KENT BUSINESS SCHOOL, UNIVERSITY OF KENT, CANTERBURY, UK

Financial System Development in Central and Eastern Europe: Time for Equity Culture?

/Doctoral Thesis/

Degree: Management

Zita Stone

Supervisors: Dr Fragkiskos Filippaios, Dr Carmen Stoian, Mr Gerry Beaney

Kent
Business School

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Declaration

The author hereby declares that, except where duly acknowledged and referenced, this research study is entirely her own and has not been submitted for any degree or other qualification at Kent Business School, University of Kent or any other third level institution in the UK or abroad.

Zita Stone, May 2011

Abstract

Equity culture is underdeveloped in Central and Eastern Europe. The corporate sector's dependence on debt as an external source of capital, scarce and illiquid capital markets and distrust in corporate sharing are the reasons for this. Yet, according to a number of surveys, firms are dissatisfied with the existing forms of debt driven external capital. The barriers of access to capital and the cost of capital are high resulting in unattractive and inflexible financing options. However, the availability of capital is a necessity for corporate existence and economic growth. The question of the viability of equity financing development as an alternative to the traditional debt financing in the transition economies of Central and Eastern Europe puzzles many. National policymakers as well as domestic and foreign investors need this question answered so that time and effort is not wasted on pursuing unviable strategies and creating unrealistic investment plans.

The development of an equity culture in the CEECs is the main focus of this study. We develop a theory-bridging conceptual framework through which we attempt to demonstrate what factors contribute to its formation. We maintain that firms seeking equity finance are the main drivers for equity culture development in a country. This demand is affected by the size of transaction costs these firms incur in the process of searching for, establishing and co-ordinating contractual relationships with equity providers. We establish that the size of transaction costs is determined by a set of conditions stemming from internal (managerial) and external (macro-economic and institutional) environments impacting the firm.

The conceptual framework is empirically tested using quantitative data on ten Central and Eastern European countries (CEECs) (EU member countries since 2004 and 2007) for a continuous period of thirteen years (1996-2008). Firstly, a relatively new graphical display method – the Co-Plot method – is applied to cluster the gathered data. This method facilitates benchmarking against two representatives of the equity oriented financial system (UK and USA) and two representatives of the bank (debt) oriented financial system (Germany and Japan). The outcome of this analysis is the identification of three separate groups within our sample of CEECs (Leaders, Potentials, Laggards) in terms of the potential for equity culture development they exhibit. Secondly, a regression analysis follows. It determines causal relationships between the demand-based dependent variables and independent variables represented by equity culture supportive conditions. Regressions are performed while controlling for different firm sizes (Large firms, SMEs, Micro firms and the total number of firms) to determine the driving factors of equity culture development for each firm size individually as differing effects are expected. Furthermore, we carry out the regression analysis while controlling for the groups of Leaders, Potentials, and Laggards on a case by case basis. Finally, a qualitative comparative analysis for three CEECs, Slovakia, Hungary and Bulgaria, (each being a representative for a group with different potential for equity culture development) is provided.

Our findings suggest that CEECs belonging to the group of *Leaders* have the macro-economic and institutional conditions necessary for the development of an equity culture in place and that it is the equity-oriented financial institutions and the managerial capabilities which require further attention so that equity culture can be fully developed. By contrast, countries from the *Potentials* group have the macroeconomic performance required for the development of an advanced equity-based financial system, however the conditions stemming from the institutional (including both quality as well as adequacy of equity-

oriented financial intermediaries) and the managerial environment need improving. The results for the group of *Laggards* indicate that in order for an equity culture to be able to develop, a complex set of macro-economic, institutional and managerial conditions requires attention. Furthermore, we establish that large firms do not necessarily require the presence of adequate managerial conditions for them to become the drivers of equity culture development. In the case of SMEs we find that it is primarily the presence of appropriate institutional rather than macro-economic and managerial conditions that have to be satisfied in order for these firms to opt for equity finance. Finally, our results for micro firms imply that although the presence of adequate macro-economic and institutional conditions is important, however, it is not sufficient. It is the presence of appropriate managerial conditions which motivate micro firms to consider equity finance.

Our study contributes to the existing literature in several ways. Firstly, it contributes to theory by providing a new conceptual perspective on the financial system development and firm financing options in transition economies typical for their limited experience with equity financing and an underdeveloped equity culture, such as the CEECs. Secondly, it provides contributions to practice by proposing managerial and policy recommendations, how to identify best investment targets, and how to support equity culture development should it be desired.

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Finally, to my family and friends, who have rallied round to help me during the more difficult periods during the last four years and who have allowed me time to continue my research.

Dedication

To Glenn,

Looking back at the end of this research project I would like to thank you for that first push that prompted a learning journey many years ago, for believing in me and, for all the smiles and positive words along the way.

There are few things that are more valuable to me.

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List of Abbreviations

AIM	:	Alternative Investment Market
BRIC	:	Brazil, Russia, India and China
CEE	:	Central and Eastern European
CEECs	:	Central and Eastern European Countries
EBRD	:	The European Bank for Reconstruction and Development
EU	:	European Union
FDI	:	Foreign Direct Investment
IPF	:	Investment Privatisation Fund
NC	:	National Competitiveness
NSO	:	National Statistical Office
OECD	:	The Organisation for Economic Co-operation and Development
RBV	:	Resource Based View
SME	:	Small and Medium Enterprise
VC	:	Varieties of Capitalism
WB	:	The World Bank

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Chapter 1: Introduction

1.1. Introduction

The recent economic crisis (i.e. the global financial crisis of 2008-2009) has confirmed that without adequate access to capital, firms in all types of economies suffer. The fact that the financial sector has been unable to provide adequate financing for many firms since 2008/2009 has resulted in corporate standstill or even declared insolvency of some formerly well-performing firms. As a result, most financial analysts and economists agree that the ultimate challenge for any economy at the time of such a serious economic crisis is to restore financial confidence and stability among all financial sector participants (the firms, investors, Government and financial institutions), to enable the adequate flow of capital and to facilitate the efficient functioning of different financial systems.

Capital finance is essential for firm growth and by implication for economic growth (Stoian and Filippaios, 2007). This leads to the question of how firms can best finance themselves and what types of financial systems are likely to form in the future. This is particularly relevant for countries with historically weak and underdeveloped financial systems, such as the transition countries of Central and Eastern Europe (hereafter CEECs). Limited availability of capital, poor access to finance and low quality financial institutions form the characteristics of weak financial systems present in the majority of the transition countries of Central and Eastern Europe (Hermes and Lensink, 2000). It is clear that without access to stable and adequate financial markets these countries' ultimate goal of catching up with their more developed counterparts is unachievable.

1.2. Research Problem

We intend to investigate the financial systems of the CEECs which until the 1990s were operating under a State socialist system. In any political establishment, whether democratic or socialist, progress can only be achieved if there is economic growth (Kolodko, 2000). In the late 1980's, the socialist economies of Central and Eastern Europe were experiencing serious economic, financial, social and ultimately political difficulties (Stiglitz, 1995). This resulted in the region's inability to expand, satisfy its population's social needs, attract

investment and boost productivity, and ultimately resulted in the need to change the existing centralised political and economic regime.

Today, two decades after the start of their transition process from centrally planned to market oriented economies, CEECs still have to face many challenges in order to catch up with the developed systems of their Western European counterparts and other developed nations worldwide. The creation and enhancement of an efficient and sustainable financial system is without a doubt one of the key challenges (EBRD, 2006). Indeed, the underdeveloped banking system (overwhelmed with low capital, large volumes of non-performing loans to state enterprises, small branch networks, inexperienced staff and management, limited competition, etc.) and an even less developed capital markets system (with weak legal infrastructure, non-existent institutional investors, etc.) (Morelli, 2010), both legacies of the previous political regime, have impeded the financial liberalisation process and thus also the CEECs' growth and development potential.

Unlike the CEECs, more advanced economies have successfully adopted one, or the combination of, two financial system models (bank-based or equity-based) and have accordingly created corporate governance structures, established financial institutions and legislative systems which function in support of each individual system (Amable, 2003; Morelli, 2009). In an effectively and efficiently functioning bank-based system there is a significant presence of banking tradition in a country, with strong historical roots and embedded trust within the banking sector (Levine and Zervos, 1998; Levine, 2002; Beck and Levine, 2004; Detragiache et al., 2006). On the other hand, the equity-based model requires the presence of a strong and developed equity culture in a country (Bekaert et al., 2001; Bekaert et al., 2002; Smith, 2003; Kim and Kenny, 2007; Li, 2007). A number of scholars point out that in advanced forms of financial systems bank financing is often at some stage followed by equity financing (Geschenkron, 1962; Pagano, 1993). Indeed, Smith (2003) observes that bank lending and government-determined allocation of capital are currently giving way to private equity financing in many advanced economies.

1.3. Research Aim and Research Questions

In this study we intend to examine if equity has the potential to become a 'competitor' to debt as an external source of capital in the CEECs. As these countries are still in a

transition process to a more developed financial system[1], establishing whether equity-based financing could be seen as an effective, firm-friendly and corporate growth-supportive alternative to debt-based financing is vital. In order to provide an answer to this we investigate the phenomenon of *equity culture* – the bedrock of a well-functioning equity-based system. We define *equity culture* as a financing culture adopted by a country's corporate sector implying this sector's bigger freedom to opt for equity-oriented financing as a result of present feasible market conditions. We thus consider the firm and its demand for equity finance to be the driver for the development of an equity culture in a country. We maintain that firms demand equity financing if the costs associated with this demand do not exceed costs associated with other sources of available external capital, such as debt. In our study, we examine several aspects of an *equity culture.*

Firstly, we aim to conceptually establish which external and internal environments to the firm shape the development of a financial system in such a way that it generates the existence of an equity culture. Thus we put forward our first research question as follows:

1. *What are the main environmental forces that shape the direction of a financial system development towards creating an equity culture in a transition economy?*

Secondly, we intend to conceptually and empirically determine the nature of conditions, stemming from specific external and internal environments, which have to be satisfied in order for an equity culture to be able to develop. Thus we formulate our second research question in the following way:

2. *What conditions stemming from the environmental forces guide the process of moving towards the creation of an equity culture in a transition economy?*

Thirdly, by empirically examining a sample of ten CEECs we aim to establish which specific factors have an effect on the firms' strategic[2] decision to opt for equity finance. Because we see the firm and its demand for equity financing to be the driver for the development of an equity culture, we believe, the identification of such factors informs us about the specific nature of conditions which make equity culture development in the CEECs feasible. Therefore, we formulate our third research question as follows:

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[1] In 2008, Czech Republic was the first CEE to abort the status of a transition economy and adopt the status of a developed economy (EU, 2009).

[2] In this thesis, the term 'strategic financing' refers to 'long-term financing' as opposed to day-to-day, short-term financing.

3. *Under what specific external and internal factors is the creation of an equity culture feasible in the CEECs?*

Lastly, deriving from the conceptual and empirical results we intend to conclude our study with a set of managerial and policy recommendations for the CEECs. We expect heterogeneous results among the CEECs group in terms of their status of equity culture development, and therefore we aim to propose recommendations for three individual groups – CEECs demonstrating the best, medium and the lowest potential for equity culture development. Thus we formulate our fourth research question in the following way:

4. *Which strategies should be followed by business practitioners and financial institutions and what policies should be adopted by governments and financial organisations in order to support the development of an equity culture in the transition economies of the CEECs?*

Collectively, our research aims to provide a valuable contribution to the existing research through an analysis of the financial system development in the CEECs and offers a new insight into a research area not yet fully explored by the academic community – the potential for equity culture development in the transition countries of Central and Eastern Europe.

1.4. Research Justification and Research Contributions

We have been prompted to research the potential for equity culture development in the CEECs for several reasons: paucity of previous academic research and high business and policy-making relevance. We believe that our research makes significant contributions to theory and practice.

1.4.1. Paucity of Previous Research

Most of the academic research on financial system development (including research on financial liberalisation, financial intermediation, types and systems of financing, etc.) has been primarily focused either on developed economies or the BRIC countries (Abiad and Mody, 2005; Kim and Kenny, 2007). However, European and World organisations and political institutions have recognised the increasing role of the transitioning CEECs for the

whole European and World economy, and started directing their research and funding activities towards these countries. For example, the United Nations' annual conference on trade and development (UNCTAD) focused its 2006 'World Investment Report' on trade and development in transition economies of the Central and Eastern European region.

So far, researchers have been investigating the extent of general financial liberalisation (Abiad and Mody, 2005), the timing together with the causes of equity market liberalisation (Kim and Kenny, 2007), the conditions under which investment liberalisation results in market development (Hargis, 1998), the level of financial intermediation (King and Levine, 1993; McNulty et al., 2007), historical determinants of financial development (La Porta et al., 1997; Beck et al., 2000), the role of financial system design during economic transition and the role stock markets in the process of financial intermediation (Hermes and Lensink, 2000b), financial system architecture (Scholtens, 2000) in less developed economies, in some cases addressing specifically the CEE transition economies.

The reasons for an increasing number of academics turning their attention to transition economies vary. Kim and Kenny (2007) state that there is little known about the determinants of equity market liberalisation in developing countries and, that on the whole, it is an under-explored research area. Hargis (1998) investigates this subject due to a conflict between the empirical studies and alleged fears of policy makers. Although McNulty et al. (2007) agree with King and Levine (1993) that more research is needed on the development of financial institutions in the transition economies, they differ in their research approaches. McNulty et al. (2007) use a sample of newly formed transition economies which were previously not available and consider the determinants of intermediation, particularly in a sample of three groups of developing countries: the former Soviet countries, the Non-Soviet transition economies of Central and Eastern Europe and developing countries. Hermes and Lensink (2000) observe that financial system development in transition economies has gained increasing attention in academic as well as political circles.

However, despite this increased scientific work, some scholars point out the existence of gaps in previous research and call for more attention to the area of financial system development in transition economies. For example, Purda (2008) points out that there is a need to further study transition countries as 'caution should be used in extending

the results from research on financial systems of developed economies with well-functioning financial markets to the context of transition and post-transition countries'. Previous to that, Bekaert and Harvey (2002) stress the requirement for a better understanding of the combination of factors (macro-economic and institutional) influencing financial system reforms in transition markets. Similarly, Klapper and Love (2003) emphasise the need to re-focus the research in transition economies from country-level to firm-level, or a combination of these two levels. Pinkowitz et al. (2002) highlight the need to analyse corporate governance mechanisms when assessing financing choices of firms, in particular equity capital, in transition economies. Fisher et al. (1997) and later on Kornai (2006) add at the corporate level, the motivations behind firm financing choices should be more closely examined. Bakker and Gross (2004) call for more attention specifically to the transition economies of Central and Eastern Europe as 'these markets are particularly interesting since they provide us with a number of comparable, yet in many interesting respects, different cases'. Also, the need to provide empirical knowledge on factors affecting the CEECs' future financial systems' developments and direction has been accentuated by many (e.g. Hermes and Lensink, 2000; Nord, 2000) with some particularly stressing the importance of an assessment from the equity financing perspective (EBRD, 1998; Smith, 2003).

Nevertheless, to our knowledge, the financial system development in the CEECs with the focus on equity culture development has not been given the attention it deserves by the academic community and such studies are requested by business practitioners. Interestingly, we observe that despite the popular use of the term 'equity culture' by the business people, its use in the academic literature use is not as popular and is defined in different ways.

We believe that Central and Eastern European countries are likely to play an important role in the globalised world. Through our research work we attempt to close the gap in the academic area and provide a knowledgeable insight into the financial system of the CEECs with the focus on the equity culture development, areas of interest highlighted by both the business community and international organisations. The knowledge that we aim to obtain from our research work will add significant value to future business planning, will help local businesses determine their financing and growth options and identify areas that need to be improved in order for them to achieve growth efficiency.

Furthermore, it will provide governments with an agenda for change, and highlight present system weaknesses.

1.4.2. High Business Relevance

Based on articles published in business related publications (e.g. the Harvard Business Review or the Business Week), academic reports aimed for non-academic institutions (e.g. the AIM (London-based stock market for growing companies) report by the London School of Economics for the London Stock Exchange), general observations from the world of finance and also personal conversations with the business and finance community it appears that the financial system development in Central and Eastern Europe and specifically the subject of equity culture are important current issues. The question of which CEECs have the best potential to develop and adopt an equity culture requires attention for business-related as well as policy-oriented reasons.

Importantly, as a result of our previous work on AIM's[3] potential future expansion into the area of Central and Eastern Europe (Stone, 2006) we identified the lack of knowledge on equity culture development in the CEECs. This research project revealed AIM's limited expansion interest into the Central and Eastern European region. Whilst it was beyond the scope of that project to identify the list of factors causing this reality, a phenomenon of *limited equity culture presence* in this geographic area was clearly recognised. This became a research inspiration for our study.

1.4.3. Contributions to Theory

The paucity of previous academic research on equity culture development in the transition economies of Central and Eastern Europe has an impact on our research approach. Firstly, we start by developing a conceptual framework which bridges traditional theories used in the Economics and Finance research (Transaction Costs Theory) with new strategic, managerial and institutional theories (The National Competitiveness concept, The Resource Based View, and the Theory of Varieties of Capitalism). Through the conceptual framework we establish which are the environmental aspects that shape the development of an equity culture in transition economies as well as what is the nature of conditions

[3] AIM – Alternative Investment Market, the London stock exchange for small and medium enterprises (SMEs) (www.londonstockexchange.com/aim

stemming from such environments that have to be satisfied so that equity culture can develop. The research focus of our study - the financing of business activities at a strategic level, where internal capital is no longer adequate and external capital is necessary – has been instrumental in our conceptualisation and explains our theory-bridging approach. The conceptual framework is in detail introduced in Chapter 3.

The complexity of the conceptual framework is reflected in the empirical examination we apply. Firstly, we collate a database which consists macro-economic, institutional and managerial data. Secondly, we apply a three-tier research methodology through which we test our collated data. We start by clustering and benchmarking using the Co-Plot methodology, then we apply a fixed effects panel data regression analysis and as the last step of the empirical examination we perform a qualitative comparative analysis of three selected CEECs.

A contribution to theory also lies in the choice of method we apply for data benchmarking and clustering. The relatively new clustering method of Co-Plots is designed for multi-criteria analysis and enables us to visualise the position of the CEECs relative to four chosen benchmarks (UK, USA – representatives of the Anglo-Saxon equity oriented system and Germany, Japan – representatives of the German-Japanese bank-dominated system) by reflecting a complex set of macro-economic, institutional and managerial data. To our knowledge, the Co-Plot method has not been applied to CEECs' analysis before. Instead it has been used to cluster the banking institutions within the Greek banking industry (Raveh, 2000b), in an exploratory study on mergers and acquisitions (Weber et al., 1996), in a car selection problem analysis (Raveh, 2000a), and a few others.

1.4.4. Contributions to Practice

Our study makes practical contributions in the form of managerial and policy-making implications. Firstly, as equity-based financial institutions (e.g. AIM) are considering a business expansion to Central and Eastern Europe, and existing and potential investors in the CEE region are looking for new investment opportunities, it is essential to have the information as to which countries in this geographic area would be a viable expansion and investment target. Secondly, as the financial systems in the CEECs are still in the process of developing, it is appropriate to address the issue of equity culture so that focused domestic policies are formed in those countries wanting to develop an equity-based

system. Furthermore, with the recognition of the significant role transition economies are expected to play in the future globalised world, bilateral international organisations have signalled their interest in research related to macro-economic, institutional and financial advancement of these countries.

1.5. Thesis Overview

In this section we present the research map (Fig. 1.1.), which outlines our research process, and the structure of this thesis. We divide our study into two main research blocks: a theory-building (conceptual) part and a theory-testing (empirical) part. Firstly, the theory-building part of our study entails a thorough literature review (Chapter 2) followed by the introduction and justification of our conceptual framework (Chapter 3). Secondly, the theory-testing part of our study contains three analytical approaches: clustering/benchmarking (Chapter 6), regression analysis (Chapter 7) and qualitative comparative analysis (Chapter 8). A brief introduction of each of our chapters follows next.

Chapter 2 – the literature review and Chapter 3 – the conceptual framework form the theory building section of our study. The literature review reveals a gap in our research area and justifies the need to create a new theoretical concept. The conceptual framework is introduced, justified and applied with the outcome of propositions creation in the conceptual framework chapter.

Chapters 4 and 5 are our methodology chapters. Chapter 4 outlines the methodology we adopt in order to empirically test our theoretical concept. It starts with the discussion of the philosophical, and within this context also methodological, perspectives. Then it outlines the data collection techniques and describes the sample. Before offering a debate on the legitimacy of our research, it examines our three-tier methodology of data analysis – clustering, regressions and the application of a qualitative comparative analysis. It finishes by stating the research limitations. Chapter 5 discusses the transformation of our data into measurable variables. With the help of the ANOVA method it also examines the fit between individual variables.

Chapters 6, 7 and 8 are sections on the empirical testing of our conceptual framework introduced earlier. Firstly, we apply the Co-Plot methodology, an interesting alternative to Principal Component Analysis, to discuss the gathered data. Benchmarking the CEECs to

the representatives of two different financial system models enables us to perform clustering and thus handle the data in a manageable way. Secondly, to find out the causal effects between independent and dependent variables we perform a regression analysis. Finally, to provide a soft data interpretation we offer a qualitative comparative analysis of three CEECs – Slovakia, Hungary and Bulgaria. These countries represent three individual groups characterised by different levels of equity culture development – the *Leaders*, *Potentials*, and *Laggards*.

Chapter 9 outlines the key research outcomes and proposes recommendations concluded from our study. Here we discuss the contributions to knowledge as well as consider the research limitations. Finally, we make recommendations for further academic research in our field.

Fig. 1.1.: The Research Map

Research Title

Financial System Development in Central and Eastern Europe:
Time for Equity Culture?

⇩

Literature Review

Theory Building

/Conceptual/

1. Financial Systems
2. Financial System Models
3. Equity Culture
4. Equity Culture and the Transition Economies

Conceptual Framework

1. Concept Bridging of Institutional, Strategic and Managerial Theories

Transaction Costs Theory

↗ ↑ ↖

Varieties of Capitalism + *National Competitiveness* + *Resource Based View*

2. Formulation of Propositions

Theory Testing

/Empirical/

⇩

Clustering/Benchmarking

Co-Plot Methodology

↓

Formulation of Causal Relationships

Regression Analysis

↓

Qualitative Comparative Analysis

'Soft Interpretation' of Quantitative Findings

⇩

Conclusions and Recommendations

Source: Author's Own

Chapter 2: Literature Review

2.1. Introduction

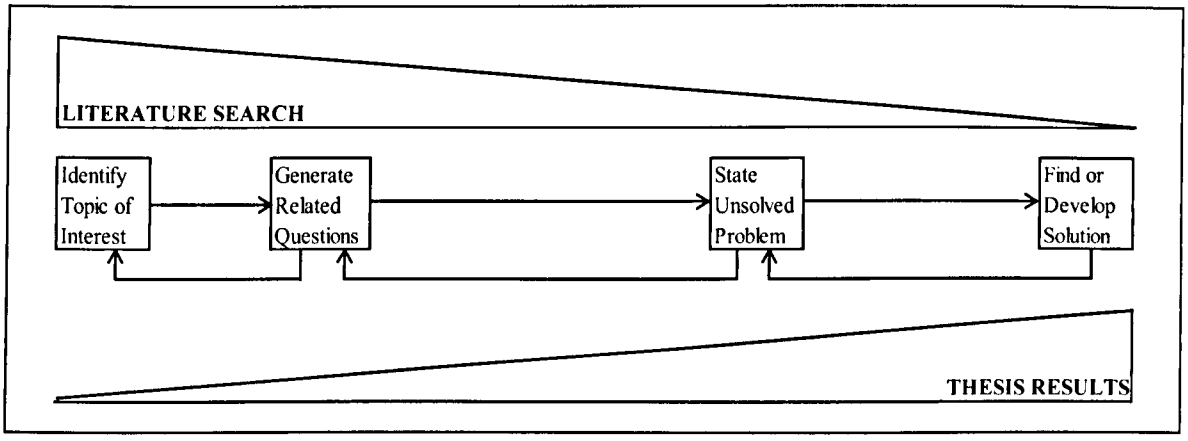
The primary aim of this chapter is to provide a critical overview of the existing literature related to our research interest – equity culture development in transition economies. To accomplish this aim several other objectives have to be met. We provide the background and context to our research interest and thus 'frame' our research problem. By relating our research topic to a larger pool of closely-related literature we are able to offer possibilities of extending it and distinguish between what has been done and what needs to be done. Furthermore, we find that the literature review serves as an instrument for identifying relationships between our ideas and practice and enables us to create a general framework for establishing the importance of our study.

This chapter is organised as follows: First, we provide a brief discussion of the literature reviewing model we adopt – our search strategy. Then we apply the same model to our research as we discuss relevant literature to our study. In particular we evaluate existing literature on financial system development, financial system models, bank and equity financing, and an equity culture creation. Finally, a concluding section of the literature review follows. It summarises the main facts discussed and identifies gaps that are covered by our research study.

2.2. Our Search Strategy

We see the literature review investigation as a continuous process and we use a diagram developed by Booth et al. (1995) to show this (Fig. 2.1.). Indeed, the literature review is a building element of our solution development process as theory development (provided in Chapter 3) and individual methodological approaches (provided in Chapter 4) flow from its specifics. It is part and parcel of our scientific work as it not only helps us to formulate the topic of our interest but also contributes to the generation and justification of related research questions. Perhaps most importantly, it enables us to state unsolved problems and thus establish gaps in our research area. With our literature review we aim to ensure that the research we perform is not duplicated and that literature searches put forward the best available evidence of other research undertaken in our scientific area so far.

Figure 2.1.: A Flow Diagram of a Literature Review



Source: Adapted from Booth et al. (1995)

In our search strategy we follow the recommendations of Machi (2009) to include three different types of resources: core, recommended and additional. Firstly, *core* resources are searched as a minimum requirement and are given priority to other sources. Our group of core resources consists journal articles related to financial system development, firm financing, equity financing in general, in transition economies and then specifically in the CEECs. These resources are predominantly published in journals relevant to International Business and Strategy such as the 'Journal of International Business Studies', 'Strategic Management Journal', the 'Management International Review', the 'Academy of Management Review', the 'Harvard Business Review', the 'Journal of Financial Economics', the 'Journal of Development Economics', the 'Journal of Banking and Finance', and the 'Journal of Transitional Economies' etc. Although the International Business and Strategy fields are the primary sources of information we also employ literature from other closely related areas. According to Cooper (2010) this approach increases a study's reliability and contributes to the completeness of the theory formulation. Furthermore, within this group, we research books with details of relevant theories and methodology. We believe that effective searches across these sources ensure that our literature review covers the significant part of research performed in our field and thus lays fundamentals for our own scientific discovery.

Secondly, we include *recommended* resources of unpublished literature including theses and conference proceedings, which we located through the search of library catalogues, Social Sciences Citation Index (SSCI) and the Web search engines.

Recommended resources are useful as they usually confirm that the scientific work is not duplicated (Machi, 2009). We, however, find that access to some of these sources is limited and use them when available. Thirdly, we take account of *additional* resources as these further increase the comprehensiveness of our research. Our key examples of additional resources are discussions with people from the field or hand-searching of key journals.

In addition to identifying the appropriate set of literature resources we must also impose limitations on other aspects of the literature search. In order to deal with the vast amount of information available we realise we have to be clear on the terminology we use for the search of references, the research time period of relevant literature we aim to cover, and the organisational mode we adopt to group and present our material. The research model that best suits the purpose of setting the scene, introducing the main ideas of our topic, and consequent in-depth reporting on the specific issue our research focuses on is the *from general to specific* approach, commonly applied by many science practitioners (Booth et al., 1995). Following this model we not only perform the initial reference search but also group material together for the purpose of its presentation in this chapter.

Although the primary goal of this study is to investigate the potential for equity culture development in the CEECs, we first need to observe the process of a financial system development with the system of influences and factors that affect its direction. Then we progress onto the examination of specific financial system models and their determinants. In addition, we investigate what the catalysts of moving from one financial system model to another are. These two areas of investigation serve as prerequisites to the viability of an equity culture based research. This research approach has an effect not only on the type of terminology we use for the reference search but also on the order in which this terminology is arranged. To be specific, the type and order of the terminology we research is 'financial system development', 'financial system architecture', 'financial system models', 'corporate decision-making', 'financing choices of firms' 'bank financing', 'equity financing', and 'equity culture'. It is important to note that the search is applied first at a general level – for developed and emerging economies and then specifically for transition economies and the post-communist economies of the CEE region. We attempt to restrict the period the review covers to the more recent works. However, if historical underpinning of an aspect is necessary we reach to an earlier literature.

2.3. Financial Systems: Their Role and Sources of Effectiveness

The link between financial system development and an economic growth has been established early in the 20th century (Schumpeter, 1911). More recently, a number of financial analysts have empirically confirmed that a more developed financial system has a positive impact on the economic growth both at the macroeconomic level (King and Levine, 1993; Beck et al., 2000; Rajan and Zingales, 2003a) as well as at the microeconomic level (La Porta et al., 1997; Beck et al., 2005) as financial constraints stemming from a less developed financial system can negatively affect growth. Despite the popularity of the topic of financial system development in discussions of economic growth, there is still little agreement on how to define it and measure it (Levine, 2002). For the purpose of this study we adopt a definition of a financial system development as developed by the World Economic Forum (WEF). It defines financial development as the 'factors, policies and institutions that lead to effective financial intermediation and markets, and deep and broad access to capital and financial markets' (WEF, 2008, p. 3). The process of financial development depends, among other factors, on how the financial system's supporting mechanisms in a particular country are designed and established (Hermes and Lensink, 2000). This includes the type and role of financial institutions, the design of the regulatory and supervisory system, and the role of government policies that are related to controlling that particular system (Levine and Zervos, 1998; Rajan and Zingales, 2003b). Thus it can be said that the direction, speed of development and quality of financial systems is determined by a number of *inputs:* the combination of local (political, economic, legal, sociological and cultural) environments, evolving financial institutions and global factors; and the level of effectiveness these inputs employ. The combination of the input factors leads to specific financial system *outputs:* the availability of and access to capital.

The availability of capital and attractive terms on which firms can access capital are signs of a developed financial system. Advanced financial systems fulfil many roles in an economy. They allow firms to finance their corporate growth (Levine et al., 2000); permit more efficient mobilisation of savings for households and the corporate sector (Beck et al., 2000); allow greater investment in human capital and facilitate risk amelioration (Stein and Jeremy, 1997); reduce information costs (King and Levine, 1993); permit better monitoring of managers and improved systems of corporate control (Berglof and Pal, 2005); allow larger scale operations and facilitate financing of small and medium

enterprises (SMEs) (Klapper and Love, 2003). Recent finance literature (Beck et al., 2006) also suggests that in terms of resource allocation, developed financial systems with sustainable financial markets are invaluable. It is suggested that if these are not present and international lenders/investors are approached to provide financial services, a number of challenges may potentially arise. For example, due to institutional heterogeneity between the lender's and borrower's financial systems, problems such as biased court systems, different loan development procedures, different accounting rules and standards, capital controls and so forth may have to be overcome. Taking all these issues into consideration, it may then become too costly and inefficient or simply impossible for the firms to finance their investments adequately.

The efficiency factors that contribute to the development of an advanced financial system are of political, economic and institutional nature. Firstly, although the role of government as a financial service provider or financial regulatory body has been disputed (Beck, 2006), its role and contribution to a financial system development has been commented on by many (e.g. Strange, 1995; La Porta et al., 1999). This is because financial system development can only progress to an advanced level if political forces support and do not go against economic and institutional reforms necessary for such progress. This viewpoint goes in line with Rajan and Zingales's (2003a) findings who point out that favourable (or unfavourable) political outlook on financial development is the main reason for cross-country differences in the quality of a financial development. In fact, it is believed that in some less developed countries financial system development has been prevented by special country interests (Hermes and Lensink, 2000). Scholtens (2000) takes the view that local politics shapes the economic and institutional conditions in a country, and through these influences the type of financial intermediaries that are able to develop and the level of efficiency they can function at. In a more recent assessment of financial systems and their functionalities, Purda (2008) calls for a compatibility between economic policies and the existing political economy in a country, which encompasses the areas of institutional quality, politics and economics. In our study, we follow the view of Scholtens (2000) and account for the political influences conceptually and empirically through economic and institutional indicators.

Secondly, macro-economic stability is not only a pre-requisite for a financial system development but a necessary building block for an effective financial system (Beck, 2006). Monetary stability perceived through a low and stable inflation rate and feasible interest

rates provides investors with confidence that their returns on investments will materialise and that they can commit to payments in real terms. Indeed, it has been empirically shown that countries with lower and more stable interest rates have more advanced financial systems and thus are able to offer more financing options to their corporate sectors (Levine et al., 2000). Furthermore, Choi and Jeon (2007) point out that higher levels of foreign direct investment (FDI) also contribute to a financial system development. Domestic firms learn and observe the financing practices of their parent companies (usually coming from more developed systems) and the knowledge they gain enables them to make more informed financial decisions or even 'experiment' with new sources of capital. In our study, we assess the macro-economic performance by conceptually referring to the theory of national competitiveness. We go in line with Beck's (2006) observation that sound macro-economic performance has a positive impact on the development of a financial system. We thus consider the 'health' of a nation's economy the main building block of an advanced form of a financial system.

Thirdly, institutional quality, pointing both to legal efficiency and competent corporate governance, is another crucial pillar of an effective financial system. The certainty of legal rights of borrowers, creditors and other investors can only be secured through an enforcement of contracts and their adherence to these. Importantly, the significance of creating a sound legislative framework before considering the set-up of a particular financial system (bank-based or market-based) is according to some scholars (e.g. Kaufmann et al., 2000; Monks and Minow, 2001; Levine, 2002) essential at the early stages of a country's financial system development. Countries with good investor protection laws, competition laws and proper disclosure of information have financial systems represented by larger and broader financial markets which means better accessibility to external finance for individual firms (La Porta et al., 1997; Pagano and Volpin, 2005). Moreover, good governance practices in the financial and corporate sectors are critical for the development of an effective financial system (La Porta et al., 1999; Kaufmann et al., 2000). The studies of Klapper and Love (2004) and Francis et al. (2005) find that the quality of corporate governance is positively related to growth opportunities of firms and their need for external financing. Simply put, governance provides assurance that the market is honest, that investors make decisions based on reliable information and that management is running the enterprise for the stakeholders' benefit (Monks and Minow, 2001). Committing to better corporate practices might not be easy in less

developed economies and in countries with poor state investor protection as the mechanisms to do so might not be present or are too expensive (Doidge et al., 2007). Firms that have an access to foreign markets are less dependent on the progression of their domestic financial systems and often if they pursue better corporate practices, it may be because of the foreign country governance requirements, and not of their own. Some suggest that cultural differences across countries provide explanations to the existence of different corporate governance models (e.g. Peng, 2004; Kim and Kenny, 2007). Thus a corporate governance model in one country may not be adequate and effective in another (Aguilera and Jackson, 2003). This is to say that each nation may develop a unique corporate governance system based on individual country characteristics, local cultural norms and political arrangements. However, irrespective of the type of corporate governance model applied in an economy, its role as a building block of an advanced financial system cannot be disputed.

Attention has been drawn also to the fact that in efficient financial systems firms are able to benefit from the presence of institutions which support their mode of managerial coordination (Peng, 2004). The existence of institutions that monitor the firm network, secure the exchange of information among firms, monitor firm behaviour and sanction in the case of defection can significantly affect the terms on which firms access external capital and secure finance for their business activities (Newman, 2000). For instance, investors who have little access to inside information of a firm and have to rely on data shown on the balance sheet are more hesitant in providing capital than those who have inter-firm networks with available data on hand (Hall and Soskice, 2001). Interestingly, a number of researchers (e.g. North, 1990; Peng, 2004) agree that formal institutions alone are not sufficient to secure an efficient working of a particular economy. Other factors such as the role of culture, historical experience and informal rules should be taken into consideration. Drawing on the earlier literature we include the examination of individual countries' institutional systems in our study. We consider the nature of an institutional system to be another essential determinant for the type of a financial system developed in a country. However, in addition to existing literature on financial system development which assess the quality of institutional systems by focusing on the legal and corporate governance aspects (e.g. Boot and Thakor, 1997; Hermes and Lensink, 2000a) we go further in the institutional assessment. We examine what type of financial intermediaries have emerged in individual countries under observation as a result of the quality of their

institutional systems. This perspective adds more depth to our analysis of the financial system development of our chosen groups of countries.

2.4. Financial System Models

Although it is assumed that an equilibrium financial structure consists of an optimal combination of bank credit and market finance (Boot and Thakor, 1997), experience shows that one particular model usually dominates (Allen and Gale, 2000). Traditionally, there have been two main financial system models, the Anglo-Saxon – market-oriented model commonly adopted in the UK and US, where businesses have access to highly liquid and sophisticated capital markets such as the London and New York stock exchanges; and the German-Japanese – bank-dominated model where business has relied more upon debt from financial institutions and banks and where the stock markets are active but smaller (Allen and Gale, 2000; Beck, 2006; Li, 2007). While the market-oriented model has commonly been referred to as the 'equity-based model', the bank-dominated model has been known as the 'debt-driven model'.

The qualities of debt-based versus equity-based financial systems as substitute sources of finance have been debated for over a century now. A wide range of Banking and Finance literature has researched both financial system models and their respective determinants (Beck and Levine, 2004; Del' Ariccia and Marquez, 2004; Clarke et al., 2006; Detragiache et al., 2006; Deidda and Fattouh, 2008). Although some believe that differentiating between debt-based and equity-based systems is unfounded as they both equally contribute to an economic growth (Levine, 2002), the sequencing pattern of these two systems cannot be disputed. It has been suggested that in the process of financial development, bank lending as a form of financing generally appears first, followed by stock and bond market development while consumer credit and insurance markets are created last (Geschenkron, 1962; Pagano, 1993). This is because bank-based financial systems are believed to be better at promoting economic growth which is associated with the development of more advanced forms of financial systems. Boot and Thakor (1997) also maintain the view that as the financial system reaches higher levels of development, capital markets are likely to expand at the expense of banks and to the advantage of equity based financial intermediaries.

Global financial liberalisation has led to the opening up of financial markets, higher bank concentration and also consolidation in the banking sector (Singh, 1997). This has had a significant impact on the development of bank-based systems in many countries. It has been observed that banking financial intermediaries have more market power in concentrated markets where they can raise interest rates and restrict access to long-term loans (Sudarsanam et al., 2001). On the other hand, in concentrated bank markets, high credit supplies allow for economies of scale from which small and medium-sized enterprises seem to benefit the most (Scholtens, 2000). Highly concentrated bank markets have been identified to have a higher participation of foreign banking institutions. A large number of studies report that firms (both smaller and larger) generally experience better financing opportunities in the case of higher levels of foreign bank presence as it tends to increase the cost-efficiency, lending and welfare of banking institutions (e.g. Beck and Levine, 2004; Detragiache et al., 2006). However, Clarke (2006), points out that foreign bank entry can cause 'cream-skimming' and lead to an overall decline in cost-efficiency, lending and welfare, especially for SMEs. Dell' Ariccia and Marquez (2004), on the other hand observe that domestic banks (i.e. lenders with informational advantage) competing with foreign banks (i.e. outside lenders with cost advantage) choose to focus on SMEs, a particular niche in the market. As a consequence, credit thus becomes more easily accessible for this kind of borrower which might have been neglected previously by lenders.

Nevertheless, there are exceptions which do not appear to be affected to a great extent by the level of concentration and consolidation in the banking sector. Large firms with relatively easy access to foreign markets, face fewer constraints in accessing long-term capital than the smaller firms (Demirguc-Kunt and Maksimovic, 1996). In less developed economies specifically, a large proportion of large firms are foreign owned, often subsidiaries of firms from developed countries. These firms have fewer problems in accessing capital as they have access to financing from their 'parent' countries or international markets. It is generally believed that access to long-term loans is of lesser constraint in countries with more developed financial markets, higher per capita income, more competitive elections and in countries that are growing more rapidly than in those with less developed and slower equivalents (Rostowski, 1995; Hermes and Lensink, 2000b; Clarke et al., 2006). Some studies further report that lack of bank supervision and

regulation are the hurdles preventing a more advanced banking financial system (Levine, 2002; Detragiache et al., 2006).

On the other hand, equity-based systems function better in those countries that firstly, from the economic point of view, have better performing economies and trade with developed countries. This trade offers a number of benefits, such as skilled job creation, development of more sophisticated products and increased investors' interest from foreign countries (Bekaert et al., 2001). Secondly, the existence of equity-based systems depends on the overall financial development of a country, such as the extent of development in the banking sector, the bond markets and the use of trade credit (Li, 2007). It can thus be suggested that financial development is crucial in determining whether a country is ready to open its equity markets. From the political and institutional point of view, equity-based systems are observed in countries that have good institutional quality, are democracies and receive more FDI (La Porta et al., 1997; Kim and Kenny, 2007). Bekaert et al. (2002) also note that equity-based systems are prevalent in countries that have improved their macroeconomic and institutional conditions but add that a noticeable improvement in financial technologies is also necessary. Examples of innovations in financial technology are financial liberalisation in a given country, large and small scale privatisation and enterprise restructuring. Smith (2003) maintains the existence of equity-based systems is positively associated with the activity and liquidity of equity-oriented financial intermediaries and trade openness. It has also been observed that laws that protect shareholders rights, accounting standards that produce high quality, comprehensive and comparable corporate financial statements, good country credit ratings and greater economic freedom in a country tend to foster the development of conditions necessary for an equity-based system (Alexandrou and Sudarsanam, 2001).

Some financial experts warn (Wyplozs, 2002; Prasad et al., 2003) that there is little advantage in opening up equity markets if the macro-economic conditions and the institutional infrastructure are not adequately developed. If the transition is premature (e.g. when there is inadequate financial regulation) the country faces more risk and instability than what it had to absorb when initially liberalising the financial market. The risks incurred are typically exchange rate instability and the inability to handle the influx of foreign investors, consequently resulting in the loss of business confidence and investment interest (Bekaert and Harvey, 2002). In this case the change from a bank-based system to one in which equity-finance dominates or even bank-finance and market-finance coexist

together might have an adverse affect on economic growth (Deidda and Fattouh, 2008). In addition to this, Li (2007) comments that countries sometimes subsidise their equity markets, as a matter of pride. This suggests that some countries end up with larger equity markets than would otherwise be created with the help of efficient institutions. The sustainability of such equity markets has been questioned by many (e.g. Bekaert et al., 2001; Kim and Kenny, 2007). In our study we examine equity financing as a feasible way of securing external capital regularly considered by firms and as an alternative to debt financing. We maintain that in order for this newer more advanced form of financing to be successful in the transition economies and to lead to a sustainable equity-based system, an *equity culture* has to be developed.

2.4.1. Equity Culture: The Bedrock of an Equity-based System

For the development of an equity-based financial system it is necessary that an *equity culture* is created (Myners, 2001). It can be said that equity culture develops alongside an equity-based financial system. Existing literature offers several definitions of the phenomenon of an equity culture. Some claim that equity culture denotes shared ownership receptive by firms and stock company formation (Bekaert et al., 2002). Others suggests that a solid equity culture means that firms are able to finance their business activities through financial assets of which share investments account for a significant proportion (Beck and Levine, 2004). Equity culture is also defined as 'the route to a wider shareholder democracy' (Myners, 2001) or even seen as an expansion of share ownership by individuals (Bilias et al., 2009). Claessens (1995) in his earlier work states that equity culture means a market economy that has a corporate sector in which individuals are enabled to participate. In some works, however, an exact definition of equity culture is missing and authors refer to a 'bundle' of definitions. For instance, Smith (2003) first defines the equity culture as the culture of stock markets themselves. Then he implies that equity culture actually represents public willingness to invest in stocks. This confuses the reader. To avoid confusion, for the purpose of this study, we draw on these earlier works yet offer our own definition as we see *equity culture* as a financing culture adopted by a country's corporate sector implying this sector's bigger freedom to opt for equity-oriented financing (built on the principle of wealth creation through shared ownership) subject to feasible market conditions. Indeed, we see the firm – the basic organisational unit – to be the driver for the development of an equity culture. The *demand* for equity financing by

firms as a source of finance necessary for business decisions at the strategic level is a determinant of an equity culture's existence or nonexistence. Therefore, we see the willingness of individuals to invest in stocks or the expansion of stock markets as *supply* conditions contributing to the development of an equity culture and not its driving elements.

We believe and in this respect are congruent with earlier literature (Bekaert et al., 2002) that a developed equity culture requires a broad investor base which can only be sustained if the investor confidence is strong. The investor must be confident about the regulatory and legal aspects of the financial market environment. Without an adequate regulatory and corporate governance system in place that secures fairness and transparency the existence of an equity culture is not viable. The investors must be convinced that they are making decisions based on reliable information (Monks and Minow, 2001) and that the management is running the business for the benefit of shareholders (Myners, 2001). In addition, the investor/shareholder must be willing to undertake riskier business behaviour (Kwok, Tadesse, 2006) and must be flexible with his decision-making (Guiso et al., 2003).

Traditionally, equity culture, as defined in this study, is best developed in countries with liquid stock markets. Such markets normally encompass a broad range of economic sectors (e.g. industrial, financial and resource), offer a wide range of financial instruments (e.g. share futures, index derivatives, etc.), manage the risk with hedging tools and obey the rules of clearing and settlement systems (Pagano and Volpin, 2005). Indeed, it can be said that the development of equity culture has got good economic reasons (Claessens, 1995; Black, 1997, Smith, 2003). Liquid financial markets encourage saving and attract investors that enable firms to raise the necessary capital. A distinct equity culture and high market capitalisation lowers firms' financing costs and thus opens new windows of opportunity for investment. Firms with injected financial capital contribute to the economic health and further development (Beck et al., 2000). They provide employment, contribute to the creation of knowledge and foster innovative thinking. Without adequate capital firms cannot develop their business and that has negative implications for the broader economy. This fact is true in the case of transition economies which are typically debt finance oriented and have an underdeveloped equity culture.

2.4.2. Equity Culture and the Transition Economies

Transition economies are characterised by their bank-based financial systems (Gehrke and Knell, 1992). The fact that equity financing has not been extremely successful as a source of capital acquirement in transition countries is not surprising. The former centrally planned systems embedded constraints and simply did not allow for the development of equity financing. It is believed that the development of equity financing as an equal form to debt financing has been hindered due to special country interests (Stiglitz, 1999). Indeed, equity culture development supporters have had to overcome massive obstacles, such as mistrust of stock exchanges, nationalistic aversion to adopting 'Anglo-Saxon' financial techniques and resistance to sound corporate practices on which a viable public equity market depends (Smith, 2003).

Specifically, in the transition economies of Central and Eastern Europe, the former communist regimes opposed the development of stock markets, the primary financial intermediaries of equity-based financing, and thus their level of development in 1989 was comparable to the British stock markets in the 19th century (Hermes and Lensink, 2000). Indeed, only a small part of corporate investments was financed by equity (Kornai, 2006). As a result of the narrow scope of financial markets in Central and Eastern Europe, capital providers have associated firm financing in these transition countries with higher risk than in other more developed economies (Wyplozs, 2002). The disregard for transparency, medium to high levels of bankruptcy and lack of adequate business expertise and experience have been identified as the main reasons for this (Bakker and Gross, 2004). Despite considerable advances over the last decade, existing European financial markets are still functioning below their potential (EBRD, 2006). As a result, European development and particularly the transition EU economies have been losing out on jobs and growth. Economists agree that the main reason for this is the fragmentation of these markets which is driven by domestic bias, inefficient regulation and risk-averse culture. This results in an inability of many funds to become sufficiently specialised and to achieve critical mass within a (short) timescale (i.e. attracting large number of companies and investors). Therefore, the majority of firms in the CEECs have preferred traditional ways of financing such as debt financing, leasing and renting.

However, recent views point out that a combination of global and region-specific factors gives an indication that there may be a realistic potential for equity culture

development in transition economies (Segal, 2009). Firstly, the recent financial crisis highlighted a number of 'cracks' in the current banking sector and the issues related to the corporate sector's over-dependence on it. Secondly, the economic improvement demonstrated in the majority of transition economies prior to the financial crisis (e.g. removed restrictions on foreign ownership, improved accounting and information standards) and in many cases the transition countries' ability to limit the negative consequences caused by the financial crisis have been identified as reasons to believe that the 'promotion' of equity financing as a direct competitor to debt could be plausible (Djankov and Murrell, 2002). Cumulatively, these events could be seen as potential catalysts for the development of an equity culture in transition economies.

In the case of the transition economies of Central and Eastern Europe (CEECs) the following has to be noted. Firstly, the reform process in the CEECs is still ongoing. Although the CEECs succeeded in complying with the economic requirements imposed upon them by the European Union (EU), the financial liberalisation process is far from being finished (EBRD, 2009). This provides an opportunity for correct economic policy shaping which could be potentially geared towards supporting an equity culture in these countries. Secondly, events such as privatisation of formerly state owned businesses, the establishment of the Euro currency and the shift in the pension systems from state-owned to individual retirement accounts and defined contribution pension plans (just to name a few) have prompted the 'equity culture' supporters to raise their hopes. Thirdly, the substitution of top-down corporate governance systems based on central planning with corporate governance systems that react to and base their decisions upon market signals is seen by many some as a signal for the change of direction of these countries' financial systems (Djankov and Murrell, 2002). Fourthly, the increased interest of foreign investors in the CEE region has a significant impact as 'equity culture' emerges where a strong investor base is. The increased interest of the foreign investors has been prompted by the downturn in the mature equity markets. Investors are therefore looking for new and exciting markets with substantial growth and potential. The CEECs might not be the centre of their investment activities (with the BRIC countries taking the prime) but the spillover effect may have an economic policy changing impact. Lastly, but perhaps most importantly, the majority of the corporate sector in the CEECs is dissatisfied with the financing services their financial systems offer (EBRD, 2008b). Indeed, a strong increase in the demand for sophisticated financial services in the rapidly expanding economies of

Central and Eastern Europe has been noted (EBRD, 2006). Many firms in the CEECs feel that the limited availability of finance is the major constraint to their growth and development as many have their bank loan applications declined or receive only part of what they requested (Scholtens, 2000). Furthermore, due to limited competition at the local level, banks are able to overcharge for their capital raising services, with the effect of locking companies into long-term relationships. The banking sector also has started to require an increased amount of information on business propositions before granting loans. This has could remove an advantage of bank finance (because it was quick and easy to arrange). Klapper et al. (2002) find that the main sources of dissatisfaction firms express are red tape, poor services, excessive bank charges and the inappropriateness of solutions offered.

From the research perspective, international authorities (e.g. The World Bank, The European Bank for Reconstruction and Development) have recognised that transition economies as new democratic economies have a high growth potential and therefore, have called for more scientific work on the transition type of economy (OECD, 2009). Indeed, since the transition process started, financial systems in these countries have started to be analysed, transition processes in individual countries have been evaluated and some downfalls of the existing systems rooted in the inherited legacy of the previous regime have been identified (Underhill, 1995; Bakker and Gross, 2004; Doyle and Walsh, 2005). However, a number of authors have identified more areas that need further clarification and gaps that require additional research.

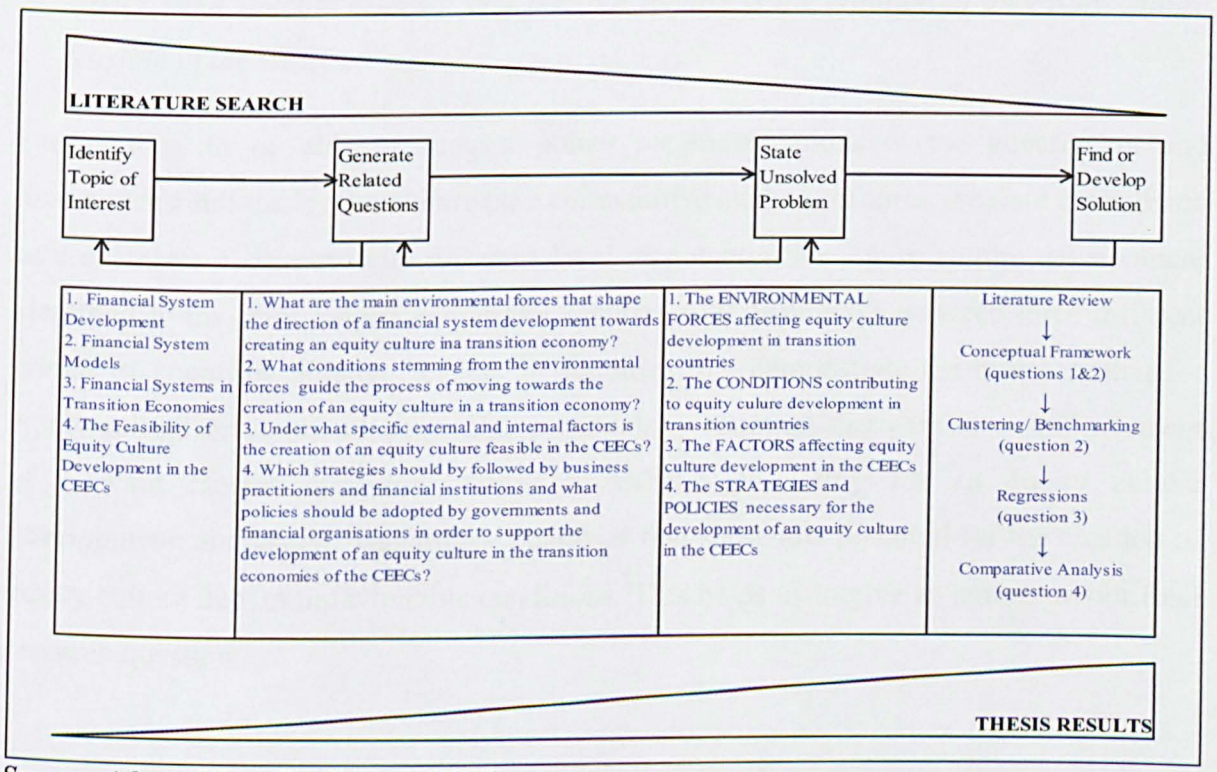
For instance, Purda (2008) points out that there is a need for further research on transition countries (e.g. transition economies of the CEECs) as 'caution should be used in extending the results from research on financial systems of developed economies with well-functioning financial markets to the context of transition and post-transition countries'. Bekaert and Harvey (2002) stress the requirement for a better understanding of the combination of factors (macro-economic and institutional) influencing financial system reforms in transition markets and Klapper and Love (2003) emphasise the need to re-focus the research in transition economies from country-level to firm-level, or a combination of these two levels. Pinkowitz et al. (2002) highlight the need to analyse corporate governance mechanisms when assessing financing choices of firms, in particular equity capital, in transition economies. Fisher et al. (1997) and later on Kornai (2006) add at the corporate level, the motivations behind firm financing choices should be more closely

examined. Bakker and Gross (2004) call for more attention specifically to the transition economies of Central and Eastern Europe as 'these markets are particularly interesting since they provide us with a number of comparable, yet in many interesting respects, different cases'. Also, the need to provide empirical knowledge on factors affecting the CEECs' future financial systems' developments and direction has been accentuated by many (e.g. Hermes and Lensink, 2000; Nord, 2000) with some particularly stressing the importance of an assessment from the equity financing perspective (EBRD, 1998; Smith, 2003). However, to our knowledge, in the case of the transition literature, the attention to equity culture as a phenomenon coexisting in a financial system with a strong capital market sector, the effect of its limited existence in the transition economies and viable suggestions for its possible development have been neglected. This is where our study adds value.

2.5. Conclusion

The literature review has enabled us to outline issues related to our research problem, identify and justify our research subject and understand the limitations of scientific work performed in our research area. A diagram adapted from Booth et al. (1995) shows in a nutshell our literature review process.

Figure 2.2.: A Flow Diagram of Literature Review: Application to Our Study



Source: Adapted from Booth et al. (1995)

In our study we aim to investigate a number of issues related to the phenomenon of *equity culture* and its development in transition economies with special focus on ten transition economies of Central and Eastern Europe. We pose four research questions. Firstly, to investigate the environmental forces which affect the development of an equity culture in transition economies and identify specific conditions stemming from these environmental forces that have to be satisfied in order for an equity culture to develop we create first two research question as follows:

1. *What are the main environmental forces that shape the direction of a financial system development towards creating an equity culture in a transition economy?*
2. *What conditions stemming from the environmental forces guide the process of moving towards the creation of an equity culture in a transition economy?*

We provide answers to these questions by developing a conceptual framework in Chapter 3. Our second research question is further empirically examined with a specific group of transition economies – the CEECs through benchmarking and clustering in Chapter 6. Secondly, the CEECs are further examined as we empirically evaluate the nature of factors affecting equity culture development in these countries. This is achieved with a regression analysis in Chapter 7. This analysis thus answers our next research question which is formulated as follows:

3. *Under what specific external and internal factors is the creation of an equity culture feasible in the CEECs?*

Furthermore, to be able to suggest policy recommendations at the government and financial institutions level we draw on a comparative analysis of three separate cases. Each case examines a country with different level or potential for equity culture development identified in the prior empirical analysis sections. We distinguish between three different groups of countries: Firstly, 'leaders' – countries that demonstrate the best potential for equity culture development; secondly, 'potentials' – countries that with some improvement of relevant market conditions reveal a realistic possibility for an equity culture development; and lastly, 'laggards' – countries that show low potential for the creation of equity culture due to unfavourable conditions. This helps us to give an answer to our final research question:

4. *Which strategies should be followed by business practitioners and financial institutions and what policies should be adopted by governments and financial organisations in order to support the development of an equity culture in the transition economies of the CEECs?*

To sum up, in our work we aim to conceptually and empirically investigate the potential for an equity culture development in the transition economies of Central and Eastern Europe. This aspect of a financial system development and the chosen research approach have not been detected in the prior research.

Chapter 3: Conceptual Framework

3.1. Introduction

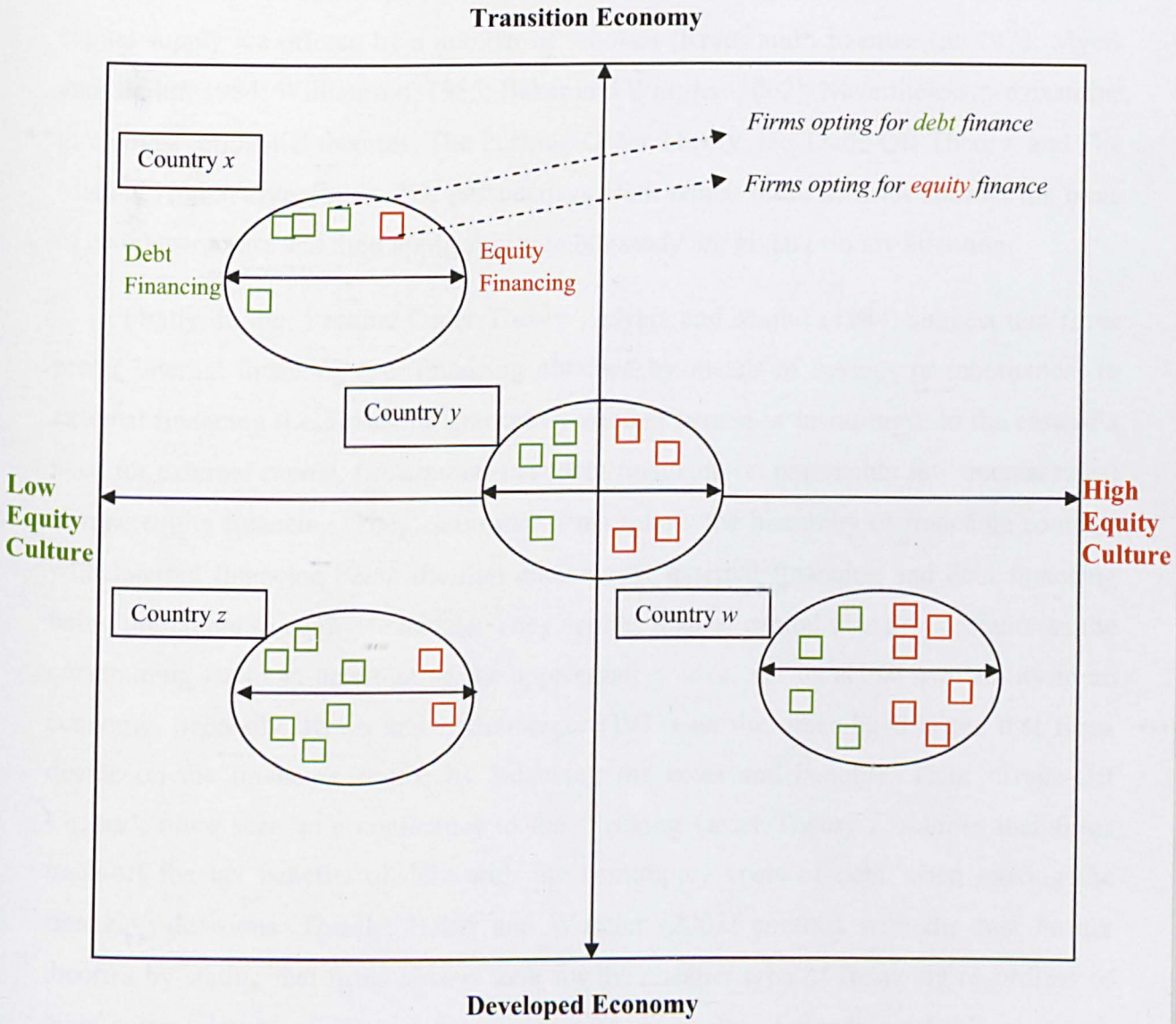
The aim of this chapter is to introduce a new conceptual framework that explains the process of equity culture development in transition economies. We propose that equity culture may develop in transition economies if firms do not incur excessive transaction costs when demanding equity financing as compared to the size of transaction costs associated with the more commonly used debt financing. The size of transaction costs is determined by the character of conditions affecting the demand for equity finance. Such conditions originate from internal and external environments of the firm. Our conceptual framework enables us to determine not only the nature of these environments but also the specific conditions these environments have to satisfy. The role of the conceptual framework is thus to provide answers to the first two of our research questions. Firstly, what the main environmental influences affecting an equity culture development are, and secondly, which conditions stemming from those environments have to be met so that equity culture may be developed.

To limit ambiguity, we note the following: Firstly, the research focus is on the financing of firm activities at a strategic level, where internal capital is no longer adequate (primarily due to the size of the capital requirement which firms are unable to generate internally) and external capital is necessary. Therefore, we presume that firms seeking external finance have two options: debt or equity. We thus attempt to investigate what motivates firms to switch to a new source of capital or increase the levels of a less used source of external capital, such type of capital being equity.

Secondly, to achieve the status of a developed economy is not restricted to the adoption of an equity culture. Indeed, there are countries that are developed economies yet have not acquired a dominant equity culture. Germany and Japan are the prime examples of such economies (Levine, 2002; Amable, 2003; Smith, 2003). Therefore, the conceptual framework serves the purpose of a theoretical tool designed to assess the feasibility of an equity oriented financing as an alternative to a debt based financing in those economies that are striving to achieve the status of developed economies. This argument is graphically depicted in Fig. 3.1. It shows that individual countries' positions can be plotted in terms of the equity culture presence (horizontal level displaying low and high equity culture) and

the level of economic development (vertical level displaying transition and developed economies). Country *x* depicts a less developed transition economy with a weak bank system providing unattractive debt and an almost non-existent equity culture. Country *y* represents a more developed transition economy with a stronger banking system and some demand for equity financing. Countries *z* and *w* are both examples of developed economies. The former has a bank based developed financial system and thus low equity culture while the latter exhibits the presence of an equity based developed financial system and thus high equity culture.

Fig. 3.1.: Conceptual Framework – Graphical Display 1



Source: Author's Own

This theory-building chapter is organised as follows: Firstly, we justify the need for a new theoretical approach as we look at earlier corporate finance theories. Secondly, we explain our approach of theory bridging that we apply for the development of the conceptual framework, followed by a detailed explanation of the conceptual framework itself. Then we formulate several propositions and conclude the chapter with a summary.

3.2. The Need for a New Theoretical Approach

According to the Economics and Corporate Finance literature, sources of financial capital commonly comprise debt, equity, or some combination of these two (Boot and Thakor, 1997; Allen and Gale, 2000; Vitols, 2001; Boldizzoni, 2008). Discussions on the subject of capital supply are offered by a number of scholars (Kraus and Litzenberger, 1973; Myers and Majluf, 1984; Williamson, 1985; Baker and Wurgler, 2002). Nevertheless, we examine three most influential theories: The Pecking Order Theory, the Trade-Off Theory, and The Market-Timing Hypothesis. The perspectives from which these theories address the issue of capital structure and their applicability to our study are given primary attention.

Firstly, in the 'Pecking Order Theory', Myers and Majluf (1984) suggest that firms prefer internal financing (i.e. financing obtained by means of savings or inheritance) to external financing (i.e. financing granted by another person or institution). In the case of a need for external capital, firms prefer new debt financing (at reasonably low interest rates) to new equity financing. They claim that firms follow the hierarchy of financing sources, with internal financing being the first choice over external financing and debt financing being preferable to equity financing. They see the size of capital that firms require as the constraining factor in determining the appropriate source, not its actual availability in an economy. Secondly, Kraus and Litzenberger (1973) on the other hand argue that firms decide on the financing source by balancing the costs and benefits. Their 'Trade-Off Theory', often seen as a competitor to the 'Pecking Order Theory', assumes that firms trade-off the tax benefits of debt with the bankruptcy costs of debt when making the financing decisions. Thirdly, Baker and Wurgler (2002) contrast with the two former theories by stating that firms always look for the cheaper type of financing regardless of their current levels of internal resources, debt or equity. According to this corporate finance theory - the 'Market Timing Hypothesis' - firms choose a source of financing that is at the time of decision-making more highly valued by financial markets, in a sense that

firms would opt for debt financing during sound debt periods and for equity during attractive equity periods.

However, the applicability of these theories to our research is limited. Empirical evidence suggests that neither the Pecking Order, Trade-off nor Market Timing Hypothesis theories can fully explain the capital structure choices of firms in the countries of Central and Eastern Europe (Delcoure, 2007). The reason for this claims to be the specificity of factors observed in these transition economies such as the differences and financial constraints of banking systems, shareholders and bondholders rights protection, sophistication of equity and bond markets and corporate governance. However, some scholars (Booth et al., 2001; Novorozhkin, 2003) suggest that these countries follow the modified 'pecking order' as their corporate sectors rely heavily on external short-term (debt) rather than long-term (equity) capital. This is due to the limited length of operations of their stock exchanges, trading mechanisms, market capitalization. Haas and Peeters (2006) point out that retained earnings and short-term debt are not sufficient capital options to fuel corporate and economic growth. Transition authors generally agree (Booth et al., 2001) that there is still ample room in these transition economies to further deepen their financial markets.

We further maintain that the common drawback is the perspective from which these theories examine the financing choices. They adopt a developed financial system perspective and therefore automatically assume that firms have a number of financing options (bank or equity) available, that the financial intermediaries are present and favourable and that the institutional and macro-economic conditions, i.e. the national competitiveness levels are quite stable and high.[4] These conditions are not present in less developed economies in a form equal to more developed economies. In the CEECs, for example, the understanding of equity culture is limited (Scholtens, 2000), the availability of equity finance is low (Bakker and Gross, 2004), and the few operating capital markets are highly illiquid (Thatcher, 2007). For these reasons, the CEECs are 'tagged' as countries with almost non-existent equity culture.

In addition these existing theories do not conceptually explain what the main influences that contribute to the development of a particular type of a financial system are

[4] The 2008 'World Competitiveness Report' confirms that, despite the global economic downturn, developed countries are able to protect their status of 'developed' countries and maintain relatively high competitiveness levels in comparison to developing and emerging economies.

and which factors in particular determine the development of an equity culture. In our thesis we focus on the strategic (i.e. long-term) sources of finance (debt and equity). To investigate the potential for equity culture development in the CEECs we thus develop a conceptual framework which draws on the modified corporate structure theory of 'pecking order'. We maintain that financing decision-making of firms depends on the size of transaction costs such firms incur when deciding on the most adequate source of external finance. It is important to mention that we adopt an early economic approach to the definition of transaction costs and thus define it as the total cost associated with debt or equity rather than the contractual part of raising finance.

Our theoretical approach which bridges managerial, strategic and institutional theories enables us to understand the complex set of factors that affect the financing decision-making of firms toward equity financing and thus shape equity culture creation in a country. The theory bridging approach and the individual theories are explained in the next section. We maintain that this relatively new theoretical concept innovatively initiates discussion about the motives and incentives behind the firms' financial decision-making. This subject has been previously given little attention by the Economics and Corporate Finance literature. This is where our study adds specific value.

3.3. Approach

The main contribution of conceptual framework, as a research strategy for theory building, is that it forces us to think in a systematic manner about research problems (Botha, 1989). We find that the complex process of immersion, the testing of previous assumptions and the modification of those assumptions altogether ultimately lead to theory building. We apply this intellectual research strategy in an attempt to make sense out of the data that we have uncovered (Shields and Tajalli, 2006). We believe, and in this regard we follow on Gioia and Pitre's (1990) theory building work, that the nature of a conceptual framework should be seen as a search for comprehensiveness stemming from bridging different theoretical views. The concept of theory bridging is indeed seen as a powerful theory building tool (Botha, 1989; Shields and Tajalli, 2006) and it has been recently popularised in the fields of Strategic Management (SM) International Business (IB). In fact, the 3rd JIBS Annual Conference on Emerging Research Frontiers in International Business (2006) focused solely on the subject of bridging of IB theories, constructs and methods. Volberda

(2006) states that due to the fragmentation of the IB field, the integration and synthesis of adjacent theories is necessary. Oesterle and Laudien (2007) add that the need to model co-evolutionary frameworks is accentuated by the dynamics of the today's firm sector and the innumerable contexts we find it in. On the whole, we find that modern scientists (Gioia and Pitre, 1990; Volberda, 2006; Oesterle and Laudien, 2007) agree that in order for the IB research to matter more and be better applicable to the real business world, researchers should not only study the firm survival or success, but also the quality of the economic sector, culture and people – the stakeholders that encompass the firm and its existence.

The firm and its financing mechanisms is a complex matter, influenced by both, internal as well as external environments. Complex relationships such as the ones between firms and their stakeholders, between firms themselves and between firms and the macro-environment they are embedded in, can seldom be understood through a single theoretical lens and therefore a combination of theories is appropriate (Gioia and Pitre, 1990; Gray and Wood, 1991). Furthermore, the widened focus of Corporate Finance theories from pure profit-maximisation ideas to added growth concepts (Klapper and Love, 2003), requires the adoption of a new theoretical perspective which bridges managerial/behavioural, institutional and strategic thinking. In our case, the theory bridging strategy serves the purpose of explaining factors that affect financing choices of firms internally (within the firm) and externally (outside the firm), and motivate them to switch to equity financing.

We recognise that the financing decisions of firms ultimately represent the demand of financing and that economies can only supply financing for which there is demand (Allen and Gale, 2000; Beck et al., 2006; Deidda and Fattouh, 2008). We add that it is not just economies purely from the economic, but also institutional and intra-firm point of view. This demand depends on the motivations behind capital seeking decisions, the risks firms are prepared to bear (Levine and Zervos, 1998; Levine, 2002), the quality of their institutional environments (Williamson, 1985; Peng et al., 2008) and macro-economic 'health' of the nation this firm is in (Demirguc-Kunt and Maksimovic, 1996; Wyplosz, 1999). Demand for a new type of financing (such as equity financing in the case of the CEECs), initiated for example by a politically driven change of the economic system, can only lead to a sustainable financing culture if the macro-economic, institutional and managerial environments support it. Furthermore, if the conditions are not adequately

developed and aligned with what the corporate sector demands, progress toward a developed financial system is prevented.

The managerial theory of the Resource Based View, the strategic theory of National Competitiveness and the institutional theory of Varieties of Capitalism conceptually underpin our analysis. These theories and their role in our conceptual framework are explained in detail in the next section.

3.4. Conceptual Framework

3.4.1. A New Framework with the Help of Old Concepts

The conceptual framework is based on the traditional profit-maximising view of the firm according to which strategic choices of firms are determined by the size of costs involved. We believe that the firm ultimately opts for such type of financing that enables it to keep its costs to the lowest possible level. We maintain that next to the real (production) costs, it is the size of the transaction costs that firms consider. We apply Williamson's (1975) definition of transaction costs as "the costs of planning, adapting and monitoring task completion under alternative governance structures". The logic of our argument is that if the costs of equity finance are too high, firms will not demand it and thus the size of transaction costs will prevent an equity culture development.

Furthermore, Dahlman's (1979) typology of transaction costs, namely the search, contracting and co-ordination costs, enables us to differentiate between individual types of transaction costs. For the purpose of our research we apply these in the following way. Firstly, the search costs can be characterised as costs incurred through searching for the best (and available) capital supplier providing equity. Secondly, the contracting costs can be identified as the costs of contractual arrangements under equity-based financing options. And lastly, the co-ordination costs can be described as costs of managing the relationship between the firm and the equity provider. Williamson's (1979) 'Transaction Cost Theory' (TCT) which evolved from the 'Theory of the Firm' (Coase, 1937) is, therefore, our theoretical starting point. We believe that the size of transaction costs is affected by factors internal (firm-level) and external (country-level) to the firm.

Internally, the size of transaction costs is affected not only by the traditional factors of the mainstream Economics and Finance literature – the size of the firm and the firm's

performance, but also by other factors such as the firm's former experience with external sources of finance, the type and quality of capabilities accumulated throughout the firm's existence, managerial preferences and the firm's overall stance towards learning, innovation and change. By complementing the traditional Economics outlook with views from an increasingly important managerial/strategic stream of literature we are able to explain what other factors internal to the firm affect the financing choices. The 'Resource Based View' (RBV) (Barney, 1991; Teece et al., 1997) theoretically underpins our concept.

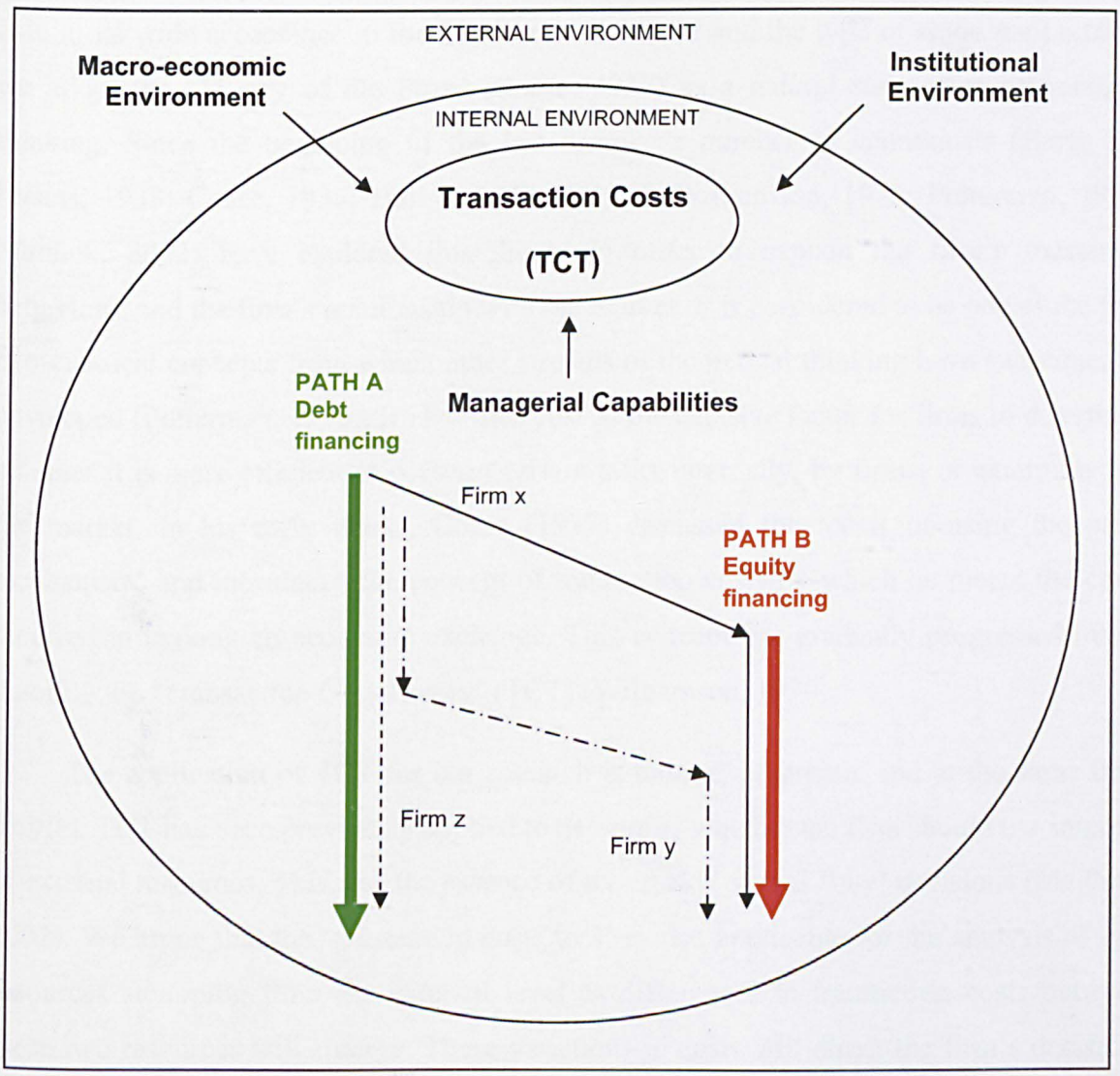
In addition, we argue that the external environment in which the firm is embedded influences the firm's strategic decision-making. Firstly, the institutional environment by which we mean the 'set of fundamental political, social and legal ground rules that establishes the basis for production, exchange and production' (Davis and North, 1971) affects financial system development. It has been established in the literature (Vitols, 2001; Jackson and Deeg, 2008; Peng et al., 2008) that bank based and equity oriented financial systems differ in their institutional set-ups. The firmly established institutional theory of 'Varieties of Capitalism' (VC) (North, 1990; Hall and Soskice, 2001) provides us with theoretical underpinnings in this respect. Based on this theory we give special attention to the finance and corporate governance side of the institutional environment. We explore both the qualitative aspects of the institutional environment and the quantitative presence of financing institutions (intermediaries) that were able to develop in such institutional conditions. The rising influence of institutional theories in the Strategy and International Business literature (Peng, 2004; Jackson and Deeg, 2008) also supports the appropriateness of its application.

Secondly, the macro-economic environment which we see as a 'hygiene' factor for any advanced financial system development has to be analysed. The concept of national competitiveness (NC) (Porter, 1990) provides theoretical foundation for this aspect of our examination. We maintain that the level of national competitiveness affects the financing choices firms have. Any type of external capital supply, whether bank or equity, requires the presence and proper functioning of a competitive economy that is able to attract new capital providers and keep the already established ones. It is the more developed economies that make it feasible for alternatives to debt oriented sources of capital to develop (Bekaert et al., 2002). We thus see the development and adoption of equity

financing associated with lower transaction costs in those countries that carry the characteristics of more developed economies.

In conclusion to this section we sum up our theoretical thinking, which is also graphically displayed in Fig. 3.2. Traditionally, firms have two basic financing options when seeking external capital. The common occurrence in the financial system developments of transition economies is that debt financing is established first, before additional external sources such as equity financing, emerge (hence the equity financing arrow on right is positioned lower than the debt financing arrow on the left) (Djankov and Murrell, 2002; Filatotchev et al., 2007). The speed and intensity of moving from one source of finance to another varies from firm to firm and from country to country. Some firms switch to an alternative source of finance as soon as it is established in an economy (firm *x*), others observe, learn, gain experience and then adopt it later (firm *y*). And, inevitably, there are firms that do not switch at all and remain debt financed (firm *z*). The main decision-making factor in this respect is the size of transaction costs. These decrease or increase depending on three main influences: the managerial capabilities within the firms, and the institutional and macro-economic conditions outside the firms. The Resource Based View, the Varieties of Capitalism theory and the National Competitiveness approach enable us to put these influences into theoretical concepts. A more detailed explanation of all above mentioned theories, and their combination into a single theoretical model follows in the next section.

Fig. 3.2.: Conceptual Framework – Graphical Display 2



Source: Author's Own

3.4.2. Four Players – One Game: The Role of Individual Theories in the Framework

It has been established that the theory-bridging approach offers a contribution to scientific work because it fosters an awareness of different perspectives and thus can tap various aspects of research phenomena producing new and uniquely informative theoretical views of events under study (Gioia and Pitre, 1990). As introduced in the previous section, we aim to explain the development of an equity culture in transition economies through a multi-paradigm theoretical approach by combining the Economics theory of Transaction Costs, managerial theory of Resource Based View, strategic concept of National Competitiveness and the institutional theory of Varieties of Capitalism.

3.4.2.1. Transaction Costs Theory (TCT): The 'Old and Tested'

Due to its wide acceptance in the Economics literature and the type of study we perform, we adopt the 'Theory of the Firm' (Coase, 1937) as a natural start of our theoretical thinking. Since the beginning of the last century a number of economists (Berle and Means, 1933; Coase, 1937; Hall and Hitch, 1939; Williamson, 1975; Putterman, 1996; Madhok, 2002) have explored this theory in order to explain the firm's existence, behaviour, and the firm's relationship with the market. It is considered to be one of the first neo-classical concepts from which other streams of theoretical thinking have subsequently developed (Putterman, 1996). It identifies cost as the decisive factor for firms to determine whether it is more efficient to perform certain tasks internally, by firms, or externally, on the market. In his early works, Coase (1937) discussed the 'costs of using the price mechanism' and introduced the concept of transaction costs by which he meant the costs incurred in making an economic exchange. This concept has gradually progressed into a theory – the 'Transaction Cost Theory' (TCT) (Williamson, 1979).

The application of TCT for our research is unique, pragmatic and at the same time fruitful. TCT has been previously applied to determine whether the firm should use internal or external resources. This was the essence of the 'make' versus 'buy' decisions (Madhok, 2002). We argue that the 'transaction costs tool' is also applicable for the analysis of two resources stemming from the external level as differences in transaction costs between these two resources will emerge. These variations in costs will direct the firm's decision-making about external sources of financing.

In our research we focus on the analysis of external sources of capital (debt and/or equity) that firms opt for when internal sources are unavailable or no longer adequate. In the case of external financing, firms incur higher transaction costs than they would through the means of internal financing. However, firms incur these costs willingly as external capital is typically used for the financing of more complex, often long-term, strategic-level activities. We thus concentrate on the variations in transaction costs in terms of these two sources of capital. The transaction costs typology of search, contracting and co-ordination costs enables us to better identify the advantages and/or obstacles of individual financing choices. From the search costs point of view, firms seeking equity financing may incur high costs if the equity financing platform is not present, i.e. if they are unable to find an equity provider, or have to search for one in foreign markets. Furthermore, the

development of an equity culture may be prevented due to firms' inability to comply with the contracting requirements of equity financing. Lastly, firms choosing equity financing as an external source of capital may be subject to high transaction costs in the case of poor co-ordination of their relationship with the equity provider. This may occur as a result of internal limitations, insufficient institutional quality, or adverse macro-economic conditions.

3.4.2.2. The Resource Based View (RBV): The New Perspective

With the ever stronger influence of managerial and behavioural theories (Lockett and Thompson, 2001) in the sphere of international business, the changing focus of the firms onto corporate growth issues (Levine and Zervos, 1998; Beck et al., 2000) and the changing status of the firms to 'learning units' (Teece et al., 1997), the exclusivity of a purely economic view on the matters of corporate finance is no longer viable. It has to be set against managerial thinking (Baumol, 1993). Considerations on the ways managers use the firm's internal resources and capabilities (Teece et al., 1997), the extent to which they base their decisions on past experiences, and the ability, willingness and readiness of their firm to dynamically develop and adapt, enable us to explain the incentives and motives behind particular financing choices of firms.

We thus adopt RBV, a managerial theory from the Strategic Management perspective, viewed by many (Madhok, 2002) as a natural complement to the TCT. Indeed, RBV concentrates on the identification of those firm specific resources and capabilities that enable firms to gain and maintain a sustainable competitive advantage (Penrose, 1959; Barney, 1986; Barney and Hesterly, 2008) and enhance the value creation of the firm (Lockett et al., 2009). RBV, as part of rapidly growing behavioural aspect of Strategic Management literature, gives us information about how firms actually operate and what affects their strategic decision-making.

The approach we adopt is to treat the RBV primarily as a theory that offers insights about the decision-making behaviour of managers. The issues of the dynamic capabilities development such as the creation of knowledge together with the path dependency phenomenon and the managerial intentionality aspect are our primary interest. The dynamic capabilities perspective (Teece, 2007) discusses how the firm has to re-adjust to a rapidly changing business environment resulting in renewing or altering its existing

resources (Teece et al., 1997; Wang and Ahmed, 2007). We are interested in how these re-adjustments affect the firms' financing choices and to what extent they could trigger switching to an alternative source of external capital.

Every firm develops a set of unique capabilities through learning (Pedler et al., 1997; Senge, 2006). Firms acquire knowledge through 'learning by doing' when conducting business. Lack of knowledge and experience is related to the limitation of options and possibly to higher costs. Firms initially follow a strategy that helps them to develop a set of unique resources and capabilities. Unless they are motivated to change they follow the path that has worked initially, that's been adopted as a norm and that works. Path-dependent tendency is thus regarded as an incremental part of the learning process (Wang and Ahmed, 2007). It is, however, not the only factor that internally affects the strategic decision-making. We believe and in this respect are in line with Hutzschenreuter et al.'s (2007) argument that once path dependencies are accounted for, there may still some unexplained corporate behaviour remain. Why is it that some firms opt for an alternative source of finance quicker than others? Why some firms won't consider alternative sources of finance despite the fact that the path dependent patterns have been 'broken'?[5] The factor of managerial intentionality can explain this.

Managers' intentions inevitably vary from case to case. For some the strategic focus is on the 'stay regional versus go global' aspect, for others it is the 'imitate versus innovate' aspect. We believe that the variation can be explained through the attitude towards risk, learning, workers' motivation, professional (e.g. finance) skills, level of domestic and international experience, just to name a few. In line with Adler's (1997) findings, we believe that national culture influences the values, attitudes and behaviour of individuals. We, therefore, reason that individual's perception of uncertainty and attitudes toward risk are affected by the national culture in which the individual resides. To support our argument we are able to provide the findings by Kwok and Tadesse (2006) who have statistically proven that uncertainty avoidance is a statistically significant variable in differentiating natural inclination to a financial system (bank or equity based). However, it goes beyond the scope of this study to study national culture as the primary independent variable affecting equity culture development. Rather, we consider it in combination with other managerial factors named above.

[5] Here we mean firms with similar external environment conditions – institutional and overall macro-/micro-economic.

The notion of entrepreneurship and entrepreneurial culture induces the constructive discussion on managerial resources and capabilities even further. Entrepreneurial literature (Kirzner, 1973; Baumol, 1990; Shane, 2003) suggests that the presence or absence of an entrepreneurial culture determines managerial attitudes towards knowledge creation and managerial intentionality. Entrepreneurial thinking amongst managers in a firm empowers managerial intentionality (Hutzschenreuter et al., 2007) which in the case of strategic financing translates as subjective selection and execution of financing choices.

Entrepreneurial authors such as Shane (2003) Pisano et al. (2007) and Bowen and De Clercq (2008) are consistent in their view that the existence of entrepreneurial culture coincides with the presence of managerial skills, regulation and corruption. Firstly, advanced managerial skills, and finance skills in particular, provide managers with a sense of autonomy and skills necessary for entrepreneurial thinking. Secondly, a well-specified legal system that encourages laws that mandate disclosure, facilitate private enforcement through liability rules (La Porta et al., 2006), offer better protection for minority shareholders (La Porta et al., 1999), and has an impartial judiciary (Whitley, 1999) are the regulatory necessities for financing decision-making with entrepreneurial 'flavour'. Thirdly, higher levels of corruption, which can be interpreted as lower levels of trust in public officials, can adversely influence entrepreneurial thinking. A corrupt environment changes frequently and unpredictably (Baumol, 1990). We maintain that corruption represents uncertainty and can potentially discourage managers to adopt the role of entrepreneurs. Due to the link between entrepreneurship and managerial intentionality we aim to investigate the correlation between entrepreneurship, managerial (i.e.) finance skills, regulation, corruption and equity culture creation. At this point we observe how the intra-firm environment and managerial thinking as such are influenced by the institutional conditions present in an economy. A progression toward the examination of an institutional environment and its place in our conceptual framework is therefore a natural and logical step.

3.4.2.3. Varieties of Capitalism: Institutions Matter!

Institutional theories have recently become more important. They have become pivotal in strategic managerial thinking and are no longer considered as "background theories" to other major firmly established concepts (Peng et al., 2008). Scholars agree that formal and informal institutions, commonly known as the "rules of the game" (North, 1990), shape the

strategy and performance of firms (Vitols, 2001; Peng, 2004; Lau et al., 2007; Jackson and Deeg, 2008). North (1990) points out that the informal institutions mirror the national culture and the norms adopted. The necessity to understand cultural differences in order to fully appreciate the various institutional origins and evolution has been stressed by many IB authors (e.g. North, 1990; Hall and Soskice, 2001; Buck and Shahrim, 2005; Kwok and Tadesse, 2006; Witt and Redding, 2009). North (2005: ix) reasons that "...the cultural component of the scaffolding that humans erect is ...central to the performance of economies and policies over time". Wright et al. (2005), in their works on emerging economies, go in line with North's observations and stress the role of culture in any strategic decision-making. Witt and Redding (2009) add that when habits and routines, the two building elements of culture, become fixed, institutions, the layer of societal order, are formed. Chui et al. (2002) in their research come to a conclusion that culture does matter for corporate structure related considerations. It not only affects the structure of the informal institutional system (rules, laws, regulation) but also managements' perception of the costs and risks related to debt or equity finance. The previously discussed theory of RBV enables us conceptually to include the factor of national culture when considering managerial strategic decision-making. On the macro level we observe different types of culture through the type, quality and functionality of individual institutional environments and thus consider cultural differences only as a subset of complex institutional contexts.

Research on institutional variations has thrived in socio-economics as the 'comparative business systems approach' (e.g. Whitley, 1999) and within comparative political economy as the 'varieties of capitalism theory' (Hall and Soskice, 2001; Jackson and Deeg, 2008). Researchers have studied the key dimensions of institutional variation across various capitalist systems and the implications of this variation in terms of outcomes at the national economy and the firm level. The Varieties of Capitalism theory (VC) (Hall and Soskice, 2001) – identifies different forms of capitalism by pointing out the institutional differences. The core distinction VC draws is between two types of institutional environments, liberal market economies (LMEs) and co-ordinated market economies (CMEs). The context of competition and formal contracting are central to liberal market economies while in coordinated market economies more collaborative rather than competitive relationships prevail and a strategic interaction among firms and other actors replaces typical demand and supply conditions behaviour of competitive liberal markets (Jackson and Deeg, 2008). These two forms of capitalism constitute ideal types at

the poles of a spectrum along which other nations can be displayed. Therefore, the VC theory is also useful for understanding institutional environments of those countries that do not exactly follow one or the other pattern earlier introduced (Lane and Myant, 2007). Principally, VC conceptualises how corporate behaviour is affected by the institutions of political economy (Hall and Soskice, 2001). It identifies the firm as the centre of the analysis and thus 'builds bridges' between Business Studies and Comparative Political Economy. This firm-centered view fits our concept, as we see the firm as the main 'actor' in equity culture development. The relationship of the firm with institutional 'actors' determines the size of transaction costs and thus the feasibility of equity culture creation.

For the purpose of this inquiry, we focus on one sphere of the formal institutional environment identified by VC – corporate governance[6]. Corporate governance is linked to financial system development in the mainstream Economics and Finance literature (La Porta et al., 1997; Levine, 1997; Kaufmann et al., 2000). The extent of corporate governance in a country determines which type of external finance is accessible and most viable. We focus on those institutional aspects that affect financing decision-making of firms. Although the 'rules of the game' principle (North, 1990) characterises the main function of corporate governance, its importance can hardly be restricted to the legal framework. Other elements of weak corporate governance such as excessive bureaucracy, disruptive corruption, poor transparency, and low democratic accountability have the power of imposing significant costs to firms and therefore are crucial considerations for the quality of an institutional environment. Not only do such conditions deter external capital providers from entering the market and growing, but also steer firms towards traditional ways of financing. Financial intermediaries adopt different ways of dealing with these market imperfections. Banks, for example, don't condition the provision of capital on publicly available data (Demirguc-Kunt and Maksimovic, 1996) and their strong contractual culture safeguards them from the weaknesses of the corporate governance system as a whole. On the other hand, equity providers, such as institutional or private investors gain information about firms from publicly available sources. Therefore, in order to access finance, businesses need to understand 'the rules of transparency', which we translate as adherence to law and order, adequate bureaucratic quality and successful limitation of corrupt practices. We use the ultimate representatives of each institutional

[6] The other four spheres – industrial relations, vocational training and education, inter-firm relations, employees - are not directly applicable for our research topic. Hall and Soskice (2001) provide a detailed analysis of these.

environment – Germany and Japan for the CMEs and the UK and USA for the LMEs as our benchmarks to simulate the institutional structure of the financing sector in each country.

In addition to the qualitative, corporate governance assessment of the institutional environment, we also examine the structure of the financial intermediaries sector in order to determine the presence or absence of equity oriented financial institutions. In line with earlier literature (Offe, 1996) which states that firms automatically make such strategic financing choices (debt or equity) for which there is institutional support we thus claim that the institutional structure is another significant determinant of equity culture development. Vittas (1998) adds that the degree of development of non-bank financial intermediaries is not only a specification tool on the type of financing dominating in an economy but also a determinant of a country's overall level of financial development. We thus reason that a complementary relationship between firms, financial intermediaries and corporate governance practices steers corporate demand for external capital toward a specific financial direction (debt or equity). Ultimately, the decision-making factor on the type of capital selected will be the size of transaction costs a firm incurs during this process.

3.4.2.4. National Competitiveness (NC): An External Determinant of Financing Choices

No firm exists in a vacuum and its existence is externally affected by the competitive nature of the macro-environment it is embedded in. Political forces of individual nations are usually set to promote competitiveness and thus build corporate and national competitive confidence. There are many and complex determinants of national competitiveness. Modern economists (Porter, 1990; Schwab and Porter, 2008) have highlighted the institutional and economic factors as the two main constituents of national competiveness that determine the level of productivity of a country and the performance of individual firms. Indeed, the role of a country's competitiveness in determining the functioning of firms and the strategies they choose to pursue has been stressed by many (Kogut and Singh, 1988; Porter, 1990; Peteraf, 1993; Schwab and Porter, 2008).

Our approach to studying national competitiveness is to focus on the performance (competitiveness) of a country's national economic system. This approach is not uncommon. It has been noted in the literature (e.g. Hamalainen, 2003) that researchers tend to substitute the word 'competitiveness' with 'economic performance' due to an overlap of

theoretical arguments in the fields of economic growth and international competitiveness. We see national competitiveness as a measure of a nation's economic capability and potential in the world economy. Nations that are competitive are able to meet the needs of their corporate sectors and thus contribute to the fulfilment of their strategic goals (Rajan and Zingales, 2003b). Therefore, it can be said that the competitiveness level of a nation reflects this nation's ability to provide prosperity to its firms – the main economic drivers of any economy. We are able to determine the level of competitiveness within each nation by studying a country's economic strength in terms of economic stability and growth, productivity, trade openness, structure and by examining the presence of the most potent macro-economic factors such as labour costs, interest rates, exchange rates, GDP growth and others as determined by Michael Porter in his works on national competitiveness (Porter, 1980; Porter, 1990; Schwab and Porter, 2008).

We reason that the level of national competitiveness affects financing choices of firms and therefore impacts on equity culture development. In countries with strong competitive confidence, firms have more financing choices and the incentives to use the sources in order to fulfil their (and consequently their countries') growth potential (King and Levine, 1993; Beck et al., 2005). Empirical research has confirmed that banks and any other forms of non-bank financial intermediaries are more active and efficient in advanced (competitive) economies (Beck et al., 2001) On the other hand, in countries with lower levels of macro-economic performance where inflation is not under control, interest rates are disproportionally high and economic growth is stagnating, firms cannot make informed strategic decisions (Rajan and Zingales, 2003b). Advanced financial systems, whether bank or equity based, are associated with the presence of competitive national economies. However, national economies that are less competitive are more commonly able to facilitate the functioning of bank oriented financial systems than equity based financial systems (Bekaert et al., 2001). Therefore, we maintain that economies with higher levels of national competitiveness are in a better position to develop equity culture than their less competitive counterparts.

The Transaction Costs Theory, the Resource Based View, the theory of Varieties of Capitalism and the concept of National Competitiveness are bridged together to provide a conceptual answer to the problem of equity culture development in transition economies. We have identified the firm and its demand for equity financing as the main driver of equity culture development in a country. Firms may opt for equity financing if the

transaction costs they incur in the process of searching for an equity provider, creating a contractual relationship with an equity provider and co-ordinating a business relationship with an equity provider are low due to favourable (equity financing) conditions. These supply conditions are of macro-economic, institutional and managerial nature. In order to 'crystallise' the concepts, we put forward several propositions. These are introduced in the next section.

3.5. Propositions

Based on the focal concepts fundamental to our discussion we devise propositional statements – the parameters for our theory. The fundamental role of propositions is to provide explanation or information about an aspect of reality (Chatman, 1996). Their value to the theory building process lies in their ability to be tested, thereby strengthening or weakening our theory (Botha, 1989; Chatman, 1996). We believe that to carefully design propositions a revisit of the research questions is a logical approach. A research question should respond to an inquiry being proposed, suggest generalisable links with similar or varied phenomena and give fresh insight to matters of our research concern (Chatman, 1996). Our research questions are the following:

1. *What are the main environmental forces that shape the direction of a financial system development towards creating an equity culture in a transition economy?*
2. *What conditions stemming from the environmental forces guide the process of moving towards the creation of an equity culture in a transition economy?*
3. *Under what specific external and internal factors is the creation of an equity culture feasible in the CEECs?*
4. *Which strategies should be followed by business practitioners and financial institutions and what policies should be adopted by governments and financial organisations in order to support the development of an equity culture in the transition economies of the CEECs?*

The purpose of propositions in our conceptual framework is to act as a guide when examining issues related to an equity culture creation in two ways. Firstly, to determine the nature and significance of individual internal and external environments on the equity culture development in transition economies for the firm as such and then for specific

group sizes (Large, SMEs and Micro firms). Secondly, to identify the conditions these environments have to display in order to accommodate an equity culture development.

3.5.1. Environmental Forces Affecting Equity Culture Development

In the conceptual framework introduced previously we determined three key sources of an external and internal influence on the equity culture creation. These are the macro-economic, institutional and managerial environments. We believe that a competitive macro-economic environment acts as a basic support mechanism for any form of an advanced financial system development, and therefore is also a necessary prerequisite for equity culture creation. Furthermore, the institutional and managerial environments have a crucial role, as they steer the direction of financial system development toward a specific type: bank or equity oriented.

We thus put forward *Proposition 1:*

P1: Equity culture development in transition economies is shaped by a combination of macro-economic, institutional and managerial environments.

However, we propose that these environments do not affect individual firm size groups[7] in the same way and weight due to the varied internal characteristics of these groups. Therefore, an assessment of the Micro firms, SMEs and Large firms follows in terms of the incentives behind a) accessing external sources of capital, and b) opting for the specific type of equity capital and thus forming an equity culture.

3.5.1.1. Micro Firms

Micro firms are not a homogenous group (Hill and McGowan, 1999). The group's diversity is reflected in the high variability of individual micro firms. It includes high technology knowledge based firms as well as small corner shops. Firms with high growth aspirations on one hand with the so called 'life style businesses' on the other, share the population of this group.

The informal management style of Micro firms (Chell and Baines, 2000) is reflected in the strategic planning. Perren (1999) reasons that formal strategic planning is normally

[7] For firm typology we apply the size variable as defined by the EU in 2006 and thus identify three firm types: Micro firms, SMEs and Large firms (for exact definitions see Chapter 4)

not present in the Micro firms and that any strategic decision-making is informal and normally not communicated to other stakeholders. Later research found that the Micro-firm managers/owners make strategic decisions based on intuition and previous experience (Kelliher and Reinl, 2007). Schaper et al. (2005) also point out that the Micro firm owner/manager can't often distinguish between strategic planning/decision-making and day-to-day problem solving. Decisions are made without any form of long-term planning. As a result, decisions with short-term focus that result in short-term returns are favoured over those that require long-term investment. This, consequently, has got an impact on the long-term success.

The majority of Micro firms are not growth focused (Perren, 1999). The literature explains the lack of growth in two main ways. Firstly, the growth poverty is attributed to the lack of resources (Chell and Baines, 2000). Poor resource base leaves little opportunity for development, learning and reflection. This fosters a culture that is not prone to growth and not open to change. Secondly, it is explained by the lack of managerial capability (Schaper et al., 2005). Managerial skills and capabilities are particularly important in established business as these enable the owner(s)/manager(s) to deal with external shocks. Previous research states that the majority of Micro firm owners/managers have managerial shortcomings (Kelliher and Reinl, 2007). Their managerial skills are developed by trial and error (Schaper et al., 2005) as they perform the day-to-day business activities. Many authors see the business ownership as a 'learning experiment' in itself and believe that it protects some from business failure (e.g. Chell and Baines, 2000).

Furthermore, the sustainability of many Micro firms is questionable as high failure rates are representative of this group. As many as forty percent of Micro firms cease to exist within the first three years and eighty percent fail to trade in the longer term (Perren, 1999). The same research also indicates that there is little difference between Micro businesses that fail and those that are just surviving. This suggests the vulnerability of the Micro firm sector.

Due to the fragile nature of their business establishment and the general lack of collateral, Micro firms experience difficulty in obtaining capital from external capital providers (Perren, 1999). They are considered a high risk and therefore are charged a high risk premium by lenders. Perren (1999) empirically confirms that the lack of finance is positively correlated with the high business failure of the Micro firm. Furthermore, the

smallness of the Micro firm is usually reflected in the small value of its transactions. For instance, the cost of using formal institutions is relatively high for this type of business. Similarly, it is costly for formal institutions to lend capital to small businesses because of the fixed administrative costs which are high relative to the earnings from the transactions performed by the firm. The most popular sources of external finance for Micro firms are loans from family and friends, overdrafts and bank loans (Mead and Liedholm, 1998). These are all debt-based. Venture capital is the only and least used source of capital by Micro firms that functions around the notion of an equity culture. A small niche of Micro firms turn to this form of credit when larger sums of capital are required. The Micro firms who apply this type of financing are mostly from the financial services sector or heavy industry sector (e.g. mining companies). More recently, the difficulties in raising debt have resulted in early and start-up technology and bio-tech firms seeking equity finance, particularly where product development may be expensive and several years away.

Lack of resources and limited growth ambitions are the main barriers of Micro firms to considering alternative source of financing (e.g. equity) as they are not cost-effective. Unarguably, Micro firms contribute to the overall financial system development in a country. With their demand for overdrafts and loans these firms generate need for bank based financial institutions (Mead and Liedholm, 1998). In the case of transition economies this means that they reinforce the path-dependency of using debt as the primary source of external capital. Although we argue that Micro firms principally play a small role in equity culture development, we aim to establish the nature of factors that prompted the few exceptions to use equity as an external source of capital. Based on our understanding of this group, we expect the managerial and institutional factors to be specifically significant in the case of micro-firms demanding equity financing and thus contributing to an equity culture development. We expect the macro-economic conditions to be less significant as Micro firms are believed to be affected more by the micro-economic conditions of their local community.

3.5.1.2. Large Firms and SMEs

Large firms and small and medium enterprises (SMEs) are the primary drivers of economic and technological progress (Klapper et al., 2002). The ability of these firms to exploit the economies of scale and scope is considered to be the essential driving force of a country's economic development. The strategic decision-making these firms undertake is related not

just to the ultimate goal of profit maximisation but also to the one of corporate growth (Beck et al., 2005). These corporate motivations signal a more ambitious attitude towards transaction costs as the long-term benefits become a 'strong partner' to the short-term costs in the strategic decision-making of these firms. Therefore, we reason that these two firm groups are more prone to considering alternative sources of finance, such as equity.

In the initial stages of the transition process, however, the firms that 'experiment' with new forms of financing first are the large ones (Beck et al., 2005). The newly formed SME sector uses mainly short-term debt financing as a source of external capital (Klapper et al., 2002). Large firms have the resources to make more advanced strategic decisions. Firstly, Large firms adapt the learning process and managerial skills at a faster speed than in any other type of firm (Hermes and Lensink, 2000), and secondly they are able to develop links with firms in foreign countries' quicker than their smaller counterparts (Choi and Jeon, 2007). Furthermore, the institutional change and the establishment of new financial intermediaries is in the initial stages of the economic transition period typically geared towards supporting larger rather than smaller firms (Beck et al., 2000).

Due to the scale of the Large firms' operations, their financing requirements are mainly determined by the external influences of macro-economic and institutional environments. Although the strategic decision-making is also influenced by the managerial capabilities of individual firms, it is not driven by it, as we believe it is the case in Micro firms and SMEs. Strategic decision-making in Large firms is typically formed by a group of managers responsible for strategy formulation and thus the managerial capabilities of individual staff are not playing a role as big as in the Micro firms. On the other hand, SMEs are more vulnerable to macro-economic issues in an economy and are affected by the institutional inefficiencies of their domestic markets. Furthermore, the managerial environment is important.

We thus put forward *Propositions 2, 2a, 2b* and 2c*:*

P2: The impact of macro-economic, institutional and managerial environments is dissimilar for different firm sizes.

P2a: The managerial environment has stronger impact for Micro firms than SMEs and Large firms.

P2b: The institutional environment has strong impact for Micro firms, SMEs, and Large firms.

P2c: The macro-economic environment has stronger impact for SMEs and Large firms than Micro firms.

3.5.2. The Conditions Affecting Equity Culture Development in Transition Economies

When firms in transition economies make the decision to finance their activities with equity capital they incur transaction costs in the form of search, contracting and co-ordination costs. The size of these costs depends on the fit between the macro-economic, institutional and managerial environments with the demand for equity financing. If there are complementarities and the fit is good, transaction costs will be low, however if there are few complementarities and the fit is weak, transaction costs will be high. It is the nature of factors that contribute to low transaction costs that is of our interest.

Firstly, search costs are the costs associated with market research. Firms need to assess the availability of equity providers – private and institutional investors, the number and quality of equity related services – equity brokers and investment advice companies, and the liquidity of financial intermediaries – stock exchanges. To do so, firms inevitably sustain search costs in the form of time, resources and finances. Secondly, contracting costs are the costs firms incur when negotiating and entering a contractual agreement with an equity provider. Today's existence of complex institutional frameworks and policies results in the high cost of contractual agreements as costs are born in order to negotiate and write the terms of the arrangements, monitor the performance of the contracting party and enforce the contracts. Lastly, co-ordinating costs are the costs attributed to the maintenance of the relationship between a firm which uses equity as its source of external capital, individual investors and financial intermediaries.

Firms embedded in economically underperforming countries usually opt for traditional forms of external capital such as bank financing (Schmukler and Vesperoni, 2001). Prasad et al. (2003) go in line with this finding and note that there is little advantage in considering more advanced sources of capital unless the country is economically adequately developed. Indeed, improved macro-economic conditions in transition economies are a necessary prerequisite for the establishment of more developed forms of external financing (Bekaert et al., 2002). Minkov (2004) notes that firms in countries that have achieved higher levels of economic development are able to benefit from alternative sources of financing and focus their attention on economic growth.

Institutional environments in the transition countries have been formed by the character of political and financial liberalisation processes these countries have been through. Firms embedded within an environment supportive of a coordinated market economy, typical for prevailing bank-oriented institutions, laws and policies and a higher concentration (and competition) of banking intermediaries incur higher search, contracting and co-ordinating costs when opting for equity financing. The simple fact of limited availability of equity-supportive institutions accompanied by under-developed institutional policies may result in higher transaction costs that firms may not be prepared to bear.

Also, the corporate governance practices developed as part of individual institutional frameworks lead to specific transaction costs. Bank based systems typically exercise strict contractual agreements (Bekaert, 1995). According to Kwok and Tadesse (2006), the reason for this is that bank-based systems are preferred in countries with high uncertainty avoidance, in other words are highly risk-averse. Contracts are therefore seen as tools that help to prevent high risk. Firms have contractual obligations also when they opt for equity financing but the contractual process is of a different character – a contract is seen more as a legally practical and necessary part of the capital securing process as opposed to ultra-dominant part of the negotiation process. Equity financing is a more popular financing option in countries that display lower uncertainty avoidance characteristics, i.e. are less risk-averse (Kwok and Tadesse, 2006) and show no or little transparency issues (Kim and Kenny, 2007).

Although affected by the macro-economic and institutional environments, the financing decision ultimately lays with the managers, the type of firm they represent and the extent to which they follow the path-dependent tendencies. If the managerial style of managers in transition economies is path-dependent, good experience dominates and relationships based on trust prevail, firms have no or very little incentive to consider alternative sources of financing. Indeed, under these circumstances firms will automatically apply for another bank loan and thus keep their search, contracting and co-ordinating costs at low levels. However, if managers have had an international experience with equity financing, if they are allowed and motivated to 'experiment' with riskier financing options and have good financial skills, path-dependent tendencies may be broken and firms may consider equity financing.

Based on the assumptions above we put forward *Proposition 3*:

P3: Equity culture development is feasible in a transition economy if there are advanced macro-economic conditions, if the system carries the characteristics of a liberal market economy, and the managerial style is risk-taking.

3.6. Conclusion

In this chapter we have put forward a conceptual framework and propositions in terms of equity culture development in transition economies. We believe that the conceptualisation itself can be regarded as a valuable theoretical contribution in its field. The combination of theoretical concepts used and consequently arranged into a single theory building block is also innovative. The propositions are designed to investigate the main influences and conditions that contribute to an equity culture development in transition economies. This less popular source of finance in the transition economies yet popular in a number of developed economies is a dynamic and challenging issue to observe.

Chapter 4: Methodology

4.1. Introduction

In the previous chapters we explored relevant Economics, Finance and Transition Finance literature in relation to financial system development, financial system models and access to finance whilst focusing specifically on the issue of equity culture development. We also introduced our conceptual framework – the theory-building block of our research. The theoretical and conceptual factors influence the research design of our thesis, which is discussed in this methodology chapter. Firstly, we outline the research objectives and debate the relevance of individual methodological philosophies. Then we introduce our research sample followed by a discussion on data collection and data handling. After that we overview the data analysis methods, discuss the legitimacy of our research and note the limitations. Finally, we summarise our methodological choices.

4.2. Research Objectives

Research objectives enable us to clearly understand the purpose of our study and further assist in the direction we investigate research phenomena (Emory and Cooper, 1991). The objectives of our research are twofold: Firstly, we aim to identify environmental forces and specific conditions stemming from these that contribute to an equity culture development in transition economies. Secondly, we intend to identify specific factors which affect equity culture development in the CEECs.

These research objectives arose as a result of our previous work on AIM's[8] potential future expansion into the area of Central and Eastern Europe (Stone, 2006). This research project revealed AIM's limited expansion interest into the Central and Eastern European region. Whilst it was beyond the scope of that project to identify the list of factors causing this reality, a phenomenon of *limited equity culture presence* in this geographic area was clearly recognised. A consequent review of relevant academic literature revealed gaps in the context of equity culture development in transition countries.

[8] AIM – Alternative Investment Market, the London stock exchange for small and medium enterprises (SMEs) (www.londonstockexchange.com/aim

Thus we form our research objectives as follows:

1. *To identify the main environmental forces that shape the direction of a financial system development towards creating an equity culture in a transition economy.*
2. *To examine the nature of conditions stemming from the environmental forces which guide the process of moving towards the development of an equity culture in a transition economy.*
3. *To determine under what specific external and internal factors the creation of an equity culture is viable in the CEECs.*
4. *To propose which strategies should be followed by business practitioners and financial institutions, and which policies should be adopted by governments and financial organisations in order to support the development of an equity culture in the transition economies of the CEECs.*

4.3. Philosophical Perspectives

Philosophical perspectives relate to assumptions about the social world and how it can be investigated (Saunders et al., 2000). Burrell and Morgan (1979) maintain that two main perspectives exist: the nature of society and the nature of science. Firstly, social research is based on assumptions that underpin social science and these assumptions shape the methodological choices researchers make. Secondly, science involves the subjective or objective research approach. These philosophical assumptions are often depicted as standing in opposite relation, which permits comparison between the different research traditions. The research assumptions of epistemology, ontology and methodology are expanded upon next.

4.3.1. Our Epistemological Perspective

Epistemology concerns the question of what is regarded as acceptable knowledge in a discipline (Bryman and Bell, 2003), how it can be obtained and communicated to others (Burrell and Morgan, 1979). There are two extreme views on this in the epistemological debate. Firstly, *positivism,* a view which theorises that knowledge can be acquired while the researcher is independent of the phenomenon under study (Saunders et al., 2000). Positivism further entails the principle of *deductivism*, which comes with a belief that the purpose of theory is to generate propositions or hypotheses that can be tested and that will

thereby allow explanations of laws to be assessed (Bryman and Bell, 2003). Remenyi and his co-authors (1988) further add that science must be conducted in a way that is value-free, in other words that is *objective.*

Secondly, a contradicting notion to positivism advocating the necessity of personal experience by a researching individual is *interpretivism* (Saunders et al., 2000; Bryman and Bell, 2003). This epistemological view believes that reality is socially constructed and therefore it can be only understood in context which cannot be fully comprehended without the researcher's direct involvement in the phenomenon of the study (Remenyi et al., 1988). While *inductivism* – a theoretical principle according to which scientific research proceeds from observations to theories (Saunders et al., 2000) has been also associated with positivism, it is primarily a principle of interpretivism in the working-through of its implementation in the practice of research (Bryman and Bell, 2003).

The nature of our research does not necessitate closeness to the research phenomenon – the firm as a corporate organisational unit or financial intermediary. We follow the view that organisations exist as concrete entities about which data can be collected (Pugh, 1983). Data collection is geared towards the accumulation of facts and consequently leads to the development of a *conceptual framework.* Every framework contains analytical constructs that are applied to examine the collected data (Bryman and Bell, 2003). As a result, conclusions can be drawn about the structure and functioning of individual organisations (Pugh, 1983) resulting in the generation of generalisable knowledge (Saunders et al., 2000). Our research is based on the above principles and thus is in agreement with positivist assumptions. We therefore believe that from the epistemological perspective *positivism* is congruent with the nature of our study, and has as such influenced the chosen methodology.

4.3.2. Our Ontological Perspective

While the epistemological perspective refers to assumptions about knowledge, ontology relates to the reality of the phenomenon being investigated (Burrell and Morgan, 1979). Research literature (Burrell and Morgan, 1979; Remenyi et al., 1988) depicts it with two opposite viewpoints, *nominalism* and *realism.* The former denies all objectivity, whether actual or potential (Hacking, 1999) and states that abstractions known as universals are without essential reality and that only individual objects have real existence (Armstrong,

1978). Conversely the latter maintains that a single reality exists independently of an individual's appreciation of it (Burrell and Morgan, 1979) and that objectivity is not only present but must be recognised by the scientist (Armstrong, 1978). We maintain that 'the firm' – an organisational unit through which the phenomenon of equity culture creation is investigated – possess its own reality. We are thus are in line with Berle and Means (1933) and Coase (1937), the 'fathers' of organisational theories, who almost a century ago determined that the firm possesses its specific existence and nature.

Furthermore, we find that Bryman and Bell (2003) have observed that realism shares some common features with the epistemological perspective of positivism. Firstly, it is the belief that social sciences should apply the same types of approach to the collection of data and to explanation. Secondly, it is the view that there is external reality to which scientists direct their attention. Realists (Bhaskar, 1989) state that scientists will be only able to understand the social world if they identify the structures at work that generate events that are under scientific observation. Such structures are observable through the practical and theoretical work of social scientists.

Considering these ontological concepts, we deem the theory of realism to fit our research study better than the ontological theory of nominalism. The objectivist view, the general manifesto of this theory – the recognition of the reality of the phenomenon under observation, and the structuralist perspective are the main justifications for this.

4.3.3. The Methodological Perspective

We now discuss the methodology – the means available to research the phenomenon being studied (Remenyi et al., 1988), the techniques for acquiring new knowledge or amending previously discovered knowledge (Bell, 1987), the systematic approach taken towards the collection of data so that information can be obtained (Jankowicz, 1991; Saunders et al., 2000; Bryman and Bell, 2003), the logical and rational order of steps by which scientists come to conclusions about the world around them (Blaxter et al., 2001). The methodological approach is guided by the researcher's choices in relation to epistemology and ontology and thus denotes an objective or subjective approach to research (Burrell and Morgan, 1979). The objective approach correlates with *quantitative* research methodology while the subjective approach is associated with *qualitative* research methodology.

Our previous examination of epistemological and ontological approaches suggests that positivism and realism are the correct philosophical choices to guide our approach to methodology. Based on this finding we confirm that a quantitative research method founded on the objectivist principle is the *main* research method. This suggests that quantitative approach is performed from the 'outsider' perspective as the researcher is removed from the data (Remenyi et al., 1988). Multiple characteristics of our study contribute to the justification of this approach. Firstly, an examination of the nature of our research problem, which is the identification of conditions and factors that contribute to an equity culture creation in transition economies, requires the creation of variables. It is the quantitative approach that applies statistical methods and mathematical modelling, and is variable centred (Punch, 1998). Secondly, our research design requires empirical testing of a previously developed conceptual framework. This is traditionally achieved with the help of a quantitative method (Depka, 2006). Furthermore, the quantitative approach fits with our research design as it is efficient at understanding and explaining large-scale structural features of social life (i.e. the direction of a financial system in transition economies) (Punch, 1998), is better generalisable (Saunders et al., 2000), and is used for analysis at macro-levels (Bryman and Bell, 2003). Whilst our research involves a selection of countries which are studied over a variety of years in order to understand and predict the future of a dynamic element – the equity culture development we indeed deem the adoption of a quantitative research method appropriate.

The demand for a quantitative based approach in our research area has also been stressed by a number of authors. For instance, Demirguc-Kunt and Maksimovic (1996) have stressed the need for creating new *conceptual models* based on which available data on emerging equity markets in developing economies (such as the transition economies of the CEECs) can be empirically tested. Schmukler and Vesperoni (2001) pointed out the requirement for a *variable-based* approach to studying factors affecting financing choices of firms, the complexity of the financial, business and economic environments and the resource-heavy conditions related to external financing, specifically due to their diversified nature. Bekaert and Harvey (2002) have noted the necessity to apply *deductive* approaches when investigating capital markets in the developing economies (such as the transition economies of the CEECs). More recently, Oliveira and Fortunato (2006) highlighted the importance *objectively* assess all firm size groups (micro, small and medium, and large), the financial constraints they experience and the financing choices they make.

From these examples it is evident that quantitative approach is a preferred research method in our research area and is thus congruent with our earlier suggestion of using the quantitative method as the core method for our study.

However, we believe that choosing just one research method may not be sufficient as 'by adopting only one research method a researcher may be discovering only one view of a particular research situation' (Cooper, 2010). Everitt and Dunn (2001) also warn that giving attention only to what can be measured or quantified and thus ignore the wider social and political contexts may result in suggesting misleading recommendations. These arguments are strong in support of a mixed-methodology approach (Bryman, 1988; Tashakkori and Teddlie, 1998; Creswell, 2002), suggesting that utilising a variety of approaches may lead to more robust results. We see the research as a process that has different phases which do not function effectively under the same research methods. Therefore, a combination of research methods might be necessary so that individual phases function to their best potential and thus collectively contribute to a more comprehensive research outcome.

We adopt Tashakkori and Teddlie's (1998) definition of a mixed methodology research design which incorporates various qualitative and quantitative strategies within a single study that might have either a quantitative or qualitative theoretical drive. Therefore, although our study is of a quantitative character, we 'import' a qualitative strategy supplemental to our core method which serves the purpose of enlightening or providing clues that are followed up within the core method. Caracelli and Greene (1993) call this type of mixed methodology a 'sensitizing strategy' as the supplement method is not used as a stand-alone project but rather is applied to provide clues to the earlier generated results a researcher arrives at using the core method. Due to the fact that this supplementary method provides only a glance at a different perspective and the findings are not confirmed independently of the main study, we cannot call this research design a triangulation. Triangulation, the multi-method research design, involves the presence of two or more subprojects which explain methodological integrity and thus are complete in themselves. Remenyi (1998) notes that mixed methodology methods are not unusual in academic research and that usually one research method 'dominates' over another. Bryman and Bell (2003) also comment that is quite unusual to find examples of investigations in which qualitative and quantitative research have a roughly equal role as in most cases one approach tends to prevail as the major source of data collection and analysis.

Although differences between the qualitative and quantitative approaches exist epistemologically and ontologically (Bryman and Bell, 2003) as they represent a different approach to social science (Remenyi et al., 1988; Easterby-Smith et al., 1991), the qualitative and quantitative approaches to research share some similar characteristics and indeed can complement each other in a number of ways (Saunders et al., 2000). Table 4.1. demonstrates some of the fundamental characteristics and qualities these methods possess.

Table 4.1.: Key Characteristics of Qualitative and Quantitative Research Methods

Characteristics	Qualitative	Quantitative
Approach	Subjectivist	Objectivist
The role of theory in relation to research	Inductive (generation of theory)	Deductive (testing of theory)
Epistemological orientation	Interpretivism	Positivism
Ontological orientation	Nominalism	Realism
Comparative approaches	Ideographic	Nomothetic
Meaning	Expressed though words	Derived from numbers
Collection	Non-standardised	Numerical and standardized data
Method of analysis	*Observer impression*	Diagrams and statistics

Source: Burrell and Morgan (1979), Bryman and Bell (2003), Saunders et al. (2000)

Quantitative research is indirect and abstract and treats experiences as similar, adding or multiplying them together, or quantifying them (Bell, 1987). On the other hand, qualitative approach implies a direct concern with experience as it is 'lived' or 'felt' or 'undergone' (Bhaskar, 1989). These specific characteristics of the two different research methods are the core reasons why we believe in our research add significant value. By combining them into a single mixed methodology we enjoy these benefits simultaneously. The specifics of the methods we apply for data analysis are offered later in this chapter, in section 4.6.

4.4. Sample Description

4.4.1. Geographical Area: The CEECs

Our research sample – the segment of the population that is selected for investigation (Bryman and Bell, 2003) – includes ten Central and Eastern European countries, the CEECs. Transition literature (Lavigne, 1999; Stiglitz, 1999; Wyplosz, 1999; Kolodko, 2000; Lavigne, 2000) calls these countries 'the group one countries'. They are the former centrally planned economies of Central and Eastern Europe, also denoted as the (former) transition economies of Central and Eastern Europe which were the last ones to obtain

European Union (EU) membership: Firstly, in 2004 (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia), and secondly, in 2007 (Bulgaria and Romania).

A sample of ten countries is manageable in terms of data handling, yet provides opportunity for clustering. These countries share similar pasts as former centrally planned systems, date the start of their political, economic and financial liberalisation processes almost equally, and have comparable transition experiences. Klapper et al. (2002) notes that in the early years of the transition period the CEECs shared several characteristics such as a concentration of firms in the manufacturing sector, low legal and governance standards, and poor accounting standards. However, these countries have undertaken different post-transition economic and institutional paths, developed diverse trade links and created distinctive corporate sectors. These characteristics form a sample that shares a satisfactory amount of common links yet differentiates sufficiently to motivate the researcher to look for and identify those distinguishable attributes.

Additionally, we simultaneously gather data for four selected benchmarks: the UK and the USA – the representatives of the Anglo-Saxon equity oriented systems, and Germany and Japan – the representatives of the German-Japanese banking oriented financial systems (Allen and Gale, 2000). We use these benchmarks in the first step of our data examination – the clustering analysis, which is presented in Chapter 6.

4.3.2. Research Period: 1996-2008

Equity culture development is a process which evolves gradually owing to the speed of adequate macro-economic, institutional and managerial conditions in a country. Such development is best observed on a sample of continuous data. In our research we investigate continuous data from 1996 to 2008. The explanation and justification of this research period is provided next.

Although the political transition started in the 1990s, the institutional transformation and macro-economic stabilisation started being recognised in 1996 (Coricelli, 1998b; Lau et al., 2007). This happens in big political transitions as the systems are inefficient in absorbing the influx of changes and therefore remain at pre-transition levels for some period (Newman, 2000; Roth and Kostova, 2003). Indeed, in the very first years of the transition the post-communist economic reforms were still in their infancy, the region was

in a recession and the obstinacy of the inflation rate was causing many headaches (Murrell, 1996; Sinn and Weichenrieder, 1997). The focus on macro-stabilisation policies rather than institutional building delayed the progress towards more advanced institutional reforms in many areas including financial. Prior to 1996 any attempt for an equity culture creation would not have been successful. Only after the first five years have the economic clouds over CEECs started lifting (EBRD, 1998). Sinn (1997) also comments that economic recovery did not start till six to seven years after the fall of communism. The implementation of monetary policies designed by the International Monetary Fund together with independent country-specific economic and political reforms led to the occurrence of growth across the region. Inflation that reached peak levels of 600 percent in the early 1990's was by 1996 averaging 18 percent (EBRD, 1999). By the end of 1995 most of the CEECs were experiencing a modest economic growth which meant an end to the initial transformation-driven recession (EBRD, 1999).

The last year of our research period, year 2008, is a period point by which all CEECs have become EU members and have mostly accomplished all the major transition reforms as directed by the EU (Schwab and Porter, 2008). In this year, the Czech Republic – as the first CEEC – was taken off the list of transition countries and was awarded a status of a developed European economy. Furthermore, from the data collection point of view, we have identified data availability constraints before 1996 and after 2008.

4.5. Data Collection

4.5.1. Data Collection Technique and Sources

In our research we adopt data collection techniques in line with the quantitative approach. Saunders (2000) points out that quantitative data can be collected in a standardised way, thus the data set used in this study comes from several secondary sources in order to cover all the areas relevant to our investigation. Firstly, in order to determine the conditions in the macro-economic environment we access data from the Economist Intelligence Unit (EIU), the *world's leading resource for economic and business research, forecasting and analysis* (EIU, 2010a), the Institute for Management Development (IMD) in the World Competitiveness Yearbook, the *world's most renowned and comprehensive annual report on the competitiveness of nations and their corporate sectors* (IMD, 2010), and the European Bank for Reconstruction and Development (EBRD) database on transition

indicators, *a unique source of information on Central and Eastern Europe* (EBRD, 2008a). Secondly, to reflect the institutional environments of individual countries we use data from the International Country Risk Guide (ICRG), a valuable source of data on institutional quality and in more detail the EBRD transition indicators database. Thirdly, to account for the managerial capabilities of firms we use data from the IMD database. Furthermore, in order to investigate the firm sector in terms of ownership and the financial intermediaries sector we use the Orbis database, a global product of Bureau van Dijk, with information on 75 million companies worldwide (BureauVanDijk, 2008).

For the purpose of this project, 'data cleaning' procedures are followed so that data can be approached in an effective yet robust way. Firstly, as proposed in the conceptual framework, the firm sector analysis aims to investigate how different firm size groups react to equity financing and what factors are the main drivers of an equity culture development in the case of the Large firms, SMEs and also Micro firms. However, our source of data for the firm sector – the Orbis database – only provides data for the total number of firms. Therefore, some data handling in the form of class sizes creation is necessary before the variable construction process can be explained. Secondly, managerial data for some of our sample countries, which we collect from the IMD database, does not cover the whole of the 1996-2008 period and in some instances years 1996-1999 displayed zero values. Therefore, we used the 'trends technique' to obtain the missing values. These two data handling instances are explained and justified in detail in the next section.

4.5.2. Data Handling

4.5.2.1. Handling of the Firm Data

According to the Orbis database the total number of firms in our research sample – the CEECs is 2,417,670. In order to group these firms according to their size we use the European Union's firm definition of 2003. This definition uses two size thresholds: the number of employees (CON 1) and other two key financials – the total assets (CON 2) and the turnover (CON 3). These are shown in Table 4.2.

Table 4.2.: Firm Definition according to the EU Classification (2005)

Firm Type	CON 1 Employees	CON 2 Total Assets (EUR)	CON 3 Turnover (EUR)
Large	>251	>43 mil.	>50 mil.
SMEs	11-251	2 mil. – 43 mil.	2 mil. – 50 mil.
Micro	<10	<2 mil.	<2 mil.

Source: European Commission (2005); www.europa.eu (accessed 2007)

The total sum of 2,417,670 includes large firms (Large) - 1,940 firms, small and medium enterprises (SMEs) - 34,477 firms, and micro firms (Micro) – 583,022 firms. We notice, that the sum-up of Large, SMEs and Micro firms does not add up to the total number of firms in the CEECs. There are two reasons for this:

1. Some of the firms have unknown one or more of the CON 1, CON 2 and/or CON 3 values.
2. By adapting the 'CON 1 + CON 2 + CON 3 method' we exclude from the sample a significant number of firms which fit just one or two of the above conditions as opposed to all three. For example, it would be incorrect to assume that large firms are only those of more than 251 employees with financial values of more than 43 mil. in total assets and 50 mil. in turnover. Firms with just 10 employees but with financial values of more than 43 mil. in total assets and 50 mil. in turnover are also known as Large. The same applies for firms with 11 -250 employees and financial values of more than 43 mil. in total assets and 50 mil. in turnover.

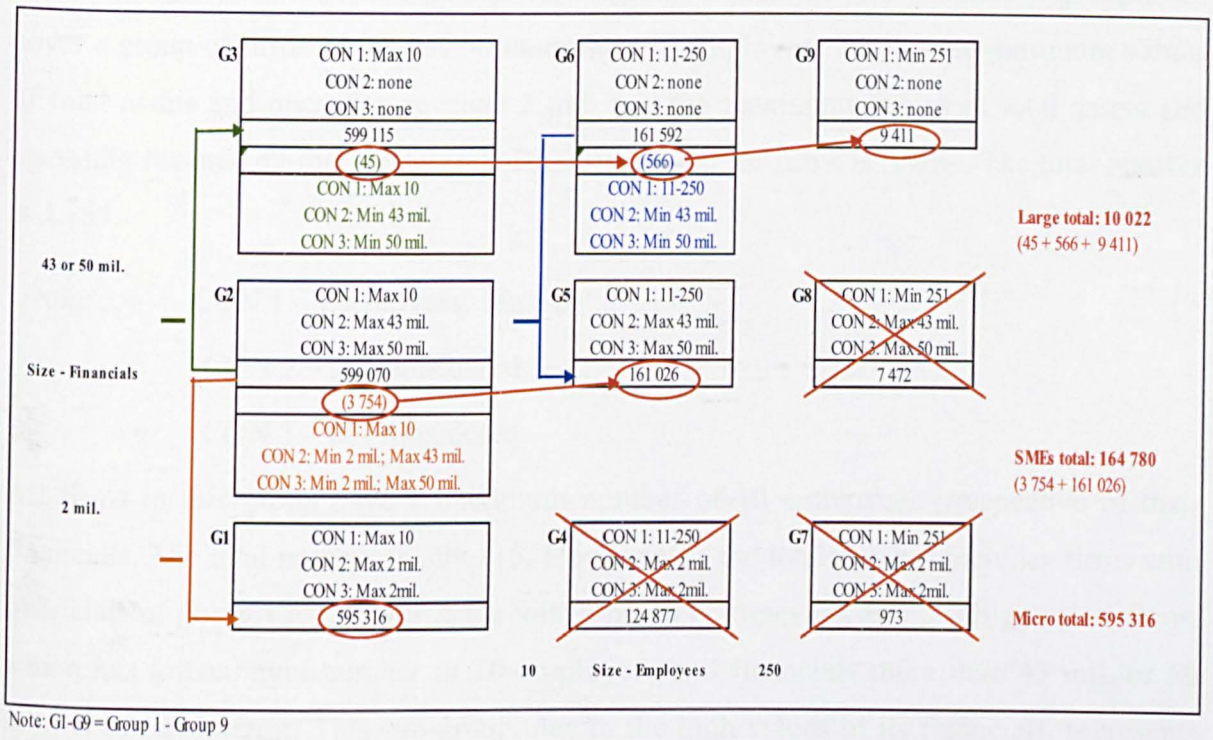
The simplified method of combining three variables for each group (i.e. Large, SMEs, Micro) would lead to the emergence of missing values in the sample. This would seriously damage the robustness of our sample and negatively affect the validity of our results. Therefore, we design a new method of firm grouping.

The initially adopted sampling method leads to two significant sampling problems. Firstly, missing values in some of our sampling units indicate the problem of an incomplete sample. Secondly, the one-way combination of three selected conditions results in undesirable exclusion of a significant number of sampling units (firms). Therefore, we approach the sampling in the following way:

1. We select only those firms that have known values for all three variables: the number of employees, total assets and turnover. This enables us to reduce the total number of firms to a more manageable sample of 770,118 (Table 4.3.).

2. We then combine CON 1, CON 2 and CON 3 in such a way that enables us to cover all possibilities. We create 9 subgroups (Table 4.3.):

Figure 4.1.: The Decision-making Tree for Group Creating Criteria



Note: G1-G9 = Group 1 - Group 9

Source: Author's Own

We now discuss the above table from Group 1 (bottom left corner) to Group 9 (upper right corner.

Group 1: CON 1 – Employees: Maximum (hence Max) 10

CON 2 – Total Assets: Max 2 mil.

CON 3 – Turnover (Operating Revenue): Max 2 mil.

The combination of these three conditions provides a number of firms which can be identified as 'true' Micro firms. The group meets the size requirements in terms of the number of employees and financials. The total number of this group is 595,316.

Group 2: CON 1 – Employees: Max 10

CON 2 – Total Assets: Max 43 mil.

CON 3 – Turnover: Max 50 mil.

This group matches the size requirements for Micro firms in terms of the number of employees but the financials are the ones of SMEs. The total number of this group is 599,070.

However, by subtracting the total number of group 1 from the total number of group 2 we cover a group of firms which has no more than 10 employees but has the minimum values of total assets and operating revenue 2 mil. and the maximum values of total assets and operating revenue 43 mil. or 50 mil. This 'sub-group' of firms is SMEs. The total number is 3,754.

Group 3: CON 1 – Employees: Max 10

CON 2 – not considered

CON 3 – not considered

All firms in this group have a maximum number of 10 employees irrespective of their financials. The total number is 599,115. However, as the total number includes firms with financials of group 1 and group 2, the total amount is irrelevant. But a sub-group of firms, which has a maximum number of 10 employees and financials more than 43 mil. or 50 mil., is of our interest. This sub-group, due to the high values of its financials, represents part of the Large firms. The total number of this sub-group is 45.

Group 4: CON 1 – Employees : 11-250

CON 2 – Total Assets: Max 2 mil.

CON 3 – Turnover: Max 2 mil.

This group consists of firms that have between 11 and 250 employees but maximum 2 mil. in total assets or 2 mil. in operating revenue. The total number of these firms is 124,877. Our next group - group 5, however, includes these firms. Therefore, we don't include this group in our classification.

Group 5: CON 1 – Employees: 11-250

CON 2 – Total Assets: Max 43 mil.

CON 3 – Turnover: Max 50 mil.

This group represents the group of 'true' SMEs. The number of employees, the value of total assets and the size of the operating revenue fit the criteria of SMEs. Therefore, the total amount of this group, 161,026 firms, is included in the sample.

Group 6: CON 1 – Employees: 11-250

CON 2 – Total Assets: not considered

CON 3 – Turnover: not considered

The firms in this group include all firms that have between 11 and 250 employees irrespective of the firms' financials. The total number of this group is 161,592. However, a small sub-group of 566 firms is of our interest. The difference between group 6 and group 5 gives a small but important sample of large firms that have between 11 and 250 employees and a minimum value of 43 mil. in total assets and 50 mil. in operating revenue.

Group 7: CON 1 – Employees: Min 251

CON 2 – Total Assets: Max 2 mil.

CON 3 – Turnover: Max 2 mil.

Firms in this group have more than 251 employees but the maximum value of their total assets is no more than 2 mil. and the maximum value of the operating revenue is less than 2 mil. The total number of firms in this group is 973. This group, however, is not included on its own but as a part of bigger group – group 9. This is explained in the coming lines.

Group 8: CON 1 – Employees: Min 251

CON 2 – Total Assets: Max 43 mil.

CON 3 – Turnover: 50 mil.

Firms in this group have more than 251 employees but no more than 43 mil. in operating assets and 50 mil. in the turnover. The total number of firms in this group is 7,472. As it was the case with group 7, this group is not considered in the final sample of Large firms as the final group, group 9, incorporates these firms.

Group 9: CON 1 – Employees: Min 251

CON 2 – Total Assets: not considered

CON 3 – Turnover: not considered

Firms in the final group are those with more than 251 employees. The values of total assets and turnover are not considered. This is the largest group out of the three groups with employees more than 251. The total number is 9,411. This is somewhat not surprising, as we would expect that for a firm with more than 251 employees to remain profitable it has to have an annual turnover of 50 mil. and/or the value of the firm's total assets must be

more than 43 mil. All the firms from this sample are included in the final sample. These are Large firms.

Our firm group classification concludes that the firm sector sample consists 770,118 firms. These firms have known values in terms of their employees, total assets and turnover.

1. Micro firms

Group 1, which includes firms that have no more than 10 employees and less than 2 mil. in total assets or turnover, is the only group that represents the Micro firms. The total number of this group is 595,316.

2. *SMEs*

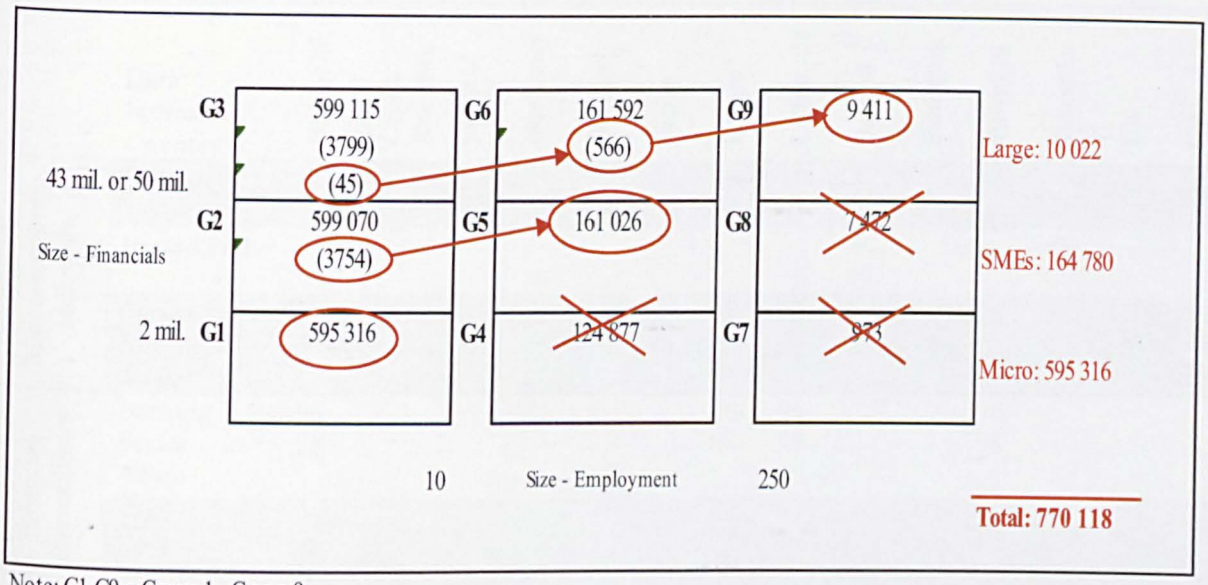
There are two groups of SMEs. Firstly, there is a subgroup between groups 1 and 2. Firms in this sub-group have no more than 10 employees but have a minimum of 2 mil. in their total assets and turnover, and a maximum of 43 mil. in total assets or 50 mil. in turnover. The total number of this type of firms is 3, 754. Secondly, there is group 5, which represents the 'true' SMEs. There are 161,026 of these. Therefore, a total sum of 164,780 is the sum of all SMEs in our sample.

3. Large

There are three groups of large firms. Firstly, it a subgroup between groups 2 and 3. A small number of firms (45) with less than 10 employees but with the value of total assets of more than 43 mil. and the value of operating revenue of more than 50 mil. Secondly, it is another subgroup, this time between groups 5 and 6. This group of 566 firms meets the requirements of SMEs in terms of the firm's size (11-50 employees) but at the same time those of large firms (Min 43 mil. ion total assets and Min 50 mil. in Turnover). Lastly, it is the big group of large firms (9,411). The total number of large firms comes up to 10,022 firms.

As table 4.2 shows the total number of Micro firms (595,316) SMEs (164,780) and Large firms (10,022) adds up to the total number of firms in the CEECs (770,118).

Figure 4.2.: Firm Size Specification: Total Number of Firms



Note: G1-G9 = Group 1 - Group 9

Source: Author's Own

4.5.2.2. Handling of the Missing Data

The problem of missing data occurs in cross-national research in Economics, Sociology and Political Science because governments and/or other institutions responsible choose not to, or in some instances fail to, report statistical data for one or more years (Zarate et al., 2006). We find this to be the case in the instance of macro-economic, institutional but primarily managerial data. Therefore, we adopt a technique of trends (Dewberry, 2004), also called the data extrapolation technique (Armstrong, 2001), which enables us to create values for the whole sample of continuous data. The extrapolation method is reliable, objective and easily automated. It enables us to construct new data points outside the set of known data points.

The table shows that countries with the most missing managerial data (presented in the order from most to least missing time observations) are Bulgaria, Latvia, Lithuania, then Romania, followed by Estonia and Slovakia, and lastly Slovenia. Even our benchmarks demonstrate missing values for years 1996-2000 in some instances. This is an evidence of the 'young age' of the secondary managerial data sources. However, creating trends is a method commonly used by researchers and statisticians when dealing with missing continuous data (Dewberry, 2004) and therefore does not negatively affect the robustness of our methodological approach to the missing values problem.

Table 4.3.: The Exhibit of Missing Data

	Data Indicators/ Country	Bulgaria	Czech Republic	Estonia	Germany	Hungary	Japan	Latvia	Lithuania	Poland	Romania	Slovakia	Slovenia	UK	US
Macro-economic Indicators	Balance of Trade							96-01	96-01			96-98			
	Inward FDI									96-99					
	Gower. Budget Sur/Def	96-00						96-00	96-00	96-99			96-99		
Financial Intermediaries	Banking Sector Assets	96-98						96-98	96-98			96-98			
	Stock Market Capital.	96-98						96-98	96-98			96-98			
Managerial Indicators	Worker Motivation	96-04		96-00				96-04	96-04		96-02	96-00	96-98		
	Finance Skills	96-04	96-98	96-00	96-98	96-98	96-98	96-04	96-04	96-98	96-02	96-00	96-98	96-98	96-98
	Foreign High-skilled people	96-04	96-01	96-01	96-01	96-01	96-01	96-04	96-04	96-01	96-02	96-01	96-01	96-01	96-01
	International Experience	96-04		96-00				96-04	96-04		96-02	96-00	96-98		
	Competent Senior Managers	96-04		96-00				96-04	96-04		96-02	96-00	96-98		
	Adaptability of Companies	96-04	96-00	96-00	96-00	96-00	96-00	96-04	96-04	96-00	96-02	96-00	96-00	96-00	96-00
	Credibility of Managers	96-04		96-00				96-04	96-04		96-02	96-00	96-98		
	Entrepre-neurship	96-04		96--00				96-04	96-04		96-02	96-00	96-98		
	Attitudes towards Globalisation	96-04	96-00	96-00	96-00	96-00	96-00	96-04	96-04	96-00	96-02	96-00	96-00	96-00	96-00
	National Culture	96-04		96-00				96-04	96-04		96-02	96-00	96-98		
	Flexibility and Adaptability	96-04	96	96-00	96	96	96	96-04	96-04	96	96-02	96-00	96-98	96	96
	Need for Economic and Social Reforms	96-04	96	96-00	96	96	96	96-04	96-04	96	96-02	96-00	96-98	96	96
	Corporate Values	96-04	96	96-00	96	96	96	96-04	96-04	96	96-02	96-00	96-98	96	96

Source: EIU (2010a); IMD(2010)

4.6. Methodology of Data Analysis

The compiled data is examined through the combination of three individual techniques: benchmarking/clustering, statistical regression and a qualitative comparative analysis. These are briefly introduced in the next sections and then thoroughly presented in Chapters 6, 7 and 8.

4.6.1. Variable based approaches

The variable-based notion is unique to the quantitative research (Saunders et al., 2000; Depka, 2006). The creation of variables is a fundamental part of any type of quantitative research. We have created several variables reflecting our conceptual framework. A detailed analysis of the creation, justification and measurement of variables is offered in Chapter 5.

4.6.1.1. Data Description: Benchmarking and Clustering

The design of our conceptual framework requires the collection of numerous data of economic, institutional and managerial nature for a twelve year period and for fourteen different countries. Such amount of data necessitates a structured way of presenting it. Therefore, we adopt a relatively new clustering method – the Co-Plot method (Raveh, 2000a), which is seen as an interesting alternative to Principal Component Analysis. It enables us to observe individual CEECs and benchmark them against our chosen benchmarks. Cluster analysis is used as a first step when the researcher is interested in the characteristics of the individual items in the data, rather than aiming to test causalities (Everitt and Hothorn, 2009). Our aim is to summarise the obtained data as simply, practically and effectively as possible, identify clusters of countries that perform similarly economically and institutionally compared to benchmarks representing the banking or the equity oriented financial systems. The clustering method, and the Co-Plot method in particular, enable us to do this. We provide a detailed analysis in chapter 6.

4.6.1.2. Regression Analysis: Investigation of Causality Effects

Once clusters are observed and their characteristics noted, the search for causalities is a natural second step in an empirical investigation (Everitt and Dunn, 2001). This enables the researcher to suggest direct effects between variables and test individual hypotheses. It

also offers more room for generalisation of the examined phenomena (Jankowicz, 1991). Stemming from our conceptual framework we perform simple regressions for the demand dependent variables. This is explained in detail in Chapter 7.

4.6.2. A Narrative Qualitative Approach

4.6.2.1. Comparative Analysis: A Soft Interpretation of Findings

The third and final part of our empirical investigation is the execution of a qualitative comparative analysis on three countries under observation. This provides room for a 'soft interpretation' of our findings. The advocators of this approach (e.g. Eisenhardt, 1989) state that comparative analysis are the correct approach to studying social phenomena as the analysis is performed through a thorough analysis of an individual phenomenon. This method rests on the assumption that the phenomenon being studied is typical of a certain type so that generalisations may be made that will be applicable to other phenomena of the same type (Gerring, 2004). We believe that a simple, well constructed comparative analysis will enable us to strengthen the validity of our results gained through the previous two stages of our variable-based empirical analysis.

4.7. Research Legitimacy

Reliability, validity, causality, generalisation and replicability are collectively referred to as the determinants of research legitimacy (Bryman and Bell, 2003). They are also denoted as traditional criteria for judging quantitative research (Blaxter et al., 2001). These are discussed directly relating to our research in the next subsections.

4.7.1. Reliability

Reliability relates to the issues of consistency of measures observable through the factors of stability, internal reliability and inter-observer consistency (Saunders et al., 2000). The assessment of whether a measure is stable over time, whether indicators used are consistent and whether there is consistency in recording observations should be questioned by any researcher. Blaxter et al. (2001) point out that this is also the case when a researcher is using secondary data sources. To ensure the reliability of our research we make comparisons between data and claims from a number of reputable sources. We find that

our chosen sources provide information consistent with information from other reputable sources. Furthermore, we are re-assured of the legitimate choice of our sources as we find that the data we use is based on a repeatable system of collection processes.

4.7.2. Validity

Validity is concerned with the integrity of conclusions generated from a scientific piece of work (Bryman and Bell, 2003). It relates to the issue of whether selected indicators that are devised to measure a concept really measure that concept, whether a conclusion that features a causal relationship between two or more variables is robust (*causality*), and whether results of a study can be generalised beyond the specific research context (*generalisation*) (Saunders et al., 2000). Remenyi et al. (1998) argue that research validity can be increased by using a combination of data sources as this compensates for any potential weaknesses in the researcher's use of one data collection method. Blaxter et al. (2001) also recommend the use of multiple data sources when discussing ways of safeguarding research validity. The various data sources we use for this study have been discussed in section 4.4.1.

4.7.2.1. External Validity: Generalisation

Generalisation, also by some authors denoted as generalisability, denotes the extent to which the findings of a research can be applied outside the environment within which it was undertaken (Jankowicz, 1991). It is the ultimate aim of every quantitative researcher to produce a study the results of which can be generalised. However, as Saunders et al. (2000) point out, the concern of delivering generalisability is common amongst quantitative researchers using cross-sectional and longitudinal research designs. Bryman and Bell (2003) observe that in the case of cross-sectional research design scientists usually give greater attention to internal validity issues.

4.7.2.2. Internal Validity: Causality

Causality refers to the fact that it is not satisfactory for quantitative researchers to simply describe how things are but rather explain why things are the way they are (Blaxter et al., 2001). Thus researchers are often interested in a phenomenon like motivation which not only refers to something that can be described but rather something that can be explained

(Bryman and Bell, 2003). In other words this means examining the causes. In the research objectives of our study we have identified the search for motivations that 'make or break' equity culture development in individual CEECs central to our research effort.

4.7.3. Replicability

The quantitative views of reliability and validity are directly connected with the assumption of replicability (Jankowicz, 1991). Saunders et al. (2000) state that replicability is regarded as an important quality of quantitative research as it is crucial that the methods taken in generating a set of findings are made explicit so that it is possible to replicate a piece of scientific work. In our project we describe exact processes by which the data is generated and the analysis produced. We believe that without complete information about where data come from and how it is made measurable we cannot truly understand the set of our empirical results. Therefore, we produce a 'replication data set' which includes all information necessary should anyone want to replicate our empirical results.

4.8. Research Limitations

Researchers should be aware of their study's research limitations (Blaxter et al., 2001). Any research design (whether qualitative or quantitative or the combination of both) has its limitations and it is crucial that scientists recognise these limitations and seek possible routes of mitigating them (Easterby-Smith et al., 1991). The limitations of the mixed methodology research approach and the three methodological approaches to data analysis that we adopt in this thesis: benchmarking/clustering, regression and comparative analysis, are explained next.

Critics of the quantitative approach state that it facilitates only a collection of a much narrower and sometimes even superficial dataset (Bell, 1987), that the development of standard questions necessary for the research may lead to structural bias and incorrect representation (Ragin, 1987), that results are limited due to the numerical way of description rather than more informative narrative (Punch, 1998), and that the reliance on instruments and procedures applied in the quantitative research hinders the connection between research and everyday life (Bryman and Bell, 2003). Furthermore, Depka (2006) warns that the quantitative approach requires large samples and is appropriate for macro-level rather than micro-level research (Saunders et al., 2000).

As stated earlier in this chapter the large sample of data that we gather for this research together with the added time element of a continuous research period are just two of the basic indicators of the appropriateness of the quantitative approach applications. To prevent overreliance on the statistical /numerical way of data description we start with a data description analysis. Although it is variable-based, the technique applied – the Co-Plot method – enables us to describe the data in a more narrative way. The benchmarking attribute of this method also helps us to bring the data to a more meaningful level and thus provides the essential link between pure research and life examples. On the other hand, this method alone does not support the generalisation and causality requirements that we have earlier identified as typical for a quantitative type of analysis. Therefore, as a next step, we perform a regression analysis which produces a general pattern of variable relationships. Finally, to be able to interpret the results from the regression analysis we perform a comparative analysis, which not only serves as a soft interpretation tool but also captures the social element of the interpretation of observed results. The application of this method means that we adopt a mixed methodology approach which enables us to mitigate most of the limitations of a quantitative approach when it is performed on its own.

4.9. Conclusion

The methodology chapter sought to examine theoretical and conceptual factors affecting the research design of our dissertation. Firstly, we debated the methodological philosophies followed by a discussion of approaches to sampling and data collection. Then we explained the data handling. Finally, we outlined the methodology of data analysis, we discussed issues related to the legitimacy of our research and considered the limitations and benefits of each analytical tool.

Chapter 5: Data Characteristics – An Empirical Examination

5.1. Introduction

In the previous methodology chapter we proposed that an application of a mixed methodology method is most congruent with our type of research. We thus employ a combination of quantitative and qualitative approaches to provide answers to our research questions. However, we establish that the quantitative approach *dominates* and is indeed our *main* methodological approach whereas the qualitative approach *supplements* the main method and thus *sensitizes* results gained from the quantitative analysis. In a quantitative study the sample is converted into variables so that phenomena can be studied with the help of statistical tools (Blaxter et al., 2001).

With a purpose to create a sample that is complete and reflects the complexity of the conceptual framework we collate macro-economic, institutional, managerial and corporate data. In this chapter, our aim is to define our choice of variables, justify their applicability and explain how they are measured. Furthermore, we empirically examine their fit between each other. This enables us to understand how our sample 'behaves' before we proceed to a more detailed discussion of our panel data followed by a statistical analysis.

5.2. Variable Definitions and Measurements

5.2.1. Sample Description

The details of our sample – the choice of countries and selected time period were all explained in Chapter 4. However, in this section we briefly explain the transformation of our data representing this sample into variables so that they can be statistically measured. Firstly, Variable 1 represents each of the used fourteen countries: ten CEECs and four benchmarks (Germany, Japan, UK and USA). The order of countries is arranged alphabetically. Secondly, Variable 2 denotes the years under observation: thirteen years in the 1996-2008 period. We provide an overview of these variables in Table 5.1.

In our study we observe multiple entities (countries) at multiple time periods (years). This implies that we study cross-sectional time-series (continuous) data. Econometrics literature (e.g. Wooldridge, 2002) denotes such data type the *panel data*. In our case, panel data allows us to control for variables that are not easily measured like cultural factors and

variables that change over time but not across individual countries (i.e. national policies). Therefore, it can be said, panel data accounts for individual heterogeneity of our sample. Moreover, panel data enables us to include variables at different level of analysis (i.e. firms, countries) and thus develop multilevel modelling.

Table 5.1.: Sample Characteristics: Country & Year

Variable No.	Variable	Variable Code	Variable Type	Scale/Range	Source
1	Country	country_	Categorical Nominal	1=Bulgaria 2=Czech Republic 3=Estonia 4=Germany 5=Hungary 6=Japan 7=Latvia 8=Lithuania 9=Poland 10=Romania 11=Slovakia 12=Slovenia 13=UK 14=USA	General
2	Year	year	Interval/Ratio	1996-2008	General

Source: Author's Own + European Commission (2005)

5.2.2. National Competitiveness – The Macro-Economic Indicators

When assessing the national competitiveness levels of individual countries in our sample we involve three groups of macro-economic variables. Firstly, variables 3-11 denote general macro-economic indicators commonly used to determine an economy's stability, performance and growth potential: an indicator of an economy's economic power (GDP per head), a measurement of a process by which a nation's wealth increases over time (Real GDP growth per head), a measure of an economy's long-term technological change (Total factor productivity growth), a measurement of a nation's currency's purchasing power relative to other currencies (Real effective exchange rate /CPI based/), a measure representing a direct link between productivity and the cost of labour used in generating output (Unit labour costs), a rate that is charged for the use of a lender's money (Lending interest rate), a measure of foreign investments flowing into the local economy (Inward foreign direct investment/GDP), a measure of an economy's 'health' – the balance between an economy's import and export (Balance of trade/GDP), and a measure of a nation's

economic growth (Government budget surplus-deficit/GDP). Sound macro-economic performance is an essential pre-requisite for the development of an advanced financial system (Boot and Thakor, 1997; Hermes and Lensink, 2000a). We maintain it is also necessary for the development of an equity culture.

Secondly, we include variables 12-14: the proportion of agriculture (Agriculture/GDP), services (Services/GDP) and industry (Industry/GDP) sectors. These variables provide an important indication on the structure of individual economies. Developed economies have a developed industry and services sectors with the agriculture sector playing a minor role as a contributor to a nation's economic wealth. While countries with bank-based systems tend to have bigger industry sectors (Baumol, 1990; Abiad and Mody, 2005), those with equity-based systems typically demonstrate a strong presence of their services sectors (Bekaert et al., 2001).

Thirdly, variables 15-18 offer a deeper insight into the status of macro-economic conditions specifically in the transition economies. The EBRD transition indicators are a valuable source of information on the competitive performance of the CEECs. To enrich the 'picture' of the national competitiveness levels of individual CEECs we look in particular at four transition indicators: Overall infrastructure reform, Price liberalisation, Trade and Forex system, and Competition policy.

Whereas the first two groups of variables under observation are continuous ratio variables expressed as proportional indicators, the last group of transition indicators is a categorical ordinal variable. The transition indicators score reflects EBRD's evaluation on the country-specific transitional progress. Individual scores indicate the following: A score lower than 1.5 – a country has undergone only a few reforms, a score between 1.5<2.5 – a country has improved its position moderately, a score between 2.5<3.5 – a country has demonstrated some significant actions, a score between 3.5<4.5 – a country has experienced a substantial improvement, a score higher than 4.5 – a country has reached the levels of advanced economies. We provide an overview of the above discussed variables in Table 5.2.

Table 5.2.: Macro-economic Indicators Reflecting the Level of National Competitiveness

Variable No.	Variable	Variable Code	Variable Type	Scale/Range	Source
3	GDP per head ($ at PPP) USD	lggdp_per_	Continuous Ratio	-	EIU database
4	Real GDP growth per head (% pa)	real_gdp	Continuous Ratio	-	EIU database
5	Total factor productivity growth (%)	total_fa	Continuous Ratio	-	EIU database
6	Real effective exchange rate (CPI-based) X	real_eff	Continuous Ratio	-	EIU database
7	Unit labour costs (% change pa)	unit_lab	Continuous Ratio	-	EIU database
8	Lending interest rate (%)	lending_	Continuous Ratio	-	EIU database
9	Inward foreign direct investment/GDP (%)	inward_f	Continuous Ratio	-	EIU database
10	Balance of trade (% of GDP)	balance_	Continuous Ratio	-	EIU database
11	Government budget surplus/deficit (% of GDP)	governml	Continuous Ratio	-	EIU database
12	Agriculture/GDP (%)	agricult	Continuous Ratio	-	EIU database
13	Services/GDP (%)	services	Continuous Ratio	-	EIU database
14	Industry/GDP (%)	industry	Continuous Ratio	-	EIU database
15	Overall infrastructure reform	overall_	Categorical Ordinal	<1.5=few reforms 1.5<2.5= moderate improvement 2.5<3.5= significant actions 3.5<4.5= substantial improvement >4.5= levels of advanced economies	EBRD transition indicators report
16	Price liberalisation	price_li	Categorical Ordinal	<1.5=few reforms 1.5<2.5= moderate improvement 2.5<3.5= significant actions 3.5<4.5= substantial improvement >4.5= levels of advanced economies	EBRD transition indicators report
17	Trade & Forex system	trade__	Categorical Ordinal	<1.5=few reforms 1.5<2.5= moderate improvement 2.5<3.5= significant actions 3.5<4.5= substantial improvement >4.5= levels of advanced economies	EBRD transition indicators report
18	Competition Policy	competit	Categorical Ordinal	<1.5=few reforms 1.5<2.5= moderate improvement 2.5<3.5= significant actions 3.5<4.5= substantial improvement >4.5= levels of advanced economies	EBRD transition indicators report

Source: EBRD (2008), EIU (2010)

5.2.3. Institutional Quality

Institutional environment facilitates the development of a specific financial system. While equity-based systems require institutional systems which guarantee the protection of individual shareholders, efficient bureaucracy and low corruption leading towards high transparency, the bank-based models necessitate the presence of institutional reforms and policies geared towards the co-ordination within the banking sector and its regulation. To assess the institutional quality in our sample countries we examine two sets of data. Firstly, we employ the political risk components of ICRG institutional data, which enables us to assess the institutional quality of both the CEECs and the benchmarks. Secondly, to consider the institutional progress specifically in the CEECs, we include a smaller set of EBRD transition indicators in our analysis. Both groups of variables are of categorical ordinal type.

Variables 19-21 (Government stability, Socioeconomic conditions and Investment profile) can have a minimum number of points assigned 0 and maximum 12 whereas variables 22-25 can have a minimum number of points assigned 0 but maximum 6. In every case the lower the risk point total, the higher the risk, and the higher the risk point total, the lower the risk. Variable 19 – Government stability – is a measure of a government's unity, legislative strength and popular support. Variable 20 – Socioeconomic conditions – evaluates socio-economic pressures at work (in particular unemployment, consumer confidence, poverty) that could constrain government action or lead to social dissatisfaction. Variable 21 – Investment profile – assesses factors affecting the risk to investment that are not covered by other political social or financial risk components (in particular contract viability, profits repatriation, payment delays). Variable 22 – Corruption – measures a political threat to foreign investment as it can distort economic and financial environments, reduce the efficiency of a government and businesses and introduce instability into the organisational processes. Variable 23 – Law and order – comprises two subcomponents ('law' and 'order'). While the former assesses the strength and impartiality of a country's legal system, the latter is concerned with the application of law and effective sanctioning. Variable 24 – Democratic accountability – reflects on the type of governance employed in each country. ICRG identifies five different types of governance (alternating democracy, dominated democracy, de facto one-party state, the jury one-party state, autarchy) and assigns the highest number of risk points to alternating democracies (low

risk) and the lowest number of risk points to autarchies (high risk). Variable 25 – Bureaucracy quality – is another indicator of a country's institutional strength. Countries demonstrating high points on this variable run bureaucracy systems independent from political pressures with established effective bureaucratic mechanisms.

For the assessment of the institutional quality in the transition economies we apply transition indicators as follows: Variables 26-30 – Large scale privatisation (an indicator on the process of transferring state ownership of large firms into private hands), Small scale privatisation (an indicator on the process of transferring state ownership of small firms into private hands), Banking reform and interest rate liberalisation (an indicator on the progress of banking laws and regulation), Securities markets and non-bank financial institutions (an indicator on the progress of securities laws and regulation), governance an enterprise restructuring (an indicator on the progress of corporate governance). Individual scores indicate the following: A score lower than 1.5 – a country has undergone only a few reforms (achieved limited progress), a score between 1.5<2.5 – a country has improved its position moderately (achieved moderate progress), a score between 2.5<3.5 – a country has demonstrated some significant actions (achieved significant progress), a score between 3.5<4.5 – a country has experienced a substantial improvement (achieved substantial progress), a score higher than 4.5 – a country has reached the levels of advanced economies (achieved a progress comparable to advanced economies). We provide an overview of the above discussed institutional variables in Table 5.3.

Table 5.3.a.: Indicators Reflecting Institutional Quality

Variable No.	Variable	Variable Code	Variable Type	Scale/Range	Source
19	Government Stability	governme	Categorical Ordinal	0 (low quality) - 12 (high quality)	ICRG database
20	Socioeconomic Conditions	socioeco	Categorical Ordinal	0 (low quality) - 12 (high quality)	ICRG database
21	Investment Profile	investml	Categorical Ordinal	0 (low quality) - 12 (high quality)	ICRG database
22	Corruption	corrupti	Categorical Ordinal	0 (low quality) - 6 (high quality)	ICRG database
23	Law and Order	law_and_	Categorical Ordinal	0 (low quality) - 6 (high quality)	ICRG database
24	Democratic Accountability	democrat	Categorical Ordinal	0 (low quality) - 6 (high quality)	ICRG database
25	Bureaucracy Quality	bureaucr	Categorical Ordinal	0 (low quality) - 6 (high quality)	ICRG database

Source: ICRG (2001)

Table 5.3.b.: Indicators Reflecting Institutional Quality

Variable No.	Variable	Variable Code	Variable Type	Scale/Range	Source
26	Large scale privatisation	large_sc	Categorical Ordinal	<1.5=few reforms 1.5<2.5= moderate improvement 2.5<3.5= significant actions 3.5<4.5= substantial improvement >4.5= levels of advanced economies	EBRD transition indicators report
27	Small scale privatisation	small_sc	Categorical Ordinal	<1.5=few reforms 1.5<2.5= moderate improvement 2.5<3.5= significant actions 3.5<4.5= substantial improvement >4.5= levels of advanced economies	EBRD transition indicators report
28	Banking reform & interest rate liberalisation	banking1	Categorical Ordinal	<1.5=few reforms 1.5<2.5= moderate improvement 2.5<3.5= significant actions 3.5<4.5= substantial improvement >4.5= levels of advanced economies	EBRD transition indicators report
29	Securities markets & non-bank financial institutions	securiti	Categorical Ordinal	<1.5=few reforms 1.5<2.5= moderate improvement 2.5<3.5= significant actions 3.5<4.5= substantial improvement >4.5= levels of advanced economies	EBRD transition indicators report
30	Governance and Enterprise restructuring	entrepri	Categorical Ordinal	<1.5=few reforms 1.5<2.5= moderate improvement 2.5<3.5= significant actions 3.5<4.5= substantial improvement >4.5= levels of advanced economies	EBRD transition indicators report

Source, EBRD (2008)

5.2.4. Financial Institutions: Bank-based vs. Equity-oriented Financial Intermediaries

To evaluate the financial intermediary side of the institutional environment we consider two groups of indicators. Firstly, the number of bank- and equity oriented financial intermediaries that have developed in each country under its specific macro-economic conditions and institutional quality, and secondly, the quality of the banking sector and the liquidity of the equity-oriented capital markets sector.

Bureau van Dijk's Orbis database is an invaluable source of company data, including data on financial institutions. It offers a Standard Industrial Classification developed by the US Census Bureau (US SIC) which enables us to view industry segments specific to our research. Firstly, to examine the quantitative presence of banking institutions we select five indicators. With the aim of data normalising we convert each indicator into a proportional

percentage using the total number of financial intermediaries as a denominator. Variable 31 – national commercial banks, Variable 32 – state commercial banks, Variable 33 – commercial banks (other), Variable 34 – branches and agencies of foreign banks, Variable 35 – foreign trade and international banking institutions. Secondly, to identify the number of other than bank loan credit providing institutions we add two other indicators: Variable 36 – short-term business credit institutions, Variable 37 – miscellaneous business credit institutions. Finally, to assess the presence of equity-related financial intermediaries we look at the following indicators: Variable 38 – securities dealers and brokers and flotation companies, Variable 39 – security and commodity exchanges, Variable 40 – firms offering investment advice, Variable 41 – other services allied with the exchange of securities or commodities.

Using another source of data, the IMD database, we further assess the quality of the banking sector and the equity-relates capital markets sector. Firstly, we examine the banking sector's 'depth' as we study Variable 42 – banking sector assets – in all our sample countries. Secondly, we look at the liquidity of the main stock exchanges in our sample countries. Variable 43 – stock market capitalisation enables us to observe this. In addition, we examine liquidity of the average listed firm. We thus create Variable 44 expressed as a ratio of stock market capitalisation over the number of listed domestic companies. We provide an overview of the above discussed variables in Table 5.4.

Table 5.4.a: Indicators Reflecting the Presence of Financial Intermediaries

Variable No.	Variable	Variable Code	Variable Type	Scale/Range	Source
31	National commercial banks/TNFI*	rationationalbanks	Continuous Ratio	-	Orbis Database + Author's Calculations
32	State commercial banks/TNFI	ratiostatecombanks	Continuous Ratio	-	Orbis Database + Author's Calculations
33	Commercial banks (other)/TNFI	ratiocombanks	Continuous Ratio	-	Orbis Database + Author's Calculations
34	Branches and agencies of foreign banks/TNFI	ratiobranchforeignbanks	Continuous Ratio	-	Orbis Database + Author's Calculations
35	Foreign trade and international banking institutions/TNFI	ratiofttrade	Continuous Ratio	-	Orbis Database + Author's Calculations
36	Short term business credit institutions/TNFI	ratioshortterminstit	Continuous Ratio	-	Orbis Database + Author's Calculations

Table 5.4.b: Indicators Reflecting the Presence of Financial Intermediaries

Variable No.	Variable	Variable Code	Variable Type	Scale/Range	Source
37	Miscellaneous business credit institutions/TNFI	ratiomisc	Continuous Ratio	-	Orbis Database + Author's Calculations
38	Security brokers and dealers and flotation companies/TNFI	ratiosecurity	Continuous Ratio	-	Orbis Database + Author's Calculations
39	Security and commodity exchanges/TNFI	ratiosecurity2	Continuous Ratio	-	Orbis Database + Author's Calculations
40	Investment advice/TNFI	ratioinvetsment	Continuous Ratio	-	Orbis Database + Author's Calculations
41	Other services allied with the exchange of securities or commodities/TNFI	ratiootherserv	Continuous Ratio	-	Orbis Database + Author's Calculations
42	Banking Sector Assets (% of GDP)	banking_	Continuous Ratio	-	IMD database
43	Stock market capitalisation (% of GDP)	stock_ml	Continuous Ratio	-	IMD database
44	Stock market capitalisation/Listed Domestic Companies	averagemktcap	Continuous Ratio	-	IMD database + Author's Calculations

* TNFI - Total Number of Financial Intermediaries

Source: Author's Calculations + Orbis (2008), IMD (2010)

5.2.5. The Firm Sector: Categories of Firm Size and Ownership

One of the advantages of using panel data is that it enables us to employ a multidimensional perspective. We are not only able to observe country level data but also include an examination at the firm level. In our study we utilise both levels of analysis as we maintain that firms are the main driver of an equity culture development at a national level. As we previously explained in Chapter 3, our conceptual framework, we intend to investigate if factors affecting an equity culture development vary for different firm sizes. We use the firm size definition recognised by the European Commission in 2005 and categorize the firm sector into large firms (Large), small and medium enterprises (SMEs), micro firms (Micro) and in addition the total number of firms – a combination of all three size groups - (Total). In our summary table (Table: 5.5.) a categorical nominal variable representing the firm size category has number 45.

Furthermore, to be able to identify what proportion of the firm sector 'demands' equity financing in each of our sample countries we create variables 46-50 in the following way: Firstly, we examine the proportion of public firms over the total number of firms (Variable 46). Secondly, we offer the proportion of private firms over the total number of firms (Variable 47). Then, we investigate what the number of private firms that have more than five shareholders over the total number of firms is (Variable 48). We argue that for the purpose of our research objective – an investigation of a potential for equity culture development in transition countries – assessing public firms exclusively would not produce reliable results. This is because it is not only public firms (through public equity) but also private firms with a higher number of shareholders (through private equity) that contribute to the creation of an equity culture. In addition, we generate two intensity ratios: Variable 49 – Public firms over private firms and Variable 50 – Private firms with five or more shareholders over private firms. We provide an overview of these variables in Table 5.5.

Table 5.5.: Ownership Patterns of the Firm Sector

Variable No.	Variable	Variable Code	Variable Type	Scale/Range	Source
45	Firm size	firm_sil	Categorical Nominal	1=Large 2=Micro 3=SME 4=Total	European Commission (2007)
46	Public Firms/TNF*	ratiopublic	Continuous Ratio	See Chapter 4, section 4.4.2.1.	Orbis Database + Author's Calculations
47	Private Firms/TNF	ratioprivate	Continuous Ratio	See Chapter 4, section 4.4.2.1.	Orbis Database + Author's Calculations
48	Private Firms with 5 or more shareholders/ TNF	ratioprivate5	Continuous Ratio	See Chapter 4, section 4.4.2.1.	Orbis Database + Author's Calculations
49	Public Firms/Private Firms	publictoprivate	Continuous Ratio	See Chapter 4, section 4.4.2.1.	Orbis Database + Author's Calculations
50	Private Firms with 5 or more shareholders/ Private Firms	private5toprivate	Continuous Ratio	See Chapter 4, section 4.4.2.1.	Orbis Database + Author's Calculations

TNF - Total Number of Firms

Source: Author's Calculations + Orbis (2008)

5.2.6. Intra-firm Conditions: Managerial Capabilities

To assess the internal environment of a firm and its readiness to foster demand for equity financing we include thirteen managerial variables obtained from the IMD's World Competitiveness Yearbook. The primary source of data on management practices is an executive survey designed by IMD. Data is provided through an index of 0 to10, where the bottom level denotes negative perception and the upper level indicates the most favourable perception. The type of variables can be therefore identified as categorical ordinal.

Drawing on our conceptual framework we select managerial variables which correspond to the nature of our intra-firm argument that less risk-averse managerial behaviour is positively associated with the development of an equity culture. We select thirteen variables which we deem relevant for the examination of the intra-firm environment: Firstly, Variable 51 – worker motivation – is an indicator related to business efficiency implying the presence of a culture of continuous improvement. Secondly, Variable 52 – finance skills – relates to an ability of managers to guide the firm through to more advanced financing choices. Then, Variable 53 – foreign high-skilled people – evaluates the attractiveness of firms to foreign high-skilled candidates, Variable 54 – international experience – assesses the presence of international experience of senior management and Variable 55 – competent senior mangers - looks at the involvement of senior management when strategic decision-making takes place. Next, Variable 56 – adaptability of companies – reflects the adaptability of managers when faced with new challenges and Variable 57 – credibility of managers – mirrors the credibility of managers within a society. We also include Variable 58 – entrepreneurship – which assesses if managers demonstrate entrepreneurial attitudes and qualities and Variable 59 – attitudes towards globalisation – which evaluates global awareness of managers. Finally, Variable 60 – national culture – reflects levels of openness towards foreign ideas, Variable 61 – flexibility and adaptability – reflects the flexibility of managers when they are faced with new strategic challenges, Variable 62 – need for economic and social reforms – is an indicator of a firm's ability to understand the necessity for economic and/or social change, and Variable 63 – corporate values – evaluates to what extent the corporate values of a firm take into account the values of individual employees. We provide an overview of the above discussed variables in Table 5.6.

Table 5.6.: Intra-firm Conditions: Managerial Capabilities

Variable No.	Variable	Variable Code	Variable Type	Scale/Range	Source
51	Worker Motivation	worker_m	Categorical Ordinal	index 0 to 10	IMD database
52	Finance Skills	finance_	Categorical Ordinal	index 0 to 10	IMD database
53	Foreign high-skilled people	foreign1	Categorical Ordinal	index 0 to 10	IMD database
54	International Experience	internat	Categorical Ordinal	index 0 to 10	IMD database
55	Competent Senior Managers	competen	Categorical Ordinal	index 0 to 10	IMD database
56	Adaptability of companies	adaptabi	Categorical Ordinal	index 0 to 10	IMD database
57	Credibility of Managers	credibil	Categorical Ordinal	index 0 to 10	IMD database
58	Entrepreneurship	entrepre	Categorical Ordinal	index 0 to 10	IMD database
59	Attitudes towards globalisation	attitude	Categorical Ordinal	index 0 to 10	IMD database
60	National Culture	national	Categorical Ordinal	index 0 to 10	IMD database
61	Flexibility and Adaptability	flexibil	Categorical Ordinal	index 0 to 10	IMD database
62	Need for Economic and Social Reforms	need_for	Categorical Ordinal	index 0 to 10	IMD database
63	Corporate values	corporat	Categorical Ordinal	index 0 to 10	IMD database

Source: IMD (2010)

5.3. Data Assessment: Analysis of Variance (ANOVA)

To evaluate our data set and determine if there are statistically significant differences in the experimental conditions we perform a statistical test of the analysis of variance (ANOVA). For an ANOVA, datasets are organised by factors and levels (Cryer and Miller, 1994). Factors are the different independent variables in a study and they are tested at given levels. In our study we run a 'one-way' ANOVA as only one factor changes (country) at a given level (variables 3-63). This parametric procedure helps us to determine the statistical significance of the difference between the means of ten groups (10 CEECs) and consequently four groups (Germany, Japan, UK, USA) of values. The rejection or

acceptance of the statistical significance of the differences in ten (and four) means is based on a standard that no more than 5% of the difference is due to chance or sampling error and that the same difference would occur 95% of the time should the test be repeated. Although some researchers use a more rigorous standard of 1% which means that the same difference would occur 99% should the test be repeated, we adopt the 5% acceptance level. Due to the fact that the analysis of variance is among the most popular of statistical procedures, it can be used with a number of different methodologies and is especially critical to a study using two or more groups. We use this method to empirically evaluate our data.

We perform the ANOVA for each variable in our five sets of variable groups mirroring the previous section 5.1. This approach enables us to present the results in a reader-friendly organised way and at the same time follow a structure we introduced in Chapter 3, our conceptual framework. It is important to mention that we use the ANOVA solely to determine whether there is a statistically significant difference between individual groups in our sample and thus suggest the fit among individual countries. Due to the large number of observed variables we provide data interpretation in Chapter 6, in which we not only compare individual values for our sample countries in more detail but also benchmark and create clusters using the Co-Plot method. Furthermore, the Co-Plot method enables us to include the time element into our examination.

5.3.1. One-way ANOVA of Macro-economic Indicators

Firstly, one-way analysis of variance is used to determine whether individual macro-economic indicators differed among ten CEECs and our four chosen benchmarks. The analysis shows (Table 5.7) significant differences among the CEECs in terms of all general macro-economic indicators at 1% level except from variable 7 (Unit labour costs) which is statistically not significant. The F statistics of this variable is smaller than 1 which suggests that there is less difference between groups (CEECs) than there is within individual groups. The fact that this variable is significant at only 10% level and demonstrates lower than 1 F statistics leads to a conclusion that there is small variance of data representing this particular variable. In the case of the groups of benchmarks variable 2 (Real GDP growth per head) is also significant at only 10% level.

Furthermore, we observe from the ANOVA table that Czech Republic, Estonia and Slovakia have on average the highest GDP growth, and they also score high on the Real GDP growth per head indicator. Other macro-economic indicators also confirm that these economies have very competitive macro-economic conditions. On the other hand, Bulgaria and Romania have on average worse performing economies as they display low GDP growth, low total factor productivity growth, yet for their type of economies relatively high labour costs and high lending interest rate. Other CEECs display somewhat average values. A more detailed discussion of the data with the added time element follows in Chapter 6.

Table 5.7.: ANOVA Table: Macro-economic Indicators (I)

Macro-economic Indicators (I)		GDP per head (1000$ at PPP) USD	Real GDP growth per head (% pa)	Total factor productivity growth (%)	Real effective exchange rate (CPI-based) X	Unit labour costs (% change pa)	Lending interest rate (%)	Inward foreign direct investment (% of GDP)	Balance of trade (% of GDP)	Government budget surplus/deficit (% of GDP)
Variable (v) No.		v3	v4	v5	v6	v7	v8	v9	v10	v11
No.	Country	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
1	Bulgaria	8.92	4.14	0.74	133.19	10.86	47.63	8.38	-19.76	1.30
2	Czech Rep	9.75	6.30	2.06	124.88	7.21	7.98	6.25	-2.69	-3.68
3	Estonia	9.41	7.27	4.45	117.06	14.97	8.53	8.77	-22.16	0.34
5	Hungary	9.53	3.86	2.31	119.63	7.62	13.69	5.75	-4.44	-5.99
7	Latvia	9.18	7.37	4.36	113.57	9.45	11.50	5.15	-14.67	-1.44
8	Lithuania	9.27	3.95	3.48	122.58	10.03	9.78	4.10	-15.69	-1.47
9	Poland	9.35	4.71	2.41	116.55	7.98	14.68	3.91	-7.76	-4.30
10	Romania	8.95	3.80	1.40	131.74	10.35	38.21	4.65	-10.98	-3.14
11	Slovakia	9.49	4.99	1.98	127.43	7.31	12.06	5.79	-5.28	-3.29
12	Slovenia	9.86	4.40	1.15	100.19	6.89	12.48	2.29	-3.99	-1.26
	Total	9.37	5.08	2.63	120.68	9.27	17.65	5.79	-10.74	-2.29
	F statistics	13.65	2.68	3.50	3.25	0.46	2.65	5.89	63.68	19.36
	Prob > F	0.0000	0.0071	0.0007	0.0014	0.8974	0.0077	0.0000	0.0000	0.0000
4	Germany	10.24	1.45	0.68	100.59	1.44	5.43	2.03	5.24	-2.00
6	Japan	10.23	1.00	0.08	105.28	-3.12	1.52	0.17	1.87	-6.28
13	UK	10.25	2.30	0.35	96.16	4.07	4.96	4.48	-4.72	-1.64
14	USA	10.53	1.95	1.25	102.54	1.51	6.90	1.61	-4.85	-1.90
	Total	10.31	1.67	0.59	101.14	0.98	4.70	2.07	-0.61	-2.96
	F statistics	12.47	2.68	2.99	3.03	2.29	107.79	11.53	149.81	11.48
	Prob > F	0.0000	0.0574	0.0399	0.0382	0.0900	0.0000	0.0000	0.0000	0.0000

Source: EIU (2010b) and Author's ANOVA performed in STATA

Secondly, we perform the ANOVA on indicators representing the composition of individual economies in terms of their proportions of the services, agriculture and industry sectors. In the case of the CEECs we also examine the variance of transition data obtained from the EBRD database (Table 5.8). The analysis of variance indicates that there are significant differences among the ten CEECs and our four benchmarks. We observe significance at 1% level with the F statistics being larger than 1 in all cases.

While the developed economies of Germany, Japan, UK and USA show only a small percentage of economic contribution achieved by their agriculture industry this is not the case in many of the CEECs, particularly Bulgaria and Romania. Estonia is the CEE

representative with the most productive services sector, and Czech Republic displays on average the most productive industry sector. In terms of the EBRD transition indicators, Bulgaria, Romania and Slovenia underperform their CEE counterparts.

Table 5.8.: ANOVA Table: Macro-economic Indicators (II)

Macro-economic Indicators (II)		Agriculture/ GDP (%)	Services/GDP (%)	Industry/GDP (%)	Overall infrastructure reform	Price liberalisation	Trade & Forex system	Competition Policy
Variable (v) No.		v12	v13	v14	v15	v16	v17	v18
No.	Country	Mean	Mean	Mean	Mean	Mean	Mean	Mean
1	Bulgaria	11.94	57.00	31.06	2.69	4.10	4.25	2.43
2	Czech Rep	3.48	58.10	38.42	4.02	4.33	2.85	3.56
3	Estonia	4.28	66.85	28.88	3.13	4.33	4.23	2.92
5	Hungary	6.66	61.53	31.81	3.54	4.33	4.33	3.13
7	Latvia	4.38	63.49	31.13	2.82	4.33	4.25	2.56
8	Lithuania	6.39	62.35	31.26	2.62	4.18	4.20	2.84
9	Poland	4.90	62.89	32.21	3.18	4.28	4.33	2.97
10	Romania	13.73	49.18	37.09	2.82	4.28	4.20	2.31
11	Slovakia	4.44	59.17	36.39	2.46	4.18	4.30	3.13
12	Slovenia	3.11	61.76	35.13	2.77	3.95	4.33	2.51
	Total	6.33	61.03	32.64	3.01	4.23	4.13	2.84
	F statistics	26.15	37.84	20.51	17.02	6.71	98.21	14.67
	Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	Germany	1.12	68.91	29.97	N/A	N/A	N/A	N/A
6	Japan	1.68	70.88	27.44	N/A	N/A	N/A	N/A
13	UK	1.40	71.48	27.12	N/A	N/A	N/A	N/A
14	USA	1.11	76.38	22.51	N/A	N/A	N/A	N/A
	Total	1.33	71.91	26.76	N/A	N/A	N/A	N/A
	F statistics	25.28	43.27	49.16	N/A	N/A	N/A	N/A
	Prob > F	0.0000	0.0000	0.0000	N/A	N/A	N/A	N/A

Source: IMD (2010), EBRD (2008a) and Author's ANOVA performed in STATA

5.3.2. One-way ANOVA of Institutional Quality Indicators

We apply the ANOVA to assess the variance of institutional data for the CEECs and our four benchmarks. We find that in the case of the CEECs all groups have the probability level at 1% level which suggests that data differs substantially among individual countries. The same significance level is present in most observations for the benchmarks' group with three exceptions: variable 19 (government stability), variable 21 (investment profile) and variable 25 (bureaucracy quality). In the case of variable 19 also the F statistics is below 1 which suggests that there is less difference between groups than there is within individual groups.

The ANOVA table displays very similar levels for the developed countries, with the UK and USA performing slightly better on the indicators of law and order, corruption and bureaucracy quality. The CEECs' group institutional quality indicators are on average lower than those of our four benchmarks with Bulgaria and Romania displaying the lowest values in most cases. Interestingly, Estonia scores on average lower on the variable of Investment Profile than most other CEECs, however its value is close to that of the UK.

Table 5.9.: ANOVA Table: Indicators of Institutional Quality (I)

Institutional Quality Indicators (I)		Government Stability	Socioeconomic Conditions	Investment Profile	Corruption	Law and Order	Democratic Accountability	Bureaucracy Quality
Variable (v) No.		v19	v20	v21	v22	v23	v24	v25
No.	Country	Mean	Mean	Mean	Mean	Mean	Mean	Mean
1	Bulgaria	8.36	3.81	10.29	2.71	3.85	5.24	2.00
2	Czech Rep	7.37	7.18	10.18	3.21	5.15	5.29	3.00
3	Estonia	8.92	6.87	9.93	3.54	4.00	5.08	2.61
5	Hungary	8.33	6.19	10.49	3.78	4.64	5.88	3.59
7	Latvia	8.76	5.85	10.01	2.28	4.92	5.00	2.38
8	Lithuania	7.91	6.51	10.01	2.51	4.00	5.30	2.38
9	Poland	7.89	5.38	10.46	3.08	4.41	5.88	3.05
10	Romania	8.34	4.40	8.33	2.67	4.24	5.78	1.00
11	Slovakia	8.07	6.86	9.97	3.00	4.38	5.56	3.06
12	Slovenia	9.63	6.51	10.47	3.28	4.67	5.05	3.00
	Total	8.36	5.96	10.01	3.01	4.43	5.41	2.61
	F statistics	3.49	15.27	2.65	5.28	10.20	10.00	200.43
	Prob > F	0.0007	0.0000	0.0077	0.0000	0.0000	0.0000	0.0000
4	Germany	8.94	9.98	11.14	4.21	5.36	5.30	3.97
6	Japan	8.89	8.88	10.82	3.33	5.31	5.10	3.97
13	UK	9.12	7.51	9.67	4.59	5.83	5.84	4.23
14	USA	9.39	8.17	10.53	4.67	5.48	5.82	4.00
	Total	9.09	8.63	10.54	4.20	5.50	5.52	3.99
	F statistics	0.32	12.60	1.64	17.02	3.57	15.74	1.6
	Prob > F	0.8099	0.0000	0.1918	0.0000	0.0207	0.0000	0.202

Source: ICRG (2001) and Author's ANOVA performed in STATA

The ANOVA of the transition institutional indicators indicates that there are significant differences among the CEECs as all indicators are significant at 1% level (Table 5.10.). Also the F statistics is higher than 1 in all cases which suggest that there is more difference between groups than there is within groups.

While Czech Republic, Estonia, Hungary and Slovakia's average values for the institutional data are the highest indicating a substantial improvement of the institutional indicators, Bulgaria, Romania and Slovenia are the worst performing countries in the group. In particular, Czech Republic, Estonia and Hungary perform the best on the

indicator of large scale privatisation, and Estonia, Poland, Slovakia and Slovenia show the highest values on the indicator of small scale privatisation. In terms of the banking reform we observe that Czech Republic, Estonia and Latvia demonstrate a proactive reform approach. On the other hand, the indicator of the presence of securities markets and non-bank financial institutions shows on average higher values in the case of Estonia, Hungary, Poland and Slovakia.

Table 5.10.: ANOVA Table: Indicators of Institutional Quality (II)

Institutional Quality Indicators (II)		Large scale privatisation	Small scale privatisation	Banking reform & interest rate liberalisation	Securities markets & non-bank financial institutions	Governance and Enterprise restructuring
Variable (v) No.		v26	v27	v28	v29	v30
No.	Country	Mean	Mean	Mean	Mean	Mean
1	Bulgaria	3.51	3.57	3.16	2.28	2.46
2	Czech Rep	4.00	3.23	3.92	2.85	4.30
3	Estonia	4.00	4.33	3.69	3.18	3.31
5	Hungary	4.00	4.30	3.18	3.64	3.38
7	Latvia	3.33	4.23	3.41	2.67	2.85
8	Lithuania	3.49	4.25	3.26	2.59	2.87
9	Poland	3.30	4.33	3.38	3.54	3.31
10	Romania	3.23	3.57	2.85	2.23	2.18
11	Slovakia	3.92	4.33	3.23	3.05	3.23
12	Slovenia	2.97	4.33	3.25	2.70	2.85
	Total	3.58	4.05	3.33	2.87	3.07
	F statistics	19.34	88.04	9.28	28.41	75.40
	Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000

Source: EBRD (2008a) and Author's ANOVA performed in STATA

5.3.3. One-way ANOVA of Indicators Representing Financial Intermediaries

The data assessment of financial intermediaries in the CEECs' group reveals that there are zero values for the majority of countries in the case of variable 36 (short-term business credit institutions) and all countries in the case of variables 32 (State commercial banks), 33 (Commercial banks (other)) and 34 (Branches and agencies of foreign banks) in the CEECs' group. In the case of the latter, due to zero values in the case of all countries, no significance level is provided. Therefore, these four variables cannot be included in the forthcoming statistical analysis. In the case of the remaining variables the statistical significance of the differences in the means indicates that there is a statistically significant difference between the means in all ten CEECs and all four benchmarks. All indicators are

significant at 1% level. Higher F statistics in the case of the benchmarks implies significant variations within a smaller number of observations.

Table 5.11.: ANOVA Table: Quantitative Presence of Financial Intermediaries (I and II)

Financial Intermediaries (I)		National commercial banks/TNFI*	State commercial banks/TNFI	Commercial banks (other)/TNFI	Branches and agencies of foreign banks/TNFI	Foreign trade and international banking institutions/TNFI	Short term business credit institutions/TNFI	Miscellaneous business credit institutions/TNFI
Variable (v) No.		v31	v32	v33	v34	v35	v36	v37
No.	Country	Mean	Mean	Mean	Mean	Mean	Mean	Mean
1	Bulgaria	5.20%	0.00%	0.00%	0.00%	16.56%	0.11%	9.70%
2	Czech Rep	27.60%	0.00%	0.00%	0.00%	25.71%	0.00%	36.19%
3	Estonia	12.30%	0.00%	0.00%	0.00%	8.62%	0.00%	35.43%
5	Hungary	1.56%	0.00%	0.00%	0.00%	29.68%	0.00%	6.81%
7	Latvia	6.90%	0.00%	0.00%	0.00%	6.49%	0.00%	38.22%
8	Lithuania	9.14%	0.00%	0.00%	0.00%	20.37%	0.00%	17.73%
9	Poland	5.75%	0.00%	0.00%	0.00%	18.36%	1.12%	61.92%
10	Romania	2.27%	0.00%	0.00%	0.00%	15.05%	0.00%	10.63%
11	Slovakia	19.84%	0.00%	0.00%	0.00%	15.45%	0.00%	18.09%
12	Slovenia	5.15%	0.00%	0.00%	0.00%	24.66%	0.00%	14.57%
	Total	9.67%	0.00%	0.00%	0.00%	18.09%	0.12%	24.86%
	F statistics	47.78	N/A	N/A	N/A	128.68	106.98	330.85
	Prob > F	0.0000	N/A	N/A	N/A	0.0000	0.0000	0.0000
4	Germany	6.45%	5.30%	5.30%	0.09%	24.50%	0.53%	4.11%
6	Japan	2.64%	0.00%	0.02%	1.78%	0.00%	0.00%	66.25%
13	UK	5.88%	5.35%	5.36%	0.39%	4.73%	3.20%	60.09%
14	USA	27.77%	20.91%	4.14%	0.04%	0.15%	2.04%	3.91%
	Total	10.68%	7.89%	3.71%	0.57%	7.35%	1.44%	33.59%
	F statistics	563.32	686.87	109.54	138.92	3429.22	529.56	1215.27
	Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Financial Intermediaries (II)		Security brokers and dealers and flotation companies /TNFI	Security and commodity exchanges/TNFI	Investment advice/TNFI	Other services allied with the exchange of securities or commodities/TNFI	Banking Sector Assets (% of GDP)	Stock market capitalisation (% of GDP)	Stock market capitalisation/Listed Domestic Companies
Variable (v) No.		v38	v39	v40	v41	v42	v43	v44
No.	Country	Mean	Mean	Mean	Mean	Mean	Mean	Mean
1	Bulgaria	11.42%	0.51%	16.56%	16.56%	5968.79%	1360.46%	1.16%
2	Czech Rep	12.27%	1.23%	15.05%	15.05%	8157.74%	2503.56%	63.04%
3	Estonia	28.91%	0.60%	9.60%	4.22%	5592.17%	2755.81%	45.47%
5	Hungary	4.02%	0.14%	28.90%	4.02%	7216.38%	722.00%	19.47%
7	Latvia	7.91%	1.14%	6.49%	28.91%	3614.83%	1564.46%	8.49%
8	Lithuania	9.84%	1.50%	20.70%	9.84%	3773.22%	1519.69%	8.76%
9	Poland	3.64%	2.01%	19.47%	3.64%	5381.58%	2113.53%	14.11%
10	Romania	9.34%	0.80%	25.65%	9.34%	2838.06%	1025.33%	1.03%
11	Slovakia	13.87%	1.87%	15.45%	15.45%	6860.67%	2559.87%	21.43%
12	Slovenia	5.51%	0.76%	24.68%	24.68%	7367.24%	2194.02%	10.37%
	Total	10.80%	1.06%	18.25%	13.17%	5677.07%	1831.88%	18.98%
	F statistics	113.02	19.91	107.46	102.47	32.95	5.03	0.18
	Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.18
4	Germany	1.84%	7.81%	24.54%	20.31%	16860.21%	4788.75%	162.88%
6	Japan	11.21%	1.04%	11.86%	5.80%	21162.21%	7653.50%	115.91%
13	UK	23.10%	10.26%	14.90%	25.47%	14742.42%	14322.63%	171.49%
14	USA	25.84%	14.48%	20.48%	32.00%	7121.42%	13434.90%	238.97%
	Total	15.15%	8.19%	17.94%	20.89%	14971.56%	10049.94%	172.31%
	F statistics	4332.01	10.49	199.56	2697.69	39.00	49.60	13.14
	Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* TNFI - Total Number of Financial Intermediaries

Source: Orbis (2008) and Author's ANOVA performed in STATA

From the ANOVA table we observe that Czech Republic, Estonia and Slovakia have on average the highest proportion of national commercial banks and that Czech Republic together with Hungary and Slovenia show the highest presence of foreign trade and international banking institutions. While Poland performs on average the strongest on the indicator of short-term and miscellaneous business credit institutions, Estonia and Slovakia show high values on the indicator of security brokers and dealers. Interestingly, Bulgaria and Romania demonstrate a high number of companies offering investment advice. Furthermore, from the point of view of the quality of the banking sector and equity-based sector, we observe that Czech Republic, Hungary and Slovenia have the most 'deep' banking sectors while Estonia, Slovakia and Czech Republic have the highest stock market capitalisation in their geographic area.

5.3.4. One-way ANOVA of Firm Sector Ownership Indicators

To assess the variance of firm level data in terms of firm ownership for three different size groups (Large firms, SMEs, Micro firms) and the total number of firms we apply the ANOVA (Table 5.12). We find that in the case of the CEECs and the four benchmarks all groups have the probability level at 1% level which suggests that data differs substantially among individual countries. Similarly to the previous case of the analysis of variance for indicators representing the financial intermediaries group we observe high F statistics in the case of the benchmarks. This again indicates that there is small number of observations with big variations.

Table 5.12.: ANOVA Table: Firm Ownership Patterns of Different Firm Size Groups

Firm Ownership		Public Firms/TNF*				Private Firms/TNF				Private Firms with 5 or more shareholders/TNF			
Variable (v) No.		v46				v47				v48			
Firm Size		Total	Large	SMEs	Micro	Total	Large	SMEs	Micro	Total	Large	SMEs	Micro
No.	Country	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
1	Bulgaria	4.97%	16.59%	4.20%	0.41%	95.03%	83.41%	95.80%	98.19%	6.25%	10.75%	6.75%	3.49%
2	Czech Rep	0.17%	4.96%	0.07%	0.01%	99.83%	95.04%	99.93%	99.99%	0.22%	0.20%	0.31%	0.15%
3	Estonia	0.07%	8.70%	0.02%	0.00%	99.93%	91.30%	99.98%	100.00%	3.28%	0.00%	5.43%	2.65%
5	Hungary	0.16%	2.89%	0.09%	0.02%	99.84%	97.11%	99.91%	99.98%	6.68%	3.96%	9.35%	4.44%
7	Latvia	0.33%	5.59%	0.27%	0.05%	99.67%	94.41%	99.73%	99.95%	3.46%	7.36%	5.09%	0.87%
8	Lithuania	0.41%	8.82%	0.21%	0.02%	99.59%	91.18%	99.79%	99.98%	5.11%	11.53%	6.62%	2.11%
9	Poland	0.66%	3.72%	0.29%	0.06%	99.34%	96.28%	99.19%	99.94%	1.96%	0.97%	2.11%	1.97%
10	Romania	0.48%	6.96%	1.56%	0.11%	99.52%	83.04%	98.44%	99.89%	1.37%	8.25%	3.82%	0.81%
11	Slovakia	2.22%	12.30%	2.56%	0.51%	97.78%	87.70%	97.44%	99.49%	0.22%	0.39%	0.27%	0.12%
12	Slovenia	1.89%	19.18%	1.50%	0.10%	98.11%	80.82%	98.50%	99.90%	4.12%	10.68%	6.72%	0.70%
	Total	1.14%	9.97%	1.08%	0.27%	98.86%	90.03%	98.87%	99.73%	3.27%	5.41%	4.65%	1.73%
	F statistics	148.57	167.89	178.76	128.41	148.70	167.89	50.92	128.41	206.66	1265.20	371.82	196.21
	Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	Germany	2.17%	6.68%	2.06%	1.87%	97.83%	93.32%	97.94%	98.13%	7.50%	10.23%	6.09%	4.64%
6	Japan	1.45%	8.36%	0.45%	0.00%	101.42%	91.64%	100.11%	100.00%	0.00%	0.02%	0.00%	0.00%
13	UK	6.71%	27.59%	4.54%	6.50%	96.29%	72.41%	98.46%	99.51%	5.89%	8.23%	7.03%	3.07%
14	USA	10.14%	30.16%	5.06%	8.02%	89.86%	69.84%	94.94%	91.98%	7.83%	10.02%	7.21%	3.81%
	Total	5.17%	18.20%	2.98%	2.59%	96.35%	81.80%	97.86%	97.41%	5.29%	7.18%	3.33%	2.94%
	F statistics	3259.08	2583.92	789.65	640.94	11.35	9583.91	54.94	640.94	2762.86	679.88	1403.60	3552.15
	Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Firm Ownership		Public Firms/Private Firms				Private Firms with 5 or more shareholders/Private Firms			
Variable (v) No.		v49				v50			
Firm Size		Total	Large	SMEs	Micro	Total	Large	SMEs	Micro
No.	Country	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
1	Bulgaria	5.24%	19.99%	4.39%	1.84%	6.58%	12.90%	7.06%	3.55%
2	Czech Rep	0.17%	5.23%	0.07%	0.01%	0.22%	0.21%	0.31%	0.15%
3	Estonia	0.07%	9.54%	0.02%	0.00%	3.28%	0.00%	5.43%	2.65%
5	Hungary	0.16%	2.98%	0.09%	0.02%	6.69%	4.08%	9.35%	4.44%
7	Latvia	0.33%	5.93%	0.27%	0.05%	3.47%	7.80%	5.10%	0.87%
8	Lithuania	0.42%	9.68%	0.21%	0.02%	5.14%	12.65%	6.64%	2.11%
9	Poland	0.66%	3.87%	0.30%	0.06%	1.97%	1.00%	2.13%	1.97%
10	Romania	0.48%	20.61%	1.59%	0.11%	1.37%	9.97%	3.88%	0.81%
11	Slovakia	2.28%	14.12%	2.63%	0.51%	0.23%	0.45%	0.28%	0.12%
12	Slovenia	1.92%	23.74%	1.52%	0.10%	4.20%	13.22%	6.83%	0.70%
	Total	1.17%	11.57%	1.11%	0.27%	3.32%	6.23%	4.70%	1.74%
	F statistics	137.29	135.23	167.44	124.31	203.86	1016.74	358.18	195.70
	Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	Germany	2.21%	7.16%	2.10%	1.90%	7.79%	10.97%	6.22%	4.73%
6	Japan	1.44%	9.50%	0.45%	0.00%	0.00%	0.03%	0.00%	0.00%
13	UK	7.19%	38.10%	1.56%	0.49%	6.02%	8.98%	7.14%	3.08%
14	USA	11.28%	43.20%	5.33%	8.73%	8.02%	0.32%	91.85%	3.86%
	Total	5.50%	24.50%	2.36%	2.78%	5.51%	5.07%	52.40%	2.87%
	F statistics	2835.29	2752.81	761.49	555.88	2642.08	654.28	1337.07	3383.51
	Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

*TNF - Total Number of Firms

Source: Orbis (2008)and Author's ANOVA performed in STATA

We further observe that public proportions of the total number of firms vary from those of Large firms, possibly skewed by the effect of Micro firms and SMEs and their ownership patterns. We also find that in the case of public firms the means of Germany (our representative of the bank-based model) are quite similar to those of the UK (our representative of the equity-based model). We believe that this is not necessarily due to Germany adopting an equity culture similar to the UK but to the less challenging listing requirements of German equity-related financial intermediaries. Indeed, evidence from the private sector confirms that in the case of the German firms 'going public' is a considerably less demanding process in terms of time, bureaucracy and contractual obligations. Furthermore, we find that in the case of the USA, the proportions of public firms and firms with more than five shareholders are not substantially different from the other benchmarks, despite the fact that the USA is a recognised 'prototype' of the equity culture model. We believe that this reality is due to the fact that US firms are not required to disclose the obligatory amount of corporate information typically enforced by the European regulatory systems.

In the case of the CEECs, the countries with the largest Means of public firms are Bulgaria and Slovenia, followed by Slovakia, the Czech Republic, Poland and Estonia. We argue that although in some cases this demand has resulted from the equity-supportive macro-economic, institutional and managerial conditions, the same is not true for other

countries. For example, in Bulgaria and to certain extent in Romania, the higher than expected proportion of public firms (based on the state of the quality of the overall equity-supportive environment) can be explained with the transition policies these countries' transition governments have adopted. This is analysed in more detail in Chapters 6 and 8.

5.3.5. One-way ANOVA of Managerial Indicators

Lastly, we apply the ANOVA to assess the managerial conditions of the corporate sector in the CEECs and our four benchmarks. We find that in the case of the CEECs and the four benchmarks all groups have the probability level at 1% level which suggests that data differs substantially among individual countries. The significance level below 1 which suggests that there is less difference between groups than there is within individual groups.

Table 5.13.: ANOVA Table: Managerial Conditions

Managerial Conditions		Worker Motivation	Finance Skills	Foreign high-skilled people	International Experience	Competent Senior Managers	Adaptability of companies	Credibility of Managers	Entrepreneurship	Attitudes towards globalisation	National Culture	Flexibility and Adaptability	Need for Economic and Social Reforms	Corporate values
Variable (v) No.		v51	v52	v53	v54	v55	v56	v57	v58	v59	v60	v61	v62	v63
No.	Country	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
1	Bulgaria	4.26	4.34	3.74	4.21	3.80	4.73	4.95	4.91	5.65	6.94	5.97	5.47	5.01
2	Czech Rep	5.21	6.48	5.69	3.96	4.28	5.86	4.51	5.32	5.80	6.37	5.92	4.98	5.86
3	Estonia	5.75	5.42	5.57	4.74	4.55	6.14	5.75	6.88	6.32	7.36	6.92	6.54	5.67
5	Hungary	5.36	5.19	4.33	5.16	5.75	5.49	5.20	6.04	4.80	7.07	6.28	4.36	5.12
7	Latvia	4.50	7.59	3.78	4.23	4.83	4.70	4.73	5.70	5.19	5.94	5.89	5.30	5.07
8	Lithuania	4.36	4.43	3.15	3.95	5.21	4.78	4.58	6.14	5.35	5.83	5.67	5.12	5.38
9	Poland	4.07	5.38	4.33	3.90	4.30	4.41	4.45	5.64	4.33	6.25	4.85	4.41	4.09
10	Romania	4.12	4.12	3.53	4.49	3.30	4.27	4.80	5.43	5.19	6.81	5.49	4.38	4.45
11	Slovakia	5.25	5.83	4.58	4.83	4.76	5.90	5.18	6.08	5.91	6.99	6.37	5.36	5.37
12	Slovenia	4.78	5.23	3.22	4.67	4.34	5.36	5.06	6.57	4.52	5.45	5.13	4.21	5.08
	Total	4.77	5.40	4.19	4.41	4.51	5.16	4.92	5.87	5.31	6.50	5.85	5.01	5.11
	F statistics	24.53	129.35	86.77	11.98	20.44	44.32	9.92	23.61	67.02	18.12	22.11	60.16	106.47
	Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	Germany	6.35	7.17	4.59	5.93	6.62	5.68	5.95	5.35	5.53	6.53	4.78	5.03	6.44
6	Japan	7.05	5.38	4.35	4.04	4.87	5.39	6.29	4.07	6.54	5.61	5.31	6.43	6.95
13	UK	5.82	6.67	7.41	5.21	5.90	5.67	5.71	5.29	5.84	6.94	6.14	5.47	5.88
14	USA	6.55	7.82	8.70	5.18	7.41	7.33	6.44	7.06	6.56	7.28	7.63	5.88	6.48
	Total	6.44	6.76	6.26	5.09	6.20	6.02	6.10	5.44	6.12	6.59	5.97	5.70	6.44
	F statistics	16.56	79.13	904.92	57.35	41.44	40.33	6.40	66.86	38.02	44.81	149.01	166.01	124.95
	Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: IMD (2010)and Author's ANOVA performed in STATA

From the ANOVA table we observe that on average Czech Republic, Estonia and Slovakia score the best on the indicators of worker motivation, the presence of foreign high-skilled people and adaptability of companies with Estonia and Slovakia being the best two performers out of the three. These levels are comparable with those of the four benchmarks and predominantly of those of the UK and the USA. Czech Republic also scores high on the indicators of finance skills of managers and corporate values of companies which is comparable to the values of Germany and Japan.

5.4. Conclusion

In this chapter we have introduced our data in the form of measurable variables. We also examined the fit of individual variables within their individual groups. This enabled us to understand how our data 'behaves' and whether it is suitable for our type of analysis. In the next chapter (Chapter 6) we benchmark and cluster our data using the Co-Plot method. This is then followed by a regression analysis which determines the relationship between our set of variables (Chapter 7).

Chapter 6: Clustering and Benchmarking: CEECs versus Benchmarks

6.1. Introduction

This chapter benchmarks and clusters the CEECs with regard to their financial system development. We focus on the examination of conditions that contribute to the development of an equity culture as well as conducting an assessment of the corporate sector and its demand for equity financing. We apply a relatively new clustering method – the Co-Plot method (Gilady et al., 1996; Talby et al., 1999; Raveh, 2000a), which enables us to observe on a two-dimensional scale the positioning of individual CEECs in relation to each other and four benchmarks – Germany, Japan, UK and USA. By relating to the conceptual framework, the Co-Plot method facilitates the differentiation between those CEECs that show the signs of an equity culture development and those which do not. Furthermore, this method enables us to observe the *process* of development of various external and internal factors affecting equity culture in the CEECs as we examine several years in the 1996 – 2008 period.

The chapter is organised as follows: Firstly, we introduce the Co-Plot method in terms of its place as a statistical analysis method and its methodology. Secondly, we continue by justifying the choice of specific years from the 1996-2008 period in our investigation. Next we perform the Co-Plot analysis by applying it to five different groups of data: We start by assessing the competitive position of our sample countries followed by an evaluation of their institutional environments. Then we further examine the institutional environments in terms of the type of financial intermediaries present in each sample country. We conclude the analysis by reviewing the corporate sector in terms of ownership patterns and dominant managerial capabilities this sector displays. Finally, the chapter concludes with a summary of our findings.

6.2. The Co-Plot Method – 'The New Kid on the Block'

Classical multivariate statistical analysis methods, such as the Principal Component Analysis (PCA), Correspondence Analysis (CA) or Multidimensional Scaling (MDS), analyse variables and observations separately (Talby et al., 1999). However, a relatively new clustering method designed for multi-criteria analysis– the Co-Plot method has the

advantage of analysing variables and observations simultaneously and in a simple manner (Segev et al., 1990; Raveh, 2000b; Raveh, 2000a). The method produces three results. Firstly, it shows similarity among data (i.e. decision-making units – DMUs) by the composite of all criteria (i.e. variables) involved; secondly, it gives the structure of correlations among the variables; and thirdly, it provides mutual relationships between the data and the variables (Raveh, 2000a). The software used for the Co-Plot analysis is the 'Visual Co-Plot'.

A number of scholars (Talby et al., 1999; Paucar-Caceres and Thorpe, 2005; Adler and Raveh, 2008) have stressed the advantages of using the Co-Plot method over other statistical analysis approaches. Classical multivariate analysis methods, such as Principal Component Analysis (PCA) or cluster analysis usually examine variables over a single unit of observations (an observation in our case is a country), or a variable (in our case country characteristics) over a multiple number of units of observations. However Co-Plot examines multiple variables and units of observations simultaneously. Co-Plot makes it possible to locate each unit of observation in a two-dimensional space with its location determined by all criteria (variables) simultaneously. Furthermore, the Co-Plot method technique is useful for visual inspection of data matrices as it offers a map, which is based on two graphs that are superimposed sequentially. In addition this visual representation enables cluster creation. These advantages of the Co-Plot method and its increasingly more popular application amongst researchers are the reasons behind our choice of the Co-Plot method as our chosen method.

Indeed, the Co-Plot method has been applied widely: in an exploratory study of national versus corporate cultural fit in mergers and acquisitions (Weber et al., 1996), in an analysis of the 1980-1990 computers (Gilady et al., 1996), in a car selection problem analysis (Raveh, 2000a), in a comparative study of the Greek banking system (Raveh, 2000b), and as an exploratory study for suggesting a methodology for presenting data envelopment analysis (DEA) graphically (Adler and Raveh, 2008). The application of the Co-Plot method for the analysis of the structure of the MBA programmes in the UK and the USA (Segev et al., 1990; Paucar-Caceres and Thorpe, 2005) has been recently criticised by Mar-Molinero and Mingers (2007). Their findings point out that the Co-Plot method is inappropriate for zero/one type (i.e. dichotomous) variables. Our study does not

contain such type of variable and therefore, we deem the Co-Plot method viable for our considerations.

The Co-Plot is a graphical display technique useful for visual inspection of data matrices such as $X_{n\times k}$. The data – the decision-making units (DMUs) are displayed as n points and the variables are shown as k arrows relative to the same axis and origin. Co-Plot records the observations in a manner that similar DMUs are positioned closely on the map. DMUs belonging to the same group (cluster) possess similar characteristics and behave similarly. The Co-Plot technique enables the simultaneous study of DMUs and variables by sequentially superimposing two graphs – one for points (i.e. DMUs) and the other one for arrows (i.e. variables) (Adler and Raveh, 2008). The further an observation is located along a particular arrow, the more efficient the DMU is with respect to that ratio. In addition, Co-Plot also identifies extreme outliers. Raveh (2000a) points out that these can be a sign of data measurement errors, lack of homogeneity amongst observations or they can be used to identify unnecessary variables.

6.3. The Co-Plot Methodology

Co-Plot has four stages: two preliminary treatments of the data matrix $X_{n\times k}$ – the standardisation of data and the measurement of distance between cases; and two subsequent stages – the production of a two-dimensional representation of the data and the drawing of the variables into the space of the observations. A brief methodological explanation follows[9].

a) The Standardisation of Data

In order for the variables to be treated equally, $X_{n\times k}$ is normalised into $Z_{n\times k}$. The elements of $Z_{n\times k}$ are deviations from column means $\bar{x}_{.j}$ divided by their standard deviations (S_j):

$$Z_{ij} = (x_{ij} - \bar{x}_{j}) / S_j$$

b) The Measurement of Distance between Cases

In this stage a measure of dissimilarity $D_{il} \geq 0$ between each pair of observations (rows of $Z_{n\times k}$) is chosen. A symmetrical $n \times n$ matrix (D_{il}) is produced from all the different pairs

[9]For a detailed Co-Plot methodology see Raveh (2000a), Raveh (2000b) and Adler and Raveh (2008).

of observations. The city-block distance (i.e. the sum of absolute deviations) is used as a measure of dissimilarity:

$$D_{il} = \sum_{j=1}^{k} | Z_{ij} - Z_{lj} |$$

c) The Creation of a Two-Dimensional Representation of the Data using the MDS Method

The matrix D_{il} is recorded using the Multi-Dimensional Scaling (MDS) method. The algorithm produced by this method plots the matrix D_{il} into Euclidean space in such a way that similar observations (i.e. observations with a small dissimilarity between them) are close to each other on the Co-Plot, and the dissimilar observations are distant from each other on the Co-Plot map.

The Co-Plot method uses Guttman's (1968) Smallest Space Analysis (SSA) out of the group of MDS methods. SSA uses the coefficient of alienation θ as a measure of goodness-of-fit[10]. The coefficient of alienation determines the quality of the two-dimensional Co-Plot map, in other words, it measures how well the model represents 'reality'. The smaller the coefficient, the better the output; and all values under 0.15 are deemed good (Raveh, 1986; Adler and Raveh, 2008).

d) The Presentation of Variables into the Space of Observations

In the last stage of the Co-Plot method, variables k are displayed on the Euclidean space obtained in stage 3. Talby et al. (1999) state that this is the most interesting part of Co-Plot. Here, each variable k is represented by an arrow j. The arrows emerge from the centre of gravity of the n points. The maximal correlation between the actual values of the variables and their projections on the arrow determine the direction of the arrow. The length of the arrows is undefined. Arrows associated with highly correlated variables will point to the same or similar direction. Furthermore, individual observations with a high value in a particular variable will be positioned around the space where the arrow points to, while observations with low value in that particular variable will be at the other side of the Co-Plot map.

Furthermore, in this stage, k individual goodness-of-fit measures are obtained for each of the k variables separately. These are the magnitudes of the k maximal correlations.

[10] A detailed statistical explanation of θ is provided in Raveh (1986).

The gained correlations suggest whether to keep or eliminate certain variables, as variables with low correlations do not fit into the graphical display, and therefore, have to be removed. Raveh (2000a) states that the higher the variable's correlation, the better the variable's arrow represents the direction and the order for the projections of the *n* points along the rotated axis. This also points to the high explanatory power of such variables if they are used together to form a cluster.

6.4. Applying the Co-Plot Method: The Justification of Year Selection

In order to present the evolution of clusters in a robust yet reader-friendly way for a continuous period of twelve years we pick only four years, i.e. 1996, 2000, 2004 and 2008. The justification for the selection of these specific years is the following: Firstly, year 1996 is the first year of our research period. Transition literature (Stiglitz, 1997; Brown, 1999; Lavigne, 1999) suggests that despite the fact that the political transition took place in the early 1990s, institutional transformation and system democratisation was in 1996 considered to be still in its early days. Secondly, year 2000, a mark of a transitional decade when CEECs were actively preparing to join the European Union (EU) by increasing the transparency of their economic policymaking and financial institutions and strengthen their financial systems overall (Nord, 2000). In the aftermath of the 1999 Helsinki European Council all CEECs were confirmed to join the EU in the future, and therefore they were making efforts to progress towards reforms. Djankov and Murrell (2002) also point out that 2000 was a year of increased trade activity as foreign direct investment (FDI) levels went up across the Central and Eastern European (hereafter CEE) region. Thirdly, year 2004 was the year of EU's enlargement eastwards. Eight CEECs joined the EU and two more were actively preparing to enter in the three coming years. Lastly, year 2008 is the last year of our research period. By 2008 all CEECs have become EU members and have accomplished all the major transition reforms as directed by the EU (Schwab and Porter, 2008). In this year, the Czech Republic – as the first CEEC – was taken off the list of transition countries and was awarded a status of a developed European economy. This is also the last year for which we have consistent data available.

6.5. Scope of Analysis

Firstly, we look at the national competitiveness levels of individual CEECs and the benchmarks by focusing on the macroeconomic indicators of development as our conceptual framework proposes that equity culture development requires the presence of a competitive economy characterised by a sound economic performance and an appropriate economy structure. Secondly, we examine the institutional environments of the CEECs and their benchmarks. The use of benchmarks plays a significant role in this analysis, as the institutional theory of Varieties of Capitalism enables us to distinguish between two institutional environments – the Anglo-Saxon model represented by the UK and the USA and the German- Japanese model represented by Germany and Japan. The rationale behind these first two steps in the empirical analysis is to determine whether our sample countries differ economically and institutionally.

Then, we explore the evolution along the equity culture path more specifically by examining the financial intermediaries sector and the composition of the firm sector in the CEECs and the benchmarks. The examination of the financial intermediaries sector provides information on whether equity related financial intermediaries are present to support equity culture development. On the other hand, the examination of the firm sector reveals whether its composition in terms of the firm size and firm ownership affects financing demands and thus equity culture development as such.

Lastly, we apply the Co-Plot methodology to the intra-firm analysis by examining the CEECs and the benchmarks in terms of their managerial resources and capabilities. The analysis investigates the extent to which individual firms have the ability, willingness and readiness to dynamically develop and adapt. It thus enables us to investigate the incentives and motives behind equity culture development. Furthermore, we expect this section to provide some context to the abnormalities observed in the previous stages of analysis (i.e. proportionally higher number of public firms in countries with uncompetitive economies and lacking institutional support).

6.5.1. The Competitive Environment

An assessment of the external environment in which firms and financial intermediaries operate determines the national competitiveness levels of their countries (Porter, 1990; Porter, 2008). In our conceptual framework we propose that an equity culture development

requires the presence of a competitive economy, characterised by sound macro-economic conditions and a favourable institutional environment. For the purpose of our research we focus in the national competitiveness assessment on the evaluation of the macro-economic environment in each country and the institutional environment is analysed from an institutional/political economy perspective defined in the theory of the Varieties of Capitalism as explained in our conceptual framework in Chapter 3. Therefore, in this section we firstly look at general macro-economic conditions to determine the national competitiveness levels based on economic performance. Secondly, we look at the structure of individual economies as another indicator of the level of a macro-economic development. The proportion and economic power of the agriculture, industry and services sectors gives an important indication of the direction individual economies are developing and thus the presence of a realistic potential for equity culture development. Lastly, we examine macroeconomic conditions in our sample of CEECs using transition indicators. This provides additional information for the assessment of the competitiveness levels of the CEECs.

6.5.1.1. The General Macro-Economic Conditions

A healthy economy is a necessary pre-requisite to any form of an advanced financial system development (Boot and Thakor, 1997; Hermes and Lensink, 2000a). However, the importance of a competitive national economy is even more crucial for an equity-based financial system (Bekaert et al., 2002). The argument that equity financing is seen as a more advanced form of external financing, usually formed after bank financing has been sufficiently developed (Li, 2007). This argument supports our view that a competitive economy is necessary for equity culture creation in a country. Equity providers look for investments and choose to operate in economies in which they have confidence their investments will materialise (Beck et al., 2006). Drawing back to our conceptual framework we maintain that firms opting for equity financing are more likely to incur high transaction costs in an economy that is less competitive, i.e. macro-economically underperforming.

a) Applying the Co-Plot Methodology

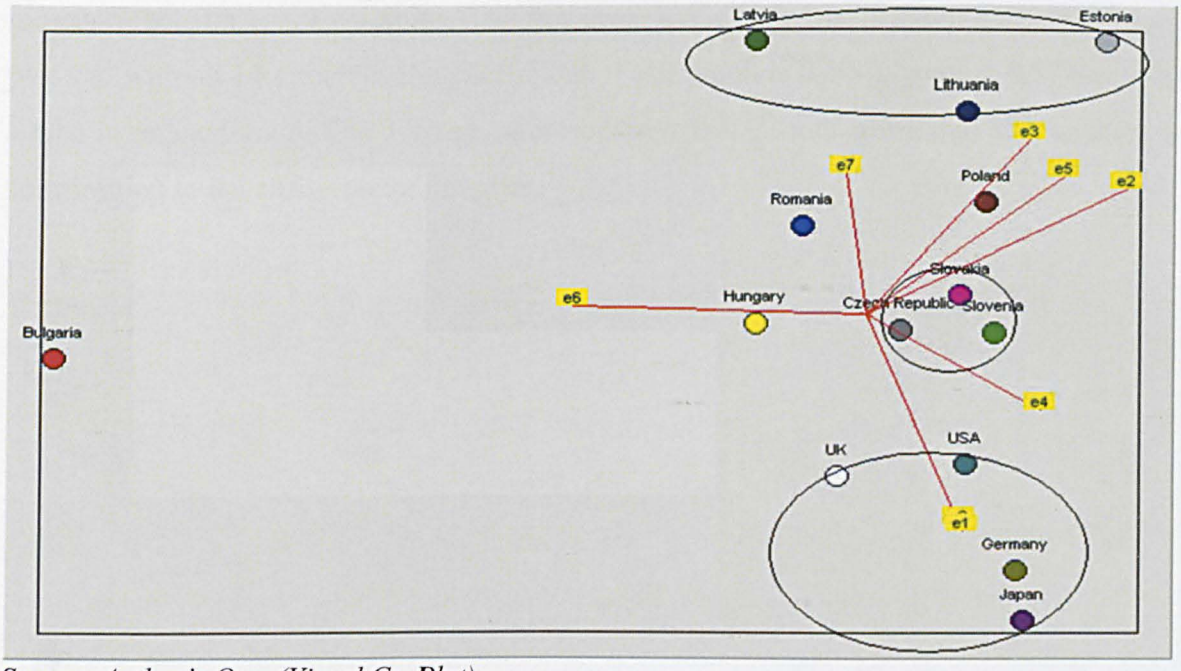
To be able to assess the competitiveness of the individual countries' economies we examine general macro-economic indicators traditionally employed by economists (e.g.

Porter, 1990): ***e1*** *– GDP per head (an indicator of an economy's economic power),* ***e2*** *– Real GDP growth per head (a measurement of a process by which a nation's wealth increases over time),* ***e3*** *– Total factor productivity growth (a measure of an economy's long-term technological change),* ***e4*** *– Real effective exchange rate (CPI based (a measurement of a nation's currency's purchasing power relative to other currencies),* ***e5*** *– Unit labour costs (a measure representing a direct link between productivity and the cost of labour used in generating output),* ***e6*** *– Lending interest rate (a rate that is charged for the use of a lender's money),* ***e7*** *– Inward foreign direct investment/GDP (a measure of foreign investments flowing into the local economy),* ***e8*** *– Balance of trade/GDP (a measure of an economy's 'health' – the balance between an economy's import and export),* ***e9*** *– Government budget surplus-deficit/GDP (a measure of a nation's economic growth).*

For year 1996 (Fig.1) we evaluate the total set of n = 14 countries with measurements on e = 9 variables. The raw data, a $X_{14 \times 9}$ matrix is submitted to Co-plot and with all 14 variables the coefficient of alienation is 0.13 indicating 0.87 reliability, which is satisfactory. The average of correlations is 0.91 indicating that all variables are contributing to the clustering of countries.

Variables *e1* (GDP per head) and *e8* (Balance of Trade) are highly correlated, on average 0.98. They are in the opposite direction of *e7* (Inward FDI/GDP) which indicates the presence of conflicting attributes. Variables *e2* (Real GDP growth per head), *e3* (Total factor productivity growth) and *e5* (Unit labour costs) are highly correlated – on average 0.96. Further, *e6* is positioned in-between *e7* and *e1/e8* and *e4* is lying in-between *e1/e8* and *e2, e3, and e5.* All variables provide information on the observations. Observation Bulgaria is separated from the other units because it has the lowest *e2, e3* and *e5* values and below average values *e1* and *e8.* With respect to the observations, therefore, Bulgaria could be considered an outlier and appears as such in Fig. 1. Cluster 1 (Germany, Japan, UK, USA) is high on arrows (i.e. variables) *e1* and *e.8.* Cluster 2 (Czech Republic, Slovakia, Slovenia) is average in most variables and therefore appears relatively close to the center of gravity. Cluster 3 (Estonia, Latvia, Lithuania) is high on variables *e2, e3, e5,* and *e7.* While Poland is a 'specialist' on *e3,* Hungary has the strongest value on *e6* and Romania is positioned in-between *e6* and *e7.* Further interpretation of the Co-Plot follows in section *b) Interpreting the Co-Plots*, p. 110.

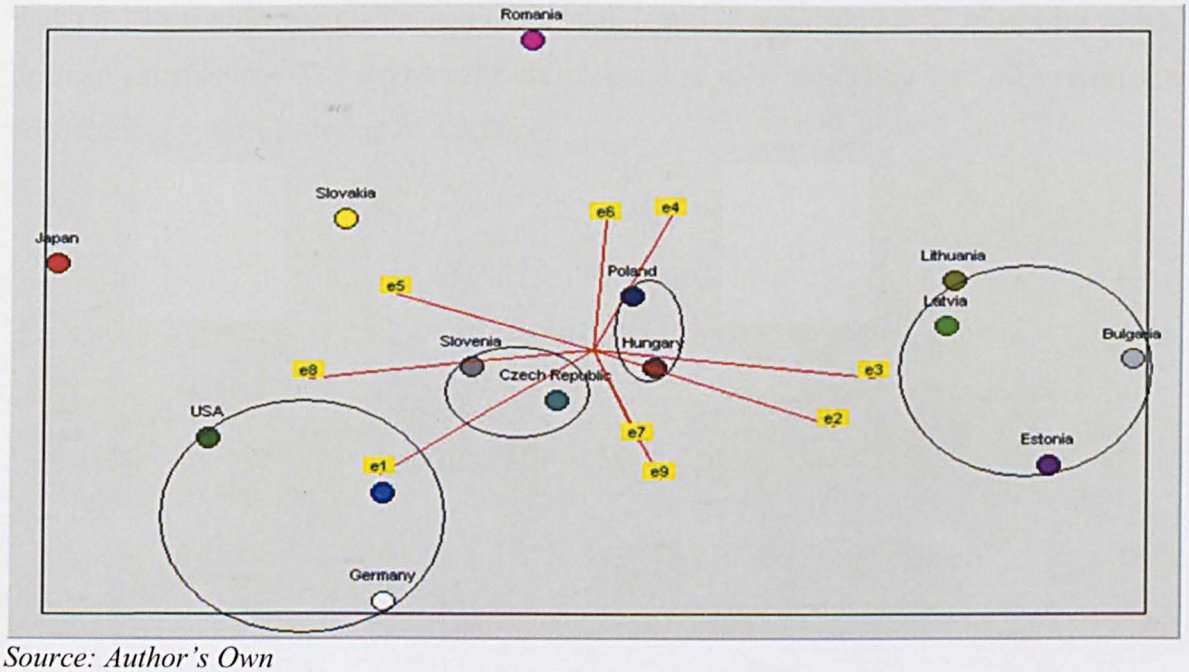
Fig.1: *n=14, e=9,* 1996



Source: Author's Own (Visual Co-Plot)

For year 2000 (Fig.2) we evaluate the total set of n = 14 countries with measurements on e = 9 variables. The raw data, a $X_{14 \times 9}$ matrix is submitted to Co-plot and with all 14 variables the coefficient of alienation is 0.13 indicating 0.87 reliability which is deemed satisfactory. The average of correlations is 0.91 indicating that all variables are contributing to the clustering of countries.

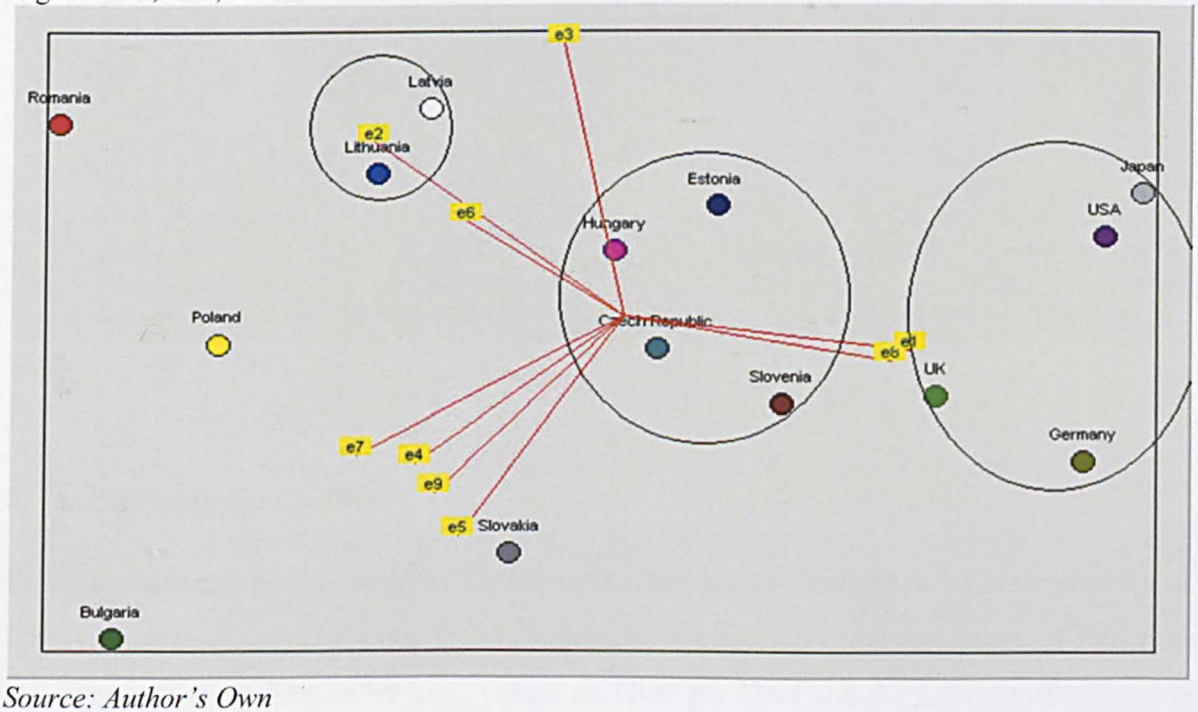
Fig.2: *n=14, e=9,* 2000



Source: Author's Own

For year 2004 (Fig.3) we evaluate the total set of n = 14 countries with measurements on e = 9 variables. The raw data, a $X_{14 \times 9}$ matrix is again submitted to Co-plot and with all 14 variables the coefficient of alienation is 0.10 indicating 0.87 reliability which is deemed good. The average of correlations is 0.93 indicating that all variables are contributing to the clustering of countries.

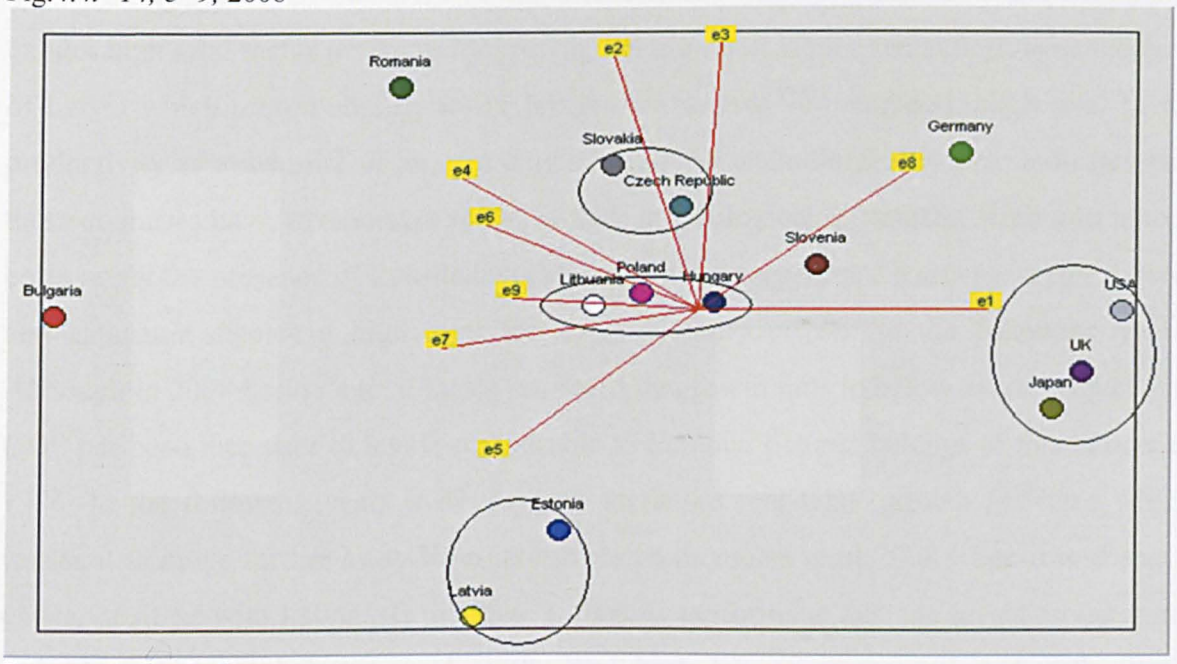
Fig.3: *n=14, e=9,* 2004



Source: Author's Own

For year 2008 (Fig.4) we evaluate the total set of n = 14 countries with measurements on e = 9 variables. The raw data, a $X_{14 \times 9}$ matrix is submitted to Co-plot and with all 14 variables the coefficient of alienation is 0.13 indicating 0.87 reliability which is deemed satisfactory. The average of correlations is 0.91 indicating that all variables are contributing to the clustering of countries.

Fig.4: *n=14, e=9,* 2008



Source: Author's Own

b) Interpreting the Co-Plots

From the general macro-economic perspective we see the existence of several clusters. Firstly, a cluster containing our four benchmarks is clearly present in almost all four time observations, characterised by high values on GDP per head and the balance of trade over GDP confirming the status of benchmarks as economic powers.

Secondly, four CEECs – the Czech Republic, Hungary, Slovakia and Slovenia exhibit in 1996 above average to high values for the balance of trade over GDP as well as above average levels for real effective exchange rate when compared to other CEECs. Poland, although not belonging to this cluster, exhibits similar values to these countries, especially in years 1996 and 2004. Despite the fact in the following years these countries do not stay in the same cluster, they remain in the same part of the graphical display. The break-up of the cluster is caused by the GDP per head increase in Czech Republic and Slovakia in years 2000 and 2004, an improved balance of trade over GDP in Czech Republic, Hungary and Slovakia in 2004 and a decrease of Poland to average levels for the same indicators in 2008. Based on this general macro-economic information we state that in these countries an advanced form of a financial system, such as an equity-based system may be viable and the development of an equity culture may be feasible (subject to further macro-economic, institutional and managerial analysis).

Thirdly, three co-members of another cluster – Latvia, Lithuania and Estonia – exhibit high total factor productivity growth and high unit labour costs (with the exception of Latvia which scored slightly lower levels than its two co-members). High total factor productivity as a measure of an economy's long-term technological change indicates that these countries have advanced in terms of their technological dynamism. High unit labour costs imply the presence of a skilled workforce and the presence of a service sector. Latvia and Lithuania display a high total factor productivity growth in the following years. Although in 2008 Latvia's total factor productivity growth falls to below average levels, its GDP per head increases to levels comparable to Estonia. Estonia belongs to this cluster in 1996. In the following years it displays an increased real GDP growth per head which causes it to move further away from its former co-members until 2008 when it re-forms a cluster position with Latvia. At this time Lithuania performs at average levels on the same variables. High total factor productivity and high labour costs supported with above average GDP growth indicate the macro-economic readiness of these individual economies to develop an equity culture, subject to institutional and managerial support.

Lastly, Bulgaria and Romania do not form a cluster with any other CEE country in terms of their macroeconomic performance. Although high lending interest rates could serve as an incentive for firms to look for less expensive external capital than debt, low real GDP growth per head and low balance of trade over GDP cause 'an outlier' positioning of these two CEECs and indicate inefficient macroeconomic activity. This suggests that these two CEECs not only economically underperform their Eastern European counterparts, but also that their economies are unlikely to support the development of a more advanced financial system such as the equity based financial model. Therefore, from the macro-economic point of view the transaction costs of seeking equity financing would be high for firms in these two countries.

6.5.1.2. The Composition of the Sample Countries' Economies

Any type of a financial system, whether bank- or equity-oriented, requires a strong economy with performing industry and services sectors (Bekaert et al., 2001). Extant literature suggests (Baumol, 1990; Abiad and Mody, 2005) that developed economies with a dominant industry sector tend to be more bank dominated, as traditionally family owned small and medium size industrial firms tend to rely on trusted, historically rooted banking

relationships. Equity financing, on the other hand, thrives in developed economies with a comparatively stronger service sector (Bekaert et al., 2001).

In the early years of the transition period many transition economies experienced an opposite trend. In these countries the only firms experimenting with equity financing were primarily from the industry sector, as the previous political regime did not support the service sector development (Klapper et al., 2002). This resulted in the existing service sector being represented mainly by young small firms for which equity financing meant higher costs than for the larger industry firms. However, transition economies realised that to make their economies more competitive they had to break the large industrial firms into more efficient and easier manageable units – the small and medium enterprises (SMEs) and they had to support the growth of the service sector (Djankov and Murrell, 2002). Industrial SMEs applied their collateral to obtain loans from banking institutions. Firms from the service sector typically lacking fixed assets that could serve as collateral to banks did not have the same borrowing opportunities. Therefore, in countries in which the service sector has experienced growth, external capital must have been secured from other external sources, some of which being equity. Therefore, to strengthen our analysis of the competitiveness levels of individual CEECs we look at the composition of their economies by examining the IMD indicators for an economy's structure: ***e10*** *– Agriculture/GDP,* ***e11*** *– Services/GDP,* ***e12*** *– Industry/GDP.*

a) Applying the Co-Plot Methodology

The Co-Plot method for the years 1996 (Fig.5), 2000 (Fig.6), 2004 (Fig.7) and 2008 (Fig.8) exhibits the following results: We evaluate the total set of n = 14 countries with measurements on e = *3(e10, e11, e12)* variables for each individual year. The raw data, a $X_{14\times3}$ matrix is submitted to Co-plot. With all 14 variables the coefficient of alienation is 0.02 for year 1996, 0.01 for year 2000 and 2004, and 0.03 for 2008 indicating a high reliability of more than 97 percent. The average of correlations is 0.87 indicating that all variables are contributing to the clustering of countries.

Fig. 5: *n = 14, e = 3(e10, e11, e12),* 1996

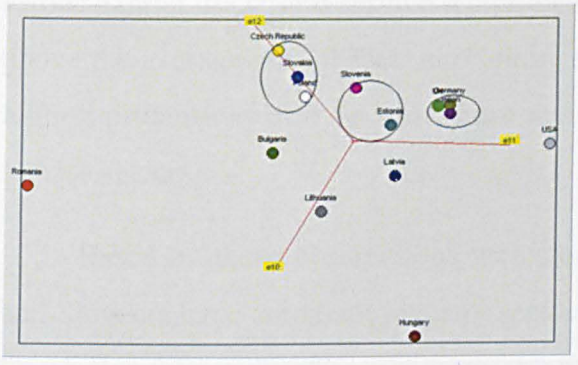


Fig. 6: *n= 14, e = 3(e10, e11, e12),* 2000

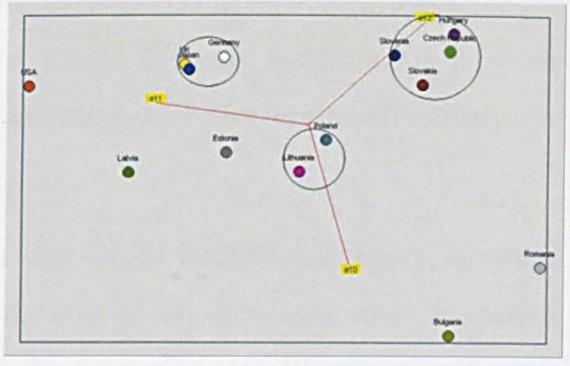


Fig.7: *n = 14, e = 3(e10, e11, e12),* 2004

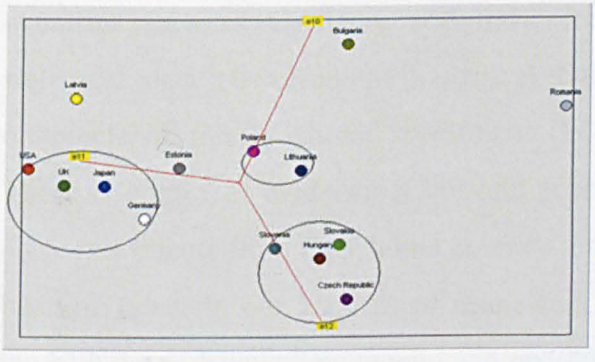
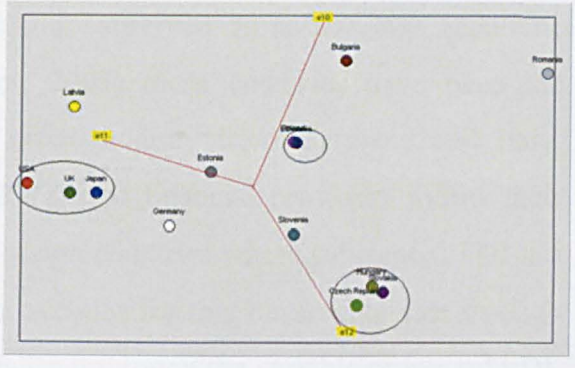


Fig. 8: *n= 14, e = 3(e10, e11, e12),* 2008



Source: Author's Own

b) Interpreting the Co-Plots

In term of the composition of individual countries our four benchmarks display he highest service sector proportion, with Germany leaning the most towards the direction of the arrow identifying industry sector (than any other of the three remaining benchmarks) and the USA being the strongest representative of the service sector. Then, the presence of the first CEECs' cluster is apparent in all four time observations (as in the previous analysis): Czech Republic, Hungary, Slovakia and Slovenia consistently show the highest proportion of the industry sector in comparison to other CEECs with the exception of 2008 when Slovenia shows a smaller proportion of the industry sector and a slightly increased proportion of its service sector. Hungary joins this group in 2000, as previously it was an agriculture-led economy. Secondly, Poland and Lithuania share similar economy composition characteristics. Although Poland starts in 1996 with the size of an industry sector comparable to Czech Republic or Slovakia, the later data shows that the level of the industry sector decreases rapidly and a higher proportion of the agriculture sector is noticeable. Interestingly, the service sector levels are close to average and slightly above

the levels of Czech Republic, Hungary, Slovakia and even Slovenia. Thirdly, Estonia and Latvia exhibit the largest service sector, below the average size of their industry sector and above the average size of their agriculture sector. Lastly, Bulgaria and Romania show the highest proportions of their agriculture sectors, and the lowest proportions of industry and service sectors.

Based on these observations we conclude that Czech Republic, Hungary, Slovakia and Slovenia have dominant industry sectors at the cost of less developed services sectors. Czech Republic is the strongest representative of the industry sector. We maintain that this fact is due to historically rooted relationships with developed industry-led European countries such as Germany and Italy. Indeed, as observed from national economic statistical data (Government Statistical Offices, 2008) these countries have been the recipients of foreign direct investment (FDI) predominantly from Germany and Italy. There is empirical evidence (Choi and Jeon, 2007) that financial providers follow their corporate clients from their home country into foreign countries where substantial FDI has been invested. In our conceptual framework we account for this observable fact through the path dependency phenomenon and operationalise it through the variable of inward FDI. Path dependent behaviour encourages firms to follow the strategic choices, such as corporate financing, of principal firms (Stark, 1992). In this case, the firms in Czech Republic, Hungary, Slovakia and Slovenia are expected to pursue the same ways of securing external capital – the debt, just like the principal firms in Germany and Italy. This is not to say that equity culture development in these countries is not viable, only that a 'hurdle' of path-dependent behaviour has to be overcome.

Estonia and Latvia exhibit a high proportion of the service sector supporting their high competitive ranking in terms of the macro-economic development (EBRD, 2008b). While a trend of a growing service sector is also apparent in Lithuania and Poland, the proportion of these countries' industry sectors is below average and a presence of a dominant agriculture sector is noted. In the case of Estonia and Latvia equity culture development is viable due to favourable macro-economic conditions and the presence of a growing service sector. In the case of the latter, however, despite the growing service sector the macro-economic environment is not as sound. The viability of equity culture development will be subject to the favourability of institutional and managerial environments.

6.5.1.3. Digging Deeper – the EBRD Transition Data

To make our assessment of the competitiveness levels in the 1996-2008 period more robust we additionally look at the EBRD transition data. Our selected EBRD variables are of institutional character and we include them in our assessment of the national competitiveness of individual CEECs as they allow us to include another important aspect related to this environmental concept. Despite the fact that we refer to the phenomenon of national competitiveness primarily from the macro-economic perspective we account for the important institutional elements that contribute to the overall 'competitiveness picture'. This examination enables us thus to have a closer look at the CEECs and their national competitiveness levels. We choose four EBRD indicators: *Overall infrastructure reform* ***(e13)***, *Price liberalisation* ***(e14)***, *Trade and Forex system* ***(e15)*** and *Competition policy* ***(e16)***.

a) Applying the Co-Plot Methodology

Co-Plot exhibits the following results for the 1996–2008 research period (Fig. 9, 10, 11 and 12): We evaluate the total set of $n = 10$ CEECs with measurements on $e = 4$ *(e13, e14, e15, e16)* variables for each individual year. The raw data, a $X_{10 \times 4}$ matrix is submitted to Co-plot. With all 10 CEECs the coefficient of alienation is 0.07 for year 1996, 0.05 for year 2000, 0.09 for year 2004, and 0.09 for 2008 indicating a high reliability of more than 90 percent. The average of correlations is 0.89 which signals an even contribution of all four variables.

Fig 9: $n = 10$, $k = 4$*(e13, e14, e15, e16)*, 1996

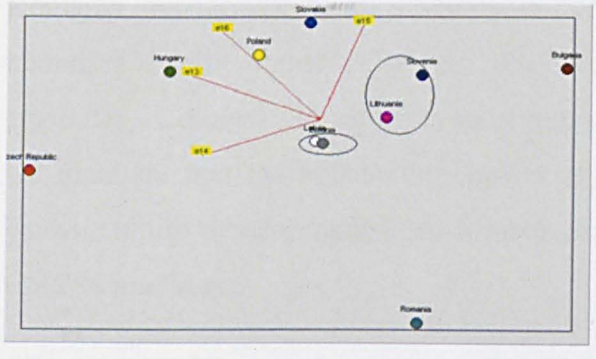


Fig. 10: $n = 10$, $k = 4$*(e13, e14, e15, e16)*, 2000

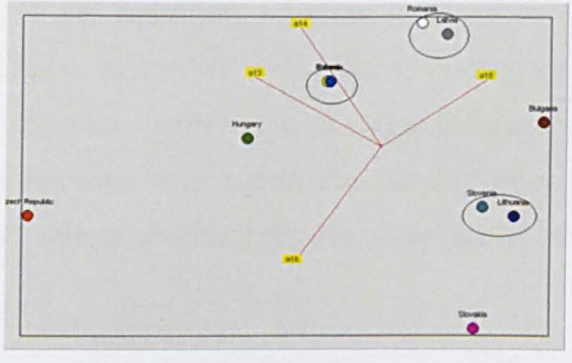


Fig 11: *n = 10, k = 4(e13, e14, e15, e16),* 2004

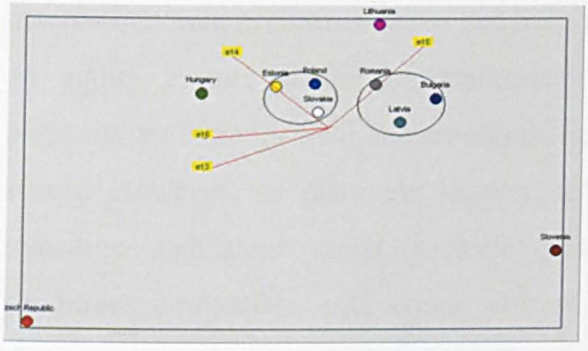
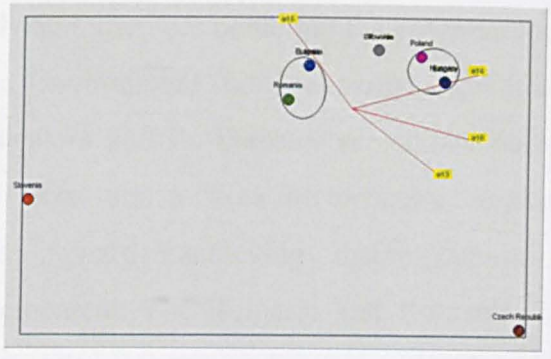


Fig. 12: *n= 10, k = 4(e13, e14, e15, e16),* 2008



Source: Author's Own

b) Interpreting the Co-Plots

The EBRD data shows that from the beginning of the research period the best performers on the transition indicators are the Czech Republic (overall infrastructure reform and competition policy)[11], Estonia (overall infrastructure reform and competition policy and by 2008 price liberalisation), Hungary (price liberalisation), and Poland and Slovakia (price liberalisation and Trade & Forex system). Although Latvia shows average levels for all four variables in 1996, it is rated high by the EBRD on the Trade & Forex system attribute in 2000, years 2004 and 2008 show that this country is over-stepped by its CEE counterparts in terms of the transition progress. Lithuania, on the other hand, shows an opposite development. Although starting low in 1996, in 2000 the country progresses into better price liberalisation policies and a much more effective functioning of the Trade & Forex system. In Slovenia, the price liberalisation system is below its CEE counterparts and also other transition indicators show lower levels than in other CEECs. Bulgaria and Romania even outperform Slovenia in terms of the transition progress as these two countries exhibit higher values for the Trade&Forex system as well price liberalisation attributes. Although Slovenia has an outlier position with regard to the transition indicators we maintain that the explanatory power of this indicator in terms of the viability of an equity culture development is of limited concern due to differing results in the previous Co-Plot analyses.

The EBRD data suggests that Czech Republic, Hungary, Estonia, Lithuania, Poland and Slovakia have made the best transition effort comparable to other CEECs. Although

[11] As of 2008 the Czech Republic was taken off of the list of CEE transition countries and was given a status of a developed European economy (EBRD, 2008).

Latvia has a comparatively larger service sector than most other CEECs, the country's macro-economic performance has not been steady and therefore could put the potential for an equity culture supportive macro-economic environment into jeopardy. Slovenia performs well on general macro-economic indicators and its industry sector has been strong. However, its relatively smaller service sector and a weak performance on the transition indicators could indicate obstacles towards achieving macro-economic conditions compatible with equity culture development. For Bulgaria and Romania it seems unattainable to achieve or sustain an equity culture in the medium term. Neither of these countries performs as well as other CEECs on their macro-economic indicators, their industry and services sectors are lacking behind the others and even the transition indicators suggest that the transition process is far from over.

6.5.2. The Institutional Environment

The institutional environment affects the financing decision-making of firms and the direction of a financial system development overall (Peng, 2004). Scientific research (Bakker and Gross, 2004; Kim and Kenny, 2007) further confirms that the institutional environments of the banking oriented financial systems differ from the institutional environments of the equity-oriented systems. An equity-based financing system requires an institutional system characterised by low corruption, high accountability, policies protecting investor rights and an efficient bureaucracy-free system (Bekaert et al., 2001; Smith, 2003). Although transparency is also important in the banking system it does not have the same imperative role as we see in the equity-based models. This is mainly because the private nature of most by bank financed firms and the traditional bank-client relationships based on trust are less transparency-centered (Levine and Zervos, 1998; Beck and Levine, 2004). These institutional differences point to the existence of the German-Japanese banking oriented- and the Anglo-Saxon equity oriented institutional systems.

6.5.2.1. The Quality of the CEECs' Institutional Environments

We examine data on institutional quality in the CEECs and the four benchmarks. From the ICRG database we select seven institutional variables that we see relevant in evaluating financial system development and an equity culture creation. We expect these variables to demonstrate institutional differences between those that support the existence of equity-

based system and those that facilitate the functioning of bank-based financial systems: We choose the indicators of *Government stability* – an indicator on the ability to carry out programmes and ability to stay in office ***(i1)***, *Socioeconomic conditions* – an indicator on public satisfaction/dissatisfaction on public policies ***(i2)***, *Investment profile* – an indicator on the attitude toward investment: expropriation/contract viability, taxation, repatriation, labour costs ***(i3)***, *Corruption* – an indicator on the legal abidance to law ***(i4)***, *Law and order* – an indicator on the strength and imparity of legal system ***(i5)***, *Democratic accountability* – an indicator on government's legal responsiveness to people ***(i6)***, *Bureaucracy quality* – an indicator on institutional strength and quality of bureaucracy ***(i7)*** to distinguish between different types of institutional environments with the liberal market institutional environment and co-ordinated market institutional environments being the two differentiating institutional prototypes.

a) Applying the Co-Plot Methodology

We evaluate the total set of $n = 14$ countries with measurements on $i = 7$ variables for each individual year of the 1996-2008 period (Fig. 13, 14, 15 and 16 respectively). The raw data, a $X_{14 \times 7}$ matrix is submitted to Co-plot. With all 14 countries the coefficient of alienation is 0.14 for years 1996, 2000 and 2008, and 0.15 for year 2004 indicating a reliability of 85 percent and above. The average of correlations is 0.79 which signals a positive contribution of all seven variables.

Fig. 13: $n = 14$, $i = 7$, 1996

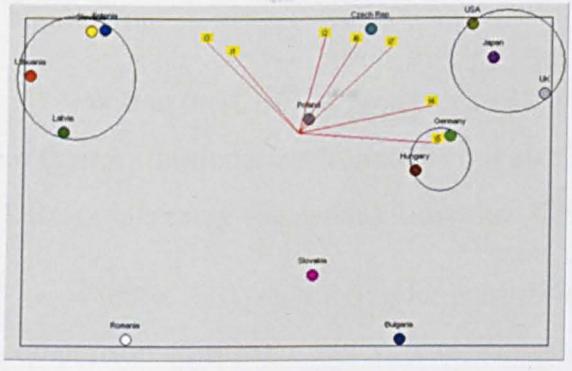


Fig. 14: $n = 14$, $i = 7$, 2000

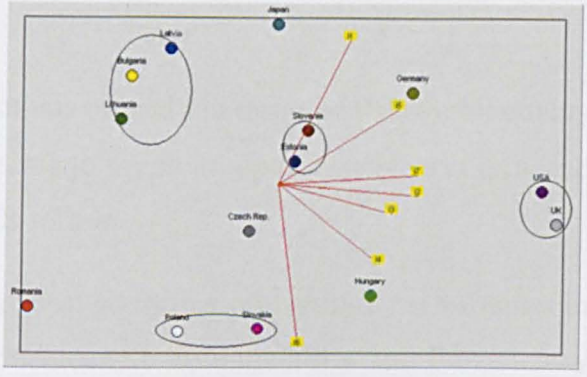


Fig. 15: *n = 14, i = 7,* year 2004

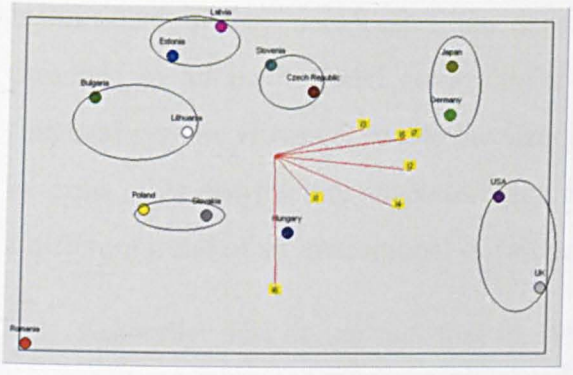
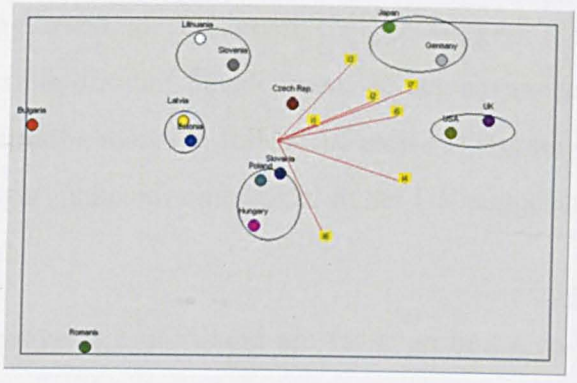


Fig. 16: *n= 14, i = 7, year 2008*



Source: Author's Own

b) Interpreting the Co-Plots

We find that Co-Plots exhibit several clusters for the 1996-2008 period. Although our four benchmarks are positioned in every year of observation on the same side of the graphical display, in no time observation they form a single cluster. This is what we expected as it is a proof of a presence of differing institutional systems in the benchmark countries. The UK and the USA are grouped together and this cluster exhibits high values for law and order, corruption and bureaucracy quality – three prerequisites of institutional transparency. Germany and Japan display slightly lower values on the same attributes and form a cluster on their own. Furthermore, the second cluster of Germany and Japan also performs better on variables displaying better socio-economic conditions and a higher investment profile. This is consistent with the identification of institutional characteristics in the Varieties of Capitalism theory which, as identified in Chapter 3 – our conceptual framework, we are building on.

Within the CEEC's group there are variations not only in terms of the overall quality of their institutional environments but also relating to which group of benchmarks (UK and USA or Germany and Japan) individual CEECs follow.

Firstly, the Czech Republic is in 1996 the best performer on institutional variables in comparison to other CEECs. The values on democratic accountability and bureaucracy quality are especially high. The investment profile indicator also remains one of the strongest among the CEECs for the rest of the research period. Similarly, Hungary displays in 1996 the presence of a reputable legal system, by 2000 the corruption levels improve and by 2004 democratic accountability achieves higher values. By 2008, due to its improvement in corruption and the increased levels of democratic accountability, Hungary

secures a position of one of the better institutionally performing CEECs. From the institutional quality perspective the ascending trend in these two CEECs suggest the presence of an institutional environment feasible for the development of an advanced financial system. However, while the Czech Republic seems to follow the path of Germany in terms of its institutional characteristics, Hungary's positioning closer to the UK suggests a different trend of an institutional development.

Secondly, despite the fact that in 1996 Slovakia and Poland are far from being co-members of one cluster (Poland displays average values for the majority of institutional variables while Slovakia was an underperformer) by 2000 these two countries join the same cluster characterised by high to above average values for democratic accountability. By 2008, however, the position of this cluster moves closer to the centre of gravity suggesting the presence of more average values across all chosen institutional variables. Although the indicators of democratic accountability and corruption suggest an improvement of the institutional environment and position these two CEECs to the direction of the UK's institutional system, the low quality of bureaucracy and average levels for the law and order indicator do not support its positioning as close to this benchmark as we saw in the case of Hungary.

Thirdly, Estonia, Latvia, Lithuania and Slovenia are interchangeably joining and leaving mutual clusters. Co-Plot adjusted to examine the CEECs without the direct comparison to the benchmarks reveals a closer position of two countries in particular: Estonia and Slovenia. According to the graphical display the corruption levels are lower compared to Latvia and Lithuania and the bureaucracy quality has scored better when compared again to the same two countries. This suggests an improvement of institutional quality in Estonia and Slovenia and institutional stagnation in Latvia and Lithuania. Therefore, from the institutional perspective point of view, Estonia and Slovenia appear to have an institutional advantage over Latvia and Lithuania. The same graphical display suggests Estonia following path similar to Slovakia, Poland and Hungary (benchmarks UK and USA) and Slovenia following the path of Czech Republic (benchmarks Germany and Japan).

Fourthly, Bulgaria and Romania are the weakest performers on institutional indicators. This suggests a limited improvement of the institutional environment in these countries. Firms seeking equity financing in these two countries face high transaction costs

due to the low institutional quality. Therefore, advanced sources of financing, such as equity seem to be an unfeasible option to most Bulgarian and Romanian firms.

6.5.2.2. Digging Deeper – Transition Data on the Quality of Institutions

In this section more institutional data is examined to supplement the institutional environment analysis performed above. The EBRD transition data on the progress of the institutional advancement of the CEECs provides information on: *Large scale privatisation* ***(i8)***, *Small scale privatisation* ***(i9)***, *Banking reform & interest rate liberalisation* ***(i10)***, *Securities markets and non-bank financial institutions* ***(i11)***, *Governance and enterprise restructuring* ***(i12)***. Privatisation, FDI, financial liberalisation and corporate governance factors vastly shape the characteristics of an institutional environment in transition economies (Choi and Jeon, 2007) and therefore play a vital role in our assessment of the quality of the institutional environment in the CEECs. These EBRD institutional indicators enrich our discussion on the different varieties of institutional systems that are the reason for and continue developing alongside bank-based and equity based financial systems.

a) Applying the Co-Plot Methodology

In this case we evaluate the total set of $n = 10$ CEECs with measurements on $i = 5$ transition variables for each individual year (Fig. 17, 18, 19, 20). The raw data, a $X_{10 \times 5}$ matrix is submitted to Co-plot. With all 10 countries the coefficient of alienation is 0.11 for years 1996 and 2008, 0.07 for year 2000 and 0.13 for year 2004 indicating a reliability of 87 percent and above. The average of correlations is 0.85 which indicates a positive contribution of all four variables.

Fig. 17: *n = 10, i = 5 (i8 - i12),* 1996

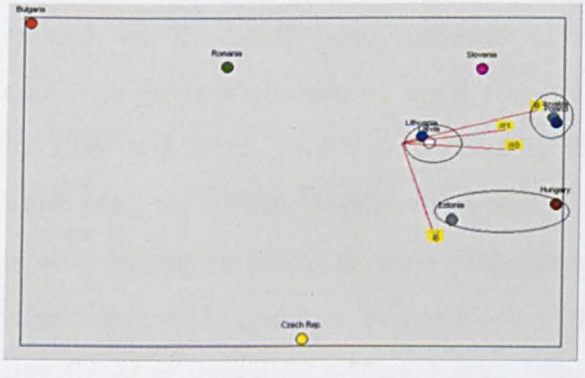


Fig. 18: *n = 10, i = 5 (i8- i12),* 2000

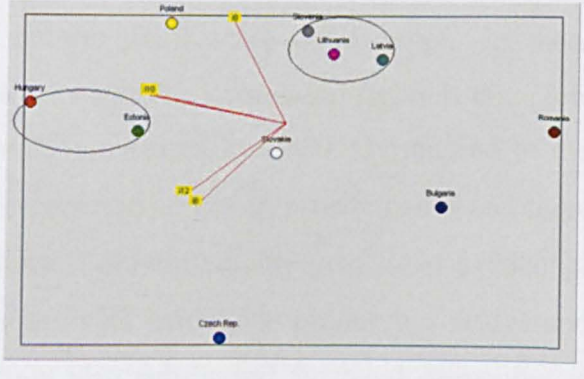


Fig 19: *n = 10, i = 5 (I 8- i12),* 2004

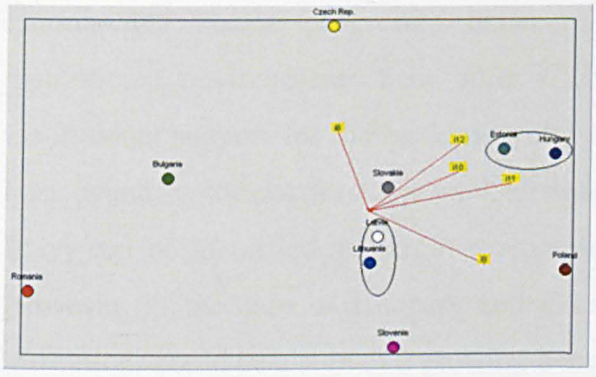
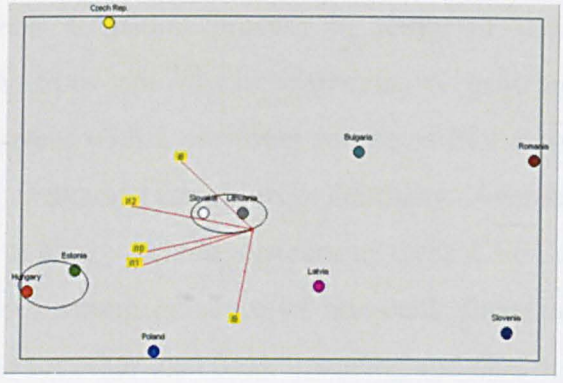


Fig. 20: *n= 10, k = 5(i8 - i12),* 2008



Source: Author's Own

b) Interpreting the Co-Plots

The Co-Plot display confirms that Czech Republic, Hungary, Estonia and Poland are the strongest performers on transitional-institutional indicators. Czech Republic and Poland do not belong to the same cluster as Hungary and Estonia. While the former exhibits a higher proportion of large scale privatisation in all time observations than any other of these four CEECs and also scores high on the governance and enterprise restructuring indicator, the latter performs extremely well on the small scale indicator in 1996 but other indicators start performing better after 2000. In the case of Hungary and Estonia small scale privatisation is prevalent and a steady performance of all the other indicators is present since 1996.

Czech Republic's large scale privatisation efforts result in performance typical of advanced industrial economies where more than 75 per cent of enterprise assets are in private hands with effectively functioning corporate governance (EBRD Transition Report, 2008). If these 'private hands' have a foreign nature, the Czech government statistical data (Czech Republic Statistical Office, 2008) states that they come from Germany, Italy, Austria, the USA and France (the particular order applies). Hungary and Estonia, and Poland, on the other hand, perform better on the small scale privatisation. In these countries the privatisation of small companies with tradable ownership rights is complete by 1996 and there is no state ownership of state enterprises by 2000. By the end of the same year, more than 50 percent of state-owned enterprises are in private hands and there is also an improvement in corporate governance. Furthermore, by year 2004 prudential supervision and regulation are in place with significant lending to private businesses and significant presence of private banks. By 2008 also substantial financial deepening is noted (EBRD Transition Report, 2008).

Based on the above information we can deduce that Czech Republic, Hungary, Estonia and Poland progressed better in their transition process in terms of their institutional environments than other CEECs from our research sample. A growing institutional support for the banking sector together with a prevalent source of FDI from host countries known for their bank oriented financial systems (e.g. Germany, Austria, Italy) can be identified as partial reasons for a bank oriented systems in these CEECs. However, in the case of Hungary and Estonia a strong presence of non-bank financial institutions could be a sign of a growing demand for other than bank financing and thus the sound banking sector could be seen just as a preparation for the entry of a more advanced form of corporate financing - equity financing. Therefore, at this stage, we maintain that the developed stage of the institutional sectors in Czech Republic, Hungary and Estonia serves as a predisposition for sound financial systems development, whether bank or equity oriented. We propose that a later analysis of the financial intermediaries and firm sectors will enable us to determine with more rigour what type of conditions are present in these countries – the ones that do or do not foster equity culture development.

Although the other four CEECs - Latvia, Lithuania, Slovakia and Slovenia do not form one single cluster in any observations, they interchangeably become cluster co-members in different years and remain in a close position on the graphical display. These countries share the characteristics of an advanced small scale privatisation with privatised firms possessing individual ownership rights (EBRD, 2008b). By 2000 all four countries make substantial progress in the establishment of bank solvency and in the framework for prudential supervision and regulation. In this year the differences in institutional transition become more visible between these four countries. While Slovenia stagnates in the transition and displays the same levels achieved in 2000 until 2008, Latvia, Lithuania and Slovakia make a better progress. While these three countries improve on the banking reform and interest rate liberalisation indicator by achieving a full interest rate liberalisation and significant bank lending to private enterprises, two of them also perform better in another way. In Lithuania and Slovakia, in addition to a growing regulatory framework for bank financing, the non-bank financial institutions, such as investment funds and private insurance companies start emerging and an associated regulatory framework is formed.

Latvia, Lithuania, Slovakia and Slovenia exhibit a good effort in small scale privatisation. However, large scale privatisation 'fights' major unresolved issues regarding

corporate governance. The transition process of institutional conditions necessary for the development of a sound financial system is in place but with some limitations. With the exception of Lithuania and Slovakia, it seems that these CEECs have to first overcome corporate governance issues such as weak to moderate bankruptcy legislation, moderate to high bureaucracy quality and the lack of tight credit and subsidy policies. Once this is accomplished, firms seeking equity financing have a better chance of experiencing lower, and therefore, more acceptable transaction costs.

The last two CEECs, Bulgaria and Romania, 'confirm' their position of laggards in terms of the transition toward an institutional environment supportive of a sound banking system and possibly equity oriented financial system. By 2008, when the best CEE performing countries achieve institutional conditions comparable to other developed industrialised economies, Bulgaria and Romania have a comprehensive programme for implementation of privatisation in place but not all their enterprises are privatised, struggle to strengthen competition and corporate governance, and lack a regulatory system necessary for the functioning of non-bank financial institutions. Unless these conditions improve, equity culture development is not feasible as high transaction costs are an obstacle for firms diverting from the usual sources of financing to a riskier alternative - equity financing.

6.5.3. Financial Intermediaries

As we have established the macro-economic and institutional development of each individual CEEC in the previous sections and thus have determined which countries have the potential to sustain equity culture if that path of corporate financing was desired, we now proceed onto the examination of the financial intermediaries sector. This analysis enables us to determine in which CEECs the 'supply-financial intermediary' side holds and thus provides a critical requirement for the growth and sustainability of equity financing. We maintain that the composition of the capital intermediaries sector is a significant contributor to equity culture development in a country and that the sustainability of equity culture depends on the presence of equity oriented financial intermediaries functioning within an 'eco-system' of a stable institutional and competitive macro-economic environment.

Therefore, in this section we apply the Co-Plot method to determine the status of the banking financial institutions versus the equity-supportive financial institutions in ten CEECs and benchmark them against four developed economies. The analysis focuses on quantitative assessment and qualitative evaluation of banking and equity-related institutions (i.e. the quality (depth) of the banking sector versus the quality (liquidity) of the equity sector). We find that several indicators show minimum variance amongst the CEECs for the 1996-2008 period. For the purpose of securing a high reliability of the Co-Plot graphical display we opt not to include such indicators[12] in the Co-Plot analysis.

6.5.3.1. The Presence of Banking versus Equity Oriented Institutions

To assess the presence of loan providing and equity offering financial intermediaries and their supporting institutions we examine their quantitative proportions individually expressed as ratios of total number of financial intermediaries (i.e. financial institutions). Firstly, we examine the variables of *National commercial banks (NCB) (**g1**), Foreign trade and international banking institution (**g2**)* to assess the presence of banking financial institutions. In addition we look at the presence of financial intermediaries other thank banks which provide loans by using variable ***g3*** – *Miscellaneous business credit institutions.* Finally, we assess the presence of equity-related financial intermediaries with the help of following variables: *Security brokers and dealers and flotation companies (**g4**), Security and commodity exchanges (**g5**), Investment advice (**g6**), Other services allied with the exchange of securities or commodities (**g7**).*

a) Applying the Co-Plot Methodology

We evaluate a total set of n = 14 countries with measurements on g = 7 variables for the 1996-2008 period (Fig. 21, 22, 23, and 24 respectively). The raw data, a $X_{14 \times 7}$ matrix is submitted to Co-plot. With all 7 variables the coefficient of alienation is 0.13 indicating 0.87 reliability for years 1996, 2000 and 2004; and 0.14 for 2008. The goodness-of-fit of attribute (i.e. variable) *g5 (Security and commodity exchanges* is very low for all years (only 0.32) and because it does not fit simultaneously with all other six attributes measured

[12] *State commercial banks, Commercial banks (other), Branches and agencies of foreign banks, Short term business credit institutions*

on the 14 countries, we eliminate *g5* from the analysis[13]. We, therefore, resubmit a data matrix $X_{14\times6}$. The second run of Co-Plot gives a satisfactory coefficient of alienation 0.05 indicating 0.99,5 reliability with an average of correlation coefficient of 0.95 for years 1996, 2000 and 2004. It also gives a coefficient of alienation 0.07 indicating 0.99,3 reliability with an average of correlation coefficient of 0.94 for year 2008. This result indicates that all chosen variables are contributing to the clustering of sample countries.

Fig 21: *n = 14, g =6,* 1996

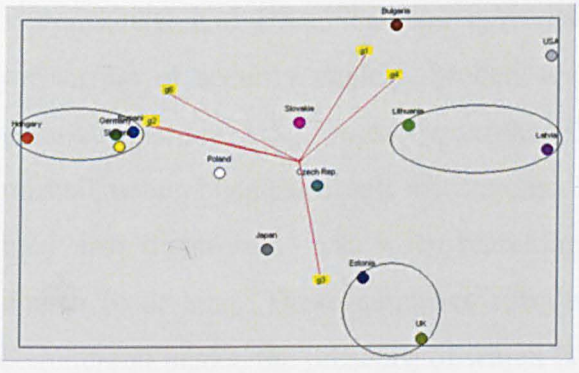


Fig. 22: *n = 14, g = 6,* 2000

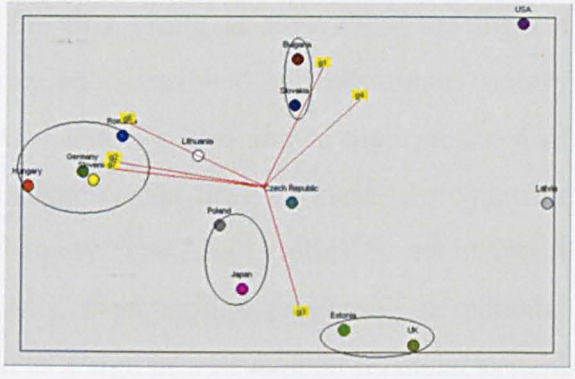


Fig. 23: *n = 14, g =6,* 2004

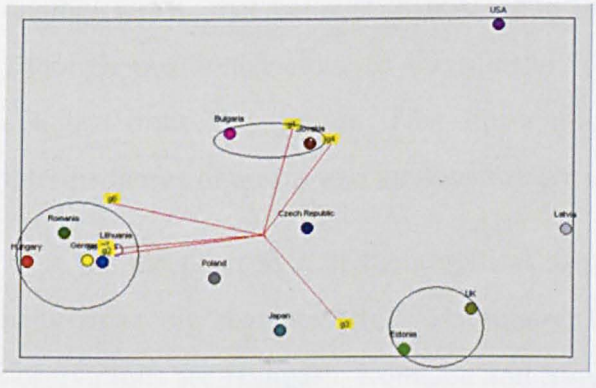
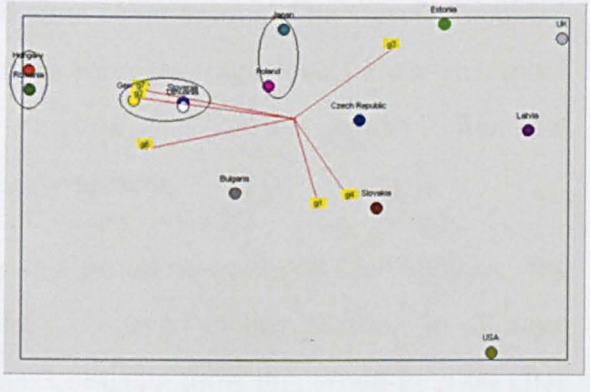


Fig. 24: *n= 14, g = 6,* 2008



Source: Author's Own

b) Interpreting the Co-Plots

Based on the findings from Co-Plot we are able to distinguish between three groups of countries: firstly, countries that exhibit similar composition of their financial intermediaries sectors as UK and USA, the two representative benchmark countries for equity oriented financial systems; secondly, countries that are positioned close to Germany – the benchmark representative for a bank oriented financial system; and thirdly, countries

[13] The number of security and commodity exchanges is, however, considered in the descriptive analysis of the financial intermediaries sector in the form of an absolute number rather than a ratio of a total number of financial intermediaries.

that show the presence of financial intermediaries similar to Japan, our fourth benchmark country. The type of financial intermediaries in Japan is similar to the one Germany in terms of the banking sector. However Japan displays a larger proportion of other financing institutions providing loans, which we do not observe in Germany. Therefore, in this instance, we differentiate between countries that follow Germany or Japan as two separate benchmarks.

Two benchmarks and representatives of the Anglo-Saxon/equity oriented financial systems, UK and USA, lead the numbers in the first group as they show the highest proportion of security dealers, brokers and flotation companies than any other country from the sample. UK, joined by another CEEC – Estonia, also shows high presence of miscellaneous business credit institutions. This suggests that firms in these two countries incur low transaction costs when searching for equity financing or other forms of credit than a bank loan. These countries simultaneously show a high proportion of national commercial banks, the presence of which is seen as a sign of a developed financial system and a necessary requirement for equity culture development. Next to Estonia, Latvia is another CEEC that belongs to this group in all time observations. The Czech Republic, although positioned close to this cluster, displays more average levels than any other country from this group. This observation suggests that in this country financial intermediaries of equity and bank nature are strongly present.

On the other side of the graphical display is a group of countries 'surrounding' the bank financing representative – Germany. CEECs observed in this position in all time observations are Hungary, Romania and Slovenia. Lithuania joins this group in 2000 after a short-lived co-existence with group one – the equity and miscellaneous business credit representatives. This cluster displays high proportion of international banking institutions and above average levels of national commercial banks. Although the presence of brokers and flotation companies in these countries is low we notice the presence of some services related to the exchange of securities and commodities. This observation suggests an existing activity in the equity related sector, however, over-powered by the banking sector's dominance.

Japan, accompanied in all time observation by one CEEC – Poland displays high proportion of miscellaneous business credit institutions and above average presence of foreign trade and international banking institutions. These two countries show the

composition of their financial intermediaries sector similar to that of Germany and its 'followers', and show the presence of other than bank credit providing institutions. This indicates that the 'supply' side development in these two countries is 'steering' towards other forms of credit than bank loans and not equity type financial institutions.

Bulgaria and Slovakia show opposite developments during the 1996-2008 time observation. Bulgaria starts in 1996 with a high number of national commercial banks and strong presence of brokers and flotation companies. However, the strong presence of equity supportive financial intermediaries gradually diminishes and the banking sector regains its dominant position. On the other hand, in the case of Slovakia, not only the presence of national commercial banks remains stable but also the number of security brokers, dealers and flotation companies is on the increase. This observation suggests that while firms in Slovakia would gradually incur lower transaction costs when arranging for equity financing. The opposite would be true for firms in Bulgaria.

6.5.3.2. The Quality of the Banking Sector and Equity related Intermediaries

Assessing the presence of financial intermediaries is important, however not sufficient. To be able to understand the financial institutions sector we also have to examine their quality. Therefore, we assess the quality (i.e. depth) of the banking sector and the quality (i.e. liquidity) of the equity related financial intermediaries (capital markets) sectors. We examine the following indicators: *Banking Sector Assets /GDP* (quality of the banking sector) ***(g8)***, *Stock market capitalisation /GDP* (liquidity of the capital markets) ***(g8)***, and *Stock market capitalisation / Number of listed domestic companies* (market capitalisation of the average firm) ***(g10)***.

a) Applying the Co-Plot Methodology

We evaluate the total set of $n = 14$ countries with measurements on $g = 3$ *(g8, g9, g10)*. The raw data, a $X_{14\times3(8\text{-}10)}$ matrix is submitted to Co-plot. With all three variables the coefficient of alienation is 0.6 indicating 0.94 reliability for year 1996 (Fig.25), 0.4 indicating 0.96 reliability for years 2000 (Fig.26) and 2004 (Fig.27) and 0.02 indicating above 0.99 reliability for year 2008 (Fig.28). The correlation coefficient shows and average of 0.88 for all four years. This result indicates that all variables contribute to the clustering of sample countries.

In all time observations the four benchmarks are positioned on the other side of the graphical display than the CEECs, showing high values on the observed indicators. Germany and Japan show a high depth of the banking sector, and UK and USA display high stock market capitalisation and high capitalisation of the average firm. To be able to visually distinguish between the performances of individual indicators in the CEECs we perform the Co-Plot analysis without the four benchmarks. Then returning back to the individual Co-Plot with all 14 countries we cluster the CEECs based on our findings.

Fig 25: *n = 14, g =3(g8,g9,g10),* 1996

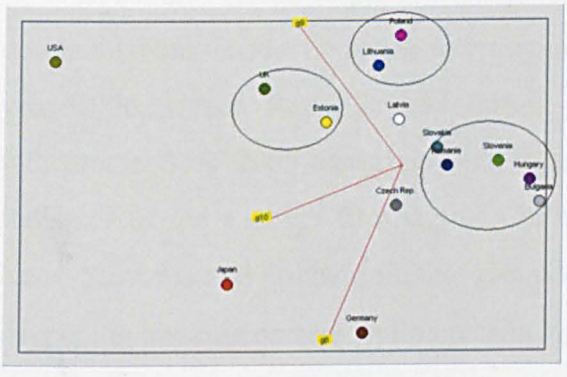


Fig. 26: *n = 14, g = 3(g8,g9,g10),* 2000

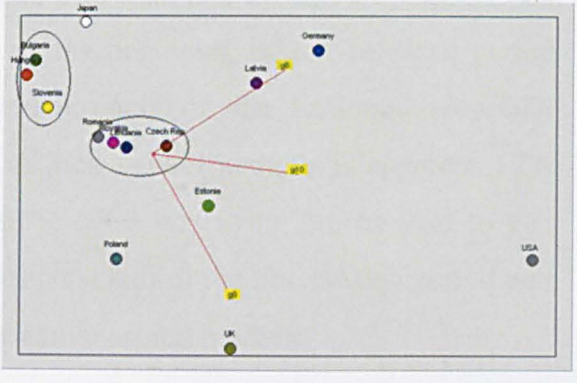


Fig 27: *n = 14, g =3(g8,g9,g10),* 2004

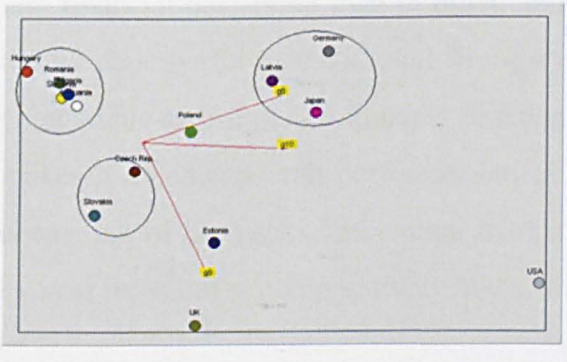
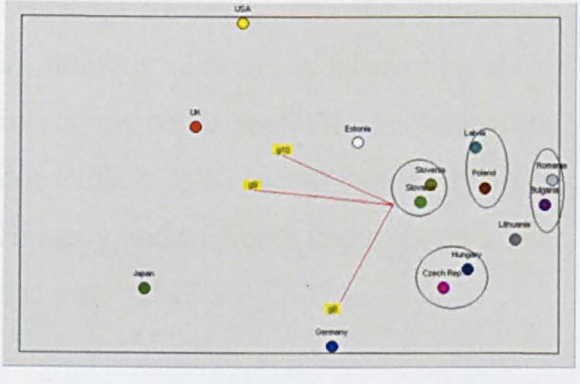


Fig. 28: *n= 14, g = 3(g8,g9,g10),* 2008



Source: Author's Own

b) Interpreting the Co-Plots

From the results gained by Co-Plots we are able to distinguish between three groups of countries that emerge toward the end of the observation period in terms of the quality of the equity financing related financial intermediaries: Firstly, countries that possess liquid capital markets and overall a good quality of equity related financial intermediaries; secondly, countries that show a better quality of the banking sector than the capital markets sector but still exhibit some deepening of the equity oriented financial intermediaries; and

thirdly, countries that exhibit lower levels for the quality of banking and capital markets sectors than any other CEEC.

Firstly, Estonia shows the best quality of the capital markets sector, i.e. high capital markets capitalisation and after 2004 also high capitalisation of the average firm. This suggests high liquidity of its capital markets and an active equity based financial sector. Slovakia seems to be also deepening its capital markets sector on a year by year basis and thus in this respect outperforms many other CEECs.

Secondly, Czech Republic, Hungary, Latvia, Slovenia, and Poland are CEECs with dominant bank-based financial intermediaries. At the beginning of our research period, year 1996, Czech Republic and Latvia perform strongly on the banking assets/GDP indicator and by 2000 also improved liquidity of their capital markets is apparent. The indicator of the average firm capitalisation is since 2000 improving on the year to year basis. Slovenia and Poland join this group in the second half of the observation period with deepening banking sectors and increasingly more active capital markets.

Thirdly, Lithuania, Bulgaria and Romania are the three CEECs in which we observe less financial deepening than in other, above discussed, CEECs. In particular, Romania is the weakest performer. Although Hungary shows similarly illiquid capital markets sector comparable to Bulgaria, Lithuania or Romania, its slightly better deepening banking sector makes it a better overall performer out of the four CEECs. We observe that the financial deepening of the banks and capital markets in Hungary and Slovenia improves on a year by year basis but at comparatively lower levels than other CEECs.

6.5.4. Ownership Patterns

After having examined the financial intermediaries in individual CEECs, in the following section we cross-examine the equity culture development in individual CEECs by analysing the composition of the firm sector in terms of its ownership structure. We investigate and compare not only the proportions of private and public firms but also of firms that are private but have more than five shareholders as we consider private equity to be a contributor to the overall equity culture development. The analysis enables us to analyse the 'demand' for equity financing demonstrated by the corporate sector. As stated in our conceptual framework, we maintain that equity culture can only be developed if firms demonstrate a re-financing preference for equity financing and do not incur

incomparably higher transaction costs than in the case of opting for a traditional source of external capital.

Therefore, in this section we evaluate the total set of countries with measurements on *f variables* in the form of ownership ratios ***f1**: publicly owned firms/total number of firms,* ***f2**: privately owned firms/total number of firms,* ***f3**: privately owned firms with more than five shareholders/total number of firms.* Furthermore, we examine two intensity ratios ***f4**: publicly owned firms/privately owned firms,* ***f5**: privately owned firms with more than five shareholder/privately owned firms.* The analysis is performed for the total number of firms, i.e. collectively for all firm size groups[14], however, significant variations between individual groups (primarily large and SMEs) are noted.

a) Applying the Co-Plot Methodology

We evaluate the total set of $n = 14$ countries with measurements on $f = 5$ variables for each individual year (Fig. 29, 30, 31 and 32 respectively). The raw data, a $X_{14 \times 5}$ matrix is submitted to Co-plot. With all 14 variables the coefficient of alienation is between 0.039 and 0.065 indicating above 99 per cent reliability for all four years. The average of correlations is 0.98 indicating that all variables are contributing to the clustering of our sample countries.

Fig 29: $n = 14, f = 5$, 1996

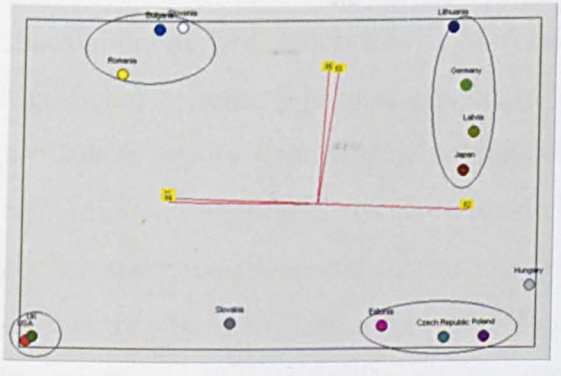
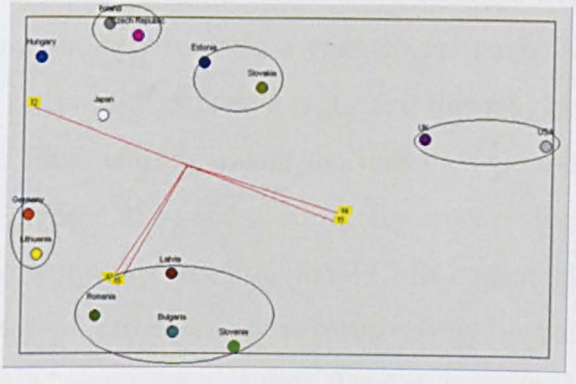


Fig. 30: $n = 14, f = 5$, 2000



[14] The EU Commission size criteria (2005) were applied in order to group individual firms according to their size. For a detailed methodology on firm grouping see Chapter 4.

Fig 31: $n = 14, f = 5$, 2004

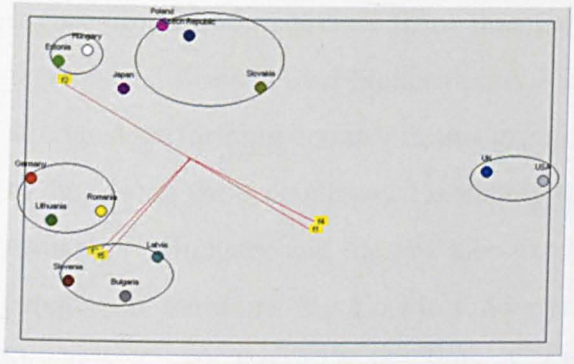
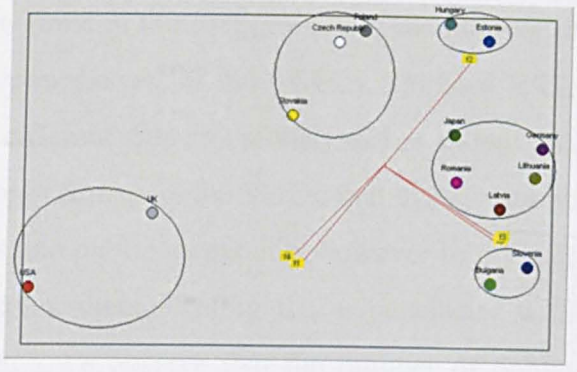


Fig. 32: $n = 14, f = 5$, 2008



Source: Author's Own

b) Interpreting the Co-Plots

Based on the Co-Plots results we are able to distinguish between three groups of countries: Firstly, countries that have developed a *significant demand* for equity financing; secondly, countries that have developed *some demand* for equity financing; and lastly, countries that have developed a *small demand* for equity financing.

First group of countries – Bulgaria and Slovenia– displays a larger proportion of public firms than the majority of the sample countries. They are positioned closely in all time observations. When we observe the ownership structure for individual firm size groups in these two countries, it is the large firms that show a high proportion of public ownership. A large proportion of SMEs is also public in these two countries, but the difference is not as big when compared to other CEECs. However, it is important to say that the public firm proportion is decreasing and not increasing on a year to year basis. A significant decrease is noticed especially in the case of Bulgaria. We argue that this may be a result of equity financing being imposed on firms in Bulgaria in the transition period rather than it being the firms' individual choice. Indeed, the need to restructure economies, abolish state ownership and secure economic growth was a task individual CEECs handled differently. In many countries that basic tool of an economy's restructuring – the privatisation – did not deliver results many were hoping for and thus firms were pushed towards going public without them or their environments being ready. The then underdeveloped banking system was not offering an alternative to the idea of public financing, as firms aiming to grow and therefore looking for external finance were not able to obtain attractive bank loans.

The second group of countries – Slovakia, Czech Republic and Poland – exhibit a higher proportion of private firms than the two firms in the first group and the number of their public firms is also higher than we notice in the rest of the CEECs. Slovakia is the strongest performing country in this group. A different size group analysis has shown that in the case of these countries, it is mainly the large firms, not the SMEs, that display public ownership. Hungary and Estonia also exhibit some public ownership, however to a lesser extent and therefore the Co-Plots do not display them forming the same cluster with Slovakia, Czech Republic and Poland. Although we observe that the number of public firms in these countries is also decreasing, it is not as radical as in the case of the first group. We argue that this is probably due to a better 'support' of the supply mechanism in the form of macro-economic, institutional and managerial conditions. Once the analysis on the firm level is accomplished, such conclusions will be drawn more precisely in the following sections.

The third group of CEECs – Latvia, Lithuania and Romania – shows the smallest proportions of public firms and moderate to low levels of private firms owned by more than five shareholders. Germany and Japan, the banking system prototypes, are either directly (sharing a cluster) or indirectly (within the same area of the graphical display) linked with these countries. Lithuania shares the cluster with the benchmark of Germany in all time observations as both individual group sizes show some presence of shared ownership within the private sector, while Latvia and Romania join the group later in the observation period. Romania initially starts with higher presence of large public firms (proportion almost comparable to Bulgaria), however, in the coming years displays a decrease of public firm ownership. Latvia adopted almost an opposite trend to Romania, as at the beginning it was positioned closely to countries with strong preference of bank financing and gradually started displaying a higher proportion of private firms with more than five shareholders, which would indicate the growing presence of private equity. However, towards the end of our research period it went again to higher number of private firms with limited public ownership.

6.5.5. The Firm's Internal Environment – Managerial Capabilities

The data analysis performed so far has helped us to explain macro-economic and institutional environments individual firms exist in and thus better understand the external conditions contributing to a financial system development. The financial intermediaries

sector analysis and the examination of the firm ownership patterns has enabled us to look closer at the progress of equity culture development within these external conditions. However, financing choices of firms and equity culture development as such are not only determined by the macroeconomic advancement (i.e. high national competitiveness) and institutional support of a country but equally by their intra-firm managerial resourcefulness.

Academic literature confirms (Marris, 1964; Karolyi, 1996; Hutzschenreuter et al., 2007) that international experience of managers and the presence of competent senior management suggest less risk averse business culture in the corporate sector of nations supportive of equity culture development. Based on Barney's (2006) Resource-based view theory we state in our conceptual framework that a strategic decision becomes viable if the internal resourcefulness – the internal resources and capabilities, are not only considered but also utilised to minimise the cost of the intended transaction.

Therefore, in this section, we examine the internal environment of the corporate sector from the managerial capabilities perspective. The IMD database provides an invaluable resource of managerial data. For the purpose of our research we select the following indicators for managerial capabilities: ***m1*** *– Worker motivation,* ***m2*** *– Finance skills,* ***m3*** *– Foreign high-skilled people,* ***m4*** *– International experience,* ***m5*** *– Competent senior managers,* ***m6*** *– Adaptability of companies,* ***m7*** *– Credibility of managers,* ***m8*** *– Entrepreneurship,* ***m9*** *– Attitudes towards globalisation,* ***m10*** *– National culture,* ***m11*** *– Flexibility and adaptability,* ***m12*** *– Need for economic and social reforms,* ***m13*** *– Corporate values.*

a) Applying the Co-Plot Methodology

We evaluate a total set of n = 14 countries with measurements on m = *13* variables for each individual year. The raw data, a $X_{14 \times 13}$ matrix is submitted to Co-plot. With all 14 countries the coefficient of alienation is 0.12 for years 1996 (Fig. 33), 0.13 for 2000 (Fig. 34), 0.13 for 2004 (Fig. 35) and 2008 (Fig. 36) indicating reliability of 87 percent and above. The average of correlations is 0.82 which signals a positive contribution of all thirteen variables.

Fig 33: *n = 14, m = 13,* 1996

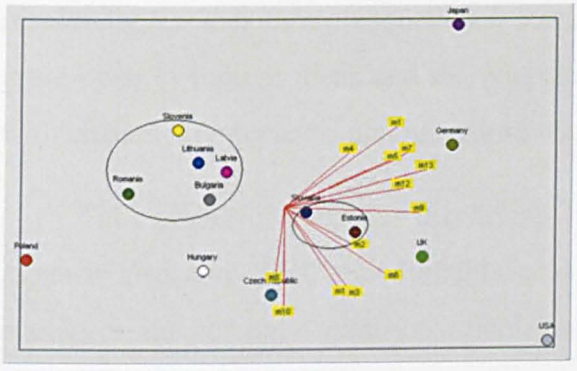


Fig. 34: *n = 14, m = 13,* 2000

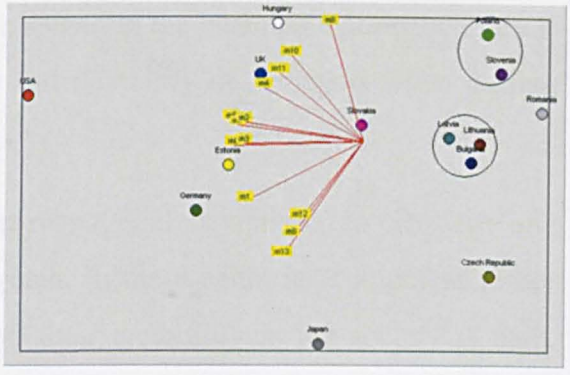


Fig 35: *n = 14, m = 13,* 2004

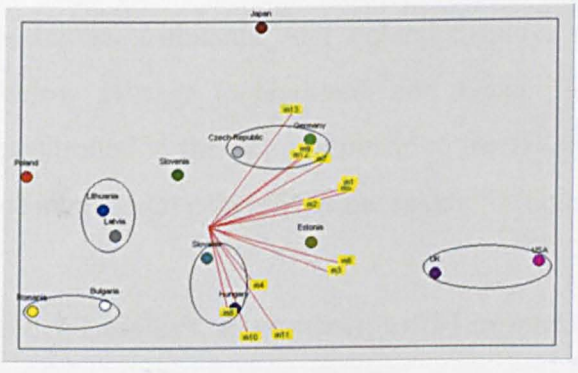
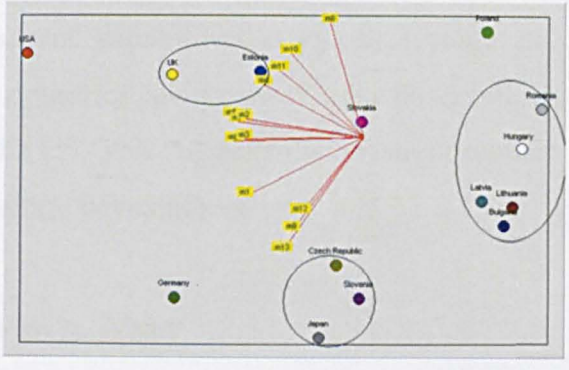


Fig. 36: *n= 14, m = 13,* 2008



Source: Author's Own

b) Interpreting the Co-Plots

The Co-Plot graphical display enables us to distinguish between three groups of countries: Firstly, the UK-USA managerial capabilities followers; secondly, the Germany – Japan capabilities followers; and thirdly, the underperformers – countries that exhibit comparatively lower values than all other CEECs.

There are two CEECs that exhibit managerial values similar to the UK and the US: Estonia and Slovakia. We find that managers in these countries' businesses are highly motivated, foreign high-skilled people are attracted to work for these countries' companies, and that the international experience of senior managers is generally significant. Moreover, the adaptability of local companies is high, the flexibility of managers is high when dealing with new challenges and overall attitudes toward globalisation are very positive. Until 2004 also Hungary is positioned in the same area of the graphical display but during the last years of our research period it changes its position completely and shows one of the lowest values on the previously well performing indicators. On the other hand, Bulgaria and Romania, show the opposite trend. They belong to the group of underperformers till

2004 but then start performing strong on a number of managerial indicators. The Co-Plot results suggest that entrepreneurship is starting to spread in the business, national culture is more open to foreign ideas and the adaptability and flexibility of managers when dealing with challenging decision-making improves.

The number of countries displaying similar managerial capabilities to Germany and Japan is also two: the Czech Republic and Slovenia. In these countries competent senior managers are not only readily available but also their credibility in the society is high. Furthermore, the need for economic and social reforms is generally well understood and corporate values take into account the values of employees. The last group of three CEECs – Latvia, Lithuania, and Poland displays managerial capabilities at values average and below average to Germany and Japan. These countries are in most time observations positioned in the exact opposite to the UK and the US. This suggests the missing presence of managerial capabilities necessary for equity culture development.

6.6. Leaders, Potentials, and Laggards: Who is Who?

The results from the Co-Plot analysis allow us thus to put forward which CEECs have the potential for the development of an equity culture. Table 6.1. cumulatively displays results from the Co-Plots. In each observation countries are organised in an ascending order with the top position indicating low level, quality or presence of conditions identified as necessary for the development of an equity culture and low position indicating high level, quality or presence of the same conditions. Countries are in brackets if they share the same cluster and are at one horizontal level if they are in the same part of the graphical display.

Table 6.1.: The Summary of Co-Plots

Environmental Concepts	Cluster	1996	2000	2004	2008
National Competitiveness	(1)	Bulgaria	(Bulgaria, Estonia, Latvia, Lithuania)	(Latvia, Lithuania) Romania	Bulgaria, Romania
General Macroeconomic Conditions	(2)	(Estonia, Latvia, Lithuania)	(Poland, Hungary)	Bulgaria, Poland	(Hungary, Lithuania, Poland)
	(3)	Poland, Romania	Romania (Czech Republic, Slovenia)	(Czech Republic, Hungary, Estonia, Slovenia)	(Estonia, Latvia)
	(4)	(Czech Republic, Slovakia, Slovenia), Hungary	Slovakia	Slovakia	(Czech Republic, Slovakia)
	(5)	(Germany, Japan, UK, USA)	(UK, USA, Germany) Japan	(Germany, Japan, UK, USA)	Slovenia (UK, USA, Japan) Germany
	(6)				
Composition of the Economy	(1)	Bulgaria, Hungary, Latvia, Lithuania, Romania	Bulgaria, Romania	Bulgaria, Romania	Bulgaria, Romania
	(2)		(Poland, Lithuania)	(Poland, Lithuania)	(Poland, Lithuania)
	(3)	(Czech Republic, Poland, Slovakia)	(Czech Republic, Hungary, Slovakia, Slovenia)	(Czech Republic, Hungary, Slovakia, Slovenia)	(Czech Republic, Hungary, Slovakia), Slovenia
	(4)	(Estonia, Slovenia)	Latvia, Estonia	Latvia, Estonia	Latvia, Estonia
	(5)	(Germany, Japan, UK) USA	(Germany, Japan, UK) USA	(Germany, Japan, UK) USA	(UK, USA, Japan) Germany
Transition Indicators (National Competitiveness)	(1)	Bulgaria, Romania	(Lithuania, Slovenia)	(Bulgaria, Latvia, Romania) Slovenia	Slovenia (Bulgaria, Latvia,Romania)
	(2)	(Lithuania, Slovenia)	(Latvia, Romania) Bulgaria	Lithuania	(Lithuania, Slovakia)
	(3)	(Latvia, Estonia)	Slovakia	(Estonia, Poland, Slovakia)	(Estonia, Hungary, Poland)
	(4)	Hungary, Poland, Slovakia	(Estonia, Poland)	Hungary	Czech Republic
	(5)	Czech Republic	Hungary	Czech Republic	
	(6)		Czech Republic		
Institutional Environment	(1)	Bulgaria, Romania, Slovakia	Romania	(Bulgaria, Lithuania)	Bulgaria, Romania
	(2)	(Estonia, Latvia, Lithuania, Slovenia)	(Bulgaria, Latvia, Lithuania)	Romania	(Lithuania, Slovenia)
Quality of Institutional Environment	(3)	Poland	(Poland, Slovakia)	(Poland, Slovakia)	(Latvia, Estonia)
	(4)	Czech Republic	Czech Republic	Hungary	(Hungary, Poland, Slovakia)
	(5)	(Germany, Hungary)	(Estonia, Slovenia)	(Estonia, Latvia)	Czech Republic
	(6)	(Japan, UK, USA)	Hungary	(Czech Republic, Slovenia)	(UK, USA) (Germany, Japan)
	(7)		(UK, USA) Germany, Japan	(UK, USA) (Germany, Japan)	
Transition Indicators (Institutional Quality)	(1)	Bulgaria, Romania	Bulgaria, Romania	Bulgaria, Romania	Romania, Bulgaria
	(2)	(Latvia, Lithuania)	(Latvia, Lithuania, Slovenia)	Lithuania, Slovenia	Slovenia
	(3)	(Poland, Slovakia, Slovenia)	Slovakia	Latvia	Latvia, Lithuania
	(4)	(Hungary, Estonia)	(Hungary, Estonia), Poland	Poland, Slovakia (Hungary, Estonia)	(Hungary, Estonia), Slovakia Poland
	(5)	Czech Republic	Czech Republic	Czech Republic	Czech Republic
Financial Intermediaries The Presence of Banking vs. equity-related financial institutions	(1)	Czech Republic, Poland, Slovakia, Japan	Lithuania, Poland, Japan	Poland, Japan	Bulgaria
	(2)	Bulgaria	(Germany, Hungary, Romania, Slovenia)	(Germany, Hungary, Lithuania, Romania, Slovenia)	(Poland, Japan)
	(3)	(Germany, Hungary, Romania, Slovenia)	(Bulgaria, Slovakia)	Czech Republic	(Hungary, Romania)
	(4)	(Latvia, Lithuania)	Czech Republic	(Bulgaria, Slovakia)	(Germany, Lithuania, Slovenia)
	(5)	(Estonia, UK)	Latvia	Latvia	Czech Republic
	(6)	USA	(Estonia, UK)	(Estonia, UK)	Slovakia, Estonia, Latvia, UK
	(7)		USA	USA	USA
The Quality of the Banking Sector and Equity Related Financial Intermediaries	(1)	(Slovakia, Romania, Slovenia, Hungary, Bulgaria)	Bulgaria, Hungary, Slovenia	(Bulgaria, Hungary, Lithuania, Romania, Slovenia)	Bulgaria, Romania
	(2)	Czech Republic	Latvia	Poland	Lithuania
	(3)	(Germany, Japan)	Germany, Japan	(Germany, Japan, Latvia)	(Latvia, Poland)
	(4)	(Lithuania, Poland)	(Czech Republic, Lithuania, Slovakia, Romania)	(Slovakia, Czech Republic)	Germany, Japan, Czech Republic, Hungary)
	(5)	Latvia	Estonia, Poland	Estonia	(Slovakia, Slovenia)
	(6)	(Estonia, UK)	UK, USA	UK, USA	Estonia
	(7)	USA			UK, USA
Ownership Patterns Total Number of firms	(1)	(Germany, Japan, Latvia, Lithuania)	(Germany, Lithuania)	(Germany, Lithuania, Romania)	(Germany, Japan, Latvia, Lithuania, Romania)
	(2)	Estonia, Czech Republic, Poland), Hungary	(Estonia, Hungary, Latvia, Lithuania)	Japan, (Hungary, Estonia)	(Hungary, Estonia)
	(3)	Slovakia	Japan, Hungary	(Slovakia, Czech Republic, Poland)	(Slovakia, Czech Republic, Poland)
	(4)	(Bulgaria, Romania, Slovenia)	(Czech Republic, Poland)	(Bulgaria, Latvia, Slovenia)	(Bulgaria, Slovenia)
	(5)	(UK, USA)	(Estonia, Slovakia)	(UK, USA)	UK, USA
	(6)		(Bulgaria, Romania, Slovenia, Latvia)		
	(7)		(UK, USA)		
Managerial Resources and Capabilities	(1)	Poland	(Poland, Slovenia)	Poland	Poland
	(2)	(Bulgaria, Latvia, Lithuania, Romania, Slovenia)	Romania	(Latvia, Lithuania)	(Bulgaria, Latvia, Lithuania, Hungary, Romania)
	(3)	Germany, Japan	(Bulgaria, Latvia, Lithuania)	Slovenia	Germany (Japan, Czech Republic, Slovenia)
	(4)	Czech Republic, Hungary	Czech Republic	(Germany, Czech Republic) Japan	
	(5)	(Estonia, Slovakia)	Germany, Japan	(Bulgaria, Romania)	Slovakia
	(6)	UK, USA	Estonia, Hungary, Slovakia	Estonia (Slovakia, Hungary)	USA (UK, Estonia)
	(7)		UK, USA	(UK, USA)	

Source: Author's Own

Drawing from the summary table we compare individual indicators across countries. We pose a question whether a specific country under observation has the necessary macro-economic, institutional and managerial conditions in order for the equity culture to be able to develop. We state 'yes' if a CEEC shows the presence of identified conditions, 'some' if a CEEC shows a close position and thus good potential for the presence of the required condition, and we score 'no' if a CEEC is positioned far from the benchmarks (or in some instance close to benchmarks representing the bank-based system however not close to benchmarks representing the equity-based system). The results are offered in Table 6.2. (year 1996), Table 6.3. (year 2000), Table 6.4. (year 2004) and Table 6.5. (year 2008).

It is important to note that in these tables we differentiate between two main groups of indicators: the conditions and demand for equity financing by firms. Firstly, the supply conditions affect the size of transaction costs which firms incur when opting for equity financing. As suggested in our conceptual framework, firms may apply for equity financing and thus contribute to the development of an equity culture if the presence of adequate conditions (macro-economic, institutional and managerial) results in a small size of such costs. Secondly, the demand for equity financing represents the number of firms which opt for shared ownership either through becoming a public firm with its shares traded on public markets or a private firm with a higher than five shareholders ownership. Drawing on our conceptual framework, we believe that a sustainable equity culture can develop if the corporate sector's high demand for equity financing is met by the presence of high conditions stemming from macro-economic, institutional and managerial environments.

Table 6.2.: Co-Plots Results 1996

	National Competitiveness			Institutional Conditions				Managerial Conditions	Demand for Equity Financing			
CEECs	Macro-economic Conditions	Economy Structure	Transition Status	Institutional Quality	Transition Status	Banking vs. Equity-related Financial Institutions	The Quality of the Banking and Equity-related Financial Sector	Managerial Capabilities	Total No of Firms	Large Firms	SMEs	Micro Firms
Bulgaria	no	no	no	no	no	some	no	no	yes	yes	yes	yes
Czech Rep.	yes	some	yes	yes	some	some	no	yes	some	yes	no	no
Estonia	no	some	no	no	yes	yes	yes	yes	some	some	no	no
Hungary	yes	some	yes	yes	yes	no	no	some	no	no	no	no
Latvia	no	some	no	no	some	yes	some	no	no	some	no	no
Lithuania	no	no	no	no	some	yes	some	no	no	some	no	no
Poland	no	no	yes	some	yes	no	some	no	some	some	no	no
Romania	no	no	no	no	no	no	no	no	yes	yes	some	yes
Slovakia	yes	some	yes	no	yes	some	no	yes	yes	yes	yes	no
Slovenia	yes	some	no	no	some	no	no	no	yes	yes	some	some

Source: Author's Own

Table 6.3.: Co-Plots Results 2000

	National Competitiveness			Institutional Conditions				Managerial Conditions	Demand for Equity Financing			
CEECs	Macro-economic Conditions	Economy Structure	Transition Status	Institutional Quality	Transition Status	Banking vs. Equity-related Financial Institutions	The Quality of the Banking and Equity-related Financial Sector	Managerial Capabilities	Total No of Firms	Large Firms	SMEs	Micro Firms
Bulgaria	no	no	no	no	no	some	no	no	yes	yes	yes	some
Czech Rep.	yes	some	yes	some	some	some	some	no	some	yes	no	no
Estonia	some	some	yes	some	yes	yes	yes	yes	some	some	no	no
Hungary	yes	some	yes	yes	yes	no	no	yes	no	some	no	no
Latvia	no	some	no	no	some	yes	some	no	no	some	no	no
Lithuania	no	no	no	no	some	some	some	no	some	yes	no	no
Poland	yes	no	yes	yes	yes	some	some	no	some	some	no	no
Romania	some	no	no	no	no	no	some	no	yes	yes	yes	no
Slovakia	yes	some	some	yes	some	some	some	yes	some	yes	some	no
Slovenia	yes	some	no	some	some	no	no	no	yes	yes	some	no

Source: Author's Own

Table 6.4.: Co-Plots Results 2004

	National Competitiveness			Institutional Conditions				Managerial Conditions	Demand for Equity Financing			
CEECs	Macro-economic Conditions	Economy Structure	Transition Status	Institutional Quality	Transition Status	Banking vs. Equity-related Financial Institutions	The Quality of the Banking and Equity-related Financial Sector	Managerial Capabilities	Total No of Firms	Large Firms	SMEs	Micro Firms
Bulgaria	no	no	some	no	no	some	no	no	yes	yes	some	some
Czech Rep.	yes	some	yes	some	some	some	some	no	some	yes	no	no
Estonia	yes	yes	yes	some	yes	yes	yes	yes	no	some	no	no
Hungary	yes	some	yes	some	yes	no	no	yes	no	some	no	no
Latvia	no	some	some	some	some	yes	no	no	yes	yes	no	no
Lithuania	no	no	some	no	some	no	no	no	no	some	no	no
Poland	no	no	yes	some	yes	some	some	no	some	some	no	no
Romania	no	no	some	no	no	no	no	no	no	some	no	no
Slovakia	yes	some	yes	some	some	some	some	yes	some	yes	some	no
Slovenia	yes	some	no	some	some	no	no	no	yes	yes	some	no

Source: Author's Own

Table 6.5.: Co-Plots Results 2008

	National Competitiveness			Institutional Conditions				Managerial Conditions	Demand for Equity Financing			
CEECs	Macro-economic Conditions	Economy Structure	Transition Status	Institutional Quality	Transition Status	Banking vs. Equity-related Financial Institutions	The Quality of the Banking and Equity-related Financial Sector	Managerial Capabilities	Total No of Firms	Large Firms	SMEs	Micro Firms
Bulgaria	no	no	no	no	no	some	no	no	yes	yes	some	some
Czech Rep.	yes	some	yes	some	yes	yes	some	no	some	yes	no	no
Estonia	yes	yes	yes	some	yes	yes	yes	yes	no	some	no	no
Hungary	some	some	yes	yes	yes	no	some	no	no	no	no	no
Latvia	yes	yes	no	some	no	yes	some	no	no	no	no	no
Lithuania	some	no	yes	some	some	no	no	no	no	no	no	no
Poland	some	no	yes	yes	yes	some	some	no	some	some	no	no
Romania	no	no	no	no	no	no	no	no	no	no	no	no
Slovakia	yes	some	yes	yes	some	yes	some	yes	yes	yes	yes	no
Slovenia	yes	some	no	some	no	no	some	no	yes	yes	some	no

Source: Author's Own

To be able to graphically display the position of individual countries in terms of their corporate sector's *demand* for equity financing and the macro-economic, institutional and managerial *conditions* these countries display we assign a numeric value to each of the possible answers: answer 'no' = 0, answer 'some' = 1, and answer 'yes' = 2. Then we individually sum up values for the *demand* and *conditions* side. These results are displayed below in Table 6.6.

Table 6.6.: Summary Table Co-Plots – Numerical values

	Conditions				Demand of Firms			
CEECs	1996	2000	2004	2008	1996	2000	2004	2008
Bulgaria	1	1	2	1	6	5	4	4
Czech Rep.	11	9	9	11	2	2	2	2
Estonia	9	13	15	15	1	1	1	1
Hungary	10	11	10	9	0	1	1	0
Latvia	5	5	6	8	1	1	2	0
Lithuania	4	3	2	4	1	2	1	0
Poland	6	10	7	9	1	1	1	1
Romania	0	2	1	0	5	4	1	0
Slovakia	10	11	11	13	4	3	3	4
Slovenia	4	5	5	5	4	3	3	3

Source: Author's Own

This conversion to numerical values enables us to create scatter plots for year 1996 (Fig. 6.2), 2000 (Fig. 6.3), 2004 (Fig. 6.4.) and 2008 (Fig. 6.5.). In these scatter plots the horizontal axis is represented by the demand of firms for equity financing (public firms and/or private firms with more than five shareholders) and the vertical axis denotes the presence of conditions necessary for the development of an equity culture. Thus the scatter plots reveal the position of each country in terms of the demand for equity financing and the supply conditions these firms are affected by. We divide each scatter plot horizontally into three sections. Firstly, the top part representing the highest level of conditions is referred to as the *Leaders*. Countries positioned in this part of the scatter plot show a high presence of conditions which we have identified necessary for the development of an equity culture. Secondly, the middle part of the scatter plot denotes a medium level of conditions important for the development of an equity culture. Countries that are positioned in this section of the scatter plot are referred to as the *Potentials*. Finally, the bottom part of the scatter plot represents a low level of conditions necessary for the development of an equity culture. We name countries within this section of the scatter plot the *Laggards*.

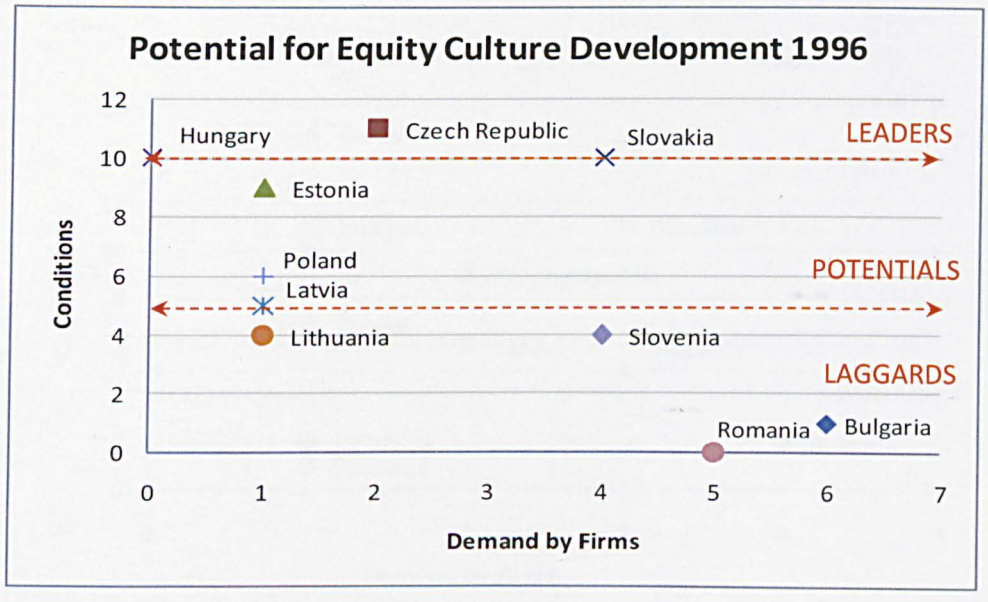
The group of *Leaders* has gradually shaped into its 2008 final form, in which Estonia, Czech Republic and Slovakia assume their positions. While Slovakia enjoys this position through-out the whole observation period with a relatively high demand, the same cannot be said about Czech Republic and Estonia. Czech Republic, despite its 1996 position in the leaders group, descends into the group of 'potentials' for the majority of the observation period and even when in 2008 it returns back to its initial group, it remains

close to the border line scoring only marginally better than some countries from the potentials group. On the other hand, Estonia shows quite the opposite trend. Despite a slow start in 1996 it moves into the leaders section and remains together with Slovakia the best performing country in this group. However, the demand for equity financing this country displays is much lower than that of its section co-members.

The final 2008 group of *Potentials* consists four countries: Hungary, Latvia, Poland and Slovenia. Apart from Latvia, none of the other three countries is in this group for the whole duration of our observation period. In the first three observation periods Hungary is in the leaders until it finally in 2008 finds a position in this group. This suggests a descending trend of the quality and presence of conditions necessary for the development of an equity culture in this country. Poland is in this group for the majority of the observation period with a exception in 2004 when it briefly joins the group of leaders. Slovenia starts in 1996 in the least good performing group of laggards and after that moves into this group. However, despite its size of demand comparable to Slovakia from the leaders group, Slovenia shows the weakest supply conditions among its 'potentials' co-members.

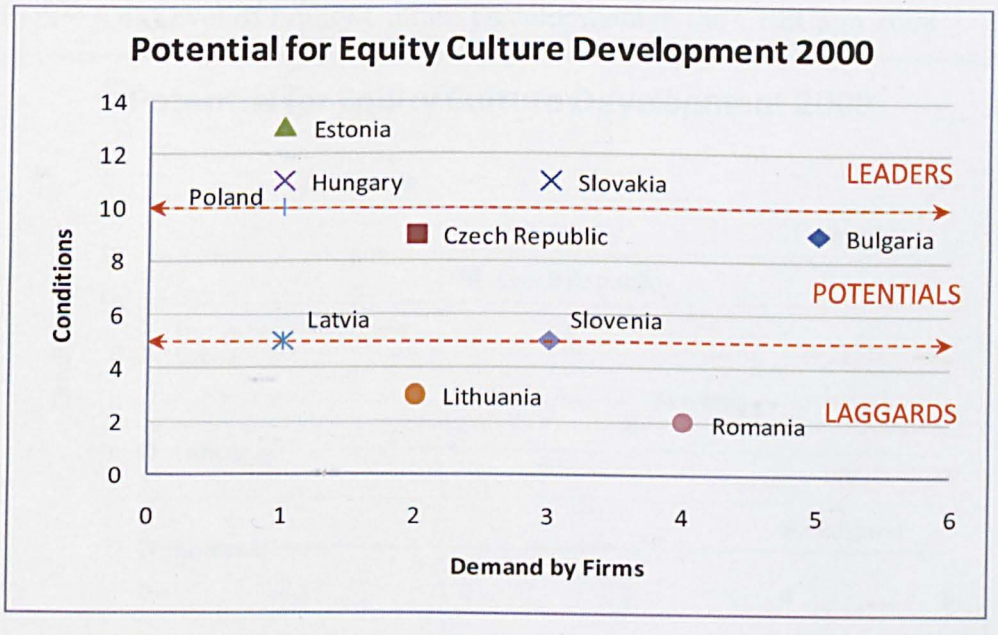
In 2008 the group of *Laggards* is represented by three CEECs: Lithuania, Bulgaria and Romania. Bulgaria is the only country from this group that moves into a different group during the observation period. Indeed, Bulgaria joins the group of 'potentials' briefly in 2004. From the beginning of the observation period this country shows a high demand for equity financing. Our results suggest that this demand has not developed as a result of supportive external and internal conditions, but due to other transition economy specific events. Thus the development of an equity culture, as defined in this thesis, seems in the case of Bulgaria unattainable.

Figure 6.1.: Level of Equity Culture Development in the CEECs in 1996



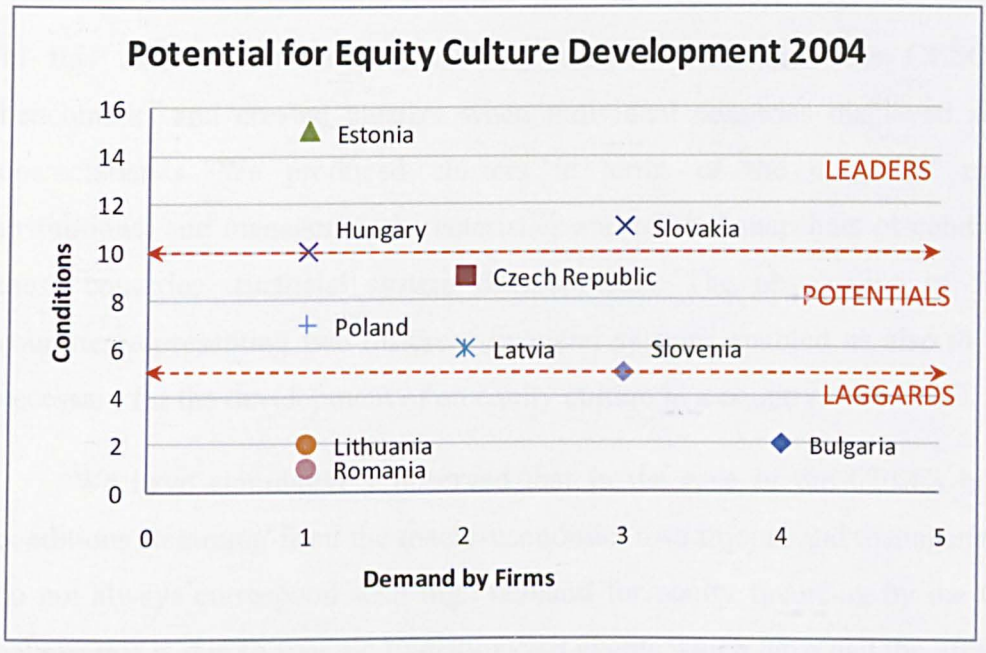
Source: Author's Own

Figure 6.2.: Level of Equity Culture Development in the CEECs in 2000



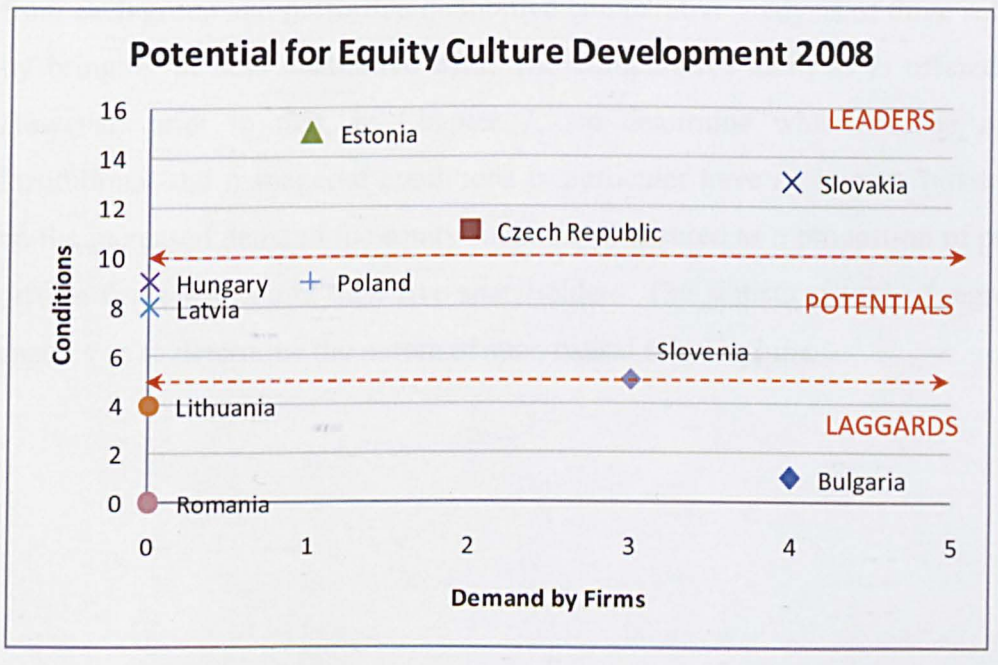
Source: Author's Own

Figure 6.3.: Level of Equity Culture Development in the CEECs in 2004



Source: Author's Own

Figure 6.4: Level of Equity Culture Development in the CEECs in 2008



Source: Author's Own

6.7. Conclusion

In this chapter we benchmarked our sample countries - the CEECs against four benchmarks and created clusters when individual countries displayed similar indicator characteristics. We produced clusters in terms of the countries' macro-economic, institutional and managerial characteristics and offered snapshots of conditions leading to these countries' financial system developments. The observation of four benchmark countries representing two different financial systems enabled us also to identify factors necessary for the development of an equity culture in a country.

We have cumulatively observed that in the case of the CEECs high presence of conditions stemming from the macro-economic, institutional and managerial environments do not always correspond with high demand for equity financing by the CEE firms. We believe this is due to specific transition-tied events which have had the effect of disturbing the co-existence of the demand and conditions side as defined in our conceptual framework. To be able to further explain these events as well as point out the differences between the three groups of *Leaders*, *Potentials* and *Laggards* we choose a representative from each group and perform a qualitative comparative analysis of three selected countries by bringing in new qualitative data. The comparative analysis is offered in Chapter 8. However, prior to that, in Chapter 7, we determine which of the macroeconomic, institutional and managerial conditions in particular have an impact, positive or negative, on the increased demand for equity financing measured as a proportion of public firms and private firms with more than five shareholders. The statistical tool of regression analysis enables us to determine the nature of such causal relationships.

Chapter 7: Regression Analysis

7.1. Introduction

In the previous chapter we performed the first stage of our empirical analysis – clustering and benchmarking. We used the Co-Plot method to perform this analysis. The aim of this chapter is to build on the results from Chapter 6 and provide answers as to what specific external and internal factors have a causal effect on a firm's strategic decision to opt for equity financing and thus influence the development of an equity culture in the transition economies of the CEECs. This empirical analysis provides answers to our third research question introduced in Chapter 1.

The chapter is organised as follows: Firstly, we discuss the methodology of our chosen statistical tool for the assessment of relationships between the dependent and independent variables – the fixed effects regression analysis[15], we introduce our dependent variables, we discuss the selection process of our independent variables, and we perform the correlation analysis. Secondly, we carry out the regression analysis and discuss our findings by relating to our conceptual framework and relevant literature. Finally, a summary section concludes this chapter.

7.2. Methodology

To empirically test the effects of specific factors on the firms' demand for equity financing we employ a regression analysis. Regression analysis enables us to make inference on an encompassing framework of analysis that takes into consideration all countries and periods of time. In this respect regression analysis differs from the earlier Co-Plot analysis which was carried out with specific groups and for a single time period. In order to allow for specific individual effects (i.e. country and time effects), our study uses the fixed effects panel estimation technique. The value of each dependent variable individually for the *ith* unit at time *t*, y_{it}, depends on *K* exogenous variables $(x_{Ait}, \ldots x_{Kit}) = x'_{it}$ that differ among individuals in a cross-section at a given point of time and also exhibit variation through time.

[15] We apply the fixed effects model as we do not deem the random effects model congruent with our type of data. The fixed effects model allows us to impose country and time independent effects for each entity that are possibly correlated with the regressors (Wooldridge, 2002). Our sample is not capturing the whole population but is measuring the difference between specific countries.

The general form of the model is:

$$y_{it} = \alpha_i + \beta' X_{it} + u_{it}$$

where $i = 1...n$, and represents the Central and Eastern European countries participating in the sample, and $t = 1,...t$ (covering the relevant time period of 1996 - 2008). β' is a 1 x k vector of coefficients constant over time and α_i is a 1 x 1 scalar constant representing the effects of those variables peculiar to the ith individual in the same fashion over time. We formulate the error term u_{it} in a way that represents the effects of the omitted variables that are specific to both the individual units and time.

We moreover assume that u_{it} is an independently identically distributed random variable with:

$$E(u_{it}) = 0$$

$$E(u_{it}u_{it}') = \sigma_u^2 I_T \text{ where } I_t \text{ is a } T \text{ x } T \text{ identity matrix.}$$

$$E(u_i u_j) = 0 \text{ if } i \neq j$$

The ordinary least squares (OLS) is the best linear unbiased estimator (BLUE) (Filippaios and Papanastossiou, 2008).

We perform the regression analysis by using a statistical computerised programme STATA 10. We opt for using a regression model with the *xi:* prefix as it handles fixed time and country effects in our regression models. We add the suffix *,robust* as we want to control for the robustness of our estimations[16]. We create a set of dummy variables for the categorical variables of *year* and *country.* Including these dummy variables enables us to see their coefficients, i.country – fixed effects, and i.time – time effects. However, we do not report these here in the interest of space and simplicity. Our regression command thus looks as follows:

xi: reg dependent_variable independent_variables i.year i.country, robust

In each estimation we report on the N number of observations included, we test for the statistical significance of the fixed (country) and time effects of our panel data with F statistics, and we test for the efficiency of our model with the coefficient of determination R^2. R^2 describes the variance in the dependent variable, which can be explained from the variance in the independent variable. Wooldridge (2002) suggests small effect size if R^2 is

[16] For reference refer to: http://www.stata.com/support/faqs/stat/robust_ref.html

< 1%, a medium effect if R^2 is between 1% - 10% and a large effect if R^2 is > 10%. We also report the overall *F* statistic of the model, the likelihood function (ll) and the akaike information criterion (*aic*) as further indicators of the model's performance.

7.2.1. Dependent Variables

Regression analysis is a statistical analysis tool, which enables us to investigate the influence of a specific predictor on a dependent variable (Dewberry, 2004). In our analysis we employ four different specifications for the dependent variable. These four variables reflect the *demand* for equity finance – the main driver of equity culture development in a country. The argument for a demand driven nature of equity culture is captured in our definition of equity culture in Chapter 1 and forms the core of our conceptual framework presented in Chapter 3.

Firstly, we identify the dependent variable as the ratio of public firms over the total number of firms in a country. We call this variable *RatioPublic.* Secondly, we create a dependent variable which reflects an intensity relationship between public firms and private firms expressed as a ratio of public firms over private firms. We refer to this variable as *PublicToPrivate.* Results for this dependent variable are presented in an appendix (Appendix B, Table 7, 8 and 9) as they do not differ from the RatioPublic variable. This is because the denominators in these two ratio type dependent variables (the total number of firms and the number of private firms) are very similar (the correlation coefficient is 0.9980).

Thirdly, to account for perhaps a less obvious demand for equity financing, in our view, however, critical for a comprehensive assessment of equity culture development in a country, we construct a dependent variable which reflects the proportion of private firms with five or more shareholders over the total number of firms in a country. We label this variable *RatioPrivate5.* Lastly, in a similar way to our second dependent variable, we consider it important to include a variable denoting an intensity character and therefore generate our fourth dependent variable as a ratio of private firms with five or more shareholders over private firms. This variable is called *Private5ToPrivate.* For the same reasons as explained in the case of our second dependent variable (in this case the correlation coefficient is 0.9931), we provide results for this dependent variable in an appendix (Appendix B, Table 10, 11 and 12).

7.2.2. Independent Variables

The full set of all independent variables considered in our study are introduced in Chapter 5. These independent variables correspond to the *supply conditions* argument, first mentioned in our definition of equity culture in Chapter 1 and then further developed in our theory building section in Chapter 3. We restate that these variables are of macro-economic, institutional and managerial character.

The first stage of our empirical examination, the clustering analysis in Chapter 6, has enabled us to identify three groups of CEECs in terms of their level of equity culture development (Leaders, Potentials, Laggards). To arrive at these results we benchmarked macro-economic, institutional and managerial indicators of the CEECs against four advanced economies representing two different financial systems, the bank-based model used in Germany and Japan, and the equity-oriented model used in the UK and the USA. This analysis proves useful for the second stage of the empirical examination, the regression analysis. To build the regression model we draw on our propositions in our conceptual framework in Chapter 3, and utilise our results from Chapter 6 – the Co-Plot analysis. This gives us a solid starting point for our estimations work. This enabled us to include variables which, based on our theoretical thinking supported by existing literature, have an impact (positive or negative) on the demand for equity financing in a country (e.g. inward FDI, lending interest rate, etc.), however, are not identified by Co-Plots as variables affecting such demand. The estimations are provided later in this chapter.

7.2.3. Correlation of Variables

We use the statistical technique of correlation to show whether and how strongly pairs of variables are related. Because the data we use is quantifiable with individual numbers bearing a meaning, and consists not only categorical but also ordinal variables we deem the correlation technique appropriate for the assessment of statistical relationship between individual variables. We assume that a +1 correlation is in the case of a perfect positive linear relationship between two variables and a −1 correlation is in the case of a perfect negative linear relationship between two variables. The closer the coefficient is to either +1 or −1, the stronger the correlation between two variables under observation. Therefore, in our correlation analysis we look for correlation values somewhere between +1 and −1 indicating linear independence between individual variables under observation.

We report the correlation table for all variables in Appendix A. We did not see any significant correlation between variables examined in the further statistical analysis of fixed effects regression except for two exceptions. Firstly, the correlation between our first two dependent variables (*RatioPublic* and *PublicToPrivate*) is high with coefficient 0.9980, and secondly between the last two dependent variables (*RatioPrivate5* and *Private5ToPrivate*) the correlation is also high with coefficient 0.9931. For robustness checks we run the regression analysis for all four dependent variables but we note that the same results hold in the case of the regression between the first two dependent variables and the last two dependent variables. The correlation results thus further support our decision not to include the intensity ratio dependent variables in the main report.

7.3. Discussion of Results

7.3.1. Estimations: Dependent Variable *RatioPublic*

7.3.1.1. Estimations RatioPublic for the Total Number of Firms

The four regressions in Table 1 (7.1.) cover the full period 1996-2008 for the full sample of CEECs. In these regressions we control only for the total number of firms. We start with a basic model which includes macro-economic independent variables (Model 1.1.), then add institutional variables (Model 1.2.), followed by variables representing the quantitative presence and quality of financial intermediaries (Model 1.3.) and finally managerial variables (Model 1.4.). Model 1.4. is the final model we arrive at in the estimation process and which we use for further analysis to estimate for different firm size (Large firms, SMEs, Micro firms) and country type (*Leaders, Potentials, Laggards*). This is explained in later sections of this chapter.

Of the macro-economic indicators which we identified through the Co-Plot analysis important for the presence or the development of an advanced financial system, it is *Inward Foreign Direct Investment (FDI)* that emerges as consistently significantly negative in these regressions, with a significance value in the final model of 5%. This would suggest that in the case of the transition economies of Central and Eastern Europe the higher the level of inward FDI, the fewer firms opt for equity financing and consider less often the option of becoming publicly traded companies. This finding does not dispute the observation of Choi and Jeon (2007) who claim that higher levels of inward FDI

contribute to the development of a more advanced financial system. However, in the case of the CEECs, it seems that FDI coming from bank-based financial systems (Germany, Italy, Austria) is a factor contributing to the continuous presence of the bank-based financial systems. The phenomenon of a path-dependent behaviour of foreign investors and their capital providers is the reason for this. Therefore, we do not disagree with Kim and Kenny's (2007) conclusion that equity based financial systems flourish in countries with increased levels of FDI. However, we add that for the FDI to fulfil its function of a contributor to the development of an equity based system, it needs to be coming from a country with developed equity-based systems so that host firms bring with them not only their investments but also an appetite for equity-based financing.

By contrast, another macro-economic indicator – *GDP per head* gains positive significance from the third model (Model 1.3.) and remains positively significant in the fourth model (Model 1.4.) at 1% level. This would suggest that the higher the GDP per head the more firms opt for equity financing and 'go public'. Our finding corresponds with the observation of Bekaert et al. (2001) who conclude that higher levels of GDP per head, as a macro-economic indicator of a country's economic power, play a part in the development of equity markets in less developed economies. Furthermore, *Lending interest rate* displays positive significance in first (Model 1.1.) and second (Model 1.2.) model at 1% level and although with only a significance of 10% it remains significant in the fourth model (Model 1.4.). This would suggest that the higher the lending interest rate in a country the higher the number of firms opting for equity financing. This observation goes in line with our conceptual thinking in Chapter 3, as we reason that higher costs associated with a bank loan as a source of external capital (caused for example by an increased lending interest rate) may result in firms considering equity financing as a feasible alternative. The last macro-economic indicator that is significantly positive in our estimations is *Balance of trade.* Although not significantly positive in the previous models, this variable gains positive significance in the fourth model (Model 1.4.) at 10% level. This indicates that the better macro-economic performance expressed as balance between imports and exports, the more firms opt for equity financing and consider the option of becoming publicly traded companies. This finding again corresponds with previous literature, which states that equity financing is more likely to become a favoured financing option for firms in countries with healthier and better performing economies (Bekaert et al., 2001; Bekaert et al., 2002).

The variable representing the proportion of the *Services* sector never approaches significance and in fact proves to have a distorting influence on the performance of other variables (i.e. affects their signs and significance). As the structure of the economy indicates the development stage of a country's economy (Hamalainen, 2003), the effect of this variable is likely to be captured by GDP per head. Therefore, we exclude this variable from our estimations after the first model. The *Competition policy* variable is positively significant in the first (Model 1.1.) and second (Model 1.2.) model at 5% and 10% level respectively. It loses significance in the third (model 1.3.) and fourth (Model 1.4.) model as we add more variables to our estimations. We believe that this is because some of the later added institutional variables (e.g. Bureaucracy Quality with which it shares a correlation value of 0.6939) take on the explanatory power of this indicator.

Through-out the Co-Plot analysis we noted the presence of a number of institutional variables related to our benchmarks representing the Anglo-Saxon equity based system. Also, existing literature has highlighted the presence of some institutional indicators necessary for the development of an equity-based financial model (Bakker and Gross, 2004; Peng, 2004). In our estimations three variables emerge as consistently significant in Models 1.2. (when these variables are first introduced), 1.3. and 1.4. Firstly, *Bureaucracy quality* displays positive significance in the second (Model 1.2.), third (Model 1.3.) and fourth (Model 1.4.) models at 5% level and then at 10% level. This would suggest that the better the quality of bureaucracy in an economy, the higher the number of firms which opt for equity financing and 'go public'. Our finding confirms our conceptualisation that a good bureaucratic system reduces transaction costs and is in line with earlier observations of Bekaert et al. (2001) and Smith (2003) who state that financial systems in which equity based forms of capital are more popular, are characterised by an efficient bureaucracy-free system.

Secondly, *Banking reform and interest rate liberalisation* demonstrate consistently negative significance in Models 1.2., 1.3., and 1.4. at 1% level. This result implies that better banking rules and regulation possibly lower contracting and coordinating costs for firms when opting for debt finance as their external source of capital and thus makes borrowing a feasible or more attractive financing option. Thirdly, the variable of *Securities markets and non-bank financial institutions* is significantly positive in Models 1.2., 1.3. and 1.4. at 1% and 5% level. This would suggest that the better the improvement in securities laws and regulation, the more firms opt for equity financing and more frequently

consider becoming publicly traded companies. The last two findings are consistent with our argument presented in Chapter 3 that the preference for either bank financing or equity finance depends on their relationship to transaction costs absorbed by firms. The lower the transaction costs associated with a particular source of external capital, the higher the preference for such source of capital by firms.

Further for the indicators representing financial intermediaries *National commercial banks* are strong in the regressions in which it is considered a predictor for the behaviour of our dependent variable – the proportion of public firms in a country's corporate sector. It displays a positive significance at 1% level in Models 1.3. and 1.4. This seems to suggest that a high proportion of national commercial banks in an economy relates to a higher number of firms opting for equity finance. At this point it is important to reiterate our finding (first noted in Chapter 6, in the Co-Plot analysis of the financial intermediaries sector) about the poor presence of commercial banks (other than national), branches and agencies of foreign banks as well as other short term business credit institutions in the transition economies of the CEECs (Orbis, 2008). Their absence in the financial sectors of the CEECs in the period 1996-2008 is significant to such an extent that we are not able to include these indicators in our analysis, as there is very little variance amongst this data (in some cases it being zero for the whole observation period). This confirms inadequate competitive conditions within the banking sector of the CEECs (EBRD, 2006). We reason that national commercial banks may take advantage of their monopoly-like position within the banking sectors of the transition economies and overcharge for their services. Indeed, as for instance Deidda and Fattouh (2008) observe, in less advanced economies, such as the transition countries of Central and Eastern Europe, which are typical for their underdeveloped financial markets, banks tend to exploit their dominant position and charge excessive interest rates for the credit they offer. Therefore, we suggest that such conditions in the banking sector may trigger firms' interest in an alternative source of external capital, such as equity.

Next, our estimations confirm what the literature most commonly refers to as an indication of a functioning equity-based system and what practitioners regard as the most obvious sign of an existing equity culture: the presence of high *Stock market capitalisation* (Levine and Zervos, 1998; Beck and Levine, 2004; WEF, 2008). The nature of the related argument is that the more liquid the equity markets are the more firms opt for equity financing and consider becoming publicly traded companies. Liquid equity markets

provide an access to a large pool of investors and offer attractive ways of raising capital for listed businesses (Pagano and Roell, 1996). Such conditions instigate low searching, contracting and coordinating costs to firms. Our findings display 5% positive significance of this variable and thus in this respect not only complement existing literature but also correspond with our conceptualisation.

For the managerial indicators *International experience of managers* is the only variable that is significantly positive in our estimations. This would suggest that firms which employ managers with international experience are more likely to consider becoming a publicly traded company. To our knowledge, this finding is specific to our study as managerial level indicators have not been previously included in this type of analysis.

Based on our findings in this section we conclude that independent variables from the macro-economic, institutional and managerial environments assert a statistical influence on our dependent variable (*RatioPublic*). This finding goes in line with our first proposition from our conceptual framework:

P1: Equity culture development in transition economies is shaped by a combination of macro-economic, institutional and managerial environments.

Table 7.1.: Estimations *RatioPublic* (Total Number of Firms)

Table 1		**Estimations RatioPublic (Total Number of Firms)**			
Variable Name	*STATA Label*	*Model 1.1.*	*Model 1.2.*	*Model 1.3.*	*Model 1.4.*
GDP per head	*lgdp_per_*	0.00284	-0.00166	0.01626***	0.01926***
		(0.00318)	(0.00196)	(0.00506)	(0.00447)
Lending interest rate	*lending_*	0.00007***	0.00004***	0.00002	0.00002*
		(0.00001)	(0.00002)	(0.00002)	(0.00001)
Inward FDI	*inward_f*	-0.00032***	-0.00018**	-0.00022**	-0.00018**
		(0.00011)	(0.00008)	(0.00008)	(0.00008)
Balance of trade	*balance_*	0.00014	0.00008	0.00017	0.00016*
		(0.00012)	(0.00011)	(0.00010)	(0.00009)
Services	*services*	-0.00004			
		(0.00015)			
Competition policy	*competit*	0.00427**	0.00221*	0.00172	0.00189
		(0.00193)	(0.00131)	(0.00138)	(0.00126)
Corruption	*corrupti*		0.00041	-0.00012	0.00048
			(0.00043)	(0.00058)	(0.00066)
Law and order	*law_and_*		0.00072	0.00026	0.00018
			(0.00071)	(0.00064)	(0.00068)
Bureaucracy quality	*bureaucr*		0.00294**	0.00239*	0.00207*
			(0.00132)	(0.00127)	(0.00124)
Large scale privatisation	*large_sc*		-0.00192	-0.00100	
			(0.00196)	(0.00182)	
Small scale privatisation	*small_sc*		-0.00531*	-0.00029	
			(0.00292)	(0.00305)	
Banking reform & interest rate liberali.	*banking1*		-0.00556***	-0.00536***	-0.00553***
			(0.00159)	(0.00123)	(0.00129)
Securities markets & non-bank finan. inst.	*securiti*		0.00317***	0.00317**	0.00268**
			(0.00114)	(0.00156)	(0.00174)
National commercial banks	*rationational banks*			0.04762***	0.04801***
				(0.01009)	(0.01162)
Miscellaneous business credit inst.	*ratiomisc*			-0.00995*	-0.00747
				(0.00589)	(0.00546)
Stock market capitalisation	*stock_m1*			0.00008**	0.00008**
				(0.00004)	(0.00003)
Worker motivation	*worker_m*				0.00069
					(0.00060)
International experience	*internat*				0.00156**
					(0.00069)
Adaptability	*adaptabi*				-0.00093
					(0.00062)
Entrepreneurship	*entrepre*				-0.00055
					(0.00050)
_cons		0.02521	0.08695***	-0.09230*	-0.12421***
		(0.02951)	(0.01840)	(0.04673)	(0.03871)
N		130	130	130	130
F		281.02528	420.59848	275.23492	255.11891
R		0.9786	0.9836	0.987	0.9883
ll		609.58809	621.70581	641.65571	648.92178
aic		-1.16e+03	-1.20e+03	-1.21e+03	-1.22e+03
Time effects		1.88**	1.06	2.16**	2.52**
Included		yes	no	yes	yes
Country effects		187.49***	219.32***	172.60***	145.66***
Included		yes	yes	yes	yes

t-statistics are in parantheses

*** statistically significant at 1% level, ** statistically significant at 5% level, * statistically significant at 10% level

Source: Author's estimations in Stata

7.3.1.2. Estimations RatioPublic Controlling for Different Firm Sizes

The regressions in Table 2 (7.2.) seek to test how the final model from our previous estimations (Model 1.4. repeated in Table 7.2. as model 2.1.) 'behaves' when we control for three different firm sizes – the large firms, small and medium enterprises (SMEs) and micro firms. Conceptually, in Chapter 3, we proposed that due to dissimilar adoption of and intentions behind strategic level decision-making and resourcefulness of these firm groups we expect heterogeneous sets of conditions affecting their demand for equity finance. We thus propose in terms of different firms sizes the following:

P2: The impact of macro-economic, institutional and managerial environments is dissimilar for different firm sizes.

P2a: The managerial environment has stronger impact for Micro firms than SMEs and Large firms.

P2b: The institutional environment has strong impact for Micro firms, SMEs, and Large firms.

P2c: The macro-economic environment has stronger impact for SMEs and Large firms than Micro firms.

Thus in this section we aim to discuss our results regarding proposition *2, 2a, 2b*, and *2c*. This type of analysis is novel, as to our knowledge, the type of predictors affecting a firm's demand for equity financing (in this case expressed as a ratio of public firms over the total number of firms) has not been investigated for different firm sizes.

Our findings show that there is a number of variables which display at least 10% significance (positive or negative) for all three firm sizes. Firstly, in the case of *GDP per head,* large firms (Model 2.2.) and micro firms (Model 2.4.) display significance level at 5% and in the case of SMEs (Model 2.3.) the significance level is at 1%. This would suggest that increased levels of GDP per head positively affect the number of firms choosing equity as their source of external capital irrespective of those firms' size. This result holds most significantly for the group of SMEs. Secondly, *Lending interest rate* is also significantly positive in the case of all firm sizes. The significance is strong in the case of large firms and SMEs (significance level at 1%) and medium strong in the case of micro firms (significance level at 5%). This would indicate that the factor of high lending interest rate has a positive impact on the number of firms choosing equity irrespective of their size. However, this appears to be specifically the case for large firms and SMEs. We find that in

both cases it is the groups of large firms and SMEs which display high significance. Our findings endorse the line of reasoning earlier observed by Klapper et al. (2002) that despite the fact that all firms are to some extent affected by major macro-economic developments in a country, it is the SMEs and large firms, which seem to be the most sensitive to them. We claim that this applies especially to SMEs, the newly established group of the 'engines of growth' in Central and Eastern Europe, which do not have the same resources as large firms and are not 'protected' by the micro-economic performance of local communities as micro firms are (Reeb, 2007). Therefore, their exposure to any macro-economic event is more direct and impacts their strategic decision-making substantially.

Thirdly, the institutional indicator of *Banking reform and interest rate liberalisation* is significantly negative in the case of all three firm sizes. We note significance at 1% level in the case of SMEs and micro firms. Significance at 5% level is noted in the case of large firms. This would imply that improved banking laws and regulation decrease the number of firms opting for equity finance irrespective of their size, but especially the number of SMEs and micro firms. Also, the variable of *Securities markets and non-bank financial institutions* is significantly positive across all firm sizes at 10% in the case of large firms and SMEs or 5% level in the case of micro firms. This would suggest that the better the securities laws and regulation, the higher the number of firms choosing equity finance as their external source of finance irrespective of the firm's size. However, this argument holds most significantly in the case of large firms and SMEs. These results suggest that if the above conditions hold, large firms and SMEs are more likely to consider equity financing than micro firms. We draw on our conceptual framework and reason that micro firms need extra 'motivation' from the managerial level to consider equity financing in the presence of such institutional conditions. This is discussed in the subsequent section.

In addition, from the financial intermediaries group, the indicator for *National Commercial Banks* emerges as consistently significantly positive in the regressions for all three firm sizes. The results are significant at 1% level in the case of large firms and SMEs, and at 10% level in the case of micro firms. This would indicate that large firms and SMEs react to the dominant presence of national commercial banks by considering another alternative - equity. Micro firms react in the same way to a lesser extent. This finding reconnects with our earlier observation that micro firms although reacting to this condition in the same way as large firms and SMEs, might not be as 'quick' in making an equity-oriented financing decision as their larger counterparts. The lack of formal strategic

planning and missing appetite for growth-related projects (Mead and Liedholm, 1998), contribute to the build-up of excessive costs which in most cases micro firms cannot afford to bear. Also, *Stock market capitalisation* is significantly positive across all firm sizes. We observe that the significance is equal for all firm sizes at 5% level. This finding suggests that liquid stock markets in transition economies encourage firms of different sizes to opt for equity capital and become publicly traded companies. Finally, of the group of managerial indicators *International Experience* is significantly positive in the case of all firm sizes, with 1% significance level in the case of large firms and SMEs, and 10% significance level in the case of micro firms. This implies that the presence of managers with international experience is always a factor which encourages firms to consider using equity capital and becoming a publicly traded company. International experience of managers ads to their managerial confidence and may encourage moving away from traditional ways of leading their business (Hutzschenreuter et al., 2007). We add that this also applies to their financing decisions.

So far, our findings have shown that there are factors which affect all firms in the economy irrespective of their size. However, we further observe that there some factors which influence more SME and micro firms and do not exhibit any effect on large firms. We find, congruent with our conceptualisation, that these factors are primarily institutional and managerial ones. We discuss these next.

Firstly, we observe that in the case of micro firms the macro-economic variable of *Inward FDI* emerges as significantly negative (Model 2.4.) but displays no significance in the case of large firms (Model 2.2.) or SMEs (Model 2.3.). This would suggest that increased inward FDI decreases the number of micro firms opting for equity finance, but not large firms or SMEs. We reason that increased levels of FDI create more competition within the corporate sector with the in-coming firms crowding out micro firms. By taking on the roles of micro firms in an economy, the new firms simultaneously remove some of their growth potential. This explains the limited interest of micro firms in equity finance in the case of increased levels of inward FDI.

Furthermore, we note that the institutional indicator of *Corruption* is significantly positive in the case of micro firms (at 5% level) despite the fact that this indicator is not statistically significant in the case of large firms (Model 2.2.), SMEs (Model 2.3) or the total number of firms (Model 2.1.). This would indicate that in the case of micro firms a

less corrupt institutional system triggers these firms' interest in equity financing. Also, another institutional indicator, *Bureaucracy quality,* displays positive significance for micro firms (at 10% level), but not for large firms or SMEs. This would suggest that more in the case of micro firms than large firms or SMEs, a less corrupt institutional system with an efficient bureaucratic system leads to a higher number of public firms. We reason that while large firms and SMEs can easier absorb the increased contracting and coordinating costs associated with corrupt institutional systems and inefficient bureaucracy, micro firms do not have such resourcefulness. In their case, therefore, these institutional conditions play a primary role when making a strategic decision to adopt an equity-oriented financial model.

We also observe that the managerial indicator of *Worker motivation* is significantly positive in the case of micro firms (at 5% level) and SMEs (at 10% level). This would indicate that if SMEs and micro firms possess a corporate culture of continuous improvement, such resource is likely to lead these firms to equity financing. This resource does not have to be embraced by managers in large firms for them to consider becoming publicly traded companies. Another managerial indicator – *Adaptability,* is significantly positive only in the case of micro firms. This would imply that the higher the number of micro firms with adaptable managers, the higher the number of firms which opt for equity finance as their external source of capital. Managers in large firms and SMEs do not have to possess this particular capability for their firm to opt for equity financing. These findings go in line with our conceptualisation that mostly micro firms, and to some extent also SMEs, require the presence of adequate managerial conditions for them to execute the decision to become publicly traded companies.

Our last observation gives validity to our third proposition (Proposition 2c). We note a significant result for large firms and SMEs, but not for micro firms in the category of macro-economic variables. The variable of *Balance of trade* is significantly negative only in the case of large firms and SMEs (at 1% level) and not significant in the case of micro firms. This would imply that the macro-economic performance of a country in terms of its imports and exports affects more the large firms and the SMEs. This observation also goes in line with our earlier proposition that strategic decisions of micro firms are to a larger extent affected by the conditions in their immediate (micro) environment than the national macro-economic environment.

Based on our findings in this section we conclude that the impact of macro-economic, institutional and managerial conditions is dissimilar for different firm sizes. This observation is in line with our proposition 2. Furthermore, we observe the number of large public firms in the transition economies of the CEECs is driven primarily by the macro-economic and institutional conditions. We also note that the number of public SMEs depends on the quality of macro-economic, institutional, and managerial conditions. Lastly, we identify the institutional and managerial conditions as the primary driving forces of the strategic decision to become public in the case of micro firms. These findings are in line with our propositions 2a, 2b, and 2c.

Table 7.2.: Estimations *RatioPublic* for Different Firm Sizes

Table 2		Estimations RatioPublic Firm Sizes			
		Model 2.1.	*Model 2.2.*	*Model 2.3.*	*Model 2.4.*
Variable Name	*STATA Label*	*Total*	*Large Firms*	*SMEs*	*Micro Firms*
GDP per head	*lgdp_per_*	0.01926***	0.03669**	0.01638***	0.00179**
		(0.00447)	(0.02583)	(0.00438)	(0.00078)
Lending interest rate	*lending_*	0.00002*	0.00017***	0.00003***	0.00002**
		(0.00001)	(0.00005)	(0.00001)	(0.00001)
Inward FDI	*inward_f*	-0.00018**	-0.00022	-0.00011	-0.00006*
		(0.00008)	(0.00027)	(0.00007)	(0.00004)
Balance of trade	*balance_*	0.00016*	0.00150***	0.00029***	0.00006
		(0.00009)	(0.00046)	(0.00008)	(0.00004)
Competition policy	*competit*	0.00189	0.00205	0.00155	0.00034
		(0.00126)	(0.00899)	(0.00135)	(0.00059)
Corruption	*corrupti*	0.00048	-0.00059	-0.00003	0.00053**
		(0.00066)	(0.00239)	(0.00058)	(0.00024)
Law and order	*law_and_*	0.00018	-0.00198	-0.00001	0.00026
		(0.00068)	(0.00252)	(0.00054)	(0.00025)
Bureaucracy quality	*bureaucr*	0.00207*	0.00264	0.00107	0.00140***
		(0.00124)	(0.00496)	(0.00110)	(0.00043)
Banking reform & interest rate liberali.	*banking1*	-0.00553***	-0.01116**	-0.00412***	-0.00281***
		(0.00129)	(0.00552)	(0.00109)	(0.00053)
Securities markets & non-bank finan. inst.	*securiti*	0.00268**	0.00156*	0.00191*	0.00133**
		(0.00174)	(0.00585)	(0.00147)	(0.00048)
National commercial banks	*rationational banks*	0.04801***	0.13049***	0.01415***	0.1648*
		(0.01162)	(0.04740)	(0.01017)	(0.00575)
Miscellaneous business credit inst.	*ratiomisc*	-0.00747	0.01849	0.00181	-0.00111
		(0.00546)	(0.02466)	(0.00410)	(0.00222)
Stock market capitalisation	*stock_m1*	0.00008**	0.00024**	0.00007**	0.00002**
		(0.00003)	(0.00011)	(0.00003)	(0.00001)
Worker motivation	*worker_m*	0.00069	0.00573	0.00097*	0.00037**
		(0.00060)	(0.00224)	(0.00052)	(0.00020)
International experience	*internat*	0.00156**	0.00779***	0.00167***	0.00015*
		(0.00069)	(0.00267)	(0.00058)	(0.00021)
Adaptability	*adaptabi*	-0.00093	-0.00378	0.00084	0.00034*
		(0.00062)	(0.00230)	(0.00052)	(0.00026)
Entrepreneurship	*entrepre*	-0.00055	-0.00193	-0.00051	-0.00018
		(0.00050)	(0.00184)	(0.00042)	(0.00019)
_cons		-0.12421***	-0.05827	-0.09553**	-0.00137
		(0.03871)	(0.20830)	(0.03688)	(0.00674)
N		130	130	130	130
F		255.11891	339.41204	384.24526	209.93053
R		0.9883	0.9873	0.9898	0.9847
ll		648.92178	467.83635	671.18411	750.71188
aic		-1.22e+03	-8.58e+02	-1.26e+03	-1.45e+03
Time effects		2.52**	3.45**	3.27**	1.28
Included		yes	yes	yes	no
Country effects		145.66***	99.08***	153.96***	69.33***
Included		yes	yes	yes	yes

t-statistics are in parantheses

*** statistically significant at 1% level, ** statistically significant at 5% level, * statistically significant at 10% level

Source: Author's estimations in Stata

7.3.1.3. Estimations RatioPublic Controlling for Three Different Groups of CEECs

The tests reported in Table 3 (7.3.) aim to reflect the nature of the relationship between our dependent variable and independent variables when controlling for three different groups of CEECs in terms of their equity culture development as concluded in the clustering analysis in Chapter 6. We tagged these groups Leaders (CEECs displaying *the best* potential for equity culture development), Potentials (CEECs displaying *some* potential for equity culture development) and Laggards (CEECs displaying *little* potential for equity culture development). Controlling for these different groups reduced our sample of 130 observations to 42 in the case of Leaders, 45 in the case of Potentials and 43 in the case of Laggards. In these regressions we control for the total number of firms as breaking them up by firm size would result in a very small number of observations and thus not enough degrees of freedom.

We notice that our estimations yield only one result when a variable is significant in all three groups. It is the macro-economic indicator of *Lending interest rate* that is significant in all three regressions (at 10% level). This would imply that a higher lending interest rate in a country leads to a higher number of firms opting for equity capital irrespective of that country's status of equity culture development. Other indicators affect primarily one or in some cases two groups. These are now discussed group by group.

Firstly, our estimations show that in the case of the group of Leaders the better the securities laws and regulation, the more firms opt for equity financing and become publicly traded companies (*Securities markets and non-bank financial institutions* is significantly positive at 5% level). Also, in this group the number of public companies increases if there are liquid equity markets (*Stock Market Capitalisation* is significantly positive at 10% level) and if there is international experience within the management team of their firms (*International experience* is significant positive at 5% level). This implies that in the case of the group of Leaders it is the presence and functioning of equity-related financial intermediaries and the presence of adequate managerial capabilities which lead to an increase the demand for equity finance.

Secondly, we observe for the group of Potentials that the number of public firms is higher the better the securities laws and regulation are (*Securities markets and non-bank financial institutions* is significantly positive at 10% level), the stronger and more impartial their legal system is (*Law and order* is significantly positive at 5% level) and the more

efficient their bureaucratic system is (*Bureaucracy Quality* is significantly positive at 10%). However, the presence of *Miscellaneous business credit institutions* causes a decreased 'interest' of firms in using equity finance as their external source of capital (negative significance at 10% level). This suggests, that firms in this group are likely to consider other sources of credit supply if they are incurring excessive costs related to bank loans rather than opting for equity as a straight forward alternative. Our next finding further advances this argument.

In our earlier results (Table 1 (Model 1.4.) and Table 2 – all models) the macro-economic indicator of *GDP per head* exhibits positive significance. This suggests that when we produce estimations controlling for our sample of ten CEECs as one group and also when we control for different firm size, the higher the GDP per head in a country the more firms opt for equity finance. However, we find that when we control for individual country groups, the indicator of GDP per head generates significantly negative result (at 1% level) for the group of Potentials. This would suggest that in this group increased GDP per head is not associated with an increased demand of firms for equity finance. The macro-economic advancement in these countries thus seems to be linked to firms' demand for sources of external capital other than equity. We reason that this is related to these countries' institutional systems, which in the case of this group's member countries (as of 2008: Hungary, Latvia, Poland, Slovenia) are indeed similar to those observed in bank-based systems (EBRD, 2006) and to the existence of other than bank loan credit providing institutions (Orbis, 2008). Thus, in this group macro-economic advancement 'fuels' demand for bank finance, for which there is an established institutional and financial intermediary support. Based on our observations for the group of Potentials we therefore maintain that the demand for equity finance may increase subject to adequate institutional reforms aimed at improving the efficiency of the legal and bureaucratic systems coupled with the presence and functioning of equity related financial intermediaries.

Lastly, we find that in the case of the Laggards group *inward FDI* emerges significantly negative (at 10% level), which is not the case for the groups of Leaders or Potentials. This would imply that more in the group of Laggards than the other two groups, increased levels of inward FDI have a negative effect on the number of firms opting for equity finance. National government statics of this group's member countries (as of 2008: Bulgaria, Lithuania, Romania) state that investment flows from the OECD area account for over 90% of FDI in Bulgaria and Romania and about 88% in Lithuania (NIS-Romania,

2008; NSI-Bulgaria, 2008; SO-Lithuania, 2008). OECD (2009) states that the largest sources of FDI are these countries' main trading partners: Austria, Germany, Greece and Italy. Flows of FDI predominantly coming from these countries, which are characterised for their bank-dominated systems (Amable, 2003), explains the negative effect of inward FDI on the development of a healthy public corporate sector.

Furthermore, the institutional variables of *Banking reform and interest rate liberalisation, National commercial banks*, and *Miscellaneous business credit institutions* also display negative effects on the number of firms opting for equity finance (at 10% level and 5% level respectively). This would suggest that specifically in this group of CEECs an improvement of institutional conditions in the banking sector, a high proportion of national commercial banks, and the presence of miscellaneous intermediaries (offering other than bank loan short-term credit) decrease the number of firms choosing equity finance. We reason that improved banking rules and regulation together with an increased number of banking and other short-term credit providing institutions create competitive conditions in the banking sector. This contributes to lower transaction costs associated with bank finance for firms from the Laggards group, and therefore these firms do not have an incentive to consider an alternative source of finance – equity capital.

However, we observe that in this group there are two indicators which exhibit positive significance on the dependent variable RatioPublic. Firstly, the institutional indicator of *Corruption* displays positive significance at 10% level which suggest that the less corrupt institutional systems these countries produce, the more firms opt for equity finance. Secondly, within the managerial variables the most notable result is the change of the negative sign on *Entrepreneurship* to a significant positive sign in the case of the this group. This suggests that entrepreneurial characteristic of management teams in the group of Laggards leads to an increased demand for equity finance. Interestingly, although short of significance, the result remains negative in the case of Leaders and Potentials. This suggests that entrepreneurial qualities of managers are not associated with an increased demand for equity finance in these two groups. Based on our findings we observe that in the case of the Laggards group an increased demand for equity finance is determined by a combination of conditions stemming from fundamental macro-economic, and adequate institutional and managerial environments.

From the analysis of this section we can conclude that there are differences between our three groups of CEECs in terms of macro-economic, institutional and managerial conditions affecting the demand for equity finance. While in the first group of more advanced CEE economies – the Leaders, an increased demand for equity finance depends on the existence and proficient functioning of financial intermediaries, in the second group of Potentials it is in addition to these also a deeper institutional reform that is required. The group of Laggards is most complex, as in this group a number of macro-economic, institutional and managerial issues require reforming attention so that a sustainable increased demand for equity financing can be facilitated.

Table 7.3.: Estimations *RatioPublic* for Different Groups of CEECs

Table 3		**Estimations RatioPublic EC Type (Total Number of Firms)**		
		Model 3.1.	*Model 3.2.*	*Model 3.3.*
Variable Name	STATA Label	*Leaders*	*Potentials*	*Laggards*
GDP per head	*lgdp_per_*	0.00604	-0.00363***	0.00676
		(0.00861)	(0.00083)	(0.01265)
Lending interest rate	*lending_*	0.00038*	0.00005*	0.00002*
		(0.00019)	(0.00003)	(0.00001)
Inward FDI	*inward_f*	0.00016	-0.00001	-0.00031*
		(0.00014)	(0.00003)	(0.00016)
Balance of trade	*balance_*	0.00010	-0.00002	0.00037
		(0.00027)	(0.00004)	(0.00022)
Competition policy	*competit*	0.00699	0.00184	-0.00024
		(0.00395)	(0.00079)	(0.00180)
Corruption	*corrupti*	0.00079	-0.00024	0.00335*
		(0.00125)	(0.00014)	(0.00153)
Law and order	*law_and_*	-0.00077	0.00119**	-0.00040
		(0.00204)	(0.00044)	(0.00148)
Bureaucracy quality	*bureaucr*	0.00067	0.00123*	-0.00219
		(0.00357)	(0.00061)	(0.00343)
Banking reform & interest rate liberali.	*banking1*	-0.00523	0.00057	-0.00367*
		(0.00378)	(0.00038)	(0.00196)
Securities markets & non-bank finan. inst.	*securiti*	0.00331**	0.00045*	-0.00412
		(0.00291)	(0.00029)	(0.00291)
National commercial banks	*rationational banks*	0.19382	0.00079	-0.01574*
		(0.11436)	(0.00559)	(0.01659)
Miscellaneous business credit inst.	*ratiomisc*	-0.02594	-0.00705*	-0.04456**
		(0.02936)	(0.00356)	(0.01967)
Stock market capitalisation	*stock_m1*	0.00003*	0.00000**	0.00006
		(0.00007)	(0.00001)	(0.00007)
Worker motivation	*worker_m*	0.00127	0.00005	-0.00146
		(0.00147)	(0.00019)	(0.00346)
International experience	*internat*	0.00147**	-0.00029	0.00073
		(0.00140)	(0.00023)	(0.00088)
Adaptability	*adaptabi*	-0.00077	0.00000	0.00084
		(0.00081)	(0.00022)	(0.00133)
Entrepreneurship	*entrepre*	-0.00063	-0.00009	0.00187*
		(0.00097)	(0.00016)	(0.00103)
_cons		-0.07698	0.02961***	0.00976
		(0.08227)	(0.00663)	(0.11597)
N		42	45	43
F		335.21298	1.46e+03	3.96e+03
R		0.9976	0.9985	0.9983
ll		259.60855	312.01907	260.08022
aic		-4.51e+02	-5.78e+02	-4.54e+02
Time effects		4.27**	1.78	3.47**
Included		yes	no	yes
Country effects		5.06**	181.20***	90.69***
Included		yes	yes	yes

t-statistics are in parantheses

*** statistically significant at 1% level, ** statistically significant at 5% level, * statistically significant at 10% level

Source: Author's estimations in Stata

7.3.2. Estimations: Dependent Variable *RatioPrivate5*

The next set of estimations is carried out for our second dependent variable expressed as the ratio of private firms with more than five shareholders over the total number of firms *(RatioPrivate5).* It is important to mention that although we regard this variable as another proxy to measure the level of equity culture development in a country (as conceptually explained in Chapter 3); we also see it as a competitive alternative to our first variable – *RatioPublic.* This is to say, that we realise that in order for firms to access equity capital they do not have to go public but they can choose to remain privately owned. We see the 'by equity financed yet privately owned' structure as an interim stage between being privately held with none or very small number of owners (less than five) and becoming publicly traded. It can be therefore said, we consider it being the first stage of equity culture development in a country.

When we perform estimations for this dependent variable *(RatioPrivate5)* we notice, that a slightly different set of independent variables take on the role of predictors and that the performance of some replicated variables differs in terms of significance and/or signs. This is somewhat expected as in this instance we measure the demand for equity finance from a different perspective – examining firms that are not publicly traded yet have a higher than usual (for a private firm) number of owners (shareholders). In particular the indicators of *Balance of trade, Services* and the managerial indicator of *Worker motivation* have a distorting effect on the performance of other indicators (i.e. changing the signs and significance levels of other regressors), and therefore we choose not to include them in our estimations. On the other hand, we find that some variables not applied in the *RatioPublic* model gain in significance in this model, and therefore we decide to include them in our estimations. These are the institutional indicator of *Investment Advice* and the managerial indicator of *Finance skills.*

As with our first dependent variable in table 1 (7.1.) we start with a basic model which includes macro-economic independent variables (Model 4.1.), then add institutional variables (Model 4.2.), followed by variables representing the quantitative presence and quality of financial intermediaries (Model 4.3.) and finally managerial variables (Model 4.4.). Model 4.4. (Table 7.4.) is the final model we arrive at in the estimation process and which we use for further analysis when controlling for different firm sizes (Table 7.5.) and different CEE groups (Table 7.6.). In the interest of simplicity and flow of argument we

extensively comment only on those results which differ from the first set of estimations or produce more material for our argument.

7.3.2.1. Estimations RatioPrivate5 for the Total Number of Firms

By contrast to our estimation results in Table 7.1., the macro-economic indicator *GDP per head* and the institutional indicators of *Securities markets and non-bank financial intermediaries* and *Investment Advice* emerge as significantly negative in our estimations (at 1%, 10% and 5% levels respectively). This would imply that the higher the GDP in a country, the better the securities regulation and the more finance companies providing investment advice exist, the fewer firms in this country's corporate sector increase the ownership of their firms to five or more shareholders and stay private. Based on our earlier results we suggest that an improved economic performance of a country (here measured with GDP per head), better regulation of the securities markets and an increased presence of firms offering investment advice lead firms to increase their number of shareholders, opt for equity finance and become publicly traded companies rather than go through the 'intermediate stage of transition' and increase the number of owners, use equity finance but remain privately owned.

Furthermore, we observe that *Corruption* is consistently significantly negative at 5% level. This would imply that a less corrupt system does not necessarily increase the number of private firms with five or more shareholders. Our finding does not go against the empirically proven fact that equity financing is more popular in countries with less corrupt institutional systems (Kim and Kenny, 2007; Lau et al., 2007), but merely suggests that uncorrupted institutional systems do not have a direct influence on the increase of firms in a country's private sector with a bigger shareholder base. We reason that a less corrupt institutional system provides assurance to their private firms that the existing system is efficient, that a fair competition within the financial intermediaries sector is present, and therefore, that the privately owned firms get a fair credit deal from their existing capital providers. However, we find that the institutional indicator of *Law and order*, has a direct positive influence (at 5% level) on the number of private firms with an increased shareholder base. This indicates that a strong and impartial legal system and an effective application of law in a country affect the private sector in such a way that individual firms increase the number of their shareholders and thus adopt equity as an alternative option to their traditional sources of finance. When private firms increase their shareholder base they

do not have the level of legal protection and mandatory transparency which public firms gain and have to abide by under the umbrella of institutionalised stock exchanges. Therefore, in the case of private firms a stimulus from the legal system in the form of strengthened rules serves as an incentive for them to increase the shareholder base and benefit from equity finance.

Finally, we find from our set of managerial variables that there are two variables which emerge significant in the final observation. These are *Finance skills* and *Adaptability* (positive significance at 10% and 5% levels respectively). Our findings suggest that private firms which employ managers who have the capabilities of good finance skills and are adaptable to new business conditions, are more likely to increase their ownership base and thus consider getting involved in an equity-based ownership relationship. In line with our conceptualisation, we reason that managers with such capabilities are more confident and willing to take new and riskier strategic decisions.

Based on our findings in this analysis we find that a combination of macro-economic, institutional and managerial factors influence the number of private firms with five or more shareholders in a country. This finding is congruent with our first proposition presented in our conceptual framework (Chapter 3) despite the fact that we adopted a different measure of a corporate sector's demand for equity financing. Next we carry out estimations with the same dependent variable (*RatioPrivate5*) when controlling for different firm sizes (Table 7.5.) and different CEE groups (Table 7.6.).

Table 7.4.: Estimations *RatioPrivate5* (Total Number of Firms)

Table 4		**Estimations RatioPrivate5 (Total Number of Firms)**			
Variable Name	*STATA Label*	*Model 4.1.*	*Model 4.2.*	*Model 4.3.*	*Model 4.4.*
GDP per head	*lgdp_per_*	-0.04480***	-0.04180***	-0.03706***	-0.03824***
		(0.00287)	(0.00290)	(0.00357)	(0.00357)
Lending interest rate	*lending_*	0.00001*	0.00002**	0.00001	0.00001
		(0.00001)	(0.00001)	(0.00001)	(0.00001)
Inward FDI	*inward_f*	-0.00009	-0.00011*	-0.00009*	-0.00008
		(0.00005)	(0.00006)	(0.00005)	(0.00005)
Competition Policy	*competit*	-0.00279**	-0.00165	-0.00105	-0.00133
		(0.00133)	(0.00108)	(0.00124)	(0.00122)
Corruption	*corrupti*		-0.00148**	-0.00142**	-0.00115**
			(0.00057)	(0.00055)	(0.00052)
Law and order	*law_and_*		0.00102	0.00160**	0.00144**
			(0.00067)	(0.00067)	(0.00062)
Bureaucracy quality	*bureaucr*		-0.00119	-0.00050	-0.00070
			(0.00118)	(0.00119)	(0.00103)
Banking reform & interest rate liberali.	*banking1*		0.00053	-0.00069	-0.00088
			(0.00125)	(0.00137)	(0.00138)
Securities markets & non-bank finan. inst.	*securiti*		-0.00342***	-0.00170	-0.00185*
			(0.00097)	(0.00107)	(0.00107)
National commercial banks	*rationational banks*			-0.03163	0.02641
				(0.02680)	(0.02662)
Miscellaneous business credit inst.	*ratiomisc*			-0.03426*	-0.02829
				(0.01814)	(0.01893)
Investment advice	*ratioinvestment*			-0.19088*	-0.16752**
				(0.06791)	(0.06821)
Finance skills	*finance_*				0.00063*
					(0.00054)
International experience	*internat*				0.00050
					(0.00054)
Adaptability	*adaptabi*				0.00118**
					(0.00051)
Entrepreneurship	*entrepre*				-0.00100
					(0.00063)
_cons		0.45927***	0.43666***	0.41739***	0.42664***
		(0.02448)	(0.02386)	(0.03262)	(0.03084)
N		130	130	130	130
F		1.25e+03	1.18e+03	1.25e+03	1.06e+03
R		0.9940	0.9951	0.9956	0.9960
ll		640.14416	652.49747	660.16002	666.62261
aic		-1.22e+03	-1.24e+03	-1.25e+03	-1.25e+03
Time effects		14.42***	16.83***	9.26***	10.77***
Included		yes	yes	yes	yes
Country effects		1323.43***	777.29***	803.94***	558.15***
Included		yes	yes	yes	yes

t-statistics are in parantheses

*** statistically significant at 1% level, ** statistically significant at 5% level, * statistically significant at 10% level

Source: Author's estimations in Stata

7.3.2.2. Estimations RatioPrivate5 Controlling for the Different Firm Sizes

The regressions in Table 7.5. seek to test how the relationship between our dependent (*RatioPrivate5*) and independent variables evolves when we control for different firm sizes. These estimations thus examine whether our propositions 2, 2a, 2b, and 2c hold for dependent variable *RatioPrivate5* as we earlier observed it is the case for the dependent variable *RatioPublic.*

Firstly, we observe that there are some indicators which produce significant results for all firm sizes. The macro-economic indicator of *GDP per head* emerges strong in all three models – in the case of Large firms (Model 5.2.), SMEs (Model 5.3.) and Micro firms (Model 5.4.) at 1% significance level. This suggests that the higher the GDP in a country the fewer private firms irrespective of their size increase their shared ownership to five or more shareholders. As explained in the previous section, we believe, that when macro-economic performance of a country improves, firms tend to directly opt for becoming publicly traded companies rather than private firms with an increased number of shareholders.

Although *Lending interest rate* does not emerge significant when controlling only for the total number of firms, interestingly we observe significant results in the estimation work when controlling for three different firm sizes. In the case of large firms a significantly negative result (at 5% level) implies that an increased lending interest rate does not result in these firms increasing their shareholder base and yet remaining private. A strong significance in an earlier model (Model 2.2.) suggests that high lending interest rate triggers large firms' intention to go public. However, the same observation does not hold for SMEs and micro firms. Our results indicate that in these two firm sectors an increased interest rate instigates private firms' interest in equity financing with an aim to remain in private hands. SMEs and primarily micro firms do not have the same resources as large firms (Filatotchev et al., 2007), and therefore for them the strategic decision of becoming a public company is associated with high transaction costs. Thus they adopt the interim option of using equity yet remaining private which is for them more cost feasible.

Next, we notice that there are a number of factors which influence the group of Micro firms specifically. Negative effect is observed from the macro-economic indicator of *inward FDI* (at 1% level), institutional indicator of *Securities markets and non-bank financial intermediaries* (at 1% level), *National commercial banks* (at 10% level) and

Investment advice (at 5% level). This would suggest that increased levels of inward FDI, improved securities laws and regulation, and an increased number of national commercial banks or finance companies offering investment advice do not increase the number of private micro firms with a shareholder base of five or more. This finding confirms our earlier proposition that micro firms do not react to economic and institutional events stemming from the macro level to the same extent as SMEs and large firms. Indeed, our next findings confirm that specifically in the case of micro firms it is the presence of adequate managerial capabilities which may motivate these firms to move away from their traditional strategic choices. The managerial indicators of *Finance Skills and Adaptability* are significantly positive (at 10% level) only in the case of micro firms. This suggests that micro firms with managers who possess good finance skills and are adaptable to new business conditions are more likely to enlarge their shareholder base and benefit from equity finance.

Lastly, we observe that there are some variables, primarily of macro-economic and institutional nature, which have an effect on large firms and SMEs but not on micro firms. Results from our estimations demonstrate that a less corrupt institutional system does not increase the number of large private firms and private SMEs with a shareholder base of five or more owners (*Corruption* is significantly negative at 1% level). Our earlier results showed (Table 7.2.) that the same institutional condition does not have any effect on the number of large public firms and public SMEs (results exhibited the same (negative) sign but were short of significance). This suggests that a less corrupt system, when considered as a single indicator of institutional quality in a country, does not encourage more large firms or SMEs to use equity capital either through an enlarged shareholder base as private firms or public firm. On the other hand, we find that the presence of an impartial legal system has that effect on large firms and SMEs (*Law and order* is significantly positive at 10% level). This would suggest that in the case of large private firms and private SMEs an effective legal system encourages them to increase their shareholder base and thus benefit from equity finance. It is important to state that our results do not go against the empirical evidence provided in earlier works by, for example, Bekaert and Harvey (2002), Peng (2004) or Lau et al. (2007) that equity-based financial systems function better in transparent institutional systems characterised by the presence of an impartial legal system, low corruption and efficient bureaucracy, but merely suggest that the demand for equity

financing by large firms and SMEs may increase as a result of an improved legal system but not as a result of reduced corruption in a country's institutional system.

Furthermore we find that in the case of private SMEs a substantial improvement in securities laws and regulation or an increased presence of finance companies offering investment advice does not provide an incentive to increase their shareholder base (*Securities markets and non-bank financial intermediaries* displays negative significance at 10% level and *Investment Advice* shows significance at 5% level). In the case of large firms, these indicators display the same (negative sign), however are short of significance. Based on our earlier results from Table 7.2. we reason that an improvement in institutional conditions directly related to equity finance encourages large firms and SMEs to opt for equity finance through becoming a public company and not remaining private.

Finally, we observe significant influence of one managerial variable in the case of large firms and SMEs. The indicator of *Finance skills* is significantly positive for SMEs (at 5% level) and large firms (at 10% level). This finding suggests that the presence of management with good finance skills has a positive effect on private SMEs, and to lesser extent also large private firms, to increase their shareholder base and thus use equity finance for refinancing needs. Overall, however, managerial skills appear to be more important at the micro level.

Our results in this section confirm our proposition 2, that different firm sizes are not affected to the same degree by macro-economic, institutional and managerial conditions in their considerations to use equity capital. We also demonstrate that micro firms even with adequate institutional and macro-economic 'support' are not likely to opt for equity finance, unless they are motivated to do so as a result of more developed and adequate managerial capabilities. This finding is in line with our proposition 2c. We also find that large private firms and private SMEs are more likely to increase their shareholder base as a result of quality country legal system, however not necessarily as a result of low levels of corruption. The necessity of adequate managerial conditions is less important than it is in the case of micro firms. We also observe that in the case of large firms and SMEs adequate institutional and macro-economic conditions mean that these firms opt for becoming publicly traded companies rather than increasing their shareholders and remaining private.

Table 7.5.: Estimations *RatioPrivate5* for Different Firm Sizes

Table 5		Estimations RatioPrivate5 Firm Sizes			
		Model 5.1.	*Model 5.2.*	*Model 5.3.*	*Model 5.4.*
Variable Name	*STATA Label*	*Total*	*Large Firms*	*SMEs*	*Micro Firms*
GDP per head	*lgdp_per_*	-0.03824***	-0.01212***	-0.03041***	-0.03231***
		(0.00357)	(0.00227)	(0.00426)	(0.00366)
Lending interest rate	*lending_*	0.00001	-0.00005**	0.00003**	0.00003***
		(0.00001)	(0.00002)	(0.00001)	(0.00001)
Inward FDI	*inward_f*	-0.00008	0.00006	-0.00009	-0.00023***
		(0.00005)	(0.00007)	(0.00006)	(0.00006)
Competition Policy	*competit*	-0.00133	0.00243**	0.00113	-0.00313
		(0.00122)	(0.00107)	(0.00156)	(0.00116)
Corruption	*corrupti*	-0.00115**	-0.00262***	-0.00181***	0.00065
		(0.00052)	(0.00057)	(0.00060)	(0.00048)
Law and order	*law_and_*	0.00144**	0.00022*	0.00092*	0.00057
		(0.00062)	(0.00087)	(0.00068)	(0.00057)
Bureaucracy quality	*bureaucr*	-0.00070	-0.00626	-0.00047	-0.00175
		(0.00103)	(0.00169)	(0.00101)	(0.00108)
Banking reform & interest rate liberali.	*banking1*	-0.00088	0.00353	-0.00091	-0.00257
		(0.00138)	(0.00177)	(0.00151)	(0.00119)
Securities markets & non-bank finan. inst.	*securiti*	-0.00185*	-0.00109	-0.00192*	-0.00307***
		(0.00107)	(0.00204)	(0.00111)	(0.00113)
National commercial banks	*rationational banks*	-0.02641	0.04141	0.07159	-0.01817*
		(0.02662)	(0.04021)	(0.02860)	(0.02385)
Miscellaneous business credit inst.	*ratiomisc*	-0.02829	0.02247	-0.06041	0.03055
		(0.01893)	(0.02499)	(0.01934)	(0.01631)
Investment advice	*ratioinvestment*	-0.16752**	-0.08887	-0.19123**	-0.18476**
		(0.06821)	(0.12477)	(0.07455)	(0.07597)
Finance skills	*finance_*	0.00063	0.00183*	0.00064**	0.00079**
		(0.00054)	(0.00073)	(0.00057)	(0.00050)
International experience	*internat*	0.00050	0.00045	0.00051	0.00033
		(0.00054)	(0.00058)	(0.00060)	(0.00048)
Adaptability	*adaptabi*	0.00118**	-0.00015	0.00073	0.00068*
		(0.00051)	(0.00050)	(0.00053)	(0.00046)
Entrepreneurship	*entrepre*	-0.00100	0.00080	-0.00050	-0.00053
		(0.00063)	(0.00054)	(0.00067)	(0.00042)
_cons		0.42664***	0.21515***	0.39134***	0.32702***
		(0.03084)	(0.02811)	(0.03476)	(0.03113)
N		130	130	130	130
F		1.06e+03	3.21e+03	1.67e+03	393.17254
R		0.996	0.9976	0.9971	0.9915
ll		666.62261	608.12142	656.01154	677.14345
aic		-1.25e+03	-1.16e+03	-1.23e+03	-1.27e+03
Time effects		10.77***	1.22	7.66***	9.47***
Included		yes	no	yes	yes
Country effects		558.15***	1469.49***	616.25***	141.85***
Included		yes	yes	yes	yes

t-statistics are in parantheses

*** statistically significant at 1% level, ** statistically significant at 5% level, * statistically significant at 10% level

Source: Author's estimations in Stata

7.3.2.3. Estimations RatioPrivate5 Controlling for Three Different Groups of CEECs

The tests reported in Table 6 (7.6.) seek to test how selected variables affect our dependent variable (in this case *RatioPrivate5*) when controlling for three different groups of CEECs (Leaders, Potentials, Laggards) in terms of their potential for equity culture development as concluded in the clustering analysis in Chapter 6. As in the earlier section, controlling for these different groups reduced our sample of 130 observations to 42 in the case of Leaders, 45 in the case of Potentials and 43 in the case of Laggards. We perform the estimations controlling for the total number of firms, as breaking them up according to different firm size would reduce the sample size to a statistically unacceptable level.

Our estimations demonstrate that different groups of countries are affected by different macro-economic, institutional and managerial variables. We also reveal that in some cases firms leave out the interim stage of using equity (through remaining privately owned) and directly opt for public ownership. We discuss these next, group by group.

Firstly, in the group of *Leaders* we notice a significant presence of two variables. Firstly, the macro-economic indicator of *GDP per head* is significantly negative at 1% level. This would imply that specifically in the group of Leaders higher GDP per head does not cause an increase of private firms with five or more shareholders. We tentatively speculate that in this group, a higher GDP per head has the effect of leading firms to an equity model financial structure through becoming publicly traded companies rather than staying in private hands. The result from Table 3, Model 3.1. supports this as the macro-economic indicator of GDP per head exhibits the correct sign although being short of 10% significance. Secondly, the managerial indicator of *Adaptability* displays positive significance at 10% level. This result is not observed in the groups of Potentials or Laggards. This finding suggests that the presence of management which has the capability to quickly adapt to new business conditions can encourage private firms to increase their shareholder base to five or more shareholders and thus benefit from equity finance.

Secondly, we observe that in the group of *Potentials* private firms are encouraged to increase their shareholder base through the presence of competitive markets (*Competition Policy* is significantly positive at 5% level), and an impartial legal system (*Law and order* is significantly positive at 10%). However, the presence of effective bureaucracy suggests an opposite effect – a decreased number of private firms opting for an enlarged shareholder ownership. An earlier observation from Table 3, Model 3.2. confirms that firms in the

group of Potentials are more likely to choose becoming publicly traded companies rather than remain privately owned should the presence of effective bureaucracy occur.

Thirdly, we notice in the group of *Laggards* that the number of private firms with five or more shareholders does not increase as a result of an increased *Lending interest rate* (negative significance at 5% level), low *Corruption* (negative significance at 5% level) or effective bureaucratic system (*Bureaucratic quality* is significantly negative at 10%). This finding confirms our earlier observation (when used the *RatioPublic* proxy) that in the case of the group of Laggards, macro-economic and institutional conditions play a much more significant role than we observed for the groups of Leaders and Potentials.

Findings from this section are important for two reasons. Firstly, they confirm, that when measuring demand for equity culture using either the proxy of *RatioPublic* or *RatioPrivate5*, our results are consistent. The demand for equity finance is in the group of *Leaders* affected the least by macro-economic and institutional conditions. In the group of *Potentials* the demand is affected primarily by institutional conditions and in the case of *Laggards* it is a complex set of macro-economic, institutional and managerial conditions which have an impact on the demand for equity. Secondly, our findings from this section suggest that firms in the group of *Leaders* are more likely not to go through the intermediate stage of using equity capital and remaining privately owned but opt for directly becoming publicly traded companies.

Table 7.6.: Estimations *RatioPrivate5* for Different Groups of CEECs

Table 6		**Estimations RatioPrivate5 EC Type (Total Number of Firms)**		
		Model 6.1.	*Model 6.2.*	*Model 6.3.*
Variable Name	*STATA Label*	*Leaders*	*Potentials*	*Laggards*
GDP per head	*lgdp_per_*	-0.05860***	-0.00253	-0.00261
		(0.01374)	(0.01307)	(0.02120)
Lending interest rate	*lending_*	-0.00012	-0.00009	-0.00003**
		(0.00032)	(0.00016)	(0.00001)
Inward FDI	*inward_f*	0.00001	-0.00010	0.00010
		(0.00008)	(0.00013)	(0.00014)
Competition Policy	*competit*	0.00186	0.00368**	0.00078
		(0.00434)	(0.00159)	(0.00242)
Corruption	*corrupti*	-0.00007	-0.00300	-0.00051**
		(0.00164)	(0.00085)	(0.00143)
Law and order	*law_and_*	-0.00183	0.00128*	0.00149
		(0.00180)	(0.00178)	(0.00157)
Bureaucracy quality	*bureaucr*	-0.00749	-0.00534**	-0.00323*
		(0.00669)	(0.00178)	(0.00310)
Banking reform & interest rate liberali.	*banking1*	-0.00293	0.00152	-0.00269
		(0.00361)	(0.00232)	(0.00303)
Securities markets & non-bank finan. inst.	*securiti*	-0.00294	-0.00136	-0.00443
		(0.00262)	(0.00158)	(0.00830)
National commercial banks	*rationational banks*	-0.00032	0.07919	0.08120
		(0.07193)	(0.08163)	(0.22844)
Miscellaneous business credit inst.	*ratiomisc*	-0.00435	0.01230	-0.12986
		(0.07007)	(0.03875)	(0.22414)
Investment advice	*ratioinvestment*	-0.32616	0.15658	-0.12820
		(0.45286)	(0.30349)	(0.44654)
Finance skills	*finance_*	-0.00063	-0.00072	0.00132
		(0.00193)	(0.00074)	(0.00123)
International experience	*internat*	-0.00011	0.00037	0.00063
		(0.00071)	(0.00078)	(0.00116)
Adaptability	*adaptabi*	0.00262*	0.00084	0.00075
		(0.00185)	(0.00050)	(0.00257)
Entrepreneurship	*entrepre*	-0.00001	-0.00157	0.00033
		(0.00062)	(0.00100)	(0.00177)
_cons		0.60979**	0.18793	0.19057*
		(0.17291)	(0.11788)	(0.08872)
N		42	45	43
F		3.23e+03	4.07e+03	2.97e+03
R		0.9997	0.9995	0.9994
ll		266.61943	291.28264	266.78659
aic		-4.61e+02	-5.09e+02	-4.64e+02
Time effects		6.69**	10.23**	1.24
Included		yes	yes	no
Country effects		20.66**	22.60**	39.64***
Included		yes	yes	yes

t-statistics are in parantheses

*** statistically significant at 1% level, ** statistically significant at 5% level, * statistically significant at 10% level

Source: Author's estimations in Stata

7.4. Conclusion

In this chapter we test the relationship of our independent variables stemming from the macro-economic, institutional and managerial environments on our dependent variable, which reflects the demand for equity financing and through our conceptualisation, the level of equity culture development in a country. We proxy for such demand in two ways. Firstly, we use the measure of the ratio of public firms over total number of firms in a country (*RatioPublic*). Then, we apply a second measure expressed as a ratio of private firms with five or more shareholders over total number of firms. We believe that this second measure reflects the first stage of equity culture development in a country (i.e. when firms opt for equity finance through their larger shareholder base, yet remain privately owned). The character of our sample, panel data, leads us to using a fixed effects regression analysis. This specific type of linear regression enables us to control for country and time effects specific to our sample.

We carry out a three-stage regression analysis for each of our dependent variables. Firstly, we demonstrate how we create the model and comment on the nature of variables which assert significant influence on the dependent variable. Our results using either proxy for equity finance demand are consistent and confirm our proposition from Chapter 3 that a combination of macro-economic, institutional and managerial factors have an effect on the level of equity culture development in a country. Results from this model primarily confirm findings of existing literature and are in line with our conceptualisation. Nevertheless, our contribution lies in the inclusion of managerial indicators, which, to our knowledge, is a novel academic input.

Secondly, we use our final model from the first stage of the analysis to estimate the significance power of the identified independent variables individually on each dependent variable when controlling for three different firm sizes. This investigation aims to provide answers to our second set of propositions from Chapter 3. Again, using either dependent variable as a proxy confirms that our results are consistent and verify that the impact of macro-economic, institutional and managerial environments is dissimilar for different firm sizes. We observe, that the managerial environment has a stronger impact on Micro firms and to a lesser extent on SMEs but a limited influence on Large firms. We further find that the institutional environment affects all firm sizes almost to an equal degree. Lastly, we empirically establish that the macro-economic environment has a stronger impact for Large

firms and SMEs, however exerts less impact on Micro firms. Results from this section offer new findings, as the examination of the demand for equity finance by controlling for three different firm sizes is original in itself.

Lastly, in our final set of regressions we demonstrate that equity culture development does not depend and indeed does not require the presence of the same macro-economic, institutional or managerial factors for every CEEC from our sample. Based on our results we reason that in the case of countries belonging to the group of *Leaders* (identified in our preceding empirical analysis in Chapter 6 as a group with the best potential for equity culture development) the progress of this group's macro-economic and institutional conditions satisfies the requirements for equity culture development. It is primarily the existence and adequate functioning (i.e. quality) of financial intermediaries 'supplying' equity capital and the progress toward a more risk-taking behaviour at the managerial level of the corporate sector on which a successful development of an equity culture will depend. Then, based on our observations for the group of *Potentials* (identified in our preceding empirical analysis in Chapter 6 as a group with medium potential for equity culture development) we maintain that for a successful equity culture development this group is 'a step behind' the *Leaders* group as the development of an equity-related intermediary sector has to be coupled with adequate institutional reforms which yet have to be adopted. Finally, based on our results for the group of *Laggards* (identified in our preceding empirical analysis in Chapter 6 as a group with low potential for equity culture development) there is a need for a complex reform process to take place at the macro-economic, institutional and managerial level should the development of a sustainable equity culture be desired.

We specifically observe that in the case of countries belonging to the group of *Laggards*, inward FDI from countries with bank-based systems anchors these economies in the traditional bank-based system. This observation reinforces the notion of path dependency which we presented in our conceptual framework. However, our results demonstrate that high lending interest rates act as a catalyst in equity finance demand as they are increasing the transaction costs associated with bank finance. Also, the presence of miscellaneous credit institutions appears to prevent the *Laggards* and also *Potentials* from developing an equity culture. Poor institutional development also seems to keep the development of demand for equity culture behind. In particular, corruption leads to countries becoming *Laggards* and poor Law and order and high bureaucracy leads to

countries getting trapped in the group of *Potentials*. Nevertheless, entrepreneurial capabilities appear to be necessary to overcome some of the barriers toward increasing the demand for equity finance in the case of the group of *Laggards*, such as the high costs of bank-based finance associated with corrupt institutional environments. Importantly, international experience of managers appears to trigger the change of countries' position to belonging to the group of *Leaders* (subject to the presence of remaining pro-equity culture development conditions).

Chapter 8: Qualitative Comparative Analysis

8.1. Introduction

The first two stages of our empirical investigation were thorough variable-based examinations of our data. In this chapter we perform the third and final part of our empirical examination: a qualitative comparative analysis of the selection of three CEECs. Our comparative analysis has the character of a qualitative narration and it serves the purpose of an interpretation of soft elements of our data which could not be captured quantitatively. As previously explained in Chapter 4, our Methodology Chapter, the application of this method fulfils the *sensitising* role of results gained from the *dominating* quantitative investigation. Comparative analysis is central to empirical social science as it produces explanations for complex phenomena under observation (Ragin, 2009). We consider *equity culture development* a complex phenomenon, and therefore, we employ the comparative analysis in the final stage of our empirical analysis to provide context to our conceptual and quantitative findings. This final examination also allows us to put forward policy recommendations. Clearly, without this our examination would not be complete.

The Co-Plot analysis in Chapter 6 was concluded with an identification of three groups of CEECs in terms of their potential for equity culture development. We distinguished between the groups of *Leaders*, *Potentials* and *Laggards*. In Chapter 7 we employed this categorisation by controlling for each group individually when carrying out the regression analysis. This enabled us to establish the nature of causal significance (or non-significance) from one group to another. Our findings suggest that in order for equity culture to develop in these three groups a different combination and level of macro-economic, institutional and managerial conditions has to be satisfied. In other words, this analysis enabled us to identify what keeps equity culture in certain CEECs from developing.

We propose that in the case of the countries belonging to the *Leaders* group, the macro-economic and institutional conditions are in place and that it is the strengthening of the presence and quality of equity related financial intermediaries together with continuous building of adequate managerial capabilities within the corporate sector which need attention so that an equity culture can be developed. By contrast, we find for the group of *Potentials* that a 'package' of institutional conditions, equity related financial

intermediaries and managerial conditions needs attention. The results for the last group of *Laggards* suggest, that countries in this group are economically, institutionally and managerially the furthest from the development of an equity culture and therefore conditions stemming from all the three environmental forces require improving.

In this section we aim to further utilise this grouping by selecting one country representative from each group and perform a comparative analysis between these representatives. The three representatives are *Slovakia* for the group of *Leaders*, *Hungary* for the group *Potentials* and *Bulgaria* for the group of *Laggards*. The justification of this selection is provided in the next section.

This chapter is organised as follows: firstly, we give reasons for the selection of our three country representatives introduced above. Secondly, we outline the structure of the comparative analysis we follow when providing answers to and soft interpretation of our findings from the quantitative analysis. Then, we perform the comparative analysis by drawing on our quantitative results, bringing in new qualitative supportive evidence and cross-comparing the three individual cases. Finally, we summarise our findings in a brief conclusion.

8.2. The Rationale behind Our Choices of Country Representatives

The selection process reflects two underlying principles. Firstly, the selected country is a member of a group which it is chosen to represent, for the majority of the observation period and in the final year of our examination – year 2008. Secondly, a closer analysis of the chosen country enhances our understanding of countries with which it shares a group. An added element for the justification of our selection is our belief that that the selected countries are specifically interesting in their nature.

Firstly, from the group of *Leaders* we select *Slovakia,* a CEEC which displays high potential for equity culture development. This country is present in the Leaders' group in all years under observation. We observe that it differs from its other two co-members, Czech Republic and Estonia, in terms of its corporate sector's medium to high demand for equity financing despite very similar levels of conditions these three countries appear to share by the end of 2008 (see Chapter 6, Figures 6.2.-6.5.). We believe that this important difference requires further attention.

Secondly, from the group of *Potentials* we choose *Hungary,* a CEEC which in the first half of our research period seemed to have developed some of the supply conditions necessary for the development of equity culture. This causes Hungary to be part of the Leaders' group for a short period of time (around year 2000 – see Chapter 6, Figures 6.2.-6.5.). However, toward the end of the observation period Hungary becomes a member of the Potentials' group. Despite this country's 'membership' of the leading group and then the group of Potentials, it still displays low demand for equity finance. Therefore, in this case we are interested in providing answers as to what the reasons are for this observed 'reversal' of equity culture development.

Lastly, we include *Bulgaria* in our comparative analysis as a representative for the group of *Laggards.* Bulgaria exhibits limited presence of conditions necessary for equity culture development with an exception in year 2000 when it briefly joins the group of Potentials (see Chapter 6, Figures 6.2.-6.5.). However, we find Bulgaria to be a unique case, as it displays a high demand for equity financing when compared not only to its co-members but also to other countries from the groups of Leaders and Potentials. We believe that this needs to be further examined. Our comparative analysis with the input of additional qualitative data presents an ideal opportunity to explore the specificities of these individual cases and highlights the importance of other qualitative factors in influencing financial system development and equity culture development in particular.

8.3. The Structure of the Comparative Analysis

The rationale of the comparative analysis is twofold. Firstly, we aim to provide a historical approach to the financial system development path of our three selected CEECs. Secondly, we intend to discuss key country characteristics of each representative by bringing in new qualitative data. The sources of data we primarily use are the EBRD, OECD and World Bank reports, and information from the National Statistical Offices of the selected three countries. Importantly, we consistently suggest links to equity culture development as proposed in our conceptual framework (Chapter 3) and empirically assessed through the clustering and benchmarking method of Co-Plots (Chapter 6) and regression analysis (Chapter 7). The structure of the forthcoming analysis is thus as follows:

1. *Transitional Process* – this section provides information on the pre-transition and early transition period and the existence of historical or other (e.g. commercial) links with

other European countries. Information of this character is vital for the comprehensive understanding of the type of financial systems our chosen countries have selected, yet is not covered in our database. Therefore, it has its place in this analysis. In this section we mainly focus on the processes of democratisation, financial liberalisation, and privatisation in our selected countries. A closer analysis of the transformation process from centrally planned to market based and an examination of drivers and ways this transition was performed (e.g. the speed, type and level of the privatisation process) helps us to understand why and how the financial system has developed to its current form. The nature of this argument is captured in our conceptual framework in Chapter 3 through the notion of path-dependency.

2. *Economic and Institutional Development* – this section sheds more light on the macro-economic and institutional trends, which, as we have observed through our earlier empirical examination in Chapters 6 and 7, emerged in the CEECs. We focus our discussion mainly on the issues of economic growth, stability and reforms. The selection of three representative countries enables us to achieve this in a more detailed approach for every country under observation.
3. *Development of the Banking and Market Sector* – this section discusses interesting patterns that emerge from our sample specifically in the case of our three chosen countries in terms of institutions supplying equity capital - the financial intermediaries. We comment on issues related to this subject (e.g. the role of the Central Bank and regulation) which inevitably have an impact on the development of the banking and capital markets sectors, yet are not captured by our quantitative data. Again, the link to our conceptualisation is stressed in this section.
4. *The Corporate Sector: What Source of External Capital Do Firms Demand?* – this section builds on our corporate data and discusses the financing patterns of firms, reflecting our conceptualisation and observations of our quantitative results.

8.4. Three Countries – Three Different Stories

8.4.1. Transitional Process

One could argue that Bulgaria, Hungary and Slovakia due to their geographical proximity, communist past and the timing of the transition process have developed their financial systems in an identical way. However, the contrary is true. In fact, some argue (e.g. Shafik,

1995) that their communist past is the only feature these countries have in common. These three countries, just like other CEECs, have developed unique trade links, secured foreign investment from various sources and adopted different privatisation methods (Brown, 1999; Stoian, 2007). Some imply that due to the 'individuality' of each post-communist country's transformation process it would be inappropriate to speak of one transition, rather than many distinctive transitions (Coricelli, 1998).

Relevant literature suggests that there are two areas related specifically to the transition process of the CEECs, which have affected financing choices of firms and the direction of their financial system development (Hermes and Lensink, 2000a; McNulty et al., 2007). These are Foreign Direct Investment (FDI) and its main driver – the privatisation process in the CEECs. We thus maintain that these two 'historical' influences need to be considered also in our analysis of the equity culture development in this geographical region.

Privatisation

Firstly, we address the process of transferring state ownership and government functions to the hands of the private sector – the privatisation (WorldBank, 1992). Universally, in our three selected CEECs the privatisation process was realised in two stages. In the first stage, privatising was aimed at domestic buyers as the reluctance to sell home grown business to foreign hands was in the way of looking beyond individual countries' borders (Offe, 1996). Domestic buyers varied from individual citizens to various investment privatisation funds (IPFs). The establishment of IPFs enjoyed different success in our three selected CEECs. Therefore, this is where the similarities of the privatisation processes in Bulgaria, Hungary and Slovakia end.

While in Bulgaria IPFs enjoyed some success (Prohanska, 1997), still not to the same level of the Czech (i.e. Czech Republic) experience (Shafik, 1995). IPFs, as the first specific investment companies established in Bulgaria, had significant importance in the capital market development in this country and were the main drivers of the mass privatisation. They were expected to successfully fulfil the tasks of an intermediary for the formal transfer of state ownership to private hands (Prohanska, 1997). However, the 1999 EBRD Transition Report (EBRD, 1999) concludes that in reality there were many drawbacks associated with the Bulgarian IPFs. The then existing Bulgarian banks

controlled most of the investment funds, which resulted in an over-concentrated and one-sided ownership. Many of the privatised firms had outstanding loans to the banks, which resulted in price manipulation and false market creation. This points out to the corrupt environment of the Bulgarian newly democratised state.

On the other hand, IPFs played a marginal role in Hungary and Slovakia and thus left the privatised interests in the hands of individual citizens (Sinn and Weichenrieder, 1997). However, while Slovakia sought to quickly undertake the privatisation process through a mass privatisation (Shafik, 1995), Hungarian privatisation was more careful and gradual (Kornai, 1997). In addition, we find other differences between the Hungarian and Slovak privatisation processes. While the privatisation by sale was almost exclusively the most preferred method in Hungary (and Bulgaria, for that matter), in Slovakia it was combined with another method – the voucher privatisation (EBRD, 1998). Bennett et al. (2007) find in their empirical work that voucher privatisation has been significantly associated with faster macroeconomic growth. However, they observe that privatisation by sale never exerts a significant independent influence on growth.

Based on this brief comparison of Bulgarian, Hungarian and Slovak privatisation processes we can conclude that despite their close timing (i.e. early 1990s) they were dissimilar in their nature. Firstly, in Bulgaria, the private ownership was directed into the hands of newly established IPFs which dominated the privatisation market in an oligopolistic manner and thus created conditions for growing corruption and low competitiveness. Furthermore, the privatisation by sale adopted in Bulgaria did not lead to a significant macro-economic growth. Secondly, although Hungary avoided 'rushing' into privatisation and took a longer time to prepare the legal side for the upcoming transition changes (Wang, 1991), the method of privatisation by sale did not enhance macro-economic growth. Lastly, Slovakia's state ownership was divided amongst its citizens, which led to a diffused type of corporate governance (Shafik, 1995). However, the combination of the method by sale and vouchers resulted in this country's faster macro-economic improvement than in Hungary or Bulgaria.

Foreign Direct Investment (FDI)

The second stage of privatisations came a few years later when the CEECs' governments realised the importance and significance of foreign investments for domestic

firms and economies (EBRD, 1999). As a result, privatisation became the main driver of FDI in these countries in the early transition period (Sinn and Weichenrieder, 1997). Nevertheless, in the early years of the transition process the infancy of the regulatory system together with insecure property rights and the return of the former communist party to power (to a bigger extent in Hungary than in Bulgaria or Slovakia) led to the generation of a poor FDI record (EBRD, 1998). Low FDI levels were also caused by the fact that these former centralised economies were still reluctant to make assets available to foreign investors. Selling countries' assets meant selling 'family silver' which encountered widespread political and public resistance. Furthermore, FDI meant purchasing of existing previously state owned assets rather than green-field projects which would require a lot of restructuring effort by the new investors (Sinn and Weichenrieder, 1997).

In our conceptual framework we have demonstrated that depending on where the investment (inward FDI) is coming from has an impact on the financing choices domestic firms make and on the corporate practices they utilise. The phenomenon of path dependence is central here. We reason that individual countries and consequently firms within them either follow the established, 'tried-out' paths of business financing, or they assume the financing paths of their new owners or investors. Although in our previous empirical examination we were able include the indicator of *inward FDI*, which indeed in many cases exerted a significant influence on our dependent variable (Chapter 7, Tables 7.1.-7.6), we suggested that in order to give our interpretation of quantitative results more validity a further investigation has to take place. This is where the 'strategy' of added qualitative information adds value.

The findings from our regression analysis (Chapter 7) imply that increased levels of inward FDI have a negative effect on the number of firms opting for equity finance. We further find that these results specifically hold in the case of the group of Laggards, for which Bulgaria is our chosen representative. We reason that this is caused by the bank-dominated nature of the investor countries' financial systems. The National Statistical Institute of the Republic of Bulgaria (2008) reports that FDI flows primarily from the OECD area counting for over 90% of the total inward FDI this country absorbs. The European countries of Germany, Austria, Greece and Italy have been identified as the largest investors in this country (OECD, 2009). We maintain that as a result of these countries' bank-dominated systems (Amable, 2003), investors brought with them limited

home-grown appetite for equity finance. This explains why inward FDI has not been positively affecting the demand for equity finance.

In the case of Slovakia, the primary sources of foreign investment were Germany, Austria and the Czech Republic, and relatively stable trading relations remained also with Hungary and Poland (Shafik, 1995). Later on, a new wave of investment came from France which was largely aimed at the automotive industry. The United Kingdom and the USA started to appear on the investors list only in the last few years (SO-SVK, 2008). As Germany, Austria and Czech Republic were significant investors, the governance models of the bank-oriented economies have had a chance to develop deep roots. However, the later increased investor interest from the UK and the USA appears to have started 'sowing the seeds' of equity oriented projects. Although this did not have an immediate governance changing effect on Slovak firms (EBRD, 2008b), the notion of equity finance started to play a more competitive role to bank finance than in the majority of other CEECs.

FDI has played a vital role in the restructuring efforts of the Hungarian government since the beginning of the transition period in the early 1990s (Kornai, 1997). As in the other two CEECs, investors from the developed European countries account for the overwhelming majority of investments in Hungary. The Hungarian Statistical Office (2008) reports that for over a decade it annually amounts to 79%. Germany is by far the most important source of FDI, followed by Netherlands and Austria. USA is the largest non-European investor, its investment flow into this country is however smaller than that of Germany, Netherlands or Austria. The banking sector grew radically in the late 1990s and the FDI flow from almost exclusively bank-oriented European countries is by some seen as a reason for this. Nevertheless, the high concentration within the banking sector led to the sharpest fall of foreign investments in the first years of the new millennium and then again at even larger scale in 2008 that no other CEEC has experienced (EBRD, 2009). This was at a time when Slovakia, its neighbouring country, started to truly benefit from and during the crises was protected by a more diversified financial sector.

Founded on the logic of inward FDI flows affecting the financing choices of local firms and thus the direction of a financial system development, we observe that our three selected countries vary in this respect. FDI flows to Bulgaria and Hungary primarily originated from countries with bank-dominated systems, while in the case of Slovakia the presence of investors from equity-oriented systems is noted. This is in line with our

findings in Chapter 7 which demonstrated that in the case of less transitionally progressed CEECs inward FDI from bank based systems led to a path-dependent behaviour and thus the dominance of banking systems.

8.4.2. Economic and Institutional Development: The 'Must Haves'

Capital structure in transition economies is affected by specific country factors (Booth et al., 2001). We demonstrate in our conceptual framework (Chapter 3) that country factors are related to the macro-economic and institutional conditions in a country. Furthermore, through our previous empirical analyses we identify the nature of conditions which led to an advanced equity-oriented financial system model and thus to a developed equity culture. Results from our regression analysis (Chapter 7) suggest that the group of Leaders, represented in this section by Slovakia, have accomplished the macro-economic and institutional conditions necessary for the development of an equity culture. By contrast, the group of Potentials, represented in this section by Hungary, has the macro-economic environment suitable for equity culture development, however the institutional conditions need improving. In the case of the last group of Laggards, represented in this section by Bulgaria, both the macro-economic and institutional qualities require significant attention. This section sheds some light on the policies individual governments of these countries adopted. This enables us to understand better the successes and failures of the macro-economic and institutional conditions we have observed through our data.

In 1996, Bulgaria experienced an economic crisis, to which the government reacted with the implementation of a radical stabilisation and structural reform programme. By 1997 the first bank was privatised and the new stock exchange began trading (EBRD, 1999). In the coming years Bulgaria applied to join the EU, however was not selected for the group of 'first wave' candidates. The then government realised that the macro-economic instability was one of the reasons for this and imposed tight constraints on fiscal and monetary policies (OECD, 2009). Although the Bulgarian government made progress in accelerating enterprise restructuring, however this process was hampered by a weak legal system, high corruption and inefficient bureaucracy (EBRD, 2006). This observation is in line with our findings in Chapter 7 where we demonstrated that corrupt and bureaucratically inefficient systems in countries belonging to the group of *Laggards* present serious obstacles to the development of an equity culture.

The liberal government regime of Hungary in 1996 encouraged an early flow of FDI. This increased the competition levels in the banking sector and quickened the process of bank privatisation. Hungary was the first country in Eastern Europe to reform its pension system. This act was greatly supported by The World Bank as a sign of a progressive system liberalisation (Bakker and Gross, 2004). As a result of these and other reforms Hungary was accepted for the first round of EU accession. However, in the second half of our observation period some policymaking contradicted earlier reforms and Hungary was accused of a loss of direction (Filatotchev et al., 2007).

By contrast to Hungary, Slovakia was put in a category of 'troubled democracies' in the early transition years, mainly due to its authoritarian political regime (Sikula, 2002). As a result of the political regression in the early 1990s, the new reform-oriented Slovak government stressed the need to catch up with other candidate CEECs ahead of the negotiations with the EU. Therefore, after 1998 in an effort to increase national competitiveness, radical steps were taken to liberalise international capital flows, to reform the institutional environment, and to improve the macro-economic performance (OECD, 2009). Reforms were introduced to accelerate privatisations, to design new tax system, to deregulate labour market and price, and to remodel the healthcare, pension and education systems. The flat-rate tax introduced by Slovak's center-right government created a suitable business and investment climate for individuals and companies (Oravec, 2006). The newly reformed system with low labour costs, low taxes and political stability attracted a lot of foreign investment, which resulted in increased employment and overall economic growth. What was once a 'black hole' in Europe was with political reform-oriented will transformed into a model of transition for other CEECs.

The national policy-making affects the macro-economic performance of a country as well as institutional quality. The notion of a necessity for advanced macro-economic environment and adequate institutional quality are central to our conceptualisation. We find that a government's reluctance to assume the role of a co-ordinator rather than initiator in economic matters (in the case of Bulgaria) or a failure to follow up the reform work in a consistent manner (in the case of Hungary) lead to underperforming economic and institutional systems. However, an adoption of adequate inter-related macro-economic and institutional reforms leads to an improvement of an economy's competitive performance (in the case of Slovakia).

8.4.3. Development of the Banking and Market Sector: What is Available?

The CEECs started the financial liberalisation process in the late 1980s followed by the transition period from centrally planned to market economies in the early 1990s (Brown, 1999). Many believed that by the time these transition economies joined the European Union (EU), their financial systems would have gone through the whole financial liberalisation process. However, the majority of the CEE countries did not completely accomplish this process prior to their accession, and will be only regarded as fully liberalised when fiscal consolidation, economic macro-stability, the strengthening of institutions in the financial markets and prudent and pragmatic management of financial liberalisation are present (EBRD, 2008b).

In the first few years of the transition period the banking sector in Bulgaria was dominated by five large state-owned banks, which accounted for about two-thirds of total bank assets (EBRD, 1998). Privatisation, as a core element of the reform programme advanced slowly, which impacted negatively on the competitiveness of this sector. The reasons for the delay of the reform in the financial sector were many. The state's reluctance to end its involvement in the banking industry (in scope and time) and the lack of continuity in the reform policy process which provided for an unstable institutional environment are named most often (e.g. Prohanska, 1997; Vincelette, 2001). Indeed, the continuing centralisation of the financial system, non-adequate banking regulation and supervision, and the lack of fair competition contributed to the underdevelopment of the financial sector. The real reforms started in 1997, when the first bank (United Bulgarian Bank) was privatised and the new stock exchange began trading. However, the underdevelopment of the legal framework leading to weak protection of minority shareholders and information disclosure were a clear sign of the fact that the Bulgarian stock exchange was in its infancy. The first decade after the fall of communism did not bring many changes in the transformation of the financial intermediaries sector and most of the reforming effort started emerging in the second decade. Although the centralised control has successfully moved towards a system with separate central bank and some regulation, political involvement in the reforming of the financial system was identified as the biggest hurdle on the route to a competitive and fully liberalised financial sector.

By contrast to Bulgaria, Hungary initiated an early transitional privatisation and relatively early on started addressing the problems of inadequate regulation and poor

competition within its existing banking sector (Kornai, 1997). The first major reforms were undertaken quite early – the separation of the Hungarian National Bank and the national commercial banks happened in the early 1990s (EBRD, 1998). Foreign financial intermediaries were encouraged to invest in Hungarian banks and The World Bank (2002) reports that by 2001 foreign banking investors owned around 70 per cent of the equity capital held by Hungarian banks. Hungary took further steps toward financial sector modernisation by forming a national regulatory commission – Bank Supervisory Board and also another independent agency responsible for bank supervision - Hungarian Financial Supervisory Agency (HFSA) (EBRD, 2006). Although the HFSA was initially seen as proof of a great reform in the transition process, later on it was criticised for not properly addressing many of the risks taken by banks. The dominance of the banking sector resulted in the Hungarian corporate sector's dependence on banking services.

In the first ten years of the new Slovak Republic's (hereafter Slovakia) existence[17] the financial industry went through significant systematic institutional, organisational and personnel changes (EBRD, 2006). The National Bank of Slovakia, as the central bank with the most important function of a regulatory body, was established in 1993. Despite the dominance of three state-owned banks within the banking industry in the early transition years (EBRD, 1998), later on an expansion within the commercial banking sector occurred and brought along necessary competition (EBRD, 2006). By the time Slovakia started actively preparing for the EU accession in 2004 principal transition reforms were undergone and the strategic priorities of the banking industry changed their focus and turned to institutionally and managerially specific issues. It was recognised that achieving a stable standard and transparent legal and business environment within the banking industry was a necessary pre-condition for the development of an advanced financial system. Furthermore, Slovakia coordinated its efforts towards a successful adoption of international accounting standards, international tax system, and a new form of banking supervision (from mandatory to risk-oriented bank supervision) with the aim of achieving EU standards. Also, rationalisation in the organisation and working methods within the banking industry was called for by financial experts as active stimulation was believed to intensify communication and cooperation between Slovak banks and their foreign partners (Oravec, 2006). Once the conditions within the Slovak banking system improved,

[17] The Federal Republic of Czechoslovakia in 1993 peacefully split into the Czech Republic and Slovak Republic (i.e. Slovakia).

attention was focused on the creation and further advancement of alternative financing services to support the growth of the corporate sector. In the case of equity-related financial intermediaries, some activity existed, however, poor liquidity and insufficient legislative support were identified as hurdles toward a better functioning of this financial sector (EBRD, 2008b).

8.4.4. The Corporate Sector: What Source of External Finance Do Firms Demand?

In our conceptualisation (Chapter 3) we suggest that in the case of equity culture development a high demand for equity finance has to be reflected in a high presence of adequate macro-economic, institutional and managerial conditions. We thus see the corporate sector's demand for equity finance as the main driver for equity culture development. However, we find in the case of some CEECs from our sample (primarily the Laggards group) that corporate sector's high demand for equity finance is not always a reflection of adequate pro-equity culture conditions. Bulgaria, our representative for the group of Laggards, is a prime example of this. Through our earlier empirical examination (Chapters 6 and 7) we have observed that Bulgaria's macro-economic, institutional and managerial conditions are not adequately developed for the development of an equity culture. Yet, the analysis of Bulgaria's corporate sector suggests that the demand for equity financing is present. The robustness of our conceptual framework is preserved by the fact that this high demand is rapidly decreasing (more than in any other CEEC) on an annual basis. We believe that there are two reasons for the high demand in the case of Bulgaria. Firstly, we believe that such demand was artificially created by Bulgaria's transition government in an effort to progress the privatisation process unsuccessfully initiated with the sale method. Secondly, the reason for high demand was the underdevelopment of Bulgaria's banking sector. Bulgarian firms which wanted to benefit from the liberalisation process and were ready to grow their business hit the wall of the underdeveloped banking sector, and insufficient availability and excessive cost of capital. Thus for many of these firms the only choice they had was to 'experiment' with equity capital. The reality of inadequate macro-economic, institutional and managerial conditions resulted in the large drop-out rate of public firms that we observe.

In the case of Hungary, our representative from the group of Potentials, we observe low demand for equity finance despite Hungary's position in a group identified as having a medium potential for equity culture development. We find, that despite the macro-

economic advancement (although slightly decreasing towards the end of our observation period) and good institutional support (observed specifically in the case of Hungary not the group of Potentials as a whole) the demand for equity finance is low. The reason for this is links with countries characterised by bank-based system (Germany as the main source of FDI) and dominance of the banking sector in this country. Our earlier examination also shows that managerial capabilities are not congruent with managerial capabilities found in equity-oriented systems.

Firms in Slovakia use primarily debt finance as their source of capital, however some demand for equity finance is present. The improving macro-economic conditions and institutional environment are the main reasons for this. However, in order for equity culture to fully develop a further implementation of pro-equity culture managerial conditions is vital.

8.5. Conclusion

The aim of this chapter is to provide additional qualitative information and analysis in order to enrich the interpretation of our results from previous variable-based empirical analyses. We discuss the influences from the pre-transition and the early transition period which, in our opinion, affect the financing choices firms make and the type of financial systems individual economies develop. We also suggest policy-related reasons which affected the macro-economic and institutional conditions in our sample of transition economies. In addition we examine issues related to the specifics of a financial system (regulation and competitiveness within the sector). Lastly, we briefly re-state how corporate sectors react to the combination of transition-specific macro-economic and institutional conditions.

We observe that in the case of Bulgaria, our representative for countries with the smallest potential for equity culture development, delayed and ineffective privatisation, dominant position of the banking sector, and delays in implementing necessary macro-economic and institutional reforms led to the creation of inadequate conditions for equity culture development. The paradoxically high demand for equity finance is explained twofold: by politically driven pressure on firms to become publicly traded companies and by the underdevelopment of the banking sector as the only refinancing alternative. In the case of Hungary, our representative for countries with medium potential for equity culture

development, we find a successful start to the transition process followed by an inconsistent reform process. When combined with a one-sided bank-oriented direction of a financial system and weak institutional support this results in medium to low demand for equity finance. In the case of Slovakia, our representative for the group of Leaders, we observe that a combination of consistent and appropriately timed reforms led to the development of an environment which may well support equity culture development.

Chapter 9: Conclusion

9.1. Introduction

In this final chapter we summarise our thesis argument and our research findings. We discuss research limitations and present explanations as to how we approached these to secure the robustness and validity of our study. Furthermore, we explain in which ways our study contributes to the academic literature and how it enriches the knowledge base of business practitioners and policymakers. We also suggest how this study can be used as a basis for future research.

9.2. Summary of Thesis Argument

In the introduction of this thesis we suggest that the issue of the CEECs' financial system development and its future direction requires academic attention. Traditionally, the bank-based system unilaterally dominated in the immediate post-communist region of Central and Eastern Europe. However, academic (Hermes and Lensink, 2000a; Scholtens, 2000; Bakker and Gross, 2004) as well as business-based (EBRD, 1998; EBRD, 2006) evidence shows that the dominance of the banking sector has negatively affected the cost and availability of capital which firms need for corporate growth. Based on the notion that corporate growth is positively associated with national macro-economic growth (Beck et al., 2000) we stress that a discussion about the most feasible and suitable advanced financial structure, which will contribute to the CEECs' efforts to catch up with their more developed neighbours, is necessary, timely and topical. We investigate whether the transition economies of Central and Eastern Europe are able to move away from the dominating debt-driven financing structure and consider the equity-oriented model as a feasible alternative.

To achieve this research aim, we approach the above discussed research problem from the equity culture development point of view. For the purpose of this study we define *equity culture* as a financing culture adopted by a country's corporate sector implying this sector's bigger freedom to opt for equity-oriented financing as a result of present feasible market conditions. Through the investigation of this phenomenon, seen as the bedrock of an equity-based financial system, we set out to examine which transition economies of

Central and Eastern Europe have the best potential to successfully adopt and benefit from an equity-based financial system.

We develop a theory-bridging conceptual framework in which we propose that the demand for equity finance by the corporate sector is the driver of equity culture development in a country. We reason that such demand depends on the size of transaction costs firms incur when searching for equity capital, stepping into a contractual relationship with an equity provider, and maintaining and coordinating the contractual relationship with an equity provider. We then empirically test the propositions made in our conceptual framework using a combination of quantitative variable-based and qualitative research methods.

The principal objectives of this research are formulated below:

1. *To identify the main environmental forces that shape the direction of a financial system development towards creating an equity culture in a transition economy.*
2. *To examine the nature of conditions stemming from the environmental forces which guide the process of moving towards the development of an equity culture in a transition economy.*
3. *To determine under what specific external and internal factors the creation of an equity culture is viable in the CEECs.*
4. *To propose which strategies should be followed by business practitioners and financial institutions, and which policies should be adopted by governments and financial organisations in order to support the development of an equity culture in the transition economies of the CEECs.*

In the following section we outline our research findings.

9.3. Summary of Research Findings

The main findings of our research are the following:

We provided an answer to our first and partly to our second objective when we conceptually identified three environmental forces which have an effect on the size of transaction costs firms incur when seeking equity capital and which thus inherently have an impact on equity culture development. These are of macro-economic, institutional and managerial nature. Firstly, we reason that any form of an advanced financial system

(whether bank- or equity-based) requires the presence of a competitive macro-economic environment. In this respect The National Competitiveness concept theoretically underpins our view. Secondly, we state that equity culture development requires the presence of an adequate equity culture-oriented institutional system. This is to say that institutional conditions which support the proper functioning of an equity-based system together with the presence and sufficient quality of equity-based financial institutions which supply equity capital to the corporate sector, are necessary for the development of an equity culture. In this respect we employ the institutional theory of Varieties of Capitalism to strengthen our theoretical thinking. Lastly, we propose that in order for equity culture to develop, the managerial environment has to support the demand for equity finance and be aligned in terms of equity culture supportive managerial capabilities. The strategic theory of the Resource Based View provides a theory-building foundation in this respect. Perhaps most importantly, we maintain that it is the combination and interaction of equity culture supportive factors stemming from the above three environmental forces which have to be satisfied, in order for equity culture to be able to develop.

By empirically applying our conceptual framework to a sample of ten CEECs we addressed our second objective in a more specific way. We found that the CEECs are at different stages of a financial system development and thus have developed the conditions necessary for the development of equity culture to different levels. Our first empirical examination – the cluster and benchmarking analysis (Chapter 6) confirmed that there are three different groups of CEECs. Firstly, we identified a group of CEECs which has the best developed conditions and thus have a high potential for equity culture development. We called this group *The Leaders* and the CEECs which belong to this group by the end of our research period (2008) are Czech Republic, Estonia and Slovakia. Secondly, we identified a group of CEECs which has developed some conditions and thus has a medium potential for equity culture development. We called this group *The Potentials* and we found that Hungary, Latvia, Poland and Slovenia are the four CEECs which belong to this group in 2008. Lastly, we established that there is the last group of CEECs which have the least developed conditions and thus the lowest potential for equity culture development (*The Laggards*). It is the countries of Bulgaria, Lithuania, and Romania which belong to this group.

Furthermore, to respond to our third research objective we further empirically examined through a regression analysis in Chapter 7 the nature of conditions which need to

be developed for the existence of a successful equity culture in the case of each group of CEECs. We found that in the case of countries belonging to the group of Leaders the progress of their macro-economic and institutional conditions satisfies the requirements for equity culture development. It is primarily the existence and adequate functioning of financial intermediaries 'supplying' equity capital and the progress at the managerial level of the corporate sector on which a successful development of an equity culture depends. In the case of the group of Potentials we found that this group is 'a step behind' the Leaders group as the development of an equity-related intermediary sector has to be coupled with adequate institutional reforms which yet have to be adopted. Finally, for the group of Laggards we found that there is a need for a complex reform process to take place at the macro-economic, institutional and managerial level should the development of a sustainable equity culture be desired.

We also found, through the last stage of our empirical examination – the qualitative comparative analysis in Chapter 8, that countries with the best potential for equity culture development (Leaders) have gone through a more successful model of privatisation, have benefited from consistently increasing FDI from both equity and non-equity-based systems and a progressive reform-process. On the other hand, countries with medium potential for equity culture development (Potentials) have experienced less successful privatisation and inward FDI was primarily one-sided from countries with rooted bank-based systems. In these countries also a bigger centralisation by the banking sector and inconsistency in the institutional reform process was noted. In the case of the last group with lowest potential for equity culture development (Laggards) we observed strong political involvement in the privatisation process and a delayed and inefficient process of macro-economic and institutional reforms.

Last but not least, we set out to empirically investigate whether factors which we found have an impact on equity culture development for the corporate sector as a whole, have the same influence (in terms of type and scope) on different firm sizes (Chapter 7). We adopted the European Commission (2005) firm size thresholds and divided our sample of the corporate sector into three groups: Large firms, SMEs and Micro firms (Chapter 4). We proposed in our conceptual framework (Chapter 3) that ultimately it is the groups of Large firms and SMEs which are the strongest drivers of equity culture development in a country. Nevertheless, we included the group of Micro firms in our empirical analysis as they represent a significant proportion of the total number of firms in transition economies.

In addition, we were interested to find out the nature of conditions which motivate the few exceptions from the group of Micro firms to use equity finance as their external source of capital. Our analysis found that when controlling for different firm sizes, differences occur in the nature of conditions which affect the demand for equity finance the most. We found that the managerial environment has stronger impact on Micro firms and to a lesser extent on SMEs but a limited influence on Large firms. We further observed that the institutional environment affects all firm sizes almost to an equal degree. Lastly, we established that the macro-economic environment has a stronger impact on Large firms and SMEs, however exerts less impact on Micro firms.

9.4. Research Limitations

We have identified some limitations associated with this study:

Firstly, the paucity of previous research on equity culture development in transition economies required a macro-level approach. We realised that existing corporate finance theory (discussed in Chapter 3, section 3.2.) is not applicable to our context. The main reason for this is the multidisciplinary perspective we adopt with a specific focus on the domain of Strategic Management. Therefore we had to start by developing a conceptual framework. Then, in order to empirically test the validity of our conceptualisation we opted for the analysis of panel data which included ten CEECs and four benchmark countries (Germany, Japan, UK, and USA) observed within a thirteen year time period (1996-2008). Although we believe that the macro-level approach was the correct choice for our type of research problem, we are aware of the limitations that come with it. This macro-level approach did not allow us to go to as much depth and detail as a micro-level research would. However, because of our study's unique character (as discussed above) it was necessary to start at the macro-level, understand the forces and factors which influence equity culture development and thus provide a solid base for future micro-level research.

Secondly, the uniqueness of our study presented another problem – the scarcity of studies with which we could compare our results. Although a number of studies that have been presented in our literature review (Chapter 2) have investigated financial system development in the transition economies of Central and Eastern Europe, the angle through which we investigated financial system development, the phenomenon of equity culture, is unique in its field. However, we believe that our chosen method for the first stage of the

empirical analysis, the benchmarking method (Chapter 6), provided the necessary comparative element which we were not able to achieve through a comparison with other studies related to the same research subject.

The last limitation of our study is linked to the macro-level perspective that, as explained earlier, we adopted. Due to the complexity of our conceptual framework, we had to employ various kinds of data (macro-economic, institutional, managerial) for a large sample (ten CEECs) across a long time period (thirteen years). This meant that a quantitative analysis of secondary data was going to be our primary research method. One of the disadvantages of using secondary data is that the researcher does not have any influence over the accuracy and robustness of used data (Bryman and Bell, 2003). To mitigate the limitations associated with the use of secondary data we not only used reputable sources but we also used them in combination, as we were aware that basing a research on one source of secondary data may negatively affect the robustness of research results (Depka, 2006).

9.5. Dual Contribution of the Study

Our study makes a theoretical as well as practical contribution. In the following section we explain which academic areas we contribute to and what practical implications stemming from our study can enrich the knowledge base of business practitioners as well as policymakers.

9.5.1. Contribution to Research

Although there is evidence of various research performed on the financial system development (Hermes and Lensink, 2000a; Levine, 2002; Purda, 2008), growth – finance relationship (Levine, 1997; Beck et al., 2000; Deidda and Fattouh, 2008), financial structures and their influence over long-run economic growth (King and Levine, 1993; Boot and Thakor, 1997; Nord, 2000; Beck and Levine, 2004), some scholars point out the existence of gaps in previous research and call for more attention to the area of financial system development in transition economies. Bakker and Gross (2004) call for more attention specifically to the transition economies of Central and Eastern Europe as 'these markets are particularly interesting since they provide us with a number of comparable, yet in many interesting respects, different cases'.

While, Hermes and Lensink (2000a) stress the need to provide empirical knowledge on factors affecting the CEECs' future financial systems' developments, Bekaert and Harvey (2002) are more specific as they stress the requirement for a better understanding of the combination of macro-economic and institutional factors influencing financial system reforms in transition markets. However, Purda (2008) warns about the dangers of extending results from research on financial systems of developed economies with well-functioning financial markets to the context of transition and post-transition countries. Klapper and Love (2003), on the other hand comment on the methodological approaches adopted and emphasise the need to re-focus the research in transition economies from country-level to firm-level, or a combination of these two levels.

As seen from the above, the literature review we presented earlier in this thesis (Chapter 2) as well as to our best knowledge, the subject of financial system development with the focus on equity culture development, has not been fully investigated. In order to provide valuable scientific evidence we carefully designed our research through constructing a conceptual framework on which we then designed an empirical model capturing our research questions.

Our conceptual framework bridges the traditional theory used in the Economics and Finance research (The Transaction Costs Theory, The Pecking Order Theory) with new strategic, managerial and institutional theories (The National Competitiveness concept, The Resource Based View, and the Theory of Varieties of Capitalism). The conceptual framework provides answers as to what are the environmental forces which impact on the development of an equity culture in transition economies as well as what is the nature of conditions stemming from such environments that have to be satisfied so that equity culture is able to develop. The complexity of the conceptual framework is reflected in the empirical examination we apply. Firstly, we create a database which consists macro-economic, institutional and managerial data by collating a number of databases. Secondly, we apply a three-tier research methodology through which we test our collated data. We start by clustering and benchmarking using the Co-Plot methodology, then we apply a fixed effects panel data regression analysis and as the last step of the empirical examination we perform a qualitative comparative analysis of three selected CEECs.

9.5.2. Contribution to Practice

Evidence from business related publications (e.g. WorldBank, 2002; LSE, 2006) as well as our personal observations from the world of finance suggest that the financial system development in Central and Eastern Europe and specifically the subject of equity culture are important current issues. The question of which CEECs have the best potential to develop and adopt an equity culture requires attention so that correct managerial recommendations can be drawn and suitable policy implications can be proposed.

Firstly, as equity-based financial institutions (e.g. AIM) are considering a business expansion to Central and Eastern Europe, and existing and potential investors in the CEE region are looking for new investment opportunities, it is essential to have the information as to which countries in this geographic area would be a viable expansion and investment target. Secondly, as the financial systems in the CEECs are still in the process of developing, it is appropriate to address the issue of equity culture so that focused domestic policies are formed in those countries wanting to develop an equity-based system. Furthermore, with the recognition of the significant role transition economies are expected to play in the future globalised world, bilateral international organisations have signalled their support for research related to macro-economic, institutional and financial advancement of these countries.

The specific contributions our study generates and the recommendations which can be drawn for the above discussed business-related and policy-oriented bodies are provided in the next section.

9.6. Recommendations

Based on the findings from our examination of equity culture development in the transition economies of Central and Eastern Europe, we are able to propose managerial and policy recommendations. We start by identifying specific groups which may be interested in our study and we suggest the reasons why. Then we make relevant managerial and policy recommendations.

9.6.1. Managerial Recommendations

In terms of managerial recommendations we have identified two groups which, we believe, may benefit from the findings of our study. These are investors and potential investors in the CEECs, and financial institutions considering expansion in the European and specifically Central and Eastern European region.

Investors and Potential Investors in the CEECs

This research informs investors and potential investors as to the issues they are likely to face in the CEECs, and the degree of difficulty they may experience in making successful investments in these countries. Our study enables them to target investment areas that have a developing equity culture and thereby reduce their risk. We believe this research may be of particular interest to the larger investment funds and investment banks.

Financial Institutions Considering International Expansion in the CEE region

Financial institutions may find this research valuable for two main reasons. Firstly, it identifies countries with immature equity markets which may present opportunities for first mover advantage to financial investors prepared to take a long-term view. Secondly, it provides others, such as the London Alternative Investment Market (AIM), with a clear indication of those countries which may be requiring more liquid junior capital markets in the future.

We believe that before making an investment decision and choosing their investment market individual investors and financial institutions would benefit from assessing the level of equity culture that is developed in their target market. By using the conceptual framework that we have developed and the empirical findings that we have discovered these two groups can determine the following:

1. Firms with the best potential for equity culture development

The nature of countries/markets which have the best developed equity culture reflected through a high demand for equity finance generated as a result of adequate macro-economic, institutional and managerial conditions. In the case of the CEECs, this thesis

provides an answer to this. We identified the Czech Republic, Estonia and Slovakia as CEECs with the best potential for the development of a sustainable equity culture.

2. *The realistic time frame as well as the potential for the development of an equity culture in a country*

If the target country does not have adequate macro-economic and institutional conditions in place, then it is unlikely that equity culture will be developed in the short term. This is because forming a stable economy and decreasing bureaucratic inefficiency and high levels of corruption are tasks which need many years to implement (Stoian and Filippaios, 2008). However, if the macro-economic and institutional requirements are satisfied, and it is the presence of financial institutions that is lacking, equity culture may develop in the medium term. In a situation when a country has all the necessary conditions and the managerial capabilities within the corporate sector are missing, then it is likely that equity culture development is achievable in the short-term.

3. *The type of firms (in terms of firm size) which are likely to demand equity finance*

If a country has suitable macro-economic and institutional conditions for the development of equity culture but not the managerial capabilities of individual managers, it is the large firms which are likely to opt for equity finance. On the other hand, the demand of SMEs for equity finance depends primarily on the presence of institutional conditions. Lastly, Micro firms even in the presence of adequate macro-economic and institutional conditions are not likely to opt for equity finance unless a strong presence of equity culture supportive managerial capabilities is noted. This provides information for financial institutions in terms of which section of the corporate sector should be targeted.

9.6.2. Policy Recommendations

With regard to our recommendations for policy makers we believe that our study can be of interest not only to domestic governments and the European Commission but also to some international bilateral organisations.

Domestic Governments and the European Commission

Both domestic governments in the CEECs and also the European Commission are concerned with improving economic growth rates of European member states. Our

research identifies those countries which are lagging behind in terms of equity culture development and further, suggests causes of this. This research should give an impetus to countries from the Laggards and Potentials groups to continue with the reforms necessary.

International Bilateral Organisations

Organisations such as the International Monetary Fund (IMF), The World Bank and regional development banks such as the Asian Development Bank (ADB) and Intra-American Development Bank (IADB) are concerned with economic development of transition economies. Our study identifies key factors in the development of an equity culture in the CEECs which may be applied to other groups of transition countries. We believe that our research and methodology will be of considerable interest to this group of international finance and development institutions.

Furthermore, based on our empirical results we are able to make the following recommendations:

High levels of inward FDI in a transition economy have a negative effect on the number of Micro firms applying for equity finance. Our findings further show the same indicator does not affect large firms and SMEs to the same extent. Our results do not imply, that if a country wants an increased demand for equity finance (not just by large firms, SMEs but also by Micro firms), FDI should not be encouraged. We propose that inward FDI should be encouraged, however from nations known for established equity culture, so that some of the host firms' appetite for equity finance can transfer into local firms.

The presence of an efficient bureaucratic system and an institutional system with low corruption levels is not a necessary condition in the case of SMEs and Large firms. This is to say that transition countries which do not satisfy the institutional conditions of efficient bureaucracy and low corruption can still have large firms and SMEs demanding equity finance (subject to the presence of the remaining conditions). However, in such institutional conditions Micro firms are less likely to demand equity finance. Therefore, if a country wants to start building equity culture at all levels of its corporate sector, improved quality of the bureaucratic system and low levels of corruption may enable it to achieve that (subject to adequate macro-economic and managerial conditions).

The presence of motivated staff with international experience and an ability to adapt are necessary preconditions for a high demand for equity finance at the micro level, but these managerial capabilities are not necessarily required in the case of large firms and are only to some extent necessary in the case of SMEs. We therefore suggest, that programmes enabling managers to gain knowledge from international exposure in foreign countries with a functioning equity-based system may help them to achieve the necessary managerial capabilities an equity culture requires.

9.7. Recommendations for Further Research

Now that the conceptualisation is in place, the main external forces which affect equity culture development have been identified, the conditions which have to be satisfied so that equity culture can develop have been named, and strategy-building and policy-making recommendations for the development of an equity culture have been proposed, the research focus can change from a macro-level to micro-level. This is to suggest that equity culture development can be assessed with the input of qualitative methods more closely for:

1. individual groups of CEECs identified in our study (*Leaders*, *Potentials*, *Laggards*) with the aim of understanding some of the differences in demand between countries which share a group with the same potential for equity culture development;
2. a single country from our sample with the aim of examining its corporate sector's demand by assessing individually Large firms, SMEs, and Micro firms;
3. or other transition economies outside the European region. In this case we would propose first applying the conceptual framework and methodology introduced in this study and then progress onto the micro-level research.

APPENDIX A: Table of Correlations

Correlation Table	RatioPublic	PublicToPrivate	RatioPrivate5	PrivateStoPrivate	GDP per head	Lending interest rate	Inward FDI	Balance of Trade	Services	Competition Policy	Corruption	Law and Order	Bureaucracy Quality	Large scale privatisation	Small scale privatisation	Banking reform	Securities markets	National Commercial Banks/TNFI	Miscellanious Business Credit Institutions/TNFI	Stock market capitalisation	Worker motivation	International Experience	Adaptability	Entrepreneurship	Investment advice/TNFI	Finance skills
RatioPublic	1.0000																									
PublicToPrivate	0.9980*	1.0000																								
RatioPrivate5	0.4816*	0.4862*	1.0000																							
PrivateStoPrivate	0.5652*	0.5719*	0.9931*	1.0000																						
GDP per head	-0.1338*	-0.1300*	-0.2280*	-0.2235*	1.0000																					
Lending interest rate	0.1853*	0.1894*	0.1385*	0.1537*	-0.4203*	1.0000																				
Inward FDI	0.0030	-0.0082	-0.0033	-0.0080	0.0260	-0.1576*	1.0000																			
Balance of Trade	-0.0586	-0.0492	-0.2316*	-0.2154*	0.4466*	-0.1103*	-0.4251*	1.0000																		
Services	-0.2128*	-0.2185*	0.0064	-0.0254	0.3167*	-0.4048*	0.1146*	-0.2144*	1.0000																	
Competition Policy	-0.2260*	-0.2304*	-0.3655*	-0.3694*	0.7154*	-0.3400*	0.1747*	0.3660*	0.2716*	1.0000																
Corruption	-0.0021	0.0029	-0.0158	-0.0200	-0.1352*	0.2015*	-0.1342*	0.1136*	-0.1561*	-0.0760	1.0000															
Law and Order	-0.0707	-0.0618	-0.1566*	-0.1500*	0.0520	0.1304*	-0.3664*	0.4403*	0.0145	0.0569	0.4250*	1.0000														
Bureaucracy Quality	-0.1830*	-0.1833*	-0.1339*	-0.1538*	0.5095*	-0.2690*	-0.1077*	0.4362*	0.3939*	0.6839*	0.3893*	0.3346*	1.0000													
Large scale privatisation	-0.1884*	-0.1997*	-0.2530*	-0.2708*	0.3915*	-0.4521*	0.4317*	-0.0646	0.2338*	0.4332*	-0.0091	-0.1460*	0.3344*	1.0000												
Small scale privatisation	-0.1169*	-0.1182*	0.0754	0.0453	0.2794*	-0.3813*	-0.0625	-0.0596	0.6290*	0.0895*	-0.0293	-0.2054*	0.4232*	0.0889*	1.0000											
Banking reform	-0.2182*	-0.2199*	0.0053	-0.0269	0.5964*	-0.4561*	0.3048*	-0.0146	0.5187*	0.5247*	-0.1453*	-0.2083*	0.4386*	0.5666*	0.5072*	1.0000										
Securities markets	-0.3020*	-0.2891*	-0.1440*	-0.1722*	0.6195*	-0.3460*	0.0457	0.2202*	0.4368*	0.6772*	0.0167	-0.0468	0.5854*	0.4378*	0.4248*	0.7356*	1.0000									
National Commercial Banks/TNFI	0.2423*	0.2282*	0.1236*	0.1380*	-0.4985*	0.4355*	0.0874*	-0.2037*	-0.1800*	-0.3331*	-0.0321	-0.0576	-0.1284*	-0.2492*	0.2490*	-0.4408*	-0.5790*	1.0000								
Miscellanious Business Credit Institutions/TNFI	-0.1791*	-0.1797*	-0.3149*	-0.3175*	0.1214*	-0.2185*	0.1165*	-0.3466*	0.4960*	0.2093*	0.0625	0.0698	0.1141*	0.2398*	0.1311*	0.2214*	0.2516*	-0.2638*	1.0000							
Stock market capitalisation	-0.1568*	-0.1547*	-0.0520	-0.0655	0.5696*	-0.2854*	0.2735*	-0.0022	0.3572*	0.4663*	-0.0459	-0.0340	0.2835*	0.3740*	0.1719*	0.5750*	0.5395*	-0.5014*	0.2760*	1.0000						
Worker motivation	-0.1014*	-0.1018*	-0.1804*	-0.1899*	0.4497*	-0.2032*	0.0967*	0.0666*	0.1971*	0.4442*	0.1753*	-0.0248	0.4400*	0.4947*	0.1826*	0.4509*	0.3628*	-0.2008*	0.3426*	0.2804*	1.0000					
International Experience	0.0221	0.0251	0.0516	0.0421	0.3131*	-0.0643	-0.0364	0.2168*	0.0304	0.1489*	-0.1131*	-0.1840*	0.1517*	0.1759*	0.2977*	0.3836*	0.2248*	-0.1538*	-0.1137*	0.1779*	0.5386*	1.0000				
Adaptability	-0.1016*	-0.1015*	-0.1349*	-0.1463*	0.4766*	-0.1998*	0.0789	0.1705*	0.1801*	0.4375*	0.3198*	0.1472*	0.5457*	0.5059*	0.0979*	0.4007*	0.3558*	-0.2104*	0.3331*	0.3508*	0.7784*	0.4267*	1.0000			
Entrepreneurship	-0.0571	-0.0521	0.0078	-0.0059	0.2467*	-0.1912*	-0.1485*	-0.0592	0.2594*	0.0167	0.3021*	0.0102	0.3480*	0.0452	0.5681*	0.2358*	0.1934*	-0.3100*	0.3125*	0.0773	0.4228*	0.2797*	0.4525*	1.0000		
Investment advice/TNFI	0.0385	0.0473	0.2110*	0.2061*	0.2482*	-0.0450	-0.1166*	0.4013*	-0.3855*	0.0691	0.0605	-0.1217*	0.0441	-0.0073	0.0763	0.1187*	0.2277*	-0.4055*	-0.7221*	0.1322*	-0.1294*	0.2332*	-0.0967*	-0.0278	1.0000	
Finance skills	-0.2052*	-0.2050*	-0.0871*	-0.1139*	0.1778*	-0.2116*	-0.0863*	0.1640*	0.6104*	0.1624*	0.0125	0.3674*	0.4828*	0.1451*	0.4153*	0.3789*	0.2922*	-0.0706	0.2715*	0.1671*	0.2866*	0.2730*	0.2763*	0.1942*	-0.3551*	1.0000

Source: Author's estimations in Stata

APPENDIX B: Regressions for *PublicToPrivate* and *Private5ToPrivate*

Table 7	Estimations PublicToPrivate (Total Number of Firms)			
	Model 7.1.	*Model 7.2.*	*Model 7.3.*	*Model 7.4.*
lgdp_per_	0.00285	-0.00148	0.01746***	0.02095***
	(0.00349)	(0.00210)	(0.00546)	(0.00488)
lending_	0.00008***	0.00005***	0.00003	0.00003*
	(0.00001)	(0.00002)	(0.00002)	(0.00002)
inward_f	-0.00035***	-0.00020**	-0.00024**	-0.00020**
	(0.00012)	(0.00009)	(0.00009)	(0.00009)
balance_	0.00014	0.00009	0.00017	0.00017*
	(0.00014)	(0.00012)	(0.00011)	(0.00010)
services	-0.00004			
	(0.00017)			
competit	0.00459**	0.00244*	0.00176	0.00192
	(0.00212)	(0.00143)	(0.00150)	(0.00138)
corrupti		0.00050	-0.00004	0.00061
		(0.00047)	(0.00064)	(0.00074)
law_and_		0.00068	0.00028	0.00018
		(0.00077)	(0.00070)	(0.00075)
bureaucr		0.00321**	0.00268*	0.00234*
		(0.00140)	(0.00136)	(0.00132)
large_sc		-0.00204	-0.00106	
		(0.00209)	(0.00195)	
small_sc		-0.00605*	-0.00066	
		(0.00325)	(0.00335)	
banking1		-0.00603***	-0.00587***	-0.00604***
		(0.00170)	(0.00133)	(0.00140)
securiti		0.00343***	0.00350**	0.00295
		(0.00122)	(0.00169)	(0.00187)
rationational				
banks			0.05264***	0.05405***
			(0.01103)	(0.01299)
ratiomisc			-0.01094*	-0.00831
			(0.00641)	(0.00596)
stock_m1			0.00009**	0.00009**
			(0.00004)	(0.00004)
worker_m				0.00071
				(0.00065)
internat				0.00164**
				(0.00075)
adaptabi				-0.00099
				(0.00067)
entrepre				-0.00061
				(0.00054)
_cons	0.02749	0.09085***	-0.09995*	-0.13745***
	(0.03242)	(0.02014)	(0.05063)	(0.04244)
N	130	130	130	130
F	246.01713	435.35265	254.43103	235.30188
R	0.9771	0.9814	0.9863	0.9876
ll	598.01136	611.34336	631.09022	637.84158
aic	-1.14e+03	-1.18e+03	-1.19e+03	-1.20e+03
Time effects	1.77*	0.95	2.05**	2.35**
Included	yes	no	yes	yes
Country effects	167.42***	194.40***	156.28***	132.46***
Included	yes	yes	yes	yes

Source: Author's estimations in Stata

Table 8	Estimations PublicToPrivate Firm Sizes			
	Model 8.1.	*Model 8.2.*	*Model 8.3.*	*Model 8.4.*
	Total	*Large Firms*	*SMEs*	*Micro Firms*
lgdp_per_	0.02095***	0.06160**	0.01760***	0.00190**
	(0.00488)	(0.03873)	(0.00464)	(0.00081)
lending_	0.00003*	0.00027***	0.00004***	0.00002**
	(0.00002)	(0.00007)	(0.00001)	(0.00001)
inward_f	-0.00020**	-0.00032	-0.00012	-0.00007*
	(0.00009)	(0.00041)	(0.00008)	(0.00004)
balance_	0.00017*	0.00231***	0.00030***	0.00007
	(0.00010)	(0.00069)	(0.00009)	(0.00005)
competit	0.00192	0.00203	0.00159	0.00035
	(0.00138)	(0.01354)	(0.00142)	(0.00061)
corrupti	0.00061	-0.00064	0.00002	0.00055**
	(0.00074)	(0.00361)	(0.00062)	(0.00025)
law_and_	0.00018	-0.00320	-0.00001	0.00026
	(0.00075)	(0.00367)	(0.00058)	(0.00026)
bureaucr	0.00234*	0.00160	0.00125	0.00144***
	(0.00132)	(0.00707)	(0.00117)	(0.00044)
banking1	-0.00604***	-0.01315**	-0.00449***	-0.00288***
	(0.00140)	(0.00799)	(0.00116)	(0.00055)
securiti	0.00295**	0.00374*	0.00210*	0.00137**
	(0.00187)	(0.00815)	(0.00157)	(0.00049)
rationational				
banks	0.54045***	0.18655***	0.01700***	0.01722**
	(0.01299)	(0.07087)	(0.01101)	(0.00598)
ratiomisc	-0.00831	0.03438	0.00161	-0.00120
	(0.00596)	(0.03560)	(0.00439)	(0.00229)
stock_m1	0.00009**	0.00031**	0.00007**	0.00002**
	(0.00004)	(0.00016)	(0.00003)	(0.00001)
worker_m	0.00071	0.00843	0.00101*	0.00038**
	(0.00065)	(0.00326)	(0.00055)	(0.00021)
internat	0.00164**	0.01138***	0.00176***	0.00015*
	(0.00075)	(0.00392)	(0.00062)	(0.00022)
adaptabi	-0.00099	-0.00576	0.00090	0.00035*
	(0.00067)	(0.00329)	(0.00055)	(0.00027)
entrepre	-0.00061	-0.00292	-0.00057	-0.00019
	(0.00054)	(0.00272)	(0.00045)	(0.00019)
_cons	-0.13745***	-0.20154	-0.10460***	-0.00208
	(0.04244)	(0.31226)	(0.03922)	(0.00695)
N	130	130	130	130
F	235.30188	269.20283	357.88147	221.01467
R	0.9876	0.9838	0.9893	0.9816
ll	637.84158	419.15258	662.62184	746.68121
aic	-1.20e+03	-7.60e+02	-1.25e+03	-1.44e+03
Time effects	2.35**	3.42**	3.14**	1.26
Included	yes	yes	yes	no
Country effects	132.46***	81.06***	145.38***	66.84***
Included	yes	yes	yes	yes

Source: Author's estimations in Stata

Table 9	Estimations PublicToPrivate EC Type (Total Number of Firms)		
	Model 9.1.	*Model 9.2.*	*Model 9.3.*
	Leaders	*Potentials*	*Laggards*
lgdp_per_	0.00611	-0.00379***	0.00800
	(0.00911)	(0.00086)	(0.01436)
lending_	-0.00040*	0.00006*	0.00003*
	(0.00020)	(0.00003)	(0.00001)
inward_f	0.00017	-0.00001	-0.00034*
	(0.00015)	(0.00003)	(0.00018)
balance_	0.00011	-0.00003	0.00040
	(0.00028)	(0.00005)	(0.00025)
competit	0.00733	0.00192	-0.00027
	(0.00418)	(0.00083)	(0.00203)
corrupti	0.00085	-0.00025	0.00373*
	(0.00132)	(0.00015)	(0.00170)
law_and_	-0.00082	0.00124**	-0.00044
	(0.00216)	(0.00046)	(0.00168)
bureaucr	0.00078	0.00129*	-0.00241
	(0.00377)	(0.00064)	(0.00387)
banking1	-0.00554	0.00059	-0.00425*
	(0.00399)	(0.00039)	(0.00222)
securiti	0.00357	0.00047	-0.00444
	(0.00308)	(0.00030)	(0.00328)
rationalbanks	0.20370	0.00028	0.01939
	(0.12078)	(0.00583)	(0.01877)
ratiomisc	-0.02677	-0.00728*	-0.04967**
	(0.03101)	(0.00370)	(0.02206)
stock_m1	0.00004*	0.00000**	0.00007
	(0.00007)	(0.00001)	(0.00008)
worker_m	0.00134	0.00005	-0.00157
	(0.00155)	(0.00019)	(0.00387)
internat	0.00154**	-0.00030	0.00079
	(0.00148)	(0.00024)	(0.00099)
adaptabi	-0.00081	0.00000	0.00089
	(0.00085)	(0.00023)	(0.00150)
entrepre	-0.00067	-0.00009	0.00207*
	(0.00102)	(0.00016)	(0.00114)
_cons	-0.07930	0.03089***	0.00290
	(0.08710)	(0.00689)	(0.13132)
N	42	45	43
F	328.08720	1.40e+03	3.12e+03
R	0.9975	0.9984	0.9992
ll	257.30375	310.20903	254.87841
aic	-4.47e+02	-5.74e+02	-4.44e+02
Time effects	4.26**	1.78	3.19**
Included	yes	no	yes
Country effects	4.88**	174.34***	78.57**
Included	yes	yes	yes

Source: Author's estimations in Stata

Table 10	Estimations Private5toPrivate (Total Number of Firms)			
	Model 10.1.	*Model 10.2.*	*Model 10.3.*	*Model 10.4.*
lgdp_per_	-0.04481***	-0.04167***	-0.03615***	-0.03824***
	(0.00296)	(0.00308)	(0.00373)	(0.00357)
lending_	0.00002*	0.00003**	0.00002	0.00001
	(0.00001)	(0.00001)	(0.00001)	(0.00001)
inward_f	-0.00012	-0.00014*	-0.00012*	-0.00008
	(0.00006)	(0.00007)	(0.00005)	(0.00005)
competit	-0.00263**	-0.00144	-0.00102	-0.00133
	(0.00137)	(0.00113)	(0.00128)	(0.00122)
corrupti		-0.00137**	-0.00131**	-0.00115**
		(0.00063)	(0.00060)	(0.00052)
law_and_		0.00096	0.00159**	0.00144**
		(0.00071)	(0.00070)	(0.00062)
bureaucr		-0.00131	-0.00053	-0.00070
		(0.00121)	(0.00122)	(0.00103)
banking1		0.00035	-0.00082	-0.00088
		(0.00130)	(0.00144)	(0.00138)
securiti		-0.00346***	-0.00171	-0.00185*
		(0.00101)	(0.00113)	(0.00107)
rationational				
banks			-0.02156	0.02641
			(0.02840)	(0.02662)
ratiomisc			-0.03159*	-0.02829
			(0.01928)	(0.01893)
ratioinvestment			-0.18725*	-0.16752**
			(0.07009)	(0.06821)
finance_				0.00063*
				(0.00054)
internat				0.00050
				(0.00054)
adaptabi				0.00118**
				(0.00051)
entrepre				-0.00100
				(0.00063)
_cons	0.46261***	0.43916***	0.40847***	0.42664***
	(0.02529)	(0.02526)	(0.03430)	(0.03084)
N	130	130	130	130
F	1.11e+03	1.10e+03	1.26e+03	1.06e+03
R	0.9938	0.9947	0.9953	0.9958
ll	634.75432	645.04523	653.36226	666.62261
aic	-1.21e+03	-1.23e+03	-1.23e+03	-1.25e+03
Time effects	13.44***	15.30***	7.99***	9.19***
Included	yes	yes	yes	yes
Country effects	1234.31***	715.23***	729.92***	507.16***
Included	yes	yes	yes	yes

Source: Author's estimations in Stata

Table 11	Estimations Private5ToPrivate Firm Sizes			
	Model 11.1.	*Model 11.2.*	*Model 11.3.*	*Model 11.4.*
	Total	*Large Firms*	*SMEs*	*Micro Firms*
lgdp_per_	-0.03824***	-0.01212***	-0.03041***	-0.03231***
	(0.00357)	(0.00227)	(0.00426)	(0.00366)
lending_	0.00001	-0.00005**	0.00003**	0.00003***
	(0.00001)	(0.00002)	(0.00001)	(0.00001)
inward_f	-0.00008	0.00006	-0.00009	-0.00023***
	(0.00005)	(0.00007)	(0.00006)	(0.00006)
competit	-0.00133	0.00243**	0.00113	-0.00313
	(0.00122)	(0.00107)	(0.00156)	(0.00116)
corrupti	-0.00115**	-0.00262***	-0.00181***	0.00065
	(0.00052)	(0.00057)	(0.00060)	(0.00048)
law_and_	0.00144**	0.00022*	0.00092*	0.00057
	(0.00062)	(0.00087)	(0.00068)	(0.00057)
bureaucr	-0.00070	-0.00626	-0.00047	-0.00175
	(0.00103)	(0.00169)	(0.00101)	(0.00108)
banking1	-0.00088	0.00353	-0.00091	-0.00257
	(0.00138)	(0.00177)	(0.00151)	(0.00119)
securiti	-0.00185*	-0.00109	-0.00192*	-0.00307***
	(0.00107)	(0.00204)	(0.00111)	(0.00113)
rationational banks	-0.02641	0.04141	0.07159	-0.01817*
	(0.02662)	(0.04021)	(0.02860)	(0.02385)
ratiomisc	-0.02829	0.02247	-0.06041***	0.03055*
	(0.01893)	(0.02499)	(0.01934)	(0.01631)
ratioinvestment	-0.16752**	0.08887	-0.19123**	-0.18476**
	(0.06821)	(0.12477)	(0.07455)	(0.07597)
finance_	-0.00063	0.00183**	0.00034	0.00084*
	(0.00054)	(0.00073)	(0.00057)	(0.00050)
adaptabi	0.00050	0.00045	0.00051	0.00033
	(0.00054)	(0.00058)	(0.00060)	(0.00048)
internat	0.00118**	-0.00015	0.00073	0.00068*
	(0.00051)	(0.00050)	(0.00053)	(0.00046)
entrepre	-0.00100	0.00080	-0.00050	-0.00053
	(0.00063)	(0.00054)	(0.00067)	(0.00042)
_cons	0.42664***	0.21515***	0.39134***	0.32702***
	(0.03084)	(0.02811)	(0.03476)	(0.03113)
N	130	130	130	130
F	1.06e+03	3.21e+03	1.67e+03	393.17254
R	0.9958	0.9976	0.9971	0.9915
ll	666.62261	608.12142	656.01154	677.14345
aic	-1.25e+03	-1.16e+03	-1.23e+03	-1.27e+03
Time effects	9.19***	1.22	7.66***	9.47***
Included	yes	no	yes	yes
Country effects	507.16***	169.49***	616.25***	141.85***
Included	yes	yes	yes	yes

Source: Author's estimations in Stata

Table 12	Estimations Private5ToPrivate EC Type (Total Number of Firms)		
	Model 12.1.	*Model 12.2.*	*Model 12.3.*
	Leaders	*Potentials*	*Laggards*
lgdp_per_	-0.05919***	-0.01334	-0.00335
	(0.01382)	(0.01319)	(0.00484)
lending_	-0.00012	-0.00009	-0.00002**
	(0.00032)	(0.00016)	(0.00001)
inward_f	0.00001	-0.00010	0.00008
	(0.00008)	(0.00013)	(0.00006)
competit	0.00188	0.00387**	-0.00063
	(0.00436)	(0.00160)	(0.00075)
corrupti	-0.00008	-0.00305***	-0.00037**
	(0.00164)	(0.00085)	(0.00057)
law_and_	-0.00185	-0.00130*	-0.00029
	(0.00181)	(0.00179)	(0.00104)
bureaucr	-0.00758	-0.00541**	-0.00313*
	(0.00673)	(0.00179)	(0.00260)
banking1	-0.00292	0.00154	-0.00386**
	(0.00363)	(0.00235)	(0.00178)
securiti	-0.00293	-0.00131	-0.00203
	(0.00263)	(0.00159)	(0.00323)
rationational banks	0.00090	0.08095	-0.01891
	(0.07232)	(0.08220)	(0.06816)
ratiomisc	-0.00457	0.01317	-0.05880
	(0.07043)	(0.03907)	(0.05934)
ratioinvestment	-0.32643	0.16894	-0.11212
	(0.45521)	(0.30674)	(0.14267)
finance_	-0.00178	0.00056	-0.00135
	(0.00194)	(0.00075)	(0.00101)
internat	-0.00011	0.00040	-0.00001
	(0.00072)	(0.00078)	(0.00094)
adaptabi	0.00185*	0.00085	0.00063
	(0.00186)	(0.00050)	(0.00068)
entrepre	-0.00001	-0.00159	0.00002
	(0.00063)	(0.00101)	(0.00051)
_cons	0.61220**	0.18908	0.15533***
	(0.17395)	(0.11872)	(0.04424)
N	42	45	43
F	3.17e+03	3.89e+03	1.77e+03
R	0.9997	0.9995	0.9987
ll	266.42792	290.88252	246.96573
aic	-4.61e+02	-5.08e+02	-4.48e+02
Time effects	6.67**	10.49**	1.29
Included	yes	yes	no
Country effects	20.44**	22.95**	40.94***
Included	yes	yes	yes

Source: Author's estimations in Stata

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