



LUND UNIVERSITY
School of Economics and Management

Corporate Governance: Growth and Investment

A Case of Selected Central and Eastern European Countries

Authors: Corina Budianschi
Ljupco Kocarev

Supervisor: Göran Anderson

Table of Contents

Abstract.....	4
1. Introduction	5
1.1 Governance as a concept.....	5
1.2 Corporate governance	5
1.3 Eastern Europe and Corporate Governance	7
1.4 Problem Statement.....	8
1.5 Purpose	9
1.6 Limitations.....	9
1.7 Target group.....	9
2. Theoretical Framework.....	10
2.1 Corporate governance in theory and practice.....	10
2.2 Corporate Governance Mechanisms	10
2.2.1 Board of Directors.....	10
2.2.2 Large Shareholders	11
2.2.3 Hostile Takeovers.....	12
2.2.4 Financial Structure	12
2.3 Privatization	13
2.4 Corporate Governance Mechanisms in CEE	13
2.5 Corporate Governance Principles in CEE	15
2.6 Agency Theory.....	16
2.6.1 The agency problem between owner and manager.....	17
2.6.2 Mitigating the agency problem.....	17
3. Method	19
3.2 Testing hypotheses	22
3.3 Data.....	24
4. Empirical Findings and Analysis	27
4.1 Descriptive Statistics	27
4.2 Hypothesis I.....	28
4.2.1 Findings	29
4.2.2 Analysis	33

4.3	Hypothesis II.....	34
4.3.1	Findings	35
4.3.2	Analysis	38
5.	Conclusions	40
	References.....	42
	Appendix A:.....	47
	Appendix B:	48

Table of Figures

Table 2. 4:	Corporate Governance Mechanisms in CEE	14
Table 3. 2:	Countries.....	24
Table 4. 1.1:	Descriptive Statistics.....	3028
Table 4. 2.1:	Hausman test (Hypothesis 1, Regression 1).	29
Table 4. 2.2:	Regression results for Hypothesis 1, Regression 1	30
Table 4. 2.3:	Hausman test (Hypothesis 1, Regression 2)	31
Table 4. 2.4:	Regression results for Hypothesis 1, Regression 2	3032
Table 4. 3.1:	Hausman test (Hypothesis 2, Regression 1).	35
Table 4. 3.2:	Regression results for Hypothesis 2, Regression 1	36
Table 4. 3.3:	Hausman test (Hypothesis 2, Regression 2).	36
Table 4. 3.4:	Regression results for Hypothesis 2, Regression 2	37

Abstract

- Title:** Corporate Governance: Growth and Investment. A Case of Selected Central and Eastern European Countries
- Date:** June 2014
- Course:** BUSP69 Degree Project II in Finance
- Supervisor:** Göran Anderson
- Key words:** Corporate, Finance, OLS, Econometrics, CEE, GDP, Investment, Corporate governance indicators, Privatization, Agency Theory, effectiveness, extensiveness
- Purpose:** The main purpose of this paper is to eliminate the gap between theory and practice about corporate governance in selected countries in Eastern and Central Europe, which have transitioned from a socialist to a market economy.
- Method:** We collect the necessary data for 28 European Countries from the European Bank for Reconstruction and Development (EBRD). Countries are then grouped into 4 regions. Using OLS regressions two hypotheses are being tested, where “investment levels” is the explanatory variable for the first hypothesis, and “GDP growth” for the second one. Each hypothesis consists of two regressions, one representing the “corporate governance index” and the other “corporate governance indicators”.
- Conclusions:** The main finding of this paper is that corporate governance is negatively correlated to investment levels and GDP in the selected countries. The remaining independent variables in the regressions show statistically significant correlations as suggested by other papers and theory. The inefficiency of corporate governance and weak law institutions might be the main drivers of the underlying result.

1. Introduction

1.1 Governance as a concept

Before getting into more detail regarding the underlying topic the term governance should be elaborated first. Governance had existed as long as any modality of human organization existed. The term can be related to the means by which the corporation runs itself. Recently, however, the term has been exposed to public scrutiny because of the many issues of governance both on a national, and corporate level (Crowther & Aras, 2013). These problems sparked concerns about what really represents good governance. The World Bank (1991, p.1) defined governance as: "the exercise of political authority and the use of institutional resources to manage society's problems and affairs". Governance is thus a top down process which enables a society (or a firm) to accept leadership and make certain decisions that would not be made in the first place. Usually the power is used dictatorially, or in a certain way that most members of the entity in question do not approve of. This "consensual form" is present in many organizations, from local clubs to a nation-state level. The overall effect is that the governance is decided according to power structures, which usually are not always in line with the interests of the less powerful.

1.2 Corporate governance

Corporate governance has been gaining momentum ever since the mid '80s. Its beginnings can be related to the Anglo-American codes of good corporate governance which represented a benchmark at the time. Developing countries as well as western economies established an adapted version of these codes for their own firms. This kind of self-regulation had been very popular and ultimately was chosen above a predefined set of legal standards (Van den Barghe, 2001). Following steep recessions and corporate improprieties, corporate governance has become of vital importance to most firms, mostly because investors' protection has become a very important problem. The main demand of the owners was that firms must implement strict corporate governance fundamentals so that higher returns are achieved and agency costs reduced. As a matter of fact, most investors are ready to pay more for firms to have good governance principles, hence the firm's corporate governance report is one of the most important means for investor's decisions (Crowther & Aras, 2013). Even though corporate governance standards have always been imperative for getting good rating marks for big and publicly-traded companies,

they are now becoming much more relevant for all the relevant stakeholders. Bottom line is that companies cannot and must not ignore the demand for good corporate governance from shareholders, potential investors and other stakeholders.

Corporate governance can be considered as a body of moral values, ethics and trust - as an effort of synergy of all the members of society including the government, the public, corporations i.e. the stakeholders. Corporate governance is a famous topic mostly because of the consequences after certain corporate governance mechanisms have been used. This represents a very complex issue which cannot be fully understood without taking geographical and cultural factors into account in order to grasp the differences and similarities in corporations in various parts of the world.

Corporate governance lies in the very core of the way companies are run. Oftentimes defined as "the way businesses are directed and controlled", it contemplates the work and activities of the board - as the subject that bears all the responsibility for the firm (Casson, 2013). As a broad term, corporate governance is a famous area of research, catching the interest of many economists and practitioners over the past couple of years. Yet, the term is somewhat unclear, as the name only grasps the process of regulating companies and does not clearly point out who is governing whom (Frederiksen & Jessen, 2006). Shleifer and Vishny present a definition of corporate governance that is simple and yet manages to capture the essence of the term:

"Corporate Governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return in their investment."

(Shleifer and Vishny 1997, p. 737)

Even though corporate governance causes a mixed reaction amongst economists whether it could positively impact firm's performance, it sure does affect the company's strategy (Crowther, 2009). Furthermore, some research results emphasize that the quality of the corporate governance system of an economy might be a critical determinant of its competitive position (Fulghieri and Suominen, 2005). Corporate governance is mainly concerned with building a balance between the economic and social objectives of a firm, and including different aspects such as effectiveness and efficiency of resource utilization, accountability toward its stakeholders, and the conduct of the company in the social environment.

The main need for corporate governance stems from the segregation of the ownership from the control (management) of the company. According to classical and neo-classical economic theories there is not such conflict when the owner is at the same time the manager (Smith, 1776; Menger, 1871). In this specific case, when the investor is the manager, he does not only act in his interest, but also the interest of the firm. Thus, in order to get the maximum return on personal investments, each owner designs his unique and optimal governance structure (Ahmed, 2009). The main problem emerges in publicly owned firms where the investors of capital have limited power over the corporate decision making (Jensen & Meckling, 1976). The owners in the publicly held firms have either little or no say in the corporate decision making process. Not being able to influence the managers' decisions directly, they either trust them or create a corporate governance device i.e. mechanism, to ensure the optimal choices had been made. The core of corporate governance literature is precisely those mechanisms, or devices, which ensure both owners and fund suppliers that profitable business activities for the return on their investments have been undertaken (Shleifer and Vishny, 1997).

1.3 Eastern Europe and Corporate Governance

Because of the limited corporate governance codes and historical background, the majority of Eastern European countries have concentrated corporate ownership structures (La Porta et al., 1999). The ownership of publicly held companies usually belongs to the large shareholders. Pajuste (2003) claims that the median voting rights held by the largest investor in 9 Eastern European countries is 44%. The median voting rights of the largest investor is highest in Romania with 53%, and lowest in Slovenia with 23.7%. There is not much difference upon comparing the ownership concentration in Eastern and Western European economies, as many Western countries have a higher or similar percentage of voting rights. Faccio and Lang (2002) research the ownership concentration and voting power held by the largest owner in the respective countries. The median voting rights held by the largest owner range from 16% in Ireland to 54% in Austria, with Scandinavian economies being somewhere in between. The high degree of ownership concentration in Eastern Europe affects the relationship and contracting between principal (shareholders) and agent (managers). Usually, in highly concentrated ownership environments there is a conflict that initially starts as a disagreement between the outside shareholders and managers. This relationship finally transforms into a conflict between

minority shareholders and the controlling owner. A research by Stulz (2005) and Doidge et al. (2007) point out that companies outside the US are actually controlled by large shareholders who ultimately strive to private benefits from the companies they control. Studies by Johnson et al. (2000), Lombardo & Pagano (2002), Shleifer and Wolfenzon (2002), Durnev and Kim (2005), Stulz (2005) assume that the costs of seeking private benefits are higher in economies where the law and corporate transparency are higher. Many of the countries in Eastern Europe have low corporate transparency rankings and disclosure clarity relatively to Western Economies and Scandinavia, according to Standard and Poor's disclosure ranking and Transparency International's Corruption Perception index (2013).

1.4 Problem Statement

Are higher levels of corporate governance positively correlated with GDP growth and investment levels in Eastern and Central European countries? Corporate governance in Eastern and Central Europe has been exposed to intensive scrutiny and research activities over the last decade, including papers by: Haiss P.R and Fink G. ("Corporate Governance in Central and Eastern Europe: Transition management is a tough job", 1998), Miclaus P. G. ("Corporate Governance: a South-Eastern European perspective", 2007), Vliegthart A. ("Corporate Governance in Eastern Central Europe: The State of the Art", 2004), among others.

The core of our paper can easily be connected to the famous "Washington Consensus" where "privatization, liberalization and macroeconomic stability" (Aggestam, Falck, 2000) were the pillars of any modern country. Even though the consensus was originally intended for Latin American countries, these ground rules were perceived as a general recipe for evolution for developing countries including our sample of selected countries. The demise of the Washington Consensus can easily be associated with some crucial events from the 1990's such as: transition crisis in Central and Eastern Europe, the limited growth in Africa and the Asian financial crisis. Nowadays the majority of economists suggest a broader set of instruments and objectives for insuring smooth transition to a market based economy (Franzini, 2009).

1.5 Purpose

The main purpose of this paper is to eliminate the gap between theory and practice about corporate governance in selected countries in Eastern and Central Europe, which have transitioned from a socialist to a market economy. Furthermore, the secondary purpose is to determine the concrete effect of corporate governance mechanisms on a country's growth level and investment.

1.6 Limitations

A possible limitation of this paper is the selected time period. Because the data for all the variables was not available beyond the selected years, a larger time frame could improve the accuracy of the research. Another potential drawback is the fact that the independent variables used to perform regressions are collected from a survey from 2007 which implies that the data is not time-varying. This could also have a slight impact on the findings. Finally an extension of the model incorporating additional factors such as ownership structure could possibly better capture and explain the link between investment, GDP growth, and corporate governance.

1.7 Target group

This thesis is specifically written for students with a background in economics and corporate finance, researchers, professors and other subjects interested in corporate finance, econometrics and time series analysis. Furthermore, this paper might be of special interest to those familiar with the economies in Eastern and Central Europe, or emerging markets in general.

2. Theoretical Framework

In order to understand what drives corporate governance the reader should be introduced to some fundamental notions that characterize corporate governance mechanisms and principles. It should be mentioned that this chapter will discuss the application of corporate governance from a theoretical perspective. Furthermore the chapter will be structured as follows: corporate governance will be discussed from a general perspective which is not necessarily specific for CEE countries. Here some examples including mechanisms in developed countries will be given. The following section focuses on corporate governance in CEE countries specifically. Finally the remainder of the chapter discusses agency problems which are a reoccurring issue for corporate governance in general and even more so in developing countries.

2.1 Corporate governance in theory and practice

The notion that corporate governance is a determinant of growth is in fact in line with classic economic theory. According to the economist Jean Tirole (2001): "the standard definition of corporate governance among economists and legal scholars refers to the defense of shareholder interest". Corporate governance is the usual response to agency problems between owners and managers of companies, who oftentimes have conflicting interests. With lack of constraints managers have no real incentive to return any of the profits to the investors ex post. Of course, this triggers the problem of securing funds ex ante: no one will be willing to invest their money to a project when they know their capital will be misused.

2.2 Corporate Governance Mechanisms

2.2.1 Board of Directors

The board of directors is composed of executive and nonexecutive directors which are elected by the company's shareholders to monitor and control top management. Hart (1995) argues that although in theory the board of directors has an essential role, reality suggests that it does not always serve in the best interest of the company. An obvious reason is the difficulty of the executive directors to act as supervisors for themselves. When it comes to the other members of the board which are outsiders, they often lack financial interest in the company and therefore are not really affected by the affairs or performance of the firm (Hart, 1995). Hart (1995) states that

nonexecutive directors are likely to be on the board of other companies as well which disables them to become significantly involved in the company's activities. Also they have a sense of loyalty towards the management which elected them and want to maintain a good relationship with these in order to get reelected.

2.1.1. Proxy Fights

As previously mentioned, the board of directors does not always fulfill its job requirements leaving the shareholders unsatisfied with their activity. In such cases the shareholders can decide to replace the current board with a new one through a proxy fight. This process consists of one or more shareholders, known as the dissidents, who are willing to start the proxy fight (Dodd & Warner, 1982). They select a set of candidates to run for the board and then convince the other shareholders to vote for it. Proxy fights are not always beneficial for companies where the ownership is too diffused and the costs of initiating the election and getting the shareholders on board are high (Hart, 1995). Dodd and Warner (1982) discuss that during a specific period after the announcement of the contest is made public, companies experience negative returns. On the other hand there is a positive impact on the performance of the share price during the election.

2.2.2 Large Shareholders

According to Shleifer and Vishny (2012), concentrated ownership is a common modality to assure that the outside investors will have their rights protected. This means that minority shareholders, whether they are one or more, have stakes of ten to twenty percent in the company which gives them enough power to monitor the firm's management. This makes it possible for some usual problems such as free riding, to be avoided. By having large ownership stakes, minority shareholders are generally interested in higher profits and therefore in their maximization which covers another issue i.e. agency problems.

In Europe, the characteristics of minority ownership are different for every country. In the case of Germany, around one fourth of the votes in major firms are controlled by large banks. On the other hand the ownership structure in small firms is characterized by pyramids as these are typically family owned. Therefore it is likely that the control will be concentrated in the hands of the owner himself (Franks & Mayer, 1994). Pyramids arise when two or more firms are being controlled by the same individual, usually the owner (Barca & Trento, 1997). According to

Barca and Trento (1997), because minority shareholders have dispersed voting rights across the chain of companies, this enables the owner to gain control of the shareholders' capital with minimal capital of his own. France is characterized by cross ownership which enables the voting rights to be diffused across the companies as opposed to them being concentrated in the hands of one firm or person as it happens in pyramids (Morck, 2000). In the rest of Europe (Finland, Sweden, Italy etc) the companies are controlled usually by their owners who in many cases also happen to be their founders (Shleifer & Vishny, 2012).

Shleifer and Vishny (2012) point out that large minority ownership has a higher level of effectiveness in countries with stronger legal systems. As this will ensure the protection of the minority shareholders' voting rights whereas in countries with less sophisticated courts, there are greater chances that the majority ownership will be favored.

2.2.3 Hostile Takeovers

The issue with the above mentioned mechanisms is the fact that the shareholders that identify the problem and initiate the change in the company incur large costs while gaining little back. Hostile takeovers on the other hand are mechanisms with a lot more power, as the benefit for those who detect the underperforming firm, are much more significant (Hart, 1995). The targets are companies in which the board of directors fails to monitor and control the management and thus agency and free rider problems arise. In other words the internal governance mechanism is inefficient (Shivdasani, 1992).

2.2.4 Financial Structure

Unlike the above mentioned mechanisms, this method disciplines the management not through voting or monitoring but through the financial structure of the company (Hart, 2005). Debt is one of the means that will stop management to reinvest the company's profit irresponsibly. The amount of debt signals a certain level of commitment and creditability against the managements' opportunistic behavior. Nevertheless debt will act as a discipline method only when it is followed by an appropriate punishment such as a bankruptcy procedure, in the occurrence of default. For example Chapter 11 is a default mechanism that may have the opposite effect on the management giving it fewer incentives to avoid bankruptcy (Hart, 2005).

2.3 Privatization

Scholars such as Johnson and Shleifer (2004) discuss the potential drawbacks of privatization and the necessary measures that have to complement it, such as encouraging competition. This entails a different set of political initiatives. Johnson and Shleifer (2004) discuss that a key source that distinguishes countries is their underlying law system. More specifically European countries are characterized by civil law which naturally assumes less protection of minority shareholders. Therefore the benefits of privatization are not fully exploited as lack of minority protection causes agency problems and expropriation. As a result, such countries have less outside investment and larger debt-to-equity ratios which makes them more susceptible to collapse (Friedman, Johnson & Mitton, 2003). There are certain mechanisms that private companies have developed in civil law countries, that help them with external investors, however these mechanisms are not even close to perfection as there still remain a number of loopholes that management use in their own interest (Johnson, La Porta et al., 2000).

2.4 Corporate Governance Mechanisms in CEE

According to Lupu (2008) the starting point of the transition differed significantly between the CEE countries since their financial and economic situations were not alike. This in turn translated onto the transition taking different patterns of development, at times resulting in financial crises for some countries. Nevertheless despite the different trajectories, with time these countries built economic systems that exhibit a mixture of capitalism that is found in Continental Europe and characterized by large shareholders and parts of capitalism that have an entrepreneurial focus, specific for the US.

Lupu (2008) argues that transition led to an unexpected result in the form of new types of governance. Privatization was common for all CEE countries however transferring ownership was not enough to generate proper incentives for managers. The problem of conflict of interest still remains as managers often abuse of their status in order to benefit themselves neglecting how this may affect the company. Therefore the enforcement of corporate governance mechanisms is needed.

Table 2. 4: Corporate Governance Mechanisms in CEE (Source Berglöf & Pajuste, 2005)

Corporate Governance Mechanism	Importance in CEE	Possibility for Policy Intervention
Large Shareholders (block-holders)	Considered very important mechanism; as a result there is concentrated ownership	Reinforce laws that protect minority shareholders whilst maintaining the incentive to hold controlling blocks
Market for Corporate Control	Not important when there is concentrated ownership	Control and ownership disclosure and transparency; improve banking system
Proxy Fights	Small chances of being effective because the ownership is concentrated	Better communication between shareholders through more advanced technology; Control and ownership disclosure and transparency
Activity of the Board	Not likely to have a significant impact because the owner controls the board and can fire or hire its members	Voting transparency; introduce cumulative voting; train the board of directors;
Executive Compensation	Not that important, owner can act in his own interests, can fire or hire	Compensation system should be disclosed, introduction of laws dealing with conflicts of interest
Shareholder activism	Possibly important for companies with diffused shareholders	Boost communication and contact between the shareholders; increase minority shareholder protection
Monitoring of the Bank	Important however dependent on how healthy the banking system is	Stronger regulations for the banking system; introduce credit agencies
Monitoring of the Employees	Possibly important especially for small firms with highly skilled employees	Information should be disclosed to employees; potentially have a representative in the board
Litigation	High dependence on the efficiency of the enforcement environment	Enable communication between shareholders, introduce class action suits
Social and Media Control	Possibly important however dependent on how independent the media and the level of competition	Diversify media control; more competition and public campaigns
Mechanisms of Bilateral Private Enforcement	Important however can have disadvantages for outsiders	Encourage better commercial and civil courts
Multilateral Mechanisms (Auditors, arbitration)	Possibly important but the audits are not always fair, there can be conflicts of interest and the problem with enforcement still persists	Enable the development of mechanisms for private third parties

Table 2.4 is an overview of the different corporate governance mechanisms that can be applied in CEE countries (Berglöf & Pajuste, 2005). How efficient these mechanisms are, is dependent on the type of and how well certain institutions operate in a specific country. For example, Coffee (1999) states that there is evidence showing that during bad economic and financial times the level of expropriation increases. Simply put, managers are more likely to conduct activities that will ultimately affect their personal benefits in troubling times. For this reason Coffee (1999) argues that countries with stronger legal systems that protect the rights of minority shareholders are less affected by a negative shock to the economy. Thus failure of the institutions to function appropriately serves as an impediment to the development of good corporate governance mechanisms.

2.5 Corporate Governance Principles in CEE

So far this paper has discussed the different aspects of corporate governance mechanisms in a general setting as well as more specifically for CEE countries. However the success of implementing corporate governance mechanisms, as Berglöf and Pajuste (2005) state, is highly dependent on how well institutions function. Golebiowska-Tataj and Klonowski (2009), add more elements to the theory discussed so far by introducing a set of five principles that aid countries in transition to establish better corporate governance mechanisms.

The first principle deals with financial control and the right of the management and shareholders to be aware of the company's real financial situation. This usually involves a third party, such as an auditing firm, which confirms whether inside financial reporting is reliable or not (Melis, 2004). The challenge for the CEE countries is to avoid the unofficial economy that is created through entrepreneurs who go against paying taxes. Such entrepreneurs rely on non-governmental agencies for protection, whose activity is deemed as illegal and corrupt. The companies that form around such unofficial sectors are not transparent in their earnings. As a result proper financial control is not established, violating one of the principles of corporate governance (Johnson, Kaufmann & Shleifer, 1997). According to Golebiowska-Tataj and Klonowski (2009) another key principle is conflict resolution, as prolonged misunderstanding and clashes between managers and the shareholders leads to agency problems and thus may negatively affect the company in the long-run. Furthermore the next principle focuses on utilizing corporate governance in order to improve company performance. Scholars such as Cremers and Nair (2005), establish that there is a definite link between corporate governance and the profitability of a firm. The next assumption states that corporate governance helps the strategies to be implemented in such a way that results in increased returns and thus creates value for the financial shareholder in particular. The final principle assumes that corporate governance practices can be transferred. According to Bris, Brisley and Cabolis (2008) shareholders with large corporate governance experience have a positive impact on the companies they partake in. This makes it possible to transfer corporate governance principles between companies or countries.

2.6 Agency Theory

The main task of corporate governance is to deal with the agency problem generated from contractual arrangements among factors of production (Shleifer & Vishny, 1997). According to the agency theory elaborated by Coase (1937) and farther explained by Jensen and Meckling (1976), a company is a legal entity that serves as a core for various sets of contracts between divergent parties. The underlying relationship works in such a way that the principal appoints another agent to conduct some services on his behalf, which usually involves assigning some decision making authority to the agent. The principal is interested in spending the funds in a certain way, and as such tries to stop any financial improprieties regarding expropriation and negative NPV projects that can be undertaken by the manager. This problem is known as the agency problem between principal and agent. The separation of ownership and control is a lucrative on-going debate among economists. A conflict of interest always arises when the ownership and control are not aligned. Ideally, the owner and the manager would sign a "complete contract" which foresees every future state of the world and establishes corresponding actions under each. However, this requirement of prediction of all the future states is "technically infeasible", and thus the underlying contract unattainable. Another reason which necessitates the use of incomplete contracts is the asymmetric information (Frederiksen & Jessen, 2006). Asymmetric information concerns the fact that owners and managers do not possess the same information, i.e. managers usually know a lot more about the projects and funds compared to the owners, because it is almost impossible for the owners to monitor each action of the manager. The costly, almost impossible perfect contracts along with the conflicts of interest and inefficient controlling of managers, eventually reduces the value of the company, thus incomplete contracts must be used instead. Due to the incompleteness of the contracts agency problems may arise. Jensen and Meckling (1976) define the agency cost as "*the sum of the monitoring expenditures by the principal, the bonding expenditures by the agent and the residual loss*", where the residual loss refers to "*the dollar equivalent of the reduction in welfare experienced by the principal as a result of divergence between the agent's decision and the ones maximizing the principal's welfare*" (p. 308).

2.6.1 The agency problem between owner and manager

Agency problems exist between various subjects, however the most discussed ones in the literature are those agency costs caused by separation of ownership and control. This separation is specifically important in modern companies with diffused ownership structures. There are a few reasons for this inference. First, within a developed capital market the investors (owners) are able to easily alter their investments from one firm to another with relatively low costs (Fama, 1980). This goes in line with the portfolio theory, which suggests that the more investors diversify their portfolio the less interested they are in singular firm's activities (Li, 2010). On the other hand, agents who have relevant monitoring and managing skills are willing to rent out their human capital to companies for a certain fee, which depends on the company's performance. Furthermore, shareholders with diversified portfolios are either disinterested or not qualified for managing and controlling, and are ready to delegate their management control to other agents (Fama & Jensen, 1983).

Even though the ownership theory claims that the owners should have the final say and make decisions, they are not able to so because of under-qualification and lack of necessary managing skills. Hence, the majority of residual rights are held by the managers and it's ultimately them who allocate the resources to their own liking. This ignites the expropriation problem which can take various forms. Vishny (1997) indicates that in countries where investors are not well protected, like in Eastern Europe, the expropriation takes on direct forms such as cashing out or transfer pricing. In the Western economies on the other hand, such as the US, the expropriation of funds by managers is of a more subtle form, using indirect approaches. A unique way of expropriation worth mentioning is the management entrenchment, where the managers secure their position at a high level of compensation, even though they might not be fully qualified for the underlying position (Morck, Shleifer & Vishny, 1988).

2.6.2 Mitigating the agency problem

In order to eliminate or minimize the divergences between the interests of owners and managers, the owners need to initiate incentive contracts for the managers and effective monitoring system within the firm (Jensen & Meckling, 1976). The incentive contracts are perceived as instruments used to align the interests of the managers and owners and can take various forms such as:

dismissal threats (when a firm's performance is lower than a certain benchmark), stock options and equity ownership. Monitoring on the other hand, is another remedy for the agency problem that can be used beside the incentive contracts. According to Fama & Jensen (1983), when controlling and ownership are separated, a monitoring system which is independent from management ought to be established in order to eliminate the agency problem.

Monitoring can be elaborated from two different perspectives. When ownership is concentrated in a few residual claimants, decision control should belong to the large shareholders for "ratifying and monitoring important decisions and setting rewards" (Fama & Jensen, 1983). These large shareholders have the power to reduce the agency problem because they have enough control power to affect the strategies and decisions of the company, while being equally interested in profit maximization (as the shareholders' main incentive). In contrast, when ownership belongs to many diffused subjects it is impractical and impossible for every claimant to have a say in the decision-making process of the corporation. As mentioned before, this is mostly due to the lack of competency and disinterest of the diversified shareholders, who are thus willing to mitigate their decision-making power to competent managers such as the board of directors (Fama, 1980). The board of directors is a prevailing organizational form within the decision control system with the authority to hire, fire, set compensation schemes and control important firm decisions (Li, 2010). Monitoring can also take other forms, like "decision hierarchies", where the senior level managers are responsible for monitoring the subordinate managers; and "mutual monitoring system" where all agents monitor each other because the rental rate for their human capital is dependent on the company's performance.

3. Method

3.1 Panel Data

Observations in panel data involve at least two elements; a time-series and a cross sectional dimension. (Hsiao, 2006). Simply put, a panel data is a data set in which the behavior of some subjects are observed across time. These entities could be companies, individuals, or as in our case - states. With panel data one can include variables at different levels of analysis suitable for hierarchical or multi-level modeling. Panel data have several advantages over time-series or cross-sectional data. To begin with, panel data provides more accurate inferences of the model's parameters, as it contains more degrees of freedom and a richer sample variability. There is also a greater scope of capturing complex entity behavior. However, probably the biggest advantage of using panel data is that a lot of issues can be addressed and it is also possible to work out more complex problems. (Brooks, 2008; Verbeek, 2012). Certain drawbacks might be data collection problems, non-responsiveness (micro panels) or cross-state dependency in the macro panel scenario (Reyna, 2010). The more serious challenge of panel methodology is to control the effect of unobserved heterogeneity, as well as, obtain valid conclusions on the structural parameters.

3.1.1 Fixed and random effects

For financial research there are two main models that can be applied; the fixed-effects model and the random effects model. Each model contains different properties depending on decomposition of certain variables or proposing different intercepts for each entity. Below, these models are explained more in depth.

3.1.1.1 Fixed effects

The fixed effects model breaks down the error term into an entity specific impact and a remainder error term that varies over time. Simply, the fixed effects can be used whenever one is only interested in analyzing the effect of variables that vary over time (Brooks, 2008; Berbeek, 2012). The fixed effects model explores the relation between predictor and outcome variables within an entity, such as one country. Each country has its own individual properties that might or might not influence the predictor variables. In this scenario, it can be assumed that something within the entity (country) may influence the outcome variables and one needs to control for this.

This can be connected to the rationale or assumption that there is correlation between the entity's error term and outcome variables. The fixed effects remove the impact of those time non-varying properties from the predictor variables, thus the predictor's net effect can be assessed. Probably the most important assumption of the underlying model is that the time-invariant properties are unique to the country and should not be correlated with other entity's characteristics. Each country is different, so the error term and constant should not be correlated with the others. The equation that needs to be estimated is as follows (Brooks, 2008; Berbeek, 2012):

$$y_{it} = \alpha + \beta x_{it} + \mu_i + v_{it} \quad (2)$$

Besides the entity-fixed-effects model, the time-fixed-effects model can also be used. Now the error term can be broken down into a time-specific effect and a remainder error:

$$y_{it} = \alpha + \beta x_{it} + \lambda_t + v_{it} \quad (3)$$

A combination of the previous two can also be made, where we allow for both time-specific and entity-specific effects within the same model. In this case, the error term is decomposed into three parts: time-specific effect, entity-specific effect and a remainder term. (Equation 4)

$$y_{it} = \alpha + \beta x_{it} + \mu_i + \lambda_t + v_{it} \quad (4)$$

To sum up, the fixed-effects models are designed to study the causes of changes within an entity. A time-invariant property cannot cause such a change, because it is non-varying for each entity (Reyna, 2010).

3.1.1.2 Random effects

The motivation behind random effects model is that, unlike the fixed effects model, the diversity across entities is presumed to be random and uncorrelated with the independent variables in the underlying model. Greene (2008) further motivates that the main difference between fixed and random effects models is whether the unobserved individual effect incorporates elements that are correlated with the explanatory variables in the model, not if these effects are stochastic or not. Unlike the fixed effects model where the invariant variables are absorbed by the intercept, an advantage of the random effects model is that invariant variables can now be included in the model.

The following equation represents the core of the random effects model:

$$y_{it}^* = \alpha^* + \beta x_{it}^* + u_{it}^* \quad (5)$$

$$\begin{aligned} y_{it}^* &= (y_{it} - \Theta \bar{y}_i) \\ \alpha^* &= (1 - \Theta)\alpha \\ \text{where } x_{it}^* &= (x_{it} - \Theta \bar{x}_i) \\ u_{it}^* &= (u_{it} - \Theta \bar{u}_i) \end{aligned}$$

$$\text{and } \Theta = 1 - \frac{\sigma_v}{\sqrt{T\sigma_\mu^2 + \sigma_v^2}}$$

The transformation is required so that there is no remaining correlation in the error terms (Brooks, 2008). In general, the random effects model is expected to be more efficient than the fixed effects model because less parameters have to be estimated, thus degrees of freedom are saved. On the other hand, in this model there are stricter assumptions that have to be satisfied, i.e. the model is only valid when the composite error term is uncorrelated with all the controlled variables.

3.1.2 The Hausman Test

In order to determine whether fixed or random effects should be used, a Hausman test should be run which will indicate what method is more appropriate for the given model. After running the test in EViews, if the significance of the p-value indicates that the unobserved effects and the independent variables are unlikely to be uncorrelated and consequently leads to the rejection of the null hypothesis. On the other hand, a p-value that is not significant at 5% supports the idea of uncorrelation. Since the random effects model is based on the assumption that the errors are uncorrelated with the effects, in a Hausman test failure to reject the null hypothesis means that random effects should be utilized while the opposite suggests that fixed effects are more appropriate.

The Hausman test statistic:

Consider two estimators, $\hat{\beta}_0$ and $\hat{\beta}_1$.

H₀: Both estimators are consistent but only $\hat{\beta}_0$ is efficient.

H₁: Only $\hat{\beta}_1$ is consistent.

$$m = \hat{q}'(\hat{V}_1 - \hat{V}_0)^+ \hat{q} \sim \chi^2(k)$$

Where: \hat{V}_1 and \hat{V}_0 are estimates of the covariance matrices of $\hat{\beta}_0$ and $\hat{\beta}_1$ and $q = \hat{\beta}_1 - \hat{\beta}_0$.

3.1.3 Autocorrelation and Heteroskedasticity

Because panel datasets have a time series cross-section nature, it is likely that the data can suffer from autocorrelation and heteroskedasticity. In order to test for autocorrelation in a panel data, the provided Durbin-Watson statistic by EViews can be utilized. This value is computed by utilizing a stacked set of residuals on which the first order residual correlation is calculated. The Durbin Watson statistic takes values from zero to four. A value of two or close, indicates no or almost no autocorrelation. Values much smaller or higher than two suggest positive and negative autocorrelation respectively. If autocorrelation is detected, it can be corrected by lagging the dependent variable by one period and performing the test again in order to assess any changes in the Durbin Watson value.

When it comes to heteroskedasticity, having such a problem can cause invalid inferences from regressions and statistically insignificant results. Unfortunately it is not possible to utilize heteroskedasticity tests in EViews when dealing with panel data however in order to account for this issue the white cross-section coefficient covariance matrix can be used.

3.2 Testing hypotheses

The main implication from economic literature is that corporate governance affects economic growth and investment levels (Fanzini, 2009). It is argued that agency costs which come from the separation of ownership and control will decrease with more extensive corporate governance. As a result, the returns of investments will go up, since less surplus will be taken by the managers. Furthermore, the availability of funds will increase and cost of outside financing will decrease, since investors will be more willing to supply financing. Finally, the aggregate investment will increase as there is a higher supply of outside financing.

The implication of theory results in two hypotheses that can be tested:

Hypothesis 1:

H₀: Higher corporate governance levels will increase the aggregate level of investment

Hypothesis 2:

H₀: Higher corporate governance levels will increase growth rates

Note: Higher corporate governance levels refers to extensive corporate governance regulations achieved by utilizing the mechanisms of corporate governance elaborated before.

The hypotheses are tested using a sample of 28 Eastern and Central European countries that started the transition process to a market system in the beginning of the 1990's. There are a couple of reasons why we were particularly interested in these countries. As developing economies undergoing a rapid transition, there had been a lot of variations as to which reforms have been successful across the region. The geographic closeness and a shared communism history allow to aggregate perplexing factors which otherwise would be difficult to quantify. Lastly, after the fall of communism in 1989, all of the underlying countries began the process of restructuring around the same time.

The Eastern and Central European countries in the sample are: Macedonia, Moldova, Georgia, Hungary, Latvia, Lithuania, Czech Republic, Estonia, Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, Poland, Romania, Russian Federation, Serbia, Slovak Republic, Slovenia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, Kazakhstan, Kyrgyzstan. These countries can be grouped into 4 regions: Balkans, CEE, Baltics and EA/A. The first category consists of 8 Balkan economies including the Former Yugoslav countries. Besides their geographic proximity, most of these countries also share a common history and similar economic indicators. The second group, consists of 8 countries in Central and Eastern Europe, and the reasons for this grouping is also because of the geographic closeness and the shared transition from a socialist to a market economy. The third region contains all the Baltic States, and finally Region 4 includes Russia and 8 ex-soviet countries from Eurasia and Asia.

Table 3. 2: Countries

BALKANS:	Macedonia	Croatia	Albania	B&H	Bulgaria	Montenegro
	Slovenia	Serbia				
CEE*:	Moldova	Hungary	Czech Republic	Poland	Romania	Ukraine
	Slovakia	Belarus				
BALTICS:	Latvia	Lithuania	Estonia			
EA/A**:	Georgia	Armenia	Azerbaijan	Tajikistan	Turkmenistan	Uzbekistan
	Kazakhstan	Kyrgyzstan	Russia			

**CEE – selected countries from Central/Eastern Europe*

***EA/A – selected ex-Soviet countries from Eurasia and Asia*

3.3 Data

Dependent Variables

For each hypothesis mentioned, there is one dependent variable. The data is taken from the database provided by the European Bank for Reconstruction and Development (EBRD). For the first hypothesis, the level of investment is utilized (*inv*, taken as % of GDP), while for the second hypothesis the growth in real GDP is used (*gdp*).

Independent Variables

EBRD has gathered a set of corporate governance indicators which can be found in the Corporate Governance Legislation Assessment Project. These indicators will represent the independent variables used in order to carry out the regressions. This assessment was made by law firms that operate in the EBRD area and it comprises six main interest groups. These are the following:

Group 1: making sure that there is a foundation for the corporate governance framework to be effective (*cg1*).

Group 2: Shareholder rights (*cg2*).

Group 3: the fair shareholder treatment (*cg3*).

Group 4: stakeholders' role within corporate governance (*cg4*).

Group 5: transparency and disclosure (cg5).

Group 6: board responsibility (cg6).

From these groups, certain questions are selected, weighted and gathered into an index specific for each group, which together with the rest of the indexes is then used to form another general index (*cgindex*). EBRD provides this data on their website. These six groups that are utilized to describe corporate governance practices in the 28 CEE countries are rather straightforward and incorporate the concepts discussed earlier in the paper. Generally, the first group refers to the legal framework that countries must possess in order to ensure effective corporate governance. The next two groups measure how well shareholders are protected. The fifth group examines the level of disclosure and transparency required by law and the last group looks at the board's rights and how strong they are. The fourth group is slightly controversial because it considers stakeholder's rights which include, for example, suppliers and employees. Therefore the maximization of shareholder value can be overshadowed by the protection of stakeholder rights.

Two regressions are run for each individual dependent variable, employing the aggregate corporate governance index and the corporate governance components. The first regression therefore will result in determining the overall impact of corporate governance, while the second one captures the impact of each element of corporate governance, presented above. The data is however available from 2003 until 2009.

Control Variables

Besides the variables mentioned above, there is an additional indicator that is also collected from the EBRD database and it measures the effectiveness of these corporate governance components (*cgeffec*). What this entails is that a country may score high on certain corporate governance groups yet at the same time have a low effectiveness score which indicates that while there are laws protecting shareholder rights for example, their enforcement is weak. Such a control variable proves to be necessary since there might be gap in the legal system that will otherwise not be detected. The level of investment is expected to be positively correlated with corporate governance effectiveness.

Furthermore, another four control variables are used in order to examine macroeconomic stability, deregulation and privatization. The rate of money growth (*mgr*) and lending (*lendr*) are used to capture macroeconomic stability. Lower rates of money growth will be registered when inflation is low and according to the Washington Consensus, interest rates should be low as well. Price liberalization (*pricelib*) is the control variable utilized for deregulation while privatization is captured by the control variable with the same name (*privatiz*). It is expected privatization and price liberalization to positively affect the level of investment meanwhile having an opposite effect on lending rate and money growth.

The control variable for price liberalization will take values from 1 to 4.33, 1 showing that prices have no or little liberalization i.e. government controlled while 4.33 shows liberalization of prices. The rate of lending is for each country takes into account maturities and their weighted average. When it comes to privatization the control variable looks at the private sector and how much of GDP is attributed to it. Finally the change in broad money at the end of each year expressed in percentages is indicated by the money growth control variable.

The next control variable contains the regions (*reg*) of every country. As previously mentioned, there are four regions that will be examined. Each region is attributed a number from one to four. The natural logarithm of the GDP per capita (*loggdp*) for each country represents another control variable. This variable is expected to be positively correlated with investment and growth. As previously discussed the origin of the legal system is a factor that has proven to explain some differences between corporate governance and protection of shareholder rights in various countries. Therefore legal origin (*legor*) will be the eighth variable. If the commercial law of a country has its origins in the French civil law then the value 0 will be attributed, otherwise if it originates from the German civil law, the value will be 1.

4. Empirical Findings and Analysis

There are certain corporate governance issues in some regions and countries that have not been analyzed in detail (Claessens, 2003). In particular, the special corporate governance issues of state owned firms are not well understood, nor are the principles of enforcement. According to theory, better corporate governance principles benefit companies through easier access to financing, better company performance and lower cost of capital (Franzini, 2009). Many studies agree that these channels function not only at a company level, but in countries and regions as well - although causality is not always clear.

4.1 Descriptive Statistics

The country that has the highest GDP growth as well as investment level is Azerbaijan. On the other end, the lowest GDP growth and investment level also both, belonging to Lithuania. The descriptive statistics below show that out of all the corporate governance groups, cg4 (stakeholders' role within corporate governance) has the highest mean while cg6 (board responsibility) has the lowest mean. The highest score for this group belongs to Slovenia while the lowest is attributed to Tajikistan. Both of these countries belong to different regions. When it comes to cg6, besides the fact that it has the lowest mean it also has the lowest minimum value which is 0.07 and was registered by Ukraine.

When it comes to the overall corporate governance index and efficiency, the country that has the highest level of corporate governance is Lithuania while efficiency-wise is has a value of 6.65 which is above the mean and close to the maximum value. On the opposite end of Lithuania is Tajikistan which also happens to have the lowest efficiency value out of all countries. When it comes to lending rate, Georgia has the highest lending rate while Lithuania has the lowest. Countries such as Bulgaria, Albania and Armenia have the maximum liberalization value Belarus, Turkmenistan and Uzbekistan score the lowest. When it comes to GDP, Slovenia reaches the top number while again Tajikistan has the lowest value far from the mean. When it comes to privatization, Georgia again has the lead while a value of only 2.6 which is very low belongs to Azerbaijan.

Table 4.1.1: Descriptive Statistics

	Mean	Median	Maximum	Minimum	Std. Dev.
Dependent Variables					
GDP growth	5.371949	6.3	30.5	-18.4	6.170137
INVESTMENT	26.2077	25.5	58	11.43	6.630386
Explanatory Variables					
CG1	0.630694	0.647059	0.882353	0.176471	0.164493
CG2	0.626732	0.643836	0.882353	0.176471	0.146262
CG3	0.689223	0.714286	0.857143	0.428571	0.106734
CG4	0.707924	0.692308	1	0.307692	0.177586
CG5	0.601959	0.636364	0.878788	0.333333	0.172261
CG6	0.53276	0.571429	0.821429	0.071429	0.190614
CG_INDEX	10.64796	11.11682	13.3115	6.196666	1.941759
EFF	5.322368	5.025	6.825	2.775	0.981453
LENDRATE	13.72857	12.1	32.2667	5.11333	6.264045
LGDP	8.200522	8.319496	10.20857	5.513646	1.125883
LIBER	4.032331	4.3	4.3	2.7	0.439274
MGROW	25.0969	22.29341	78.80869	-4.43928	16.98325
PRIVATIZATION	14.83308	13.3	41.8	2.6	9.528702

In order to see if there is any high correlation between the variable, a correlation table is presented in Appendices A and B. The results show that there are no reasons for concern.

4.2 Hypothesis I

Below are presented the regressions used for testing the first hypothesis, where the subscript “t” indicates a time-changing variable, while “i” denotes a changeable variable across countries.

Regression 1:

$$INV = \beta_0 + \beta_1 cgindex_i + \beta_2 cgeffec_i + \beta_3 legor_i + \beta_4 privatiz_{it} + \beta_5 pricelib_{it} + \beta_6 \log gdp_{it} + \beta_7 mgr_{it} + \beta_8 lendr_{it} + \beta_9 reg_i + \varepsilon$$

Regression 2:

$$INV = \beta_0 + \beta_1 cg1_i + \beta_2 cg2_i + \beta_3 cg3_i + \beta_4 cg4_i + \beta_5 cg5_i + \beta_6 cg6_i + \beta_7 cgeffec_i + \beta_8 legor_i + \beta_9 privatiz_{it} + \beta_{10} pricelib_{it} + \beta_{11} \log gdp_{it} + \beta_{12} mgr_{it} + \beta_{13} lendr_{it} + \beta_{14} reg_i + \varepsilon$$

4.2.1 Findings

As previously discussed, in order to determine if either random or fixed effects are more suitable for the model in this paper, a Hausman test is run. The output is presented below.

Table 4.2.1: Hausman test (Hypothesis 1, Regression 1)

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.091685	5	0.1513

As can be seen, the p-value is not significant at 5% which leads to the inability to reject the null hypothesis i.e. random effects should be used in this regression. In order to check for autocorrelation, after the regression is run, the Durbin Watson statistic indicates a value of 1.64 which indicates some form of positive correlation. In this case the dependent variable, investment, is lagged by one period and another regression is run. At the same time in order to account for the possible heteroskedasticity, the White cross-section coefficient covariance matrix is utilized. The new value of the Durbin Watson statistic suggests a much better model as it is 2.08. The results can be seen in table 4.2.2.

The findings suggest that the corporate governance index is significant with a p-value of 0.033 and is also negatively correlated with investment. Thus it can be said that a one unit increase in the corporate governance index results in a 0.3 percent decrease in the investment level. These findings are consistent with those of Franzini (2009) who also finds a significant negative correlation between these two variables. Nevertheless such results are surprising as they contradict the expected outcome. According to the literature previously mentioned in the paper, higher levels of corporate governance should be accompanied by increased investment and not the opposite. Another significant control variable is corporate governance effectiveness which has a p-value of 0 and is positively correlated with investment. Such an outcome was expected and predicted by the literature. Legal origin is positively correlated with investment and it is significant. When it comes to privatization, the results indicate negative correlation however with a p-value of 0.322 which shows insignificance. This finding is contrary to that of Franzini (2009) who finds positive and significant correlation between privatization and investment. The next control variable, price liberalization displays a positive correlation with investment but an insignificant explanatory power with a p-value less than 0.25. The variable \ln of GDP indicates

that an increase in the investment level results in higher GDP and has a significant p-value. Both of these findings are consistent with the literature. Another finding that is significant at 5% and in line with theory is lending rate which is negatively correlated with investment. Money growth on the other hand, although significant it is positively correlated with the dependent variable. The direction of the relationship is against what literature might predict however consistent with Franzini as he too finds a positive and significant correlation.

The regression also indicates that countries from region 4 are doing worse in terms of investment than countries from the first region. This region has coefficients that are statistically significant at 5%. Regions 2 and 3 on the other hand have insignificant coefficients. Also the last variable denotes the lagged dependent variable.

Table 4. 2.2: Regression results for Hypothesis 1, Regression 1 (Investment is the dep. variable).

	Coefficient	Std. Error	T-Statistic	Prob.
CGINDEX	-0.279158	0.150625	-1.85333	0.033*
CGEFFEC	0.631189	0.183767	3.434714	0.000*
LEGOR	1.066295	0.29887	3.567757	0.000*
LENDR	-0.062484	0.033445	-1.86828	0.032*
LOGDP	0.377085	0.229516	1.64296	0.052**
PRICELIB	0.89156	1.307771	0.68174	0.249
MGROW	0.06718	0.026372	2.54738	0.006*
PRIVATIZ	-0.030258	0.065366	-0.46289	0.322
REG2	-0.082133	0.346724	-0.23688	0.407
REG3	-0.01489	1.601733	-0.0093	0.496
REG4	-2.02329	0.451353	-4.48273	0.000*
LAGINV	0.767317	0.125577	6.110327	0.000*
Adjusted R-squared	0.734	*p<0.05 **p<0.1		
No. of observations	108			

The same procedure as previously discussed for the first regression, was applied for the next regression. The results from the Hausman test indicate again that random effects should be used. As Table 4.2.3 suggests, the p-value of 0.41 does not make it possible to reject the null hypothesis.

Table 4.2.3: Hausman test (Hypothesis 1, Regression 2)

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.061629	5	0.4084

After running the regression with random effects, the obtained Durbin Watson value was of 1.98 which is acceptable. Lagging the dependent variable results in a value of 2.45 which is not desirable. Therefore taking heteroskedasticity into account by using White cross-section coefficient covariance matrix, the results from Table 4.2.4 were obtained.

The second regression can be used to clarify which components of corporate governance drive the unexpected result described in the previous part. Focusing on the corporate governance indicators, there are three components correlated with investment with significant p-values (cg1, cg2 and cg5). Although the indicators cg3 and cg6 show negative correlation with the levels of investment, they are not statistically significant for the underlying countries. The result of negative correlation between investment and the corporate governance index in regression 1 can be explained by the significant negative magnitude of: cg1 (ensuring the basis for an effective corporate governance framework), cg2 (shareholder rights) and cg5 (disclosure and transparency). As a result, the indicators represented by cg1, cg2 and cg5 are those driving the negative correlation between investment and corporate governance index in Regression 1. The only indicator with a positive coefficient is cg4 (the role of the stakeholders within corporate governance) which is outweighed by the previous four, hence the negative coefficient. When it comes to the other explanatory variables, the natural logarithm of the GDP per capita has a positive coefficient at a statistically significant level. This is supported by theory and other studies (Franzini, 2009) that investment levels and GDP have a positive relationship. The corporate governance effectiveness is positively correlated with investment levels, as this result is consistent to the findings from Regression 1. Another significant explanatory variable is price liberalization which has a p-value of 0.033 and is positively correlated with investment.

Table 4.2. 4: Regression results for Hypothesis 1, Regression 2 (Investment is the dep. variable).

	Coefficient	Std. Error	T-Statistic	Prob.
CG1	-43.29556	27.73373	-1.56112	0.061**
CG2	0.139468	16.97355	0.00822	0.087**
CG3	-6.335943	21.486	-0.29489	0.384
CG4	4.821319	15.55776	0.309898	0.379
CG5	-21.47228	9.67226	-2.21999	0.014*
CG6	-6.715556	17.53479	-0.38299	0.351
CGEFFEC	3.696641	2.722244	1.357939	0.089**
LEGALOR	-0.578798	2.188918	-0.26442	0.396
LENDRATE	-0.213365	0.054316	-3.92818	0.000*
LGDP	5.722684	0.974377	5.87317	0.000*
LIBER	10.97104	5.891454	1.862196	0.033*
MGROW	0.03993	0.018089	2.20739	0.015*
PRIVATIZATION	-0.115957	0.165439	-0.70091	0.242
REGION2	4.59371	3.054249	1.504039	0.068**
REGION3	7.11036	6.387946	1.11309	0.134
REGION4	9.000856	5.392617	1.669107	0.049*
Adj. R-squared	0.4	*p<0.05; **p<0.1		
No. of Obs.	133			

The regional dummy variable included in the regression appears to have quite explanatory power as well, with countries in regions 2 and 4 faring better in terms of investment than their counterparts in region 1 (The Balkans) at statistically significant levels.

The interest rate (lendrate) as expected is negatively correlated to the investment levels, and this simple relationship is logical as higher interest rate would negatively affect the levels of investment. The results show that the variable legal origin has almost no explanatory power, which is consistent with La Porta et al.'s finding that there is no much difference in corporate governance between economies whose commercial code is based on German or French-civil law (Mark. J Roe, 2000). Money growth is significant and positively correlated with investment while privatization besides its trivial coefficient, is statistically insignificant, so we cannot draw any inferences about the relationship between privatization and investment in the underlying sample of countries.

4.2.2 Analysis

As previously mentioned, the first two regressions exhibit interesting results that go against theory but are consistent with Franzini (2009). The findings of the first regression suggest that more extensive corporate governance does not contribute to higher levels of investment in the CEE countries.

An independent variable that has a positive correlation with investment and is significant, is "shareholder rights" which would suggest that increased protection of the shareholders leads to higher levels of investment. This section of the survey includes questions that deal with the transparency of the board's activities and the shareholders' awareness towards any changes in the firm, whether they are of a capital or voting nature. Nevertheless it is unclear why "transparency and disclosure" have the opposite effect on investment. Golebiowska-Tataj and Klonowski (2009) state that disclosure of information regarding the financial situation of the company would act as an incentive for investors and classify this as a necessary principle in developing countries. Therefore the first corporate governance principle in CEE is violated according to earlier findings.

A possible explanation can be justified by the fact that the survey containing the corporate governance groups, was carried out in 2007 and is therefore used as a proxy for the time period 2003-2009. The lack of time varying data can decrease the accuracy of the findings. Franzini (2009) uses the same approach for a longer period and results in a similar outcome.

When looking at the reliability of the study, most of the control variables behave according the literature with data collected from EBRD which is a source that has previously been used in such studies and therefore can be considered as trustworthy. Furthermore, the results of this paper are in line with those of Franzini (2009), with the exception of some small variations. This proves that the paper has credibility and the source of the negative correlation between investment and corporate governance could be due to the exclusion of other factors such as ownership concentration.

Throughout the paper it has been discussed the role of ownership concentration for effective corporate governance. Table 2.4 indicates that large block-holders are an important mechanism in CEE countries. Unfortunately this data is difficult to obtain and not available for many of the

countries included in the sample. Concentrated ownership is a remedy for poor corporate governance and it assures that the rights of outside investors will be protected (Shleifer & Vishny, 2012). Franzini (2009) points out that there is a negative correlation between concentrated ownership and corporate governance. If this is true then it can account as a main driver behind this paper's findings. Thus, how extensive corporate governance regulations are may have less explanatory power than the ownership structure factor. This leaves room for future studies that extend the present model by adding ownership.

Two variables that lack any explanatory power are privatization and legal origin (in the second regression). In fact Johnson and Shleifer (2004) establish a connection between the two control variables by stating that the origin of a country's legal system can have a significant impact on the exploitation of the benefits of privatization.

Rejecting the null from Hypothesis 1, leads to the conclusion that there is a discrepancy between corporate governance in theory and in practice. There is a debate among scholars regarding the efficient implementation of corporate governance in CEE countries and what policies are appropriate for such regions.

4.3 Hypothesis II

Below are presented the regressions used for testing the first hypothesis, where the subscript "t" indicates a time-changing variable, while "i" denotes a changeable variable across countries.

Regression 3:

$$GDP = \beta_0 + \beta_1 cgindex_i + \beta_2 cgeffec_i + \beta_3 legor_i + \beta_4 privatiz_{it} + \beta_5 pricelib_{it} + \beta_6 \log gdp_{it} + \beta_7 mgr_{it} + \beta_8 lendr_{it} + \beta_9 reg_i + \varepsilon$$

Regression 4:

$$GDP = \beta_0 + \beta_1 cg1_i + \beta_2 cg2_i + \beta_3 cg3_i + \beta_4 cg4_i + \beta_5 cg5_i + \beta_6 cg6_i + \beta_7 cgeffec_i + \beta_8 legor_i + \beta_9 privatiz_{it} + \beta_{10} pricelib_{it} + \beta_{11} \log gdp_{it} + \beta_{12} mgr_{it} + \beta_{13} lendr_{it} + \beta_{14} reg_i + \varepsilon$$

4.3.1 Findings

As previously elaborated, the Hausman test is run first in order to determine whether fixed or random effects are more relevant for the underlying model. The following table showcases the result of the test.

Table 4.3.1: Hausman test (Hypothesis 2, Regression 1)

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.543660	5	0.6168

The null hypothesis of the Hausman test is that we need to use random effects, while the alternative suggests for fixed effects. Since the p-value is higher than 0.05 we cannot reject H₀ and can therefore infer that the random effects is more suitable for the underlying regression. Checking for autocorrelation can be done by observing the relevant Durbin Watson statistic. The DW statistic indicates a value of 1.83 which suggests some form of a positive correlation. To correct for this, we lag the dependent variable (GDP growth) by one period and run another regression. Finally, the White cross-section coefficient covariance matrix is used to account for possible heteroskedasticity. The new value of the Durbin Watson statistic suggests a better model as the new value is 1.93.

The results from Hypothesis 2, regression 1, are shown in Table 4.3.2 which indicates that there are seven out of eleven variables that have significant coefficients. As in hypothesis 1, the corporate governance index and effectiveness are both significant with a p-value of 0.05 and 0.08. Also the direction of the relationship between these independent variables and GDP is negative for the corporate governance index and positive for the effectiveness index which was expected after the findings from regression 1, hypothesis 1. The next three variables, privatization, legal origin and ln of GDP, all show a negative relationship with the GDP growth rate which is surprising especially when it comes to the latter. Nevertheless their coefficients do not have any explanatory power as suggested by their p-values which are greater than 0.1. Price liberalization and money growth, both show a positive correlation with the dependent variable and have significant p-values of 0.032 and 0.038. Although literature would suggest money growth to have a negative correlation with the GDP growth rate, Franzini (2009) also finds a

positive correlation. The variable lending rate has a negative and significant coefficient with a p-value of 0.001 and therefore exhibits a behavior predicted by theory.

Table 4.3.2: Regression results for Hypothesis 2, Regression 1 (GDP growth rate is the dependent variable)

	Coefficient	Std. Error	T-Statistic	Prob.
CGINDEX	-0.95225	0.591487	-1.60993	0.055*
CGEFFEC	0.809592	0.58701	1.379179	0.0852*
LEGOR	-0.03986	0.285567	-0.13957	0.4446
LENDR	-0.20775	0.135487	-1.53336	0.0639*
LOGDP	-0.35783	0.800226	-0.44716	0.3278
PRICELIB	1.873583	0.940144	1.992868	0.02425*
MGROW	0.036894	0.019088	1.932825	0.0278*
PRIVATIZ	-0.05104	0.045325	-1.1261	0.1312
REG2	1.787174	0.539803	3.31079	0.0006*
REG3	1.796166	2.026883	0.886172	0.18865
REG4	3.647835	1.56373	2.332778	0.01065*
Adjusted R-squared	0.214	*p<0.05 **p<0.1		
No. of observations	108			

The dummy variables included in the regression, regions 2 and 4 have positive coefficients and are significant at 5%. The adjusted R-squared has a higher value of this regression, which indicates a slightly better predictability power than the first regression from hypothesis 1.

The same procedure is used for the second regression. The output from the Hausman test points out that random effects should be used again. As the following table shows, the p-value of 0.71 does not make it possible to reject the null so random effects are used again. Finally, the Durbin Watson value is 1.975 which is close to 2 and therefore acceptable.

Table 4.3.3: Hausman test (Hypothesis 2, Regression 2)

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.897753	5	0.7157

Table 4.3.4 contains the results of the last regression, where the relationship between the GDP growth and 16 explanatory variables is observed. The fourth regression is used to decompose the

effect of individual corporate governance indicators on GDP growth. In the underlying regression, 3 corporate governance components are correlated with GDP growth at statistically significant levels: cg1 (ensuring the basis for an effective corporate governance framework), cg5 (disclosure and transparency) and cg2 (shareholder rights). Franzini (2009) also finds a negative correlation between cg1 and GDP growth rate for selected European countries at a statistically significant level. The corporate governance effectiveness variable, similarly as the previous results, displays a positive relationship with GDP growth at a significant level. The privatization variable and the legal origin of the countries within the sample, have very negligible coefficients which both do not show any statistical significance. A significant explanatory variable is price liberalization that has a p-value of 0.06 and is positively correlated with the GDP growth. Furthermore, the results showcase the insignificance of the natural logarithm of GDP. The interest rate (lendrate) displays a negative correlation to the GDP growth at a statistically significant level. A decrease in the interest rate will result in a higher GDP growth.

Table 4.3.4: Regression results for Hypothesis 2, Regression 2 (GDP growth rate is the dependent variable)

	Coefficient	Std. Error	T-Statistic	Prob.
CG1	-7.92194	5.959036	-1.3294	0.09315**
CG2	6.486114	3.392463	1.911919	0.0292*
CG3	-1.83383	3.057552	-0.59977	0.2749
CG4	-2.01348	1.714123	-1.17464	0.12125
CG5	-6.20784	2.722139	-2.2805	0.0122*
CG6	-1.77953	3.024332	-0.5884	0.2787
CGEFFEC	0.725055	0.641112	1.130933	0.0902**
LEGALORIGIN	0.376655	0.498298	0.755882	0.22565
LENDRATE	-0.21096	0.129518	-1.62881	0.05305**
LGDP	-0.4174	0.838864	-0.49757	0.30985
LIBER	1.754422	1.090265	1.60917	0.05515**
MGROW	0.028271	0.020897	1.352865	0.08935**
PRIVATIZATION	-0.04031	0.054205	-0.74365	0.2293
REG2	2.102046	0.86548	2.428763	0.00835*
REG3	2.267094	1.989196	1.139703	0.1284
REG4	4.739892	1.587543	2.985678	0.00175*
Adj. R-squared	0.223735	*p<0.05; **p<0.1		
No. of Obs.	133			

The dummy variables included in the regression (Region 2 and Region 4) have positive coefficients and are statistically significant with $p < .01$. These results imply that Regions: 2 and 4 are doing better in terms of the GDP growth compared to the Balkan and Baltic countries (Region 1 and 3, respectfully). Finally, the Adjusted R-Squared which points out the goodness of fit, which is higher than the previous regression (0.223).

4.3.2 Analysis

Regarding the findings for Hypothesis 2, these indicate a negative relationship between corporate governance breadth and GDP growth. Rejecting the null of Hypothesis 2 doesn't necessarily imply a surprising result. There is evidence that when a country's overall corporate governance system is weak, as is the case in some Eastern European countries, the underlying corporate governance mechanisms have limited effectiveness, i.e. they might not affect the GDP growth as expected. Furthermore, the negative correlation is driven by the following two corporate governance components: “ensuring the basis for an effective corporate governance framework” and “disclosure and transparency”. Even though as previously discussed, according to theory the presence of a sound basis of corporate governance and transparency should increase growth.

In addition to the six variables used to measure the extensiveness of corporate governance, another indicator is used in order to determine the effectiveness as well. The corporate governance effectiveness measures the extent to which shareholders are able to seek legal protection. Besides the appropriate rights all shareholders must have, they should also be willing to take forward their responsibility of stewardship. For instance, a region with a very extensive corporate governance structure may have a low effectiveness mark meaning that the investors are not able to use the legal framework in order to carry out their rights in practice. It is a fair assumption that effective corporate governance helps to underpin market confidence, financial stability and thus overall growth (Warring, 2009).

The positive correlation between GDP growth and price liberalization is expected and supported by theory. There are various channels through which liberalization may affect growth. To begin with, foreign investors, enjoying better diversification benefits, will increase local equity prices permanently resulting in lower cost of capital (Bekaert & Harvey, 2001). Henry (2000) shows evidence that the cost of capital is reduced after big regulatory reforms. Furthermore, there is

now a substantial literature on how financial liberalization may promote overall development (Love, 2000). Harvey and Bekaert (2009) conduct a study and find that financial liberalization alone contributes 30% of the total increased growth.

The money supply growth in our sample is represented either by M2 or M3 depending on the availability of data regarding the countries in the sample. The results show a positive relation between the money growth and GDP growth. The validity of this outcome is both expected, and supported by theory. Liang & Huang (2011) study the relationship between money supply and GDP and conduct a qualitative and quantitative analysis by adopting M2 money supply and GDP measuring economic performance. The underlying analysis indicates that a change of M2 will trigger a change in GDP, a result that is in line with the output from our regression.

Finally, the interest rate as an independent variable is statistically significant with a negative coefficient, which supports the theoretical founding that GDP growth and interest rates show a slight negative correlation. D'Adda & Scorcu's (1997) paper on this topic points out that that the effect of a 1% increase in the real interest rate leads to a fall of 0.35% in the growth rate for the average of the European countries over the period 1965-1994. This finding is consistent to the negative correlation in Central and Eastern European countries included in the sample.

5. Conclusions

This paper sought to describe and analyze the connection between investment, GDP growth and corporate governance in theory and in practice. The presented literature introduces the reader first by discussing corporate governance from a general setting and then by focusing solely on mechanisms and principles in CEE countries.

The findings of the paper negate some of the preliminary anticipations regarding the effect of corporate governance on investment and GDP growth. After testing the hypotheses, there was found a negative correlation between the dependent variables and corporate governance. The common drivers of this negative correlation in both regressions are the following corporate governance groups: “ensuring the basis for an effective corporate governance framework” and “disclosure and transparency”. Although the literature would predict the opposite, a speculated reasoning behind these results is the omission of other corporate governance factors such as ownership structure that are difficult to obtain data on. On the other hand, most control variables behave as expected and predicted by literature which increases the reliability of the study.

The negative correlation between both, GDP growth, Investment and Corporate Governance might be explained by contemplating the issues of corporate governance. The inefficiency of corporate governance in the selected countries in Central and Eastern Europe might be due to (Bobirca & Miclaus, 2007):

- the perseverance of the problem of soft budget constraints, along with the difficulty of securing external financing.
- the remaining impact of the country over corporate decision-making through a network of tax arrears, subsidies and administrative favors provided in exchange for residual managing and controlling rights
- weak minority-investor protection, along with entrenched positions of binding managers, who remain in control despite that privatization had transferred ownership to outsiders
- Substantial dependency on banks, undeveloped capital markets and high debt/equity ratios.
- Concentration of ownership negatively affects the liquidity of equity markets.

The inefficient corporate governance in the selected countries can also be explained with the weaker legal systems and corruption. Naturally, there are differences in the magnitude of these issues depending on the state. Court delays, which can be used as a measure of contract enforceability are higher in Civil Law countries than in Common Law Countries (Djankov, Glaeser, La Porta, Lopez-de-Silanes & Shleifer, 2003). The majority of Central and Eastern European economies have adopted a Civil Law System. Furthermore, according to the World Bank (2006), Central and Eastern European countries generally belong to the group with quite high court delays (especially Montenegro, Serbia and Bosnia and Herzegovina). These court delays naturally increase the cost of using courts in order to find a resolution to a conflict.

Corruption is also a substantial issue that affects the corporate governance efficiency in the region (Bobirca & Miclaus, 2007). According to the "Corruption Percentage Index" (CPI) countries in Central and Eastern Europe are significantly more corrupt (or, seen as corrupt by market participants) compared to the other European Countries.

One of the most important inferences from this paper is that there is a weak corporate governance framework in most countries included in the sample. According to (Bobirca & Miclaus, 2007) the corporate governance framework cannot be solved only by radical improvements. The development of the law system does not go hand in hand with the development of financial markets. This anomaly is due to the ineffective law institutions, which shape up the term "effectiveness".

In their research of finance and law around the world, LLSV (1998) show that effective law enforcement is not a substitute for the poor laws on the books. The reverse holds for the countries in Central and Eastern Europe: the existence of laws cannot replace weak institutions.

Finally this paper could serve as a platform for future studies. An extended model could explain the current findings in more depth by adding additional factors that describe and measure the relationship between investment, GDP growth and corporate governance.

References

Aggestam M. & Falck H., (2000) Poland in a Post Washington Consensus Perspective, *Swedish Network for European Studies in Economics and Business*, Lund University
www.snee.org/filer/papers/19.pdf (accessed April 7, 2014)

Ahmed S. (2009), “Essays on Corporate Governance and the Quality of Disclosed Earnings across Transitional Europe”, *Hanken School of Economics*, Helsinki

Barca, F. & Trento, S. (1997). State ownership and the evolution of Italian corporate governance. *Industrial and Corporate Change*, 6(3), 533-559.

Bekaert G. & Harvey C.R. (2001), "Economic Growth and Financial Liberalization", *Duke University's Fuqua School of Business*

Berglöf, E., and A. Pajuste (2005), What Do Firms Disclose and Why? Enforcing Corporate Governance and Transparency in Central and Eastern Europe, *Oxford Review of Economic Policy* 21 (2), pp. 178-197.

Bris, A., Brisley, N. & Cabolis, C. (2008). Adopting better corporate governance: Evidence from cross-border mergers. *Journal of Corporate Finance*, 14,224-240.

Brooks, C. (2008). *Introductory Econometrics for Finance (2nd Ed.)*. Cambridge, Cambridge University Press.

Casson J. (2013), “A Review of the Ethical Aspects of Corporate Governance Regulation and Guidance in the EU”, *Institute of Business Ethics - in association with the European Confederation of Directors’ Associations*, p.6

Claessens S., (2003), “Corporate Governance and Development”, *The International Bank for Reconstruction and Development*

Coase, R. C. (1937), “The nature of the firm”, *Economica*, 4, 386-405.

Coffee, J.,C. (1999). Privatization and corporate governance: the lessons from securities market failure. *The Journal of Corporation Law*, 25, 1-39.

- Crowther D. & Aras G. (2013), "Global Perspectives on Corporate Governance and CSR", *Gower Applied Business Research*
- Cremers, K.,J. & Nair, V., B. (2005). Governance mechanisms and equity prices. *The Journal of Finance*, 60(6),2859-2894.
- D'Adda C. & Carlo A., (1997), "Real Interest Rate and Growth: An Empirical Note", *Journal of International and Comparative Economics*, pp. 7-8
- Dodd, P. & Warner, J.,B. (1982). On corporate governance. *Journal of Financial Economics*, 11,401-438.
- Doidge, C., Karolyi, G. A. and Stulz, R. M. (2007). "Why do countries matter so much for corporate governance?", *Journal of Financial Economics*, 86(1), 1-39.
- Durnev, A. and Kim, H. (2005). "To steal or not to steal: Firm attributes, legal environment, and valuation". *Journal of Finance*, 60, 1461-1493.
- Faccio, M. and Lang, L. H. P. (2002). "The ultimate ownership of Western European corporations", *Journal of Financial Economics*, 65, 365-396.
- Fama, E., (1980). "Agency problems and the theory of the firm". *The Journal of Political Economy* 88: 288-307.
- Fama, E., and M.C. Jensen (1983). "Separation of ownership and control". *Journal of Law and Economics* 26: 301-325.
- Franks, J. & Mayer, C. (2001). Ownership and control of German corporations. *The Review of Financial Studies*, 14(4),943-977.
- Franzini S., (2009) Corporate Governance in Theory and Practice, *Journal of Politics and International Affairs*
- Frederiksen S. & Jessen B. K. (2006). "The effects of corporate governance structures on the acquisition activity and performance of acquiring firms, *Aarhus School of Business*

Friedman, E., Johnson, S., & Mitton, T. (2003). Propping and tunneling. *Journal of Comparative Economics*, 31(4), 732-750.

Fulghieri, P. & Suominen, M. (2005). "Does Bad Corporate Governance Lead to too Little Competition? Corporate Governance; Capital Structure and Industry Concentration", *ECGI Working Paper Series in Finance*; No.74

Greene W. H., (2008). *Econometric Analysis*. Prentice Hall.

Golebiowska-Tataj, D. & Klonowski, D. (2009). When East meets West: corporate governance challenges in emerging markets of Central and Eastern Europe- the case of Polish aggregate processors. *Post-Communist Economies*, 21(3), 361-371.

Hart, O. (2005). Corporate Governance: Some Theory and Implications. *The Economic Journal*, 105(430), 678-689.

Henry, P. (2000), "Do Stock Market Liberalizations Cause Investment Booms", *Journal of Financial Economics*, pp. 5

Hsiao, C. (2006). *Panel Data Analysis - Advantages and Challenges*. Institute of Economic Policy Research, University of Southern California.

Jensen, M. C., Meckling, W. H. (1976). "Theory of the Firm: Managerial Behavior, Agency Costs & Ownership Structure", *Journal of Financial Economics*, 3, 305-360.

Johnson, S. & Shleifer, A. (2004). Privatization and Corporate governance. *National Bureau of Economic Research*, 13-33.

Johnson, S., Boone, P., Breach, A. and Friedman, E. (2000). "Corporate governance in the Asia financial crisis", *Journal of Financial Economics*, 58, 141-186.

Johnson, S., Kaufmann, D. & Shleifer, A. (1997). The Unofficial Economy in Transition. *The Brookings Papers on Economic Activity*, 2, 159-221.

- Johnson, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2000). Tunnelling. *National Bureau of Economic Research, working paper 7523*.
- La Porta, R., Lopez-De-Silanes, F. and Shleifer, A. (1999) "Corporate ownership around the world", *Journal of Finance*, 54, 471-518.
- Li, X., (2010), "Corporate Governance, Firm Performance, and Executive Compensation: Evidence from China", *Edwards School of Business*
- Liang F. & Huang W., (2011), "The Relationship Between Money Supply and the GDP of United States", *Hong Kong Baptist University*, pp. 18-20
- Lombardo, G. and Pagano, M. (2002). "Law and equity markets: a simple model". In: McCahery, J., Moerland, P., Raaijmakers, T., Renneboog, L. (Eds.), "Corporate Governance Regimes: Convergence and Diversity", Oxford University Press, Oxford, 343-362.
- Love, I. (2000), "Financial Development and Financing Constraints: International Evidence from the Structural Investment Model", *Columbia University*
- Lupu, I. (2008). Corporate Governance in Central and Eastern Europe: Convergence to European Corporate Governance? *Annals of the University of Oradea, Economic Science Series 17(2)*, 702-706.
- Melis, A. (2004). On the role of the board of statutory auditors in Italian listed companies. *Corporate Governance. 12(1)*, 74-84.
- Menger, C. (1871). "Principles of Economics", Translated by Dingwall, J. and Hoselitz, B. (1976), *New York University Press*, New York.
- Monks, R.A.G., & Minow, N. (1995). *Corporate governance*, Blackwell Business, Oxford.
- Morck, R., Shleifer, A. and Vishny, R.W. (1988). "Management ownership and market valuation: An empirical analysis", *Journal of Financial Economics*, 20, 293-315.

Pajuste, A. (2003). "Corporate governance and stock market performance in Central and Eastern Europe: A study of nine countries 1994-2001", Working Paper Available at SSRN: <http://ssrn.com/abstract=310419>.

Reyna, O. T. (2010). Panel Data Analysis: Fixed & Random Effects. Princeton University

Shleifer, A. & Vishny, R., W. (1997). A survey of corporate governance. *The Journal of Finance*, 48(2), 737-783.

Shleifer, A., and Wolfenzon, D., (2002). "Investor protection and equity markets". *Journal of Financial Economics*, 66, 3-27.

Shivdasani, A. (1992). Board composition, ownership structure, and hostile takeovers. *Journal of Accounting and Economics*, 16, 167-198.

Smith, A. (1776). "The Wealth of Nations", *Cannan Edition 1937, Modern Library*, New York

Stulz, R., (2005). "The limits of financial globalization, *Journal of Finance*", 60, 1595-1638

The World Bank (1991). Managing development: the governance dimension. Retrieved on 2014-24-05 from http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2006/03/07/000090341_20060307104630/Rendered/PDF/34899.pdf.

Tirole, J. (2001). Corporate governance. *Econometrica*, 69(1), 1-35.

Verbeek, M. (2012). *A Guide to Modern Econometrics (4th Ed.)*. West Sussex, John Wiley & Sons Ltd.

Warring K. (2006). "Effective Corporate Governance Frameworks - Encouraging enterprise and market confidence", *Institute of Chartered Accountants in England & Wales*, pp. 4-5

Appendix A: Correlation matrix of explanatory variables including cg_index

	Cg_index	Money Growth	LGDP	Liberalization	Lending rate	Privatization	Efficiency	Legal Origin
Cg_index	1							
Money Growth	-0.38995	1						
LGDP	0.582217	-0.37202	1					
Liberalization	0.530002	-0.25956	0.385673	1				
Lending rate	-0.221	0.410294	-0.52829	-0.04728	1			
Privatization	0.289032	-0.02825	0.121099	0.298739	0.294521	1		
Efficiency	0.617277	-0.12646	0.424013	0.416804	-0.01259	0.211979	1	
Legal Origin	0.281557	-0.3148	0.53467	0.173927	-0.29835	0.196105	0.195419	1

Appendix B: Correlation matrix of explanatory variables including corporate governance

groups

	Money Grow	LGDP	Liber.	Lend. rate	Privat.	Eff.	Legal Origin	Cg1	Cg2	Cg3	Cg4	Cg5	Cg6
Money Grow	1												
LGDP	-0.372	1											
Liber.	-0.259	0.3856	1										
Lend. rate	0.4102	-0.282	-0.047	1									
Privat.	-0.028	0.1210	0.2987	0.2945	1								
Eff.	-0.126	0.4240	0.4168	-0.012	0.2119	1							
Legal Origin	-0.314	0.5346	0.1739	-0.298	0.1961	0.1954	1						
Cg1	-0.356	0.4510	0.3012	-0.211	0.2753	0.3780	0.2781	1					
Cg2	-0.335	0.1934	0.5144	-0.268	0.1963	0.3686	0.2624	0.5268	1				
Cg3	-0.188	0.0513	0.1612	-0.051	0.1441	0.3654	0.1034	0.1750	0.2988	1			
Cg4	-0.255	0.2471	0.0712	-0.191	0.0707	0.241	0.0651	0.4523	0.5080	0.2372	1		
Cg5	-0.213	0.4206	0.4078	-0.079	0.2194	0.3638	0.2320	0.3978	0.0211	0.3329	0.1605	1	
Cg6	-0.329	0.2831	0.1794	-0.178	0.2399	0.0657	0.1218	0.2562	0.1053	0.4350	0.2068	0.3493	1

