higher profitability and fewer earnings management through discretionary accruals for the companies they monitor (Djankov, 1999; Chung *et al.* 2002). According to Shleifer & Vishny (1986), institutional investors also have greater incentives to monitor management activities than the board of directors, for instance, because they have a high stake in the company. Chaganti & Damanpour (1991) mention that managers usually feel pressured and will perform better when they have to comply with large institutional investors requirements. One example is that institutional ownership can lower earnings management through discretionary accruals (Chung *et.al* 2002).

Many Authors such as Nesbitt (1994), Smith (1996), and Del Guercio and Hawkins (1999) investigate the “shareholder activism”¹⁰ from big pension funds in US to their target companies and found a direct and positive effect from shareholder activism of pension funds on firm’s performance and stock’s performance. Hartzell and Starks (2003) demonstrated the benefits of the institutional ownership to constrain the level of executive benefits replacing it to higher levels of performance based payments. Cornett *et al.* (2004), for instance, find for US firms from S&P 100 that there is a significant and positive relationship between institutional investors and the operating cash flow return. Cornett *et al.* (2005) and (2007) also found a significant and positive relationship between institutional investors and the operating cash flow return but, also, a positive and significant relationship between the number of institutional investors holding stocks in the company and the operating cash flow return. Last but not least is the fact that Tahir *et.al* (2015) use other company performance proxy such as ROE and ROA ¹¹ and confirmed the same positive and significant relationship between institutional ownership and the performance of the companies.

On the other hand, institutional ownership can be harmful to the company when small shareholders are not protected or institutions have ties with corporate management (Djankov, 1999). Moreover, when ties between institutional investors and manager are close, institutional investors tend to allocate their voting rights to the management decision (McConnell and Servaes, 1990). Large institutional investors can use their relationship with managers to expropriate the wealth of small shareholders decreasing the company’s performance (Djankov, 1999). Commercial

⁹ Trade creditors is one example of outside owner who better monitor the company they own (Djankov, 1999).

¹⁰ Shareholder activism is regarded as the active monitoring process of firms holding equities and ownership stakes in another company.

¹¹ ROE = Return on equity and ROA = Return on assets.

banks are one example of a large institutional investor that through higher lending spreads and consequently a direct dilution of other stakeholders can benefit themselves at the expense of small investors (Djankov, 1999). Bhattacharya & Graham (2007) provide evidence from Finnish public traded companies in 2004 finding that the relationship between institutional ownership and firm's performance is negative. Thus, literature is not clear about the direction of the relationship between institutional ownership and firm's performance.

Thus, due to the fact that part of the literature shows significant and positive relationship between the institutional ownership and the performance of the company and another part points out significant and negative relationship between the institutional ownership and the performance of the company:

Hypothesis 1: A higher concentration of institutional ownership affects company's performance.

2.3. Institutional Environment and Cross-Countries Differences

So far, it was not mentioned that the relationship between ownership structure and the performance of the company discussed before by previous literature could be influenced by institutional and cultural factors inherent of each country. Matten and Moon (2008), Hahn and Kühnen (2013) and Haniffa and Cooke (2005) highlight the importance of institutional factors and societal structures that guide behaviour (DiMaggio & Powell, 1983), in explaining differences in the corporate environment. Holthausen (2009) discusses that, unless the underlying economic and institutional factors from different countries converge to become more similar, it will be hard to find the same corporate behaviour among countries. Short & Keasy (1999) discuss that the UK and U.S have different institutional settings and characteristics which provide the UK stronger incentives to monitor companies and managers compared to U.S. Indeed, the author found that the incentives for managers to expropriate the company's wealth in their own benefit happens with a higher level of managerial ownership in UK compared to U.S.

La Porta *et al.* (1998) mention an important factor about cross-countries difference and corporate governance. The legal regime providing protection for investors differs between countries. Furthermore, the legal regime will partially determine the behaviour of the economic

agents, who will use the law for their own benefit (Mahoney, 2009)¹². Klapper & Love (2004) provide an important insight into legal regime differences. The authors state that ownership structure and the cost of external finance change depending on the legal regime and its enforcement power to guarantee investor's protection. Moreover, greater investor's protection is correlated to more investor's willingness to provide the capital needed to fund companies and lower costs to provide these funds (La Porta et al., 1998). Also, Rubin et. al (2007) highlight that once companies¹³ are regarded as riskier they would have a higher risk premium imposed by financial institutions providing funds and, consequently, higher cost and worse performance than less riskier companies.

The literature points out that another important institutional factor which differs among countries and affects the corporate behaviour is the enforcement strength. North (1991), discusses that the contract enforcement is the main driver of economic performance. La Porta *et al.* (1997) mention that quality of law enforcement will depend strongly of the legal system. The authors claim that while countries that have common law have the highest level of legal enforcement and shareholder's protection, countries with German and Scandinavian civil law system have a middle quality level of legal enforcement and shareholder's protection and the countries with French civil law system have the lowest quality level of legal enforcement and shareholder's protection.

A proof that the quality of the financial reporting is weaker for foreign companies listed in U.S compares to American companies is provided by Lang, Ready, and Wilson (2006). Holthausen (2009) additionally argues that reporting quality is higher in U.S compared to foreign companies listed in U.S because foreign companies are tied to their home market and institutions which can provide weaker enforcement. Besides that, the presence of institutional factors from specific countries that fail to assure the ideal enforcement for their companies will leverage the power of other factors which affects corporate decisions and reports such as ownership concentration (Holthausen, 2009).

¹² Mahoney (2009) also discusses an example where small differences in the law can trigger big economic events. The author exemplifies that the 1966 amendment to Federal Rule of Civil Procedure 23 created a change that essentially give the defendants and attorneys a new mechanism against companies. The main implications of this change and the increased number of class-suit for the companies were negative returns in their shares.

¹³ Rubin et.al (2007) mention a higher risk premium for Integrated Gasification Combined Cycle (IGCC) plants compared to Pulverized Coals (PC) plants and Natural Gas Combined Cycle (NGCC) plants.

Gow and Swinnen (2001) assert that developing countries, where the institutions are still in the process of “maturation”, do not have efficient institutions capable to assure the enforcement of contracts. Furthermore, Berglöf and Claessens (2006) claim that emerging and developed countries differ in many aspects, but, one of the main difference is the enforcement of the law between both, which is also reinforced by La Porta *et al.* (1997). The weaker enforcement seen in emerging countries represent, in general, a problem for local and international providers of financing, since, they do not have enough guaranties to receive their expected return and for companies once capital providers are reluctant provide financing. Lins (2003) highlights that, due to their characteristics, emerging countries show the effect of the ownership structure in the firm valuation more predominantly. First, because emerging countries are a special case where pyramid ownership structure is a prevalent structure in those countries. Secondly, legal regimes in emerging countries assuring investor’s protection are generally weak. Finally, corporate control mechanisms such as takeover market are usually not developed in emerging countries. Lerner & Schoar (2005) specify that this is the case when those countries have a civil law system. In this case, higher institutional ownership allows, for instance, to have higher board representation and protect the company from being jeopardized by the effects of weak contractual protection and law enforcement.

Some of the studies and results about the level of enforcement in emerging countries are provided by Johnson *et.al* (2000), Klapper & Love (2004) and Meyer *et al.* (2009). Johnson *et al.* (2000) look at 25 emerging countries and show in their model that emerging markets, which usually have a weak legal system, can augment the drawbacks or benefits of ownership concentration. Besides that, Johnson *et al.* (2000) exemplify with the possibility of having loss of investor’s confidence in emerging countries where the managerial ownership is high and the legal system is weak. Klapper & Love (2004) discuss an interesting point of view when selecting 495 companies from 25 countries to analyse, according to a governance ranking from Credit Lyonnais Securities Asia (CLSA) survey. Klapper & Love (2004) find that countries need stronger corporate governance to show reliability to the market when they have weak shareholder protection and legal system. Last but not least, Meyer *et al.* (2009) claim that institutional factors strongly influence the strategy of companies that want to enter the emerging countries market.

Thus, Considering the general characteristics of developing countries our second hypothesis is the following:

Hypothesis 2: The effects of the institutional ownership structure on the company performance is higher in emerging countries with civil law system compared to developed countries with common law system.

Considerable numbers of studies have been made to study the effect of the ownership structure and the value of the firm or corporate governance (Claessens *et al.*, 2002; Faccio and Lang, 2002; La Porta *et al.*, 2002; Lins, 2003; Cueto, 2008) in emerging countries. For example, Lins (2003) examined 1433 firms across 18 emerging countries and found a lower value for firms when manager control rights exceed their proportional ownership in countries with a weak legal system. Specifically, about institutional ownership, significant amount of studies have been made about its effect on the performance of the company in developed countries. As already mentioned Cornett *et al.* (2004, 2005, 2007), Nesbitt (1994), Smith (1996), and Del Guercio and Hawkins (1999) studying the U.S. market found a positive and significant relationship between institutional ownership and the performance of the companies. On the other hand, Bhattacharya & Graham (2007) studying companies from Finland found a negative effect of the institutional ownership on the performance of the companies.

Another line of research is being made to study the ownership structure and the performance of the companies in emerging countries. Tahir *et.al* (2015) studying Pakistani companies found a positive and significant relationship between institutional ownership and strategic measures of performance. Lins (2003) investigates 1433 firms from 18 countries regarded as emerging markets by The Economist Magazine and found that large institutional blockholders can help to solve the agency problem and the imposed deduction from the value of the company related to this risk which, consequently, results in higher Tobin's Q value¹⁴. Douma *et. al* (2006) explored Indian companies which had foreign and domestic institutional ownership from Bombay Stock Exchange (BSE) and showed that although foreign and domestic institutional ownership have a positive impact on the performance of the companies, higher impact is seen when there is foreign institutional ownership. However, to this date, the difference in the relationship between institutional ownership and the performance of the company in emerging countries compared to developed countries is unexplored. Thus, there is a need to get more insights about the difference

¹⁴ Tobin's Q value is a common proxy of the performance of the company used by various authors such as Lins (2003), Tsai & Gu (2007), Ang & Ding (2006) and Demsetz & Villalonga (2001).

in the effect of the institutional ownership on the performance of the company in emerging and developed countries.

3. Research Method

To answer the research question and test the proposed hypotheses, a regression analysis is conducted. The data used for the empirical analysis comes from two main data sources: Orbis and Datastream. The data used for the institutional ownership is collected from Orbis and the data used to measure the performance of the companies and control variables from Datastream. The sample is composed of 97 public traded companies from the countries selected which institutional ownership data (Institutional stockholder with more than 10% of ownership) could be retrieved in Orbis database. The database is formed by 51 companies from developed countries (USA, New Zealand, Norway, Ireland, Japan, Denmark, Australia, Belgium, UK, Canada and Netherlands) and 46 companies from emerging countries (Brazil, Mexico, Indonesia, Chile, Morocco, Sri Lanka, Argentina and Turkey) The countries were selected according to the classification of governance indicators for developed and emerging countries made by Claessens & Yortuglo (2013) which can be seen in the Appendix Table 1.A and Table 1.B. To capture the general characteristics of emerging countries having poor corporate governance factors and developed countries having strong corporate governance factors, which might affect the effects of institutional ownership on company's performance as already described before by Lins (2003) and Lerner & Schoar (2005), data was further refined based on the classification of countries in the Appendix Table 1.A and Table 1.B. Only countries scoring higher or equal than the average of three governance indicators (Developed Countries) and below or equal than the average of three governance indicators (Emerging Countries) were selected. Lastly, companies and countries that did not have available information were excluded from our sample.

Table1. shows the result of the two-sample t-test applied for the data selected from emerging and developed countries. This paper uses a two-sample t-test, which allows to check whether two population have equal or different means, to check whether the samples selected from emerging and developed countries are heterogeneous. The result shows that the data selected from emerging and developed countries have means which are significantly different from each other, which implies that developed and emerging countries sample used in this paper are heterogeneous and can

be used to verify if the institutional ownership structure on the company performance is higher in emerging countries with civil law system compared to developed countries with common law system. The observation period ranges between 2012 and 2015 due to data availability and because it is considered as period of relatively financial stability by the literature. The period before 2000 and right after 2007 is constituted by several crisis and imbalances in emerging countries and bubbles (e.g Asian crisis in 1997, ICT bubble in 1995 and the subprime crises in 2007), which spread over other countries, leading to real economic problems such as the decline of the economic activity and crash of the financial market, (Scott, 2014; Sornette and Woodard, 2009). Thus, in line with Scott (2014), Sornette and Woodard (2009) this paper focuses on data for from 2012¹⁶ to 2015.

Table 1. Two-sample t-test: Emerging vs. Developed countries sample

Group	Obs	Mean	Std. Err	Std. Dev.	(95% Conf. Interval)	
Developed	184	-0.15527	0.034598	0.46931	-0.223536	-0.08701
Emerging	204	0.16324	0.033623	0.48023	0.096948	0.22953
Combined	388	0.01219	0.25408	0.50048	-0.03776	0.06214
Diff.		-0.31851	0.48301		-0.41348	-0.22354
diff = mean (0) – mean (1)				t = -6.5943		
Ho : diff = 0				degrees of freedom = 386		
Ha : diff < 0		Ha : diff != 0		Ha : diff > 0		
Pr (T < t) = 0.0000		Pr (T > t) = 0.0000		Pr (T > t) = 1.0000		

3.1. Dependent Variable

Performance of the company

The dependent variable of this paper, the performance of the company is measured by Tobin's Q. Extensive literature (Douma *et.al*, 2006; Lins, 2003; Tsai & Gu, 2007; Ang & Ding, 2006; Grosfled, 2006) studying different ownership structures and the performance of the companies have been using Tobin's Q as a proxy for performance. Tobin's Q is defined as the market value of equity plus total debt divided by the book value of total assets.

¹⁶ According to Sornette and Woodard (2009) the ICT bubble lasted until 2000 and the Internet Stock Index became considerably stable in the beginning of 2001.

3.2. Independent Variable

Institutional Ownership

The independent variable institutional ownership (Log[Institutional Ownership]) is the total ownership percentage held by the largest direct owner of the company, in case of ownership equal to 10%¹⁷ or higher (Mínguez-Vera & Martín-Ugedo, 2007). In order to maintain a symmetric distribution of the ownership structure, the variable will be transformed using the following logistic transformation: $\text{Log[Institutional Ownership]} = \log\left(\frac{\text{inst. ownership}}{(\text{inst. ownership}-100)}\right)$. This has been used extensively by the literature studying ownership structure (Demsetz & Villalonga, 2001).

3.3. Control Variables

The control variables used in our model are based on previous literature (Douma *et.al*, 2006; Lins, 2003; Tahir *et.al*, 2015; Tsai & Gu, 2007; Chaganti & Damanpour, 1991; Ang & Ding, 2006; Short & Keasy, 1999) discussing the relationship between the institutional ownership and the performance of the company. Previous literature converges to an agreement for some of the alternative explanatory variables for the performance of the company. In line with previous literature this paper includes as the control variables: The legal system (Legal_Dum), the leverage ratio of the company (Lever), the level of capital expenditures (Fixed), a proxy for the firm size (Sales), the age of the company (Age) and dummies for the company's industry (Industry_Dum). A summary of how are the control variables calculated can be seen below in the Table 1.

3.4. Model Specification

Following previous literature about institutional ownership and performance we use the following OLS model to test the hypothesis of this paper:

$$Q_{i,t} = \beta_0 + \beta_1(\text{Log[Institutional Ownership]}_{i,t}) + \beta_2(\text{Civil_Law_Dum}_i) + \beta_3(\text{Leverage}_{i,t}) + \beta_4(\text{Fixed}_{i,t}) + \beta_5(\text{Sales}_{i,t}) + \beta_6(\text{Age}_{i,t}) + \sum_{i=7} \beta_i(\text{Industry_Dum}_i) + \varepsilon_i \quad (1)$$

¹⁷ La Porta *et al.* (1998) and Faccio and Lang (2002) assert that control can be significantly exercised with the ownership is equal or higher than 10%.

Table 2. Variables Description.

Explanatory Variable	Symbol	Definitions
Dependent Variable		
Tobin's Q	Q	market value of equity plus total debt divided by the book value of total assets.
Independent Variables		
Institutional Ownership	Log[Institutional Ownership]	Natural logarithm of institutional ownership percentage divided by institutional ownership percentage minus one hundred.
Control Variables		
Legal System Dummy ¹⁸	Civil_Law	The variable equals to 1 if the legal system of the country is Civil Law and 0 if is Common Law.
Leverage ratio	Leverage	Current liabilities plus long-term liabilities divided by total assets of the company.
Capital expenditures	Fixed	Expenditures on fixed plant and equipment divided by total assets of the company.
Sales	Sales	Natural logarithm of the company's sales.
Age	Age	Years of existence since year of incorporation.
Industry Dummies ¹⁹	Industry _Dum	The variable equals to 1 if the company is in the specific industry and 0 if the company is not.

¹⁸ Morocco and Sri Lanka have a mixed legal system. However, following Barro (1996) this paper classified Morocco as a country with civil law system and Sri Lanka with common law system based on the system that affects the business enforcement.

¹⁹ This paper used 14 industries industry classification provided by NACE (Nomenclature générale des Activités économiques dans les Communautés Européennes). The industries by this paper are: Manufacturing; Financial and insurance activities; Information & communication; Whole sales and Retail Trading; Agriculture, forestry and fishing; Water supply; Transportation and storage; Real estate activities; Electricity, Gas, Steam and air conditioning supply; Mining and quarrying; Professional scientific and technical activities and Transportation and storage.

3.5. Durbin-Wu-Hausman Test and 2OLS Model

One of the main concerns about the methodological consistency is the possibility of endogeneity for institutional ownership. Demsetz (1983) and Demsetz and Villalonga, (2001) argued and proved by empirical results that ownership structure is an endogenous variable and can lead to inclusive and biased results when studying the relationship between institutional ownership and the performance of the company. There might be some omitted variables which both influence the performance of the company and institutional ownership. Moreover, Lin *et.al* (2010) claim that these omitted variables can affect simultaneously the institutional ownership and the performance of the companies which would bias our results. Then, to ensure methodological consistency, we followed the methodology used by Tsai & Gu (2007) and Tahir *et.al* (2015) which make use of Durbin-Wu-Hausman test to ensure proper and unbiased results allowing this paper to “portrait” the true relationship between the performance and institutional ownership.

The Durbin-Wu-Hausman Test tests whether OLS or 2OLS is the best unbiased estimator model to study the relationship between institutional ownership and the performance of the companies. Firstly, following the paper of Gugler & Weigand (2003) and Qin *et.al* (2016) we regressed Loginst1 against all the control variables, independent variable and the instrumental variable, which in this case is the institutional ownership lagged by one year (L1. Loginst1) and the saved the residuals (Loginst1_res

$$\text{Loginst1}_{i,t} = \beta_0 + \beta_1(\text{L1.Log[Institutional Ownership]}_{i,t}) + \beta_2(\text{Civil_Law_Dum}_i) + \beta_3(\text{Leverage}_{i,t}) + \beta_4(\text{Fixed}_{i,t}) + \beta_5(\text{Sales}_{i,t}) + \beta_6(\text{Age}_{i,t}) + \sum_{i=7} \beta_i(\text{Industry_Dum}_i) + \text{Loginst1_res} \quad (2)$$

Secondly, the residuals saved in the Eq. 2 are added to the Eq. 1. as follows

$$Q_{i,t} = \beta_0 + \beta_1(\text{Log[Institutional Ownership]}_{i,t}) + \beta_2(\text{Civil_Law_Dum}_i) + \beta_3(\text{Leverage}_{i,t}) + \beta_4(\text{Fixed}_{i,t}) + \beta_5(\text{Sales}_{i,t}) + \beta_6(\text{Age}_{i,t}) + \sum_{i=7} \beta_i(\text{Industry_Dum}_i) + \text{Loginst1_res} + \varepsilon_i \quad (3)$$

Finally, if the institutional ownership residuals are significantly different from zero using a T-test in Eq. 3, then, OLS model is regarded as biased and the use of 2OLS model is statically

justified due to demonstration of endogeneity problem. On the other hand, if the institutional ownership residuals are not significantly different from zero using a T-test in Eq. 3, OLS model is regarded as the best unbiased estimator

3.6. Breusch–Pagan Test and OLS Robust Standard Error Model

Another problem which is commonly encountered when dealing with panel data is heteroskedasticity. Petersen (2009) discusses that since researches studying corporate finance often deal with company's panel data, they often face a problem with their data base due to residuals correlation across companies and across time which is called heteroskedasticity. To check for heteroskedasticity this paper follows Santiago-Castro & Brown (2007) and Dolde & Knopf (2006) and apply the Breusch–Pagan Test to test if the residuals across companies and time are not correlated. If the chi-square statistic in the Breusch–Pagan Test is large, the hypothesis of heteroskedasticity is confirmed and this paper will use a linear regression with robust standard error which for Croux *et al.* (2003) corrects the model for residual correlation by providing unbiased and robust standard errors. Unlike, if the chi-square statistic in the Breusch–Pagan Test is not large, the common OLS model is used as the best unbiased estimator.

4. Results and Discussion

4.1. Summary Statistics

Table 3. shows the descriptive statistics for the data coming from 97 public traded companies ranging from 2012 to 2015. For most of the variables used in the regression analysis used in this paper 388 observations were used. However, due to some missing information only 384 observations were available for leverage ratio, capital expenditures and Tobin's Q, which uses data the same missing information used for leverage ratio, and only 379 observations were available for sales. On average Tobin's Q is 4.70 and ranges from -6.09 to 189.62 and has standard deviation of 18.71, which shows that the sample contains different companies that had their performance affected by different factors during 2012-2015.

The natural logarithm of institutional ownership is on average 0.1219 (51% of ownership) and has a minimum of -0.9542 (10% of ownership) and maximum of 1.6901 (100% ownership), which is the result of the data selection to capture companies with percentages of ownership that can influence company's decisions

Table 3. Summary Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
Q	384	4.705	18.714	-6.089	189.6
Log[Institutional Ownership]	388	0.012	0.500	-0.954	1.690
civil law	388	0.628	0.483	0	1
leverage	384	0.218	0.160	0	0.780
fixed	384	0.076	0.312	0	3.398
sales	379	7.308	1.350	3.272	10.391
age	388	56.025	43.700	1	174
accommodation	388	0.030	0.173	0	1
agriculture	388	0.030	0.173	0	1
construction	388	0.010	0.101	0	1
electricity	388	0.020	0.142	0	1
financial	388	0.226	0.419	0	1
information	388	0.092	0.290	0	1
manufacturing	388	0.309	0.462	0	1
mining	388	0.030	0.173	0	1
scientific	388	0.020	0.142	0	1
real estate	388	0.030	0.173	0	1
transportation	388	0.061	0.241	0	1
water	388	0.010	0.101	0	1

Furthermore, it is possible to notice with the mean of the leverage ratio (0.2184) that the companies in the sample do not depend mainly on debt to finance their activities which gives more “room” for institutional ownership’s influence as mentioned before by Lins (2003) and Lerner & Schoar (2005), since, debtholders represent a fundamental control mechanism²⁰ when corporate governance is weak. Lastly, for the age of the companies used in this paper, the results show that although new companies are in the sample (minimum of 1 year old) most of the companies are well

²⁰ Look at Caprio & Levine (2002) for how debtholders can make managers act in the interest of capital providers.

established in their respective markets (Average of 56 year's old and maximum of 174 year's old).

4.2. Multicollinearity

Table 4, Table 4.A and Table 4.B show the VIF (Variance Inflation Factor) test results and correlation table, respectively, used to check for multicollinearity problem among the variables used in the regression model. The highest VIF value found was 2.69 and the highest correlation value found was 0.41 results. Following Stack (1992) this paper concludes that multicollinearity is not likely to present an issue in the analysis.

Table 4. VIF Test

Variables	VIF	1/VIF
Log[Institutional Ownership]	1.21	0.8275
civil law	1.53	0.6515
leverage	1.33	0.7509
fixed	1.22	0.8172
sales	1.41	0.7111
age	1.23	0.8103
accommodation	1.32	0.7583
agriculture	1.28	0.7793
construction	1.15	0.8731
electricity	1.23	0.8133
financial	2.47	0.4056
information	1.80	0.5552
manufacturing	2.69	0.3718
mining	1.32	0.7600
scientific	1.19	0.8369
real estate	1.30	0.7695
transportation	1.46	0.6843
water	1.11	0.9001

4.3. Hausman Wu Test

Table 5. shows the result of the Hausman Wu test used in this paper to address the possibility of having an endogenous institutional ownership variable. The first column (instrumental variables) shows the result of the regression using the institutional ownership as the dependent variable and institutional ownership lagged by one year (L1. Log[Institutional Ownership]) as the instrumental variable. As shown in the Table 6. the instrumental variable used for institutional ownership is significantly different from zero at 0.01 significance level. Moreover, it means that institutional ownership lagged by one year is an extremely strong instrumental variable and can be used in the Hausman Wu test to check whether institutional ownership is endogenous.

The second column (Hausman Wu) highlights the result of the regression using Tobin's Q as the dependent variable and the residuals saved from model 1. From model 2 is possible to see that the residuals saved from model 1 are not significantly different from zero at 0.05 significance level which suggests that there is no endogeneity problem involving institutional ownership and using 2OLS model would not provide the best unbiased results. Cornett *et al.* (2007) found similar results analysing the impact of institutional ownership in the performance of S&P 100 firms. Furthermore, Gugler & Weigand (2003)²¹ suggests that large shareholders, which is the case of institutional entities owning shares on companies, can affect firms exogenously when they are ubiquitous.

4.4. Breusch Pagan Test

Table 6. shows the results of the Breusch-Pagan test used to address likelihood of having a problem of heteroskedasticity in the regression model. The results show that Chi2 is extremely high (520.40) and significantly different from zero ($p = 0.0000$). Based on Croux *et al.* (2003) this paper concludes that heteroskedasticity is a severe problem in the model and using LRRSE (Linear Regression with Robust Standard Errors) gives the best unbiased estimation.

²¹ Gugler & Weigand (2003) based their conclusion in German Corporations.

Table 6. Breusch-Pagan Test

Ho : Constant variance
Variables : fitted values of Q

Chi² (1) = 520.40

Prob > Chi² = 0.0000

4.5. Institutional Ownership and Performance

Table 7. shows both the OLS (1) and LRRSE (2) results which have R-squared = 0.229. The OLS and LRRSE model shows a significant and negative effect (-4.020) of the institutional ownership on the company's performance controlling for the legal system, the leverage ratio, capital expenditures, sales, age of incorporation and 12 industries. Moreover, the results confirm the first hypothesis of this paper that a higher concentration of institutional ownership affects company's performance and replicates the same effect from institutional ownership found by Bhattacharya & Graham (2007), Gugler & Weigand (2003) and Chaganti & Damanpour (1991). Djankov (1999) claim that when institutional investors are large and have significant power on the company's decision, they can take decisions that benefit themselves instead of maximizing the value of the company and the wealth of all the shareholders. This might be the case for the institutions studied in this paper which have on average 51% of ownership in the companies. Is it important to notice that the level of significance of the institutional ownership variable is higher in the LRRSE model (1%) than in the OLS (5%) because LRRSE corrects for the biased standard errors which can be seen by the different standard errors between the OLS (1.915) and LRRSE model (1.156).

Furthermore, the results highlight that civil law legal system dummy has a negative coefficient (-11.64) and is significant at 1% level of significance. Since, civil law legal system dummy compares the effect of the legal system against the common law legal system, this result was expected based on La Porta (1997) that discusses the low quality of enforcement provided by the civil law system enabling practices that jeopardizes the wealth of the company such as wealth expropriation by management. The leverage ratio confirms previous literature findings and is statistically significant in both OLS and LRRSE models, although at 5% level of significance for

Table 5. Wausman Wu Test

VARIABLES	(1) Inst. Variable	(2) Hausman Wu
Log[Institutional Ownership]		-4.671* (2.384)
civil law	0.0538* (0.0314)	-11.23*** (2.551)
leverage	-0.0636 (0.0862)	21.70*** (6.943)
fixed	-0.0251 (0.0444)	2.693 (3.561)
sales	0.0176 (0.0107)	1.309 (0.852)
age	5.79e-05 (0.000308)	-0.0187 (0.0247)
accommodation	-0.117 (0.0795)	-4.793 (6.434)
agriculture	-0.0831 (0.0789)	-4.014 (6.342)
construction	-0.0931 (0.127)	4.564 (10.21)
electricity	0.0641 (0.0936)	11.38 (7.523)
financial	-0.0632 (0.0454)	1.411 (3.653)
information	-0.0802 (0.0555)	0.965 (4.466)
manufacturing	-0.0553 (0.0433)	1.233 (3.486)
mining	-0.118 (0.0793)	-7.128 (6.422)
scientific	-0.100 (0.0921)	40.19*** (7.422)
real estate	-0.0517 (0.0789)	-1.983 (6.342)
transportation	-0.157** (0.0632)	-7.411 (5.131)
water	-0.0942 (0.125)	-5.044 (10.04)
Residuals		2.353 (5.486)
L1. Log[Institutional Ownership]	0.909*** (0.0270)	
Constant	-0.0837 (0.0832)	-2.582 (6.657)
Observations	283	283
R-squared	0.846	0.235

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

LRRSE and 1% level of significance for OLS, but has positive coefficient (24.63) which contradicts previous literature findings. Some studies such as Kang *et. al* (2010) and Chen and Zhao (2006) have already documented a positive relationship between leverage ratio and

company's performance. Chen and Zhao (2006) argue that this is the case when companies have profitable opportunities in the future and a high leverage ratio justifies funding to profitable projects. Agreeing with the results of Short & Keasy (1999), sales (proxy used for company's size) has a positive coefficient and is significant coefficient at 5% level of significance in LRRSE. Age of incorporation and capital expenditures are not statistically significant in OLS and LRRSE models and are in line with the results from Lins (2003), Douma *et al.* (2006), Tahir *et.al* (2015) and Tsai & Gu (2007).

Table 7. also, demonstrates the difference in the results between the LRRSE model with only emerging countries under civil law legal system (3) and the LRRSE model with only developed countries under common law legal system (4). In both models with emerging and developed countries, the institutional ownership is not significant. The coefficient of the institutional ownership is higher in the model using developed countries (5.834) than in the model using emerging countries (0.133). The results reject the second hypothesis of this paper that the effects of the institutional ownership structure on the company performance is higher in emerging countries with civil law system compared to developed countries with common law system. Although, Lins (2013) mentions that institutional ownership predominantly has a positive effect on the company's performance in emerging countries and previous literature also highlights ways which institutional ownership can help companies to achieve a better performance. However, La Porta *et al.* (2000) provides evidence that when legal structure is weak investors are forced to concentrate their ownership which for some authors might not improve performance. Thus, the results indicates that the effects of ownership will be nullified when the governance indicator together with the legal system are either extremely weak or strong to allow for any potential benefit provided by institutional ownership (Gow and Swinnen, 2001; La Porta *et al.*, 1997; Claessens, S. & Yurtoglu, B., 2013; Cornett *et al.*, 2005; Gillan and Starks, 2000; McConnell and Servaes, 1990; Bethel *et al.*, 1998; Shleifer & Vishny, 1986; Chaganti & Damanpour, 1991; Chung *et al.*, 2002; Djankov, 1999; McConnell and Servaes, 1990; Bhattacharya & Graham, 2007)

4.6. Robustness Test

Hernández-Cánovas *et al.* (2014) discuss an important factor about debt as an additional control mechanism. The authors mention that debt serve has an instrument to discipline manager in driving

performance to repay debtholders. To avoid a sample selection bias from companies that have better performance due to debt control mechanisms and check the robustness of our results, this

Table 7. Regression Results: Institutional Ownership and Performance

VARIABLES	(1) OLS	(2) LRRSE	(3) Emerging	(4) Developed	(5) >Long-Term Debt
Log[Institutional Ownership]	-4.020** (1.915)	-4.020*** (1.156)	0.133 (0.203)	5.834 (4.353)	-3.793*** (1.221)
civil_law	-11.64*** (2.245)	-11.64*** (3.365)			-9.902*** (3.321)
leverage	24.63*** (6.260)	24.63** (9.833)	0.948 (0.901)	83.86** (34.10)	27.55** (10.95)
fixed	2.693 (3.066)	2.693 (1.884)	2.440 (5.083)	7.296 (23.84)	2.495 (1.913)
sales	1.261 (0.765)	1.261** (0.499)	0.182 (0.127)	8.169*** (2.962)	0.660 (0.475)
age	-0.0204 (0.0221)	-0.0204 (0.0236)	-0.0154 (0.00987)	-0.226*** (0.0723)	-0.0277 (0.0240)
accommodation	-3.948 (5.709)	-3.948 (2.422)			-4.758* (2.528)
agriculture	-2.226 (5.632)	-2.226 (2.654)	-0.787** (0.394)		-6.187* (3.210)
construction	5.669 (9.116)	5.669 (4.432)			5.596 (4.607)
electricity	11.60* (6.715)	11.60*** (4.163)	2.086*** (0.385)		
financial	1.949 (3.250)	1.949 (2.849)	-0.457 (0.414)	5.148 (7.430)	0.338 (2.762)
information	1.828 (3.985)	1.828 (3.129)	-0.435* (0.227)	4.087 (8.650)	2.033 (3.216)
manufacturing	2.472 (3.105)	2.472 (3.857)	0.196 (0.594)	-2.209 (8.092)	2.068 (3.884)
mining	-6.560 (5.703)	-6.560** (3.095)			-6.341** (3.080)
scientific	41.95*** (6.620)	41.95*** (13.04)		84.92*** (7.096)	42.91*** (13.37)
real estate	-1.186 (5.667)	-1.186 (3.561)	-0.392 (0.438)	-7.812 (6.380)	-1.649 (4.081)
transportation	-6.860 (4.500)	-6.860** (2.820)	-0.237 (0.667)	-20.98*** (6.889)	-6.946** (2.849)
water	-4.911 (8.979)	-4.911** (2.026)	-0.597 (0.410)		
Constant	-3.079 (5.904)	-3.079 (3.950)	0.342 (0.481)	-40.37* (21.08)	0.124 (3.547)
Observations	379	379	174	113	339
R-squared	0.229	0.229	0.074	0.431	0.227

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

paper use refined the sample of companies below the long-term average in the LRRSE. Table 7. show the results of the robustness check (5) and it can be noticed that institutional ownership, the

legal system dummy and leverage ratio have the same predicted sign for the coefficients, although different values, and are significant at the same level than the LRRSE (2). Thus, this paper concludes that the results are robust.

5. Conclusions

Considerable studies have been made to study the effect of institutional ownership on company's performance and produced mixed results. Some researchers argue that the effect of the institutional ownership on the company's performance is positive such as using monitoring skills to drive better performance (Bethel *et al.*, 1998; Djankov, 1999; Chung *et al.* 2002; Chaganti & Damanpour, 1991). Other authors emphasize a negative effect of the institutional ownership on the company's performance such as wealth expropriation (Djankov, 1999; McConnell and Servaes, 1990; Bhattacharya & Graham, 2007). This paper follows previous literature methodology using emerging and developed countries to confirm the significance of institutional ownership and have more insights about the direction of the relationship between institutional ownership and company's performance.

Moreover, a body of literature highlights the importance of institutional factors to explain cross-country behavioural difference. Researchers claim that usually emerging countries would have weaker governance factors and legal system not capable to enforce protection and the rights of investors compared to developed countries. They also assert that institutional ownership could help to drive good company's performance when the quality of enforcement is weak, which is usually the case of emerging markets (Holthausen, 2009; Short & Keasy, 1999; La Porta *et al.*, 1998; La Porta *et al.*, 1997; Mahoney, 2009; Klapper & Love, 2004; North, 1991; Gow and Swinnen, 2001; Berglöf and Claessens, 2006; Lins, 2003; Lerner & Schoar, 2005). This paper attempts to provide new insights in the studies of the institutional ownership effects on company's performance in emerging countries. This paper does it by looking at the difference between the effect of institutional ownership on the company's performance in emerging and developed countries by selecting a subsample that contains emerging countries with weak governance factors and legal system and developed countries with strong governance factors and legal system.

The empirical results of this paper suggest that institutional ownership is not always endogenous when shareholders are large institutions. Additionally, this study confirms the findings of a body of researchers which claim that institutional ownership can significantly affects

company's performance in a negative way (Bhattacharya & Graham, 2007; Gugler & Weigand (2003); Chaganti & Damanpour, 1991; Djankov, 1999). Last but not less interesting is the fact that this paper found insignificant effect of the ownership when comparing the results of the model using subsample s that contains emerging countries with weak governance factors and legal system and developed countries with strong governance factors and legal system. There is an indication by the literature and results that the effect of institutional ownership on company's performance will be nullified when the governance indicator together with the legal system are either extremely weak or strong to allow for any potential benefit provided by institutional ownership (Gow and Swinnen, 2001; La Porta et al., 1997; Claessens, S. & Yurtoglu, B., 2013; Cornett et.al, 2005; Gillan and Starks, 2000; McConnell and Servaes, 1990; Bethel et al., 1998; Shleifer & Vishny, 1986; Chaganti & Damanpour, 1991; Chung et.al, 2002; Djankov, 1999; Bhattacharya & Graham, 2007)

In this paper, Tobin's Q was used as a proxy for company's performance to check whether the effects of institutional ownership on it would be significant and which direction of relationship it would have. Furthermore, Tobin's Q is not the only proxy used by previous literature to account for company's performance. Then, this paper recognizes that not using additional proxies for performance such as ROA (Return on Assets), ROE (Return on Equity), stock returns, profit margin, operating cash flow, price earnings ratio is a limitation to the robustness of the results found and future research in this direction can provide usefulness insights among the impact of institutional ownership in different performance proxies. Additionally, this paper used a subsample with emerging countries with weak governance factors and legal system and developed countries with strong governance factors and legal system to see the difference, it would be also meaningful to test the results of the difference between the impact of institutional ownership on company's performance with companies in countries where governance factors are not significantly weak or strong. This can give crucial information and inputs to "draw" more complete inferences about the difference between emerging and developed countries found in the results of this paper. Finally, this paper recognizes that the unavailability of information before 2012 is a limitation to have bigger sample and more accurate estimates.

6. References

- Agrawal, A. & Chadha, S. (2005). *Corporate Governance and Accounting Scandals*. Journal of Law and Economics, 48, 371-406.
- Anderson, R. C., Mansi, S. A. & Reeb, D. M. (2003). *Founding family ownership and the agency cost of debt*. Journal of Financial Economics, 68, 263-285.
- Ang, J. S. & Ding, D. K. (2006). *Government ownership and the performance of government-linked companies: The case of Singapore*. Journal of Multinational Financial Management, 16, 64-88.
- Barros, R. J. (1996). *Determinants of economic growth? A cross-country empirical study*. National Bureau of Economic Research. NBER working paper No. 5698 available at: <https://core.ac.uk/download/pdf/6822675.pdf>.
- Bhattacharya, P. S. & Graham, M. (2007). *Institutional ownership and firm performance: Evidence from Finland*. SSRN working paper. Available at SSRN: <http://ssrn.com/abstract=1000092>.
- Berglof, E. & Claessens, S. (2006). *Enforcement and good corporate governance in developing countries and transition economies*. World Bank Research Observer, 21, 123-150.
- Berle, A., & Means, G. (1932). *The Modern Corporation and Private Property*. New York: Macmillan.
- Bethel, J., Liebiskind, J. & Opler, T. (1998). *Block share purchases and corporate performance*. Journal of Finance 53, 605-635.
- Caprio, G. J & Levine, R. (2002). Corporate governance in finance: Concepts and international observations, In: *Financial Sector Governance: The Roles of the Public and Private Sectors*, Eds. Robert, E., Litan, M. P. & Sundararajan, V. Washington, DC: Brookings Institution Press, 17-50.
- Caves, D.W. and L.R. Christensen (1980). *The Relative Efficiency of Public and Private Firms in a Competitive Environment: The Case of Canadian Railroads*. Journal of Political Economy, 88, 958-76.
- Chaganti, R., & Damanpour, F. (1991). *Institutional ownership, capital structure and firm performance*. Strategic Management Journal, 12, 479-491.
- Chen, L. & Zhao, X. (2006). *On the relation between the market-to-book ratio, growth opportunity, and leverage ratio*. Finance Research Letters, 3, 253-266.

- Chung, R., Firth M. & Kim, J. (2002). *Institutional monitoring and opportunistic earnings management*. Journal of Corporate Finance 8, 29-48.
- Claessens, S., Djankov S., Fan, J. P. H. & Lang, L. H. P. (2002). *Disentangling the Incentive and Entrenchment Effects of Large Shareholdings*. Journal of Finance, 57, 2741-277.
- Claessens, S. & Yurtoglu, B. (2013). *Corporate governance in emerging markets: A survey*. Emerging Markets Review, 15, 1-33.
- Coase, Ronald, 1988, "The Theory of the Firm?" in Coase. R. "The Firm, the Market, and the Law," University of Chicago Press, Chicago and London, pp. 33-55.
- Cornett, M. M., Marcus, A. J., Saunders, A. & Tehranian, H. (2004). *The impact of institutional ownership on corporate performance*. New York University working paper
- Cornett, M., A., Marcus, A., Saunders, A. & Tehranian, H. (2005). *The Impact of Institutional Ownership on Corporate Operating Performance*. New York University working paper.
- Cornett, M., A., Marcus, A., Saunders, A. & Tehranian, H. (2007). *The Impact of Institutional Ownership on Corporate Operating Performance*. Journal of Banking & Finance, 31, 1771-1794.
- Croux, C; Dhaene, G. & Hoorelbeke, D. (2003). *Robust Standard Errors for Robust Estimators*. Center for Economic Studies. Available at: <http://www.econ.kuleuven.be/ces/discussionpapers/default.htm>.
- Cueto, D. (2008). *Corporate Governance and Ownership Structure in Emerging Markets: Evidence from Latin America*. Available at SSRN: <http://ssrn.com/abstract=1157031>.
- Del Guercio, D. & Hawkins, J. (1999). *The motivation and impact of pension fund activism*. Journal of Financial Economics, 52, 293-340.
- Demsetz, H. (1983). *The structure of ownership and the theory of the firm*. Journal of Law and Economics 26 (2), 375–390.
- Demsetz, H. & Lehn, K. (1985). *The Structure of Ownership: Causes and Consequences*. Journal of Political Economy, 93, 1155-77.
- Demsetz, H. & Villalonga, B. (2001). *Ownership structure and corporate performance*. Journal of Corporate Finance, 7, 209–233.
- DiMaggio, P. J. & Powell, W. W. (1983). *The Iron Cage Revisited: Institutional Isomorphism*

- and Collective Rationality in Organizational Fields*. American Sociological Review, vol. 48(2), pp. 147-160.
- Dolde, D. (2008). *Impact of Corporate Ownership on Risk-Taking and Returns at Thrift Institutions*. Available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=928652.
- Douma, W. & Knopf, J. D. (2006). *Foreign and domestic ownership, business groups, and firm performance: Evidence from a large emerging market*. Strategic Management Journal, 27, 637-657.
- Djankov, S. (1999). *Ownership Structure and Enterprise Restructuring in Six Newly Independent States*. Comp. Econ. Stud., 41(1), 75-95.
- Dye, T. R. (1985). *Strategic ownership positions in U.S industry and banking*. American Journal of economics and sociology, 44(1), 9-22.
- Eisenhardt, K. M. (1989). *Agency Theory: An Assessment and Review*. The Academy of Management Review, 14 (1), 57-74.
- Faccio, M. & Lang, L. H. P. (2002). *The Ultimate Ownership of Western European Corporations*. Journal of Financial Economics, 65 (3), 365-395.
- Gillan, S. & Starks, L. (2000). *Corporate governance proposals and shareholder activism: The role of institutional investors*. Journal of Financial Economics, 57, 275-305.
- Gow, H. & Swinnen, J. (2001). *Private Enforcement Capital and Contract Enforcement in Transition Countries*. American Journal of Agricultural Economics, 83(3), 686-690.
- Grosfeld, I. (2006). *Ownership concentration and firm performance: Evidence from an emerging Market*. William Davidson Institute Working Paper no. 834.
- Grossman, S. & Hart, O. (1980). *Takeover bids, the free rider problem, and the theory of the corporation*. Bell Journal of Economics, 11, 42-64.
- Gugler, K. & Weigland, J. (2003). *Is ownership endogenous?*, Applied Economics Letters, 10, 483-486.
- Hahn, R. & Kühnen, M. (2013). *Determinants of sustainability reporting: a review of results, trends, theory, and opportunities in an expanding field of research*. Journal of Cleaner Production, 59(1), 5-21.
- Haniffa, R. M. & Cooke, T. E. (2005). *The impact of culture and governance on corporate social reporting*. Journal of Accounting and Public Policy, vol. 24, pp. 391-430.

- Harris, M. & Raviv, A. (1978). *Some Results on Incentive Contracts with Application to Education and Employment, Health Insurance, and Law Enforcement*. American Economic Review, 68, 20-30.
- Hartzell, J. C. & Starks L. T. (2003). *Institutional investors and executive compensation*. Journal of Finance, 58(6), 2351-2375.
- Hernández-Cánovas, G.; Mínguez-Vera, A. & Sánchez-Vidal, J. (2014). *Ownership structure and debt as corporate governance mechanisms: An empirical analysis for Spanish SMES*. Journal of Business Economics and Management, 1-17, doi: 10.3846/16111699.2013.859171.
- Himmelberg, C. P., Hubbard, R. G. & Palia, D. (1999). *Understanding the determinants of managerial ownership and the link between ownership and performance*. Journal of Financial Economics, 53, 353-384.
- Holthausen, R. W. (2009). *Accounting Standards, Financial Reporting Outcomes, and Enforcement*. Journal of Accounting Research, vol. 47(2), pp. 447-458.
- Jensen, M. (1983). *Organization Theory and Methodology*. Accounting Review, 56, 319-338.
- Jensen, M. & Meckling, W. (1976). *Theory of the firm: managerial behavior, agency costs, and capital structure*. Journal of Financial Economics, 3, 305–360.
- Jensen, M., Solberg, D. P. & Zorn, T. S (1992). *Simultaneous determination of insider ownership, debt and dividend policies*. The Journal of Financial and Quantitative Analysis, 27(2), 247-263.
- Johnson, S., La Porta, R., Lopez-de-Silanes, F. & Shleifer, A., (2000). *Tunneling*. American Economic Review 90, 22–27.
- Kang, K. H., Lee, S. & Huh, C. (2010). *Impacts of positive and negative corporate social responsibility activities on company performance in the hospitality industry*. International Journal of Hospitality Management, 29, 72–82.
- Klapper, L. F. & Love, I. (2004). *Corporate governance, investor protection, and performance in emerging markets*. Journal of Corporate Finance, 10, 703 – 728.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A. & Vishny, R. (1997). *Legal determinants of external finance*. Journal of Finance, 52, 1131-1150.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A. & Vishny, R. (1998). *Law and finance*. Journal of

Political Economy, 106, 1113 – 1155.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. & Vishny, R. (2000). *Investor Protection and Corporate Governance*. Journal of Financial Economics, 58, 3-27.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. & Vishny, R. (2002). *Investor Protection and Corporate Governance*. Journal of Financial Economics, 58, 3-28.

Lang, M., Ready, J. & Wilson, W. (2006). *Earnings Management and Cross Listing: Are Reconciled Earnings Comparable to U.S. Earnings?*. Journal of Accounting & Economics, 42, 255–83.

Lerner, J. & Schoar, A. (2005). *Does Legal Enforcement Affect Financial Transactions? The Contractual Channel in Private Equity*. The Quarterly Journal of Economics, 120 (1), 223-246.

Lin, Y. H.; Chiou, J. R. & Chen, Y. R. (2010). *Ownership structure and dividend preference: Evidence from China's privatized state-owned enterprises*. Emerging Markets Finance and Trade, 46, 56–74.

Lin, C., Ma, Y., Malatesta, P. & Xuan, Y. (2011). *Ownership structure and the cost of corporate borrowing*. Journal of Financial Economics, 100, 1-23.

Lins, K. V. (2003). *Equity Ownership and Firm Value in Emerging Markets*. Journal of Financial and Quantitative Analysis, 38 (1), 159-184.

Matten, D., & Moon, J. (2008). “Implicit” and “explicit” CSR: A conceptual framework for a comparative understanding of corporate social responsibility. Academy of management Review, 33(2), 404-424.

Mahoney, P. (2009). *The Development of Securities Law in the United States*. Journal of Accounting Research 47, 325–347.

Maug, E. (1998). *Large Shareholders as Monitors: Is there a trade-off between liquidity and control?*. Journal of Finance, 53, 65-98.

McConnell, J. J. & Servaes, H. (1990). *Additional evidence on equity ownership and corporate value*. Journal of Financial Economics, 27, 595-612.

Meggison, W., Nash, R. & van Randenborgh, M. (1994). *The financial and operating performance of newly privatized firms*. Journal of Finance 49, 403-452.

Meyer, K. E.; Estrin, S.; Bhaumik, S. & Peng, M. W. (2009). *Institutions, resources, and entry strategies in emerging economies*. Strategic Management Journal, 30 (1), 61– 80.

- Mínguez-Vera, A. & Martín-Ugedo, J. F. (2007). *Does ownership structure affect value? A panel data analysis for the Spanish market*. International Review of Financial Analysis 16, 81 – 98.
- Mintzberg, H. (1983). *Power in and around organizations*. Prentice-Hall, Englewood Cliffs, NJ.
- Modigliani, F. & Miller, M. H. (1958). *The Cost of Capital, Corporate Finance, and the Theory of Investment*. American Economic Review, 48(4), 261–97.
- Modigliani, F. & Miller, M. H. (1963). *Corporate Income Taxes and the Cost of Capital: A Correction*. American Economic Review. 53(3), 443–53.
- Morck, R., Shleifer, A. & Vishny, R. (1988). *Management ownership and market valuation: an empirical analysis*. Journal of Financial Economics, 20, 293–315.
- Myers, S. C. (1977). *Determinants of Corporate Borrowing*. Journal of Financial Economics, 5, 147-176.
- Nesbitt, S. L. (1994). *Long-term rewards from shareholder activism: a study of the 'CalPERS effect.'* Journal of Applied Corporate Finance, 6, 75-80.
- North, D. C. (1991). *Institutions, Institutional Change, and Economic Performance*. Cambridge: Cambridge University Press.
- Petersen, M. A. (2009). *Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches*. The Review of Financial Studies, 22(1), 435-480.
- Popkin, B. (2014, March 29). *This Shareholder Has Major Influence Over Your Brewing Stock: Jim Koch's stake in the Boston Beer Company gives him a lot of control over the business*. Retrieved from: <http://www.fool.com/investing/general/2014/03/29/this-shareholder-has-major-influence-over-your-bre.aspx>.
- Qin, Z.; Mishrab, V. & Smyth, R. (2006). *An empirical examination of endogenous ownership in Chinese private enterprises*. Journal of the Asia Pacific Economy, 21(4), 513-530.
- Rubin, E. S., Chen, C. & Rao, A. B. (2007). *Cost and performance of fossil fuel power plants with CO2 capture and storage*. Energy Policy, 35, 4444-4454.
- Santiago-Castro, M. & Brown, C. J. (2007). *Ownership structure and minority rights: A Latin American view*. Journal of Economics and Business, 59, 430–442.
- Sapienza, P. (2004). *The effects of government ownership on bank lending*. Journal of Financial Economics, 72, 357–384.
- Scott, K. D. (2014). *Global Financial Crises*. Selected Works. Available at: file:///solon.prd/files/P/Global/Users/N96783/UserData/Downloads/fulltext_stamped.pdf

- Shleifer, A. (1998). *State versus Private Ownership*. The Journal of Economic Perspectives, 12 (4), 133-150.
- Shleifer, A. & Vishny, R. (1986). *Large Shareholders and Corporate Control*. Journal of Political Economy, 94, 461-488.
- Short, H. & Keasey, K. (1999). *Managerial ownership and the performance of firms: Evidence from the UK*. Journal of Corporate Finance, 5, 79–101.
- Smith, M. (1996). *Shareholder activism by institutional investors: Evidence from CalPERS*. Journal of Finance, 51, 227-252.
- Sornette, D. & Woodard, R. (2009). *Financial bubbles, real estate bubbles, derivative bubbles, and the financial and economic crisis*. Mimeo. EHT Zurich: Department of Management Technology. Available at : <http://arxiv.org/pdf/0905.0220v1.pdf>.
- Stack, S. (1992). *The Effect of Divorce on Suicide in Japan: A Time Series Analysis, 1950-1980*. Journal of Marriage and Family, 54 (2), 327-334.
- Tahir, S. F, Saleem, M. & Arshad, H. (2015). *Institutional ownership and corporative value: Evidence from Karachi Stock Exchange (KSE) 30-Index Pakistan*. Praktični menadžment, 6, 41-49.
- Tsai, H. & Gu, Z. (2007). *The relationship between institutional ownership and casino firm performance*. Hospitality Management, 26, 517-530.
- Wilson, H. S. T. (2002). *How Does Government Ownership Affect Firm Performance? Evidence from China's Privatization Experience*. Journal of Business Finance & Accounting, 29 (1).

7. Appendix

Table 1.A Governance Indicators 2

Governance indicators.

Country	Legal origin	Legal rights strength	Creditor rights	Legal protection of minority shareholders	Efficiency of debt enforcement	Anti corruption	Disclosure requirements	Corporate governance opacity
		Index	Index	Index	Index	Index	Index	Index
Australia	British	9.0	3	79	87.8	196	75	21
Austria	German	7.0	3	21	78.0	198	25	13
Belgium	French	7.0	2	54	90.8	137	42	13
Canada	British	6.0	1	65	93.2	205	92	20
Denmark	Scandinavian	8.7	3	47	76.7	244	58	21
Finland	Scandinavian	7.0	1	46	92.4	242	50	13
France	French	5.8	0	38	54.1	137	75	10
Germany	German	7.7	3	28	57.0	188	42	12
Greece	French	3.0	1	23	53.8	38	33	7
Iceland	Scandinavian	7.0	.	24	.	218	.	0
Ireland	British	8.0	1	79	89.9	160	67	16
Italy	French	3.0	2	39	45.3	33	67	10
Japan	German	6.8	2	48	95.5	119	75	10
Luxembourg	French	7.0	.	25	.	195	.	6
Netherlands	French	6.0	3	21	94.9	215	50	18
New Zealand	British	10.0	4	95	90.7	235	67	16
Norway	Scandinavian	7.0	2	44	91.8	210	58	17
Portugal	French	3.0	1	49	82.3	113	42	2
Spain	French	6.0	2	37	82.0	119	50	6
Sweden	Scandinavian	4.8	1	34	86.0	225	58	21
Switzerland	German	8.0	1	27	60.4	212	67	14
United Kingdom	British	9.0	4	93	92.3	190	83	14
United States	British	8.0	1	65	85.8	152	100	21
Developed (avg)		6.7	2.0	46.9	80.0	173.1	60.7	13.1
Argentina	French	4.0	1	44	35.8	-40	50	8
Bolivia	French	1.0	2	8	.	-59	.	.
Brazil	French	3.0	1	29	13.4	-3	25	10
Chile	French	4.0	2	63	40.9	142	58	13
China	German	4.8	2	78	43.6	-47	.	5
Colombia	French	5.0	0	58	64.8	-26	42	5
Ecuador	French	3.0	0	8	19.4	-86	0	.
Egypt, Arab Rep.	French	3.0	2	49	28.6	-46	50	4
El Salvador	French	5.0	3	57	37.8	-46	.	.
Ghana	British	6.5	1	73	.	-12	.	.
Hong Kong, China	British	10.0	4	96	88.3	179	92	.
India	British	7.2	2	55	.	-40	92	7
Indonesia	French	3.0	2	68	25.1	-82	50	9
Israel	British	9.0	3	71	66.2	99	67	16
Jamaica	British	8.0	2	35	69.0	-41	.	.
Jordan	French	4.0	1	16	44.5	17	67	7
Kenya	British	10.0	4	22	.	-95	50	10
Korea, Rep.	German	7.0	3	46	88.1	41	75	.
Malaysia	British	10.0	3	95	48.4	28	92	9
Mexico	French	5.0	0	18	72.6	-28	58	6
Morocco	French	3.0	1	57	41.9	-14	.	6
Nigeria	British	8.0	4	52	.	-110	67	18
Pakistan	British	6.0	1	41	.	-94	58	14
Panama	French	6.0	4	15	43.0	-31	.	.
Peru	French	5.7	0	41	41.8	-27	33	8
Philippines	French	3.0	1	24	17.5	-56	83	9

Source: Claessens, S. & Yurtoglu, B. (2013). *Corporate governance in emerging markets: A survey*. Emerging Markets Review, 15, 1-33.

Table 1.B Governance Indicators 2

Country	Legal origin	Legal rights strength	Creditor rights	Legal protection of minority shareholders	Efficiency of debt enforcement	Anti corruption	Disclosure requirements	Corporate governance opacity
		Index	Index	Index	Index	Index	Index	Index
Singapore	British	10.0	3	100	96.1	226	100	9
South Africa	British	9.0	3	81	39.8	40	83	16
Sri Lanka	British	3.3	2	41	45.7	-24	75	7
Taiwan	German		2	56	93.8	67	75	0
Thailand	British	4.0	2	85	54.9	-24	92	8
Tunisia	French	3.0	0	17	56.6	1	.	.
Turkey	French	4.0	2	43	6.6	-18	50	11
Uganda	British	7.0	2	41	.	-82	.	.
Uruguay	French	5.0	3	17	28.6	96	0	.
Venezuela, RB	French	2.0	3	9	13.1	-98	17	23
Zimbabwe	British	6.0	4	44	.	-116	50	.
Emerging markets (avg)		5.5	2.0	47.3	47.1	-11.0	58.9	9.5
Bulgaria	German	8.0	2	66	46.0	-20	.	12
Croatia	German	5.3	3	25	45.0	-7	.	3
Czech Republic	German	6.7	3	34	40.7	37	.	18
Hungary	German	7.0	1	20	46.7	55	.	2
Kazakhstan	French	4.0	2	48	31.4	-100	.	11
Latvia	German	9.0	3	35	49.3	4	.	.
Lithuania	French	5.0	2	38	58.7	14	.	10
Poland	German	8.2	1	30	67.7	36	.	11
Romania	French	7.5	1	41	11.0	-28	.	10
Russian Federation	French	3.0	2	48	39.0	-92	.	11
Slovak Republic	German	9.0	2	29	58.9	27	.	0
Ukraine	French	8.3	2	11	17.5	-91	.	0
Transition (avg)		6.8	2.0	35.4	42.7	-13.8	.	8.0

Source: Source: Claessens, S. & Yurtoglu, B. (2013). *Corporate governance in emerging markets: A survey*. Emerging Markets Review, 15, 1-33.

Table 4.A Pearson Correlation Matrix 1

	loginst1	civil_law	leverage	fixed	sales	age	accommodation
loginst1	1.0000						
civil_law	0.1732	1.0000					
leverage	-0.1634	0.1834	1.0000				
fixed	0.0671	0.0934	-0.0176	1.0000			
sales	-0.0782	0.4103	0.2154	-0.0161	1.0000		
age	-0.0708	-0.0900	-0.0777	0.2596	0.1235	1.0000	
accommodation	-0.1537	0.1372	0.1704	0.0130	0.0640	0.0074	1.0000
agriculture	-0.0044	0.1372	0.1440	-0.0196	0.0739	-0.0690	-0.0319
construction	0.0270	0.0784	-0.0708	-0.0240	0.0050	0.1227	-0.0182
electricity	0.1285	0.1115	-0.0893	0.0001	0.0093	0.0548	-0.0259
financial	0.0782	0.0594	-0.1163	-0.0599	0.0087	-0.0212	-0.0968
information	0.0517	0.0986	-0.1510	-0.0362	0.0728	0.0613	-0.0571
manufacturing	0.0241	-0.1785	-0.0147	-0.0908	-0.2314	-0.0857	-0.1195
mining	-0.1623	0.0140	0.0492	-0.0314	0.1329	-0.0854	-0.0319
scientific	-0.0757	-0.0387	-0.0587	0.0014	0.0810	0.0747	-0.0259
realestate	-0.0105	-0.1093	-0.1563	0.0109	-0.0438	-0.0417	-0.0319
transportation	-0.1480	-0.0685	0.1649	-0.0269	0.0452	-0.0168	-0.0459
water	-0.0096	0.0784	0.1490	-0.0242	0.0730	0.0338	-0.0182

Table 4.B Pearson Correlation Matrix 2

	agricu~e	constr~n	electr~y	financ~l	inform~n	manufa~g	mining
agriculture	1.0000						
construction	-0.0182	1.0000					
electricity	-0.0259	-0.0148	1.0000				
financial	-0.0968	-0.0553	-0.0786	1.0000			
information	-0.0571	-0.0326	-0.0464	-0.1732	1.0000		
manufactur~g	-0.1195	-0.0683	-0.0971	-0.3624	-0.2140	1.0000	
mining	-0.0319	-0.0182	-0.0259	-0.0968	-0.0571	-0.1195	1.0000
scientific	-0.0259	-0.0148	-0.0211	-0.0786	-0.0464	-0.0971	-0.0259
realestate	-0.0319	-0.0182	-0.0259	-0.0968	-0.0571	-0.1195	-0.0319
transporta~n	-0.0459	-0.0262	-0.0373	-0.1391	-0.0821	-0.1718	-0.0459
water	-0.0182	-0.0104	-0.0148	-0.0553	-0.0326	-0.0683	-0.0182
	scient~c	reales~e	transp~n	water			
scientific	1.0000						
realestate	-0.0259	1.0000					
transporta~n	-0.0373	-0.0459	1.0000				
water	-0.0148	-0.0182	-0.0262	1.0000			