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### **Bank corporate governance, risk management and ownership in the EU member and candidate nations**

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**BANK CORPORATE GOVERNANCE, RISK MANAGEMENT  
AND OWNERSHIP IN THE EU MEMBER AND CANDIDATE  
NATIONS**

**BY**  
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**A THESIS SUBMITTED TO BANGOR UNIVERSITY IN FULFILMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN  
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**September 2019**

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# **Abstract**

This thesis examines the process of European Union (hereafter EU) accession and membership on bank corporate governance structure, bank performance, bank risk, risk management and ownership structure in new EU member and candidate nations. This thesis explores whether this political process of EU accession and membership has influenced these areas of bank activity. Three empirical chapters of this study investigate the questions using a hand-collected dataset of banks from EU member and candidate nations with the assessment based on three principles. First, the analysis examines the influence of a political organisation, the EU, and the political process on these three main topics. Second, the analysis brings an interdisciplinary approach to explain this influence by employing finance and economics theories. Lastly, this thesis uses three original, hand-collected and cross-national datasets in the empirical chapters.

The thesis reports that the EU accession process and the EU membership has a remarkable influence on corporate governance structure and performance, risk management and risk, and ownership of sample banks in member and candidate nations. The thesis indicates that the accession process has influenced the take up of beneficial corporate governance practices. Distinctly, long-term membership of the EU has a little further influence on the dissemination of these positive corporate governance characteristics. Over the sample period, banks in candidate nations involved in the accession process display better financial performance whereas the financial performance of banks in member nations has been poorer.

The thesis finds that while accession to the EU has engendered sound risk management structures, this progress is not as much as that experienced by banks in member nations. This political process, therefore, appears to explain some of the currently unexplained variations in bank risk management observed across Europe in recent years. The univariate tests and random effect model results indicate that banks in new member states have a better risk management structure and the EU accession process and membership improves this. In regarding selected risk measures, banks in member nations show worse risk performance compared to banks operating in candidate nations. The relationship between risk management structure and risk measures of sample banks provides mixed results.

The thesis demonstrates that bank ownership is highly concentrated and foreign ownership is high in both member and candidate nations. These both are significantly higher for banks in member nations compared to banks from candidate nations. Due to increasing bank holding company (BHC) ownership of banks during the accession process and joining the EU, the percentage of shares held by financial institutions has increased, and individual/family, state and managerial ownerships have remained very low. It is reported that the political process of joining the EU influences the ownership structure of banks. Foreign, institutional, manager, and public ownership are higher in the membership period whereas, domestic, individual, private and state ownership lower in this period.

This thesis proposes some policy recommendations and research implications. One recommendation of the thesis considers board independence and the proportion of female directors. European Commission highlights the importance of the independent board members and the presence of female board members in several policy documents. Therefore, EU policymakers could recommend a mandatory quota system for female directors and independent directors both for directors of the board itself and for directors of the committees.

The thesis indicates that the risk management structure of banks requires consideration. The importance of quality in risk management and internal control of banks has been raised especially after the recent financial crisis. The presence of an executive chief risk officer (hereafter CRO), female CROs and female board members, establishing a separate board committee that is solely responsible for risk management and the independence of this committee improve the quality of risk management of banks. The findings suggest that EU policymakers should endorse the establishment of these risk management structures in banks.

The thesis displays that the share of foreigners in banks is very high. The dominance of foreign ownership could hinder the adoption of good corporate governance and risk management practices. Another recommendation is that the policymakers in the EU should maintain effective regulations to protect the rights of minority shareholders and sustain a competitive environment in the host nations banking industry.

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## List of Abbreviations

BCBS	Basel Committee on Banking Supervision
BDDK	Banking Regulation and Supervision Agency of Turkey
BHC	Bank Holding Companies
BIS	Bank of International Settlements
BMC	Banking and Managerial Control Model
BRRD	Bank Recovery and Resolution Directive
CE	Council of Europe
CEBS	Committee of European Banking Supervisors
CEE	Central and Eastern Europe
CEO	Chief Executive Officer
CRD	Capital Requirements Directive
CRO	Chief Risk Officer
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECB	European Central Bank
EDIS	European Deposit Insurance Scheme
EP	European Parliament
ESC	Employee and Start-up Control Model
EU	European Union
FCC	Foreign Corporate Control Model
FSAP	Financial Services Action Plan

FSB	Financial Stability Board
FYROM	Former Yugoslavian Republic of Macedonia
GDP	Gross Domestic Product
GLS	Generalised Least Squares
HHI	Herfindahl-Hirschman Index
IEF	Index of Economic Freedom
IFC	International Finance Corporation
IMF	International Monetary Fund
M&A	Mergers and acquisitions
MENA	Middle East and North Africa
NIM	Net Interest Margin
NPL	Nonperforming Loans
OECD	Organisation for Economic Co-operation and Development
ROA	Return on Assets
ROE	Return on Equity
SEC	US Securities and Exchange Commission
SEE	South Eastern Europe
SME	Small and Medium-sized Enterprises
SRI	Stanford Research Institute
SRM	Single Resolution Mechanism
SSM	Single Supervisory Mechanism
SPK	Capital Markets Board of Turkey
TCE	Transaction Cost Economics
UK	United Kingdom

US	United States
USSR	Union of Soviet Socialist Republics
VI	Vienna Initiative
WGI	World Governance Indicators

## Chapter 1. Introduction

### 1.1 Motivation and Background of the Research

*“A process of convergence in Member States’ approaches to Corporate Governance is already underway. Our over-arching objective at EU level is to encourage this process. A shining example of convergence is the diffusion of codes of corporate governance based on the “comply-or-explain” principle, including the Cromme code which we are celebrating today.”*

*24 June 2004,*

*Mr Frits Bolkestein*

*(Member of the European Commission, in charge of the Internal Market, Taxation and Customs)*

The enlargement of the European Union (EU) and the integration of European nations increased during the 1990s and accelerated during the new millennium. This enlargement and integration process mostly emerged and developed following the downfall of the Union of Soviet Socialist Republics (USSR). Hence the ending of the Cold War brought irremediable political changes to newly independent countries of this union and the other Eastern European nations and added a new term called “*transition economies*” to the economics literature. Many of these nations started to follow market economy systems and open their economies to foreign investments and trade that increased their level of globalisation and integration with the world economy. European nations of the former USSR and Eastern European had a new political goal of EU membership. These nations were also motivated and supported by EU organisations and nations to achieve this goal. Following the political process of joining the EU during the 1990s, many nations became members during the 2000s. A candidate nation has to fulfil several requirements to become an EU member. These requirements aim to prepare a candidate nation

to be eligible to participate in the union by changing and improving its social, economic, cultural, political, educational and judicial systems at the EU level. In recent years, these assumptions have faced scepticism and the *Brexit* debate, in particular, has cast doubt on whether EU membership is overwhelmingly advantageous.

There is a long tradition in corporate governance, risk management, and ownership research to focus on agency theory to examine the separation of ownership and control and to propose solutions to the principal-agent problem. However, during the last three decades, alternative theories and approaches in these fields have been emerged and have been increasingly applied. Several studies have been undertaken based on different theories and approaches including institutional theory, stakeholder theory, and transaction cost economics theory, the political economy of corporate governance and law and finance. This thesis follows the alternative approach and addresses the corporate governance, risk management and ownership practices in banks in the EU political economy framework. Thus, the thesis poses the following questions:

- Have the institutions (legal and political) and the political process of the EU been influential in these areas in banks?
- Has the EU political process (accession and membership) affected bank ownership structures, financial and risk performance?
- Do the selected corporate governance and risk management variables influence financial and risk performance of banks?

In addressing these questions, this study empirically examines the effect of EU membership and candidacy on bank corporate governance and bank performance, bank risk, and risk management and bank ownership structures for banking in the EU member and candidate nations. Thus, the primary interest is the reforms of the EU in those areas, apposite laws, rules, regulations, directives are discussed initially, and then other regulations, recommendation, and



guidelines are introduced briefly. The policymakers of EU<sup>1</sup> have shown considerable efforts to generate and improve corporate governance, risk management and ownership related issues such as (rules and regulations on mergers and acquisitions (M&A)), a central area of regulatory and legal development for the EU. The aim of the thesis is to apply the institutional theory; transaction cost economics theory (hereafter TCE) and stakeholder theory and political economy to explore the influence of the political process of joining the EU on bank corporate governance and bank performance, bank risk, and risk management and bank ownership structure. In this context, the thesis answers those research questions in separate empirical chapters.

This examination is timely for many reasons. Determining the benefits of EU membership and candidacy are critical for political and economic considerations particularly for banking. The European Commission (hereafter EC) is the leading institution responsible for corporate governance-related issues in the EU and influences corporate governance through repeated directives and recommendations<sup>2</sup>. The policymakers of EU, EC, European Parliament (hereafter EP) and European Central Bank (hereafter ECB) have been tackling issues related to these areas from the beginning of the 2000s starting with modernising Company Law. Following *the EU Action Plan on Company Law* (2003), *the EU Green Paper on Financial Services Plan* (2005), *the EC recommendation as to the role of non-executives and supervisory directors on boards of listed companies* in 2005, (COM/2005/162), *the Driving European Recovery Report* in 2009 (COM/2009/114), the Report on the Application by Member States of the EU of the Commission (COM/2010/286), *Recommendation on Remuneration Policies in the Financial Services Sector* (COM/2009/384), *the Green Paper on Corporate Governance in Financial Institutions and Remuneration Policies* 2010 (COM/2010/284), *the Green Paper on the EU Corporate Governance Framework* in 2011 (COM/2011/164) and *the EC recommendations on corporate governance quality* in 2012 and 2014 (COM/2012/614; COM/2012/740; 2014/208) were published.

The actions on corporate law date from the 1970s but since 1999, the European Commission has been accelerating these changes to establish a common approach for developing an integrated pan-EU strategy and codes of conduct (Doyle, 2010, p.588). *The Lisbon Agenda*

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<sup>1</sup> Appendix III provides brief information on EU political and legal institutions.

<sup>2</sup> Appendix II lists all regulatory documents of corporate governance, risk management and ownership practices in EU context.

(2000), pivotal in the development of the EU, declared a single mechanism in economics (*single monetary and banking union*), law (*Action plan on Modernising Company Law and Enhancing Corporate Governance* in the European Union was declared in 2003/2004) and finance (in 2005 and 2010, the Commission presented *the Green Paper on Financial Services Policy 2005* and *the Green Paper on Corporate Governance in Financial Institutions and Remuneration Policies* in 2010) across the EU. These developments have influenced newer member and candidate nations; nations often at a lower level of development than established member states within Western Europe (EC, 2003). Two areas of intense activity in this process have been the corporate governance and risk management practices and their conduct in banks.

The *acquis* or accumulated legislation includes a multitude of regulations and laws which banks are obliged to comply with (Doyle, p. 601, 2010). The EU has influenced the institutional development of corporate governance structures in accession and new member nations, most importantly through the accession conditions laid out in the *acquis communautaire*. This term is used to define the amassed regulation, legal acts, and court decisions, which constitute the body of the EU law (Vlagenthart and Horn 2007). Initially, the requirements outlined in *the EU Financial Services Action Plan (FSAP)* (Communication of 1999) and *the Winter Group* (2002) state that the convergence of national corporate governance codes in the EU should be encouraged. Subsequently, the EC has announced two communications to the Council of Europe and the European Parliament which are namely *the Action Plan on Modernising Company Law (Enhancing Corporate Governance in the European Union, 2003/2004, the Statement on Risk Management and Internal Control* from the European Corporate Governance Forum in 2006) and *the Green Paper on Financial Services Policy* in 2005, which influence corporate governance requirements.

After the financial depression in 2007/2008, the Commission adopted a new action plan for the corporate governance of financial institutions in *the Driving European Recovery Programme* (2010). Lastly, in 2010, the Committee of European Banking Supervisors (CEBS) published guidelines on risk management in the banking sector, and the EC issued a *Green Paper on Corporate Governance in Financial Institutions and Remuneration Policies*. Reforms in these areas have been steadily increasing during this period, and several documents have been produced by the EC aiming to improve practices in those areas.

This thesis focuses on the influence of the EU on bank corporate governance, risk management, and ownership structure. Why does this thesis focus on banks? The answer is because first as financial intermediaries banks have a central role in an economy acting as creditors, influencing investments and obliquely economic growth and development of a country. Second, the recent financial crisis showed the importance of the quality of corporate governance, risk management and ownership structures (especially the role of institutional investors) of banks. This financial crisis has motivated international organisations such as the EC, Basel Committee, Organisation for Economic Cooperation and Development (hereafter OECD) and some developed countries to focus mainly on these issues. International regulations and guidelines for corporate governance and risk management practices in banks and corporate governance regulations and guidelines developed by EU institutions and some EU member nations are discussed in this chapter.

The importance of *good* corporate governance and risk management practices and issues related to corporate control and ownership has increased during the last couple of decades especially after the financial crises. These financial crises forced many nations to create and improve codes and principles and develop new approaches for corporate governance, risk management and ownership structure of firms after these turbulences. Not only nations yet also international and supranational organisations have revealed and developed principles, rules and recommendations for corporate governance including board structure, risk management, transparency because it has been widely discussed that the performance of firms is overall affected by the governance structure of firms.

During the last two decades, not only the EU but also the OECD re-examined and improved their guidelines, which were first revealed in 1999 and updated in 2004, to find solutions to problems of corporate governance practices (including risk management) of financial institutions, which were observed during the recent financial turmoil. For this purpose, the OECD Steering Group on Corporate Governance were constituted. After that, a report was published by the OECD in 2010 as of the new guideline on corporate governance. The report emphasises the effect of failures and weaknesses in corporate governance on the financial catastrophe, including risk management practices, manager bonuses and salaries and remuneration systems in some cases have not been strictly related to the risk management of the company and its longer-term benefits. The remuneration of directors and senior executives also remains a vastly debated issue in many OECD countries. The report links financial turmoil

and corporate governance of financial services companies considering failures in the oversight of risks, remunerations policies, and failures in performing accounting and compliance with regulatory requirements.

Many scholars have reported that the governance of firms is also influenced by political and institutional factors (e.g., Roe, 2003; North, 1990). It is one of the main pillars of this thesis to consider these factors because of the shifting political and legal environment of continental Europe, especially in Central and Eastern Europe (CEE) and the organisational and political nature of EU. As, after the EU accession, CEE region nations have to apply European Directives, this helps us analyse corporate governance in those countries (Andreff, 2006). As encouraged by the EU, sound governance practices in the Czech Republic, Poland and Hungary are expected to have improved following their participation to the union (McGee, 2006).

In the continental European social democracies, directors are under pressure to create and stabilise employment. This pressure affects capital allocations through risky investments to maintain profitability. North (1990) underlies this relationship between politics, institutional structure and economic performance of firms. Roe (2003) indicates that politics could affect a firm regarding its ownership structure, size, profitability, capital flows, investment, managers-employees relationship, and its internal governance structure and highlights the difference between the Anglo-Saxon and the continental European economies regarding the ownership structure of firms. Hall and Soskice (2001) divide these economies into two categories namely “*Liberal and Coordinated Economies*.” This difference in the economic structure together with the political environment in these nations generates diffuse ownership and concentrated ownership (Roe, 2003).

Therefore, first, the relationship between EU accession and corporate governance and general performance of banks and then the relationship between bank risk management and risk performance in the EU political context are examined. Lastly, the relationship between the political process of EU accession and membership on ownership structures of banks operating in sample nations are explored. Thus, one of the aims of this thesis is to examine the political economy and institutional theory of corporate governance, ownership change and risk management of banks. Chapter four explores corporate governance and performance of banks in member and candidate nations during the accession process of joining in the EU and membership period, and chapter five focuses on the risk management and risk of banks in the

EU member and candidate nations considering whether there is any effect of the EU. In chapter six of the study, the ownership structure of banks in sample nations is studied by providing a theoretical discussion and historical background within the EU context.

The financial crisis and corporate scandals occurring within financial firms during the last three decades display the importance and vitality of good corporate governance practices. It should be noted here that the term good governance and the good governance practices in financial companies different than nonfinancial companies where the interests of stakeholders (depositors, customers, supervisors) do not match with the interests of shareholders and is also as important as the interests of shareholders in financial companies (De Haan and Vlahu, 2016). Thus, many developed countries saw the importance of *good* corporate governance rules for firms and have announced corporate governance rules for all nonfinancial and financial firms. One of the first documents was the UK's Code of Corporate Governance, which has been influential for many countries corporate governance. The UK responded to Enron by introducing *the Higgs Report*, and the US revealed *Sarbanes-Oxley Act* (Solomon, 2013, p.4). The members of the OECD have created their code of corporate governance following the guide of organisation so-called "*the Principles of Corporate Governance*" published in 2004.

After the financial turmoil in 2007/2008, financial systems of many countries have been adversely affected, and many banks failed and had to be bailed out. In 2007, there were negative signs in the banking sector, with a growing understanding that banks had been lending inappropriately in the subprime market. Borrowers who were not in a financial position to repay mortgages and loans were defaulting, and banks were facing a severe liquidity crisis (Solomon, 2013, p.40; Smerdon, 2010, p.673; Kirkpatrick, 2010). This crisis shows that banks can be very fragile and should regularly be examined and regulated by the relevant authorities to maintain their stability and sound performance. This crisis also shows the importance of good risk management practices in banks, and that a well-performing, solid, stable and less risky banking system plays a vital role in the success of economies. Corporate governance and risk management failures in the banking sector led to the recession, with a slowdown in business activity resulting in hundreds of thousands of people becoming unemployed. The terrible consequences of poor risk management in banks are ongoing (Solomon, 2013, p.41; Smerdon, 2010, p. 674; Tricker, 2012, p. 19, Kirkpatrick, 2010). Several studies have also stated that the performance of banks is affected by its corporate governance, risk management and ownership structures (e.g. Adams and Mehran, 2008; Pathan, 2009; Cornett et al., 2009; Aebi et al., 2011;

Erkens et al., 2012; Ferreira et al., 2010; Klomp and De Haan, (2012); Claessens and Yurtoglu, 2012; Liang et al., 2013).

For instance, the dramatic experience of Turkey is an excellent case to illuminate this issue. Turkey experienced one of the worst financial crisis in her history in 2001. Over half of the 47 banks operating in the country, went bankrupt with huge losses, mostly because of their fragile capital structures. This catastrophe displayed the need for additional regulatory actions for banks to strengthen their capital structures, transparency and improve the stability and durability of the sector. The government took immediate steps and implemented new rules and regulations for banks. During the 2007/2008 financial crisis, the results of those actions were seen in the banking sector and the Turkish economy in general which recovered from this crisis undamaged relative to the 1994 and 2001 economic crises. After this crisis new corporate governance rules and regulations for banks were also introduced by *the Banking Regulation and Supervision Agency (BDDK)* and *the Capital Markets Board of Turkey (SPK)* in 2003 and 2005 successively (Stavrinakis et al., 2007).

Good corporate governance, risk management, and bank ownership structures have a crucial role in the success of the banking system. Hence, many countries and particularly international organisations such as the Basel Committee, the OECD, and the EU have given special attention to that issue and have revealed governance rules and regulations especially for the banks. Because of the critical importance of banks, the Basel Committee on Banking Supervision (BCBS) was formed for regulating the banking industries of member states. Since that year, the Basel Committee presented reports in order to guide their member countries about corporate governance and risk management issues.

In September 1999, the Committee published a paper termed “*Enhancing Corporate Governance for Banking Organisations*” (BCBS, 1999). This paper first highlighted the significance of the OECD principles for banks; secondly raised concerns about corporate governance issues discussed in previous Committee papers, and thirdly indicated some new topics linked to corporate governance for banks and their supervisors to take account (BCBS, 1999). After that version, in February 2006, the new version of *Enhancing Corporate Governance for Banking Organisations* was published. This paper was more detailed than the first version where some principles for sound corporate governance were stated, and the role

of supervisors was presented, and pieces of advice were provided as follows (BCBS, 1999, p. 3):

- *“set corporate objectives (including generating economic returns to owners);*
- *run the day-to-day operations of the business;*
- *consider the interests of recognised stakeholders;*
- *align corporate activities and behaviours with the expectation that banks will operate in a safe and sound manner, and in compliance with applicable laws and regulations*
- *protect the interests of depositors”.*

In October 2010, the “*Principles for Enhancing Corporate Governance*” were introduced including sound corporate governance principles for the board, senior management, risk management, and internal control, compensation, corporate structures, and disclosure and transparency separately (BCBS, 2010). Those principles, risk management, and internal controls are highlighted in part C. It is suggested (p. 17) “*banks should have an effective internal controls system and a risk management function (including a chief risk officer or equivalent) with sufficient authority, stature, independence, resources and access to the board.*” This system distinguishes risk management and internal controls and identifies risk management as the process of (p. 17):

- *“identifying key risks to the bank;*
- *assessing these risks and measuring the bank’s exposures to them;*
- *monitoring the risk exposures and determining the corresponding capital needs (i.e., capital planning) on an ongoing basis*
- *monitoring and assessing decisions to accept particular risks, risk mitigation measures and whether risk decisions are in line with the board-approved risk tolerance/appetite and risk policy;*

- *reporting to senior management, and the board as appropriate, on all the items noted in this paragraph.”*

This version was revised and presented in October 2014 as “*Corporate Governance Principles for Banks*” a consultative paper issued for the comments of the members. The aim of these guidelines was stated as follows (BCBS, 2014, p. 4):

*“In the light of ongoing developments in corporate governance, and to take account of the FSB peer review recommendations and other recent papers addressing corporate governance issues, the Committee has decided to revisit the 2010 guidance. One of the primary objectives of this revision is to explicitly reinforce the collective oversight and risk governance responsibilities of the board. Another important objective is to emphasise key components of risk governance such as risk culture, risk appetite and their relationship to a bank’s risk capacity. The revised guidance also delineates the specific roles of the board, board risk committees, senior management and the control functions including the CRO and internal audit. Another key emphasis is strengthening banks’ overall checks and balances.”*

The role of board risk committees and the functionality of CROs for banks are strongly highlighted by the Basel Committee. Chapter four assigns proxies for these two variables along with others, to explore the quality and functionality of risk management structure and their influence on risk performance of sample banks.

*The UK Walker Report* (2009) was one of the national responses to the Global Financial Crisis, which focuses on corporate governance, risk management, and the role of shareholders in UK banks. Walker (2009, p. 5) states the objective of this report as follows:

*“To examine corporate governance in the UK banking industry and make recommendations, including in the following areas: the effectiveness of risk management at board level, including the incentives in remuneration policy to manage risk effectively; the balance of skills, experience and independence required on the boards of UK banking institutions; the effectiveness of board practices and the performance of audit, risk, remuneration and nomination committees; the role of institutional shareholders in engaging effectively with companies and monitoring of*



*boards; and whether the UK approach is consistent with international practice and how national and international best practice can be promulgated.”*

The European Commission (2010) and the OECD (2010) have revealed guidelines to develop corporate governance of banks and more especially on risk management (Dermine, 2013). The European Commission responded to this crisis in 2009 and announced<sup>3</sup> that a report (Larosiére Report) was being prepared (EU Green Paper, 2010, p. 2):

*“(i) To examine corporate governance rules and practice within financial institutions, particularly banks, in the light of the financial crisis, and (ii) where appropriate, make recommendations, or even propose regulatory measures, in order to remedy any weaknesses in the corporate governance system in this key sector of the economy. Strengthening corporate governance is at the heart of the Commission's programme of financial market reform and crisis prevention. Sustainable growth cannot exist without awareness and healthy management of risks within a company.”*

This report was used by EC to reform the regulatory and supervisory framework for financial markets based on the conclusions of the report<sup>4</sup> (EU Green Paper, 2010, p. 2). This report termed “*the Report of the High-Level Group on Financial Supervision in the EU*” informed the latter *Green Paper Corporate Governance in Financial Institutions and Remuneration Policies* in 2010. In the risk management part (p .7), the Paper states that

*“Risk management is one of the key aspects of corporate governance, particularly in the case of financial institutions. Several large financial institutions no longer exist precisely because they neglected the basic rules of risk management and control. Financial institutions have too often failed to take a holistic approach to risk management”.*

Before ending this section of the chapter, the OECD Report in 2010 is addressed, which many nations in Europe have created their principles of corporate governance based on the guidelines of OECD principles of corporate governance in 1999 and revised version in 2004. The World Bank also announced reports on corporate governance in transition economies such as Czech

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<sup>3</sup> COM (2009) 114 final, Driving European recovery Volume I.

<sup>4</sup> Report of the High-Level Group on Financial Supervision in the EU published on 25 February 2009. Mr. Jacques de Larosiére was chairperson of the group.

Republic (2002), Hungary (2003) and Poland (2005) which was specifically focused on the comparison of recent developments among these countries (McGee, 2006). Such, agendas for good corporate governance are introduced in the UK, the US and elsewhere around the world, but for some reason, these reports and guidelines have not delivered protection to major banks and other critical financial organisations (Solomon, 2013, p. 5).

To sum up, these documents demonstrate that how international and national organisations have approached these issues decisively and made subjects of corporate governance, risk management and ownership of banks some of the most considered research areas in finance. There has been continuous research on this area to find practical solutions to the failures and problems above. The corporate governance, risk management, and corporate ownership literature have been growing significantly, and studies on corporate governance of banks capture a significant portion in this literature. This thesis contributes to this campaign by adopting an interdisciplinary approach in the EU context. The following section reviews the main findings, and section 1.3 introduces the contributions of the thesis. Section 1.4 highlights the thesis structure and the last section concludes this chapter.

## **1.2 Main findings of the thesis**

Three empirical chapters examine the EU influence on corporate governance structure and performance of banks, bank risk, and risk management and bank ownership changes during and after EU accession. First, chapters four, five and six of the thesis use univariate and multivariate analyses to compare corporate governance, risk management and ownership structure of banks in member and candidate nations, the influence of EU member on bank financial and risk performance, and the relationship between corporate governance structure and performance and risk management structure and bank risk. The same estimation approaches were used in the three empirical chapters. Initially, by employing T-test and Mann-Whitney U test, the whole sample was divided into two, and corporate governance, risk management, and ownership structures and performance and risk variables (return on asset, return on equity, net interest margin, and Z-Score and NPL ratio) of banks in member and candidate nations were compared. All selected variables of banks in new member nations were

compared based on years that nations joined the EU (2004, 2007 and 2013 respectively). As a second step, in chapter four the fixed effects model, for chapter five, the random effects model and chapter six, the probit model was used to analyse the relationship between EU membership and all selected variables.

### *1.2.1 Main findings of chapter four*

Table 1.1 illustrates the changes in selected variables for the banks in member nations based on their membership year. For banks in the eight nations, which joined the EU in 2004, the average board size decreased during the membership period compared to the pre-membership period. The average share of independent board members also decreased in the membership period. The average percentage of female board members and foreign board members increased in the post-membership period compared to the pre-membership period. The average ROA, average ROE, and the average NIM all decreased during the membership period compared to pre-membership period.

The results for sample banks from nations that joined the EU in 2007 were quite different compared to banks in the first group nations. The average number of board members and the share of foreign directors in board both increased in banks of both nations during the membership period compared to pre-membership period. However, the share of independent board members and the share of female board members declined in the post-membership period compared to pre-membership period. Similar to the results for banks in the first group nations the average values of all the performance ratios decreased in the membership period compared to the pre-membership period. The findings for Croatian banks show that the average board size, the share of independent board members and the share of female board members increased in the post-membership period compared to the pre-membership period. While the share of foreign directors in this nation's bank declined during the membership period, the average values of all the performance ratios decreased in the membership period compared to pre-membership period.

**Table 1.1**  
**Changes in Selected Variables for Member Nations Pre- and Post-Membership Periods**

Variables	Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia (2004)			Bulgaria and Romania (2007)			Croatia (2013)		
	Prior	Post		Prior	Post		Prior	Post	
Board Size	8.00	7.57	↓	6.23	6.52	↑	7.25	8.73	↑
Board Independence (%)	19.00	16.00	↓	9.00	8.00	↓	3.00	7.00	↑
Share of Female (%)	12.00	15.00	↑	12.00	9.00	↓	6.00	11.00	↑
Share of Foreigners (%)	47.00	54.00	↑	61.00	62.00	↑	93.00	89.00	↓
ROA	1.20	0.70	↓	2.21	1.15	↓	1.25	-0.40	↓
ROE	13.10	6.00	↓	18.85	10.31	↓	12.56	-3.24	↓
NIM	3.64	3.07	↓	6.68	4.65	↓	3.55	3.20	↓

The fixed effects model was used to assess the relationship between performance and corporate governance variables for the four different samples. These samples include all banks, which have gone through the accession process, and the banks within EU member nations only, the banks in candidate nations and all banks including control group nations banks.

The results for all banks from nations which have gone through an accession process (new member and candidate nations), board size and board independence both have negative but insignificantly impacts on ROA, while female directors have a positive impact on this variable. EU membership has a highly significant and negative influence. Similarly, EU membership has a highly significant negative influence on ROE. Board size has a significant negative influence on ROE while female directors have a positive influence on performance. The relationship between NIM and EU membership is also significantly negative. Unlike ROA and ROE, board size, board independence, and foreign directors have a positive and significant influence on NIM. Female directors have a positive relationship with this variable although

this is not significant. Overall, for all ROA, ROE and NIM ratios, EU membership has negative and female directors show mostly positive influences on performance.

Using a sample of banks from the nations joining the EU in 2004, 2007 and 2013, EU membership again shows a negative influence on all three performance measures with an insignificant relationship with NIM. For this group of banks, board independence has a significant positive relationship with NIM whereas board size has a significant negative influence on ROE. Female directors have a positive relationship with all performance variables, yet the results are insignificant for ROA and NIM and significant positive for ROE. The sample of banks in candidate nations was investigated separately. Female directors have a significant positive effect on ROA and ROE, but not on NIM in this group of banks. Board independence has significant and negative relationships with both ROA and ROE, while an insignificantly positive relationship with NIM. Foreign directors have significant negative impacts on both ROA and ROE but insignificant influence on NIM. Lastly, where all banks in member nations (including banks in long-standing member nations) and banks in candidate nations are considered, EU membership again has a significant negative relationship with all the performance variables. While board size has negative effects both on ROA and ROE, female directors, brought highly strong positive effects on both. The relationships between NIM and board size and board independence are positive yet the relationship between this variable and CEO duality is negative but weak. Overall, board size and independence have a negative impact on bank performance while female directors have a positive impact on bank performance.

Three supplementary analyses are also conducted to analyse first the effect of EU membership on corporate governance changes, second analysis is made by using four corporate governance variables including board size, board independence, female directors and foreign directors as dependent variables. The third one also made by using interaction terms created by multiplying EU dummy and selected corporate governance variables to see the impact of the EU membership together with those corporate governance variables on the performance of banks. The EU membership has negative relationships with board size and board independence and has a positive relationship with female and foreign directors. When the samples are divided based on before and after EU membership, the results of the analysis show the similar direction with the main analysis results which shows that female director positively and board size negatively influence ROA and ROE and both positively influenced NIM. Last analysis shows

that the interaction variables are not significant that indicates that the influence of EU membership on a performance of bank does not rely on by what means the bank is governed.

### *1.2.2 Main findings of chapter five*

Chapter five investigates the relationship between bank risk and risk management structure and the influence of the EU on both. This chapter also employs T-tests and Mann-Whitney U tests and additionally the  $\chi^2$  test for univariate analyses. The structure of the dataset allows a random effects model to be used to analyse the relationship between bank risk and risk management structure and the EU influence on bank risk measures (Z-Score and NPL). The estimation process that was followed in this chapter is similar to chapter four.

The results for banks in nations that became members in 2004 displayed that the Nonperforming loans (hereafter NPL) ratio had a significant difference between pre-membership and membership periods showing an increase in this ratio. Although tests values were insignificant, the Z-Score was higher for the membership period suggesting growth in bank risk. When considering risk management variables, there were significant differences and improvement in the membership period for when a chief risk officer was present, when a chief risk officer was executive, if a risk committee was present and whether a risk committee was reporting to the board variables. The average values of all these variables significantly rose in membership period. Lastly, although the share of female chief risk officers increased during the membership period, the results were not statistically significant for both tests.

The findings for banks, which joined the EU in 2007, showed similar results to the group above. Similarly, the value of the NPL ratio for the membership period was statistically significant, and different from the pre-membership period and higher for membership period compared to period 2000-2006. Differently, the Z-Score was low for the membership period and insignificant for banks in this group. For risk management variables, the results indicated that the presence of a chief risk officer, whether the chief risk officer is an executive if a risk committee is present and if the risk committee reports to the board were all high in the membership period compared to the pre-membership period, these results were statistically significant. The proportion of female chief risk officer was higher and statistically significant in this group in membership period compared to accession period.

Lastly, results for banks from Croatia the latest member nation were similar to the banks in the other two groups of nations. NPL ratio was statistically significant and higher for the membership period. Whereas the average value of the natural logarithm of Z-Score is lower for the membership period and this was statistically significant. The test results for risk management variables were similar to the results of both EU groups. The results indicate that the chief risk officer is an executive, if a risk committee is present and if the risk committee reports to the board were all higher in the membership period rather than in the pre-membership and were statistically significant. The results indicated that if the presence of a chief risk officer and the presence of a female chief risk officer is higher for the membership period, this was statistically insignificant.

The risk measures of banks in EU member nations and candidate nations were also compared. According to the T-tests, Z-Score and NPL ratio displayed significant differences between these two groups and show that banks in candidate nations were less risky and more stable compared to banks in member nations. The risk management variables of banks in member and candidate nations were compared by using  $\chi^2$  tests. The presence of a chief risk officer, if the chief risk officer is an executive and the gender of the chief risk officer were all significantly different between member and candidate nations. The presence of a risk committee and the condition of a risk committee reporting to the board variables had no significant differences between the groups. Banks in member nations appeared to have a superior risk management structure, but banks in candidate nations had relatively better Z-Scores and NPL ratio.

The random effect model was used and was estimated for four groups of banks including a control group to show the robustness of the results. The results showed that there was a statistically significant positive relationship between EU and Z-Score that indicated EU membership increased bank risk. Similar results were observed for the sample consisting of only banks from eleven EU members. After including banks from four developed EU members, Z-Score gave similar results. Considering the risk management variables, a higher percentage of female board members were positively associated with stability. According to the results for NPL ratio, positive and highly significant relationship between this measure and EU membership was reported. There was also a positive relationship between the NPL ratio and the presence of a chief risk officer, dual board structure and CEO duality. Overall, the presence of female CRO showed a negative relationship with the NPL ratio and positive relationship with Z-Score. Overall, a positive and significant relationship with Z-Score and the share of

female board members on boards was reported. The presence of CRO, executive CRO and female CRO have also positively influenced bank stability and risk for some samples.

Three supplementary analyses are also conducted to analyse first the effect of EU membership on risk management structure changes, second analysis is made by using five risk management variables including CRO presence, CRO executive, CRO gender, risk committee presence, and risk committee report to board as dependent variables. The third one also made by using interaction terms created by multiplying EU dummy and selected risk management structure variables to see the impact of the EU membership together with those risk management structure variables on performance of banks. The relationships between EU membership and all risk management variables are positive except for CRO gender which is negative. When the samples are divided based on before and after EU membership, the results of the analysis show a similar direction with the main analysis results. Last analysis shows that the interaction variables are not significant that indicates that the influence of EU membership on risk performance of bank does not rely on in what manner the bank's risk management structure is designed.

### *1.2.3 Main findings of chapter six*

In chapter six, the univariate analysis results for banks in member nations based on nations' membership years were given separately. According to the T-tests results for banks in member nations that joined the EU in 2004, there were no significant differences in ownership structure between accession and membership periods. Mann-Whitney U test results were significantly different between pre-membership and membership periods for state, foreign, domestic, bank holding companies (hereafter BHC), institutional and managerial ownership and Herfindahl-Hirschman Index (hereafter HHI). Foreign, institutional and BHCs ownerships and HHI slightly increased during the membership period compared to the pre-membership period. State, family/individual, and managerial/directorship ownership decreased in the membership period.

Based on the results for the second group of banks, which became members in 2007, there were very close results for foreign, domestic, state, institutional and BHC ownership. Foreign,



institutional and bank ownerships were raised after joining the EU whereas domestic, state and family/individual ownerships decreased in the same period compared to the pre-membership period. HHI significantly increased during the membership period indicating increasing ownership concentration for the sample banks in this group.

According to the results for Croatian banks, foreign ownership and domestic ownership were significantly different before and after 2013. Foreign ownership and HHI increased while domestic ownership decreased. All the shares of Croatian banks in the sample were owned privately. According to univariate analysis results for comparing banks in member and candidate nations, there were significant differences between banks in member and candidate nations for all variables except for managerial and public ownership. The percentage of shares owned by foreigners, BHCs, family/individual, managerial/directorial and institutional ownership and HHI were significantly different and higher in banks in member nations compared to banks in candidate nations. The percentage of shares held by domestic owners, state/government institutions were significantly higher in banks in candidate nations compared to banks in member nations.

Different from the models used in chapters four and five, the probit model was employed for regression analyses in chapter six. According to the results for the sample of all accession banks, the coefficient of foreign ownership was positive for EU membership, which means that banks in member nations more likely owned by foreigners compared to banks in candidate nations. This result is supportive of univariate analysis, which reported foreign ownership was significantly higher for banks in member nations than banks in candidate nations. Both managerial ownership and institutional ownership were more likely to be high in the membership period. Banks in member nations were less likely to be privately owned, state-owned and individual-owned compared to banks in candidate nations.

A separate sample including only banks from member nations was used to observe the ownership changes within this group for accession and membership periods. The results were almost the same as the results in the full sample. Lastly, bank-level and nation-level control variables were included and reported here that the ownership change of banks also has the significant relationships with bank-level and nation-level variables, yet the primary consideration of the study is the EU political process and country-specific effects on bank ownership.

### 1.3 Contributions

The thesis contributes to the literature in the following aspects: First, by conducting this research, the European Union accession effects on the corporate governance structure of banks in the EU member and candidate nations are examined. The improvements and progressions in the corporate governance structure of banks in sample nations are investigated. Second, the possible effects of EU regulations and directives on bank corporate governance and risk management practices are examined. Third, this is a cross-country study within the EU context; this research helps researchers to discover how corporate governance practices in sample banks have converged at the EU level.

Empirical studies that examine the convergence of corporate governance codes and practices worldwide exist in the corporate governance literature. Distinctly, the theoretical approach of this research has interdisciplinary features. Further examining the corporate governance, risk management and ownership of banks is a relatively new research topic. Lastly, this study contributes to this growing literature by applying institutional theory, stakeholder theory and TCE theory and the influence of a political process on corporate governance, risk management and ownership of banks in the EU context.

The theoretical discussion of this study aims to provide a different point of view on these topics. Institutional theory has been recently employed in corporate governance studies (for details see chapter two) to explain the convergence and applications of corporate governance codes and practices worldwide. Another application of this theory is in organisational management and corporate governance studies (e.g., Burton, 2000; Sikavica and Yoshikawa, 2012; Krenn, 2016) for examination and comparison of corporate governance practices among firms by using an institutional theory concept of *isomorphism*. This infers the formal structure of organisations adopts a similar form to other organisations. Therefore, this study aims to explain the findings of the three empirical chapters using this concept as well. The next section of the thesis presents the thesis structure.

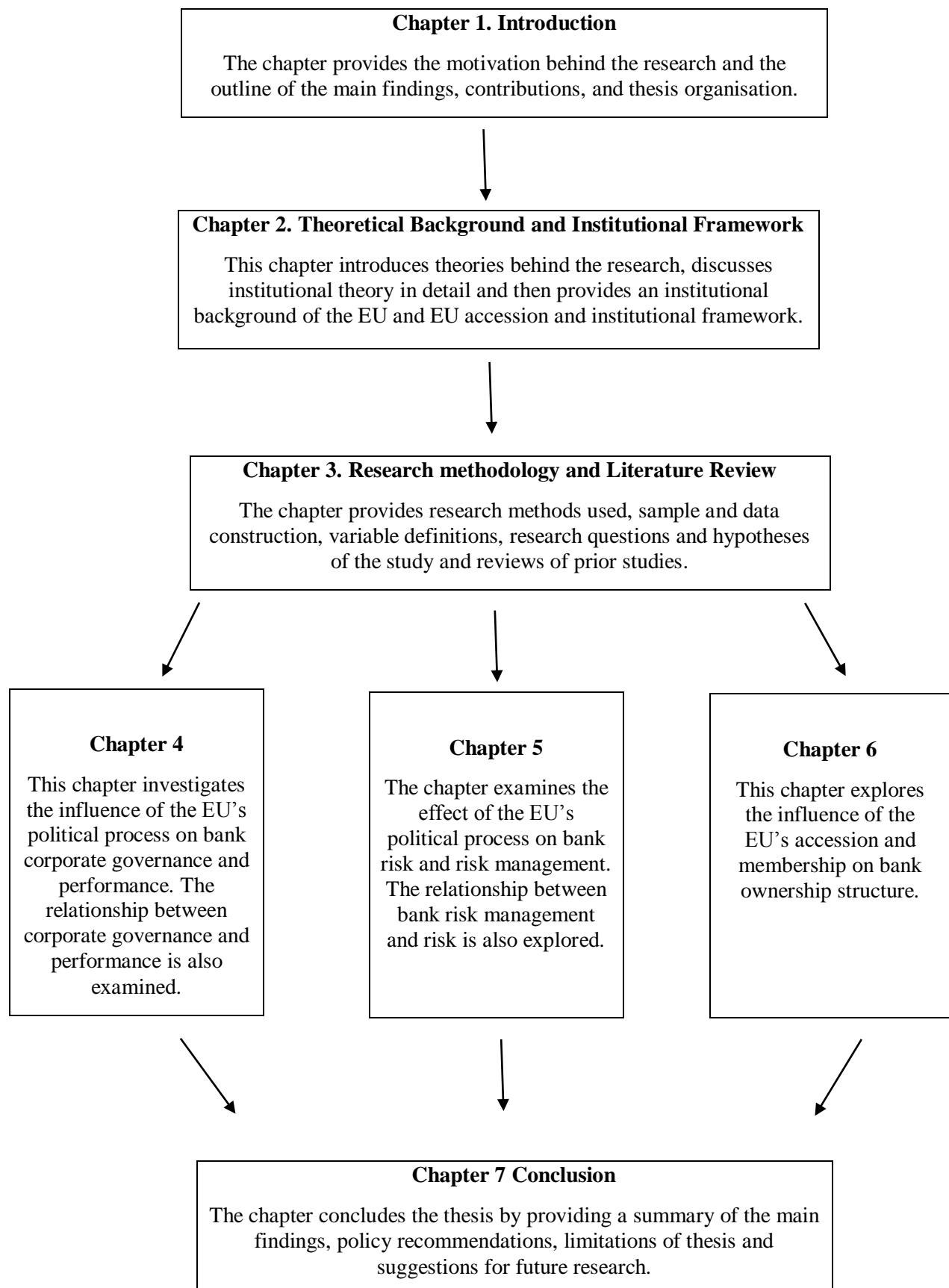
## **1.4 Thesis structure**

This section presents the thesis structure.

Chapter two provides the theoretical background of the thesis and the institutions, political concepts and the corporate governance framework of EU. The theories behind the research including institutional theory, stakeholder theory, and transaction cost economics (TCE) theory are provided as the theoretical framework of this research. In the first section, the introduction of the chapter is provided. In the second section, the discussion on those theories are extended in separate subsections, and the institutional framework is discussed. In the third section, the corporate governance framework of EU in general and the member nations in the CEE region are reviewed. The last section concludes this chapter.

Chapter three summarises the research methodologies employed in the research. The first section of the chapter comprises the introduction. The second section presents the sample and data construction and variable definitions. The research questions and hypotheses of the thesis are provided in the third section of the chapter. The fourth section explains the model specification and estimation methods that are used in the empirical chapters. Section five of the chapter reviews the prior literature on performance and corporate governance, bank risk management, bank risk, and bank ownership structure. The last section concludes the chapter.

Chapter four examines whether the EU accession process influences corporate governance and performance of banks in member and candidate nations. First, the theoretical framework and the EU corporate governance framework are introduced. By employing a fixed effects model, the relationship between corporate governance and performance and EU accession are then investigated. In chapter five the relationship between bank risk management, bank risk and the effect of the EU accession and membership are examined. Following the relevant statistical tests, the random effect model is employed to examine this relationship. Chapter six investigates the changes in bank ownership in candidate and membership nations during and after accession period. So, this chapter proposes answers to this question: What is the influence of the EU accession process and membership on the bank ownership structure? Chapter seven provides the conclusion of the thesis. The summary of the main findings and policy implications and suggestions are provided in the first section, and in the second section, the limitations of the research and suggestions for future research are outlined. Figure 1.1 presents the organisation of the thesis.



**Figure 1.1** Organisation of the thesis

## 1.5 Conclusion

There is an ongoing effort to build a united mechanism in economics, law and financial areas among EU member states since the Lisbon Agenda was announced in 2000. It was expected that this would mainly affect new member and developing countries of the union (EC, ECB, 2003). Many rules, regulations, directives, recommendations, and Company Law development introduced changes that are expected to have impacts on the corporate governance of banks in EU member and candidate nations. It is essential to examine whether all these actions influence issues within the EU accession and membership process. This research enables an examination of the effects of becoming an EU member and candidate nations on bank corporate governance, risk management and ownership structure from political economy perspectives.

While corporate governance structure and performance relationship, risk management, and risk and corporate control and ownership have been widely studied for non-financial firms, these issues have been poorly researched for banks. Studies of these issues have caught the attention of researchers in recent decades. Following the financial crisis in 2007/2008, the importance of evolving and developing markets for global financial and economic development has increased (Adams and Mehran, 2008; Aebi et al., 2012). The international organisations such as EU, the OECD, the Basel Committee revealed guidance for good corporate governance and risk management of banks because the importance of the performance of banks for the success of economies of countries and global economic and financial stability has been seen once again (Padgett, 2013, p.401).

This thesis develops those discussions by focusing on a new member and candidate nations banking industry under the EU political and institutional context. Through employing institutional theory and the political economy of corporate governance, this work contributes to the literature. This chapter introduces the background and motivation behind this research in the first section and then presents the main empirical findings. After highlighting contributions in section three and displaying the organisation of the thesis in section four with figure 1.1., this section concludes the chapter. The next chapter reviews theories behind the research and provides a historical background of EU and CEE region nations corporate governance framework and actions taken in the areas of corporate governance, risk management, and ownership structure.

## Chapter 2. Theoretical Background and Institutional Framework

### 2.1 Introduction

This chapter presents the theories behind the research. The second section addresses the EU political process and the general corporate governance, risk management and ownership framework of the EU and the selected sample nations in the CEE region. Different from the prior corporate governance studies focusing on shareholder based theories (mainly agency theory), this study discusses political, economic, institutional and stakeholder perspectives of bank corporate governance, risk management, and ownership structures. The shareholder-based theories arising from agency theory have been widely used in finance literature for researching corporate governance, risk management and corporate control and ownership (Jensen and Meckling, 1976; Fama and Jensen, 1983; Eisenhardt, 1989; Morellec and Smith Jr., 2007; Fahlenbrach, 2008; Filatotchev and Wright, 2011). This dominance of agency theory has been challenged especially during the 1990s, and the studies on corporate governance, risk management, ownership, and control have moved from this narrow perspective to consider broader issues of political economy (Davis and Useem, 2001) and institutional and legal frameworks (Davis and Useem, 2005).

Shleifer and Vishny (1997, p. 738) offer a broad definition of corporate governance as *“corporate governance mechanisms are economic and legal institutions that can be altered through political process-sometimes for the better.”* Davis and Thompson, (1994) further incorporate a *“political approach”* and institutional view in *“the separation of ownership and management”* context for exploring the institutional process and establishing a connection with organisation theory and corporate governance and ownership. Some scholars (Polanyi, 1957; Granovetter, 1985, Davis and Thompson, 1994; Bebchuk and Roe, 1999) argue that institutional and social actors, which significantly affect the performance and organisational structures of corporations, surround the corporations (Davis and Useem, 2001). A political view on companies points out that *“the public corporation is as much a political adaptation as an economic or technological necessity and the size and technology story fails to completely explain the corporate patterns we observe”* (Roe, 1991, p. 10).

To sum up, this thesis focuses not only the internal governance of banks but also considers the effects of external factors that influence the corporate governance, risk management, and ownership structure and their financial and risk performance. Thus, the thesis stands on an interdisciplinary approach and takes account a stakeholder-oriented corporate governance theory (stakeholder theory), economics theories (transaction cost economics theory and institutional theory) and the political economy of corporate governance. This chapter discusses these theories in the next subsections.

In section 2.2, and its subsections institutional theory, stakeholder theory, and transaction cost economics (TCE) theory are discussed in depth. The relationship between stakeholder theory, corporate governance, and banking models in Europe is given, and after that in section 2.3, the institutional theory is discussed in detail with the institutional framework and its relationship with economic performance and transaction costs.

A comprehensive discussion on the political process of the EU accession process is introduced in 2.3.2. Subsection 2.3.3 presents the EU corporate governance framework. In this subsection, the laws, rules and regulations, directives, actions and recommendations in the EU context are presented in historical order. All sample nations of this study, except Turkey are located in the CEE region. Thus, further insight on ownership, risk management, and corporate governance framework is provided in a separate subsection. The historical changes during the transition, including privatisation, and EU accession are introduced. The last section summarises this chapter.

## **2.2 Theoretical background**

The root of the research on firms has origins in Adam Smith's book *The Wealth of Nations*. In the mid-19<sup>th</sup> century, after the Industrial Revolution, economic growth and activities all around the world but especially in Europe grew significantly, raising the number and capacity of companies. This increased the demands of companies for capital. This process continued with the discovery of "*limited liability*" whereby "*shareholders not responsible for the debts of the companies in which they invest*" (Solomon, 2013, p.9).

The invention of limited liability started the change in the ownership structure of firms and paved the way for agency theory. Berle and Means (1932) made a significant contribution to the literature by explaining the reason (shareholders dispersion) behind the separation of ownership and the control of a company. Coase (1937) established a new approach to understanding the existence of firms. Following these seminal studies, work from different academic disciplines (economics, law, finance, sociology and management) were published to develop our understanding of firms (e.g, Cyert and March, 1963; Alchian and Demsetz, 1972; Williamson, 1975 and 1981; Jensen and Meckling, 1983; DiMaggio and Powell, 1983; North, 1990 and 1991). In the subsequent sections of this chapter, the theoretical background of the thesis is discussed in detail. The institutional theory is taken up comprehensively in the next subsection following the stakeholder theory and TCE theory.

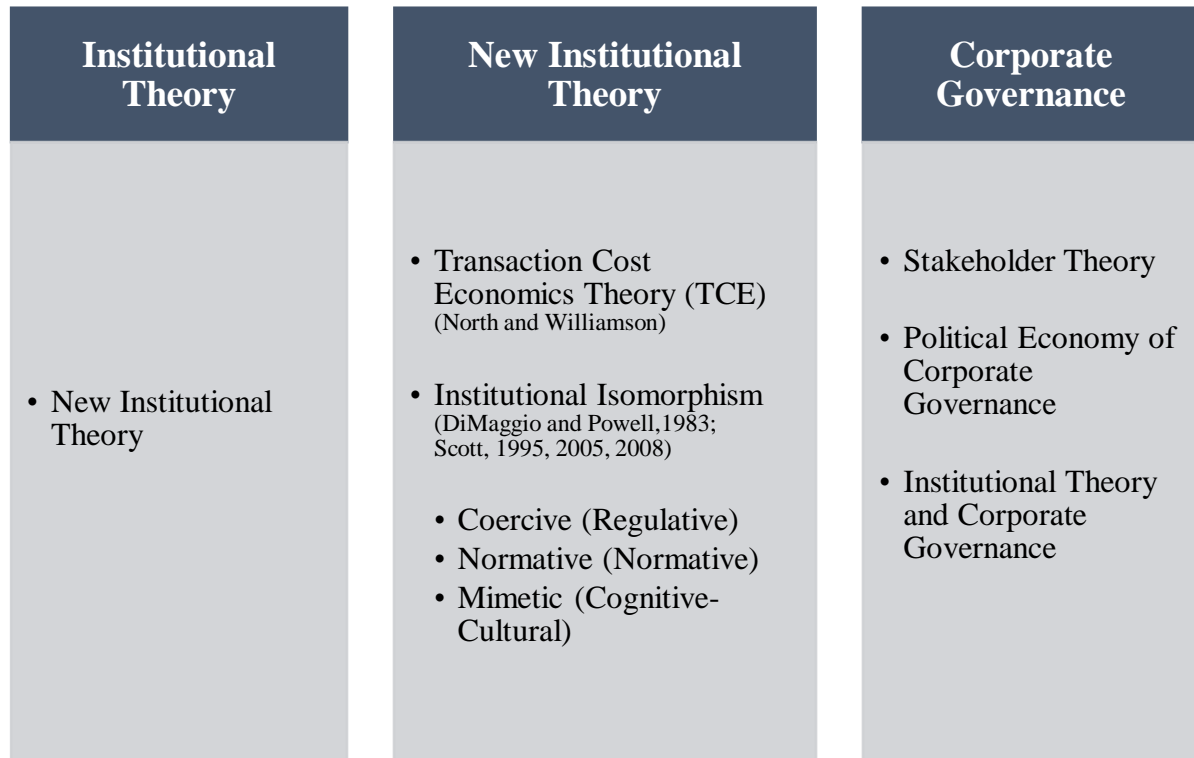
### *2.2.1 Institutional theory*

Institutional theory is one of the main theories used in this thesis. The institutional theory exists as an interdisciplinary theory of economics, political science, and sociology in the 19<sup>th</sup> century and early 20<sup>th</sup> century. Then it was evolved to new-(neo)-institutional theory and has been applied in economics (neoclassical economics), political science (Scott, 2005, p. 460) and in organisational science. In this section, a general review of the theory is provided with related issues discussed afterward. Scott (2005, p. 460) stated that new institutional theory has interested scholars from other social science disciplines to investigate micro-social interactions and macro (“*global*”) structures such as in transaction cost economics and evolutionary economic studies. In this thesis, the *new* institutional theory, and its adaptations to economics and corporate governance is employed. Thus, this section briefly reviews the old (early) institutional theory and then discusses why the new institutional theory is used.

According to Scott (2005, p. 460), institutional theory gives profound and strong features to the social structure by examining the influence of institutional structures such as “*schemas, rules, norms, and routines*” within a process on the social and organisational behaviours. The new institutionalism has evolved with globalisation, which causes the creation of more complex and technologically advanced organisations. This brought the role of culture, cognition, and environment and the discussion on institutionalisation (Meyer and Rowan,



1977; Zucker, 1977; Lawrence and Lorsch, 1967) to the theoretical discussion of institutional theory. Figure 2.1 illustrates the theoretical framework of the thesis.



**Figure 2.1** Theoretical framework

Following this brief introduction on the historical development of institutional theory, a comprehensive discussion on the new institutional theory and its connection to other sections of this chapter is provided. The genesis of the new institutional theory arose from the limitations of old institutionalism for explaining the “*sources of structuring*” (Scott, 2005, p. 462). These early debates produce studies on the foundations of new institutional theory (e.g., Meyer, 1977; Meyer and Rowan, 1977; Meyer et al., 1978). For this study, the new institutional theory is considered for two reasons; first, this theory led us to neoinstitutional economics (transaction cost economics theory) and the relationship between institutional theory and corporate governance and second to institutional isomorphism. Thus, the next subsection discusses institutional isomorphism.

### 2.2.2 Institutional isomorphism

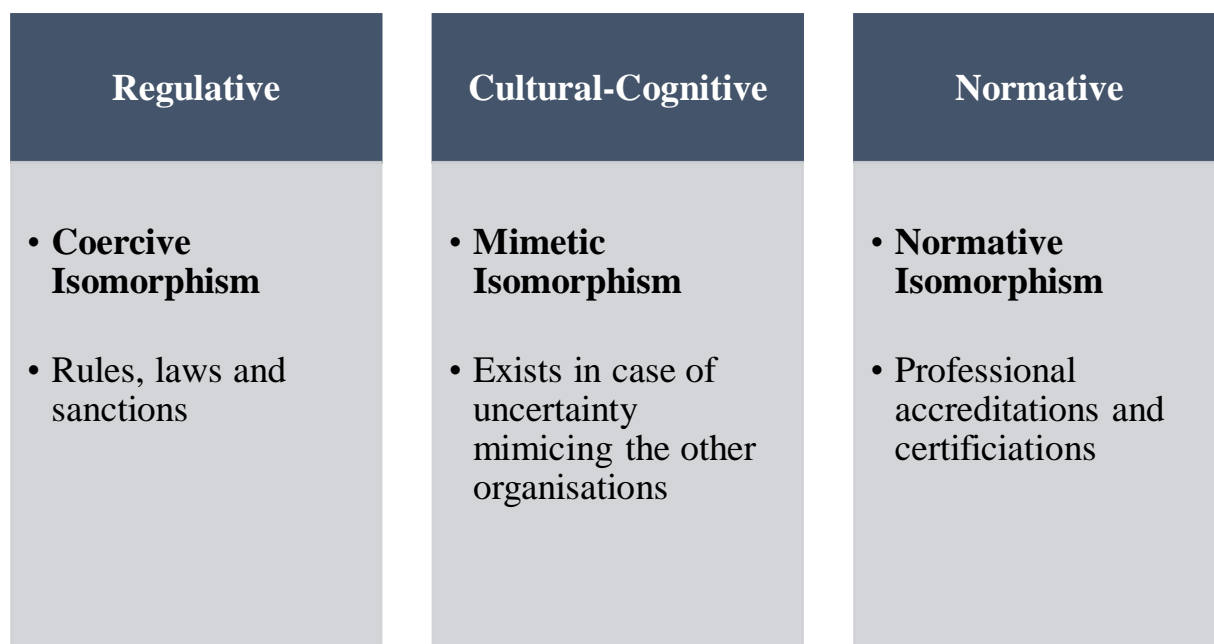
Isomorphism was introduced by Hawley (1968, P. 334) as “*units subject to the same environmental conditions.....acquire a similar form of organisation which develops similar internal arrangements.*” This general description of isomorphism then was integrated into institutional theory by Meyer and Rowan (1977) and was adapted by DiMaggio and Powell (1983) for explaining institutional changes in the organisational structure and organisational legitimacy, whereby an organisation acknowledges its external environment (Meyer and Scott, 1983 and Deephouse, 1996). Institutional isomorphism (hereafter isomorphism) is a theory interested in the institutions (the rational and prudent choices) that shape the organisation's structure but not the psychological conditions of actors (DiMaggio and Powell, 1983). This research thus considers institutions that influence the governance structures of banks in the EU context.

The starting point of exploration of the DiMaggio and Powell's work was Weber's analysis on a *bureaucratic* and rational change in the organisation. They argued that the process of bureaucratisation had been completed in companies (achieved by the *professionals*) and states (achieved by the *state*) without make these organisations efficient but more similar. (DiMaggio and Powell, 1983). This research study contends that during the transition period, and the period of accession to the EU, the sample nations and companies experienced radical institutional changes that made them more similar. The constitution of capitalist market institutions, the influence of privatisation of companies and the foreign direct investment mostly from the continental Europe nations lead these organisational changes.

The organisational life cycle includes significant varieties at the beginning of organisational formation and style in the organisational field. However, after the formation of the organisations, there are increasing similarities occurred in the organisational field, which is established by stakeholders such as key suppliers, resource and product consumers, regulatory agencies, and other organisations that produce similar services or products (DiMaggio and Powell, 1983). When the evolution of company ownership in CEE region nations is considered, it is observed that foreign domination in companies brings homogenisation in the internal and external environment of companies. For instance, some powerful actors (foreign bank holding companies in this research) led the organisations to become more similar when they arrive at the external environment of these organisations.

Freeman (1982, p. 14) pointed out that old and big organisations do not adapt to their organisational environments instead they dominate their environments. The discussion raised the importance of the concept of “*connectedness*” (see Laumann et al., 1978). Emphasis is given to this phenomenon since DiMaggio and Powell (1983) explained that the term “*connectedness*” as “*the existence of transactions tying organizations to one another: such transactions might include formal contractual relationships, participation of personnel in common enterprises such as professional associations, labour unions, or boards of directors, or informal organizational-level ties like personnel flows*”. This helps us to link the isomorphism and the other two theories in the next subsections. Meyer (1979) and Fennell (1980) introduce two types of isomorphism that are competitive and institutional. The former is used for explaining competition (including for resources and customers) among organisations and related to economic activities. The latter brings legitimacy and organisational power to organisations (Kanter, 1972, p.152-154; Carroll and Delacroix, 1982; DiMaggio and Powell, 1983).

DiMaggio and Powell (1983) extended this discussion and introduced three mechanisms of institutional isomorphism to explain institutional change. These mechanisms are namely (i) *coercive*, (ii) *mimetic* and (iii) *normative*. Scott (1995, 2005 and 2008) reviews these three mechanisms and reformulates their institutional order to include *regulative*, *normative* and *cultural-cognitive* elements. *Coercive* isomorphism is related to political influence and including compliance with rules, laws, and sanctions for survival and legitimacy of an organisation. *Normative* isomorphism includes compliance with social obligations, and professional values arising from such as certifications and accreditations. *Mimetic* isomorphism occurs in cases of uncertainty to maintain survival and legitimacy of organisations (DiMaggio and Powell, 1983 and Scott, 2008). Figure 2.2 summarises these three pillars of institutional change and isomorphism.



**Figure 2.2** Three pillars of isomorphism (DiMaggio and Powell, 1983 and Scott, 2008)

Coercive isomorphism and mimetic isomorphism are appropriate as the political, and legal institutions of EU include rules, norms, laws, regulations, and directives influencing corporate governance practices both at the national and organisational level. Mimetic isomorphism influence organisational structure in the event of uncertainty which organisations might follow other organisations and mimic their structures (DiMaggio and Powell, 1983). Following diversification, financial strategies and acquisitions, firms can mimic other companies in the market (see, Fligstein, 1991; Haunschild, 1993; Haveman, 1993).

In this thesis, the sample consists of mostly banks owned by big foreign bank holding companies, which affect the governance structure of subsidiary banks and cause mimetic isomorphism. The foreign ownership in the sample banks has been increasing in both member and candidate nations during the accession and membership periods. On that occasion, it is claimed that legal and political institutions together with institutional changes influence the governance structure of banks. Lastly, some recent studies (see, Blum et al., 1994; Bilimoria, 2000 and 2006 and Carrasco et al., 2014) have also analysed the explanation of a female presence on company boards from the institutional theory perspective. These studies consider institutional legitimacy and the benefits (such as firm reputation, being more advantageous to employ talented females) stem from the institutional legitimacy as one of theoretical

explanation for board diversity on executive and nonexecutive positions on boards (Kanter, 1977; Blum et al., 1994; Bilimoria, 2000 and 2006 and Cabrera-Fernandez et al., 2016). Blum et al., (1994) by referring studies of DiMaggio and Powell (1991) and Shenhav and Haberfeld (1992) argued that firms try to look more legitimate than other firms in their environment do by recruiting more employees from females and ethnic backgrounds. Following this discussion, the corporate governance and institutional theory relationship are discussed.

### *2.2.3 Institutional theory and corporate governance*

Institutional theory in corporate governance studies has been used to assess and interpret the impact of introducing corporate governance codes of practice and corporate governance developments (Chizema and Kim, 2010; Fiss, 2008). Chizema and Kim (2010) explore the institutional theory and corporate governance developments. They investigate the effects of Anglo-American corporate governance style on Korean companies by examining outside directors and performance relationship. From an institutional theory perspective compliance with a code of practice that is brought in from a country with a different culture and environment can result in cosmetic rather than good compliance. A tick-box form of compliance is likely to result. Institutional theory suggests that there will be resistance to the introduction of new codes of corporate governance best practice. Such resistance can result in decoupling whereby there is apparent compliance with a code, but practice within the organisation continues as before with little or no genuine change in corporate behaviour (Solomon, 2013, p. 21). This is also discussed in the section above that institutional isomorphism is one of the strong responses in strategic behaviour of organisations to such changes (for this research compliance to the rules, regulations, directives and policy actions of EU). Fiss (2008) states, “*with its insights into the nature of authority and control structures, the institutional theory is uniquely positioned to provide important contributions to scholarship on corporate governance. However, the reverse is also true: because of its concerns with the control of the corporation, corporate governance presents a particularly attractive field for institutional theory and an opportunity to clarify and refine it*” (Fiss, 2008, p.389).

Other scholars acknowledge that corporate governance is influenced by political and institutional factors (North, 1990; Roe, 2003). North (1991) states that institutions are the set of rules or as constraints that influence economic and social development. For societies, firms

and other organisations, institutional change informs this evolution. Williamson (1975) explores the transaction and transformation costs of various organisational forms by treating the institutional framework as exogenous. The organisation of a company seems to determine the boundaries beyond which the company can determine price and production. In other words, the way in which the company is organised determines its control over transactions. It is in the interest of company management to internalise transactions as much as possible. The main reason for this is that such internalisation removes risks and uncertainties about future product prices and quality. It allows companies to remove risks of dealing with suppliers to some extent. Any way of removing such information asymmetries is advantageous to company management and reduces business risk for a company.

The political process is another critical factor in determining the organisational structure of firms (for this research *banks*) that is related to corporate governance practices and institutional framework. Therefore, legal and political institutions are assumed to influence economic entities. Under these circumstances, this research considers both institutional and political factors that influence corporate governance practices, ownership structure, and risk management structure of banks in its theoretical context. This chapter examines the influence of the EU accession and membership process, as an effective political process, on the institutional framework and corporate governance practices within the EU, on corporate governance structure and performance of banks since, North (1990) underlies the relationship between politics, institutional structure and economic performance of firms.

During the EU accession, CEE region countries would have to apply European directives, and this helps researchers analysing corporate governance in those countries (Andreff, 2006). As encouraged by the organisational bodies of the EU, corporate governance practices in the Czech Republic, Poland and Hungary are expected to have improved following their participation to the union (McGee, 2006). Bank corporate governance of candidate nations could have been additionally influenced by factors such as their historical and often socialist legacies (Dobak, 2006). These effects, observed across Europe, may have affected new member states and candidate nations differently. For example, stakeholder-oriented approaches from Germany have influenced nations such as Poland and the Czech Republic. Findings of this thesis support this conclusion. Similarly, different experiences of command economics and central planning, seen in the Yugoslav or Soviet systems or geographic location could have affected such arrangements. For this purpose, the EU institutional bodies have been working

on these differences and providing directives, rules, and recommendations at EU level to improve corporate governance practices across the EU.

#### *2.2.4 Institutions, economic performance and transaction cost economics*

In the first chapter, it is stated that the effect of the European Union accession on corporate governance, performance, bank risk, and risk management and ownership structure on banking in new member and candidate nations of EU is examined in this thesis. As it is expected, nation-level law systems of a candidate country, specific for this research, corporate law system, need to be coherent with the EU law system (*acquis communautaire*). All of these require significant changes in the institutional structure of a candidate country. Also after the downfall of the communist system, the free-market transition had been started in those countries, and this has resulted in dramatic changes especially in economic and political structure and institutional change because this transition process required the establishment of the market economy and democratic institutions. Institutions including governance structures, social arrangements, norms, rules and their practices in social life have changed. These institutions emerge because they reduce transaction costs and adjust social needs. Therefore, a review of the institutions, institutional framework and theory are undertaken before proceeding to the next chapters. The previous subsection discusses institutional theory, institutional isomorphism and institutional theory and corporate governance relations. This subsection discusses institutions and transaction costs economics more comprehensively and completes another pillar of the theoretical framework of this research.

North and Williamson are two pioneering scholars who developed institutional economics and transaction cost economics literature. According to North (1991), institutions are the set of rules in a game and more formally this rules used as constraints to form human communication. They shape incentives in contemplation of economic, social or political phenomenon. Societies progress through time and experience historical change. Institutional change forms this evolution and is key to understanding the historical change. Economic performance is affected by institutional structure because institutions under the technology used determine the transaction and production costs. Formal rules, informal constraints, and characteristics of enforcing those constraints together form institutions. Formal rules could be changed easily by the state (for this research supranational organisation EU) whereas informal rules could not be

changed. However, the personal understandings of people that were shaped by their ideological view also affect both formal and informal rules and identify unambiguous choices between formal rules and developing informal constraints (North, 1991).

The effects of institutions of economic performance are barely disputed. The differential performance of economies during the period is mostly affected by the way institutions evolve. Efficient markets are fundamental for economic growth, and a set of political and economic institutions make it possible to create such markets (North, 1991). Williamson states that “*transaction cost theory is an interdisciplinary alliance of law, economics, and organization*” (Williamson, 1996, p.25) and institutions form the political, economic and social interactions through informal constraints like sanctions, taboos, customs, traditions, and code of conduct and formal constraints like constitutions, laws and property rights (North, 1991).

It is increasingly understood that within socialist economies the underlying institutional framework is the fundamental source of poor performance. In this sense, transition nations try to find ways to restructure their institutional framework to increase their organisational productivity (North, 1994). Highly specialised forms of transaction organisations emerge as a necessity. Institutions and organisations are required by international specialisation and division of labour to protect property rights across national boundaries so that capital markets can take place with the credible commitment of the players (North, 1991).

North (1991) emphasises that “*innovations that lowered transaction costs consisted of organisational changes, instruments, and specific techniques and enforcement characteristics that lowered the costs of engaging in an exchange over long distances. These innovations occurred at three cost margins: (1) those that increased the mobility of capital, (2) those that lowered information costs, and (3) those that spread risk. The categories are overlapping, but they provide a useful way to distinguish cost-reducing features of transacting.*” Economic performance is determined by institutions thorough transaction and transformation costs. The implications of institutions and organisations concerning performance is analysed by the property rights literature rather than the formation and evolution of organisations (North, 1994).

After this general introduction to institutions, transaction cost economics and economic performance relationship, corporate governance are included in this relationship. North (1990) debates that a national system of corporate governance may be seen as an institutional matrix



that provides both the roles to the players and the goals to be followed by the corporation. He offered frameworks regarding the role of institutions in corporate governance that are embedded in a bounded rational actor model of the corporation. The institutional approach to corporate governance suggests that national corporate governance systems are importantly affected by cultural differences (Tricker, 1984). The primary assumption of this field of research has been that each country's system of corporate governance developed in response to its particular historical, cultural, and technological influences. However, recently some scholars have aimed to develop these arguments into more coherent frameworks that allow for a better understanding of the mechanisms that underlie national governance systems, as well as a systematic comparison of national differences in governance arrangements (Fiss, 2008). This research considers a supranational organisation's, the EU's influence on corporate governance, risk management and ownership structures and performance of banks in member and candidate nations since EU as a political and legal organisation, could change the practices on these areas by using political process and legal institutions such as laws, rules, and directives.

Economic and political institutions establish essential parts of a useful institutional matrix. Institutions as the significant focus of the literature on institutions and transaction costs, within a competitive framework, create efficient solutions to problems of organisation. Political institutions specify and enforce formal economic constraints or property rights. Increasing productivity takes place in an economic environment created by the evolution of political and economic institutions (North, 1991). The way a political and economic system works is determined by the exchange relationship between a set of institutional constraints and organisations. In the recent economic system worldwide, the percentage of gross national product going through government and the ubiquitous regulations of it are the keys to economic performance besides the policies that specify and enforce property rights shaping the basic incentive structure of an economy (North, 1994). After this detailed discussion on institutions, transaction cost economics, and institutional theory, the next subsection discusses transaction cost economics theory comprehensively.

### 2.2.5 Transaction cost economics (TCE) theory

A discussion of transaction cost economics theory describing its historical development may be found in Williamson (1975). This theory first proposed by Coase (1937) and Cyert and March (1963). The firm is as a personal economic unit in a world of perfect markets and equilibria but rather as an organisation comprising people with differing views and objectives (Solomon, 2013, p.13). Transaction cost economics theory is built on the reality that firms substitute for the market in effecting the allocation of resources. Indeed companies are so large and so complex that price movements outside companies' direct production and the markets coordinate transactions.

Even though everyone had the same objective as maximising firm's profits, performing of this takes substantial resources. When there is wealth-maximising behaviour and asymmetric information about the valuable attributes what is being exchanged economic performance is critically being determined by transaction costs. Transaction and production costs per exchange are reduced by institutions in order to make potential gains from trade realisable (North, 1991). Williamson (1975) explores the transaction and transformation costs of various organisational forms by treating the institutional framework as exogenous. The organisation of a company seems to determine the boundaries beyond which the company can determine price and production. In other words, the way the company is organised determines its control over transactions. It is in the interest of company management to internalise transactions as much as possible. The main reason for this is that such internalisation removes risks and uncertainties about future product prices and quality. It allows companies to remove risks of dealing with suppliers to some extent. Any way of removing such information asymmetries is advantageous to company management and reduces business risk for a company.

Traditional economies view economic agents rational and profit maximisation the primary objective of business. Transaction cost economics attempts to integrate human behaviour more realistically. In this paradigm, managers and other economic agents practice bounded rationality (Solomon, 2013, P.14). The result of assuming bounded rationality is that companies must “*organise transactions to economise on bounded rationality while simultaneously safeguarding the transactions in question against the hazards of opportunism*” (Williamson, 1996, p. 48).

Solomon (2013, p.13) states that under the problems of bounded rationality and opportunism, directors form transactions in their best interests and this activity needs to be controlled. Such opportunistic behaviour could have terrible consequences on corporate finance discouraging potential investors from investing in companies. Immediately, it could be seen there are some similarities here between agency theory and transaction cost economics as both theories present a rationale for management to be controlled by shareholders. If the information is asymmetric and costly to take by the parties to exchange then the cost of transacting increases. As a result, the way the players develop institutions in order to structure human interaction creates some level of market imperfection. In economic history, there are success stories that show institutional innovations lowered the transacting costs and opened the way to capture more gain from the trade and to the expansion of markets (North, 1994). If the information is asymmetric and costly to obtain and to exchange then the cost of transaction increases. As a result, the way the actors develop institutions in order to structure human interaction creates some level of market imperfection. In economic history, institutional innovations have lowered the transaction costs and increased more gains from the trade and the expansion of markets (North, 1994).

The efficiency of an economic market is measured by the level of competitive structure that is close to the conditions of a zero transaction cost framework through arbitrage and dynamic information feedback. A political market efficiency is determined by the constituents accurate evaluation of the policies of competing candidates that affect their well-being, the legislation or regulation that maximise the aggregate income of the related parties to the exchange and compensation of those poorly affected in order to ensure that there exists no part injured by an action (North, 1994). Two distinct transaction cost problems are posed by the growth of long-distance trade. The first one is a classical problem of the agency that was solved by the use of kin. Use of kinship and family ties that bind agents to principals were used to resolve this problem in medieval and early modern times. Expanding the proportions and scope of commercial transaction grew, the discretionary behaviours other than kinship required the development of more elaborate accounting procedures to monitor the behaviour of agents (North, 1991).

With the growth of volume and size of the trade, a significant dilemma takes place in agency problems. The second problem was contract negotiation and enforcement in alien parts of the world. Transacting and engaging of institutions, organisations and instruments were made

possible through lowering information costs and providing incentives for contract fulfilment. As a result of close community relationships among Jewish traders that lowered information costs and enabled them to act as a group against agents violating their commercial code through ostracising and retaliating against them, Jewish traders in the Mediterranean in the 11th century solved the agency problem (North, 1991). A capital market, therefore, requires the security of property rights. Securing property rights in a polity and judicial system permits low cost contracting and flexible laws, which permit a vast space of organisational structures and the creation of complex governance structures to limit the problems of agency in hierarchical organisations are required (North, 1991).

### *2.2.6 Stakeholder theory*

The third pillar of the theoretical framework of this research is the stakeholder theory. The stakeholder approach has an essential place in the EU context due to the pluralist view in the political history of the EU. The history of stakeholder theory and use of the term of stakeholder has roots in the innovative research of Stanford Research Institute (now SRI International) in 1963 (Freeman, 2010, p.31). According to the SRI, directors should recognise the concerns of shareholders and as well as other interested parties while performing the main objectives for the long-term success of the company (Freeman and Mc Vea, 2010). The foes to shareholder view in corporate governance comprehensively brought normative doubts on the importance of shareholder's interest only; support the view for interests of stakeholders that managers should consider (Waldkirch, 2008). Freeman (2010, p.55) stated that a large firm has a group of stakeholders including employees, customers, suppliers, owners, financial community (other financial firms and brokers), government, competitors, trade associations, political groups, activist groups, unions, customer advocate groups and trade associations. However, some scholars (e.g., Friedman, 1970) claimed that companies are established to generate money, not to manage the common or moral improvement of society (Pfarrer, 2010). A figure could be drawn for the bank by including financial authorities such as central banks. Figure 2.3 illustrates the stakeholder map for bank adapted from stakeholder map of a tremendous organisation by Freeman (1984, p.55).



**Figure 2.3** Stakeholder map of bank organisation (Adapted from Freeman, 1984, p.55)

Donaldson and Preston, (1995) consider the importance of property rights and propose an alternative approach to stakeholder theory including three aspects of the theory namely “*descriptive/empirical, instrumental and normative.*” This approach to some extent innovative and take the stakeholder theory from “*managerial*” to “*instrumental.*”

*Descriptive/Empirical aspect:* The stakeholder theory is unarguably *descriptive.* It presents a model describing what the corporation is.

*Instrumental aspect:* The stakeholder theory is also *instrumental.* It establishes a framework for examining the connections, if any, between the practice of stakeholder management and the achievement of various corporate performance goals.

Normative aspect: The first and second aspects are significant aspects of the stakeholder theory; this aspect is a fundamental basis of their approach.

Following this approach, Jones (1995), Jones and Wicks (1999), Friedman, and Miles (2002) further developed this approach to “*instrumental stakeholder theory*.” This development in stakeholder theory provides an understanding of the relationship between managers and other stakeholders, their influence on firm performance within broad economic theory. Stakeholder theorists claim that the board members have ethical duties to other stakeholders and they should consider their interests as well when managing the company. In many countries especially in Europe, employees, one of the primary stakeholder groups, have rights to be represented at the boards of companies (Padgett, 2012, p.86).

Dent (2009) states that no firm can be successful without joining its employees, customers, suppliers, and the communities in which it operates. Solomon (2013, p.8) states that interests of shareholders can only be fulfilled by taking account of the interests of other stakeholders, as firms, which are responsible to all of their stakeholders are over the long term more prosperous and more wealthy. This approach captures the concept of the “*business case*” and as well as the current approach of the EU and the UK to adopt the “*enlightened shareholder*” approach.

## **2.3 Political process of accession to EU and the corporate governance, risk management and ownership framework of EU and nations in the CEE region**

### *2.3.1 Political process of accession to EU*

Before introducing the specific review of literature for each study, a general introduction to the EU accession process is useful. The political process of joining EU requires institutional and political changes. These changes influence many areas in candidate nations during the accession period and the following accession the influence of EU organisations continues in membership period. This subsection briefly presents the EU accession process.

According to the European Commission (EC), all applications for accession are subject to an opinion issued by the Commission and a decision taken by the Council. Before this, the country must meet a certain number of conditions. All countries wishing to join the EU must abide by the accession criteria or the Copenhagen criteria (1993). Every single candidate state has to fulfil the requirements and improve its economic, social, political and cultural standards for the membership.

These requirements are as following (EC):

- *“political criteria: stability of the institutions safeguarding democracy, the rule of law, human rights and respect for and protection of minorities;*
- *economic criteria: the existence of a viable market economy, the ability to respond to the pressure of competition and market forces within the EU;*
- *the ability to assume the obligations of a Member State stemming from the law and policies of the EU (or the acquis), which include subscribing to the Union's political, economic and monetary aims;*
- *having created conditions for integration by adapting their administrative structures.”*

The explanation of the European Commission for the process which begins after the requirements are fulfilled by candidate states is short as follows:

*“Once the countries granted the status of applicant States satisfy these criteria, accession negotiations are ready to begin. The accession negotiations are the cornerstone of the accession process and cover the adoption, implementation, and application of the acquis by the applicant countries. They are intended to help them to prepare to be able to meet their obligations as the Member States once they join the EU. The negotiations are based on the acquis, which is divided into chapters, each of which corresponds to a different area of it. Once the negotiations on all the chapters have been completed, the accession processes come to an end and an agreement, called the Accession Treaty, may be concluded between the Member States and the applicant country to mark accession.”*

It has long been assumed that the political process of joining the EU aims to improve and converge standards of member nations to a determined level. Thus, during the journey to joining the EU, candidate nations should follow a designated political process to become a member. There are specific negotiation chapters that form the EU acquis, the whole body of EU law that candidate nations should follow and complete during the accession process to become a member nation. The negotiation chapters are categorised under 35 chapters covering many areas from economy to education. Therefore, as expected this process also influences corporate governance, risk management, and company control. The European Union organisations such as the Commission aim to generate political and institutional improvements by considering all stakeholders in all those fields.

### *2.3.2 Corporate governance, risk management, and ownership framework of EU*

To understand the influence of the EU on corporate governance and risk management practices and the ownership structure of banks in member and candidate nations it is important to review the general framework of EU in these areas. Thus, the next part of this subsection addresses these issues. After that, the corporate governance, risk management and ownership framework of the EU members in the CEE region are addressed. Based on the theoretical discussion above, the former introduces the historical background of corporate governance and risk management framework. It also provides details on laws, directives, regulations and policy actions related to corporate governance and risk management practices and ownership change at EU level. The latter introduces historical change in CEE region nations and the formation and evolution of corporate governance models in this region following the transition and EU accession processes.

#### *2.3.2.1 General introduction to the corporate governance, risk management, and ownership framework of EU*

In the realm of corporate governance and banking, this acquis includes a multitude of regulations and law which banks are obliged to comply with (Doyle, 2010, p.588-595). Figure



2.4 summarises the main steps<sup>5</sup> in chronological order. This process of enhancing bank corporate governance, risk management and ownership in the EU was initiated with the requirements outlined in *the EU Financial Services Action Plan* (Communication of 1999) and *the Winter Group* (2001) which stated that convergence of national corporate governance codes in the EU should be encouraged and a regulatory framework provided for company law in 2003. Subsequently, the EC announced two communications to the Council of Europe (CE) and the European Parliament.

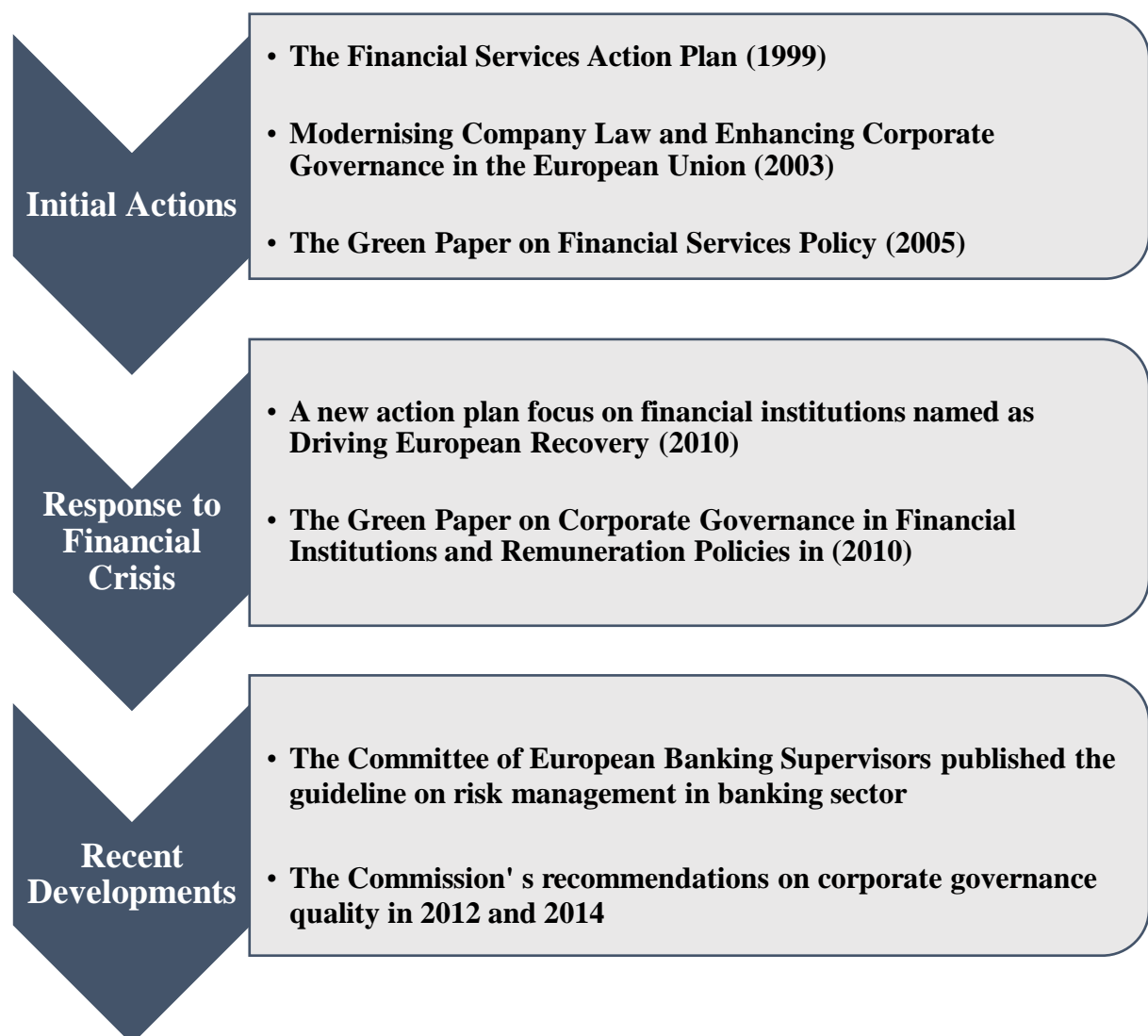
These included *the Action Plan on Modernising Company Law and Enhancing Corporate Governance in the European Union*, declared in 2003/2004 and *the Green Paper on Financial Services Policy* 2005. In 2006, *Statement on Risk Management and Internal Control* was revealed by the European Corporate Governance Forum. The EU regulatory bodies such as Commission and European Central Bank have questioned the existing corporate governance structure of financial institutions in Europe their poor performance during the recent crisis and have decided to find a solution to this issue (EC and ECB, 2010). After this crisis, the Commission developed a new action plan specific to focus on financial institutions and produced a new report named *Driving European Recovery* in 2010. In 2010, the Committee of European Banking Supervisors published the guideline on risk management in the banking sector. The Commission also issued a *Green Paper on Corporate Governance in Financial Institutions and Remuneration Policies* in 2010. Commission has been publishing directives that are more specific and regulations on corporate governance and risk management during the 2000s and 2010s that will be expected to be more influential in the near future.

*The EU Action Plan on Company Law* (2003) aimed to modernise company law across the member nations. For this study, relevant EU directives, rules, regulations, laws, and EU accession itself are the primary consideration of political and legal institutions and their influence on bank ownership structure were examined. Mainly, during the candidacy period, candidate nations followed EU rules and regulations and converge their national law system EU's law which called *acquis communautaire*. All of the member nations have updated and reviewed their corporate governance practices according to EU level corporate governance regulations. The candidate nations have also adjusted their corporate governance rules and regulations consistent with EU level regulations to satisfy accession conditions (IFC, 2015).

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<sup>5</sup> Appendix IV provides more details on these regulatory documents.

By ending the accession process successfully and become a member, a candidate nation have to follow 35 chapters and close all those chapters. Chapter 6 and 9 of acquis regulates company law and financial services, which is vital for chapter six to consider. For instance, based on rules and regulations in chapter 6 of the negotiations, the merger and acquisition of companies are regulated. Chapter 9 also regulates the operations of financial companies across the EU. Therefore, the membership facilitates mergers and acquisitions and financial operations cross-borders. From the results of this chapter, the sample banks in member nations have become widely owned by the bank holding companies of other member nations of EU compared to banks in candidate nations.



**Figure 2.4** European Union corporate law, governance and risk management developments

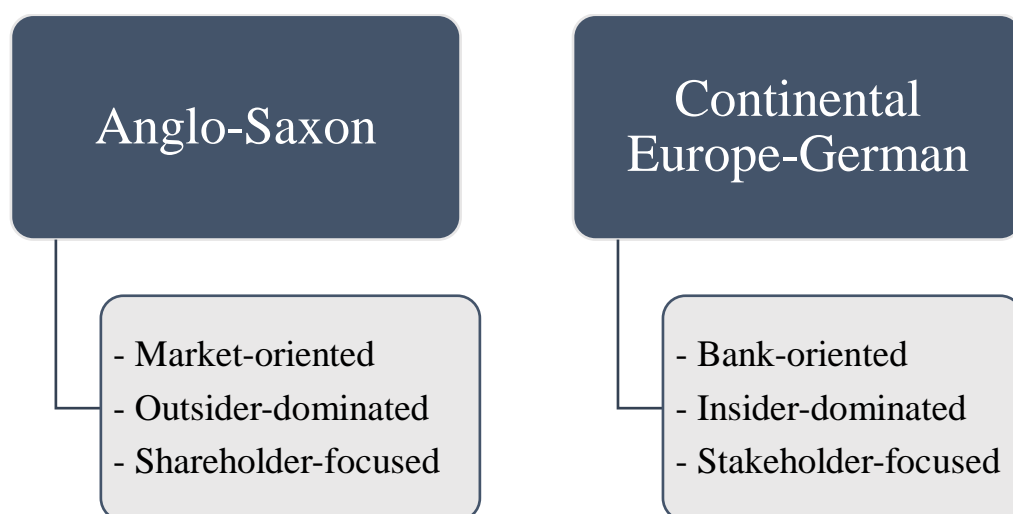
The institutional view on ownership of firms has emerged at the beginning of the 1990s has linked political economy with the firm, institutions, and efficiency (Roe, 1991, 1994; Prowse, 1995; North, 1990). The institutional view presented by North (1990) and afterward Roe (1994) highlights that ownership structure is significantly dependent on regulations and legal/political institutions. At that point, by examining the case in the US court's decision to raise the protection of assets of firms by controlling managers' tendency to serve their interests, Shleifer and Vishny (1997) show that legal institutions have a significant role in protecting interests of investors and shareholders. In developed nations, legal institutions, such as laws, rules, and regulations affect the control of corporations by determining and defining the rights and limits of stakeholders and setting up the market for corporate control (Milhaupt, 1996 and Cioffi, 2000).

Company laws and regulations that vary from nation to nation influence the financial system and ownership structures. For example, banks in Germany could own substantial shares in non-financial companies without any constraints while banks in the US are legally prohibited by this activity (Pedersen and Thomsen, 1997). Roe (1994) stated that German industrial development was fuelled by German banks due to their substantial managerial and investment banking experiences and that politics can affect a firm regarding its ownership structure, size, profitability, capital flows, investment, managers-employees relationship, and its internal governance structure (Roe, 2003). He highlights the difference between the United States and continental Europe regarding ownership structure of firms and divides them into two categories namely diffuse ownership and concentrated ownership and claims that this is because of the different political environment in these two different regions.

The United States and the United Kingdom are classified by La Porta et al., (2000) as market-oriented systems because of the effective and dominant role of their market institutions whereas they state that because of legal families of these nations existed before the foundation of their financial markets laws could not respond to market pressures. In Continental Europe, legal families characterise legal rules, and this eventually affects its financial markets (La Porta et al., 2000). Supported by well-functioning finance industry including different instruments such as stockbrokers, analysts, merchant banks, big and well-organised stock markets help companies to go public smoothly and lower the costs of capital they need (Pedersen and Thomsen, 1997). Such stock markets could exist if supported by formal institutions (Roe, 1991, 1994).

Blair (1995) and Andreff (2006) argue that most Western modern corporations do not fit the mainstream model of corporate governance (agency theory) and underlying context of the bipolar principal-agent model due to the fact that shareholders are rarely the only residual claimants. Therefore, they criticise the mainstream model for exaggerating the conflict between shareholders and managers. Andreff (2006) also states that the stakeholder management nexus is essential whomever the stakeholders are.

Arnaboldi and Casu (2011) introduced two models of the banking system in the EU; the Anglo-Saxon Market System and the Continental Europe Bank-based System. They indicate that these two systems reflect two different corporate governance models of banks. One of that is the liberal Anglo-Saxon Model, and the other is the more concentrated Continental Model (German Model). Llewellyn (2006) describes those models as the Shareholder Value Model and Stakeholder Value Model stating the Shareholder Value Model is an Anglo-Saxon model while Stakeholder Value Model is mostly occurred in continental Europe (see Figure 2.5 below).

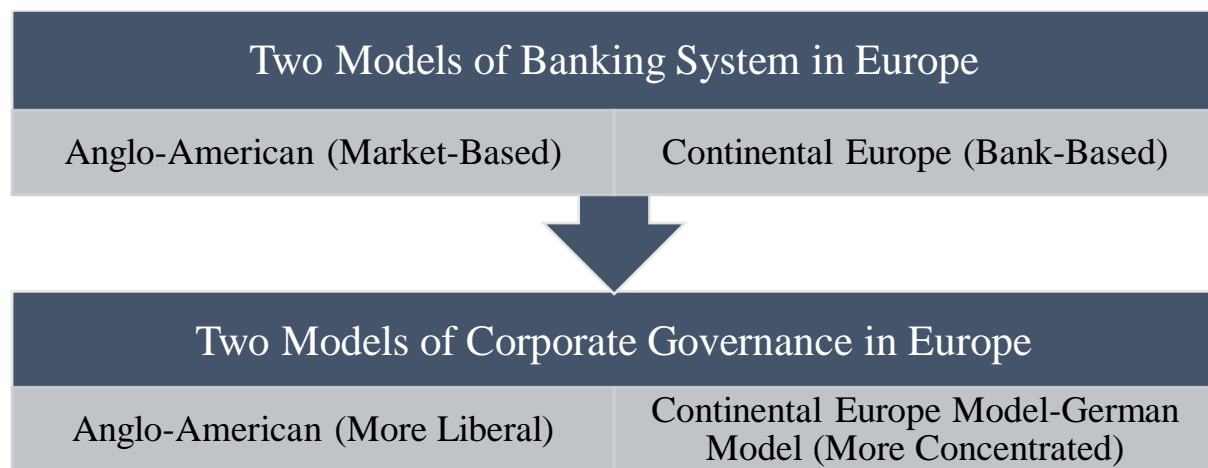


**Figure 2.5** Main corporate governance models in Europe

Some convergence in the corporate governance structures of these nations has occurred in recent years. Before 2007, this convergence was towards market-based approaches; after the crisis, the direction of this process is disputed, moving either towards a Continental Model (Arnaboldi and Casu, 2011) or away from this model (Horn, 2012). Therefore, the EC should

regard all stakeholders of banks in the creation of corporate governance rules and regulations.

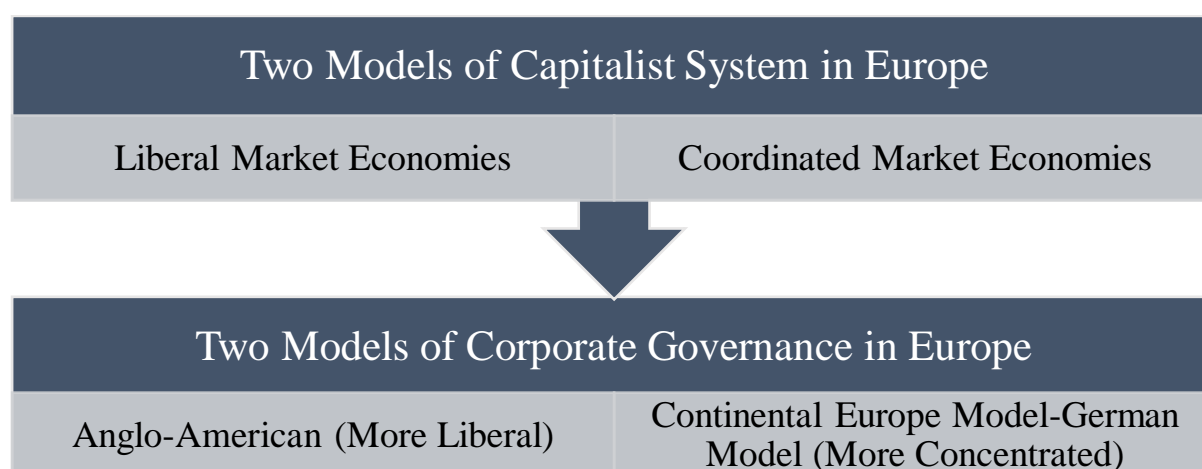
Arnaboldi and Casu (2011) also note that the two models of banking system show up in the EU. As shown in figure 2.6, the first is the Anglo-Saxon Market Based System, and the other one is the Continental Europe Bank-based System. They indicate that these two systems are the reason for two different corporate governance models of banks.



**Figure 2.6** Two models of the banking system and corporate governance in Europe

Llewellyn (2006) also describes two different models for banks, which are the Shareholder Value Model, and Stakeholder Value Model. He states that the Shareholder Value Model is an Anglo-Saxon oriented model while Stakeholder Value Model mostly occurs in continental Europe. Regarding EU banking systems integration, until 2007 the trend was towards a degree of convergence in the direction of a more market-based approach with an emphasis on ROE maximisation. However, after the recent financial crisis in 2007/2008, this seems to be converted to the Continental Model (Arnaboldi and Casu, 2011). Another illustration could be drawn following Hall and Soskice (2001) where they offer two different economic models of the capitalist system. The first model is called “*liberal market economies*”, which includes Anglo-Saxon nations such as UK, Ireland, and the US and the second model is called “*coordinated market economies*”, which includes the European nations such as Germany, France and Austria and Asian nations such as Japan (Hall and Soskice, 2001, p. 8-19). Figure

2.7 demonstrates an alternative relational model of the economic system and corporate governance models.



**Figure 2.7** Two models of the economic system and corporate governance in Europe

The following subsection broadly discusses the corporate governance, risk management and ownership context of nations in the CEE region.

### *2.3.2.2 The corporate governance, risk management and ownership framework of EU members in the CEE region*

Many recent EU member and candidate nations are post-communist countries and had command (planned) economic system until 1991. After that year, they started to constitute market economies, and a rapid privatisation era began. There were not developed financial markets in these countries within the communist era because of state control over the economy. Many things related to institutions started to change, and those countries became transition economies and begun their way towards the European Union. This transition period and the EU accession process brought significant change for those countries from a communist system to EU membership in a quite short period. At the middle of the 1990s, many of them declared their initiatives to participate to the EU, and after that in 2004, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia and 2007, Bulgaria and Romania have joined to the EU. Croatia in the thesis sample is the latest state that participated in the EU

in 2013. These countries bring dynamism and colour to the EU with their distinct economic, cultural and political constructions different from the other member states.

From the corporate governance perspective, Andreff (2006) states that after the downfall of the Soviet Union, following the transformation of their economies, the corporate governance structure of Central and Eastern European (CEE) region nations has varied significantly. However, in recent years especially after participation in the EU, some convergence on the corporate governance structures of CEE region nations has evolved. Hitherto the change has been prolonged, after joining the EU, some similarities generated between developed and emerging EU members. However, it cannot be said that all corporate governance structures are uniting to the single European model.

He argues that there are three stylized corporate governance models in CEE region nations. These are:

- 1- *A model of foreign corporate control (FCC)*
- 2- *A model of banking and managerial Control (BMC)*
- 3- *A mixed model based on employee and start-up control (ESC)*

- 1- *A model of foreign corporate control (FCC)*: It is also known as the Hungarian model. In Hungary and Estonia, there is substantial participation of foreign investors in the corporations. Many of them are block holders, and so they have an active monitoring and supervision power on the management of companies.
- 2- *A model of banking and managerial control (BMC)*: It is also known as the Czech model. The managers of the privatisation funds supervise the managers of privatised firms, and these privatised firms are usually being a representative of non-existing institutional investors. However, with the privatisation of those banks after the 1990s, this model converges to the FCC model in the long run.
- 3- *A mixed model based on employee and start-up control (ESC)*: It is also known as the Polish model. This model has a paradox that combines employee self – supervision as the weakest part of the structure, and the SME monitored by its bosses, which is the

most substantial part of the structure. This model also converges to the FCC model due to increased foreign investment to SMEs.

Following the transition period and privatisation of firms in CEE nations, foreign bank ownership has become a dominant ownership type in both accession and member states, yet it is significantly higher for member nations. It could also be seen in the sample of this study because these models were also observed in financial institutions primarily in banks during the privatisation period. Following the EU accession process, as foreign investment in banks had increased foreign owners have become dominant in the banking industry of the CEE region and banks in Turkey.

Dobak (2006) introduces the different interpretations of corporate governance and presents its developments in the CEE region nations through analysing historical backgrounds. He also put forward the corporate governance methods during the socialist era. Vliegthart and Horn (2007) indicate that the EU has had a crucial influence on the institutional development of corporate governance structures in CEE region nations, most importantly with the accession conditions laid out in the *acquis communautaire*. Mortimer (2009) considers the traditional approach to the models of corporate governance, namely shareholder and stakeholder models. He then extends the discussion to examine which model is adopted by Poland before and after EU participation. He concludes that Polish companies perform within the shareholder model. Ownership and control seem to be very concentrated in one place with little dispersion of shares, especially compared to the UK and the US.

## **2.4 Conclusion**

This chapter provides the theoretical background of the thesis. The theories behind the research are debated after the introduction of the chapter. The third section gives a comprehensive discussion of institutional theory. The EU accession process brings many significant influences on institutional environment in candidate nations, and this thesis investigates this influence of the EU accession on ownership, risk management and corporate governance structures of banks



in the member and candidate nations. Hence, the subsections 2.3.2 and 2.3.3 address the accession process and general corporate governance framework of EU by giving chronological steps and by highlighting the specific and key law, rules, regulations, directives, and recommendations on corporate governance, risk management, and ownership structure. The theoretical discussion is also provided on the formation of European corporate governance model and its differences from the Anglo-Saxon model. As this thesis considers new member states and candidate states in the CEE region (except Turkey), the last subsection of section 2.3 is allocated for a further discussion on the corporate governance, risk management and ownership practices in the CEE region. This section concludes this chapter. The next chapter presents the research methodology of the thesis.

## **Chapter 3. Research Methodology and Literature Review**

### **3.1 Introduction**

In this chapter, the methodological framework is provided. This chapter is divided into six sections. In this section, a brief introduction summarises the chapter. In the next section, the process of sample selection and dataset construction is introduced. The research questions and hypotheses for each empirical study are presented in the third section. Section four explains the model specification process and estimation methods for each empirical chapter. Section five reviews the literature of past studies on corporate governance, risk management, and ownership. The last section concludes this chapter.

### **3.2 Sample and data**

For both chapters four and five, banks in eleven new member states (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovenia and the Slovak Republic), five candidate states (Albania, Former Yugoslavian Republic of Macedonia (FYROM), Montenegro, Serbia and Turkey), and four long-standing member states (France, Germany, Greece and Spain) were selected to control for the influence of different EU accession procedures which has had to be fulfilled by eleven new member and five candidate nations in the sample. Those four long-standing member nations were selected for some reasons. First, the EU has a long history dates back to 1950s and many European nations have become a member since then in different years. The founding members of the Union are Belgium, France, Germany, Italy, Luxembourg, and the Netherlands and many banks in the sample nations mostly owned by Italian, Austrian, Swedish, Belgian and Dutch institutional and individual owners. Therefore in order to make variations (historical and country-level) in the sample, banks from France, Germany, Greece, and Spain were selected. Another reason for choosing those nations was timing concern. It took substantially long time to produce the datasets of this thesis, as the data (especially corporate governance, risk management, and ownership data) was manually collected. Thus the aim was to collect the relevant information

for the control sample as quickly as possible and banks in those nations were provided a vast amount of information mostly in English and this helped to save the time.

Figure 3.1 illustrates the European nations and membership and candidate years of sample nations in parentheses. In this thesis, the dataset includes the banks operating in the EU member and candidate nations.



**Figure 3.1** Sample EU member and candidate nations

As a starting point for constructing the dataset, all commercial, investment, savings, and cooperative banks from sample nations available in the BankScope database in 2015 were considered. 282 banks out of 449 banks provided annual reports and other relevant documents in their official websites. Only half of these banks (159 banks) provided annual reports and other relevant documents in English for the sample period. The number of banks in a sample of chapter four and five are the same and consisted of 211 banks<sup>6</sup> (including 52 banks from long-standing member nations as a control group). After examining more than 3000 annual

<sup>6</sup> Appendix I includes the list of banks.

reports, financial statements, corporate governance reports and official documents by central banks for sample banks, corporate governance information for each bank was collected manually, and a unique hand-collected dataset was constructed. Distinctly, the sample size of chapter six consists of 159 banks as the control group banks from four established member nations was not included in this sample.

The sample for chapter four incorporates 99 banks out of 201 banks located in eleven EU members and 60 banks out of 96 banks operating in five candidate countries over the 2000-15 period within total 1654 bank-year observations. Controlling for the influence of the EU accession process and robustness checks, an additional dataset was generated from banks in France, Germany, Greece, and Spain which are long-standing EU members and did not follow the same accession process that followed by new member and candidate nations. This sample consists of 52 banks in countries above within total of 461 bank-year observations. Therefore, the sample of study consists of 211 banks with 2115 bank-year observations.

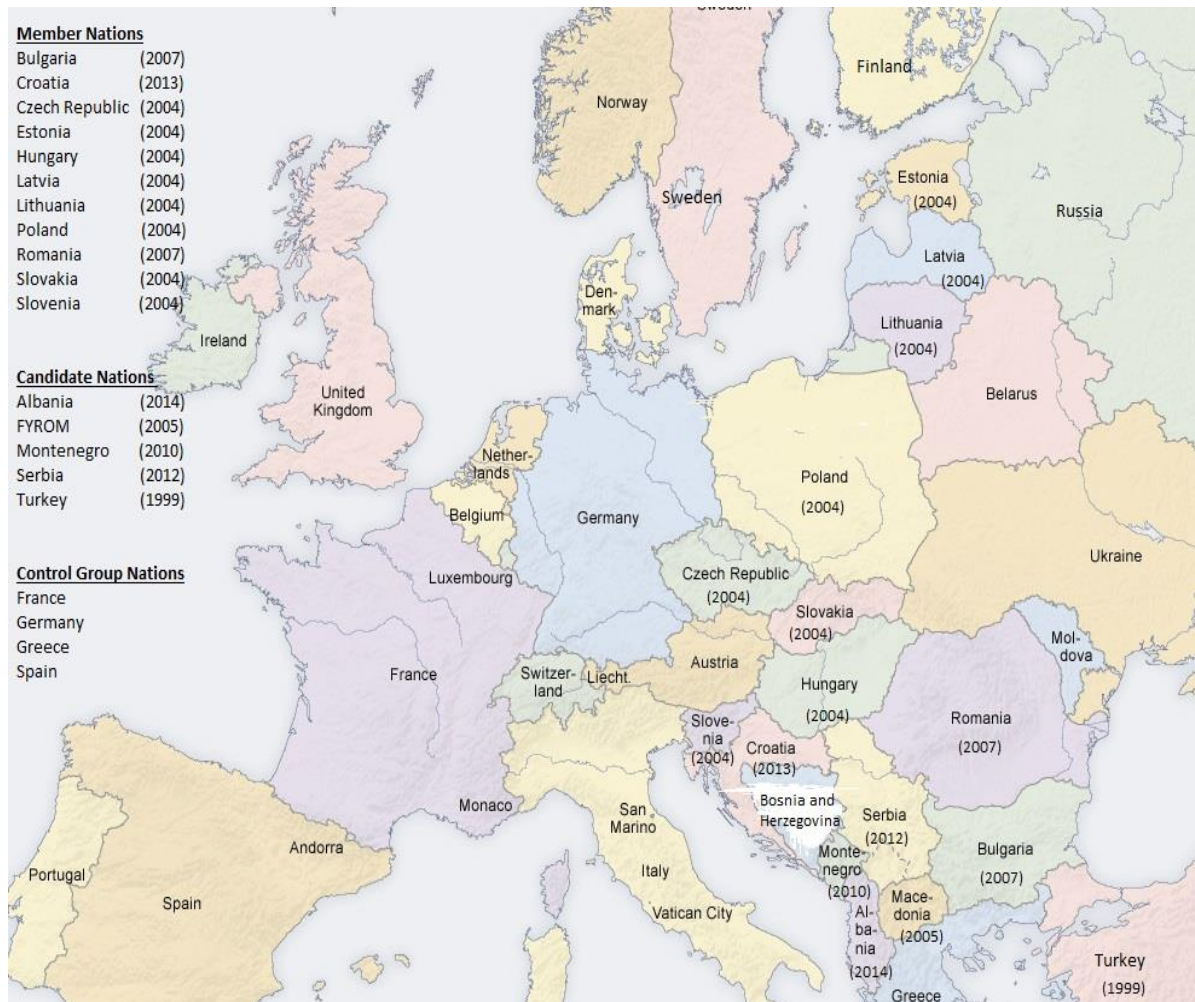
The sample for chapter five includes 211 banks with 2339 bank-year observations. From 2339 bank-year observations, 1212 bank-year observations were collected for banks in eleven EU member nations, and 619 bank-year observations are collected for banks in five candidate nations. The sample of chapter six different from the other two chapters' samples. This sample of 99 banks from eleven EU member nations provides 1227 bank-year observations and the 60 banks from five candidate nations provide 618 bank-year observations. The number of bank-observations is 1845 in total. Tables 4.1, 5.1 and 6.1 summarise further information. Following Claessens and van Horen (2012), mergers, acquisitions, entry, and exit during the period were included in the data.

Several different databases were used including SNL Financial, BoardEx, Thomson Reuters, and Bloomberg together to generate a dataset for bank-level and country-level variables<sup>7</sup>. Lastly, the dataset includes corporate governance information, the dataset includes bank-level, and country-level information was combined into one for conducting univariate and multivariate analyses. As databases and banks themselves do not provide annual reports and other relevant sources in order to produce sufficient corporate governance data for the pre-2000 period, the 2000-2015 period was selected for chapter four. A long period is chosen for this

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<sup>7</sup> Author's own calculations were used in the dataset for missing information on both bank and country level variables.

research in order to get substantial dataset for the period according to the candidacy period and membership dates of sample nations. Therefore, chapter four spans period 2000-2015 while chapter five and six spans period 2000-2016.



**Figure 3.2** Map of Europe- Member and candidate nations

Initially, a number of different databases for data collection including SNL Financial, Bankscope, and Thomson Reuters Datastream were searched. It should be stated that almost no information was provided for sample banks in these databases except for Bankscope, which provided most of the bank-level performance and risk data for each bank. The corporate governance, risk management and ownership datasets of chapter four, five and six of the thesis

were conducted manually by searching annual reports, financial statements, corporate governance reports from the websites and information provided by the banking authorities of the sample countries for each bank. The motivation is to collect as much data as possible for each study yet it is observed from the previous papers (de Andres and Vallelado, 2008; Erkens et al., 2012; Andries and Brown, 2017) that the sample size of the bank corporate governance studies is relatively small. Lastly, the sample for three of the empirical chapters comprised of unbalanced panel datasets. Empirical methods, models and data collection techniques of the previous studies were reviewed for applying to this original study.

The bank corporate governance, bank risk management, and bank ownership literature have been growing dramatically. In this literature, several different variables have been used as corporate governance variables. Board characteristics are the most significant component of the corporate governance structure. Hence, board-specific variables such as independence, size, diversity, and age are commonly used by researchers to measure the relationship between corporate governance and other specific variables.

The aim is to measure the relationship between corporate governance, performance and the EU accession process in chapter four so, depending on the data availability, as much variable as possible including board independence, board size, the gender of directors, the nationality of directors, CEO duality, board tier were used as corporate governance variables. Return on assets (ROA) return on equity (ROE) and net interest margin (NIM) were used as performance variables. Bank size (a total asset of the bank), asset quality (loan loss provision/ loan loss reserve divided by gross loans), liquidity (liquid assets divided by deposits and short-term funding), capital (equity to total assets) and operation (cost to income) ratios were used as bank-level control variables. The World Governance Indicators (WGI), Index of Economic Freedom (IEF) and GDP per capita growth for each sample nation were used as country-level variables.

In chapter five the risk management related variables such as the presence of a chief risk officer, the presence of a risk committee, the gender of the chief risk officer, whether the chief risk officer was an executive or not and whether a risk committee reports to the board or not were used as risk management variables. The Z-Score and Nonperforming loans (NPL) ratio are employed to measure the risk of banks. Besides, the WGI, Index of Economic Freedom and GDP per capita growth and inflation rate were also employed as country-level variables. Lastly, in chapter six, foreign, domestic, state, institutional, individual/family, managerial, public and

private ownership were assigned as ownership variables. Herfindahl–Hirschman Index (HHI) was used to estimate ownership concentration for each sample bank. Similar to chapters four and five, asset quality, operation, liquidity, and ROE were used as bank control variables. Lastly, both WGI and Index of Economic Freedom as well were used as country-specific variables in chapter six.

Lastly, to deal with extreme values a winsorisation method is used in this study. According to Reifman and Keyton (2010) by winsorising data “...one converts the value(s) of data points that are outlyingly high to the value of the highest data point not considered to be an outlier...” Therefore by considering this problem, all bank level variables (ROA, ROE, NIM, loan loss provision, liquidity, capital, operation, and total asset) were winsorised at 1% and 5% levels.

### **3.3 Research questions**

As discussed in section three this thesis explores the corporate governance and performance; corporate governance and risk management and lastly corporate governance and ownership structure relationships in the banking sector. The European Union has several institutional bodies and member states generally adopt the rules and regulations that are introduced by those institutions.

Two questions are asked in chapter four to examine performance and corporate governance relationship in banks after EU accession first, whether corporate governance structure affects the performance of banks operated in the selected countries. The second question examines the effects of the European Union accession on the performance of banks operated in selected countries based on specific corporate governance and accounting and market value variables. It is expected to find differences between the pre-membership and the membership periods. EU maintains high standards in political, economic, social and educational levels. Therefore, in order to become a member state, candidate states must fulfil the requirements and improve their economic, social, political and cultural standards for the membership. The candidacy and participation dates of the states are taken into account to make a comparison between the periods.

Two questions are asked in chapter five. One of the thesis aims is to examine the effect of the European Union regulations and other accepted international regulations on corporate governance structure and risk management of banks in selected countries. Hence, the first question is whether international regulations have affected the corporate governance structure and specific risk management strategies of banks. The second question is whether these regulations and the EU participation have changed corporate governance and risk management of banks. The latest global financial turmoil demonstrated the importance of quality of risk management structure in banks. Since the nature of banks is often opaque and includes risk-taking (Becht et al., 2011), it is critical to have a prudent oversight mechanism on the banking industry. The EU policymakers have taken actions and provided several policy documents (see related chapters for details). These questions examine whether there are differences in risk management structures of banks between the banks in candidate and member nations and difference before and after the membership of banks in member nations.

Lastly, two questions are examined in chapter six. The first is whether the EU membership and accession influence the ownership structure of banks. The second question is whether there are differences between ownership structures of banks in member and candidate nations. Therefore, this chapter examines whether EU membership brings change to the ownership of banks apart from the effects of globalisation on capital movements and hence ownership changes in the banking industry.

### **3.4 Model specification and estimation methods**

This section addresses the process of specifying models and the estimation methods that were used to analyse the data. Three different models and methods are employed in chapter four, five and six. All datasets of these three empirical chapters have unbalanced panel structures. Thus, panel data model approaches were employed for all. Fixed effects model were used in chapter four whereas the random effects model were used in chapter five. Different from these two chapters the probit regression model was employed in the last empirical chapter. Following Bekaert et al.,’s (2013) study, a dummy variable equals 1 for membership and 0 otherwise were used as an EU indicator in all empirical chapters.



Chapter four employs univariate analysis and multivariate analysis to assess the relationship between variables. Based on sample size, T-test and Mann-Whitney U test were used for univariate analysis and the findings were introduced in tables 4.3, 4.4 and 4.5. A panel fixed effects model is employed for multivariate analysis.

In order to determine the most appropriate model, econometric methods are used. Pooled OLS, fixed effects (within) and random effects models could be used to estimate panel models. The fixed effects model is generally recommended in the existence of unobserved bank fixed-effects (for details see Wooldridge, 2002, p. 265–291). Initially, the Hausman test (Hausman, 1978) was applied to decide whether fixed effects estimations or random effects estimations was appropriate. This test observes the difference between random effects and fixed effects estimators. If the Hausman test is significant, then the fixed effects model should be used. Breusch-Pagan Lagrange multiplier test (Breusch and Pagan, 1980) also applied and confirmed that a random effect model was not appropriate. According to the Hausman test result, the fixed effects model is suitable to be used in chapter four. Further tests were used as diagnostics. Robust standard errors (White) to heteroscedasticity and autocorrelation were obtained to deal with the heteroscedasticity and autocorrelation issues (see Greene, 2012 and Wooldridge, 2010). Finally, following Ashton and Hudson (2014), to assess whether fixed effects are needed relevant test was applied and time fixed effects were added (see Cameron et al., 2011 and Thompson, 2011). Table 4.6A and 4.6B present fixed effects model regression results.

In chapter five, the same univariate tests were used. T-tests and Mann-Whitney U tests were employed, and results were introduced in tables 5.3, 5.4 and 5.5. In addition to these tests,  $\chi^2$  tests were used for comparison as the risk management variables are binary variables. Similar pre-testing procedure of chapter four was undertaken in this chapter as well. The Hausman test (Hausman, 1978) and the Breusch-Pagan Lagrange Multiplier test (Breusch and Pagan, 1980) were estimated. The results of both tests and the dataset structure itself (see Baltagi, 2008a), which includes many dummy variables, lead us to employ the random effects regression model estimated using the Generalised Least Squares (GLS) model. Following relevant diagnostic tests, it was detected that the estimations were affected by autocorrelation and heteroscedasticity. In order to deal with these issues, following Greene (2012) and Wooldridge (2010) robust standard errors (White) and results are presented in Tables 5.6A and 5.6B. Finally, the same test of chapter four was used and time fixed effects were added.

The same two methods used in chapters four and five were also used in chapter six for univariate assessments. T-tests and Mann-Whitney U tests were used to compare ownership change in sample banks based on membership and candidacy periods of the nations. Tables 6.3 and 6.4 present the findings of the univariate analysis. The estimation method for the regression analysis is different from the methods of the previous two chapters. In order to assess the change during the EU membership, a probit regression model is employed.

Chapter six of this thesis employs a standard probit regression model to examine whether the ownership of banks has been changed before and after the EU membership. Because the dataset of this chapter has a panel data structure, it is required to consider whether a panel probit estimation is needed. To determine first, panel probit models were employed (for details see Wooldridge, p. 473-494, 2002). Then, the amounts of “ $\rho(s)$ ” for each model were obtained to consider whether they were equal to “zero” which means that the intra-panel correlation is small enough. If this is the case, the probit (pooled estimator) model could be used (Stata: Release 13, 2013). The estimations for all models show that all “ $\rho(s)$ ” is equal to “zero.” Thus, the standard probit model regression was employed, and the findings of the regression, which were robust standard errors (White) to heteroscedasticity and autocorrelation were introduced in table 6.5.

This section discusses the estimation methods and model of the thesis. The next section of the chapter reviews the relevant past studies.

### **3.5 Review of the literature on corporate governance and performance, risk management and risk, and ownership of the bank**

This section reviews literature (not specifically banks in European and sample nations) on bank performance and corporate governance, bank risk and risk management and bank ownership of banks. This includes discussion on variables that are used in the empirical chapters of the thesis. As this research focuses on banks, the studies, which consider why bank corporate governance is different and why bank regulation is vital for its stability and why bank ownership should be concerned, are also reviewed. Laeven (2013) defined banks as “*large*

*creditors, systematically important and heavily regulated, highly leveraged, have opaque asset portfolio quality, have diffused debt, have maturity mismatch between their assets and liabilities.”* This complex organisational structure makes banks very important for the whole economy and their governance practices critical.

Mehran et al., (2011) argued that the shareholders of banks require the board of directors to protect only their values, which increases the risk-taking behaviours of the bank and thus the possibility of negative outcomes to the economy of nations (Flannery, 1998). Mullineux (2006) pointed out that executives of banks differ from executives of the non-financial firms, as bank executives have a “*fiduciary duty*” to creditors, which makes an explanation to principal-agent problem inapplicable in banks. Laeven (2013) reports that prior studies on bank corporate governance give importance to shareholder value maximisation. As previously stated, stakeholders other than shareholders (e.g., debtholders and customers) are significant for bank business whose rights should be protected. Thus overall, this is the reason why this thesis considers banks and EU’s political and institutional environment. The EU’s policymakers works during the last three decades for improving good corporate governance and risk management practices across the EU member and candidate nations especially following the global financial crisis and the Eurozone crisis dramatic impacts on the banking industry and whole EU economy. This makes novel and contributory to study bank corporate governance, risk management and ownership within the EU’s political and institutional environment.

The next subsection reviews past studies of bank corporate governance and bank performance. Subsection 3.5.2 reviews studies on bank risk and risk management and the last section provide a review of the literature on bank ownership and its relationship between performance and risk management.

### *3.5.1 Literature review of corporate governance and performance*

Following the global financial crisis in 2007/2008, the nature of bank business has been revisited, and bank corporate governance and risk management practices and ownership structure has been studied repeatedly (e.g., Mehran et al., 2011; Grove et al., 2011; Becht et al., 2011; Adams, 2012; Aebi et al., 2012; Beltratti and Stulz, 2012). The discussion of corporate governance within the international context has focused on three topics including

shareholders weakness and the power of executives, the weak commitment of shareholders and the conflict between controlling blockholders in the European and other countries (Becht et al., 2011). Some scholars indicated that banks have further distinct features making banks different from the non-financial firms, including the complex structure of banks, regulation, and the number of stakeholders and opaqueness of banks, which prevents stakeholders from identifying risky activities (Diamond, 1989; Diamond, 1991; Morgan, 2002; Mehran et al., 2011; Becht et al., 2011; De Haan and Vlahu, 2016). The difference of bank industry from non-financial firms and the specific features of banks stated above has increased the interest of academic scholars and policymakers studying on bank corporate governance and risk management which is resulted in growing literature in this field. The transition of many nations to market economy, the rise of privatisation and globalisation and the easing of restrictions in the financial sector of many nations, the ownership studies on banks has also grown since especially the beginning of 1990s. This thesis contributes to this growing literature with three empirical studies on bank corporate governance and bank performance, bank risk management, and bank stability and bank ownership structure change during the EU accession and membership under the political and institutional framework.

The first empirical chapter of the thesis investigates EU influence on bank corporate governance and performance and the corporate governance structure and performance relationship. Following the mass literature of the corporate governance and performance, ROA (Yermack, 1996; Peterson and Philpot, 2007; De Andres and Vallelado, 2008; Ferreira et al., 2010; Schaeck and Cihák, 2014 and Arnaboldi, et al., 2018), ROE (Bonin et al., 2005a; Westman, 2011 and Liang, 2013) and NIM (Barth et al., 2007; Zhou and Wong, 2008; Cornett et al., 2009; Pathan and Faff, 2013; Saksonova, 2014 and Arnaboldi, et al., 2018) were assigned as the performance variables. Board size (e.g., Yermack, 1996; Eisenberg et al., 1998 and Guest, 2009), board independence (e.g., Erkens et al., 2012; Pathan and Faff, 2013), gender diversity (female directors) (Adams and Ferreira, 2009 and Garcia-Meca et al., 2015), nationality (foreign directors) (e.g., Oxelheim and Randoy 2003 and Masulis et al., 2012), CEO duality (e.g., Acrey et al., 2011 and King et al., 2011) and board type (one-tier/two-tier) (e.g., Junngmann, 2006 and Alas and Elenurm, 2014) were employed as corporate governance variables in this chapter. The selected performance and corporate governance variables are frequently used to assess the performance and corporate governance relationship in banks. Compared to corporate governance studies of non-financial firms, bank corporate governance and performance studies have a little coverage in corporate governance literature (Adams et

al., 2010). Yet, this picture has been changing after the global financial crisis in 2007/2008 (De Haan and Vlahu, 2016).

In the European context, Crespi et al. (2004) and Westman, (2011) examined ownership structure, corporate governance and performance relationship of banks. Using a sample of 867-bank observations from 477 banks operating in 37 European countries for the period from 2003 to 2006 Westman (2011) investigated the influence of management and board ownership structures on ROA and ROE. Crespi et al. (2004) focused on Spanish banks and examined the relationship between corporate governance, performance (ROA), and ownership structure. They analyse that relationship by using multivariate analysis and use the multinomial logit model. Ferreira et al., (2010) investigated the relationship between board characteristics and ROA by using a sample of 740 publicly listed banks in 41 nations. Liang et al. (2013) used both variables to examine corporate governance structure, and bank performance of a sample of the top 50 Chinese banks from 2003 to 2010 and they used board size, CEO-chairman duality, independent directors, gender and nationality of directors as board variables.

The majority of studies found a negative relationship between board size and performance for nonfinancial firms (Guest, 2009). In the US context, Yermack (1996) found a negative relationship between performance (ROA) and larger board size. Similar to this finding, Eisenberg et al. (1998) found a negative relation between board size and performance (ROA) of Finnish companies and for the UK firms Guest (2009) also found negative impact of board size on performance (ROA). Unlike that, Dalton et al. (1999) in a meta-analysis study proposed that there is a positive relationship between board size and performance. Coles et al., (2008) and Grove et al., (2011) yet showed that board size and performance (ROA) relationship could be positive depending on firm characteristics, types and if board size only large at a specific level.

Turning back to bank corporate governance and performance, the results of previous studies contrary to findings of studies on non-financial firms are mixed. Liang et al. (2013) demonstrated that board size has negative impact on Chinese banks performance (ROE) whilst Adams and Mehran (2012) found positive relationship between board size and bank performance. De Andres and Vallelado, (2008) found a positive influence of board size on performance (ROA) of banks from six OECD countries whereas Pathan and Faff (2013) found a negative impact of board size on performance (ROA, ROE, and NIM) of US banks. Likewise,

by employing a sample consisted of 58 large banks located in Europe, Staikouras et al., (2007) found that the influence of board size on bank performance variables (ROA and ROE) was significantly negative. Unlike these studies, Erkens et al. (2012) showed that there is no relationship between board size and bank performance.

Board independence similar to board size is widely used in corporate governance and performance studies. The results of previous studies on the relationship between board independence and performance are mixed. Choi et al., (2007) found robust significant positive influence of board independence on performance of Korean firms. Dahya and McConnell (2007) similarly proved that there was a positive relationship between board independence and performance (ROA) of firms located in the UK. The study of De Andres and Vallelado (2008) stated that board independence has a positive influence on performance (ROA) but showing non-linear relationship.

Considering bank performance studies, a positive relationship between financial firm (including banks) performance and board independence was presented in a number of studies (e.g., Cornett et al., 2009; Yeh et al., 2011 and Liang et al., 2013). Yeh et al., (2011) used a sample of financial institutions from G8 nations and found the positive influence of board independence and thus committee independence on the performance (ROA and ROE) of sample financial institutions and Cornett et al., (2009) found a positive relationship between board independence and performance (ROA, ROE and NIM) of publicly-held US banks. Similarly, for a sample of Chinese banks Liang et al., (2013) proved that the influence of the percentage of board independence on bank performance (ROA and ROE) is positive.

Some prior studies (Minton et al., 2010 and Pathan and Faff, 2013) on the other hand, retained the negative influence of board independence on the bank performance (ROA, ROE, and NIM). Minton et al., (2010) presented a negative influence of board independence on US financial institutions performance and also Pathan and Faff (2013) found similar results for US banks. Other studies (Bhagat and Black, 2002; Fernandes and Fich, 2009; Adams and Mehran, 2012) investigated the effect of board independence on bank performance and found insignificant results. Bhagat and Black, (2002) used a sample of US corporations and investigated the influence of board independence on performance (ROA) and found a non-correlation between these two variables. In a similar vein, Hermalin and Weisbach (1991) considered the relationship between the percentage of independent directors on boards and performance and

found no relationship between board independence and performance. In the international context, Terjesen et al., (2016) found that board independence would not influence firm performance (ROA) if the board has not gender diversity. Both Fernandes and Fich (2009) and Adams and Mehran (2012) studied US banks and found an insignificant relationship between board independence on performance of those banks. Similar to these studies, for a sample of European banks, Staikouras et al., (2007) presented that the influence of board independence on performance of those banks (ROA and ROE) was positive but insignificant.

Gender diversity has considered an important issue by international and national policymakers that some nations brought or decided to bring quotas for companies in the near future (Singh et al., 2008 and Ferrero-Ferrero et al., 2013) and some others including European Commission offering recommendation and/or guidelines for diversity issues. Previous research suggests that compared to male directors most female directors are likely to have and show different managerial skills (Zelechowski and Bilimoria, 2004). As explained by “glass ceiling” phenomenon, females have to be more competent and highly proficient to gain top-level positions in their firms (Eagly and Carli, 2003) which also improve the productivity in work environment. Females are also more likely to obtain advanced educational backgrounds and job experience that gives them competitive advantage and provide some advantages to their firms such as different ideas, strategies and effective monitoring of board of directors thus better representation of minority shareholders (Bilimoria and Wheeler, 2000; Hillman et al., 2002 and Letendre, 2004). Supportive to this theoretical context, a study by Nielsen and Huse (2010) by using a sample of Norwegian firms showed that the capability of female directors to contribute to the board of directors might depend on their different management styles. Their presence on boards improve the value of firm boards by increasing collaboration of directors and enhancing the quality of board activities. The nationality diversity as explained by the presence of foreigners and minorities brings different and original ideas, contributes to the managerial proficiency, strategical thinking, and vision in a firm (Ezat and El-Masry, 2008 and Samaha et al., 2012).

Overall, the features of board diversity that is discussed here bring the idea that board diversity could improve the performance, accounting quality and earnings management of company and a large body of empirical research (e.g., Fields and Keys, 2003; Arun et al., 2015; Garcia-Meca et al., 2015; Post and Byron, 2015 and Lara et al., 2017) has emerged to study these relationships. Some of these studies demonstrated the positive influence of gender and

nationality diversity on the functionality of board of directors, increase in performance of firm and value of firm (e.g., Ehrhart et al., 2003; Peterson and Philpot, 2007; Adams and Ferreira, 2009; Terjesen et al., 2009; Liu et al., 2014; Post and Byron, 2015; Adams, 2016; Cabrera-Fernandez, 2016; Terjesen et al., 2016; Bennouri et al., 2018 and Green and Homroy, 2018).

Chapter four contributes to these studies by finding the positive influence of female directors on bank performance. Ehrhart et al., (2003) by using white and non-white female board of directors as board diversity variable, found a positive relationship between board diversity and performance (ROA) of 127 large U.S firms. By using a sample consisted of firms from many countries, Terjesen et al., (2016) examined the relationship between the proportion of women directors and firm performance (ROA) and reported that the impact of women directors was significantly positive on performance. Alike, Liu et al., (2014) for a sample of publicly-listed Chinese firms showed that the share of female directors and female executives both have a strong positive influence on performance (ROA) of those firms. Their findings also supported that the performance of those companies performance was positively influenced better in private-owned companies compared to state-owned companies. In another study, by employing a sample of companies from different Asian countries, Low et al., (2015) also documented that the share of female directors positively affected the performance (ROE) of these companies which was also influenced by country specific variables.

In the European setting, Campbell and Minguez-Vera (2008) stated that the proportion of female directors has a strong positive influence on performance of Spanish listed firms. Similarly the result of this study, Bennouri et al., (2018) found a significant robust positive impact of female directors on performance (ROA and ROE) of French companies. Conversely, Böhrem and Ström (2010) found a negative relationship between presence of female directors and performance (ROA) of 213 firms located in Norway. Rose (2007) studied a sample of large and listed Danish companies and found insignificant relationship between firm performance and female directors on board. Similarly, Haslam et al. (2010) by employing a sample of British companies in the FTSE 100 documented that there was no significant relationship between performance variables (ROA and ROE) and female directors on board. A study (Hutchinson et al., 2015) by using the sample of large and listed Australian companies reported that the share of female directors has a positive impact on the performance (ROA) of those companies. Yet, Wang and Clift (2009) for the sample of large listed Australian companies, found no significant influence of women directors on performance (ROA and ROE) of those companies. For the



sample of US firms, Carter et al., (2003) examined the relationship between the percentage of female board members and firm value and found significant positive relationships between the percentage of female directors on the board and firm value. Contrary to findings of this study, Shrader et al., (1997) argued that there is a significant negative relationship between the female directors on board and firm value (ROA and ROE) of US firms.

By using a sample of U.S. firms from S&P 500, Adams and Ferreira (2009) examined the impact of the percentage of female directors on performance (ROA) and stated that the results are inconclusive (different signs obtained for different estimation methods including OLS, fixed-effects and IV models) results for the relationship between the female directors and firm performance. For instance, the relationship between the percentage of female directors and ROA was positive significant in OLS model but turned to negative significant after including bank fixed-effects in fixed-effects model. However, in the same study, they stated some positive aspects of female directors including presence on meetings than male directors, male directors have fewer attendance problems the more gender-diverse the board is, and women are more likely to join monitoring committees. Adams (2016) on the other hand found a positive relationship between the percentage of female directors and firm performance as measured by ROE without firm and year fixed-effects. Yet, after including firm and year fixed-effects to regression analysis, the relationship between these two variables turned to significant negative.

Arnaboldi et al., (2018) stated that compared to the number of studies on board diversity and performance in non-financial firms, the number of studies on board diversity and bank performance keeps a quite small part in the literature (e.g., Liang et al., 2013; Pathan and Faff, 2013; Garcia-Meca et al., 2015 and Arnaboldi et al., 2018). These studies documented mixed results. For instance, Garcia-Meca et al., (2015), by using a sample of 159 banks located in nine different countries including European countries, for the period 2004-2010, found that gender diversity increases bank performance (ROA) whilst this positive effect increased under the prudential legal and institutional environment for banking industry in the host country. Contrary to that, using a sample of 212 US bank holding companies, Pathan and Faff (2013) found a positive impact of the percentage of female directors on bank performance (ROA, ROE, and NIM). They also focused on the Sarbanes-Oxley Act and crisis influences on this relationship between gender diversity and bank performance and argued that the positive impact of female directors on bank performance was weakened after the SOX and the crisis

period. Liang et al., (2013) in a sample of Chinese banks also used percentage of female directors on board and found insignificant effect of female directors on performance measured by ROE and asset quality measured by NPL ratio of banks. They, in addition, reported that the performance and asset quality of banks decreased if directors in boards had political connections.

Two recent empirical studies (Farag and Mallin, 2017 and Arnaboldi et al., 2018) used samples of EU banks to investigate the relationship between gender diversity and performance of banks. Farag and Mallin (2017) employed a sample of 99 banks from 17 European countries for the period 2004-2012 to examine the influence of gender diversity on bank performance measured by ROA and ROE. They reported that the influence of the percentage of women directors on bank performance was significant and positive but showing non-linear and an inverted U-shape. Another recent empirical study by Arnaboldi et al., (2018) on corporate governance of 77 publicly-quoted European banks located in 20 EU countries for the period 2007-2015, focused on the influences of many board characteristics including board size, type, board diversity (gender and foreign), on bank performance measured by stock return, standard deviation of stock return, Z-Score, ROA and NIM. The results of the influence of gender and nationality diversities on bank performance are mixed. Considering both ROA and NIM as proxy for performance variables, they documented that the presence of female directors measured by the share of females on board showed positive but insignificant effect on both ROA and NIM.

Oxelheim and Randoy (2003) found that foreign board members that held Anglo-American nationalities significantly contributed to the value of firms operated in Norway and Sweden. Contrary to that in the US context, Carter et al., (2003) found the positive impact of directors from different ethnic backgrounds on performance. Another study by Ehrhart et al., (2003) for a sample of 127 US corporations found that there was a positive influence of board diversity on these firms performance. Whereas Masulis et al., (2012) focused on the presence of foreign independent directors on boards in a sample of US companies and reported that they have a negative influence on performance of the sample companies. They also highlighted that those directors showed less attendance to board meetings, caused increase the likelihood of financial misreporting. In Asia setting Choi et al., (2007) investigated foreign directors (as dummy variable one for at least one foreigner on board) and firm performance and stated that foreign directors have positive but insignificant influence on firm performance. Similar to this results,

Wang and Clift (2009) for the sample of listed Australian firms, found that there was no significant impact of directors from foreigners (non-Anglo-Australians) on performance (ROA and ROE) of those companies. Like Engelen, et al., (2012) for a sample of 97 listed Dutch firms considering crisis periods found that both foreign directors and female directors have no significant effect on performance of those firms. Carter et al., (2010) using a sample of large US firms found that ethnic diversity had no influence on performance (ROA) of these firms.

Returning to bank board diversity studies, for instance, Garcia-Meca et al., (2015) in their aforementioned studies, by using a sample of 159 banks located in nine different countries including European countries found that foreign directors decreased bank performance that was positively influenced by female directors. Arnaboldi et al., (2018) by using a sample of banks in different EU nations investigated the impact of the percentage of foreign directors on board on performance of bank was negative. However when considering the Eurozone crisis period the presence of foreign directors diminished the negative influence of this crisis on bank performance. Aforementioned study of Liang et al., (2013) reported that foreign directors have negative but insignificant impact on the performance of Chinese banks.

As another board characteristics the CEO/chairman duality is widely used in the literature as a proxy for CEO power (e.g., Pathan, 2009; Liang et al., 2013 and Berger et al., 2016). CEO duality identifies the situation that the CEO of a company is also the chairman of the board of directors. There is a mass body of an empirical study on the relationship between CEO duality and firm performance (e.g., Carter et al., 2003; Larcker et al., 2007; Grove et al., 2011; Aebi et al., 2012). Liang et al., (2013) for a sample of Chinese banks found that the CEO duality negatively influences bank performance (ROE) and but also found a negative but insignificant result for ROA and asset quality measured by NPL ratio. Carter et al., (2003) in the US context, reported that the influence of CEO duality on firm performance and value was strongly negative. Supportive of these findings Larcker et al. (2007) by employing a sample of 2106 financial and nonfinancial US firms for the period 2002-2003 found that the CEO duality has a negative impact on performance. Grove et al. (2011) also for a sample of 236 US banks documented that the CEO duality was negatively affected performance of banks in this sample. Nonetheless, Aebi et al., (2012) for a sample of 372 US banks, argued that there was no significant relationship between CEO duality and bank performance. Like, Berger et al., (2016) by generating two samples of US banks that consisted of failed and non-failed banks separately found that the CEO duality had no impact on the performance of bank.

### *3.5.2 Literature review of risk and risk management*

The previous subsection highlights the importance of sound risk management practices for banks has been increasing following the Global Financial Crisis in 2007/2008. Chapter five of the thesis reviews recent reforms by the EU policymakers to strength on policies. This section, therefore, reviews the literature on bank risk and risk management. One of the reasons for regulation on bank activities is to prevent banks from aggressive risk-taking strategies to maximise shareholder value (Koehn and Santomero, 1980). Many scholars thus focused on bank risk behaviour and regulation (e.g., Barth et al., 2004; Laeven and Levine, 2009; Klomp and de Haan, 2012). Barth et al., (2004) and Laeven and Levine (2009) and Klomp and de Haan (2012) studied the effects of bank regulation and supervision on bank risk in the international context. The former two studies focused on the relationship between bank governance structure, risk-taking, and national regulations. The latter study examines the effect of bank regulation and supervision on banking risk. Plenty of studies on bank risk, risk management, and corporate governance relationship have emerged (e.g. Laeven and Levine, 2009; Pathan, 2009; Acrey et al., 2011; King et al., 2011; Aebi et al., 2012; Nakano and Nguyen, 2012; Klomp and de Haan, 2012; Wang and Hsu, 2013; Sun and Liu, 2014; Minton et al., 2014; Sila et al., 2016; Andries and Brown, 2017).

A solid and independent risk governance structure for controlling and observing risk exposures has become very important as the standard corporate governance practices might not protect banks from instability. The recent financial crisis also supported this and displayed the importance of compact and more independent risk management structure within banks which was lacked especially for large ones to protect them against catastrophic events and risk of failure (Ellul and Yerramilli, 2013 and Ellul, 2015). Stulz (2008) additionally argued that risk failures mainly arise from some malfunctions at the executive level that are mainly identifying risk exposures inappropriately, problems in delivering risk exposures at the executive-level and paying no attention to underestimated risk. A study by Mongiardino and Plath (2010) however, showed that development of the risk management structure in large banks, albeit the effort of policymakers after the financial crisis in 2007/2008, appears to be very limited after surveying 20 large banks. They specified three features of good practices of risk management by questioning whether the sample banks assign board-level risk committee with a majority of

independent committee members and lastly if they have a CRO in executive position. They proved that only a few large banks had these features all together in their risk management structures. A number of empirical study after the recent financial catastrophe in 2007/2008, highlighted the importance of risk management structures and investigated the impact of more specific risk management variables such as the presence of a CRO, whether the CRO has an executive position and the presence of a risk committee and audit committee on bank risk, stability and financial performance (e.g., Aebi et al., 2012; Ellul and Yerramilli, 2013; Minton et al., 2014; Sun and Liu, 2014; Andries and Brown, 2017).

The second empirical chapter of the thesis explores first the impact of risk management structures on bank risk taking and second the EU influence on bank risk and risk management structure. In this chapter, Z-Score and the NPL ratio were used as risk measures, and the presence of CRO, CRO executives, the gender of CRO and the presence of a risk committee and whether a risk committee reports to the board are assigned as risk management variables. Z-Score has been widely used in bank risk studies (Boyd and Graham, 1986; Hannan and Hanweck, 1988; Boyd et al., 1993; De Nicolo et al., 2006; Hesse and Cihak, 2007 and Yeyati and Micco, 2007, Strobel, 2011; Liu et al., 2013; Schaeck and Cihák, 2014; Chiaramonte et al., 2015).

The NPL ratio has been used after the Eurozone crisis as the NPL of European banks became an important problem for these banks (Aiyar et al., 2015 and Jassaud and Vidon, 2017). The NPL ratio was also used to assess the asset quality of banks in some empirical studies (e.g., Liang et al., 2013; Ellul and Yerramilli, 2013 and Andries and Brown, 2017). Early studies of the bank risk management focused on the influence of CEO and board characteristics on bank risk taking and bank stability (e. g, Laeven, and Levine, 2009; Pathan, 2009; Acrey et al., 2011; King et al., 2011; Wang and Hsu, 2013). These studies employed proxies for CEO power such as CEO duality and other CEO characteristics such as CEO gender, age and tenure and board characteristics such as board independence, size, and board diversity. Research on bank ownership and its influence on bank risk has also occupied a massive room in the literature (e. g. Iannotta et al., 2007; Sullivan and Spong, 2007; Garcia-Marco and Robles-Fernandez, 2008; Barry et al., 2011; Drakos et al., 2016; Anginer et al., 2017; Shaban and James, 2018).

One of the aims of chapter five is by employing several risk management variables that are mentioned above to examine the relationship between bank-wide risk management structure

and bank risk and stability that is measured by using Z-score and NPL ratio. It is observed that there are very few studies that used those risk management variables and studied the influence of risk management structure on bank risk performance and stability (e.g., Aebi et al., 2012; Ellul and Yerramilli, 2013; Minton et al., 2014; Sun and Liu, 2014; Andries and Brown, 2017). Following three studies, by Aebi et al., (2012) and Ellul and Yerramilli (2013) for US bank holding companies and by Andries and Brown (2017) for European banks, the risk management of variables were specified for measuring risk management quality of banks by adding variable of chief risk officer gender to analyse this relationship in chapter five.

Aebi et al., (2012) by employing a dataset of 372 US banks investigated if risk management structure (such as CRO presence, executive CRO and CRO report directly to board or CEO) influenced performance (ROE and buy-hold returns) of those banks during the 2007/2008 financial crisis. The findings of the study highlighted that powerful CROs (commissioned directly report to the board of directors but not to the CEO) showed significantly higher stock returns and ROE during the crisis.

In a similar vein, Ellul and Yerramilli (2013) in their comprehensive study used a sample consisting of 72 US bank holding companies for the period 1995-2010. They innovated a risk management index by using several risk management variables (CRO Present and CRO Executive are similar to this study and including CRO top 5, CRO centrality, risk committee experience, and active risk committee) to assess the functionality, power, and independence of the risk management in that sample. They also employed board independence, board experience, institutional ownership, and additional CEO variables. They investigated the influence of risk management structure on banks tail risk, NPL ratio and accounting and financial performance of banks. The findings proved that for the banks with better risk management index, the tail risk, NPL ratio (bad loans divided by total assets) and overall performance (including ROA) of banks were better. Considering financial crisis period, they distinguished the financial crisis before and during the crisis years and they documented that banks with fragile risk control structures might have exposed more excessive risk and thus faced with trouble during the crisis period. Therefore they advocated that strong and independent risk management in bank decrease the risk of bank beginning of the financial crisis. They also separately used the CRO Centrality as proxy for CRO power to see the influence of CRO power on bank risk and reported that the findings for CRO power on bank risk were not significant as for RMI. This showed that the strength of whole internal risk

structure of bank might be much significant than the power of each risk management unit.

Andries and Brown (2017) by using a dataset of 156 banks located in CEE region studied the impact of specific corporate governance and risk management structure on bank credit growth and loss. They chose the period 2005-2012 and focus on the change before and during the global financial crisis. They did not use these variables directly and followed the similar method used by Ellul and Yerramilli (2013) and created risk management index by using variables including CRO presence, CRO executive, risk committee presence and risk committee report to board. They used not only these variable but also some corporate governance variables including board size, board independence, board expertise, and board nationality and by using these variables they also constructed another index called supervisory board index. The findings of this study displayed that the presence of foreign directors lowers the increase in credit growth before the crisis years and so decrease credit losses during the crisis years. The better risk management on the other hand for pre-crisis period ease credit growth but fewer credit losses during the crisis period. Another result should be highlighted that the number of credit losses in the crisis period does not encourage the banks with those to lose to develop their risk management structure following the crisis years.

Turning back to the prior studies on the relationship between risk management variables, other corporate governance-related variables and performance and risk taking of banks, for a dataset of US banks over the period 2000-2008, Minton et al., (2014) reported the influence of independent directors with more financial expertise was positive on the market-based (total risk) and balance sheet (Tier-1 capital ratio and real estate exposure) variables of risk that caused increase in risk taking of banks before the crisis. They also assigned CRO and risk committee presence as risk management variables and reported that these variables had no significant impact on these risk measures. Contrary to that findings, for a sample of banks located in Germany, Hau and Thum (2009) found that the banks that have supervisory boards lacked financial expertise made greater losses during the financial crisis 2007/2008. Another study that examined the German banks (Berger et al., 2014) focused on the influence of demographics of executive managers on bank risk and found that the education level of executives (having Ph.D. degree) had positive influence on banks' portfolio risk. The finding also suggested that decreasing average age of directors increasing portfolio risk.

In the international context, Erkens et al., (2012) employing a sample of 296 financial firms

from 30 countries for the crisis period 2007/2008, found that the relationship between institutional ownership and independent directors and financial institutions risk taking were positive which means that when the percentage of independent directors and institutional ownership were high the stock returns during the crisis period was low. A study by Lingel and Sheedy (2012) using a dataset consisted of 60 international financial institutions for the period 2004-2010, reported that better risk governance structure did not significantly affect risk (measured by equity returns) of that financial institutions at the peak times of the 2007/2008 financial crisis. Like Ellul and Yerramilli (2013), they constructed a risk governance index by using three of risk governance variables (the CRO executive, CRO ranked in the Top 5 executives based on salary, the risk committee activity) and the share of qualified bankers in the risk committee. They, on the other hand, found that the better governance structure lowers the risk of the sample financial institutions. In a similar setting but contrary to this findings, for a dataset composed of 503 financial institution all over the world during the 2002/2008 financial crisis, Beltratti and Stulz (2012) documented that well-governed banks with more shareholder-friendly boards, were not as much of risky before the crisis, mostly performed (buy-and-hold stock returns) poorer during the crisis. Anginer et al., (2018) by using a broad sample of dataset consisted of sample of US banks and nonfinancial firms from 1990 to 2014 and a dataset of international banks from 2004 to 2008, reported that there was a positive relationship between shareholder-friendly corporate governance and insolvency risk and non-performing loans of banks. They also stated that better corporate governance linked to more risk-taking during high economic growth. In addition, they argued that the corporate governance mechanisms that line up interests of executives and shareholders boost the excessive risk-taking in banks.

There are many studies (e.g., (Pathan, 2009; Tao and Hutchinson; Berger et al., 2014; Baixauli-Soler et al., 2015; Perryman et al., 2016; Farag and Mallin, 2017; Bernile et al., 2018 and Skala and Weill, 2018) also investigated the relationship between CEO characteristics (such as gender, age, tenure, etc.), board characteristics (such as gender, nationality, etc.) and board committees in financial and non-financial firms. In chapter five, board diversity variables (foreign and female directors), the gender of CRO and risk committee are also employed to examine their influence on bank risk variables. For instance, A study by Tao and Hutchinson (2013) made use of a sample of 317 listed financial companies in Australia for the years from 2006 to 2008 displayed that the information asymmetry within these firms reduced with the help of the harmonisation between risk and compensation committees. The findings of study



implied that the features of the committees were positively linked to risk and performance of firms. They also highlighted the importance of dual membership of a director in these committees which help to mitigate the information asymmetry and in turn lessen the negative impact of risk on firm performance of firms with greater risk.

Pathan (2009) for a sample of large US bank holding companies from 1997 to 2004, found that boards that consider more of the interest of owners of banks (strong boards accepted as small and less restrictive boards) have positive influence on bank risk (measured as total risk, idiosyncratic risk, systematic risk, assets return risk and Z-score). In contrast to that CEO power has shown negative effects on risk taking of banks. Aebi et al, (2012) in the US setting, found no significant relationship between CEO duality and bank performance (stock returns and ROE) in the crisis period.

Considering mainly board diversity and its influence on the stability of a sample of European banks, Farag and Mallin (2017) documented that presence of female directors on boards might decrease the exposure of banks to the negative of the effect of financial crisis upon the characteristics and positions of the female directors on top management level. For instance they noted that women on the executive boards of sample banks are risk lovers and their attitudes towards bank risk taking could be same as men on the executive level. A recent study by Skala and Weill (2018) employing a sample of 365 Polish banks examined the CEO gender and its influence on sample bank risk taking behaviours. The 42% of the sample banks' CEOs were female over the sample period 2008-2012. The main findings of this study is that showing banks managed by female CEOs are more risk averse with documenting more capital adequacy and capital ratios. The credit risk level of banks managed by women was similar to level of banks managed by men which indicated that better capital adequacy ratio was more likely associated to risk behaviour of female CEOs which mean risk averse that contributing the general view of that females demonstrate more risk averse behaviours.

Bernile et al., (2018) using a large dataset of US non-financial and non-utility firms with 21572 firm year observations over the period of 1996-2014 examined the relationship between board diversity index (consisted of gender, age, ethnicity, institution of college education, financial expertise, and other board experience), CEO tenure and duality, board size and non-executive directors on board and company risk (stock return volatility) and company performance (EBITDA/asset ratio, market-to-book ratios (Q)). They reported that higher diversity in the

board makes volatility lower and thus performance better by explaining that diverse boards employing more stable and less risky financial strategies. Likewise, by adapting a sample of 1123 publicly-quoted US companies, Baixauli-Soler et al., (2015) explored the relationship between top executives' stock options, company risk-taking (standard deviation of monthly firm stock returns over a period of five years and the standard deviation of daily stock returns over the last 90 trading days) and relationship between gender diversity (measured as the percentage of females on top management level) and firm risk for the years from 2006 to 2012. They reported first that there was an inverted U-shaped relationship between the wealth of top executives' created by stock (at the recent period and for the future) and firm risk. This indicated that the executives display increasing risk taking behaviours until at some point high based on their stock option and then display risk averse behaviours. The second finding of the study showed a similar relationship between risk behaviours of the executive team with more female managers compared to executive teams with less female managers. Perryman et al., (2016) in a similar vein, by using a large sample of US firms for the period 1992-2012 focused on the relationship between gender diversity at executive level (measured as the proportion of female managers on executive board) and firm risk (estimated by beta and the standard deviation of daily returns) and firm performance (measured as Tobin's Q). According to the results of the study showed that more gender diverse top executive team decrease risk and increase performance of company.

Bank size, asset quality, capital, operation and liquidity ratios are used as bank-level control variables both in chapters four and five. Bank size is widely used in banking and finance literature (e.g. McAllister and McManus, 1993; Bonin et al., 2005b; Micco et al., 2007; Altunbas et al., 2010; Drehmann and Tarashev, 2011; Barry et al., 2011; Demirguc-Kunt and Huizinga, 2013; Bhagat et al., 2015). Following Barth et al., (2001), Iannotta et al., (2007) and Chen and Wu (2014), loan loss provision divided by gross loans ratio was used as asset quality measure. Equity divided by total assets was used as capital ratio following the recent literature (e.g., Iannotta et al., 2007; Altunbas et al., 2010 and Berger et al., 2014). Following Hess and Francis, (2004), the cost to income ratio is employed as an operation ratio. Liquidity ratio as the last bank-level control variable was used following Chen and Wu (2014) and Iannotta et al., (2007). GDP per capita growth, the World Bank's *World Governance Indicators* (hereafter *WGI*), the Heritage Foundation's *Index for Economic Freedom (IEF)*, inflation rate and financial crisis dummy were used as country-level variables. Following Andersson (2016), GDP per capita growth, following De Haan and Sturm, (2000) the IEF and following

Kaufmann et al., (2010) the WGIs were used. The initial signals of Global Financial Crisis were seen in 2007/2008, but its effect occurred between 2008 and 2010 (Ivashina and Scharfstein, 2010) thus dummy variable equals to 1 used for the year 2008, 2009 and 2010. The next section provides a summary of prior studies on the ownership of banks.

### *3.5.3 Literature review of bank ownership*

Prior studies in ownership of bank form a large part of the literature. Research on this subject includes bank ownership types and their effects on performance, risk behaviour and bank ownership changes during transition and privatisation periods and global and local financial crisis (e.g. Becht and Roell, 1999; Claessens et al., 2000; Faccio and Lang, 2002; Barontini and Caprio, 2006; Villalonga and Amit, 2006; Caprio et al., 2007; Barry et al., 2011; Becht et al., 2011; Erkens et al., 2012). Although bank ownership is very concentrated and less likely have institutional ownership in Continental Europe compared to US banks, bank ownership is dominated by large blockholders worldwide (Becht and Roell, 1999 and Erkens et al., 2012).

Two research streams are reviewed in this section. The first stream of research is on ownership structure and performance in continental Europe (Renneboog et al., 2003; Kirchmaier and Grant, 2005; Thomsen, 2005). The second research stream is on ownership structure change in CEE region firms during the transition period and the influence of this ownership structure change on performance (Grosfeld and Tressel, 2001; Pajuste, 2002; Aluchna, 2006; Balsmeiera and Czarnitzki, 2017). Kirchmaier and Grant, (2005) reported ownership structures in Europe are not consistent with shareholder value maximisation and showed that dominant shareholders have a negative impact on long-term share price performance. They also state concentrated ownership of firms and the governance of these firms is a public policy concern. In a recent study, it is showed that the effect of large shareholders in banks has a negative influence on bank risk-taking and stability, which is accelerated by the weak legal and regulatory environment (Saghi-Zedek and Tarazi, 2015).

Some studies (e.g., Caprio et al., 2007; Laeven and Levine, 2009 and Shehzad et al., 2010) demonstrate that a strong legal and regulatory environment could moderate the negative influence of large shareholders in banks. Findings of this thesis are consistent with this viewpoint and demonstrate that the bank ownership structure in EU member banks is highly concentrated. As an effective regulatory and legal environment for bank performance in the presence of large shareholding is stated in previous studies, this thesis recommends EU

policymakers to develop and maintain a better legal environment in member and candidate nations.

The ownership variables comprised data collected manually from annual reports, financial statements and corporate governance reports of sample banks. Similar to Allen et al., (2011), this chapter also reports that foreign ownership is the dominant ownership type in sample banks. To measure ownership concentration, the Herfindahl-Hirschman Index (HHI) was employed which gives ownership concentration as the total of squares of the ownership percentages of each owner. The relationship between ownership concentration and bank performance and bank risk has been repeatedly studied (e.g., Grosfeld and Tressel, 2001; Aluchna, 2006; De Nicolo et al., 2006; Iannotta et al., 2007; Cespedes et al., 2009; Haw et al., 2010) and the results of bank ownership concentration on performance and risk were mixed. Recent trends indicate the highly concentrated ownership decreases the performance and risk in banks especially in countries with weak legal and regulatory environments. Although chapter six does not examine the relationship between ownership and performance and risk of banks, the results on bank ownership structure and concentration are consistent with past empirical studies.

Foreign ownership of banks (domestic ownership) has been dramatically increasing (decreasing) in all over the CEE and South-Eastern Europe (SEE) regions (all sample nations in this study located in these two regions) since the beginning of 1990s and over the years of EU accession and membership process which covers 1995-2013. The findings of chapter six support this phenomenon that nearly 67% of shares of all sample banks held by foreigners. After excluding candidate nations banks this amount increases to 72% for member nations sample banks. This phenomenon has not only been observed in the CEE and SEE regions banks but also observed in many other developing nations following the overall policy changes made by those nations that facilitating and motivating the entry of foreigners to domestic markets started to increase (Barisitz, 2005 and Bonin et al., 2015).

Chapter six of this thesis considers this radical change and aims to distinguish the EU accession and membership periods from transition periods and investigate whether the ownership of banks has been changed during this political process of accession and membership periods. As the estimations in chapter six do not include the relationship between ownership and performance and risk of banks, it is believed that the literature review on the relationship

between ownership of banks, bank performance and bank risk should be presented to contribute the overall structure of the thesis as the two empirical chapters of the thesis examined the relationship between corporate governance structure and bank performance (chapter four) and risk management structure, corporate governance structure and bank risk taking that could influence ownership structure of banks. Most of the sample nations examined in this thesis have small economies that their banking system is the most vital part of their economies and the foreign-owned banks in almost all sample nations are the dominant players in the market. This makes the performance and stability of the foreign-owned banks very crucial for the economic growth and stability of the nations.

Many recent empirical studies have examined the influence of ownership on bank performance and on the whole economy of the CEE nations especially following the financial crisis 2007/2008 and the Eurozone crisis (e.g., Cull & Peria, 2013; Bonin et al., 2015; Andries and Brown, 2017 and Bonin and Louie, 2017). For instance Cull and Peria (2013) by using a sample of banks from Eastern Europe and Latin America for the period before and during the financial crisis in 2007/2008, investigated the influence of ownership of banks on credit growth (estimated as the rise of total gross loans and the increase in corporate, consumer, and residential mortgage loans). They presented that there were significant differences between foreign-owned, state-owned and domestic privately owned banks based on the credit growth before and over the crisis period. Both foreign and domestic owned banks decreased the amount of the credit supply yet the degree of reduction was more for foreign banks than domestic private banks during the crisis. Their findings showed that this reduction observed more in firm loans which could negatively affect economic activity of, especially SMEs. Interestingly state-owned ones also behaved in a similar direction with the other two types of banks. It is also observed from the findings that there was an increase in credit supply pre-crisis period by foreign-owned banks in CEE regions. Overall, all the results for CEE banks conflicting to results for the Latin American banks.

Bonin and Louie (2015) likewise aforementioned study, examined the effect of bank ownership on banks' real loan growth before and during the financial crisis, by only considering foreign-owned banks. They used a sample of 194 foreign-owned commercial banks from eight EU member states (Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Slovakia, and Slovenia) over the period 2004-2010. They creatively divided foreign banks into two groups; first one consists of banks the subsidiaries of 6 big European bank conglomerates and the

second group all other foreign banks. The findings display that banks in these two groups acted differently in terms of lending loans whilst they were affected badly. The banks owned by big 6 groups acted similarly as domestic banks and continued to lending loans. Similar to findings of study by Cull and Peria (2013), the foreign banks in the second group were eager to contribute the lending loans pre-crisis credit boom period yet during the crisis years, they responded instantly and changed their strategies on lending.

Andries and Brown (2017) also studied on bank credit growth and loss but considered the relationship between bank corporate governance and risk management structures and bank credit growth and loss pre-crisis and during the crisis in 2007/2008. Using a dataset contains only CEE region banks, this study showed that a solid risk management structure moderated the credit growth prior to the crisis but did not moderate the credit losses during the crisis. One finding of the study reported that the presence of more foreign directors on bank board decelerate speed of credit growth before the crisis and within the crisis years decreased the number of credit losses. An inference could be made based on the result of chapter four of this thesis that in sample banks the percentage of foreign directors were highly correlated to foreign ownership (not reported) which could be a signal that of foreign owners were more likely appointed their executive managers from home to the board of sample banks. Thus based on this information, the finding of study by Cull and Peria (2013) is dissimilar to the finding of the study of Andries and Brown (2017).

Turning back to studies (e.g., Bonin et al., 2005a; Iannotta et al., 2007 and Naaborg and Lensink, 2008) that focused on the relationship between bank ownership structure and bank performance and risk study by Naaborg and Lensink (2008) examined the relationship between foreign ownership of banks and performance. Focusing on a sample of 216 banks from transition economies (CEE and Central Asia countries) they found that foreign-owned banks showed bad performance based on NIM and profit before tax during the sample year. The relationship between foreign ownership and overhead costs was also negative. The results consisted when using dummy variable for ownership. Although overhead costs are negatively related to foreign bank ownership as well. They explained these results by home-field advantage for domestic banks. Iannotta et al., (2007) also examined the impact of different ownership types on performance and risk of European banks. They employed a dataset consisted of 181 large banks operated in 15 European countries in the years from 1999 to 2004. By considering ownership concentration, profitability (ratio of operating profit to total earning

assets), cost efficiency (ratio of operating costs to total earning assets) and risk (Z-score and ratio of loan loss provision), they reported that the profitability of mutual banks and state-owned banks were worse than private-owned banks, although they had lower costs in the same time. The findings also showed that the loan quality of public banks was worse with lower Z-score (higher risk) than other types of banks. On the other hand, both private and public banks had worse loan quality and higher risk than mutual banks. The last finding of this study showed that whilst ownership concentration had no significant impact on profitability of bank, there was a positive relationship between ownership concentration and loan quality and Z-score and a negative relationship between asset risks.

Likewise, Bonin et al., (2005a) using a sample of 225 banks from 11 transition nations over the period 1996-2000, examined the relationship between ownership, especially strategic foreign ownership, and bank profit and cost efficiency by considering both time and country effects directly. As a second step, they also used ROA for examining the impact of ownership types. They found that privatisation of a state-owned bank did not improve the efficiency of these banks as they were not as much efficient as private local banks. The findings, however, proved that cost efficiency was higher for foreign banks compared to other type ownership and upon having strategic foreign ownership those banks could provide superior services comparatively. By using similar analysis (stochastic frontier analysis) for a dataset of 226 banks located in 12 European nations, Moreno et al., (2012) examined the influence of bank ownership on banking efficiency for the period from 2000 to 2008. The findings are inconsistent with aforementioned studies which reported that there was no significant change in efficiency between different types of private ownership. They also found no significant results proved that foreign banks are more efficient as mostly documented in previous empirical studies.

Contrariwise to findings of the studies above and previous literature Lensink et al., (2008) found that that the relationship between foreign ownership and bank efficiency was negative. They also used the same analysis method (stochastic frontier analysis) to examine this relationship by using a sample of 2095 commercial banks from all over the world for the years 1998 to 2003. Different than the bank efficiency studies above they also considered the quality of institutions of countries that sample banks operated in and additionally the institutional differences between host and home nations. That negative relationship between foreign ownership and bank efficiency was not too much observable in countries with high quality of

governance. Another significant result is that the negative impact of foreign ownership on bank efficiency become lesser if the quality of the institutions in the home country better and the institutional quality between home and host country at same level.

As it is highlighted in the previous sections the literature on bank ownership and its relationship between performance, efficiency, risk, corporate governance and risk management occupies a large body in finance literature. This section reviews the literature mostly on ownership in European but specifically CEE and SEE countries banks. A large number of previous studies investigated the change of ownership of the banks theoretically and empirically before EU accession and membership periods mostly for transition period of these nations. The chapter six of this thesis, on the other hand, make an original contribution to this literature by focusing on a period of a political and institutional transformation that have been experienced by the sample nations and testing the change of ownership of sample banks under the influence of this transformation.

### **3.6 Conclusion**

This chapter presents the research methodology of the thesis. The first section introduces the chapter. Variable definitions, sample construction, and the data collection process are presented in section 3.2. The third section highlights the research questions and hypotheses of the empirical chapters. Section 3.4 discusses the model specifications and estimations methods that are used in the empirical chapters of the thesis. Section five presents prior research on bank corporate governance, bank performance, bank risk, and risk management and bank ownership. This section summarises the chapter.

One of the contributions of this thesis is its original hand-collected datasets of three empirical chapters. The databases listed above do not provide sufficient information on risk management, corporate governance and ownership structures of banks in developing European nations. The data for corporate governance, risk management and ownership of sample banks were manually collected from relevant documents provided by the banks. The data on performance and risk measures were obtained from Bankscope with a significant number of data was calculated from



financial statements. Therefore, the variable selection process is formed by information provided by banks and the financial authorities of sample nations. As much information was collected as possible for each sample bank. The information for variables and sample size of each chapter is given in tables 4.1, 5.1 and 6.1.

The third section of the chapter provides the research questions and hypotheses of the thesis. In the light of institutional theory and political context of the accession process and membership of the EU, it is hypothesised that this political process of joining the EU and its institutions has influenced the bank performance, corporate governance structure, risk management practices of bank, and bank stability and bank ownership structure.

In order to answer these questions and test the hypotheses, appropriate empirical methods and models are needed. Section four explains estimation methods and model specification used in chapters four, five and six. By considering past empirical studies, methods and models were specified. The datasets are unbalanced panel datasets, and for multivariate analysis, panel data regression models were employed. Based on pre-testing, a fixed effects model was specified in chapter four. A random effects model was used in chapter five, and a standard probit model was employed in chapter six. Due to the small size of some sub-samples, Mann-Whitney U tests and T-tests were used for univariate analysis. In addition to these two tests, a  $\chi^2$  test was also used in chapter six to accommodate the categorical variables (risk management variables).

Section five considers the literature review of corporate governance, risk management, and ownership structure studies in nonfinancial firms and prior studies of bank risk management and risk, corporate governance and bank performance and ownership. This section concludes this chapter. The next chapter is the first empirical chapter of this thesis that investigates the influence of the EU political process on bank corporate governance structure and performance and the relationship between corporate governance and performance of banks.

## **Chapter 4. Is the journey more important than the destination? The EU accession and corporate governance and performance of banks**

### **4.1 Introduction**

Has the process of accession to the European Union had a positive influence on the corporate governance of banks in the European Union member and candidate nations? Has this political, economic and legal process of joining the European Union (EU) improved the performance of banks in EU member and candidate nations? While it has been long assumed membership of the EU improves political, economic, institutional, social and educational standards in member nations, these benefits have been increasingly examined. Citizens of EU and candidate nations such as Turkey<sup>8</sup> have long assumed EU membership provides many advantages. This chapter yet investigates the EU influence on corporate governance structure of banks and bank performance. The EU has had an important political agenda to improve corporate governance policy across the EU nations and has taken many initiatives especially beginning of the 2000s. According to the European Commission, the EU's rules in this area as follows (EC, 2017);

- *“To enable businesses to be set up and to carry out operations anywhere in the EU*
- *To provide protection for shareholders and other parties with a particular interest in companies, such as employees and creditors*
- *To make business more efficient, competitive and sustainable in the long term*
- *To encourage businesses based in different EU countries to cooperate with each other.”*

In addition to that Dallas and Pitt-Watson (2016) stated that over the past two decades the EU's policymakers have focused on a strategy of strengthening firm boards, improving company-level disclosure and increasing monitoring of institutional investor. As it is discussed in detail in the first chapter of the study, the EC and other policymakers in the EU produced and published many documents in corporate governance area in response to changes and needs during this two decades. For instance, following the recent financial crisis in 2007/2008, the

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<sup>8</sup> According to the Economic Development Foundation (IKV) in Turkey in 2015, 61.8% of Turkish people supported the country's EU candidacy (<http://www.ikv.org.tr/ikv.asp?id=875>)

number of policy documents<sup>9</sup> that have been published to answer the problems that had seen in financial institutions has been increased. This study however not focus only on the influence of specific policy actions but the influence of whole political process of the EU accession and membership on corporate governance structure and performance of banks as the performance and stability of banking system is a crucial part of the economic performance and stability of the EU economy. It is expected that good corporate governance practices could improve the performance of companies. This chapter overall contribute to the literature from two aspects; first by examining the influence of the EU accession and membership on performance and corporate governance structure of banks and second by using original hand-collected dataset to investigate the effect of corporate governance structure on bank performance. The EU has been expending a huge effort in recent decades to suppress gender imbalance on company boards, to promote diversity among directors and to increase the number of independent directors and to find solutions for the issues related to corporate governance that emerged following the financial crisis in 2007/2008. Considering all these, the originality of the chapter is that it is the first study that considers the EU as a factor that could influence bank corporate governance structure and bank performance.

This empirical analysis is based on a sample from eleven EU member nations and five candidate nations and including control sample of banks from four long-standing EU member nations. It is reported that EU membership has a limited influence on corporate governance structure but negative influence on bank performance and mixed results on the relationship between corporate governance structure and performance of sample banks and the adoption of good corporate governance practices produced by the policymaker organisation of EU (the European Commission, ECB, and European Parliament) results in higher corporate governance standards for candidate nations rather than benefits for new member and long-standing member nations.

Assessing the influence of these significant legal, political and regulatory developments for the corporate governance of banks has wider importance after the 2007/2008 financial crisis. Many

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<sup>9</sup> Some of them are as follows; the corporate governance and remuneration provisions for financial institutions are included in the Capital Requirements Directive IV (Directive 2013/36/EU or CRD IV. A new, tailor-made corporate governance and remuneration regime for investment firms (investment firms Directive and Regulation) put forward by the Commission in December 2017, as the current CRD IV regime was designed mainly for banks and has been found not to take appropriate account of the different business models, remuneration structures and risks posed by investment firms And the EU company law rules also include provisions on corporate governance and transparency for banks and investment firms to curb risks to the financial stability.

studies have reported that the performance of banks is significantly affected by their corporate governance structures (Adams and Mehran, 2008; Cornett et al., 2009; Van Ness et al., 2010; Hagendorff et. al., 2010; Aebi et al., 2011; Erkens et al., 2012; Pathan and Faff, 2013). Reports from international organizations such as the OECD in 2010 (*Corporate Governance and the Financial Crisis: Conclusions and Emerging Good Practices to Enhance Implementation of the Principles*); the Bank for International Settlements (BIS) in 2010 (*Principles For Enhancing Corporate Governance*), the International Finance Corporation (IFC) in 2010 (*Governing Banks, a Supplement to the Corporate Governance Board Leadership Training Resources*) and EC in 2010 (*Driving European Recovery Report, COM/2009/114*) and in 2011 (*the Green Paper on Corporate Governance in Financial Institutions and Remuneration Policies, COM/2010/286*) have concluded that poor corporate governance practices were a contributing factor in the financial crisis.

Better corporate governance has recently seen to be an essential element of financial regulation and supervision in many countries (Dermine, 2013). For example in the UK, the Walker Report (2009) and guidance from the Central Bank of Netherlands, (De Nederlandsche Bank, 2015) have both explicitly place corporate governance central to prudential supervision. While these developments along with other institutional and national regulation have influenced corporate governance practices in new member and candidate nations, the net influence of the EU accession process on bank corporate governance is unclear. Lastly, as political and institutional factors can influence corporate governance practices (North, 1990; Roe, 2003), it is crucial to assess the influence of legal and regulatory requirements on EU banks. This chapter contributes to this literature on corporate governance in banking (de Andres and Vallelado, 2008; Cornett et al., 2009; Guest, 2009; Westman, 2011; Pathan and Faff, 2013; Andries and Brown, 2017) by considering how the EU accession process influences corporate governance and performance of banks in sixteen EU member and candidate nations within the international corporate governance context and by considering institutional theory perspective and political economy of the EU accession and membership.

This chapter is structured as follows. Section 4.2 reviews the process of EU accession and EU corporate governance framework and theoretical background of the chapter. In the research methodology section, the research questions, the data, sample, variables, and the estimation methods and models are introduced. In section 4.4, the results are reported and discussed. Finally, conclusions are drawn in section 4.5.

## 4.2 Theoretical background

### 4.2.1 EU accession process and EU corporate governance framework

How the process of EU accession has influenced bank corporate governance in a new member and candidate countries is considered in numerous academic fields. In this review and for brevity, two main areas were considered in this chapter; the political process of the EU accession, and membership, and bank corporate governance in the EU context.

Although the motivations to create monetary and economic union reach back to the early 1960s, the Maastricht Treaty (1992) is an important milestone influencing economic integration between member nations by liberating the movement of capital within the EU and increasing cross-border mergers and acquisitions. Following the global financial crisis in 2007/2008 and the subsequent Eurozone crisis, weaknesses in the corporate governance of many EU banks motivated EU institutions to enhance bank corporate governance and develop the banking regulatory system. This emergent system rests on three regulatory pillars: *the Single Supervisory Mechanism (SSM)*, *the Single Resolution Mechanism (SRM)* and the, yet to be completed, *European Deposit Insurance Scheme (EDIS)*<sup>10</sup> that will cover all Eurozone countries<sup>11</sup> and influence corporate governance practices across the EU banking industry.

All applications for accession to the EU are subject to an opinion issued by the European Commission and a decision taken by the European Council. Before this approval, the candidate country must fulfil a number of conditions, abide by the accession or the Copenhagen criteria (1993) to fulfil these requirements and improve its economic, social, political and cultural standards to attain membership. These requirements have four main aspects: One, “*political criteria*” to determine the stability of the institutions safeguarding democracy, the rule of law, human rights and respect for and protection of minorities; two, economic criteria to ensure the existence of a viable market economy and the ability to respond to the pressure of competition and market forces within the EU; three, the ability to assume the obligations of a Member State stemming from the law and policies of the EU, which include subscribing to the Union's political, economic and monetary aims; and lastly having created conditions for integration,

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<sup>10</sup> This scheme will cover deposits below a hundred thousand euros of all banks in the Eurozone. The final form of this scheme is still undecided due to disagreements between member states.

<sup>11</sup> Detailed information about Economic and Monetary Union could be found in the Five Presidents' Report: Completing Europe's Economic and Monetary Union published in 2015.

adapting their administrative structures.

The Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia joined the EU in 2004, which were followed by Bulgaria and Romania in 2007. Croatia finally became a member of the Union in 2013. In addition to these new EU members, a number of nations remain as candidate nations including Albania, the Former Yugoslav Republic of Macedonia (hereafter FYROM), Montenegro, Serbia, and Turkey. After the EU accession, member nations will have to apply European Directives providing an opportunity to conduct an analysis of corporate governance in those countries (Andreff, 2006) at different stages of membership and joining the EU. Before the Organization for Economic Cooperation and Development (OECD) Report of 2010, many emerging markets in Europe have already created corporate governance procedures based on the principles of OECD (published in 1999 and revised in 2004). The World Bank reports on corporate governance in transition economies such as Bulgaria (2002), Czech Republic (2002), Latvia (2002), Lithuania (2002), Hungary (2003), Slovakia (2003), Romania (2004), Slovenia (2004), Poland (2005) Croatia (2008) and comparisons of developments among these countries (McGee, 2006) have also been influential in refining corporate governance standards. As these changes have been gradual and lacked clarity, it cannot be said that corporate governance structures have been uniting on a single European model, rather than stylized corporate governance models are developing.

To summarise, the EU accession process has altered the corporate governance practices of banks in EU new member or candidate nations is undoubted. There is a convergence of new and hybrid forms of corporate governance practices in banks at an EU level and within individual nations. This said the potential benefit or utility of these multiple and diverse changes is less than clear for banks in new EU and candidate nations.

### **4.3 Research methodology**

In this section, the methodology is presented. The research questions and hypotheses are initially discussed. The dataset construction and sample selection are then considered. Lastly,

the model used to examine the relationships between EU accession, bank performance, and corporate governance arrangements are presented.

#### *4.3.1 Research questions*

The chapter examines the effects of the EU accession on bank corporate governance and performance and the relationship between corporate governance and bank performance. The research questions are considered to investigate the EU accession impact on corporate governance structure and performance of banks and the relationship between corporate governance structure and performance of banks.

The first question is as follows:

- Does the EU accession process influence corporate governance structure and performance of banks?

Therefore, the differences between the pre-membership and membership periods are contrasted and relevant methods were used to answer this question. As the EU maintains high standards in political, economic, social and educational levels, in order to become a member state, candidate states must fulfill the requirements and improve their economic, social, political and cultural standards for the membership it could be expected improvements in corporate governance practices in the accession process and during membership period as well.

The second question is as follows:

- What is the influence of selected corporate governance variables on bank performance?

To investigate the relationship between the bank corporate governance and bank performance the relevant analyses were used. These questions are examined through comparison of banks from nations with different relationships with the EU. Initially, a sample was created including banks from candidate nations, in the process of accession to the EU and the nations that have successfully joined the EU in the sample period and this sample were used in analyses. Then the long-term members of the EU joining the EU before 2004 that not following the same

accession process traversed by the new member and candidate nations was included in this sample and used in the analyses. The results are mixed and discussed in detail in the appropriate section of this chapter and chapter three.

#### *4.3.2 Data, sample, and variables*

The dataset covers banks operating in EU member and candidate countries. These nations include four long-established EU member states (France Germany, Greece, and Spain), the first group of member nations are eight nations entering the EU in 2004, the second group of member is two nations entering the EU in 2007 and Croatia which entered the EU in 2013 and five candidate nations still to join the EU (Albania, FYROM, Montenegro, Serbia, and Turkey). A long period was chosen to enable sample nations candidacy and participation in the EU to be examined.

Several economic and financial databases such as the IMF, the World Bank, the Emerging Markets Monitor, the European Bank for Reconstruction and Development (hereafter EBRD), FTSE, S&P, and SNL Financials were also investigated to obtain relevant information on control variables for each nation. Nations were divided into three different groups according to their locations (Southern, Eastern, and Northern Europe and Turkey) and their income level (upper-middle and high income) using the World Bank classification. Further information about the sample nations and sample groups are provided in Table 4.1.



**TABLE 4.1**  
**Sample Size and Characteristics of Candidate and Member Nations**

	Region	Legal Origin	Number of Banks	Number of Sample Banks	Number of bank-year observations
<i>Panel A. Control Group EU Members (Developed Countries)</i>					
France	Western Europe	French	229	16	121
Germany	Western Europe	German	1572	16	159
Greece	Southern Europe	German	9	7	86
Spain	Western Europe	French	149	13	95
<i>Panel B. EU Member since 2004 (All High Income Level Countries)</i>					
Czech Republic	Eastern Europe	German	20	9	115
Estonia	Northern Europe	German	10	10	108
Hungary	Eastern Europe	German	16	9	110
Latvia	Northern Europe	German	17	10	112
Lithuania	Northern Europe	French	8	7	66
Poland	Eastern Europe	German	33	13	130
Slovak Republic	Eastern Europe	German	14	10	110
Slovenia	Southern Europe	German	19	9	97
<i>Panel C. EU Member since 2007 (All Upper-Middle Income Level Countries)</i>					
Bulgaria	Eastern Europe	German	17	9	120
Romania	Eastern Europe	French	14	6	61
<i>Panel D. EU Member since 2013 (High Income Level Country)</i>					
Croatia	Southern Europe	German	18	7	78
<i>Panel E. Candidates (All Upper-Middle Income Level Countries)</i>					
Albania	Southern Europe	French	10	6	47
FYROM	Southern Europe	French	13	8	70
Montenegro	Southern Europe	French	11	8	56
Serbia	Southern Europe	French	20	8	65
Turkey	Eastern Europe	French	42	30	309

Source: World Bank, United Nations and La Porta et al., (2008)

#### 4.3.2.1 Variable descriptions

The variable definitions are provided in Table 4.2. Board specific variables such as board independence, the board size, diversity, CEO duality, one-tier/two-tier board structure were used to characterise corporate governance practice three common performance variables; Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM).

**TABLE 4.2**  
**Variable Definitions and National Board Type**

Variables		Definitions			
Panel A: Variable Definitions	European Union Indicator				
	EU Membership (EUDummy)	Dummy variable equals 1 for membership period and 0 otherwise			
	Corporate Governance Variables (Hand-collected data)				
	Board Size (BSize)	The number of directors on supervisory board (Natural logarithm of board size)			
	Board Independence (Blnd)	The percentage of independent outside directors on the supervisory board.			
	Gender Diversity (Female)	The percentage of directors who are female			
	Nationality Diversity (BForeigner)	The percentage of directors who are foreigners			
	Board Structure (Tier)	Dummy variable equals 1 if the dual board exists and 0 otherwise			
	CEO/Chairman Duality (CEODual)	Dummy variable equals 1 whether the CEO is also the chairman of the board and 0 otherwise			
	Foreign Ownership	Dummy variable equals 1 if the 50% of shares of a bank were foreign-owned and 0 otherwise			
	Performance Variables	(Source: Bankscope, Authors’ own calculations)			
	Return on Assets (ROA)	Net income divided by average total assets			
	Return on Equity (ROE)	Net income divided by average shareholders’ equity			
	Net Interest Margin (NIM)	Net interest revenue divided by total earning assets			
	Bank-Level Variables	(Source: Bankscope, Authors’ own calculations)			
	Asset Quality Ratio	Loan loss reserve divided by gross loans			
	Capital Ratio	Equity divided by total assets			
	Operation Ratio	Cost to income ratio			
	Liquidity Ratio	Liquid assets divided by deposits and short-term funding			
	Bank Size	Natural logarithm of total assets			
	Country-Level Variables	(Source: The World Bank, The IMF, The Heritage Foundation and Kaufmann et al., 2010)			
	GDP Per capita Growth	The annual percentage growth rate of GDP per capita based on constant 2010 U.S. dollars			
	World Governance Indicators (WGI)	The WGI is a research dataset summarizing the views on the quality of governance based on several surveys’ responses. The dimensions of the dataset are as follows: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption. (2000-2015)			
	Index of Economic Freedom (The Heritage Foundation)	Measures economic freedom based on 12 quantitative and qualitative indicators, group into four broad categories of economic freedom: Rule of Law, Government Size, Regulatory Efficiency, Open Markets. (2000-2015)			
	Financial Crisis Dummy	Dummy variable equals 1 for the year global financial crisis and Eurozone crisis present which was the period 2008-2012			
Panel B: National Board Type	Board Type (Source: EU Commission and EBRD)				
	Dual Board				
	Croatia	Slovak Republic	Latvia	Estonia	Poland
	Czech Republic	Slovenia	Serbia	FYROM	Germany
	Dual (Hybrid)				
	Hungary	Albania			
	Dual/Unitary (Optional)				
	Bulgaria	France	Romania	Lithuania	
	Unitary				
	Montenegro	Spain	Turkey	Greece	

*EU Membership:* A dummy variable equals 1 for membership and 0 otherwise were used as an EU indicator following Bekaert et al.'s (2013).

*Board Size:* The number of directors that sit on bank supervisory board was used as the first board level variable. Board size is widely used in corporate governance literature (e.g., Yermack, 1996; Guest, 2009 and Pathan and Faff, 2013).

*Board Independence:* The percentage of independent outside directors on the supervisory board is used as the second board characteristics which are commonly used in previous corporate governance papers (e.g., Mishra & Nielsen, 2000; Erkens et al., 2012 and Pathan and Faff, 2013).

*Gender Diversity:* The percentage of female directors on the board is used for gender diversity which is mostly used in board diversity literature (e.g., Fields and Keys, 2003; Adams and Ferreira, 2009 and Garcia-Meca et al., 2015).

*Nationality Diversity:* The number of foreigners divided by the number of all directors on board is used that is generally used in corporate governance literature (e.g., Oxelheim and Randoy 2003; Ruigrok et al., 2007 and Masulis et al., 2012).

*Board Type:* A dummy variable equals 1 if a bank has a two-tier board and 0 if a bank has a one-tier board. This variable used on literature to discuss the effectiveness and functionality of one-tier and two-tier boards (e.g., Junngmann, 2006 and Alas and Elenurm, 2014).

*CEO/Chairman Duality:* A dummy variable equals 1 that is used if the CEO is also the chairman of the board and 0 otherwise. The CEO duality is mostly used in the literature as a proxy for CEO power (e.g., Acrey et al., 2011; King et al., 2011 and Liang et al., 2013).

*Foreign Ownership:* A dummy variable equals 1 if 50% of shares of a bank were foreign-owned and 0 otherwise. Foreign ownership is one of the most employed variables in ownership and corporate governance studies (e.g., Chibber & Majumdar, 1999; Allen et al., 2011; Li et al., 2011; Claessens and Van Horen, 2014).

*Return on Assets (ROA):* ROA is the first dependent performance variable of this chapter that is measured by net income divided by average total assets. ROA is broadly used as a performance variable in previous studies (e.g., Crespi et al., 2004; Carter et al., 2010; Ferreira et al., 2010 and Westman, 2011).

*Return on Equity (ROE):* ROE is the second dependent performance variable that is measured by net income divided by average shareholder's equity. ROE is also commonly used as a performance variable in the literature (e.g., Bonn, 2004; Westman, 2011; Battaglia et al., 2014; Low et al., 2015).

*Net Interest Margin (NIM)*: NIM is the third dependent performance variable that is measured by net interest revenue divided by total earning assets. NIM has also used a proxy for performance in the literature (e.g., Memmel and Schertler, 2011; Marinkovic and Radovic, 2014 and Egly et al., 2018).

*Size*: Size is measured by natural logarithm of total asset of bank which is the first bank control variable of this chapter is widely used in the literature (e.g., Yermack 1996; Pathan 2009; Peni and Vähämaa, 2012; Cheung et al., 2014; Battaglia et al., 2014 and Saghi-Zedek and Tarazi, 2015).

*Loan Provision*: As a second bank-level control variable loan provision is measured by loan loss reserve divided by gross loans which gives information on bank's asset quality (e.g., Kwan and Eisenbeis, 1997; Barth et al., 2001; Westman, 2011).

*Capital Ratio*: Another bank-level control variable is capital ratio is measured by equity divided by total assets to control for the bank's capital structure. This ratio is widely used in banking studies (e.g., Iannotta et al., 2007; Altunbas et al., 2010; Saghi-Zedek and Tarazi, 2015 and Detragiache et al., 2018).

*Operation Ratio*: Cost-to-income ratio which is measured by the cost to income ratio is used to control for managerial quality (e.g., Shehzad et al., 2010; Barry et al., 2011 and Chiaramonte et al., 2015).

*Liquidity Ratio*: As another bank-level control variable liquidity ratio is measured by liquid assets divided by deposits and short-term funding (e.g., Iannotta et al., 2007; Altunbas et al., 2010 and Chen and Wu, 2014).

*GDP Percapita Growth*: As the first country-level control variable GDP per capita growth measured as an annual percentage growth rate of GDP per capita based on constant 2010 U.S. dollars (e.g., Andersson, 2016).

*World Governance Indicators (WGI)*: The WGI is the second country-level control variable is a research dataset (2000-2015) summarizing the views on the quality of governance based on several surveys' responses. The governance quality of a nation could influence the corporate governance quality of banks hence the WGI and Index of Economic Freedom were used as country-level variables The dimensions of the dataset are as follows: Voice and Accountability,

Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption (e.g., Kaufmann et al., 2010).

*Index of Economic Freedom (The Heritage Foundation)*: As another country control variable this index measures economic freedom (2000-2015) based on 12 quantitative and qualitative indicators, group into four broad categories of economic freedom: Rule of Law, Government Size, Regulatory Efficiency, Open Markets (e.g., De Haan and Sturm, 2000).

#### *4.3.3 Estimation methods and models*

For the descriptive assessment, the most appropriate method of testing was determined following the results of normality tests, with T-tests and Mann-Whitney U tests employed. The relationship between corporate governance and performance is examined using an unbalanced panel data regression model. Financial ratios (ROA, ROE, and NIM) were used to assess the performance of banks and a dummy variable (EU Dummy) was employed to distinguish the influence of EU accession.

Pre-testing was undertaken to determine an appropriate estimation model,  $R^2$  and F tests were employed as diagnostic statistics. Hausman and Breusch-Pagan Lagrange Multiplier tests were employed, and the Hausman test results indicated the fixed effects model as the more appropriate model to use as the alternative to random effects model. The RE model assumes that the variation across individuals is unspecific and uncorrelated with the variables and the random and fixed effects estimates are mainly different from each other based on if the individual effects are correlated with the independent variables rather than if the effects are stochastic or not (Baltagi, 2005). Wooldridge (2002, p. 265-291) proposed panel fixed effects (FE) model in the presence of unobserved fixed-effect, which unobserved bank fixed effects are case for this study. Hausman and Taylor (1981) also argued that the fixed-effects model denotes a general, unbiased technique of controlling for omitted variables in a panel data set. Each individual has its own individual effects and FE model assume that individual-specific effects can influence the independent variable(s). Thus, fixed effects should be controlled for and eliminate the impact of time-invariant characteristics in order to help to assess the net effect of the independent variable(s) on the dependent variable(s) (Wooldridge, 2002, p. 265-291).

A fixed-effects panel model could be used to obtain reliable parameter estimates robust to unobservable heterogeneity when the unobservable characteristics are constant over time for an individual entity (Petersen, 2009). So after considering all these discussions and also considering the Hausman test result that suggested FE model, the FE models were estimated by using bank fixed effects estimators including country and year dummies and also obtaining bank-clustered robust standard errors (White). This method also used in many finance studies for similar reasons (e.g., Yermack, 1996; Himmelberg et al., 1999; Zhang et al., 2014 and Carvalhal and Almeida, 2014 and Arnaboldi et al., 2018).

The base model equation (1) is as follows and  $D$  denotes dummy variables,  $C$  control variables,  $u$  denotes the fixed effect of bank  $i$  and  $\varepsilon$  denotes the remaining disturbance term.

$$y_{it} = \beta X_{it} + D_{it}\alpha + C_{it} + u_i + \varepsilon_{i,y} \quad (1)$$

The following main model (2) were employed for each performance variables as dependent variables and selected corporate governance, bank level and country level variables as explanatory variables,  $\mu$  denotes the fixed effect of bank  $i$  and  $e$  denotes the remaining disturbance term. The results of the models are given in Table 4.6A and Table 4.6B.

$$\begin{aligned} PERFORMANCE_{it} = & \beta_0 + \beta_1 X_{i,t}(EU\ MEMBERSHIP) + \beta_2 X_{i,t}(BOARD\ SIZE) + \\ & \beta_3 X_{i,t}(BOARD\ INDEPENDENCE) + \beta_4 X_{i,t}(FEMALE\ DIRECTORS) + \beta_5 X_{i,t}(FOREIGN\ DIRECTORS) + \\ & \beta_6 X_{i,t}(BOARD\ TIER) + \beta_7 X_{i,t}(CEO\ DUALITY) + \beta_8 X_{i,t}(BANK\ TOTAL\ ASSET) + \\ & \beta_9 X_{i,t}(LOAN\ LOSS\ PROVISION) + \beta_{10} X_{i,t}(LIQUIDITY) + \beta_{11} X_{i,t}(CAPITAL) + \beta_{12} X_{i,t}(OPERATION) + \\ & \beta_{13} X_{i,t}(GDP\ PERCAPITA\ GROWTH) + \beta_{14} X_{i,t}(WORLD\ GOVERNANCE\ INDICATORS) + \\ & \beta_{15} X_{i,t}(INDEX\ OF\ ECONOMIC\ FREEDOM) + YEARDUMMIES_{i,y} + u_i + \varepsilon_{i,y} \end{aligned} \quad (2)$$

Further analyses were also conducted to provide more discussion on the influence of EU accession and membership on corporate governance structure and performance of banks. The

first supplementary analysis considers corporate governance variables which are board size, board independence, female directors and foreign directors are used interchangeably as dependent variables and employs panel data regression model separately to investigate the effect of EU membership on these variables. Taking account of the Hausman test results, similar to the main model (2) above, a fixed effect regression model was employed. The results of the models are given in Table 4.7. The model equation (3) for each variable is as follows:

$$\begin{aligned}
CORPORATE\ GOVERNANCE_{it} = & \beta_0 + \beta_1 X_{i,t}(EU\ MEMBERSHIP) + \beta_2 X_{i,t}(BOARD\ SIZE) + \\
& \beta_3 X_{i,t}(BOARD\ INDEPENDENCE) + \beta_4 X_{i,t}(FEMALE\ DIRECTORS) + \beta_5 X_{i,t}(FOREIGN\ DIRECTORS) + \\
& \beta_6 X_{i,t}(BOARD\ TIER) + \beta_7 X_{i,t}(CEO\ DUALITY) + \beta_8 X_{i,t}(BANK\ TOTAL\ ASSET) + \\
& \beta_9 X_{i,t}(LOAN\ LOSS\ PROVISION) + \beta_{10} X_{i,t}(LIQUIDITY) + \beta_{11} X_{i,t}(CAPITAL) + \beta_{12} X_{i,t}(OPERATION) + \\
& \beta_{13} X_{i,t}(ROA) + \beta_{14} X_{i,t}(GDP\ PERCAPITA\ GROWTH) + \beta_{15} X_{i,t}(WORLD\ GOVERNANCE\ INDICATORS) + \\
& \beta_{16} X_{i,t}(INDEX\ OF\ ECONOMIC\ FREEDOM) + YEARDUMMIES_{i,y} + u_i + \varepsilon_{i,y}
\end{aligned} \tag{3}$$

Further analysis was conducted to assess the impact of the EU accession and membership by dividing the sample into two as before and after the EU accession. The results of the models are given in Table 4.8A and Table 4.8B. The model equation (4) is as follows:

$$\begin{aligned}
PERFORMANCE_{it} = & \beta_0 + \beta_1 X_{i,t}(BOARD\ SIZE) + \beta_2 X_{i,t}(BOARD\ INDEPENDENCE) + \\
& \beta_3 X_{i,t}(FEMALE\ DIRECTORS) + \beta_4 X_{i,t}(FOREIGN\ DIRECTORS) + \beta_5 X_{i,t}(BOARD\ TIER) + \\
& \beta_6 X_{i,t}(CEO\ DUALITY) + \beta_7 X_{i,t}(BANK\ TOTAL\ ASSET) + \beta_8 X_{i,t}(LOAN\ LOSS\ PROVISION) + \\
& \beta_9 X_{i,t}(LIQUIDITY) + \beta_{10} X_{i,t}(CAPITAL) + \beta_{11} X_{i,t}(OPERATION) + \beta_{12} X_{i,t}(GDP\ PERCAPITA\ GROWTH) + \\
& \beta_{13} X_{i,t}(WORLD\ GOVERNANCE\ INDICATORS) + \beta_{14} X_{i,t}(INDEX\ OF\ ECONOMIC\ FREEDOM) + \\
& YEARDUMMIES_{i,y} + u_i + \varepsilon_{i,y}
\end{aligned} \tag{4}$$

The last additional analysis was employed to see the impact of the EU accession and membership. The interaction terms created by using EU dummy and board size, board

independence, gender diversity, and nationality diversity respectively and interchangeably in base model (model 1). The results of the models are given in Table 4.9A and Table 4.9B. The last model equation (5) is as follows:

$$\begin{aligned}
PERFORMANCE_{it} = & \beta_0 + \beta_1 X_{i,t}(EU\ MEMBERSHIP) + \beta_2 X_{i,t}(BOARD\ SIZE) + \\
& \beta_3 X_{i,t}(BOARD\ SIZE*EU\ MEMBERSHIP) + \beta_4 X_{i,t}(BOARD\ INDEPENDENCE) + \\
& \beta_5 X_{i,t}(BOARD\ INDEPENDENCE*EU\ MEMBERSHIP) + \beta_6 X_{i,t}(FEMALE\ DIRECTORS) + \\
& \beta_7 X_{i,t}(FEMALE\ DIRECTORS*EU\ MEMBERSHIP) + \beta_8 X_{i,t}(FOREIGN\ DIRECTORS) + \\
& \beta_9 X_{i,t}(FOREIGN\ DIRECTORS*EU\ MEMBERSHIP) + \beta_{10} X_{i,t}(BOARD\ TIER) + \beta_{11} X_{i,t}(CEO\ DUALITY) + \\
& \beta_{12} X_{i,t}(BANK\ TOTAL\ ASSET) + \beta_{13} X_{i,t}(LOAN\ LOSS\ PROVISION) + \beta_{14} X_{i,t}(LIQUIDITY) + \\
& \beta_{15} X_{i,t}(CAPITAL) + \beta_{16} X_{i,t}(OPERATION) + \beta_{17} X_{i,t}(GDP\ PERCAPITA\ GROWTH) + \\
& \beta_{18} X_{i,t}(WORLD\ GOVERNANCE\ INDICATORS) + \beta_{19} X_{i,t}(INDEX\ OF\ ECONOMIC\ FREEDOM) + \\
& YEARDUMMIES_{i,y} + u_i + \varepsilon_{i,y}
\end{aligned} \tag{5}$$

To deal with extreme values issue all bank level variables (ROA, ROE, NIM, loan loss provision, liquidity, capital, operation, and total asset) were winsorised at 1% and 5% levels.

The next section presents the univariate analysis results in subsection 4.4.1, the regression analysis results in subsection 4.4.2 and the additional analysis results in subsection 4.4.3.

## 4.4 Results

### 4.4.1 Univariate analysis results and descriptive statistics

The descriptive statistics for all sample banks are provided in Table 4.3; descriptive statistics and tests results for the member nations banks based on candidacy and membership periods are reported in Table 4.4, and lastly, the descriptive statistics and tests results for the member and candidate banks are given in Table 4.5. From Table 4.3, for the full sample, the mean board



size was 7.54 with a minimum of three and a maximum of nineteen members. This finding is in line with the study of Cigna et al., (2014) for banks in transition nations which they stated that majority of banks in those nations have less than ten directors in the board (they used the results of the EBRD's survey on transition nations' banks). This finding is also similar to the study of Andries and Brown (2017) on CEE region banks. Following Aebi et al., (2012), a board member was recorded as independent if he/she does not have any relationship with the bank except for a board seat. Since foreign ownership was quite high and, potentially, because it was widespread for these banking groups to appoint their executives and managers as the supervisory board directors of their subsidiaries, board independence (the percentage of independent directors) was quite low (15%). This result is in line with the previous empirical studies (e.g., Andries and Brown, 2017 and Arnaboldi et al., 2018). Also, the share of foreign board members on sample banks was 52%, a percentage related to the proportion of foreign ownership of banks. This result is similar to the previous empirical studies (e.g., Andries and Brown, 2017). Lastly, the percentage of female on supervisory boards was low with the average share of female directors on boards just 13%. Many prior empirical studies displayed the low level of the percentage of female directors and this result is in line with those studies (e.g., Liang et al., 2013; Pathan and Faff, 2013 and Garcia-Meca et al., 2015).

**TABLE 4.3**  
**Descriptive Statistics of Performance and Corporate Governance Characteristics of Banks in Candidate and Member Nations**

<i>Panel A. Continuous variables</i>	Total Observations	Mean	Median	Std. Dev.
<b>A. Governance Variables</b>				
Female director	1654	0.13	0.11	0.14
Board independence	1654	0.15	0.11	0.18
Foreign director	1654	0.52	0.57	0.35
Board Size	1654	7.54	7.00	2.63
<b>B. Performance Variables</b>				
ROA	1654	1.09	1.20	1.87
ROE	1654	9.07	11.30	20.01
NIM	1654	4.18	3.77	2.54
<i>Panel B. Dummy variables</i>		Number of observations = 1	Percentage	
CEO Duality	1654	28	1.70%	
Tier 1	1654	1196	72.31%	
Foreign 1	1654	1139	68.86%	

The number of banks with a dual board structure was high (72.31%) and recorded for 111 banks with 1196 bank-year observations whereas 48 banks with 458 bank-year observations had a unitary board. This structure affects CEO/chairman duality whereby the management board and supervisory board is separate bodies CEO/chairman duality exists for only ten banks with 28 bank-year observations. Further, bank-year observations in the sample for foreign banks are 1139 from 103 banks. Lastly, the mean ROA was 1.09%, ROE was 9.07%, and NIM was 4.18% for the entire sample over the sample period. This results are consistent with previous empirical studies (e.g., Staikouras et al., 2007; Pathan and Faff, 2013; Garcia-Meca et al., 2015; Bonin et al., 2015 and Arnaboldi et al., 2018).

Descriptive statistics were used to indicate the differences in mean values for the different groups of nations. To determine the most appropriate method of testing, the normality results were assessed and T-tests and Mann-Whitney U tests employed. From Table 4.4, panel A, for the banks in the eight nations which joined the EU in 2004, the mean board size was eight members in pre-accession period (2000-2003), whereas for the period (2004-2015) was decreased to 7.57 members. Board independence was 16% for the post-accession period, yet for the period 2000-2003, this value was 19%. The mean percentage of female board members was 12% for the first period and 15% for the second period and the proportion of foreign directors increased from 47% to 54% following the accession to the EU. The mean ROA declined after joining the EU in 2004 from 1.20 to 0.70, mean ROE decreased from 13.10 to 6.00, and lastly, mean NIM dropped from 3.64 to 3.07. These differences in pre- and post-accession periods are seen to be significant between periods.

The results in panel B are for sample banks from Bulgaria and Romania that joined the EU in 2007. The descriptive statistics and tests show that for the pre-accession period (2000-2006), mean board size was 6.23 members and for the post-accession period (2007-2015), this rose to 6.52 members. Board independence was very small for both periods (9.2% and 8% respectively), and the share of females on boards fell from 12% in the period 2000-2006 to 9.2% in the period 2007-2015. Distinctly, the proportion of foreign directors were similar before (61%) and after accession (62%). The means of ROA, ROE and NIM were 2.21, 18.85 and 6.68 for the pre-EU period and 1.15, 10.31 and 4.65 in the post-EU period, respectively. Unlike ROA, ROE, and NIM where significant falls were recorded, there were no significant differences in selected corporate governance results between the post and pre-periods.

TABLE 4.4

**Descriptive Statistics and Univariate Comparison of Corporate Governance  
Characteristics and Performance of New Member Nations**

Panel A. Banks in the EU countries which became members in 2004								
Number Observations	2000-2003			2004-2015			T-test	Mann-Whitney
	157 observations			691 observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
A. Governance Variables								
Female director	0.12	0.11	0.12	0.15	0.13	0.16	-2.362**	-1.808*
Board independence	0.19	0.20	0.18	0.16	0.08	0.21	1.548	2.683***
Foreign director	0.47	0.50	0.31	0.54	0.59	0.33	-2.319**	-2.517**
Board Size	8.00	8.00	3.05	7.57	7.00	2.79	1.727*	1.470
B. Performance Variables								
ROA	1.20	1.11	1.63	0.70	1.03	1.99	2.939***	1.428
ROE	13.10	13.15	15.31	6.00	10.69	22.91	3.703***	3.360***
NIM	3.64	3.55	1.14	3.07	2.77	2.08	3.331***	8.083***
Panel B. Banks in the EU countries which became members in 2007								
Number Observations	2000-2006			2007-2015			T-test	Mann-Whitney
	56 observations			125 observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
A. Governance Variables								
Female director	0.12	0.00	0.21	0.09	0.09	0.09	1.363	-1.057
Board independence	0.09	0.00	1.18	0.08	0.00	0.13	0.373	0.400
Foreign director	0.61	0.75	0.35	0.62	0.69	0.33	-0.093	0.150
Board Size	6.23	5.00	3.01	6.52	7.00	2.38	-0.692	-0.950
B. Performance Variables								
ROA	2.21	2.01	1.03	1.15	1.25	1.28	5.405***	5.434***
ROE	18.85	18.01	12.54	10.31	9.46	11.49	5.122***	5.670***
NIM	6.68	6.18	2.28	4.65	4.53	1.16	7.905***	5.877***
Panel C. Banks in the EU countries which became members in 2013								
Number Observations	2000-2012			2013-2015			T-test	Mann-Whitney
	63 observations			15 observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
A. Governance Variables								
Female director	0.06	0.00	0.10	0.11	0.13	0.09	-1.983*	-2.255**
Board independence	0.03	0.00	0.59	0.07	0.10	0.63	-2.186**	-2.298**
Foreign director	0.93	1.00	0.93	0.89	0.88	0.70	1.251	1.733
Board Size	7.25	7.00	2.58	8.73	9.00	1.87	-2.087**	-2.036**
B. Performance Variables								
ROA	1.25	1.30	0.47	-0.40	0.47	2.64	4.721**	4.343***
ROE	12.56	13.21	6.46	-3.24	2.74	19.01	5.464***	4.526***
NIM	3.55	3.54	0.64	3.20	3.13	0.68	1.910*	1.477

Note: \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

Panel C reports findings for Croatian banks. For the period (2000-2012), the mean board size was 7.25 members and higher 8.73 members after accession. Board independence for Croatian banks was very small for both periods (3% and 7% respectively). The share of female directors on boards was 6% between 2000 and 2012 and increased to 11% in the post-accession period, whereas, the proportion of foreign directors on boards much higher than other groups and 93%

for the pre-EU-accession and 89% for the membership period. Lastly, ROA, ROE, and NIM were 1.25, 12.56 and 3.55 respectively for the first period and -0.4, -3.24 and 3.20 for the second period respectively displaying a decline in performance.

**TABLE 4.5**  
**Descriptive Statistics and Univariate Comparison of Corporate Governance**  
**Characteristics and Performance of Banks in Candidate and Member Nations**

	EU Nations Banks			Candidate Nations Banks			T-test	Mann-Whitney
Number Observations	831 observations			823 observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
<b>A. Governance Variables</b>								
Female director	0.14	0.11	0.15	0.12	0.10	0.14	-2.843**	-2.710**
Board independence	0.14	0.00	0.19	0.17	0.18	0.14	1.956***	4.793***
Foreign director	0.55	0.60	0.33	0.48	0.52	0.36	-4.474***	-4.236***
Board Size	7.42	7.00	2.74	7.67	7.00	2.51	1.967**	2.490**
<b>B. Performance Variables</b>								
ROA	0.75	1.04	1.92	1.43	1.40	1.75	7.506***	7.680***
ROE	6.48	10.37	21.57	11.69	12.54	13.98	5.818***	4.218***
NIM	3.31	2.96	2.03	5.06	4.61	2.70	14.910***	20.520***

Note: \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

In Table 4.5, bank performance variables (ROA, ROE, and NIM) and board characteristics of banks in the entire sample were compared based on membership and candidacy periods of a nation. According to the Mann Whitney and T-tests, significant differences between all variables. The mean female directors were 14% for banks in member nations and 12% for banks in candidate nations. The mean board independence of sample banks was 14% for banks in member nations and 18% for banks in candidate nations. The share of foreign directors on the board of directors in banks in member nations was 55%, which is higher than in banks in candidate nations (48%). The board size of banks in member nations was smaller (7.42) than banks in candidate nations (7.67). Lastly, bank performance differed significantly and was higher for banks in candidate nations (1.43, 11.69 and 5.51) than banks in member nations (0.75, 6.48 and 3.54) for ROA, ROE, and NIM, respectively.

#### *4.4.2 Multivariate analysis results*

##### *4.4.2.1 Main analysis results*

Results from the regression model used to assess the relationship between performance and corporate governance variables are provided in Tables 4.6A and 4.6B. Three models were estimated by using ROA, ROE, and NIM as dependent performance variables respectively for four different samples. These samples include all banks which have gone through the accession process (panel A) and the banks within EU member nations only (panel B) in Table 4.6A and the banks in candidate nations (panel C) and all banks (panel D) in Table 4.6B.

The results in panel A are for all banks from nations which have gone through an accession process (new member and candidate nations) document that the relationship between performance (as measured by ROA) and the EU membership (represented by a binary variable equal to one for the EU membership period and 0 otherwise) is highly significantly negative. Both board size and board independence have negative but insignificant impacts on ROA, while female directors have a strong positive impact on this performance variable. Although their impacts on ROA are insignificant, the CEO duality, foreign directors and dual board structure have positive associations with this performance variable. Considering, the findings of bank control variables it is showed that total asset and liquidity ratio (liquid assets-to-deposits) have positive but insignificant yet, capital ratio (equity-to-total asset) has a positive and significant influence on ROA. Whilst, loan loss provision, and operation (cost-to-income ratio) have both negative and significant influence on this variable. As country specific variables, GDP per capita growth has a positive and significant and WGI a positive but insignificant effects on ROA, whereas IEF has negative but unimportant relationship with this variable.

The second model using ROE as performance variable reports that the relationship between the EU membership and performance again is strongly negative. The influence of board size is significantly negative on this variable. Unlike, the female directors on boards again distinctly show a significantly positive influence on bank performance. The relationships between performance and other corporate governance variables display positive but insignificant results. The effects of total assets and capital ratio are strongly positive on ROE whereas the effect liquidity is also positive but insignificant. The findings for loan loss provision and cost-to-income ratio are similar and significantly negative. The relationship between performance

and GDP per capita growth, WGI and IEF are positive but only significant for GDP per capita growth.

Last performance variable is NIM and the relationship between this performance variable and the EU membership is also significantly negative, proving that, for all the performance measures, EU membership has a negative influence on performance. Unlike ROA and ROE, the board size, board independence, and foreign directors have a significant positive relationship with this variable. Female directors have also positive influence on this variable but this is not significant. Both CEO duality and board duality have negative but insignificant relationship with this variable. Only the influence of capital ratio on NIM is positive and significant yet, cost-to-income and liquidity ratios both have negative and strong impacts on NIM. The other bank level variables have no significant influence on this performance variable. In this case, GDP per capita growth and IEF display significant positive effect on the NIM yet, WGI has negative but insignificant influence on this variable. For panel B, using a sample of banks from nations joining the EU in 2004, 2007 and 2013, it is seen that EU membership again, has a negative influence on all the performance variables, except for NIM. Both board size and board independence have negative but insignificant impacts on ROA, while both female directors and foreign directors have a positive but unimportant impact on this performance variable. Although their impact on ROA insignificant, both CEO duality and board duality have negative relationships with this performance variable. Considering, the findings of bank control variables it is showed that capital ratio and liquidity ratio have a significantly positive influence on ROA whereas total asset, loan loss provision and operation have significantly negative influence on this variable. As country specific variables, GDP per capita growth has significantly and WGI insignificantly positive effects on ROA, whereas IEF has negative but negligible relationship with this variable.

The second model using ROE as performance variable reports that the relationship between the EU membership and performance again is strongly negative. The influence of board size is significantly negative on this variable. Unlike, the female directors on boards again show a positive influence on bank performance. The relationships between this variable and foreign directors insignificantly positive and CEO duality and board duality are insignificantly negative. The effects of total assets and capital ratio are strongly positive on ROE whereas the effect of liquidity is also positive but insignificant. The findings for loan loss provision and cost-to-income ratio are similar and significantly negative. The relationship between

performance and GDP per capita growth, WGI and IEF are positive but only significant for GDP per capita growth.

**TABLE 4.6A**

**The impact of EU and Corporate Governance Characteristics on Bank Performance**

This table provides the results of fixed effects panel data analysis. 1, 2 and 3 indicate Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM), respectively. The bank-clustered robust standard errors of the coefficients are in parentheses. Panel A comprises banks from the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia, and Turkey. Panel B comprises banks from the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, and Croatia. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

MEMBER AND CANDIDATE NATIONS BANKS (PANEL A)				MEMBER NATIONS BANKS (PANEL B)		
Variables	1	2	3	1	2	3
EU Membership	-0.384*** (0.148)	-3.491** (1.720)	-0.386** (0.191)	-0.345*** (0.127)	-4.708*** (1.704)	-0.158 (0.148)
Board Size	-0.314 (0.199)	-5.173** (2.094)	0.298** (0.136)	-0.294 (0.226)	-3.344** (1.633)	0.210 (0.130)
Board Independence	-0.056 (0.474)	0.770 (5.089)	1.130*** (0.355)	-0.090 (0.619)	-0.246 (4.148)	0.893** (0.386)
CEO Duality	0.167 (0.243)	3.109 (4.173)	-0.397 (0.251)	-0.030 (0.339)	-0.579 (2.255)	-0.175 (0.401)
Female Directors	0.689** (0.305)	10.805*** (3.906)	0.177 (0.281)	0.275 (0.368)	5.786* (3.346)	0.364 (0.266)
Foreign Directors	0.132 (0.312)	4.022 (3.534)	0.627** (0.295)	0.210 (0.357)	3.991 (3.346)	0.463* (0.279)
Tier (Board Type)	0.041 (0.258)	1.441 (3.636)	-0.257 (0.164)	-0.030 (0.271)	-0.831 (2.253)	-0.077 (0.235)
Bank Size	0.156 (0.126)	4.664*** (1.755)	-0.044 (0.122)	-0.301*** (0.095)	2.933** (1.418)	-0.308** (0.136)
Loan Loss Provision	-0.451*** (0.070)	-6.015*** (0.859)	0.059 (0.073)	-0.591*** (0.092)	-4.229*** (0.717)	-0.060 (0.054)
Liquidity	0.067 (0.070)	0.213 (0.765)	-0.135** (0.063)	0.153** (0.076)	0.139 (0.565)	-0.108** (0.051)
Capital	1.163*** (0.182)	6.192** (2.275)	0.949*** (0.153)	0.441** (0.179)	2.215 (2.543)	0.550*** (0.122)
Operation	-3.134*** (0.275)	-28.340*** (3.074)	-1.022*** (0.226)	-2.941*** (0.291)	-18.834*** (2.271)	-1.009*** (0.249)
World Governance Indicators	0.542 (0.469)	7.446 (4.966)	-0.047 (0.397)	0.516 (0.513)	4.624 (4.686)	-0.690* (0.370)
Index of Economic Freedom	-0.294 (0.811)	3.662 (8.974)	1.710** (0.767)	-1.223 (0.855)	-6.485 (8.437)	1.596* (0.817)
GDP Per capita Growth	0.085*** (0.016)	0.778*** (0.200)	0.017* (0.010)	0.067*** (0.020)	0.540*** (0.185)	0.022** (0.010)
Financial Crisis Dummy	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Cons	11.206*** (3.588)	45.306 (41.790)	0.237 (3.600)	21.861*** (3.696)	78.770*** (40.412)	5.173 (4.061)
R-sq within	0.48	0.43	0.37	0.49	0.55	0.44
between	0.45	0.26	0.23	0.15	0.49	0.08
Overall	0.45	0.33	0.24	0.31	0.47	0.14
Number of Observation	1652	1652	1652	1106	1106	1106

Last, in panel B, the relationship between NIM and board independence is significantly positive and for board size, female directors and foreign directors are positive but insignificant. Both CEO duality and board duality have negative but insignificant relationship with this variable. Only the influence of capital ratio on NIM is significantly positive yet, total assets, cost-to-income and liquidity ratios have negative impacts on NIM. The other bank level variables have no significant influence on this performance variable. In this case, GDP per capita growth and IEF display significant positive effect on the NIM yet, WGI has negative but insignificant influence on this variable.

In panel C (Table 4.6B), where the sample of banks in candidate nations was investigated separately, both gender diversity (the share of female directors) and CEO duality have a positive influence on ROA. Contrary to that, board independence and nationality diversity (the percentage of foreign directors) have significantly negative impacts on these performance variables. Whilst no significant relationship between board size and this variable is observed. Looking at bank level variables, only capital ratio has significant influence on performance among the variables with positive sign (total assets and liquidity). Though both loan loss provision and cost-to-income ratios have significantly negative impacts on this variable. Only GDP per capita growth displays significant positive effect on ROA.

When considering ROE, the influence of female directors on ROE is similar to ROA. Contrary to that, board independence and nationality diversity (the percentage of foreign directors) have significantly negative impacts on these performance variables. Whilst the relationship between board size and this variable is negative but insignificant. For bank level variables, only total assets have significant influence on performance among the variables with positive sign. Both loan loss provision and cost-to-income ratios have significant negative impacts on this variable. Only GDP per capita growth displays significant positive effect on ROA. The relationship between liquidity ratio, WGI and IEF are negative but insignificant. The relationship between NIM and all corporate governance variables except foreign directors is not significant yet the relationship between this variable and foreign directors is positive but very weak. The capital ratio has positive influence on performance whereas operation ratio has a negative influence on this variable. Other bank variables and all country specific variables have no impact on NIM.



TABLE 4.6B

## The impact of EU and Corporate Governance Characteristics on Bank Performance

This table provides the results of fixed effects panel data analysis. 1, 2 and 3 indicate Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM), respectively. The bank-clustered robust standard errors of the coefficients are in parentheses. Panel C comprises banks only from Albania, FYROM, Montenegro, Serbia, and Turkey. Panel D comprises banks from Albania, FYROM, Montenegro, Serbia and Turkey, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, France, Germany, Greece, and Spain. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

Variables	CANDIDATE NATIONS BANKS (PANEL C)			ALL SAMPLE BANKS (PANEL D)		
	1	2	3	1	2	3
EU Membership	-	-	-	-0.531*** (0.156)	-4.682*** (1.757)	-0.521** (0.205)
Board Size	-0.128 (0.191)	-0.808 (1.584)	1.012 (1.361)	-0.304* (0.180)	-4.864** (1.934)	0.334** (0.156)
Board Independence	-0.904** (0.410)	-7.770** (3.245)	1.540 (1.386)	-0.273 (0.393)	-2.876 (4.258)	0.878*** (0.340)
CEO Duality	0.602* (0.326)	3.641 (3.714)	0.191 (1.006)	-0.082 (0.196)	0.197 (2.250)	-0.223* (0.130)
Female Directors	0.817*** (0.298)	7.354** (2.906)	0.020 (2.061)	0.564** (0.299)	11.136*** (3.710)	0.193 (0.353)
Foreign Directors	-0.626** (0.263)	-3.691* (2.278)	1.926* (0.967)	0.112 (0.295)	3.948 (3.710)	0.500 (0.323)
Tier (Board Type)	-	-	-	-0.067 (0.221)	1.272 (2.511)	-0.162 (0.200)
Bank Size	0.227 (0.158)	2.551* (1.445)	0.070 (0.731)	0.064 (0.141)	5.928*** (1.776)	-0.170 (0.151)
Loan Loss Provision	-0.194** (0.082)	-2.190*** (0.695)	0.040 (0.248)	-0.516*** (0.078)	-6.437*** (0.828)	0.025 (0.079)
Liquidity	0.057 (0.067)	-0.649 (0.566)	0.410 (0.266)	0.096 (0.063)	-0.054 (0.818)	-0.100 (0.069)
Capital	0.840*** (0.185)	0.045 (1.563)	2.800*** (0.775)	1.135*** (0.186)	8.924*** (2.550)	0.966*** (0.154)
Operation	-1.682*** (0.278)	-13.789*** (1.737)	-2.775*** (0.511)	-2.764*** (0.272)	-25.324*** (2.925)	-0.961*** (0.219)
World Governance Indicators	-0.520 (0.453)	-3.557 (3.542)	-1.298 (1.310)	0.411 (0.355)	8.271** (4.087)	-0.295 (0.373)
Index of Economic Freedom	-2.831 (2.040)	-4.168 (13.466)	7.005 (5.503)	-0.573 (0.835)	-0.253 (8.740)	2.106** (0.850)
GDP Per capita Growth	0.059*** (0.016)	0.506*** (0.128)	0.019 (0.040)	0.088*** (0.015)	0.927*** (0.193)	0.014 (0.010)
Financial Crisis Dummy	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Cons	15.001* (8.072)	52.578 (50.201)	-19.187 (24.757)	11.749*** (3.469)	23.651 (41.502)	-0.192 (4.042)
R-sq within	0.54	0.55	0.40	0.43	0.40	0.35
between	0.64	0.63	0.07	0.46	0.19	0.39
Overall	0.57	0.55	0.22	0.43	0.27	0.34
Number of Observations	546	546	546	2108	2108	2108

In panel D where all banks from member (including banks in long-standing member nations) and candidate nations are considered. The EU membership again demonstrates significantly negative impacts on all the performance variables. The relationship between board size and ROA is negative but weak. The influence of female directors on this variable is significantly positive and influence of foreign directors is insignificantly positive. The relationships between this variable and board independence, CEO duality and board duality are insignificantly negative. At bank level variables, only capital ratio has a significant influence on performance among the variables with positive sign (total assets and liquidity). However, both loan loss provision and cost-to-income ratios have significant negative impacts on this variable. Only GDP per capita growth displays significantly positive effect on ROA. The relationship between board size and ROE is strongly negative. The influence of female directors on this variable is significantly positive and influences of foreign directors and board duality are insignificantly positive. The relationship between this variable and board independence is insignificantly negative. At bank level variables, both total assets and capital ratio have very strong influence on performance. However, both loan loss provision and cost-to-income ratios have significant negative impacts on this variable. Both GDP per capita growth and WGI display significantly positive effects on ROE.

The relationships between NIM are significantly positive for board size and board independence and insignificantly positive for female directors and foreign directors. For bank level and country level variables only capital ratio and IEF have a very strong influence on performance. On the other hand only cost-to-income ratio has significant negative impact on this variable. All other bank level variables and country level variables have no impacts on this variable.

Overall, the results are in line with prior studies (e.g., for board size, Staikouras et al., 2007; Liang et al., 2013 and Pathan and Faff, 2013; for board independence, Bhagat and Black, 2002 and Terjesen et al., 2016; for female directors, Garcia-Meca et al., 2015; Terjesen et al., 2016 and Farag and Mallin, 2017; for foreign directors, Liang et al., 2013; Garcia-Meca et al., 2015 and Arnaboldi et al., 2018; for CEO duality, Larcker et al., 2007; Pathan, 2009; Liang et al., 2013 and Berger et al., 2016).

#### *4.4.2.2 Supplementary analysis results*

In order to examine the influence of EU membership on corporate governance changes, following the similar methodology that is used in previous empirical studies in the literature (e.g., Hermalin and Weisbach, 1988; Boone et al., 2007; Guest, 2008; Linck et al., 2008 and Chen, 2014) additional analysis is made different than this studies by using four corporate governance variables including board size, board independence, female directors and foreign directors as dependent variables. The findings of the fixed effects regression models are presented in Table 4.7. The results in panel A are for all banks from nations which have gone through an accession process (new member and candidate nations) and the results in panel B are for all sample banks from EU new member and long-standing member nations and candidate nations. The first, second, third and fourth columns present the regression results for board size, board independence, female directors and foreign directors, respectively.

The findings in the first column of panel A indicates that the relationship EU membership and board size is significantly negative which indicates board size was decreased during the EU membership. There is also significant negative relationships between board duality and board size which is expected as the size of board could increase if a bank has one-tier board structure as both executives and non-executives directors occupy seats in single board. The significantly positive relationships are observed between board size and capital ratio and bank size. It is in line with the literature as large banks because of their complex organisational structure, employ large boards. The other control variables have no significant influences on board size of banks.

Likewise, EU membership has a significant negative influence on board independence. Foreign directors and CEO duality also have significant negative relationships with board independence. Contrary to that, the relationship between EU membership and female directors is insignificant but it seems that large banks with more foreign directors and CEO duality have less female directors on their boards. It is also documented that there is a positive relationship with female directors and performance (ROA). All other variables have no significant relationships with this variable. The EU membership has no significant influence on foreign directors yet, the relationships between board independence and foreign directors and female directors and foreign directors are significantly negative. Only the board duality has a positive and significant relationship with foreign directors. The other corporate governance, bank and country level control variables have no significant effects on foreign directors.

**TABLE 4.7****The EU as a Determinant of Corporate Governance Structure**

This table provides the results of fixed effects panel data analysis. 1, 2, 3 and 4 indicate board size, board independence, female directors and foreign directors, respectively. The bank-clustered robust standard errors of the coefficients are in parentheses. Panel A comprises banks from the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia, and Turkey. Panel B comprises banks from Albania, FYROM, Montenegro, Serbia and Turkey, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, France, Germany, Greece, and Spain. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

Variables	MEMBER AND CANDIDATE NATIONS BANKS (PANEL A)				ALL SAMPLE BANKS (PANEL B)			
	1	2	3	4	1	2	3	4
EU Membership	-0.094** (0.047)	-0.053*** (0.020)	0.013 (0.017)	0.046 (0.030)	-0.058 (0.044)	-0.062*** (0.014)	0.006 (0.016)	0.040 (0.027)
Board Size	- (0.103)	-0.025 (0.017)	0.018 (0.024)	0.0377 (0.036)	- (0.100)	-0.031* (0.016)	0.008 (0.023)	-0.025 (0.033)
Board Independence	-0.158 (0.103)	- (0.050)	0.004 (0.070)	-0.470*** (0.083)	-0.165* (0.085)	- (0.044)	0.015 (0.052)	-0.385*** (0.072)
Female Directors	0.082 (0.108)	0.003 (0.050)	- (0.072)	-0.191* (0.103)	0.038 (0.100)	0.012 (0.044)	- (0.064)	-0.173* (0.093)
Foreign Directors	0.114 (0.109)	-0.231*** (0.046)	-0.134* (0.072)	- (0.030)	0.078 (0.100)	-0.222*** (0.044)	-0.120* (0.064)	- (0.016)
CEO Duality	0.003 (0.038)	-0.041** (0.020)	-0.055 (0.040)	-0.069 (0.062)	-0.040 (0.033)	-0.050 (0.032)	-0.051** (0.020)	-0.056* (0.030)
Tier (Board Type)	-0.432*** (0.096)	0.056 (0.055)	-0.104*** (0.040)	0.126** (0.058)	-0.296** (0.131)	0.026 (0.055)	-0.090*** (0.032)	0.091* (0.048)
Bank Size	0.106*** (0.035)	0.018 (0.011)	-0.027** (0.013)	-0.007 (0.020)	0.117*** (0.030)	0.017 (0.011)	-0.024** (0.011)	-0.007 (0.016)
ROA	-0.012 (0.009)	-0.002 (0.003)	0.005* (0.003)	0.001 (0.003)	-0.011 (0.007)	-0.003 (0.002)	0.002 (0.001)	-0.001 (0.002)
Loan Loss Provision	-0.022 (0.017)	-0.007 (0.007)	-0.007 (0.007)	0.011 (0.011)	-0.018 (0.015)	-0.002 (0.006)	-0.008 (0.006)	0.013 (0.010)
Liquidity	0.015 (0.017)	-0.011* (0.006)	0.008 (0.010)	-0.001 (0.009)	0.012 (0.015)	-0.013 (0.006)	0.006 (0.008)	-0.006 (0.008)
Capital	0.100** (0.045)	0.007 (0.017)	-0.014 (0.018)	-0.033 (0.031)	0.087*** (0.032)	0.010 (0.012)	-0.005 (0.013)	-0.012 (0.023)
Operation	0.065 (0.045)	-0.011 (0.015)	-0.004 (0.022)	-0.028 (0.030)	0.046 (0.035)	-0.013 (0.015)	-0.004 (0.017)	-0.016 (0.024)
World Governance Indicators	-0.194* (0.112)	-0.135*** (0.048)	0.092 (0.069)	0.030 (0.073)	-0.134 (0.094)	-0.150*** (0.038)	0.058 (0.051)	0.023 (0.058)
Index of Economic Freedom	0.305 (0.200)	0.101 (0.086)	-0.115 (0.118)	0.255 (0.162)	0.309* (0.186)	0.087 (0.087)	-0.148 (0.110)	0.180 (0.150)
GDP Per capita Growth	-0.002 (0.002)	0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.003 (0.002)	0.001 (0.001)	-0.001 (0.001)	0.001 (0.001)
Financial Crisis Dummy	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Cons	-0.963 (0.860)	-0.242 (0.361)	1.073* (0.551)	-0.445 (0.827)	-0.968 (0.790)	-0.112 (0.354)	1.128** (0.496)	-0.267 (0.737)
R-sq within	0.11	0.21	0.09	0.26	0.08	0.18	0.09	0.22
between	0.13	0.07	0.03	0.12	0.23	0.04	0.01	0.14
overall	0.13	0.07	0.03	0.16	0.20	0.04	0.03	0.16
Number of Observation	1652	1652	1652	1652	2108	2108	2108	2108

Panel B introduces the results for all sample banks from new and long-standing EU member and candidate nations. The result shows that EU membership has no impact on board size. Whilst the relationship between board independence and board size is barely significant negative and board independence and board duality is highly significant negative. Similar to the results in panel A, there are significant positive relationships between board size and capital ratio and bank size. The other corporate governance, bank level, and country level variables have no significant influences on board size of banks except IEF as it has a weak positive relationship with board size.

Likewise the results in panel A (Table 4.7), the EU membership has a significant negative influence on board independence for all sample banks. Board size, foreign directors and CEO duality also have significant negative relationships with this variable. All other variables yet have no influence on board independence except WGI as it has significantly negative relationship with this variable. All findings for female directors are almost identical to the results in panel A where the relationship between EU membership and female directors is insignificant but the relationships between female directors and foreign directors, CEO duality and bank size are significantly negative. The EU membership has no significant influence on foreign directors yet, the relationships between board independence and foreign directors, female directors, and foreign directors and CEO duality and foreign directors are all negative. The board duality, on the other hand, has positive but barely significant relationship with foreign directors. The other corporate governance, bank and country level control variables have no significant effects on foreign directors.

The second additional analysis is constructed to compare the impacts of corporate governance variables on performance before and after the EU membership. The results of this analysis are reported in Table 4.8A and in Table 4.8B for sample banks in member and candidate nations and for all sample banks, respectively. Panel A of Table 4.8A provides findings for banks in eleven EU member and candidate states in the membership period and panel B provides the findings for pre-membership period (accession period). When considering the results in Panel A column 1 (ROA), it is found that board size has a significantly negative and contrariwise, CEO duality has a significantly positive influence on performance. Female directors and board duality have insignificant positive and board independence and foreign directors have negative insignificant influences on ROA. There are also significant but mixed results reported for bank and country level control variables. Total assets, liquidity, and capital ratios have positive

influences on ROA whereas loan loss provision and operation have negative influences on this variable. Both GDP per capita growth and ROA and WGI and ROA have positive relationships.

**Table 4.8A**  
**The Impact of EU Accession Process and Membership and Corporate Governance**  
**Characteristics on Bank Performance**

This table provides the results of fixed effects panel data analysis. 1, 2 and 3 indicate Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM), respectively. Panel A presents the results for banks in membership period and Panel B presents results for banks in accession period. The bank-clustered robust standard errors of the coefficients are in parentheses. Both Panel A and Panel B comprise banks from the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia, and Turkey. The sample divided into two based on the nations membership year and candidacy. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

MEMBER AND CANDIDATE NATIONS BANKS						
Variables	MEMBERSHIP PERIOD (PANEL A)			PRE-MEMBERSHIP PERIOD (PANEL B)		
	1	2	3	1	2	3
Board Size	-0.632** (0.315)	-10.738*** (3.295)	0.086 (0.120)	-0.217 (0.274)	-1.656 (2.503)	0.427 (0.265)
Board Independence	-0.686 (1.035)	-6.952 (11.661)	0.210 (0.281)	-0.046 (0.428)	2.620 (4.778)	1.231* (0.704)
Female Directors	0.556 (0.431)	6.508 (5.503)	0.163 (0.198)	0.728* (0.420)	11.814** (4.533)	0.407 (0.531)
Foreign Directors	-0.660 (0.490)	-8.663 (6.035)	-0.016 (0.276)	-0.049 (0.406)	2.454 (3.725)	1.012** (0.413)
CEO Duality	0.533** (0.220)	8.167*** (2.835)	-0.184 (0.718)	0.436 (0.298)	6.802 (5.240)	-0.578* (0.335)
Tier (Board Type)	0.142 (0.206)	-0.061 (2.301)	-0.389 (0.252)	0.333 (0.332)	6.960 (5.566)	-0.606 (0.547)
Bank Size	0.433* (0.244)	9.275*** (3.113)	-0.020 (0.161)	0.101 (0.173)	2.643 (1.914)	0.166 (0.207)
Loan Loss Provision	-0.553*** (0.112)	-7.516*** (1.410)	-0.098* (0.058)	-0.351*** (0.081)	-3.531*** (1.078)	0.150 (0.127)
Liquidity	0.145* (0.086)	2.270** (1.065)	-0.091 (0.061)	0.118 (0.090)	-0.440 (0.938)	-0.150 (0.101)
Capital	1.477*** (0.336)	14.600*** (4.761)	0.745*** (0.171)	1.163*** (0.226)	3.033 (2.452)	1.190*** (0.241)
Operation	-2.790*** (0.473)	-25.834*** (5.521)	-0.851*** (0.185)	-3.494*** (0.429)	-28.212*** (4.237)	-1.070*** (0.373)
World Governance Indicators	1.274* (0.657)	12.961 (8.309)	-0.678 (0.426)	-0.837 (0.592)	-5.105 (5.502)	0.433 (0.551)
Index of Economic Freedom	-2.001 (1.842)	-26.337 (21.887)	2.051* (1.181)	-3.113** (1.330)	-24.123** (12.073)	2.516** (1.104)
GDP Per capita Growth	0.065*** (0.023)	0.651** (0.273)	0.020** (0.010)	0.082*** (0.022)	0.735*** (0.243)	-0.002 (0.017)
Financial Crisis Dummy	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Cons	12.028 (9.451)	78.744 (103.071)	-1.871 (5.923)	24.098*** (5.080)	180.543*** (40.252)	-5.984 (5.138)
R-sq within	0.50	0.49	0.40	0.47	0.35	0.35
between	0.38	0.31	0.18	0.56	0.46	0.02
overall	0.40	0.35	0.21	0.49	0.38	0.04
Number of Observation	830	830	830	822	822	822

Results for ROE are nearly similar to ROA, as it is reported that board size has significantly negative and inversely, CEO duality has significantly positive influences on performance. Female directors and board duality have insignificant positive and board independence and foreign directors have insignificant negative influences on ROE. Total assets, liquidity, and capital ratios have positive influences on ROE whereas loan loss provision and operation have negative influences on this variable. Only GDP per capita growth has positive relationship with ROE among country level variables. Results for NIM different than ROA and ROE documents that none of the corporate governance variables has significant influences on this variable. Only the capital ratio has a positive influence on NIM whereas loan loss provision and operation have negative influences on this variable. GDP per capita growth and IEF have positive relationships with NIM.

Panel B of Table 4.8A presents the results for sample banks in the pre-membership period. For this sample banks, only the female directors have significantly positive influence on ROA but all other corporate governance variables have no impacts on this variable. Board size, board independence, and foreign directors have negative insignificant influences and CEO duality and board duality have positive insignificant influences on ROA. There are also significant but mixed results reported for bank and country level control variables. The only capital ratio has a positive influence on ROA, whereas loan loss provision and operation have negative influences on this variable. GDP per capita growth and ROA has a positive relationship and IEF and ROA have a negative relationship.

Results for ROE shows that female directors have strong positive influence on this variable. Similar to findings of ROA, all the other corporate governance variables have no impacts on ROE. Board size, board independence, and foreign directors have negative insignificant influences whereas CEO duality and board duality have positive insignificant influences on ROE. None of bank level variables has significant positive influence on this variable yet, loan loss provision and operation have significantly negative influences on this variable. Only GDP per capita growth has a positive relationship and IEF has a negative relationship on ROE.

**Table 4.8B**

**The Impact of EU Accession Process and Membership and Corporate Governance Characteristics on Bank Performance**

This table provides the results of fixed effects panel data analysis. 1, 2 and 3 indicate Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM), respectively. Panel A presents the results for banks in membership period and Panel B presents results for banks in accession period. The bank-clustered robust standard errors of the coefficients are in parentheses. Both Panel A and Panel B comprise banks from the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia, and Turkey and France, Germany, Greece, and Spain. The sample divided into two based on the nations membership year and candidacy. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

ALL SAMPLE BANKS						
Variables	MEMBERSHIP PERIOD (PANEL C)			PRE-MEMBERSHIP PERIOD (PANEL D)		
	1	2	3	1	2	3
Board Size	-0.544** (0.272)	-8.279*** (2.893)	0.175 (0.140)	-0.217 (0.274)	-1.656 (2.503)	0.427 (0.265)
Board Independence	-0.746 (0.646)	-8.755 (7.168)	0.109 (0.292)	-0.046 (0.428)	2.620 (4.778)	1.231* (0.704)
Female Directors	0.446 (0.408)	9.458* (5.003)	0.102 (0.324)	0.728* (0.420)	11.814** (4.533)	0.407 (0.531)
Foreign Directors	-0.203 (0.435)	-3.912 (6.721)	0.004 (0.254)	-0.049 (0.406)	2.454 (3.725)	1.012** (0.413)
CEO Duality	-0.222 (0.243)	-1.002 (2.026)	-0.244* (0.127)	0.436 (0.298)	6.802 (5.240)	-0.578* (0.335)
Tier (Board Type)	-0.138 (0.231)	-0.515 (2.015)	-0.253 (0.205)	0.333 (0.332)	6.960 (5.566)	-0.606 (0.547)
Bank Size	0.259 (0.204)	10.360*** (3.080)	-0.204 (0.225)	0.101 (0.173)	2.643 (1.914)	0.166 (0.207)
Loan Loss Provision	-0.643*** (0.114)	-7.687*** (1.223)	-0.117** (0.054)	-0.351*** (0.081)	-3.531*** (1.078)	0.150 (0.127)
Liquidity	0.147* (0.077)	1.167 (1.127)	-0.078 (0.070)	0.118 (0.090)	-0.440 (0.938)	-0.150 (0.101)
Capital	1.340*** (0.274)	16.066*** (4.261)	0.707*** (0.145)	1.163*** (0.226)	3.033 (2.452)	1.190*** (0.241)
Operation	-2.133*** (0.393)	-20.276*** (4.434)	-0.684*** (0.203)	-3.494*** (0.429)	-28.212*** (4.237)	-1.070*** (0.373)
World Governance Indicators	1.134** (0.508)	15.413** (5.951)	-0.454 (0.378)	-0.837 (0.592)	-5.105 (5.502)	0.433 (0.551)
Index of Economic Freedom	-2.438 (1.806)	-27.022 (20.620)	2.157* (1.208)	-3.113** (1.330)	-24.123** (12.073)	2.516** (1.104)
GDP Per capita Growth	0.080*** (0.020)	0.964*** (0.262)	0.011 (0.012)	0.082*** (0.022)	0.735*** (0.243)	-0.002 (0.017)
Financial Crisis Dummy	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Cons	13.131 (7.885)	22.243 (95.604)	-0.900 (7.260)	24.098*** (5.080)	180.543*** (40.252)	-5.984 (5.138)
R-sq within	0.42	0.43	0.36	0.47	0.35	0.35
between	0.34	0.17	0.10	0.56	0.46	0.02
overall	0.36	0.23	0.14	0.49	0.38	0.04
Number of Observation	1286	1286	1286	822	822	822



For this sample of banks, board independence has a weak positive influence and foreign directors have a strong positive influence on NIM. Only CEO duality shows barely significant negative impact on this variable. Board size and female directors have insignificant positive and board duality has insignificant negative relationships with NIM. The relationship between this variable and capital ratio is significantly positive but for bank size it is insignificantly positive. The relationships between operation ratio and NIM is significantly negative and liquidity and NIM is insignificantly negative. Lastly, only IEF positively influences this variable.

The results that are reported in panel A of Table 4.8B provides findings for banks in all sample for membership period and panel B provides the findings for the pre-membership period (accession period). When considering the results in panel A, it is found that only board size has a significantly negative influence on ROA among all corporate governance variables. Female directors have an insignificant positive and board independence, foreign directors, CEO duality and board duality have negative but insignificant influences on ROA. There are also significant but mixed results reported for bank and country level control variables. Liquidity and capital ratios have positive influences on ROA whereas loan loss provision and operation have strong negative influences on this variable. Both GDP per capita growth and ROA and WGI and ROA have positive relationships. Results for ROE are almost same as to results of ROA, as it is reported that board size has significantly negative and inversely, female directors have significantly positive influences on performance. CEO duality, board independence, and foreign directors have insignificant negative influences on ROE. Total assets and capital ratio have strong positive influences on ROE whereas loan loss provision and operation have negative influences on this variable. Only GDP per capita growth has positive relationship with ROE among country level variables. For this sample of banks, only CEO duality shows barely significant negative impact on NIM among all other corporate governance variables in the model. Board size, board independence, and female directors have insignificant positive and board duality has insignificant negative relationships with NIM. The relationship between this variable and capital ratio is only significantly positive. The relationships between loan loss ratio and NIM and operation ratio and NIM are significantly negative and bank size and NIM is insignificantly negative. Lastly, only IEF positively influences this variable.

Panel B of Table 4.8B displays the results for the sample banks in the pre-membership period. For this sample banks, only the female directors have significantly positive influence on ROA

but all other corporate governance variables have no impacts on this variable. Board size, board independence, and foreign directors have negative insignificant influences and CEO duality and board duality have positive insignificant influences on ROA. There are also significant but mixed results reported for bank and country level control variables. The only capital ratio has a positive influence on ROA, whereas loan loss provision and operation have negative influences on this variable. Total asset and liquidity have positive but insignificant effects on this variable. GDP per capita growth and ROA and WGI and ROA have positive relationships.

Results for ROE shows that female directors have strong positive influence on this variable. Similar to findings of ROA, all the other corporate governance variables have no impacts on ROE. Only board size has a negative insignificant influence whereas board independence, foreign directors, CEO duality and board duality have positive insignificant influences on ROE. None of bank level variables has significant positive influence on this variable yet, loan loss provision and operation have significantly negative influences on this variable. GDP per capita growth and ROE has a positive relationship and IEF and ROE have a negative relationship. For this sample of banks, board independence has a weak positive influence and foreign directors have strong positive influence on NIM. Only CEO duality shows barely significant negative impact on this variable. Board size and female directors have insignificant positive and board duality has insignificant negative relationships with NIM. The relationship between this variable and capital ratio is significantly positive but for bank size it is insignificantly positive. The relationships between operation ratio and NIM is significantly negative and liquidity and NIM is insignificantly negative. Lastly, only IEF positively influences this variable.

The third supplementary analysis is conducted to discuss the association between selected corporate governance variables and performance variables. In order to do that the procedure of interaction terms approach was used and four interaction terms were created by multiplying EU dummy and with each board demographics including board size, board independence, female directors and foreign directors. The produced interaction variables were included in regression estimations separately and the results of this regressions are reported in Table 4.9A for a sample of banks from new EU member nations and candidate nations and in Table 4.9B. for sample of banks from new and long-standing EU member nations and candidate nations. The results in Table 4.9A documents that the coefficients of the interactions between EU dummy and selected corporate governance variables are statistically insignificant which implies that the impact of EU membership on a bank's performance does not depend on how the bank is governed.

**TABLE 4.9A**  
**The Impact of EU Accession Process and Membership and Corporate Governance**  
**Characteristics on Bank Performance: Interaction Term Approach**

Variables	MEMBER AND CANDIDATE NATIONS BANKS											
	ROA (PANEL A)				ROE (PANEL B)				NIM (PANEL C)			
	1	2	3	4	1	2	3	4	1	2	3	4
<b>EU Membership</b>	-0.063 (0.516)	- 0.417* * (0.163)	- 0.323* * (0.148)	- 0.551* * (0.272)	-8.024 (5.765)	-3.001 (1.818)	-2.793 (1.825)	- 4.829* (2.671)	-0.479 (0.424)	- 0.365* (0.202)	- 0.392** (0.189)	-0.201 (0.265)
<b>Board Size*EU</b>	-0.225 (0.241)	-	-	-	-5.801 (2.740)	-	-	-	0.047 (0.189)	-	-	-
<b>Board Independence*EU</b>	-	0.249 (0.612)	-	-	-	-3.723 (6.670)	-	-	-	-0.163 (0.403)	-	-
<b>Female Directors*EU</b>	-	-	-0.567 (0.538)	-	-	-	-6.445 (6.465)	-	-	-	0.054 (0.566)	-
<b>Foreign Directors*EU</b>	-	-	-	0.260 (0.310)	-	-	-	2.076 (3.300)	-	-	-	-0.287 (0.266)
<b>Board Size</b>	-0.197 (0.214)	-0.311 (0.199)	-0.319 (0.200)	-0.309 (0.197)	-2.142 (2.088)	- 5.220* * (2.103)	- 5.229* * (2.114)	- 5.131* * (2.075)	0.274 (0.208)	0.296** (0.136)	0.298** (0.137)	0.292** (0.136)
<b>Board Independence</b>	-0.081 (0.471)	-0.182 (0.405)	-0.055 (0.475)	-0.013 (0.476)	0.076 (5.048)	2.652 (4.319)	0.771 (5.083)	1.107 (5.068)	1.134*** (0.356)	1.211*** (0.455)	1.129*** (0.355)	1.082*** (0.345)
<b>Female Directors</b>	0.700* * (0.301)	0.688* * (0.306)	1.003* * (0.438)	0.689* * (0.306)	11.089*** (3.804)	10.824*** (3.892)	14.376*** (5.053)	10.804*** (3.923)	0.174 (0.278)	0.177 (0.282)	0.146 (0.510)	0.177 (0.280)
<b>Foreign Directors</b>	0.104 (0.308)	0.124 (0.308)	0.119 (0.316)	0.040 (0.310)	3.304 (3.385)	4.134 (3.472)	3.882 (3.554)	3.286 (3.454)	0.633** (0.297)	0.632** (0.297)	0.628** (0.296)	0.729** (0.332)
<b>CEO Duality</b>	0.160 (0.244)	0.165 (0.244)	0.165 (0.243)	0.171 (0.242)	2.934 (4.226)	3.138 (4.165)	3.085 (4.188)	3.144 (4.169)	-0.395 (0.251)	-0.395 (0.250)	-0.396 (0.251)	-0.402 (0.253)
<b>Tier (Board Type)</b>	0.040 (0.264)	0.034 (0.262)	0.018 (0.273)	0.045 (0.254)	1.433 (3.385)	1.539 (3.644)	1.097 (3.757)	1.478 (3.623)	-0.257 (0.165)	-0.253 (0.164)	-0.254 (0.169)	-0.262 (0.164)
<b>Bank Level Variables</b>	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>Country Level Variables</b>	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>Financial Crisis Dummy</b>	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>Country FE</b>	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>Year FE</b>	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>Cons</b>	11.332*** (3.574)	10.935*** (3.563)	11.184*** (3.560)	11.408*** (3.555)	49.107 (41.152)	49.429 (41.205)	44.871 (41.771)	46.812 (41.771)	0.205 (3.586)	0.416 (3.644)	0.241 (3.608)	0.038 (3.630)
<b>R-sq within</b>	0.48	0.48	0.48	0.48	0.43	0.43	0.43	0.43	0.37	0.37	0.37	0.37
<b>between</b>	0.44	0.45	0.46	0.45	0.25	0.26	0.27	0.26	0.24	0.23	0.23	0.22
<b>overall</b>	0.44	0.45	0.45	0.45	0.32	0.33	0.33	0.33	0.24	0.24	0.24	0.23
<b>Number of Obs.</b>	1652	1652	1652	1652	1652	1652	1652	1652	1652	1652	1652	1652

**TABLE 4.9B**  
**The Impact of EU Accession Process and Membership and Corporate Governance**  
**Characteristics on Bank Performance: Interaction Term Approach**

ALL SAMPLE BANKS												
Variables	ROA (PANEL D)				ROE (PANEL E)				NIM (PANEL F)			
	1	2	3	4	1	2	3	4	1	2	3	4
<b>EU Members hip</b>	-0.070 (0.482)	- 0.528* ** (0.163)	- 0.450* ** (0.147)	- 0.760* ** (0.291)	-3.853 (5.540)	- 4.049* * (1.727)	4.109* * (1.812)	- 6.057* * (2.978)	-0.673 (0.517)	- 0.484 ** (0.215)	- 0.512* * (0.201)	-0.432 (0.289)
<b>Board Size*EU</b>	-0.231 (0.227)	-	-	-	-4.287 (2.677)	-	-	-	0.076 (0.240)	-	-	-
<b>Board Independence*EU</b>	-	-0.019 (0.523)	-	-	-	-4.567 (6.071)	-	-	-	-0.271 (0.495)	-	-
<b>Female Directors *EU</b>	-	-	-0.732 (0.541)	-	-	-	-5.179 (6.197)	-	-	-	-0.084 (0.709)	-
<b>Foreign Directors *EU</b>	-	-	-	0.374 (0.326)	-	-	-	2.245 (3.612)	-	-	-	-0.146 (0.303)
<b>Board Size</b>	-0.171 (0.199)	- 0.304* (0.181)	- 0.311* (0.182)	-0.294 (0.179)	-2.391 (2.088)	- 4.910* * (1.943)	- 4.915* * (1.946)	- 4.802* * (1.910)	0.291 (0.260)	0.332 ** (0.155)	0.334* * (0.157)	0.330 ** (0.156)
<b>Board Independence</b>	-0.291 (0.391)	-0.260 (0.376)	-0.274 (0.393)	-0.233 (0.391)	-3.231 (4.236)	0.100 (4.207)	-2.888 (4.256)	-2.635 (4.237)	0.884* ** (0.338)	1.049 ** (0.511)	0.878* ** (0.339)	0.862 ** (0.334)
<b>Female Directors</b>	0.572* (0.296)	0.564* (0.298)	1.013* * (0.447)	0.560* (0.300)	11.293 *** (3.653)	11.176 *** (3.694)	14.315 *** (5.145)	11.112 *** (3.720)	0.190 (0.348)	0.195 (0.355)	0.244 (0.672)	0.194 (0.351)
<b>Foreign Directors</b>	0.085 (0.292)	0.113 (0.291)	0.103 (0.299)	-0.045 (0.302)	3.448 (3.647)	4.187 (3.658)	3.887 (3.723)	3.005 (3.558)	0.508 (0.325)	0.513 (0.327)	0.498 (0.322)	0.561 (0.379)
<b>CEO Duality</b>	-0.093 (0.198)	-0.082 (0.196)	-0.092 (0.197)	-0.074 (0.194)	0.009 (2.265)	0.140 (2.267)	0.127 (2.258)	0.245 (2.246)	- 0.219* (0.129)	- 0.226 * (0.129)	- 0.224* (0.131)	- 0.226 * (0.130)
<b>Tier (Board Type)</b>	-0.057 (0.222)	-0.067 (0.221)	-0.100 (0.224)	-0.061 (0.214)	1.460 (2.658)	1.297 (2.495)	1.048 (2.564)	1.309 (2.497)	-0.165 (0.202)	-0.161 (0.197)	-0.166 (0.201)	-0.165 (0.200)
<b>Bank Level Variables</b>	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>Country Level Variables</b>	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>Financial Crisis Dummy</b>	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>Country FE</b>	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>Year FE</b>	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>Cons</b>	12.362 *** (3.420)	12.268 *** (3.473)	12.235 *** (3.404)	12.384 *** (3.404)	25.862 (41.194)	28.729 (41.348)	23.557 (41.610)	24.466 (41.586)	-0.230 (4.024)	-0.100 (4.134)	-0.195 (4.035)	-0.255 (4.060)
<b>R-sq within</b>	0.43	0.43	0.43	0.43	0.40	0.40	0.40	0.40	0.35	0.35	0.35	0.35
<b>between</b>	0.45	0.46	0.46	0.46	0.20	0.19	0.19	0.19	0.39	0.39	0.39	0.38
<b>overall</b>	0.42	0.43	0.43	0.46	0.27	0.27	0.27	0.27	0.34	0.34	0.34	0.33
<b>Number of Obs.</b>	2108	2108	2108	2108	2108	2108	2108	2108	2108	2108	2108	2108

The results in Table 4.9B reports the regression results with interactions and the findings are similar to that of Table 4.9A. The coefficients of the interactions between EU dummy and selected corporate governance variables are statistically insignificant which implies that the impact of EU membership on a bank's performance does not depend on how the bank is governed. These results bring the idea for making further research in the future to examine and find the reasons under this relationship in more depth.

#### **4.5 Discussion and conclusion**

It has long been assumed membership of the EU brings high standards in political, economic, institutional, social and educational areas. In this chapter, from an institutional perspective, whether the EU accession process helps or hinders bank performance and good practices in bank corporate governance is examined. The results show that the accession process has some positive influence on the corporate governance practices of banks in candidate nations. However, since the reforms of EU on corporate governance issues go back to the early 2000s, this political process has a lagged influence on corporate governance practices of banks in newer and long-standing member nations. Both univariate and multivariate analyses report candidate countries show better performance compared to banks in member countries. Using a dummy variable for EU membership, multivariate analysis shows that banks exhibit poor performance during the membership period. The accession process also influences corporate governance characteristics. Board independence is higher in banks of candidate nations compared to in banks of member nations. Although the European Commission (COM/2005/162) highlighted the importance of board independence, this corporate governance characteristic remains low in banks of member nations. This issue might be explained by foreign ownership of many of the sample banks in member countries. Foreign owners of the banks may prefer to appoint their executives to the supervisory board of subsidiary banks to increase control that would subsequently decrease board independence.

The initial efforts of EU policymaker institutions on female representation go back to 2004 and 2006 following the publication of two directives. These are the Council *Directive 2004/113/EC* of 13 December 2004 implementing the principle of equal treatment of men and women in the

access to and supply of goods and services, OJL 373, 21 December 2004 and *Directive 2006/54/EC* of the European Parliament and of the Council of 5 July 2006 on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation (recast), OJL 204, 26 July 2006. These efforts reached the directives that directly considered female representation on boards when European Commission proposed a directive in 2012 setting 40% legislative gender (under-represented sex) quota in non-executive directors on listed firms across the EU by 2020 (European Commission, 2012). Biggins stated that “*diverse boards help to better represent all shareholders, (...) can help recruit and retain top executive women and minorities*” (1999, p. 2) and study by Abad et al., (2017) also shows that more gender diversity on boards of Spanish firms decreases the level of information asymmetry in stock markets. European Union in general and some EU nations<sup>12</sup> (Jourova, 2016; Adams, 2016; Pala-Laguna and Esteban-Salvador, 2016; Leszczynska, 2018) and Norway (Kogut et al., 2014) have been working on increasing number of women directors on company boards by promulgating quotas for female (under-represented gender) directors. The Commission also highlighted that the female representation would develop good corporate governance practices and increase firm performance (European Commission, Staff Working Document, 2012). The multivariate results suggest that female directors have significantly positive influences on the performance of banks in sample nations thus the thesis supportive to that and recommends the policymakers insist on the implementation of such a policy of a quota for female directors, increasing the presence of female directors on the boards of directors of banks. This chapter also employs regression analyses to investigate the influence of corporate governance structure on the performance of the banks during the EU journey and additionally considers the EU membership as a determinant of corporate governance structure. Overall, additive to the results of female directors, some results show that board size, board independence and when including foreign ownership the board diversity also affect the performance of bank. The results further prove that the performance of sample banks are significantly determined by bank level variables. The

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<sup>12</sup> Including Austria (35% by 2018 in only state-owned firms), Belgium (33% by 2017 in for executives and nonexecutives in state-owned and listed firms and in listed SMEs by 2019), Germany (30 % from 2016 for supervisory boards of the listed companies that are submitted to parity co-determination), Greece (33 % only companies fully or partially owned by the state for all board positions), France (from 2011 40 % by 2017 for non-executive directors in listed and non-listed companies), Italy (33% for all board positions in listed firms and state-owned firms by 2015), Netherlands (only target for 30% for all board directors) and Spain (40 % both executives and non-executives by 2015 but no sanctions, thus rather a recommendation).

results of regression analysis where the interaction terms used display that the impact of EU membership on performance of bank does not relate how the banks are managed.

While, the policymaker organisations dealing with corporate governance issues across EU such as EC, have actively engaged in the development of corporate governance practices across the EU, this chapter reports that the EU membership has little influence on corporate governance practices in banks of member nations. Even though the EC rules and recommendations in relevant directives and plans have not been much influential for sample banks from member nations, the sample banks from candidate nations show far greater take-up of such corporate governance measures. How could these results be explained? What are the reasons behind this phenomenon? Well, perhaps the journey towards accession is more influential in adopting such measures, than membership of the EU.

EU corporate governance regulations emerged in the 1990s and had disseminated only slowly amongst members. Indeed many member nations joined the EU before and during the early 2000s and were not required to amend corporate governance characteristics during their accession period. By contrast, for candidate nations, this accession journey is continuing, and incentives to amend corporate governance practices exist. While member nation banks might evolve, their corporate governance practices to the recommended corporate governance practices when completing economic and monetary union some factors may limit this progress. Foreign ownership of subsidiary banks may show a preference for relatively less independent boards to enhance control over local banks. To address the issue, the EC should focus on that and present recommendations or regulations accordingly. By using the regulatory power, the Commission might also introduce regulations to enhance the number of independent directors, female directors and domestic directors on boards. In conclusion, this chapter shows that although all efforts of the Commission have some influence on corporate governance practices of banks in accession nations these efforts need to be continued to bring corporate governance change to banks from EU members as well. Thus, this chapter suggests the Commission should proactively take actions on those issues as banking union, capital markets union and financial union overall require better governance of banks especially for sound risk management, accounting practices, and better performance.

## **Chapter 5. Has the EU accession influenced risk management in the EU member and candidate nation banks?**

### **5.1 Introduction**

Are political processes important in determining bank behaviours and risk management? Since the financial crisis, there has been increasing awareness that politics influence banking (e.g., Blau et al., 2013; Calomiris and Haber 2014; Gropper et al., 2013). This proposition is examined through determining whether the European Union (EU) accession process and membership influence the risk management practices and risk performance of the banking sector. Specifically, it is explored that whether joining this economic and political union has had a positive influence or otherwise on bank risk behaviours and risk management structure. This assessment compares the risk management and risk behaviours of banks from new EU member nations relative to banks from the candidate member nations affected by the EU accession process over the 2000-2016 period.

Using data from 159 banks from eleven EU member nations and five candidate nations and additional 52 banks from four long-standing EU members (France, Germany, Greece, and Spain) to control the results, many findings emerge. The risk management structures of banks from nations in the process of joining the EU have displayed less improvement relative to banks from EU member states. This assessment is undertaken by examining the characteristics of risk management arrangements responsible for bank-wide risk management. Turning to risk behaviours of sample banks, the results support that banks from EU member states take higher risks and display lower levels of financial stability, relative to banks from candidate nations. By adding sample banks from four EU long-standing members, these results hold for this broader sample consisting of 2339 bank-year observations. This assessment is undertaken by considering the percentage of Non-Performing Loans (NPL) and Z-Score. These results are confirmed by regression analysis, which reports a negative relationship between EU membership and both NPL ratio and Z-Score indicating bank riskiness is higher for banks in member nations relative to banks from candidate nations in the process of joining the EU.



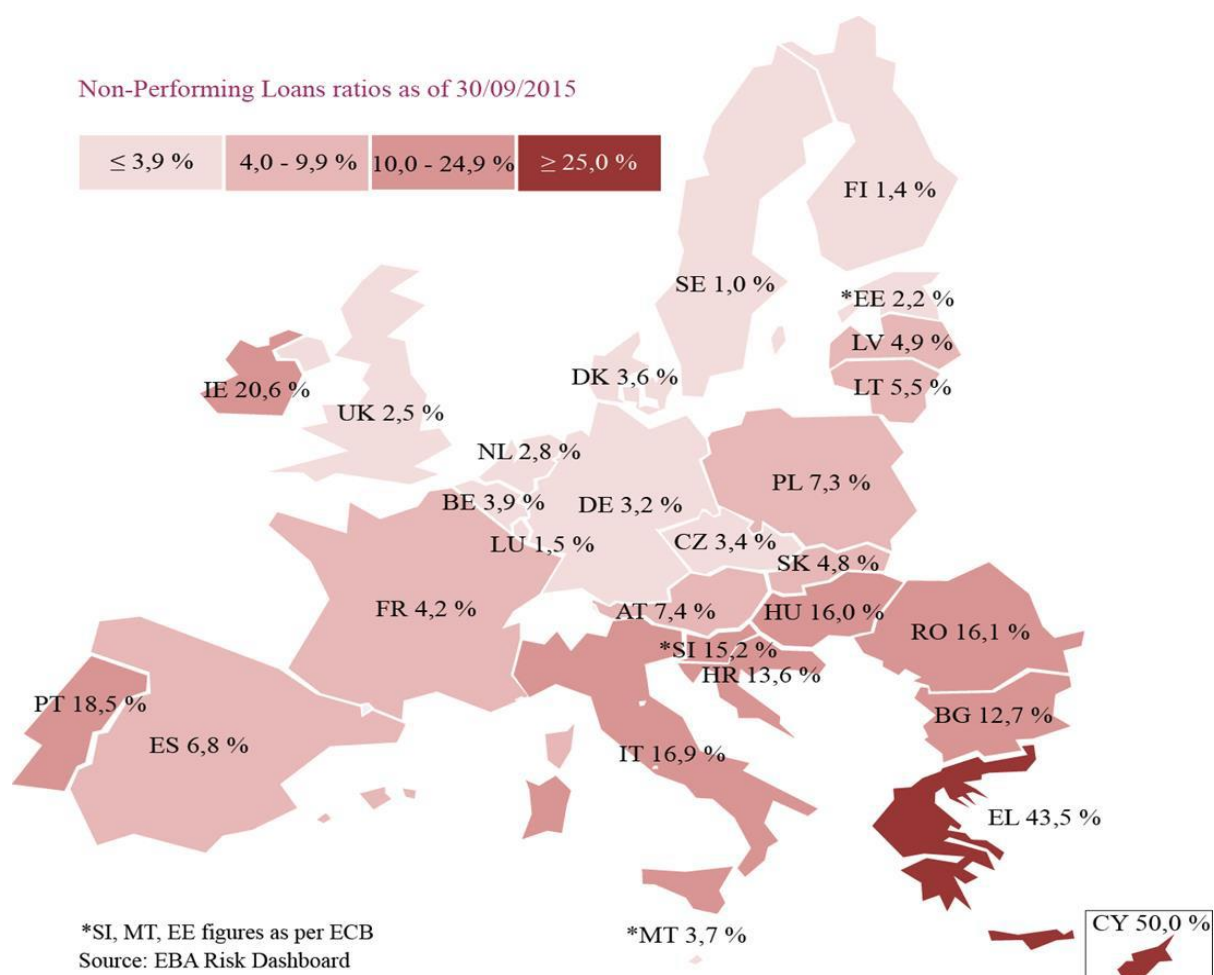
This assessment contributes to the literature in a number of respects. One, the role of politics in influencing the form and compliance with banking regulation is an emergent theme in the broader banking and regulatory literature. To date there have been significant contributions assessing the influence of political connections of firms and their boards (Blau et al 2013, Gropper et al 2013, Gropper et al 2015), links between financial crisis and regulatory and political reforms (Andersson 2016) and the influence of institutions within nations (Calomiris and Haber 2014) on bank behaviours. This chapter contributes to this broader literature through examines a distinct political influence, the process of joining the EU and EU membership on bank risk-taking.

Secondly, European Union entry and membership criteria have become a key driver of international financial regulation. The accession procedure is vital for banking as the European Commission (EC) is the leading political institution responsible for bank risk related issues in the EU. This regulatory field has developed significantly in the last decade with repeated EC directives and recommendations issued. Comprehending the impact of the accession process over the behaviour of banks and the way such regulation is implemented, enables an assessment as to the efficacy of such regulatory developments. The global financial crisis in 2007/2008 forced many international organisations and developed and developing nations to take immediate actions. Following this financial crisis, the Eurozone crisis has also hit the EU economy. The EU organisational bodies (EC, ECB and European Parliament) have inevitably focused on solving the problems emerged from these two crises especially financial stability and riskiness of European banking sector and published many legislative actions including directives, policy recommendations and rules and also guidelines<sup>13</sup> which are discussed in detail in the next section of this chapter. This study considered Z-Score and NPL ratio as two dependent risk variables as nonperforming loans have become a significant problem for the EU banking sector and eventually for the whole EU economy as it has been negatively influenced

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<sup>13</sup> Some of them are as follows; the corporate governance and remuneration provisions for financial institutions are included in the Capital Requirements Directive IV (Directive 2013/36/EU or CRD IV), as amended by Capital Requirements Directive V (Directive 2019/878/EU or CRD V) in particular in Chapter 2, Sections II and V, and in Regulation No 575/2013 or CRR, as amended by Regulation No 2019/876 or CRR II in particular in Part VIII. This legislation is under review through: The amendments to the CRD IV/CRR, which aim to make the rules on remuneration more proportionate for smaller banks and more harmonised across the EU, while ensuring that they still reduce incentives for focusing on short-term profitability and taking excessive risk. A new, tailor-made corporate governance and remuneration regime for investment firms (investment firms Directive and Regulation) put forward by the Commission in December 2017, as the current CRD IV regime was designed mainly for banks and has been found not to take appropriate account of the different business models, remuneration structures and risks posed by investment firms and lastly the European Central Bank's Guidance to Banks on Non-Performing Loans.

bank lending (ECB, 2017). Aiyar et al., (2015) argued that NPL ratio doubled in the EU banks from 2009 to 2014. This high NPL negatively impacted bank performance decreased credit supply and slowed down economic activity especially by affecting SMEs across the EU. Mesnard et al., (2016) in their briefing paper to the European Parliament presented a figure of NPL ratios across the EU in 2015 by using ECB statistics which show the importance of the NPL problem that EU banking sector was faced. Overall, this study investigates the effect of EU on NPL and Z-Score in member and candidate nations banks and thus contribute to that discussion on the EU's banking sector NPL problem and overall stability from a different and new perspective by using original hand-collected dataset.



**Figure 5.1** Non-performing loans in the EU (Source: Mesnard et al., 2016)

Lastly, there is a good number of academic literature examining the link between bank risk and corporate governance structure. Previous studies have primarily focused on the relationship between bank risk, board characteristics and risk management structures (Pathan, 2009; Aebi et al., 2012; Beltratti and Stulz, 2012; Peni et al., 2013; Ellul and Yerramilli, 2013), CEO risk incentives and compensation (Fahlenbrach and Stulz, 2011; Hagendorff and Valsalas, 2011; De Young et al., 2013; Cooper and Kish, 2014; Bennett et al., 2015; Cheng et al., 2015; Van Bakkum, 2016) and board characteristics (Caprio et al., 2007; de Andres and Vallsalado, 2008; Laeven and Levine, 2009; Burns et al., 2010; Berger et al., 2014 & 2016; Minton et al., 2014; Stulz, 2015). There are relatively few studies in the European context (Maechler et al., 2010; Saghi-Zedek and Tarazi, 2015; Chiaramonte et al., 2015; Jassaud and Vidon, 2017; Andries and Brown, 2017). It is believed that no study to date examined the influence of a political process on risk management structure and the influence of risk management structure on NPL ratio and Z-Score. Thus this study is the first to examine the influence of the EU accession and membership over bank risk behaviour and risk management structure and by using a new and original dataset to investigate the risk management structure on risk and stability of banks. Besides that this study is different than previous studies in the European context above by using many risk management-level, board-level, and bank-level and country-level variables together to control for many aspects that would influence bank risk and stability.

The chapter is organised as follows. The theoretical background of the accession process and bank risk and risk management in the EU are provided in section 5.2. The research questions, data, variable construction, and sample selection are discussed in section 5.3. In section 5.4, the univariate and multivariate analysis results are provided. Lastly, in section 5.5 conclusions and policy implications of the chapter are presented.

## **5.2 Theoretical background**

The literature on risk management of banks has been growing in recent decades especially following the recent financial depression of 2007/2008 and the subsequent Eurozone crisis. Policymakers around the world have increasingly questioned the risk management and risk of financial institutions. Such policy contributions from international organisations on bank risk

and risk management were outlined, and the political context of the EU, the policies and recommendations of EU on risk and risk management are discussed.

### *5.2.1 Bank risk and risk management studies of national and international level*

How to quantify and mitigate excessive bank risk-taking and the safety and soundness of banks and banking systems has become an important academic subject (see Wheelock and Wilson, 2000; Kwan and Eisenbeis, 1997; Demirgüç-Kunt and Huizinga, 2010; Keys et al., 2010; Mian and Sufi, 2008). Much of this literature has been influenced by discussions coordinated by the BIS and the Basle Committee. As one of the supranational organisations working to create a sound and prudent financial environment, the Basel Committee laid many foundations for assessing bank risk. The Basle Committees' *'Enhancing Corporate Governance for Banking Organisations'* (Basle 1999) highlighted the significance of the earlier OECD corporate principles for banks in 2004 and indicated new corporate governance issues for banks and their supervisors to take account (BCBS, 1999). These guidelines led to the development of bank's risk management guidelines (BIS 2010) highlighting sound corporate governance principles and reporting of risk management and internal controls, with compensation rules, senior management policies, corporate structures disclosed separately. This work was revised as a consultative paper in 2015 as the *"Corporate Governance Principles for Banks"* (Bank for International Settlements, 2015).

This approach to bank risk management and placing risk management as a central board function has disseminated over time to other international and national regulators and policymakers. For instance, the OECD report (2010) reported weaknesses in corporate governance strategies had led to excessive risk-taking in financial services companies. These were to be addressed through ensuring risk management becomes a central board function. National reports and guidelines, such as the Turner Review (2009) and the Kay Review (2012) have also highlighted the importance of risk management of firms and the enhancement of risk management structures.

This policy literature has informed and developed in tandem with EU legislation and regulation on risk management and governance. Historically risk and risk management within credit institutions and investment firms were influenced by the Council Directive 82/891/EEC, and

the directives of European Commission titled as 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, and 2007/36/EC. Since the global financial crisis and the subsequent Eurozone crisis, new challenges and responses arose. The policymaker organisations of the EU have focused more on prudential requirements by regularly publishing directives and regulatory documents. These directives and recommendations are 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012, of the European Parliament and of the Council (OJL 173, 12.6.2014, p. 190), known as the “*Bank Recovery and Resolution Directive*” (BRRD) (Directive 2014/59/EU). Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012. Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012, of the European Parliament and of the Council (OJL 173, 12.6.2014, p. 190), known as the *Bank Recovery and Resolution Directive* (BRRD) (Directive 2014/59/EU).

The EU has adopted a new action plan and Green Paper for financial institutions’ corporate governance in 2010 named as “*the Driving European Recovery Programme*” and “*the Green Paper on Corporate Governance in Financial Institutions and Remuneration Policies*” respectively. The Committee of European Banking Supervisors published guidelines on risk management for the banking sector again in 2010. Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013, on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (OJL 176, 27.6.2013, p. 338), known as *the CRD (Capital Requirements Directive)*. “*Principles for An Effective Risk Appetite Framework*” by The Financial Stability Board (hereafter FSB) and the “*Supervisory Statement on Governance and Risk Appetite*” by the *Single Supervisory Mechanism* on June 2016 and Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms.

Not directly related to corporate governance and risk management practices but important within European banking context, one of the reactions to the financial crisis 2007/2008 was the

formation of the Vienna Initiative (hereafter VI) in November 2008. It is important to mention the VI here as several banks across Europe operating in CEE region came together to react to the problems<sup>14</sup> that emerged from the crisis. The VI established with the cooperation of central founder institution EBRD and IMF, European Investment Bank (hereafter EIB), the World Bank EC and ECB which brings home and host country regulatory and fiscal authorities and the largest banking groups operating in the EBRD region together (EBRD, 2012). The EBRD, EIB, and the World Bank Group formed *the Joint IFI Action Plan*<sup>15</sup> to “support banking sector stability and lending to the real economy in crisis-hit CEE region” (De Haas et al., 2015).

According to the VI, the important primary objectives were to (EBRD, 2012):

- *“Prevent a large-scale and uncoordinated withdrawal of cross-border bank groups from the region, which could have triggered systemic bank crises not only in individual countries but in the region as a whole.*
- *Ensure that parent bank groups maintain their exposures and recapitalise their subsidiaries in emerging Europe.*
- *Ensure that national support packages of cross-border bank groups benefited their subsidiaries in emerging Europe and thus avoided a “home bias.”*
- *Agree on, and implement, basic crisis management principles in the region.”*

The success of VI paves the way for the Vienna Initiative (VI) 2.0 in 2012 which was the response to the Eurozone crisis, especially in handling deleveraging from Eastern Europe (Vienna Initiative, 2012).

The VI 2.0 aims to support banks (Vienna Initiative, 2012):

- *Avoid disorderly deleveraging.*
- *Ensure that potential cross-border financial stability issues are resolved*
- *Achieve policy actions, notably in the supervisory area, that are taken in the best joint interest of home and host countries.*

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<sup>14</sup> The VI has also acknowledged NPL issue as a main weakness for a recovery in credit markets and the NPL initiative has been formed to work specifically on this issue.

<sup>15</sup> These international finance institutions (IFI) created Joint IFI Action Plan in 2009.

## **5.3 Research methodology**

### *5.3.1 Research questions*

Reflecting the regulatory developments in this field, it is proposed that accession to the EU and EU membership are likely to be associated with an enhancement of risk management and restrain risk-taking by individual banks. The research questions are reflected to examine the influence of the EU accession and membership on risk management structure and risk and stability of member and candidate nations banks.

Subsequently, the first question is as follows:

- Does the EU accession process and membership improve or impedes the financial stability and risk of banks?

The differences between the pre-membership and membership periods are contrasted and relevant methods were used to answer this question.

The second question is as follows:

- What is the influence of selected risk management variables on bank risk and stability?

To investigate the relationship between the bank risk management structure and bank risk and financial stability the relevant analyses were employed. These questions are examined through comparison of banks from nations with different relationships with the EU. Initially, a sample was created including banks from candidate nations, in the process of accession to the EU and the nations that have successfully joined the EU in the sample period and this sample were used in the analysis. Then the long-term members of the EU joining the EU before 2004 that not following the same accession process traversed by the new member and candidate nations was included in this sample and used in the analyses. The results are mixed and discussed in detail in appropriate section of this chapter and chapter 3.

### 5.3.2 Data and variables

The dataset covers banks operating in EU member and candidate countries. These nations include four long-established EU member states (France Germany, Greece and Spain), the eight nations entering the EU in 2004, the two nations which joined the EU in 2007, Croatia which joined the EU in 2013 and five candidate nations still attempting to procure EU membership (Albania, FYROM, Montenegro, Serbia and Turkey). A sample of 159 banks is generated from eleven EU member nations and five candidate nations and an additional sample of 52 banks from four long-standing EU members (France, Germany, Greece, and Spain) is made as a control sample. By adding this sample banks from four EU long-standing members, a broader sample consisting of 2339 bank-year observations is constructed. The dataset includes all commercial, investment, savings, and cooperative banks from the BankScope database in 2016. From this dataset, banks providing annual reports and other relevant documents in English including corporate governance and risk management specific information are included. Several other databases were also examined including SNL Financial, BoardEx, Thomson Reuters, and Bloomberg to provide bank-level risk, performance, and control variables<sup>16</sup>. Economic and financial databases from the International Monetary Fund (IMF), the World Bank, the Emerging Markets Monitor, the European Bank for Reconstruction and Development (EBRD), FTSE, S&P, and SNL Financials provided relevant information for nation-level control variables. Further information is provided in Table 5.1.

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<sup>16</sup> Author's own calculations were used in the dataset for missing information on both bank and country level variables.



**TABLE 5.1**  
**Sample Size and Characteristics of Candidate and Member Nations**

	Region	Legal Origin	Number of Banks	Number of Sample Banks	Number of bank-year observations
<i>Panel A. Control Group EU Members (Developed Countries)</i>					
France	Western Europe	French	229	16	137
Germany	Western Europe	German	1572	16	171
Greece	Southern Europe	German	9	7	92
Spain	Western Europe	French	149	13	108
<i>Panel B. EU Member since 2004 (All High Income Level Countries)</i>					
Czech Republic	Eastern Europe	German	20	9	123
Estonia	Northern Europe	German	10	10	117
Hungary	Eastern Europe	German	16	9	121
Latvia	Northern Europe	German	17	10	120
Lithuania	Northern Europe	French	8	7	83
Poland	Eastern Europe	German	33	13	143
Slovak Republic	Eastern Europe	German	14	10	124
Slovenia	Southern Europe	German	19	9	106
<i>Panel C. EU Member since 2007 (All Upper-Middle Income Level Countries)</i>					
Bulgaria	Eastern Europe	German	17	9	114
Romania	Eastern Europe	French	14	6	73
<i>Panel D. EU Member since 2013 (High Income Level Country)</i>					
Croatia	Southern Europe	German	18	7	88
<i>Panel E. Candidates (All Upper-Middle Income Level Countries)</i>					
Albania	Southern Europe	French	10	6	56
FYROM	Southern Europe	French	13	8	78
Montenegro	Southern Europe	French	11	8	70
Serbia	Southern Europe	French	20	8	73
Turkey	Eastern Europe	French	42	30	342

Sources: World Bank, United Nations and La Porta et al., (2008)

### 5.3.2.1 Variable descriptions

Table 5.2 provides information about the variables of this chapter. The variables are divided into five groups. The first group of variables is composed of risk management variables. The number of studies on bank risk management structure has been increasing especially following the 2007/2008 financial crisis and the Eurozone crisis. The variables that have been used in this chapter were specified by following those studies listed below. The second set of variables is related to the corporate governance structure of banks and includes variables on boards (board size and independence), CEO power (CEO duality) board types and board diversity (female and foreign board members). The third set of variables considers bank risks and comprises two main risk measures Z-Score and non-performing loans ratio. Additional risk

measures including two of the composites of Z-Score, the standard deviation of ROA and the capital ratio are also collected robustness. The fourth group of variables consists of five bank-level variables to control for the individual (bank) specific influence on bank risk and the last group of variables is used to accommodate country-specific variation in the bank risk measures.

*EU Membership:* A dummy variable equals 1 for membership and 0 otherwise were used as an EU indicator following Bekaert et al.'s (2013).

*Chief Risk Officer (CRO) Presence:* CRO presence is the first risk management variable takes a dummy variable equals 1 if a CRO (or a position with the same responsibility) exists and 0 otherwise. The presence of CRO shows the quality of risk management (Ellul and Yerramilli, 2013; Minton et al., 2014 and Sun and Liu, 2014).

*Chief Risk Officer (CRO) Executive:* This is another risk management variable shows the power of the CRO and takes a dummy variable equals 1 if a CRO holds a position as an executive (or the same position in the bank) and 0 otherwise. This indicates the strength and effectiveness of CRO (Aebi et al., 2012 and Ellul and Yerramilli, 2013).

*Chief Risk Officer (CRO) Gender:* CRO gender is the third risk management variable takes a dummy variable equals 1 if a CRO gender is female and 0 otherwise. There are many studies in the literature that examined the influence of female directors on performance (e.g., Fields and Keys, 2003; Carter et al., 2003; Terjesen et al., 2009; Adams and Ferreira, 2009; Garcia-Meca et al., 2015). The aim of using this variable is thus to demonstrate the relationship between female CROs and bank risk.

*Risk Committee Presence:* Risk committee presence as another risk management variable takes a dummy variable equals 1 if a specific committee responsible for risk management within the bank exists and 0 otherwise which indicates the quality and strength of risk management structure of bank (Aebi et al., 2012; Minton et al., 2014 and Andries and Brown, 2017).

*Risk committee reports to the board:* This is the last risk management variable takes a dummy variable equals 1 if the risk committee reports directly to the board of directors of the bank and 0 otherwise that is a signal for the power and functionality of risk committee (Andries and Brown, 2017).

*Board Size:* The number of directors that sit on board of directors was used as the first board level variable. Board size is widely used in corporate governance literature (e.g., Yermack, 1996; Guest, 2009 and Pathan & Faff, 2013).

*Board Independence:* The percentage of independent outside directors on the supervisory board is used as the second board characteristics which are commonly used in previous corporate governance papers (e.g., Mishra & Nielsen, 2000; Erkens et al., 2012 and Pathan and Faff, 2013).

*Gender Diversity:* The percentage of female directors on the board is used for gender diversity which is mostly used in board diversity literature (e.g., Fields and Keys, 2003; Adams and Ferreira, 2009 and Garcia-Meca et al., 2015).

*Nationality Diversity:* The number of foreigners divided by the number of all directors on board is used that is generally used in corporate governance literature (e.g., Oxelheim and Randoy 2003 and Ruigrok et al., 2007).

*Board Type:* A dummy variable equals 1 if a bank has a two-tier board and 0 if a bank has a one-tier board. This variable used on literature to discuss the effectiveness and functionality of one-tier and two-tier boards (e.g., Junngmann, 2006 and Alas and Elenurm, 2014).

*CEO/Chairman Duality:* A dummy variable equals 1 that is used if the CEO is also the chairman of the board and 0 otherwise. The CEO duality is mostly used in the literature as a proxy for CEO power (e.g., Acrey et al., 2011; King et al., 2011 and Liang et al., 2013).

*Z-Score:* Z-Score is the first risk variable that is measured by Return on Assets plus Capital ratio divided by standard deviation that shows bank stability. As it is highly skewed value, the natural logarithm of the score is used (Laeven, and Levine, 2009; Liu et al., 2013 and Schaek and Cihák, 2014). This variable is broadly used in risk literature (e.g., Boyd and Graham, 1986; Boyd and Runkle, 1993; Garcia-Marco and Robles-Fernandez, 2008; Maechler et al., 2010; Beck, De Jonghe, & Schepens, 2011; Saghi-Zedek and Tarazi, 2015 and Chiaramonte et al., 2015). The Z-score reflects the probability of insolvency thus the higher values of Z-score means greater bank stability (Roy, 1952). Chiaramonte et al., (2015) demonstrate that the Z-score could detect instability and risk as well as the CAMELS variables (which includes capital, asset quality, management, earnings, liquidity, and sensitivity to market risk), by using

comparatively not too much data. There are also some studies (e.g., Lepetit & Strobel, 2013 and 2015) that have made some critics on Z-Score especially on its estimation methods as this score is only measured rely on accounting data that market-specific variables are also needed to get more information for bank stability and bank risk. As keeping in mind that the data of study have a long period from 2000 to 2016 to consider the variability in accounting variables, following Li et al., (2017), the 3-year rolling windows estimation method was used.

*NPL Ratio:* Like the other risk measure variable NPL ratio is measured as the percentage of nonperforming loans to total loans which shows credit risk. It has been widely used in the banking studies especially following the Eurozone crisis (e.g., Liang et al., 2013; Aiyar et al., 2015; Mesnard et al., 2016; Andries and Brown, 2017 and Jassaud and Vidon, 2017).

*Return on Assets (ROA):* ROA is the first dependent performance variable of this chapter that is measured by net income divided by average total assets. ROA is broadly used as a performance variable in previous studies (e.g., Crespi et al., 2004; Carter et al., 2010; Ferreira et al., 2010 and Westman, 2011).

*Size:* Size is measured by natural logarithm of total asset of bank which is the first bank control variable of this chapter is widely used in the literature (e.g., Yermack 1996; Pathan 2009; Peni and Vähämaa, 2012; Cheung et al., 2014; Battaglia et al., 2014 and Saghi-Zedek and Tarazi, 2015).

*Capital Ratio:* Another bank-level control variable is capital ratio is measured by equity divided by total assets to control for the bank's capital structure. This ratio is widely used in banking studies (e.g., Iannotta et al., 2007; Altunbas et al., 2010; Saghi-Zedek and Tarazi, 2015 and Detragiache et al., 2018).

*Operation Ratio:* Cost-to-income ratio which is measured by the cost to income ratio is used to control for managerial quality (e.g., Shehzad et al., 2010; Barry et al., 2011 and Chiaramonte et al., 2015).

*Liquidity Ratio:* As another bank-level control variable liquidity ratio is measured by liquid assets divided by deposits and short-term funding (e.g., Iannotta et al., 2007; Altunbas et al., 2010 and Chen and Wu, 2014).

*GDP Percapita Growth:* As the first country-level control variable GDP per capita growth measured as an annual percentage growth rate of GDP per capita based on constant 2010 U.S. dollars (e.g., Andersson, 2016).

*Inflation Rate:* As the second country-level control variable inflation rate gives the annual percent change in consumer price index (CPI). Inflation rate as an important macroeconomic indicator would affect the bank risk behaviour. (e.g., Bohachova, 2008)

*World Governance Indicators (WGI):* The WGI is the third country-level control variable is a research dataset (2000-2015) summarizing the views on the quality of governance based on several surveys' responses. The governance quality of a nation could influence the corporate governance and risk management quality of banks as well thus the WGI and Index of Economic Freedom were used as country-level variables. The dimensions of the dataset are as follows: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption (e.g., Kaufmann et al., 2010).

*Index of Economic Freedom (The Heritage Foundation):* As the last country control variable this index measures economic freedom (2000-2015) based on 12 quantitative and qualitative indicators, group into four broad categories of economic freedom: Rule of Law, Government Size, Regulatory Efficiency, Open Markets (e.g., De Haan and Sturm, 2000).

**TABLE 5.2**  
**Variable Definitions**

Variables	Definitions
<b>Risk Management Variables</b> <i>(Hand-collected data)</i>	
Chief Risk Officer (CRO) Presence	Dummy variable equals 1 if a CRO (or a position with the same responsibility) exists and 0 otherwise.
Chief Risk Officer (CRO) Executive	Dummy variable equals 1 if a CRO holds a position as an executive (or the same position in the bank) and 0 otherwise
Chief Risk Officer (CRO) Gender	Dummy variable equals 1 if a CRO gender is female and 0 otherwise
Risk Committee Presence	Dummy variable equals 1 if a specific committee responsible for risk management within the bank exists and 0 otherwise.
Risk committee reports to the board	Dummy variable equals 1 if the risk committee reports directly to the board of directors of the bank.
<b>Corporate Governance Variables</b> <i>(Hand-collected data)</i>	
Board Size (BSize)	The number of directors on the supervisory board (Natural logarithm)
Board Independence (Bind)	The percentage of independent outside directors on the board of directors.
Gender Diversity (Female)	The percentage of directors who are female
Board Tier (Tier)	Dummy variable equals 1 if the dual board exists and 0 otherwise
CEO/Chairman Duality (CEODual)	Dummy variable equals 1 whether the CEO is also the chairman of the board and 0 otherwise
Nationality Diversity (BForeigner)	The percentage of directors who are foreigners
<b>EU Membership</b>	
EU Membership (EUDummy)	Dummy variable equals 1 for membership period and 0 otherwise
<b>Risk Measures Variables</b> <i>(Source: Bankscope and Authors' own calculations)</i>	
Z-Score	Return on Assets plus Capital ratio divided by standard deviation shows bank stability (Natural Logarithm)
NPL Ratio	Percentage of nonperforming loans to total loans which shows credit risk
$\sigma(\text{ROA})$	The standard deviation of ROA, which indicates the volatility of asset returns.
Capital Ratio	Equity to total assets ratio which indicates leverage
<b>Bank Control Variables</b> <i>(Source: Bankscope and Authors' own calculations)</i>	
Return on Assets (ROA)	Net income divided by average total assets
Operation Ratio	The cost to income ratio
Liquidity Ratio	Liquid assets divided by deposits and short-term funding
Bank Size	Total assets (Natural Logarithm)
<b>Country-Level Variables</b> <i>(Source: The World Bank, The IMF, The Heritage Foundation and Kaufmann et al., 2010)</i>	
GDP Per capita Growth	The annual percentage growth rate of GDP per capita based on constant 2010 U.S. dollars
World Governance Indicators (WGI)	The WGI is a research dataset summarising the views on the quality of governance based on several surveys' responses. The dimensions of the dataset are as follows: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption. (2000-2015)
Index of Economic Freedom (The Heritage Foundation)	Measures economic freedom based on 12 quantitative and qualitative indicators, group into four broad categories of economic freedom: Rule of Law, Government Size, Regulatory Efficiency, Open Markets. (2000-2015)
Inflation Rate	Annual percent change in consumer price index (CPI)
Financial Crisis Dummy	Dummy variable equals 1 for the year global financial crisis and Eurozone crisis present which was the period 2008-2012

### 5.3.3 Estimation methods and models

The relationship between the variables is examined using both descriptive statistics and a panel data regression model. In the assessment risk measures are the natural logarithm of Z-Score (as an indicator of bank stability, hereafter Z-Score), NPL ratio (measure of credit risk), and standard deviation of ROA (shows volatility of risk and capital ratio (indicates leverage) A dummy variable (EU Dummy) was employed to distinguish the influence of EU membership.

The most appropriate method of descriptive statistic testing was determined following the results of normality tests, with T-tests and Mann-Whitney U tests employed. As all the risk management variables were binary variables,  $\chi^2$  tests were used to examine the comparison between the groups. To determine an estimation method, pre-testing was undertaken. Due to the data characteristics, the relationship between corporate governance, risk management, and risk variables was examined by using a panel data regression model. To decide for the most relevant model, initially, Hausman test (Hausman, 1978) and Breusch-Pagan Lagrange Multiplier test (Breusch and Pagan, 1980) were conducted. Based on the results of both tests and due to the dataset structure itself, which included many dummy variables, Baltagi and Wu (1998) and Baltagi (2008) methods were followed and the Generalised Least Squares (GLS) random effects (RE) model was employed. The alternative model fixed effects model would be inaccurate if many dummy variables were included in a model as they would be wiped out in the fixed effects regression process (Wooldridge, 2002). This was also followed by previous bank risk papers for similar reasons (e.g., Pathan 2009; Battaglia et al., 2014 and Saghi-Zadek and Tarazi, 2015). Following relevant diagnostic tests, it was detected that the estimations were affected by autocorrelation and heteroscedasticity. Pathan (2009) argued that GLS model is also robust to cross-sectional correlation and heteroscedasticity across panels. Together with that following Greene (2012) and Wooldridge (2010) robust standard errors were obtained and presented in parenthesis in Tables 5.6A and 5.6B. The base model equation (1) is as follows and D denotes dummy variables, C control variables,  $u$  denotes the between error and  $\varepsilon$  denotes the within error term.

$$y_{it} = \beta X_{it} + D_{it}\alpha + C_{it} + u_i + \varepsilon_i \quad (1)$$

The main model equation (2), which is Z-Score and Nonperforming Loans as of the dependent

variables, is given as follows:

$$\begin{aligned}
BANK\ RISK_{it} = & \beta_0 + \beta_1 X_{i,t}(EU\ MEMBERSHIP) + \beta_2 X_{i,t}(CHIEF\ RISK\ OFFICER\ PRESENCE) + \\
& \beta_3 X_{i,t}(CHIEF\ RISK\ OFFICER\ EXECUTIVE) + \beta_4 X_{i,t}(CHIEF\ RISK\ OFFICER\ GENDER) + \\
& \beta_5 X_{i,t}(RISK\ COMMITTEE\ PRESENCE) + \beta_6 X_{i,t}(RISK\ COMMITTEE\ REPORT\ TO\ BOARD) + \\
& \beta_7 X_{i,t}(BOARD\ SIZE) + \beta_8 X_{i,t}(BOARD\ INDEPENDENCE) + \beta_9 X_{i,t}(FEMALE\ DIRECTORS) + \\
& \beta_{10} X_{i,t}(FOREIGN\ DIRECTORS) + \beta_{11} X_{i,t}(BOARD\ TIER) + \beta_{12} X_{i,t}(BANK\ TOTAL\ ASSET) + \\
& \beta_{13} X_{i,t}(ROA) + \beta_{14} X_{i,t}(LIQUIDITY) + \beta_{15} X_{i,t}(CAPITAL) + \beta_{16} X_{i,t}(OPERATION) + \\
& \beta_{17} X_{i,t}(GDP\ PERCAPITA\ GROWTH) + \beta_{18} X_{i,t}(WORLD\ GOVERNANCE\ INDICATORS) + \\
& \beta_{19} X_{i,t}(INDEX\ OF\ ECONOMIC\ FREEDOM) + \beta_{20} X_{i,t}(INFLATION\ RATE) + YEARDUMMIES_{i,y} + \\
& u_i + \varepsilon_i
\end{aligned} \tag{2}$$

The results of the models are given in Table 5.6A and Table 5.6B.

Further analyses were also conducted to provide more discussion on the influence of EU accession and membership on bank risk management structure and bank risk and stability. The first supplementary analysis considers risk management variables which are the presence of chief risk officer, executive chief risk officer, gender of chief risk officer, the presence of risk committee and risk committee report to board are used interchangeably as dependent variables and employs probit panel data regression model separately to investigate the effect of EU membership on these variables. As all dependent variables are binary variables a probit regression model were employed to see the impact of EU accession and membership on these variables. The results of the models are given in Table 5.7A, Table 5.7B, and Table 5.7C. A probit model is a linear probability model that is the functional form of  $F(x'\beta)$ , and the base equation (3) is as follows:

$$F(x'\beta) = \Phi(x'\beta) = \int_{-\infty}^{x'\beta} \phi(z)dz \tag{3}$$

To examine the relationship between dependent risk management variables and the



independent variables separate regression models are specified. The model equation (4) is given as follows:

$$\begin{aligned} \text{Pr}(\text{RISK MANAGEMENT CHANGES} = 1) = & \phi(\beta_0 + \beta_{i,t}(\text{EU MEMBERSHIP}) + \\ & \beta_{i,t}(\text{RISK MANAGEMENT VARIABLES}) + \beta_{i,t}(\text{CORPORATE GOVERNANCE VARIABLES}) + \\ & \beta_{i,t}(\text{BANK LEVEL VARIABLES}) + \beta_{i,t}(\text{COUNTRY SPECIFIC VARIABLES}) + \text{YEARDUMMIES}_{i,y}) \end{aligned} \quad (4)$$

Further analysis was conducted to assess the impact of the EU accession and membership by dividing the sample into two as before and after the EU accession. The results of the models are given in Table 5.8A and Table 5.8B. The model equation (5) is given as follows:

$$\begin{aligned} \text{BANK RISK}_{it} = & \beta_0 + \beta_1 X_{i,t}(\text{CHIEF RISK OFFICER PRESENCE}) + \\ & \beta_2 X_{i,t}(\text{CHIEF RISK OFFICER EXECUTIVE}) + \beta_3 X_{i,t}(\text{CHIEF RISK OFFICER GENDER}) + \\ & \beta_4 X_{i,t}(\text{RISK COMMITTEE PRESENCE}) + \beta_5 X_{i,t}(\text{RISK COMMITTEE REPORT TO BOARD}) + \\ & \beta_6 X_{i,t}(\text{BOARD SIZE}) + \beta_7 X_{i,t}(\text{BOARD INDEPENDENCE}) + \beta_8 X_{i,t}(\text{FEMALE DIRECTORS}) + \\ & \beta_9 X_{i,t}(\text{FOREIGN DIRECTORS}) + \beta_{10} X_{i,t}(\text{BOARD TIER}) + \beta_{11} X_{i,t}(\text{BANK TOTAL ASSET}) + \\ & \beta_{12} X_{i,t}(\text{ROA}) + \beta_{13} X_{i,t}(\text{LIQUIDITY}) + \beta_{14} X_{i,t}(\text{CAPITAL}) + \beta_{15} X_{i,t}(\text{OPERATION}) + \\ & \beta_{16} X_{i,t}(\text{GDP PERCAPITA GROWTH}) + \beta_{17} X_{i,t}(\text{WORLD GOVERNANCE INDICATORS}) + \\ & \beta_{18} X_{i,t}(\text{INDEX OF ECONOMIC FREEDOM}) + \beta_{19} X_{i,t}(\text{INFLATION RATE}) + \text{YEARDUMMIES}_{i,y} + \\ & u_i + \varepsilon_i \end{aligned} \quad (5)$$

The last additional analysis was employed to see the impact of the EU accession and membership. The interaction terms created by using EU dummy and the presence of chief risk officer, executive chief risk officer, the gender of chief risk officer, the presence of risk committee and risk committee report to board respectively and interchangeably in base model (model 1). The results of the models are given in Table 5.9A and Table 5.9B. The last model (6) is as follows:

$$\begin{aligned}
BANK\ RISK_{it} = & \beta_0 + \beta_1 X_{i,t}(EU\ MEMBERSHIP) + \beta_2 X_{i,t}(CHIEF\ RISK\ OFFICER\ PRESENCE) + \\
& \beta_3 X_{i,t}(CHIEF\ RISK\ OFFICER\ PRESENCE * EU\ MEMBERSHIP) + \beta_4 X_{i,t}(CHIEF\ RISK\ OFFICER\ EXECUTIVE) + \\
& \beta_5 X_{i,t}(CHIEF\ RISK\ OFFICER\ EXECUTIVE * EU\ MEMBERSHIP) + \beta_6 X_{i,t}(CHIEF\ RISK\ OFFICER\ GENDER) + \\
& \beta_7 X_{i,t}(CHIEF\ RISK\ OFFICER\ GENDER * EU\ MEMBERSHIP) + \beta_8 X_{i,t}(RISK\ COMMITTEE\ PRESENCE) + \\
& \beta_9 X_{i,t}(RISK\ COMMITTEE\ PRESENCE * EU\ MEMBERSHIP) + \\
& \beta_{10} X_{i,t}(RISK\ COMMITTEE\ REPORT\ TO\ BOARD) + \\
& \beta_{11} X_{i,t}(RISK\ COMMITTEE\ REPORT\ TO\ BOARD * EU\ MEMBERSHIP) + \beta_{12} X_{i,t}(BOARD\ SIZE) + \\
& \beta_{13} X_{i,t}(BOARD\ INDEPENDENCE) + \beta_{14} X_{i,t}(FEMALE\ DIRECTORS) + \beta_{15} X_{i,t}(FOREIGN\ DIRECTORS) + \\
& \beta_{16} X_{i,t}(BOARD\ TIER) + \beta_{17} X_{i,t}(BANK\ TOTAL\ ASSET) + \beta_{18} X_{i,t}(ROA) + \beta_{19} X_{i,t}(LIQUIDITY) + \\
& \beta_{20} X_{i,t}(CAPITAL) + \beta_{21} X_{i,t}(OPERATION) + \beta_{22} X_{i,t}(GDP\ PERCAPITA\ GROWTH) + \\
& \beta_{23} X_{i,t}(WORLD\ GOVERNANCE\ INDICATORS) + \beta_{24} X_{i,t}(INDEX\ OF\ ECONOMIC\ FREEDOM) + \\
& \beta_{25} X_{i,t}(INFLATION\ RATE) + YEARDUMMIES_{i,y} + u_i + \varepsilon_i
\end{aligned} \tag{6}$$

To prevent extreme values affecting the results all bank-level variables (ROA, liquidity, capital, operation, and total asset) were winsorised at 1% and 5% levels following many previous empirical studies (e.g., Cheung et al., 2014 and Battaglia et al., 2014).

The next section presents the univariate analysis results in subsection 5.4.1, the regression analysis results in subsection 5.4.2 and the additional analysis results in subsection 5.4.3.

## 5.4 Results

### 5.4.1 Univariate analysis results and descriptive statistics

In this section, univariate and multivariate analysis are introduced. The descriptive statistics are provided in Table 5.3. The results of univariate analysis and descriptive statistics for banks in member nations based on membership starts year provided in Table 5.4. The findings of the univariate analysis and descriptive statistics for the banks in member nations and candidate nations are given in Tables 5. Lastly, the results of the multivariate analysis are given in Tables

## 5.6A and 5.6B.

The descriptive statistics for the sample of banks in candidate and member nations are presented in Table 5.3. The Z-Score is found as 3.39 on average. This finding is quite similar to the finding of previous empirical studies on European banks (e.g., Saghi-Zedek and Tarazi 2015 and Chiaramonte et al., 2015). For instance, the study of Chiaramonte et al., (2015) reported the Z-Score as 4.53 on average and the finding of Saghi-Zedek and Tarazi (2015) is also reported this score as 4.36. For the NPL ratio, the mean of NPL ratio is found as 9.42% for whole sample. This finding is in line with the previous literature (e.g., Aiyar et al., 2015; Bonin et al., 2015 and Mesnard et al., 2016). For instance, Aiyar et al., (2015) stated that the NPL ratio for the banks mostly from CEE region for the period 2008-2014 was over 10% and at the peak time this ratio was the maximum that was above 20 percent, in Albania, Montenegro, Romania, and Serbia.

Considering the risk management structure variables, the mean presence of CROs was 90.49%. This finding is very close to the finding of Andries and Brown (2017). The presence of executive CROs was reported as 49.15% on average. This is quite high compared to the findings of the study by Aebi et al., (2012) which was reported 13% and Andries and Brown (2017) which was found as 19%. This could be explained by the differences in sample periods of both study that are 2006 and 2005, respectively. The presence of female CROs was 18.47% on average and this number shows the similarity to the percentage of female directors which was also very low. The risk committee presence in whole sample was 31.73% on average. This is also quite high compared to finding of previous empirical studies (e.g., Aebi et al., 2012 as 8% and Andries and Brown, 2017 as 13%). Lastly, the risk committee report to board was quite low compared to other risk management characteristics and was 17.15% on average. This finding is quite close to the finding of Andries and Brown (2017) that is 10% on average for their sample banks.

**TABLE 5.3**

**Descriptive Statistics of Risk Measures and Risk Management Characteristics of Banks  
in Candidate and Member Nations**

	Total Observations	Mean	Median	Std. Dev.
<b>A. Risk measurement variables</b>				
<b>Z-Score</b>	1821	3.39	3.47	1.21
<b>NPL</b>	1737	9.42	11.25	10.55
<b><math>\sigma</math>(ROA)</b>	1831	1.19	0.85	0.94
<b>Capital Ratio</b>	1831	12.61	10.49	10.16
<b>B. Risk management variables</b>				
		<b>Number of observations = 1</b>	<b>Percentage</b>	
<b>Chief Risk Officer (CRO) Present</b>	1831	1657	90.49%	
<b>Chief Risk Officer (CRO) Executive</b>	1831	900	49.15%	
<b>Chief Risk Officer (CRO) Gender</b>	1831	311	18.47%	
<b>Risk Committee Present</b>	1831	581	31.73%	
<b>Risk Committee reports to the board</b>	1831	314	17.15%	

In Table 5.4, univariate results and descriptive statistics were compared based on years each member state joined the EU. In panel A, results for banks in member nations that became members in 2004 are displayed. For the NPL ratio, there is a significant difference between pre and post membership periods indicating an increase in this ratio. Although tests values are not statistically significant, Z-Score is higher for membership period suggesting an increase in bank risk. When considering risk management variables, there are significant differences and improvement following membership for a chief risk officer present, the chief risk officer executive, a risk committee present and the risk committee report to board variables which mean values of all variables significantly increase in membership period. Lastly, although the share of female chief risk officers increases during the membership period, the results are not statistically significant for both tests.

In panel B, results for banks in Bulgaria and Romania, which joined the EU in 2007, are provided. The results are statistically similar to the results in panel A. Similar to panel A, the mean value of NPL ratio for membership period is statistically significant and different to the pre-membership period and higher for membership period compared to period 2000-2006. Unlike the result in panel A, Z-Score is low for the membership period and statistically insignificant for banks in this group. For risk management variables, the results indicate that the presence of chief risk officer, if the chief risk officer is an executive if a risk committee is present and if the risk committee reports to the board are all higher in the membership period rather than in the pre-membership period; these results are statistically significant. Lastly, the

share of female chief risk officer is higher and statistically significant in this group in the membership period compared to pre-membership period.

**TABLE 5.4**  
**Descriptive Statistics and Univariate Comparison of Risk Measures and Risk Management Variables of Banks in New Member Nations**

Panel A. Banks in the EU countries which became members in 2004							T-test	Mann-Whitney
Number Observations	2000-2003			2004-2016				
	175 observations			755 observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
A. Risk Measure Variables								
Z-Score	3.23	3.36	1.05	3.29	3.44	1.35	-0.600	-1.450
NPL	6.63	4.09	6.78	9.10	6.23	8.72	-3.276***	-4.268***
σ(ROA)	1.30	0.92	0.96	1.35	1.07	1.05	-1.580	0.206
Capital Ratio	11.67	8.24	16.19	11.18	9.51	9.12	0.544	-5.173***
B. Risk Management Variables	n %	Std. Dev.		n %		Std. Dev.		χ²
Chief Risk Officer (CRO) Present	79.40	1.00		95.40		1.00		51.882***
Chief Risk Officer (CRO) Executive	1.70	1.00		61.20		1.00		201.131***
Chief Risk Officer (CRO) Gender	8.00	1.00		11.15		1.00		1.490
Risk Committee Present	1.71	1.00		28.87		1.00		57.876***
Risk Committee Reports to Board	1.70	1.00		15.70		1.00		24.578***
Panel B. Banks in the EU countries which became members in 2007							T-test	Mann-Whitney
Number Observations	2000-2006			2007-2016				
	52 Observations			135 Observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
A. Risk Measure Variables								
Z-Score	3.61	3.58	0.65	3.40	3.42	0.97	1.461	1.493
NPL	4.84	3.81	7.60	14.06	11.66	12.20	-4.762***	-6.201***
σ(ROA)	1.10	0.87	0.47	1.08	0.84	0.54	-1.566	-1.393
Capital Ratio	12.33	12.01	4.09	12.13	11.58	2.96	0.361	0.193
B. Risk Management Variables	n %	Std. Dev.		n %		Std. Dev.		χ²
Chief Risk Officer (CRO) Present	67.30	1.00		94.80		1.00		25.390***
Chief Risk Officer (CRO) Executive	0.00	1.00		60.00		1.00		55.042***
Chief Risk Officer (CRO) Gender	0.07	1.00		18.52		1.00		3.360*
Risk Committee Present	23.07	1.00		54.80		1.00		15.224***
Risk Committee Reports to Board	7.70	1.00		25.90		1.00		7.561***

Table 5.4 Continue

Panel C. Banks in the EU countries which became members in 2013							T-test	Mann-Whitney
Number	2000-2012			2013-2016				
Observations	64 Observations			24 Observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Median	
<b>A. Risk Measure Variables</b>								
Z-Score	4.27	4.36	0.90	3.14	3.17	1.51	4.292***	3.635***
NPL	9.15	7.96	7.21	15.60	16.17	2.76	-4.252***	-5.364***
$\sigma$ (ROA)	0.79	0.51	0.77	0.92	0.49	0.94	-0.674	-0.266
Capital Ratio	11.66	11.70	3.63	13.81	13.57	2.58	-2.655**	-2.511*
<b>B. Risk Management Variables</b>								
	n %	Std. Dev.		n %	Std. Dev.		$\chi^2$	
Chief Risk Officer (CRO) Present	92.20	1.00		100.00	1.00		1.988	
Chief Risk Officer (CRO) Executive	23.30	1.00		100.00	1.00		45.486***	
Chief Risk Officer (CRO) Gender	25.00	1.00		41.70	1.00		2.330	
Risk Committee Present	1.56	1.00		54.16	1.00		36.104***	
Risk Committee Reports to Board	0.00	1.00		20.80	1.00		14.137***	

Note: \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

Lastly, in panel C results for banks in Croatia, the newest member nation of the EU joining in 2013, are reported. The results are moderately different from the results of banks in other acceding nations, only similarity as to  $\sigma$  (ROA). Similar to the banks in other groups, the NPL ratio is statistically significantly different and higher for the membership period. Whereas the mean value of the natural logarithm of Z-Score is lower for the membership period and this is statistically significant. The test results for risk management variables are similar to the results in panel A and panel B. the results indicate that the chief risk officer is an executive, if a risk committee is present and if the risk committee reports to the board are all higher in the membership period rather than in the pre-membership and these are statistically significant. The results indicate that the presence of a chief risk officer and the share of female chief risk officer is higher for membership period but statistically insignificant.

In Table 5.5, risk measurement variables of banks in EU member nations and candidate nations are compared. According to the T-tests, the capital ratio, Z-Score and NPL ratio display significant differences between the two groups. The average value of Z-Score of sample banks was 3.30 for banks in member nations and was 3.48 for banks in candidate nations, which indicates that banks in candidate nations were less risky and more stable. Similarly, the NPL

ratio was 10.03 for banks in member nations and was 8.74 for banks in candidate nations. It is concluded that banks in member nations were riskier than banks in candidate nations during the sample period. The risk management variables of banks in EU member and candidate nations were compared using  $\chi^2$  tests. The presence of a Chief Risk Officer, if the Chief Risk Officer is an executive and the gender of the Chief Risk Officer are all significantly different for member and candidate nations. The presence of a risk committee and the condition of the risk committee reports to board variables have no significant differences between the groups. Banks in member nations appear to have superior risk management, and banks in candidate nations have relatively better Z-Scores and NPL ratio.

**TABLE 5.5**  
**Descriptive Statistics and Univariate Comparison of Risk Measures and Risk Management Variables of Banks in Candidate and Member Nations**

	Member Nations Banks			Candidate Nations Banks			T-test	Mann-Whitney
Observations	914 observations			907 observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
A. Risk Management Variables								
Z-Score	3.30	3.43	1.31	3.48	3.50	1.10	3.154***	2.080**
NPL	10.03	6.92	9.44	8.74	4.58	11.51	-3.212***	-6.693***
σ(ROA)	1.30	0.91	0.92	1.22	0.91	0.92	-1.564	0.541
Capital Ratio	11.39	9.98	11.53	13.84	11.23	11.53	5.204***	6.719***
B. Risk Variables		n %	Std. Dev.	n %		Std. Dev.	χ²	
Chief Risk Officer (CRO) Present	95.40	1.00		87.40		1.00	38.093***	
Chief Risk Officer (CRO) Executive	62.00	1.00		36.50		1.00	119.212***	
Chief Risk Officer (CRO) Gender	13.03	1.00		20.90		1.00	20.567***	
Risk Committee Present	33.33	1.00		30.24		1.00	2.011	
Risk Committee Reports to Board	17.40	1.00		16.90		1.00	0.065	

Note: \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

### *5.4.2 Multivariate analysis results*

#### *5.4.2.1 Main analysis results*

As this chapter examines whether the EU accession process has influenced the risk and stability of banks, the Z-Score and Nonperforming Loans ratio (NPL) were used as risk measures. A dummy variable was included in the model to observe the EU membership and risk of banks after nations' accession to the EU.

Panel A in Table 5.6A presents the results for a sample of banks from member and candidate nations. The first columns of panels give the results of Z-score and the second columns give the results of NPL. The findings report that there is a significant negative relationship between EU membership and Z-Score, which indicates that EU membership increases the risk of sample banks. For this sample of banks only CRO female has a strong positive influence on Z- Score among all risk management variables. This means that the presence of female CRO decreases the bank risk measured by Z-Score. Considering all corporate governance variables, the influence of board size, board independence, female and foreign directors and board duality all contributes to the bank stability. It could be inferred that board characteristics are more positively influential on bank stability. The total assets, capital ratio, and ROA have positive impacts on bank risk. Whereas liquidity and operation ratios have negative impacts on this variable. It is also documented that some country-level variables also affect bank stability. There is a negative relationship between inflation rate and Z-Score yet, this WGI is positively associated with bank stability.



**TABLE 5.6A**

**The impact of EU and Risk Management Characteristics on Risk and Stability of Banks  
in Candidate and Member Nations**

This table provides the results of GLS random effects panel data analysis. 1 and 2 indicate Z-Score and Nonperforming Loans (NPL) ratio, respectively. The bank-clustered robust standard errors of the coefficients are in parentheses. Panel A comprises banks from the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia, and Turkey. Panel B comprises banks from the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, and Croatia. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

Variables	MEMBER AND CANDIDATE NATION BANKS (PANEL A)				MEMBER NATIONS BANKS (PANEL B)			
	1		2		1		2	
EU Membership	-0.590***	(0.100)	4.389***	(0.768)	-0.798***	(0.146)	3.751***	(1.006)
CRO Present	-0.046	(0.075)	1.189*	(0.610)	0.038	(0.091)	1.841***	(0.642)
CRO Executive	-0.117	(0.074)	0.286*	(0.593)	-0.040	(0.093)	-1.153*	(0.642)
CRO Female	0.192***	(0.068)	-1.414**	(0.549)	0.211**	(0.092)	0.869	(0.640)
Risk Committee Present	-0.140	(0.074)	0.020	(0.592)	-0.187*	(0.101)	0.165	(0.687)
Risk Committee Report	-0.030	(0.090)	0.350	(0.712)	0.010	(0.120)	0.957	(0.819)
Board Size	0.312***	(0.082)	-1.390**	(0.673)	0.357***	(0.093)	-0.550	(0.656)
Board Independence	0.383***	(0.148)	1.675	(1.196)	0.560***	(0.165)	5.373***	(0.573)
Female Directors	0.537***	(0.176)	5.855***	(1.463)	0.258	(0.208)	4.068***	(1.506)
Foreign Directors	0.341***	(0.080)	-1.915***	(0.657)	0.240**	(0.099)	-1.632**	(0.715)
Tier (Board Type)	0.193**	(0.084)	4.217***	(0.686)	-0.009	(0.149)	1.594	(1.030)
Bank Size	0.077***	(0.022)	-0.861***	(0.179)	0.122***	(0.029)	-1.102***	(0.210)
Liquidity	-0.120***	(0.034)	1.358***	(0.281)	-0.133***	(0.041)	0.332	(0.291)
Capital	0.016***	(0.029)	0.192***	(0.035)	0.022***	(0.040)	0.211***	(0.057)
Operation	-0.222***	(0.010)	-6.736***	(0.298)	-0.360***	(0.129)	-4.168***	(0.901)
ROA	0.264***	(0.020)	-2.312***	(0.155)	0.293***	(0.024)	-1.983***	(0.164)
Inflation Rate	-0.016***	(0.044)	-0.093**	(0.040)	-0.018*	(0.011)	-0.155**	(0.076)
GDP Per capita Growth	-0.005	(0.010)	-0.202**	(0.082)	-0.017	(0.012)	-0.361***	(0.087)
World Governance Indicators	0.374***	(0.113)	-5.970***	(0.959)	0.459***	(0.150)	-9.118***	(1.040)
Index of Economic Freedom	-0.491	(0.391)	-14.857***	(3.352)	-0.373	(0.505)	-2.994	(3.579)
Financial Crisis Dummy	YES		YES		YES		YES	
Country FE	YES		YES		YES		YES	
Year FE	YES		YES		YES		YES	
Cons	4.098**	(1.766)	109.157***	(15.151)	3.784***	(2.278)	58.791***	(16.110)
Wald $\chi^2$	690.10***		967.42***		623.73***		807.34***	
R-sq within	0.27		0.34		0.30		0.48	
between	0.26		0.28		0.43		0.17	
overall	0.26		0.33		0.32		0.38	
Number of Observation	1817		1733		1205		1144	

The second column presents the results for NPL. The results show that the EU membership and NPL ratio is positively associated which means the NPL ratio of banks was increased during the membership period hence the instability of banks increase. There is a negative relationship between CRO gender and NPL ratios that means the presence of female CROs increase the asset quality and thus the stability of the bank. The CRO presence and CRO executive both have positive relationship with NPL but this relationship is not strong. As considering corporate governance variables, board size and foreign directors decrease NPL ratio whereas female directors and board duality increase this ratio. Controlling for bank-level variables bank size, operation ratio, and ROA are negatively and capital and liquidity ratios are positively associated with NPL. Lastly when considering country level variables it is found that all the variables have negative relationship with NPL. The results of this sample show that the bank stability and risk are determined by many different factors but mainly by board, bank, and country-specific factors and thus this indicates that overall the quality of bank governance and the quality of financial statement items are more influential.

The findings of panel B, for the sample of banks only from eleven new member state, show that the EU membership again has a negative influence on Z-Score. The result for female CRO is similar to panel A and indicates that the presence of female risk officer decreases the degree of bank insolvency risk. Likewise, board size, independence, and foreign directors have positive influence on the bank risk. Although the relationship is weak, the risk committee presence has negative influence on bank risk. The presence of female directors influences the bank risk positive but insignificant. The findings of bank and country level variables are exactly similar to the results in panel A. The total assets, capital ratio and ROA have positive effects on bank risk. Whilst liquidity and operation ratios have negative influences on this variable. It is also documented that some country-level variables also affect bank stability. There is a negative relationship between inflation rate and Z-Score hitherto, this WGI is positively associated with bank stability.

**TABLE 5.6B**

**The impact of EU and Risk Management Characteristics on Risk and Stability of Banks  
in Candidate and Member Nations**

This table provides the results of GLS random effects panel data analysis. 1 and 2 indicate Z-Score and Nonperforming Loans (NPL) ratio, respectively. The bank-clustered robust standard errors of the coefficients are in parentheses. Panel C comprises banks only from Albania, FYROM, Montenegro, Serbia, and Turkey. Panel D comprises banks from Albania, FYROM, Montenegro, Serbia and Turkey, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, France, Germany, Greece, and Spain. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

Variables	CANDIDATE NATIONS BANKS (PANEL C)				ALL BANKS (PANEL D)			
	1		2		1		2	
EU Membership	-		-		-0.680***	(0.082)	5.951***	(0.655)
CRO Present	-0.128	(0.131)	-1.520	(1.186)	0.226**	(0.103)	0.859	(0.612)
CRO Executive	-0.147	(0.121)	-2.450**	(1.066)	-0.088	(0.092)	-1.048**	(0.528)
CRO Female	0.095	(0.100)	-3.729*	(0.905)	0.184***	(0.067)	-0.176**	(0.974)
Risk Committee Present	0.042	(0.117)	-1.470	(1.083)	0.040	(0.107)	-0.092	(0.468)
Risk Committee Report	-0.054	(0.132)	-0.042	(1.166)	0.015	(0.118)	-0.444	(0.860)
Board Size	-0.124	(0.191)	-3.574**	(1.754)	0.347***	(0.070)	-0.225***	(0.063)
Board Independence	-0.210	(0.340)	-12.722***	(3.030)	-0.036	(0.344)	0.836	(0.275)
Female Directors	0.815**	(0.343)	4.495	(3.157)	0.386**	(0.176)	0.797	(0.257)
Foreign Directors	0.066	(0.150)	-3.219**	(1.360)	0.319***	(0.070)	-0.588	(0.596)
Tier (Board Type)	0.067	(0.126)	8.853***	(1.287)	-0.243	(0.404)	-3.195	(3.230)
Bank Size	0.066*	(0.039)	-1.083***	(0.361)	0.058***	(0.020)	-0.466***	(0.169)
Liquidity	-0.130**	(0.064)	4.177***	(0.600)	-0.090***	(0.033)	0.030***	(0.003)
Capital	0.013**	(0.005)	2.729**	(1.127)	0.314***	(0.057)	0.201***	(0.032)
Operation	0.076	(0.162)	-7.059***	(1.567)	-0.431***	(0.092)	-1.441**	(0.688)
ROA	0.184***	(0.036)	-2.515	(0.359)	0.205***	(0.017)	-2.049***	(0.133)
Inflation Rate	-0.030***	(0.010)	0.593***	(0.201)	-0.016***	(0.005)	-0.271***	(0.042)
GDP Per capita Growth	-0.005	(0.021)	0.097	(0.205)	0.004	(0.010)	-0.164**	(0.076)
World Governance Indicators	-0.054	(0.396)	-24.081***	(0.759)	0.663***	(0.090)	-5.872***	(0.737)
Index of Economic Freedom	-0.830	(1.023)	-0.784***	(4.255)	-0.003	(0.006)	-0.317***	(0.050)
Financial Crisis Dummy	YES		YES		YES		YES	
Country FE	YES		YES		YES		YES	
Year FE	YES		YES		YES		YES	
Cons	5.877	(4.565)	96.455***	(23.834)	2.670***	(0.742)	48.019***	(5.723)
Wald $\chi^2$	203.25***		577.39***		660.90***		1113.84***	
R-sq within	0.35		0.33		0.27		0.33	
between	0.07		0.54		0.12		0.27	
overall	0.21		0.47		0.22		0.32	
Number of Observation	616		593		2316		2243	

The results in the second column show that NPL ratio increases for sample banks with EU membership. Among the risk management variables only CRO executive has a significant negative relationship with NPL ratio. All others have no influence on this variable. The relationship between NPL and board independence and female directors are significantly positive and board duality insignificant negative. Whereas, the relationship between foreign directors and NPL is significantly negative which indicates that banks with more foreign directors have low NPL ratio comparatively. As bank level variables, bank size, ROA and cost-to-income ratio have negative relationships with NPL whilst capital ratio have positive influence on this risk measure. Lastly, the relationships between NPL and all nation-level variables are significantly negative, except IEF which has no important effect on this ratio.

Panel C in Table 5.6B documents the results for sample banks from candidate nations (nations through the accession journey). The relationships between Z-Score and all risk management variables are insignificant. CRO present, CRO executive and risk committee report-to-board variables show negative and CRO female and risk committee presence display positive but insignificant results. Similarly, the findings for corporate governance-related variables are all insignificant and for board size and board independence this is negative and for female directors, foreign directors and board duality this is positive insignificant. The relationships between Z-score and bank size, capital ratio and ROA are significantly positive, respectively. The only negative and significant results are found for liquidity ratio. Lastly, only inflation rate has significant negative impact on Z-Score among country level variables.

The findings for NPL ratio shows that all risk management variables have a negative influence on this ratio whereas only female CRO and executive CRO have significance. Likewise, board size, independence and foreign directors all have significant negative impacts on NPL whilst the board duality have significantly positive influence on this ratio. The relationships between NPL ratio and bank size and operation ratio are significantly negative. Both capital ratio and liquidity ratio have positive influence NPL ratio. As considering country level variables, it is found that the relationships between NPL and WGI and IEF are significantly negative. The influence of inflation rate as a macroeconomic factor has an increasing effect on NPL ratio whilst GDP per capita growth has no impact on this variable.

Panel D in Table 5.6B reports that the relationship between Z-Score and EU membership is significantly negative. Both the presence of CRO and female CRO have significantly positive

impacts on Z-Score which means these two variables have improved bank stability. Although risk committee presence and risk committee report-to-board have positive relationship with Z-Score, they have no significant impact on this variable. Board size, female directors and foreign directors show positively significant influence on Z-Score. All bank level variables have significant impacts on bank risk Bank size, capital ratio and ROA have positive influences on this variable whereas both operation and liquidity ratios have strong negative effects on this variable. The significantly negative relationship is found between inflation rate and Z-Score yet, the significantly positive relationship is found between WGI and Z-score.

Lastly, the NPL ratios of sample banks grow significantly during membership period. Contrariwise, the influence of executive CRO and female CRO decrease the NPL ratio. Only board size has significant influence on NPL which means board size decreases this ratio. For bank level variables, bank size and operation ratio and ROA all have negative relationship with NPL ratio while both capital ratio and liquidity ratio display increasing effect on this ratio. All country level variables have significantly negative influences on NPL ratio which means those variables decrease the NPL ratio.

The empirical studies in previous literature have been growing yet the body of this literature is still immature. Many of the prior empirical studies in the literature, which are mentioned in detail in the literature review subsection of this thesis were discussed the relationship between bank risk and stability and corporate governance characteristics. Thus one of the challenges of this chapter is to find the previous literature to discuss the results of this chapter yet, this brings another originality to this chapter. Overall, the results of the analysis that was done in this study are mixed and so for aforementioned reason, some of them only are consistent with the previous literature (e.g., for CRO presence and executive CRO, Aebi et al., 2012 and Ellul and Yerramilli, 2013; for risk committee presence, Minton et al., 2014).

#### *5.4.2.2 Supplementary analysis results*

Following the same methodology that is applied in the prior empirical studies in the literature (e.g., Liebenberg and Hoyt, 2003 and Hines, 2012), in order to examine the influence of EU membership on risk management structure changes, additional analysis is conducted by using five risk management variables including presence of CRO, CRO executive, gender of CRO,

presence of risk committee and risk committee report-to-board as dependent variables. As these variables binary variables, the probit regression models are employed. The results of regressions are presented in Table 5.7A (coefficients for sample of banks from eleven member and five candidate nations and all banks), Table 5.7B (marginal effects for sample of banks from eleven member and five candidate nations) and Table 5.7C (marginal effects for all sample banks) for each variable.

The results for CRO presence are given under column one and the relationship between EU membership and CRO present is positive that the presence of CRO is 4.2% more likely seen during the membership period. The presence of CRO and female CRO has a positive relationship and banks with CRO also has 11% more likely female CROs. The relationship between CRO presence and risk committee is positive but not significant whereas the relationship between CRO presence and risk committee report to board is significantly positive which means that banks with CROs are more likely have risk committees that directly report to board of directors. The results under column two present the relationship between CRO executive and other variables. The EU membership and CRO executive has a significant positive relationship and the banks with executive CROs are seen more likely during EU membership period 12% more likely. The presence of CRO executive and female CRO has a positive relationship and banks with CRO executive also have 11% more likely female CROs. The relationship between CRO executive and risk committee is positive but not significant whereas the relationship between CRO executive and risk committee report to board is significantly positive which means that banks with CROs are more likely have risk committees that directly report to board of directors.

The results for CRO gender are presented under column three and the EU membership and CRO gender has a significant negative relationship and the banks with female CROs are seen less likely during EU membership period 12% less likely. The presence of CRO females and CRO presence has a positive relationship and banks with CRO has 13% more likely have female CROs. The relationship between CRO executive and CRO female is positive and is 6% more like seen in banks with executive CROs. The relationship between female CROs and risk committee is positive and banks with risk committees are more likely to have female CROs whereas the relationship between CRO female and risk committee report to board is not significant.

TABLE 5.7A

## The EU Accession as a Determinant of Risk Management Structure

This table provides the results of the Probit regression analysis. 1, 2, 3, 4 and 5 indicate CRO Presence, CRO Executive, CRO Gender, Risk Committee Presence and Risk Committee Report to Board, respectively. The bank-clustered robust standard errors of the coefficients are in parentheses. The bank-level, country-level and corporate governance variables included but not reported. The Panel A comprises banks from Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia and Turkey and Panel B comprises banks from Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia and Turkey and France, Germany, Greece and Spain. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

MEMBER AND CANDIDATE NATIONS BANKS (PANEL A)						
Variables	1	2	3	4	5	
EU Membership	0.244* (0.134)	0.400*** (0.136)	-0.532*** (0.114)	0.313*** (0.115)	0.056 (0.125)	
CRO Present	-	-	0.555*** (0.131)	0.334*** (0.118)	1.202*** (0.217)	
CRO Executive	-	-	0.250** (0.106)	0.189* (0.098)	0.503*** (0.106)	
CRO Female	0.634*** (0.141)	0.344*** (0.101)	-	0.310*** (0.091)	0.092 (0.101)	
Risk Committee Present	0.131 (0.130)	0.156 (0.110)	0.367*** (0.101)	-	-	
Risk Committee Report	1.102*** (0.231)	0.304** (0.139)	-0.168 (0.118)	-	-	
Corporate Governance Variables	YES	YES	YES	YES	YES	
Bank Level Variables	YES	YES	YES	YES	YES	
Country Level Variables	YES	YES	YES	YES	YES	
Financial Crisis Dummy	YES	YES	YES	YES	YES	
Country FE	YES	YES	YES	YES	YES	
Year FE	YES	YES	YES	YES	YES	
Cons	-6.183** (2.625)	-21.345*** (4.370)	-0.195 (2.957)	2.111 (2.777)	-3.708 (3.229)	
Wald $\chi^2$	460.18***	511.30***	151.00***	439.41***	324.05***	
Pseudo R-sq	0.44	0.54	0.11	0.24	0.24	
Log likelihood	-555.98	-551.57	-739.42	-866.03	-631.47	
Number of Observation	1815	1815	1815	1815	1815	
ALL SAMPLE BANKS (PANEL B)						
EU Membership	0.171* (0.102)	0.207** (0.096)	-0.529*** (0.097)	0.168* (0.093)	0.159* (0.096)	
CRO Present	-	-	0.753*** (0.130)	0.192* (0.108)	0.989*** (0.157)	
CRO Executive	-	-	0.157* (0.094)	0.238*** (0.084)	0.565*** (0.086)	
CRO Female	0.739*** (0.126)	0.350*** (0.093)	-	0.313*** (0.091)	0.060 (0.094)	
Risk Committee Present	0.066 (0.110)	0.241*** (0.090)	0.364*** (0.098)	-	-	
Risk Committee Report	0.630*** (0.172)	0.357*** (0.106)	-0.216** (0.108)	-	-	
Corporate Governance Variables	YES	YES	YES	YES	YES	
Bank Level Variables	YES	YES	YES	YES	YES	
Country Level Variables	YES	YES	YES	YES	YES	
Financial Crisis Dummy	YES	YES	YES	YES	YES	
Country FE	YES	YES	YES	YES	YES	
Year FE	YES	YES	YES	YES	YES	
Cons	-4.757** (2.194)	-13.477*** (2.825)	0.432 (2.439)	1.644 (2.392)	-4.967* (2.670)	
Wald $\chi^2$	564.68***	705.47***	214.26***	588.55***	553.91***	
Pseudo R-sq	0.39	0.41	0.12	0.25	0.29	
Log likelihood	-736.40	-861.82	-857.54	-1065.60	-894.66	
Number of Observation	2314	2163	2314	2104	2104	

The results for risk committee presence are given under column four and EU membership and risk committee presence has a significant positive relationship and the banks with risk

committees are seen more likely during EU membership period 10% more likely. The presence of CRO and risk committee presence has a positive relationship and banks with CRO has 11% more likely have risk committee presence. The relationship between CRO executive and risk committee presence is positive and is 6% more like seen in banks with executive CROs. The relationship between female CROs and risk committee is positive and banks with female CROs have more likely risk committee presence and is 10% more likely seen. The results for risk committee report to board are given under column five and the EU membership and risk committee report to board has a positive relationship but not significant. The presence of CRO and risk committee report to board has a positive relationship and banks with CRO has 21% more likely have risk committee presence. The relationship between CRO executive and risk committee report to board is positive and is 9% more like seen in banks with executive CROs. The relationship between female CROs and risk committee report to board is positive but not significant.

**Table 5.7B**

**The EU Accession as a Determinant of Risk Management Structure (Marginal Effects)**

This table provides the marginal effects of the results of Probit regression analysis. 1, 2, 3, 4 and 5 indicate CRO Presence, CRO Executive, CRO Gender, Risk Committee Presence and Risk Committee Report to Board, respectively. The bank-clustered robust standard errors of the coefficients are in parentheses. The table comprises banks from Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia, and Turkey. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

MEMBER AND CANDIDATE NATIONS BANKS					
AT MEAN (PANEL A)					
Variables	1	2	3	4	5
EU Membership	0.042* (0.023)	0.122*** (0.043)	-0.121*** (0.026)	0.100*** (0.036)	0.010 (0.021)
CRO Present	-	-	0.126*** (0.030)	0.107*** (0.038)	0.205*** (0.030)
CRO Executive	-	-	0.057** (0.024)	0.060* (0.032)	0.086*** (0.020)
CRO Female	0.109*** (0.024)	0.106*** (0.031)	-	0.100*** (0.029)	0.016 (0.017)
Risk Committee Present	0.023 (0.022)	0.048 (0.034)	0.083*** (0.023)	-	-
Risk Committee Report	0.190*** (0.038)	0.094** (0.044)	-0.038 (0.027)	-	-
Number of Observation	1815	1815	1815	1815	1815
AVERAGE (PANEL B)					
	1	2	3	4	5
EU Membership	0.042* (0.023)	0.069*** (0.023)	-0.121*** (0.026)	0.084*** (0.031)	0.011 (0.024)
CRO Present	-	-	0.126*** (0.030)	0.090*** (0.032)	0.231*** (0.024)
CRO Executive	-	-	0.057** (0.024)	0.051* (0.026)	0.097*** (0.020)
CRO Female	0.109*** (0.024)	0.060*** (0.018)	-	0.083*** (0.024)	0.018 (0.019)
Risk Committee Present	0.022 (0.022)	0.027 (0.019)	0.083*** (0.023)	-	-
Risk Committee Report	0.189*** (0.040)	0.052** (0.024)	-0.038 (0.027)	-	-
Number of Observation	1815	1815	1815	1815	1815



The results for the sample of all banks are presented in Table 5.7C. The relationship between EU membership and CRO presence is positive and show that the presence of CRO is 3% more likely seen during membership period. The presence of CRO and female CRO has a positive relationship and banks with CRO also has 13% more likely female CROs. The relationship between CRO presence and risk committee is positive but not significant whereas the relationship between CRO presence and risk committee report to board is significantly positive which means that banks with CROs are more likely have risk committees that directly report to board of directors. The results under column two present the relationship between CRO executive and other variables. The EU membership and CRO executive has a significant positive relationship and the banks with executive CROs are seen more likely during EU membership period 8% more likely. The presence of CRO executive and female CRO has a positive relationship and banks with CRO executive also have 13% more likely female CROs. The relationship between CRO executive and risk committee is significantly positive and banks with risk committee have more likely CRO executive and have 9% more likely. The relationship between CRO executive and risk committee report to board is significantly positive which means that banks with risk committee report to board are more likely have CRO executive and is 3% more likely seen.

The results for CRO gender are presented under column three and the EU membership and CRO gender has a significant negative relationship and the banks with female CROs are seen less likely during EU membership period 11% less likely. The presence of CRO females and CRO presence has a positive relationship and banks with CRO has 15% more likely have female CROs. The relationship between CRO executive and CRO female is positive and is 3% more like seen in banks with executive CROs. The relationship between female CROs and risk committee is positive and banks with risk committees are 7% more likely have female CROs whereas the relationship between CRO female and risk committee report to board is negative and female CROs are 4% less likely seen in banks with risk committee report to the board.

The results for risk committee presence are given under column four and EU membership and risk committee presence has a significant positive relationship and the banks with risk committees are seen more likely during EU membership period 6% more likely. The presence of CRO and risk committee presence has a positive relationship and banks with CRO has 7% more likely have risk committee presence. The relationship between CRO executive and risk committee presence is positive and is 9% more like seen in banks with executive CROs. The

relationship between female CROs and risk committee is positive and banks with female CROs have more likely risk committee presence and is 12% more likely seen.

**Table 5.7C**

**The EU Accession as a Determinant of Risk Management Structure (Marginal Effects)**

This table provides the marginal effects of the results of Probit regression analysis. 1, 2, 3, 4 and 5 indicate CRO Presence, CRO Executive, CRO Gender, Risk Committee Presence and Risk Committee Report to Board, respectively. The bank-clustered robust standard errors of the coefficients are in parentheses. The table comprises banks from Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia and Turkey and France, Germany, Greece, and Spain. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

ALL SAMPLE BANKS					
AT MEAN (PANEL A)					
	1	2	3	4	5
EU Membership	0.031* (0.018)	0.076** (0.035)	-0.105*** (0.020)	0.063* (0.035)	0.036* (0.022)
CRO Present	-	-	0.150*** (0.025)	0.072* (0.040)	0.227*** (0.032)
CRO Executive	-	-	0.031* (0.019)	0.090*** (0.032)	0.130*** (0.021)
CRO Female	0.134*** (0.023)	0.128*** (0.034)	-	0.117*** (0.034)	0.014 (0.022)
Risk Committee Present	0.012 (0.020)	0.089*** (0.033)	0.072*** (0.019)	-	-
Risk Committee Report	0.114*** (0.030)	0.131*** (0.039)	-0.043** (0.021)	-	-
Number of Observation	2314	2314	2314	2314	2314
AVERAGE (PANEL B)					
	1	2	3	4	5
EU Membership	0.030* (0.018)	0.046** (0.021)	-0.108*** (0.020)	0.048* (0.027)	0.034* (0.021)
CRO Present	-	-	0.154*** (0.026)	0.055* (0.031)	0.214*** (0.033)
CRO Executive	-	-	0.032* (0.019)	0.068*** (0.024)	0.122*** (0.018)
CRO Female	0.131*** (0.022)	0.078*** (0.021)	-	0.090*** (0.026)	0.012 (0.020)
Risk Committee Present	0.012 (0.019)	0.054*** (0.020)	0.074*** (0.019)	-	-
Risk Committee Report	0.112*** (0.031)	0.080*** (0.024)	-0.044** (0.022)	-	-
Number of Observation	2314	2314	2314	2314	2314

The results for a risk committee report to board are given under column five and the EU membership and risk committee report to board has a positive relationship and banks with risk committee report to board are 4% more likely seen during membership. The presence of CRO and risk committee report to board has a positive relationship and banks with CRO has 23% more likely have risk committee presence. The relationship between CRO executive and risk committee report to board is positive and is 13% more like seen in banks with executive CROs. The relationship between female CROs and risk committee report to board is positive but not significant.

The second additional analysis is constructed to compare the impacts of risk management variables on risk and stability before and after the EU membership. The results of this analysis are reported in Table 5.8A and in Table 5.8B for sample banks in member and candidate nations and for all sample banks, respectively. Panel A of Table 5.8A provides findings for banks in eleven EU member and candidate states in the membership period and panel B provides the findings for pre-membership period (accession period).

The results show that CRO presence and female CROs have a positive and significant influence on Z-Score. Whereas other risk management variables have no significant influence on this variable. Board size has a significant positive influence on Z-Score but board independence has a significant negative influence on this variable. Bank size, capital ratio, and ROA have significant positive relationships with Z-Score and liquidity and operation ratios have significant negative relationships with this variable. During membership period inflation rate and GDP per capita growth though weak, have negative impacts on Z-Score and WGI have a significant positive influence on this variable. The findings for NPL ratio are reported in column two and shows that only CRO presence have a positive relationship with this ratio which means that the presence of CRO causes increase in NPL ratio. Other risk management variables have no effects on this ratio. Foreign directors and NPL ratio have a negative relationship that means foreign directors cause decrease in this ratio. Whilst both board independence and female directors have positive and significant relationship with this variable. On the bank level variables side, bank size, operation, and ROA make decrease in NPL ratios. On the other hand capital ratio has a positive link with this ratio which makes increase in this ratio. Lastly, apart from IEF, all other country specific variables have significant negative influences on NPL that means they drop the amount of this ratio.

The results in panel B gives the regression results for the pre-membership period. The presence of female CRO has a positive influence on this variable whereas the presence of CRO has a negative impact on this variable. The relationships between Z-Score and female directors, foreign directors, and board duality are significantly positive which means that these variables have positively contributed to stability of sample banks. Bank size and capital ratio have positive links with the Z-Score whilst both liquidity and operation ratios have negative association with this variable. Some of the country specific variables also have significant influences on bank stability. Both inflation rate and IEF have significant negative impacts on Z-Score yet, WGI has a positive influence on this variable. The only risk management variable

that has a significant relationship with NPL ratio is CRO executive which has an inverse relationship that means that the presence of executive CROs decrease NPL ratio thus bank risk.

**Table 5.8A**  
**The Impact of EU Accession Process and Membership and Risk Management**  
**Characteristics on Risk and Stability of Banks**

This table provides the results of GLS random effects panel data analysis. 1 and 2 indicate Z-Score and Nonperforming Loans (NPL) ratio, respectively. The bank-clustered robust standard errors of the coefficients are in parentheses. The sample comprises banks from Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia and Turkey and the sample divided into two based on nations membership year and candidacy. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

MEMBER AND CANDIDATE NATIONS BANKS							
Variables	MEMBERSHIP PERIOD (PANEL A)				PRE-MEMBERSHIP PERIOD (PANEL B)		
	1		2		1	2	
CRO Present	0.213*	(0.119)	1.845**	(0.870)	-0.211**	(0.092)	1.003 (0.846)
CRO Executive	-0.102	(0.098)	-0.623	(0.683)	-0.169	(0.113)	-3.219*** (1.026)
CRO Female	0.179*	(0.105)	0.540	(0.736)	0.143*	(0.085)	2.340 (0.795)
Risk Committee Present	-0.118	(0.105)	0.442	(0.732)	-0.017	(0.104)	-0.488 (0.951)
Risk Committee Report	-0.028	(0.124)	1.214	(0.856)	-0.051	(0.124)	-0.515 (1.123)
Board Size	0.453***	(0.194)	-1.060	(0.768)	-0.007	(0.123)	-1.997* (1.186)
Board Independence	-0.854***	(0.168)	4.841***	(1.380)	-0.099	(0.226)	-3.381 (2.122)
Female Directors	-0.200	(0.235)	4.667***	(1.675)	0.890***	(0.260)	8.525*** (2.565)
Foreign Directors	0.180	(0.112)	-1.589**	(0.818)	0.212*	(0.115)	-3.149*** (1.080)
Tier (Board Type)	-0.085	(0.168)	1.493	(1.171)	0.168*	(0.098)	5.715*** (0.928)
Bank Size	0.160***	(0.035)	-1.600***	(0.250)	0.080***	(0.123)	-0.215 (0.275)
Liquidity	-0.147***	(0.045)	0.222	(0.324)	-0.085***	(0.051)	2.702*** (0.475)
Capital	0.030***	(0.030)	0.198***	(0.064)	0.014***	(0.040)	0.189*** (0.047)
Operation	-0.064	(0.146)	-4.072***	(1.012)	-0.285**	(0.133)	-9.008*** (1.280)
ROA	0.364***	(0.027)	-1.960***	(0.175)	0.130	(0.030)	-2.653*** (0.270)
Inflation Rate	-0.044**	(0.021)	-0.255*	(0.150)	-0.016***	(0.010)	0.013 (0.056)
GDP Per capita Growth	-0.023*	(0.013)	-0.241***	(0.094)	-0.030	(0.015)	-0.189 (0.047)
World Governance Indicators	0.400**	(0.169)	-9.257***	(1.192)	0.442***	(0.164)	-1.505 (1.785)
Index of Economic Freedom	0.717	(0.689)	-6.743	(4.853)	-1.829***	(0.508)	-17.338*** (5.220)
Financial Crisis Dummy	YES		YES		YES		YES
Country FE	YES		YES		YES		YES
Year FE	YES		YES		YES		YES
Cons	-2.670	(3.088)	82.310***	(21.583)	10.490***	(2.304)	112.43*** (23.569)
Wald $\chi^2$	602.29***		700.28***		281.04***		473.74***
R-sq within	0.37		0.47		0.29		0.25
Between	0.39		0.31		0.13		0.19
Overall	0.37		0.40		0.21		0.30
Number of Observation	914		885		903		848

As board characteristic, board size and foreign directors have negative influences on NPL ratio that means these variables drop the NPLs. Contrary to that, female directors and board duality have positive influences on this ratio. The relationships between NPL ratio and ROA and operation ratio are negative. However, the influences of liquidity and capital ratios are significantly positive on NPL ratio. Only IEF has a significant inverse relationship with NPL among country level variables.

The findings for the sample of all banks are presented in Table 5.8B. Panel C reports the results for Z-Score and NPL ratio for membership period and panel D reports the results for both variables for pre-membership period. The results show that CRO presence and female CROs have positive and significant influences on Z-Score. Whilst other risk management variables have no significant influence on this variable. Both board size and foreign directors have significant positive influences on Z-Score but other board variables have no significant effects on this variable. Bank size, capital ratio, and ROA have significant effects positive on Z-Score and liquidity and operation ratios have significant negative relationships with this variable. During membership period WGI have a significant positive influence on Z-Score and others have no impact on this variable.

The findings for the NPL ratio are reported in column two and shows that none of the risk management variables have relationship with this ratio. For board characteristics, only board size has negative relationship with NPL ratio, this implies that large board size decreases the NPL ratio. Other board-level variables have no significant influence on this. Looking at bank level variables, it is seen that both bank size and ROA make decrease in NPL ratios. On the other hand capital ratio and operation ratio have positive link with this ratio. Lastly, apart from GDP per capita growth, all other country specific variables have significant negative influences on NPL that means they drop the amount of this ratio.

**Table 5.8B**

**The Impact of EU Accession Process and Membership and Risk Management  
Characteristics on Risk and Stability of Banks**

This table provides the results of GLS random effects panel data analysis. 1 and 2 indicate Z-Score and Nonperforming Loans (NPL) ratio, respectively. The bank-clustered robust standard errors of the coefficients are in parentheses. The sample comprises banks from Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia and Turkey and France, Germany, Greece and Spain and the sample divided into two based on nations membership year and candidacy. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

ALL SAMPLE BANKS							
Variables	MEMBERSHIP PERIOD (PANEL C)				PRE-MEMBERSHIP PERIOD (PANEL D)		
	1		2		1	2	
CRO Present	0.304**	(0.139)	-0.101	(0.791)	0.097	(0.143)	1.701* (0.965)
CRO Executive	-0.158	(0.114)	0.084	(0.576)	0.012	(0.152)	-3.277*** (1.086)
CRO Female	0.175*	(0.100)	1.327	(1.217)	0.127	(0.087)	-1.063 (1.546)
Risk Committee Present	-0.041	(0.143)	0.102	(0.564)	0.213	(0.154)	-0.589 (0.816)
Risk Committee Report	0.099	(0.156)	-1.579	(0.981)	-0.082	(0.170)	1.212 (1.540)
Board Size	0.498***	(0.089)	-0.156**	(0.069)	-0.155	(0.124)	-0.601*** (0.166)
Board Independence	-0.122	(0.462)	3.818	(3.351)	0.059	(0.485)	-0.540 (4.515)
Female Directors	0.104	(0.228)	-1.066	(2.786)	0.816***	(0.279)	5.670 (5.226)
Foreign Directors	0.303***	(0.096)	-1.103	(0.714)	0.295***	(0.112)	0.192 (1.110)
Tier (Board Type)	-0.272	(0.553)	-3.674	(3.921)	-0.374	(0.551)	-2.390 (5.223)
Bank Size	0.062**	(0.029)	-0.390*	(0.210)	0.081***	(0.029)	-0.534* (0.295)
Liquidity	-0.064*	(0.039)	-0.013	(0.010)	-0.126**	(0.058)	0.031*** (0.035)
Capital	0.250***	(0.075)	0.280***	(0.042)	0.506***	(0.090)	0.255*** (0.052)
Operation	-0.598***	(0.119)	2.120***	(0.773)	-0.191	(0.147)	-8.546*** (1.401)
ROA	0.223***	(0.021)	-1.829***	(0.141)	0.138***	(0.031)	-2.903*** (0.303)
Inflation Rate	0.010	(0.020)	-0.478***	(0.143)	-0.019***	(0.006)	-0.145** (0.071)
GDP Per capita Growth	0.020	(0.012)	-0.104	(0.086)	0.010	(0.016)	-0.309* (0.164)
World Governance Indicators	0.594***	(0.116)	-7.964***	(0.824)	0.613***	(0.188)	-1.624 (2.134)
Index of Economic Freedom	0.010	(0.009)	-0.192***	(0.062)	-0.025**	(0.010)	-0.335*** (0.102)
Financial Crisis Dummy	YES		YES		YES		YES
Country FE	YES		YES		YES		YES
Year FE	YES		YES		YES		YES
Cons	1.920*	(1.119)	24.8401***	(7.288)	3.532***	(1.111)	80.525*** (10.894)
Wald $\chi^2$	501.78***		906.17***		251.60***		439.55***
R-sq within	0.30		0.48		0.30		0.22
Between	0.18		0.26		0.17		0.22
Overall	0.24		0.36		0.21		0.33
Number of Observation	1409		1393		908		852

The results in panel D of Table 5.8B gives the regression results for the pre-membership period. None of the risk management variables has significant effects on Z-Score. The relationships between Z-Score and both female directors and foreign directors are significantly positive which means that these variables have positively contributed to stability of sample banks. Bank size, capital ratio, and ROA have positive links with the Z-Score whilst only liquidity ratio has negative association with this variable. Except the GDP per capita growth, all country specific variables also have significant influences on bank stability. Both inflation rate and IEF have significant negative impacts on Z-Score yet, WGI has a positive influence on this variable. Both CRO presence and CRO executive have significant relationships with NPL ratio where CRO presence makes increase in this ratio. Whereas CRO executive has an inverse relationship with NPL meaning that the presence of executive CROs decrease NPL ratio thus bank risk. As considering board characteristics, none of them has a significant influence on the ratio except board size which has a negative influence on NPL ratio that means this variable cause decrease in NPL ratio. The relationships between NPL ratio and bank size, ROA and operation ratio all including are negative. However, the influences of both liquidity and capital ratios are significantly positive on NPL ratio. All country specific variables except WGI, have significant inverse relationship with NPL which means that these variables improve the asset quality in sample banks.

The third supplementary analysis is conducted to discuss the association between all risk management variables and risk variables. In order to do that the procedure of interaction terms approach was used and four interaction terms were created by multiplying EU dummy with each risk management variables including the presence of CRO, the executive CRO, female CRO, the presence of risk committee and risk committee report to the board. The produced interaction variables were included in regression estimations separately and the results of this regressions are reported in Table 5.9A for sample of banks from new EU member nations and candidate nations and in Table 5.9B.for sample of banks from new and long-standing EU member nations and candidate nations. The results in Table 5.9A documents that the coefficients of the interactions between EU dummy and selected risk management variables are statistically insignificant which implies that the impact of EU membership on a bank's risk variables does not depend on how the bank risk is managed.

**TABLE 5.9A**  
**The impact of the EU Accession Process and Membership and Risk Management Characteristics on Risk and Stability: Interaction Term Approach**

MEMBER AND CANDIDATE NATIONS BANKS										
Variables	Z-SCORE (PANEL A)					NPL (PANEL B)				
	1	2	3	4	5	1	2	3	4	5
EU Membership	-	-	-	-	-	3.972*** (1.252)	4.046*** (0.852)	4.667*** (0.798)	3.706*** (0.842)	4.047*** (0.800)
CRO Present*EU	0.205 (0.138)	-	-	-	-	0.488 (1.159)	-	-	-	-
CRO Executive*EU	-	0.092 (0.114)	-	-	-	-	0.851 (0.915)	-	-	-
CRO Female*EU	-	-	-0.143 (0.135)	-	-	-	-	-1.402 (1.084)	-	-
Risk Committee Present*EU	-	-	-	-0.025 (0.114)	-	-	-	-	0.077 (0.903)	-
Risk Committee Report*EU	-	-	-	-	0.075 (0.135)	-	-	-	-	1.673 (1.071)
CRO Present	-0.123 (0.091)	-0.045 (0.075)	-0.044 (0.075)	-0.048 (0.075)	-0.043 (0.075)	1.013 (0.739)	1.203** (0.610)	1.206** (0.609)	1.286** (0.611)	1.266** (0.612)
CRO Executive	-0.133* (0.075)	-0.174* (0.103)	-0.119 (0.074)	-0.117 (0.075)	0.117 (0.074)	-	-	-	-	-
CRO Female	0.195** (0.068)	0.196** (0.068)	0.252** (0.088)	0.191** (0.068)	0.194** (0.068)	1.420*** (0.549)	1.454*** (0.551)	2.016*** (0.719)	1.468*** (0.549)	1.477*** (0.550)
Risk Committee Present	-	-	-0.136* (0.075)	-0.126 (0.096)	-0.139* (0.074)	0.010 (0.593)	-0.062 (0.599)	0.056 (0.593)	-0.094 (0.764)	0.033 (0.592)
Risk Committee Report	-0.026 (0.090)	-0.028 (0.090)	-0.036 (0.090)	-0.032 (0.090)	-0.068 (0.113)	0.359 (0.713)	0.370 (0.713)	0.295 (0.714)	0.449 (0.714)	-0.496 (0.895)
Board Level Variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank Level Variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country Level Variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Financial Crisis Dummy	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Cons	3.636** (1.793)	3.806** (1.803)	4.105** (1.766)	4.136** (1.775)	4.009** (1.774)	108.236* (15.307)	106.554* (15.404)	109.618* (15.148)	106.179* (15.210)	107.279* (15.188)
Wald $\chi^2$	693.13**	691.00**	691.64**	690.16**	690.52**	967.70**	968.77**	970.03**	973.46**	971.23**
R-sq within	0.27	0.27	0.27	0.27	0.27	0.34	0.34	0.34	0.34	0.34
between	0.26	0.25	0.26	0.26	0.25	0.28	0.28	0.28	0.27	0.28
Overall	0.26	0.26	0.26	0.26	0.26	0.33	0.33	0.33	0.33	0.33
Number of Observation	1817	1817	1817	1817	1817	1733	1733	1733	1733	1733



**TABLE 5.9B**  
**The impact of the EU Accession Process and Membership and Risk Management Characteristics on Risk and Stability: Interaction Term Approach**

Variables	ALL SAMPLE BANKS									
	Z-SCORE (PANEL A)					NPL (PANEL B)				
	1	2	3	4	5	1	2	3	4	5
EU Membership	-	-	-	-	-	6.015**	4.986**	5.906**	5.439**	6.018**
	0.711**	0.671**	0.657**	0.678**	0.686**	*(1.121)	*(0.743)	*(0.657)	*(0.720)	*(0.657)
	(0.084)	(0.088)	(0.086)	(0.086)	(0.083)					
CRO Present*EU	0.281	-	-	-	-	-0.078	-	-	-	-
	(0.151)					(1.100)				
CRO Executive*EU	-	-0.104	-	-	-	-	2.408	-	-	-
		(0.183)					(0.878)			
CRO Female*EU	-	-	-0.104	-	-	-	-	1.698	-	-
			(0.134)					(1.717)		
Risk Committee Present*EU	-	-	-	-0.044	-	-	-	-	1.494	-
				(0.179)					(0.870)	
Risk Committee Report*EU	-	-	-	-	0.178	-	-	-	-	-2.016
					(0.204)					(1.628)
CRO Present	0.067	0.213**	0.224**	0.223**	0.220**	0.898	0.916	0.850	0.950	0.840
	(0.134)	(0.103)	(0.103)	(0.103)	(0.103)	(0.822)	(0.612)	(0.615)	(0.614)	(0.613)
CRO Executive	-0.097	-0.026	-0.090	-0.091	-0.089	-1.043**	-	-1.050**	-1.083**	-1.043**
	(0.093)	(0.096)	(0.093)	(0.093)	(0.092)	(0.532)	2.805**	(0.527)	(0.528)	(0.528)
							*(0.829)			
CRO Female	0.181**	0.183**	0.236**	0.184**	0.184**	-0.176**	-0.285	-1.105	-0.159	-0.151
	*(0.067)	*(0.067)	(0.095)	*(0.067)	*(0.067)	(0.974)	(0.973)	(1.353)	(0.974)	(0.974)
Risk Committee Present	0.038	0.041	0.043	0.067	0.036	-0.090	-0.276	-0.074	-1.036	-0.096
	(0.107)	(0.107)	(0.107)	(0.154)	(0.107)	(0.469)	(0.472)	(0.468)	(0.721)	(0.467)
Risk Committee Report	0.021	0.018	0.015	0.048	-0.098	-0.444	-0.446	-0.456	-0.419	0.854
	(0.118)	(0.118)	(0.118)	(0.118)	(0.174)	(0.860)	(0.859)	(0.860)	(0.860)	(1.356)
Board Level Variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank Level Variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country Level Variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Financial Crisis Dummy	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Cons	2.727**	2.649**	2.716**	2.701**	2.691**	48.041*	46.022*	48.288*	47.532*	47.797*
	*(0.741)	*(0.741)	*(0.742)	*(0.740)	*(0.741)	** (5.732)	** (5.759)	** (5.731)	** (5.726)	** (5.721)
Wald $\chi^2$	665.45*	668.54*	661.69*	673.31*	671.70*	1113.85	1125.46	1114.90	1118.39	1117.42
	**	**	**	**	**	***	***	***	***	***
R-sq within	0.27	0.27	0.27	0.27	0.27	0.34	0.33	0.34	0.34	0.34
between	0.13	0.12	0.12	0.13	0.13	0.26	0.27	0.27	0.26	0.27
overall	0.22	0.22	0.22	0.23	0.23	0.32	0.32	0.32	0.31	0.32
Number of Observation	2316	2316	2316	2316	2316	2243	2243	2243	2243	2243

The table 5.9B reports the findings for sample of banks from new and long-standing EU member nations and candidate nations and shows that the coefficients of the interactions between EU dummy and selected risk management variables are statistically insignificant which implies that the impact of EU membership on a bank's risk variables does not depend on how the bank risk is managed.

## **5.5 Discussion and conclusion**

In this chapter, the influence of a political process, EU accession, on bank risk management and bank risk are considered. Using a unique hand-collected dataset of banks from eleven EU member and five candidate nations, the chapter reports that this political process does appear to have a significant influence on the risk management and risk of banks. This assessment is necessary not least due to the central role of the EU in developing financial regulation within the EU and more widely. The chapter also illuminates another context in which politics has a significant influence over bank behaviours.

The results show that the accession process has a significant influence on the risk management of banks, albeit in different and perhaps unexpected ways. Banks in candidate nations have a better nonperforming loans ratio and Z-Score, which indicates better bank risk management and financial stability. The variables indicate sound risk management structure has been superior in banks in member nations. For instance, the share of chief risk officer present and chief risk officer executive are higher and statistically significant in banks of member nations whereas the share of female chief risk officer is higher and statistically significant in banks of candidate nations. The share of the risk committee present and risk committee report to the board is higher in banks in member nations; they are not statistically significant differences relative to banks in candidate nations. The regression results provide mixed results about the relationship between risk management variables and the risk measures. The chapter also applies econometric analyses to examine the effect of risk management structure on bank risk and stability before and after the EU membership and further considers the EU membership as a factor of risk management structure. Overall, the results show that the presence of CRO, female CRO, and executive CRO significantly affect the risk and stability of banks. The results further

prove that the risk and stability of sample banks are significantly influenced by corporate governance (including board size, board independence, and board diversity), bank-level (e.g., bank size and capital) and country level (e.g., inflation rate and national governance quality (WGI)) variables. The results of regression analysis where the interaction terms used show that the impact of EU membership on bank risk and stability does not relate how the banks are governed. Overall, the results indicate bank risk and stability not only influenced by internal risk management structure of banks but also much other corporate governance and bank-specific factors and national and macroeconomic conditions. Creating sound risk management structures in banks has been recently encouraged by authorities and put into practice by banks themselves. Therefore, it is argued that expected positive impact of a sound risk management structure on bank stability and riskiness could be observed in the future studies and the limited influence of these variables on risk measures might be explained in this context.

The implications of these findings are multifaceted. While it has long been theorised that political institutions can be influential in governance arrangements financial regulation and banking behaviours (Calomiris and Haber 2014), such behaviours are rarely empirically tested. While continuing work has outlined the importance of political connections and institutions on banking industries, the influence is distinct, political processes in this context have been to date overlooked. This gap in the literature is spanned by this work by considering the EU accession process, which is observed to be influential. It is suggested that many other political processes maybe influences which have previously been overlooked and have been required reassessment. Indeed, what has been seen is that the process of amending national laws, regulation and approaches incorporated in EU accession has a valuable influence on banks and has a membership of the EU. More accession provides an experiment for considering the efficacy of the regulations required by regulation, with different nations moving through different regulatory requirement as part of this process. The chapter reports that much of regulation demanded by the accession process has had a positive impact.

## **Chapter 6. Ownership of banks in the EU member and candidate nations: To what extent has political process made a change?**

### **6.1 Introduction**

Has accession to the European Union (EU) and following EU membership influenced the ownership structure of banks in member and candidate nations? Does joining the EU increase foreign ownership? Is there a significant difference between the ownership structure and concentration of banks in member and candidate nations? Is joining the EU a force for the change in ownership of banks? This study aims to answer these questions by considering the political process of EU accession and membership to examine the changes in ownership of banks.

The privatisation and post-privatisation periods bring radical changes to ownership and control of firms located in many European nations which most of them have been EU member and/or candidate now. The main forces behind the privatisation of the firms and the methods of privatisation had been applied by the policymakers of these nations had differed nonetheless the results of this phenomenon has been quite similar for the firms and for the nations: The increase of foreign ownership and institutional ownership and the decrease of domestic and state ownership in firms (see, Pajuste, 2002; Aluchna, 2006; Naaborg and Lensink, 2008 and Balsmeiera and Czarnitzki, 2017). This increase in foreign entry to banking sector is argued that brings financial development, financial and economic integration between home and host countries (see Cardenas et al., 2003; Clarke et al., 2003; Naaborg et al., 2004). Foreign entry to host banking sector has been increasing after developing nations remove barriers and restrictions in this sector (Clarke et al., 2003). During the transition period many CEE nations had attracted foreign direct investment in their banking sector which has resulted in half of the total bank assets acquired by foreigners (Clarke et al., 2003 and Naaborg et al., 2004). This is also the case for sample banks of this study and the main univariate and multivariate analyses results prove the high level of foreign and institutional ownership of the sample banks.

It is believed that this study is the first one that is questioning the impact of the EU accession and membership on the change of ownership of banks in the new EU member and candidate nations. In other words, the study is curious about whether the EU accession and membership

is a cause for ownership change of banks in sample nations. The results demonstrate that following the transition period, the EU membership as well is linked to greater foreign control of banks in sample nations and decreased domestic control. Institutional ownership is higher for the membership period with many of banks owned by bank holding companies operating in different European countries and the US. State ownership is also higher in the accession period for candidate nations. The percentage of shares of banks publicly quoted is likely to be high in member banks and contrary to that less likely to be in candidate banks. This chapter displays that the ownership structure of banks is influenced by the political process of EU membership and accession. This study has another novelty that is to consider the EU accession process and membership of the EU as political process and employs the political and institutional theory to examine the change in ownership of banks. Lastly this study uses an original hand-collected dataset including several ownership types (foreign, domestic, institutional, state/government, family/individual, managerial, public and private) and has the sample covers banks from many nations that are more widespread than the samples employed in the previous studies. From those aspects, overall, this work differs from past studies which examined bank ownership structure and ownership concentration, foreign entry and financial integration and development of banking sectors, bank efficiency, the relationship between ownership and performance and risk in financial and non-financial firms (Thomsen and Pedersen, 2000; Cardenas et al., 2003; Clarke et al., 2003; Naaborg et al., 2004; Crespi et al., 2004; Lensink and Hermes, 2004; Green et al., 2004; Bonin et al., 2005; Filatotchev et al., 2007; Micco et al., 2007; Iannotta et al., 2007; Naaborg and Lensink, 2008; Barry et al., 2011; Balsmeier and Czarnitzki, 2017).

After this brief introduction, the background and context of the chapter are presented in the following subsection.

### *6.1.1 The background and context of the chapter*

The European nations examined in this chapter started to develop market economies and engaged in the privatisation of state assets, as part of a rapid period of change since the beginning of the 1990s. These nations did not have developed financial markets within the communist era because of solid-state control over the economy. Due to the significant influence of privatisation on ownership, change and corporate governance structure as well, this

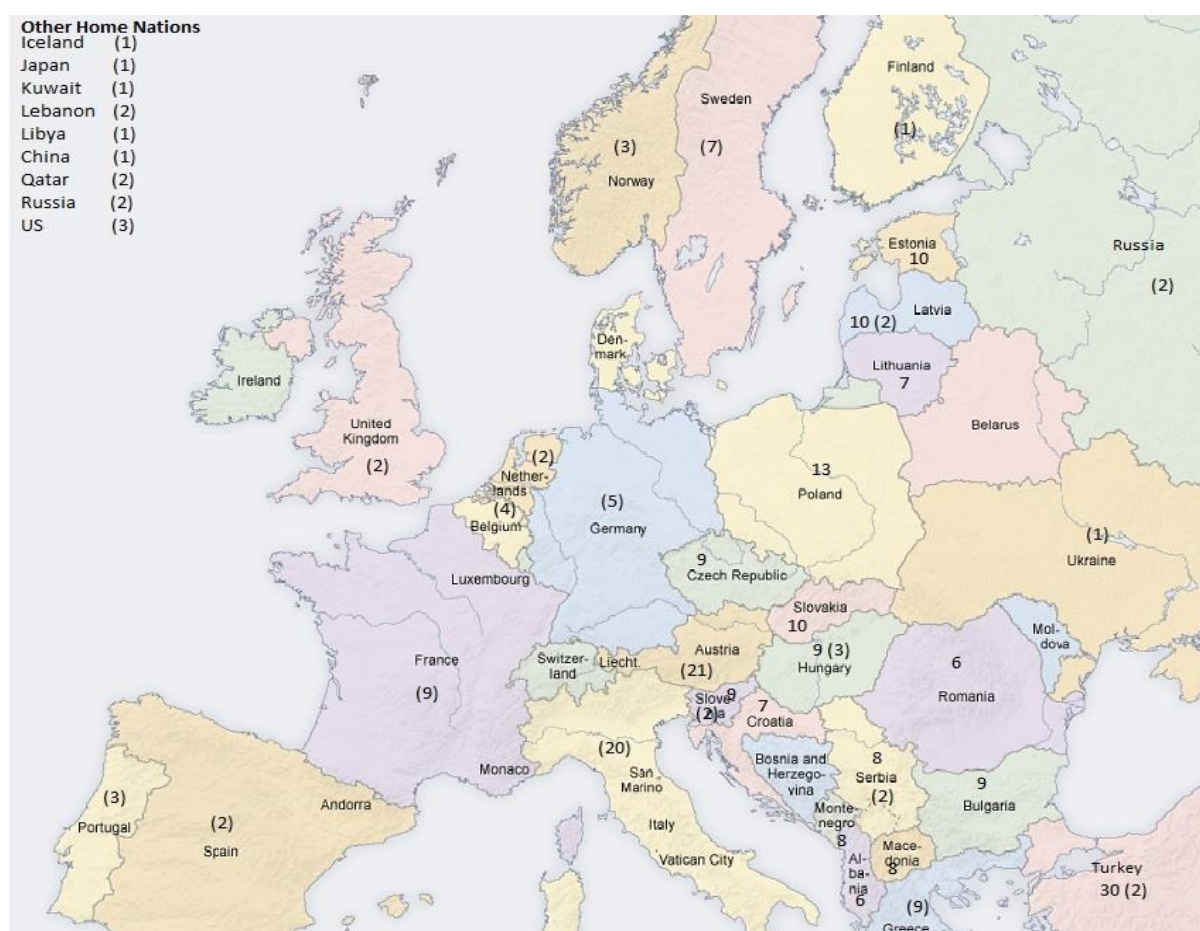
phenomenon attractive research case to be examined which also include a severe dilemma because of the question of if almost all of the countries in CEE faced essential regulations and laws following transition (Dobak, 2006).

Together with that, the new target to join in the EU brought significant and additional change for those countries from a command market system to the EU membership in a brief period. During this period, the institutional environment of these countries has changed because at the time of economic development and success of nations many informal instruments are replaced by formal ones (Guiso et al., 2015) such as political institutions (not culture or value systems) (Acemoglu et al., 2001) and by better functioning legal institutions (La Porta et al., 1998). Not only transition and privatisation yet also globalisation had influenced the ownership structure of firms and specifically banks. Increased foreign ownership and decreased state and family ownership were widely seen during the 1990s. Claessens and Van Horen (2014) state that the importance of foreign banks has increased in the domestic financial sector during the last twenty years, while this process was interrupted by the global financial crisis, there has been a dramatic increase in the foreign entry to the home countries banking industry. The foreign ownership of banks is quite higher than that seen for non-financial firms is due to the foreign entry of large bank holding companies (BHC) from developed countries including the US.

Figure 6.1 presents that bank owners are mainly from other European Union countries and European countries such as Russia and Ukraine. However, the only difference has been observed in Turkish banks that a few banks owned by individuals and institutions from the Middle East and North Africa (MENA) region. This difference might be explained because of the cultural, political and historical ties of nations with this region. The number in parentheses indicates banks that are the owners of banks in sample nations. It should be noted that Italian and Austrian individuals and institutions have been dominant owners of the sample banks followed by owners from Greece, France, and Sweden. Within the sample, foreign ownership is nearly 67%; when banks in candidate nations are excluded, it increases to 72% for banks in member nations. The owners of the member sample banks during the sample period are from 25 different countries mainly from the EU countries but also including the owners from the US, Ukraine, Libya, Lebanon, Kuwait, Qatar, Japan, China, Iceland, and Russia.

In recent years especially after joining the EU, some convergence in the ownership structures of CEE region nations has evolved. However, the change has been prolonged, after joining the

EU, some similarities generated between developed and new EU members (Andreff, 2006). The sample nations of this chapter that are introduced in Table 6.1 in the next section, all have been experiencing significant political and institutional changes such as the transition to the market economy, accession to the EU and membership to the EU. As many of sample banks that illustrated in Figure 6.1 in part 6.3.2., geographically located in CEE region, the focus is given more on the literature of those countries that have been attractive since the transition and privatisation period.



**Figure 6.1** Number of banks in the host and home nations

The CEE countries followed different paths from the privatisation of state-owned assets during the transition period including different asset valuation ways, periods for temporary asset management missions of state and share of permanent state rights on properties. (Dobak, 2006).

Hence, although, these different privatisation methods were existed during the transition period, mainly, three different corporate governance models in CEE region nations have converged to one model that is mainly dominated by foreign owners of firms in general (Andreff, 2006).

The new member and candidate nations examined in this chapter were mostly transition economies which used the command (planned) economic systems until 1991 and including Turkey that had state controlled-market mixed economic system until the beginning of the 1980s. After the downfall of the Soviet Union and following the transformation of their nations, they started to constitute market economies, then a rapid privatization era began, and this process affected ownership and corporate governance structure of firms in the new member states mostly Central and Eastern European (CEE) countries (Andreff, 2006; Dobak, 2006). This transformation process of transition countries was one of the most exciting topics that studied in academic papers (for details see Boubakri et al., 2005; Estrin, 2007; Naaborg and Lensink, 2008; Roaf et al., 2014) and books (for details see Rosenbaum et al., 2000; Pradeep, 2002).

This chapter is organised as follows; following the introduction section, the next section presents the research methodology including research questions, dataset construction, and sample and variable definitions. The univariate and multivariate analyses results are presented in section 6.3, and lastly, conclusions and discussion are presented in section 6.4 of this chapter.

## **6.2 Research methodology**

This section first introduces research questions and hypotheses. The dataset construction and variables are then explained. Finally, estimation methods and model specification are introduced.



### *6.2.1 Research questions*

The research aims to examine the effect of the European Union membership and accession on the ownership structure of banks. Claessens and Van Horen (2014) stated that foreign ownership had been increased in domestic financial sectors. Second, following the transition period that experienced in the sample nations during the 1990s, foreign investors, especially from developed economies, gradually increased their investments in the banking industries of CEE nations. This transformation process of transition countries (for details see Frydman et al., 1993a, 1993b, 1996, Frydman and Rapaczynski, 1994; Bonin and Wachtel, 2003; Bonin, 2004; Bonin et al., 2005a and 2005b; Naaborg and Lensink, 2008) based on the literature review of past studies and theoretical discussion, two questions are provided. The first question is whether the political process of the European Union membership and accession process influence the ownership structure of banks in member and candidate nations. Thus, the first questions are as follows:

- Do the EU accession process and membership influence the ownership structure of banks in member and candidate nations?

The second question is whether ownership structure and ownership concentration of banks differ in banks in member and candidate nations. Therefore, the second hypothesis is given as:

- Do the ownership structure and ownership concentration of banks differ in member and candidate nations banks?

### *6.2.2 Data and variables*

The dataset covers banks operating in EU member and candidate countries. These nations include the eight nations entering the EU in 2004, the two nations entering the EU in 2007, Croatia which entered the EU in 2013 and five candidate nations still to join the EU (Albania, FYROM, Montenegro, Serbia, and Turkey). The period was chosen to enable sample nations

candidacy and participation in the EU to be examined.

After examining more than 2000 annual reports and other relevant documents such as corporate governance reports provided by the sample banks, central banks and other governmental sources of each nation, for a very few of banks SEC's Form F-20 and local stock exchanges websites, ownership specific information for each bank gathered manually and a unique hand-collected dataset was created<sup>17</sup>. As databases and banks themselves do not provide a reasonable number of annual reports and other relevant sources in order to produce sufficient data for the pre-2000 period, the 2000-2016 period was selected. The sample incorporates 159 banks operating in eleven EU member and five candidate nations over the 2000-16 period within total 1845 bank-year observations.

The International Monetary Fund (IMF), the World Bank, the Emerging Markets Monitor, the European Bank for Reconstruction and Development (EBRD), FTSE, S&P, and SNL Financials were also investigated to obtain relevant information on control variables for each nation. Further information about the sample nations and sample groups are provided in Table 6.1. Table 6.2 provides information about variables. The dataset for ownership variables was constructed manually from relevant sources (annual reports, financial statements and other documents that were provided by sample banks, documents that were released by financial authorities of sample nations). These sources commonly provide information for each ownership type if an owner holds at least 5% of the share of bank. Following Caprio et al., (2007) if the shareholder has direct and indirect voting rights that sum to 10% or more, it is determined as large shareholders. Thus the threshold of ownership type was specified if shareholders of sample banks who have at least 10% percent and more marked as large shareholders and controlling owner. In addition, for each type of ownership the total percentage of share of bank held was used for the estimations as the change of the ownership structure of banks was compared between accession and membership period. It should also be noted that the majority of sample banks has highly concentrated ownership structure and the foreign ownership is very high compared to domestic, state and family ownerships which made easier to collect ownership data for the sample.

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<sup>17</sup> It should also be noted that for double check, the valuable database published by Claessens and Van Horen (2014) was also used. Available at <http://jmcb.osu.edu/claessens-and-vanhoren>.

This chapter aims to investigate first, whether the EU accession process and membership influence the ownership structure of banks and second, to examine the relationship between ownership structure and concentration of banks in member and candidate nations. Thus, two groups of variables have been provided. The first group of variables is composed of ownership structure variables. As the data sources are limited to such as annual reports and financial statements of banks in banks' websites, all information about variables was collected from these sources. The second set of variables is for controlling the effect of bank-specific and country-specific variation.

**TABLE 6.1**

**Sample Size and Characteristics of Candidate and Member Nations**

	Region	Legal Origin	Number of Banks	Number of Sample Banks	Number of bank-year observations
<i>Panel A. EU Member since 2004 (All High Income Level Countries)</i>					
Czech Republic	Eastern Europe	German	20	9	123
Estonia	Northern Europe	German	10	10	117
Hungary	Eastern Europe	German	16	9	121
Latvia	Northern Europe	German	17	10	120
Lithuania	Northern Europe	French	8	7	83
Poland	Eastern Europe	German	33	13	143
Slovak Republic	Eastern Europe	German	14	10	124
Slovenia	Southern Europe	German	19	9	106
<i>Panel C. EU Member since 2007 (All Upper-Middle Income Level Countries)</i>					
Bulgaria	Eastern Europe	German	17	9	129
Romania	Eastern Europe	French	14	6	73
<i>Panel D. EU Member since 2013 (High Income Level Country)</i>					
Croatia	Southern Europe	German	18	7	88
<i>Panel E. Candidates (All Upper-Middle Income Level Countries)</i>					
Albania	Southern Europe	French	10	6	53
FYROM	Southern Europe	French	13	8	78
Montenegro	Southern Europe	French	11	8	70
Serbia	Southern Europe	French	20	8	73
Turkey	Eastern Europe	French	42	30	344

Sources: World Bank, United Nations and La Porta et al., (2008)

**TABLE 6.2**  
**Variable Definitions**

Variables	Definitions
<b>Ownership</b>	<i>(Hand-collected data)</i>
Foreign Ownership	The percentage of shares of sample banks that owned by foreign institutions and individuals.
Domestic Ownership	The percentage of shares of sample banks that owned by domestic institutions and individuals.
State Ownership/ Dummy	The percentage of shares of sample banks owned by the state (governmental organisations). Dummy variable equals 1 if state/governmental organisations held shares in sample banks, 0 otherwise.
Institutional Ownership/ Dummy	The percentage of shares of sample banks that owned by institutional owners including bank holding companies (BHCs), banks such as EBRD, other financial and non-financial institutions including IFC (International Finance Corporation of the World Bank). Dummy variable equals 1 if institutions held shares in sample banks, 0 otherwise.
Bank Ownership	The percentage of shares of sample banks owned by banks and bank holding companies (BHCs).
Individual Ownership/ Dummy	The percentage of shares of sample banks that owned by families and individuals. Dummy variable equals 1 if individuals held shares in sample banks, 0 otherwise.
Managerial Ownership/ Dummy	The percentage of shares of sample banks that owned by managers and directors of banks. Dummy variable equals 1 if managers of sample banks held shares in their banks, 0 otherwise.
Public Ownership/ Dummy	The percentage of shares of sample banks that publicly held. Dummy variable equals 1 if the bank publicly held, 0 otherwise.
Private Ownership/ Dummy	The percentage of shares of sample banks that privately held. Dummy variable equals 1 if the bank privately held, 0 otherwise.
Herfindahl–Hirschman Index	This index indicates the ownership concentration by estimating the sum of squares of all shareholders in each bank. The equation is, therefore; $HHI = \sum_{i=1}^n x^2$
Dominant Shareholder	The percentage of shares of sample banks that held by dominant owners based on ownership type.
<b>EU Membership</b>	
EU Dummy	Dummy variable equals 1 for membership period and 0 otherwise.
<b>Board-Level</b>	<i>(Hand-collected data)</i>
Board Size (BSize)	The number of directors on the supervisory board (Natural logarithm)
Board Independence (Bind)	The percentage of independent outside directors on the board of directors.
Gender Diversity (Female)	The percentage of directors who are female
<b>Bank-Level</b>	<i>(Source: Bankscope, Authors' own calculations)</i>
Loan Loss Provision	Loan loss reserve divided by gross loans
Operation Ratio	The cost to income ratio
Capital Ratio	Equity to total assets ratio which indicates leverage
Return on Assets (ROA)	Net income divided by average total assets
<b>Country-Level</b>	<i>(Source: The World Bank, The IMF, The Heritage Foundation, Kaufmann, et al., 2010)</i>
Index of Economic Freedom (The Heritage Foundation)	Measures economic freedom based on 12 quantitative and qualitative indicators, group into four broad categories of economic freedom: Rule of Law, Government Size, Regulatory Efficiency, Open Markets. (2000-2015).
World Governance Indicators (WGI)	The WGI is a research dataset summarising the views on the quality of governance based on several surveys' responses. The dimensions of the dataset are as follows: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption. (2000-2015).

Variable Definitions

### 6.2.2.1 Variable descriptions

Table 6.2 provides information about variables and the details on these variables are presented in this subsection.

*EU Membership:* A dummy variable equals 1 for membership and 0 otherwise were used as an EU indicator following Bekaert et al.'s (2013).

*Foreign Ownership:* This variable is the first ownership variable that is the percentage of shares of sample banks owned by foreign institutions and individuals. This variable is mostly used in ownership and corporate governance studies (e.g., Chibber & Majumdar, 1999; Lensink and Hermes, 2004; Naaborg, and Lensink, 2008; Allen et al., 2011; Li et al., 2011 and Claessens and Van Horen, 2014).

*Domestic Ownership:* This variable is the second ownership variable that is the percentage of shares of sample banks that owned by domestic institutions and individuals. This variable is commonly used in the previous studies (e.g., Hartzell and Starks, 2003; Jones et al., 2003 and Eamets, 2008).

*State Ownership/Dummy:* This variable is the third ownership variable that is the percentage of shares of sample banks that owned by the state (governmental organisations). Dummy variable equals 1 if state/governmental organisations held shares in sample banks, 0 otherwise. The state/ government ownership is frequently studied in corporate governance literature (e.g., Xu and Wang, 1999; Sun and Tong, 2002; Dinc, 2005; Huang and Xiao, 2012 and Battaglia et al., 2014).

*Institutional Ownership/Dummy:* This variable is another ownership variable that is the percentage of shares of sample banks that owned by institutional owners including bank holding companies (BHCs), banks such as EBRD, other financial and non-financial institutions including IFC (International Finance Corporation of the World Bank). Dummy variable equals 1 if institutions held shares in sample banks, 0 otherwise. This variable is widely used in ownership and corporate governance studies (e.g., Hartzell and Starks, 2003; Parrino et al., 2003; Aggarwal et al., 2011; Erkens et al., 2012 and Arouri et al., 2014).

*Bank Ownership:* This variable is the fifth ownership variable that is the percentage of shares of sample banks that owned by banks and bank holding companies (BHCs). This variable is

another variable that is used in the ownership studies (e.g., Barry et al., 2011 and Ghosh and Petrova, 2014).

*Individual Ownership/Dummy*: This variable is another ownership variable that is the percentage of shares of sample banks that owned by families and individuals. Dummy variable equals 1 if individuals held shares in sample banks, 0 otherwise. Individual ownership is commonly used in the literature (e.g., Anderson and Reeb, 2003; Anderson and Reeb, 2004; Bartholomeusz, and Tanewski, 2006; Andres, 2008; Cascino et al., 2010 and Barry et al., 2011).

*Managerial Ownership/Dummy*: This variable is another ownership variable that is the percentage of shares of sample banks that owned by managers and directors of banks. Dummy variable equals 1 if managers of sample banks held shares in their banks, 0 otherwise. Managerial ownership is mostly used in ownership studies (e.g., Demsetz and Lehn, 1985; Himmelberg, 1999; Hartzell and Starks, 2003; Davies et al., 2005; Lasfer, 2006 and Barry et al., 2011).

*Public Ownership/Dummy*: This variable is the eighth ownership variable that is the percentage of shares of sample banks that publicly held. Dummy variable equals 1 if the bank publicly held, 0 otherwise. This variable is another variable that is used in the ownership studies (e.g., Kwan, 2004; Nichols et al., 2009 and Barry et al., 2011).

*Private Ownership/Dummy*: This variable is another ownership variable that is the percentage of shares of sample banks that privately held. Dummy variable equals 1 if the bank privately held, 0 otherwise. This variable is another variable that is used in the ownership studies (e.g., Kwan, 2004; Nichols et al., 2009 and Barry et al., 2011).

*Herfindahl–Hirschman Index (HHI)*: This index indicates the ownership concentration by estimating the sum of squares of all shareholders in each bank. The equation is, therefore;  $HHI = \sum_{i=1}^n x_i^2$ . This is another ownership variable that is widely used in banking and finance studies (e.g., Grosfeld and Tressel, 2001; Aluchna, 2006; Cespedes et al., 2009 and Haw et al., 2010).

*Dominant Shareholder:* This variable is the last ownership variable that is the percentage of shares of sample banks that held by dominant owners based on ownership type. This variable is another variable that is used in the ownership studies (e.g., Dahya et al., 2008 and Boubakri and Ghouma, 2010).

*Board Size:* The number of directors that sit on bank supervisory board was used as the first board level variable. Board size is widely used in corporate governance literature (e.g., Yermack, 1996; Guest, 2009 and Pathan & Faff, 2013).

*Board Independence:* The percentage of independent outside directors on the supervisory board is used as the second board characteristics which are commonly used in previous corporate governance papers (e.g., Mishra & Nielsen, 2000; Erkens et al., 2012 and Pathan and Faff, 2013).

*Gender Diversity:* The percentage of female directors on the board is used for gender diversity which is mostly used in board diversity literature (e.g., Fields and Keys, 2003; Adams and Ferreira, 2009 and Garcia-Meca et al., 2015).

*Return on Assets (ROA):* ROA is the first dependent performance variable of this chapter that is measured by net income divided by average total assets. ROA is broadly used as a performance variable in previous studies (e.g., Crespi et al., 2004; Naaborg and Lensink, 2008; Carter et al., 2010; Ferreira et al., 2010 and Westman, 2011).

*Size:* Size is measured by natural logarithm of total asset of bank which is the first bank control variable of this chapter is widely used in the literature (e.g., Yermack 1996; Claessens et al, 2001; Naaborg and Lensink, 2008; Pathan 2009; Peni and Vähämaa, 2012; Cheung et al., 2014; Battaglia et al., 2014 and Saghi-Zedek and Tarazi, 2015).

*Loan Provision:* As a second bank-level control variable loan provision is measured by loan loss reserve divided by gross loans which gives information on bank's asset quality (e.g., Kwan and Eisenbeis, 1997; Barth et al., 2001; Naaborg and Lensink, 2008 and Westman, 2011).

*Capital Ratio:* Another bank-level control variable is capital ratio is measured by equity divided by total assets to control for the bank's capital structure. This ratio is widely used in banking studies (e.g., Iannotta et al., 2007; Naaborg, and Lensink, 2008; Altunbas et al., 2010; Saghi-Zedek and Tarazi, 2015 and Detragiache et al., 2018).



*Operation Ratio*: Cost-to-income ratio which is measured by the cost to income ratio is used to control for managerial quality (e.g., Naaborg, and Lensink, 2008; Shehzad et al., 2010; Barry et al., 2011 and Chiaramonte et al., 2015).

*GDP Percapita Growth*: As the first country-level control variable GDP per capita growth measured as an annual percentage growth rate of GDP per capita based on constant 2010 U.S. dollars (e.g., Demirgüç-Kunt, and Huizinga, 1999; Lensink and Hermes, 2004; Naaborg, and Lensink, 2008 and Andersson, 2016).

*World Governance Indicators (WGI)*: The WGI is the second country-level control variable is a research dataset (2000-2015) summarizing the views on the quality of governance based on several surveys' responses. The governance quality of a nation could influence the change of ownership of banks (Barth et al., 2001) thus the WGI and Index of Economic Freedom were used as country-level variables. The dimensions of the dataset are as follows: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption (e.g., Kaufmann et al., 2010).

*Index of Economic Freedom (The Heritage Foundation)*: As another country control variable this index measures economic freedom (2000-2015) based on 12 quantitative and qualitative indicators, group into four broad categories of economic freedom: Rule of Law, Government Size, Regulatory Efficiency, Open Markets (e.g., De Haan and Sturm, 2000).

### 6.2.3 Estimation methods and models

Two methods are used for the estimations. To compare ownership change in sample banks based on nations' membership and candidacy periods, the most appropriate method of testing was determined, and T-tests and Mann-Whitney U tests were employed. To provide the relationship between changes in ownership structure and EU accession, a dummy variable (EU Dummy) were employed. The results of univariate analysis and descriptive information of variables are provided in section four. Due to the dataset structure, one of the bivariate outcome models, the probit model was used for multivariate assessment. In order to determine whether the ownership structure (likelihood of change) of banks has been changed during the EU

accession process and membership period, the binary variable EU dummy was used. Based on membership and candidacy periods, EU dummy takes one if the banks' host nation is a member of the EU and zero if the banks' host nation is in the accession period. A probit model is a linear probability model that is the functional form of  $F(x'\beta)$ , and the base equation is as follows:

$$F(x'\beta) = \Phi(x'\beta) = \int_{-\infty}^{x'\beta} \phi(z)dz \quad (1)$$

To examine the relationship between dependent ownership variables and the independent EU variables and country-specific and bank-specific variables, separate regression models are specified. The data for each ownership variable was collected as a percentage of shares held by each owner yet for making these variables applicable for probit model. The set of dummy variable was also used for the variables where it was needed. Hence, following Naaborg and Lensink (2008) dummy variables for the state, individual, institutional and managerial ownerships were specified if a sample bank's shares held by one of these owners that is equal 1 and 0 otherwise. The bivariate outcome models were used in different ownership studies to assess the ownership change on performance, on the probability of default and determination of ownership structure (e.g., Bishop et al, 2002; Filatotchev et al., 2007 and Zeitun, 2009). Thus following these studies a probit model was employed to estimate the likelihood of specific ownership type presence before and after EU membership.

The model equation (2) is written as follows:

$$\begin{aligned} \text{Pr}(\text{Ownership Variable} = 1) = & \Phi(\beta_0 + \beta_{EUDummy} + \beta_{BOARD\ SIZE} + \\ & \beta_{BOARD\ INDEPENDENCE} + \beta_{FEMALE\ DIRECTORS} + \beta_{BANK\ TOTAL\ ASSET} + \\ & \beta_{LOAN\ LOSS\ PROVISION} + \beta_{CAPITAL} + \beta_{OPERATION} + \beta_{ROA} + \beta_{COUNTRY-LEVELS} + \\ & YEAR\ DUMMY) \end{aligned} \quad (2)$$

Based on this equation, eight separate probit (pooled estimator) models are estimated. Initially,

as the dataset has a panel data structure, it was considered whether panel probit estimation is needed. By considering this, first, the panel probit models were employed (Wooldridge, p. 473 and 494, 2002). After that, the amounts of “ $\rho(s)$ ” for each model is observed to see if they are equal to “zero.” This means that the intra-panel correlation is small enough and if this is the case, the probit (pooled estimator) model could be used (Stata: Release 13, 2013). According to the estimations for all models in this chapter, all “ $\rho(s)$ ” equal to “zero” was had and thus the probit models regression results with standard errors robust (White) to heteroscedasticity and serial correlation in Table 6.5 were provided. To prevent extreme values affecting the results of all bank-level variables (ROE, loan loss provision, capital, operation, total asset) were winsorised at 1% and 5% levels.

## 6.3 Results

### 6.3.1 Univariate analysis results and descriptive statistics

In this section, univariate analysis results for banks in the EU member nations based on membership start year are given in Table 6.3. The descriptive statistics of ownership variables and univariate analysis for banks in the member and candidate nations are reported in panel A and panel B of Table 6.4, respectively. Univariate comparison analysis results and descriptive statistics are comparatively provided in Table 6.3 based on the year of the member states join in EU. Test results for banks in member nations which joining the EU in 2004 are provided in panel A of this table. According to the t-test results, there are no significant differences in ownership structure between pre and post-membership period. Mann-Whitney test results are significantly different pre- and post-membership periods for state, foreign, domestic, bank, institutional and managerial ownership. Foreign, institutional and bank ownerships slightly increased during the membership period compare to pre-membership period. State, family/individual, and managerial/directorial ownership decreased in the membership period. HH Index for this group of banks is 0.856 pre-membership and 0.887 post-membership. There is a significant difference between both periods, and ownership concentration increased in membership period.

To end, the percentage of shares publicly held and privately held almost unchanged pre-membership and post-membership. Based on the results for the second group of banks from the nations which became members in 2007, t-test and Mann-Whitney test results provide close significance levels for foreign, domestic, state, institutional and bank ownership. Foreign, institutional and bank ownerships increased after joining the EU whereas domestic, state and family/individual ownerships decreased in the same period compare the pre-membership. Similar to HH Index for banks in panel A, for those banks it significantly increased in after membership from 0.821 to 0.901, indicating an increase in ownership concentration for the sample banks in this group.

Finally, the results of both comparison tests for banks in Croatia that joining in the EU in 2013 are given in panel C. According to the results, foreign ownership and domestic ownership significantly different before and after 2013. Foreign ownership increases from 91.7% to 99% while domestic ownership decreases from 8.2% to 1%. Although there are no significant differences between the two periods, the percentage of shares of banks/bank holding companies and institutional ownership increases and family/individual and managerial/directorial ownership decreases. All the shares owned by Croatian banks in the sample were privately held. Finally, HH Index had also increase similar to sample banks in other groups. There is no significant difference between the two periods.

**TABLE 6.3**  
**Univariate Comparison and Descriptive Statistics of Ownership Structure of Banks in**  
**New Member Nations**

Panel A. Banks in the EU countries which became members in 2004							T-test	Mann-Whitney
Number Observations	2000-2003			2004-2016				
	175 observations			762 observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
A. Ownership Variables								
Foreign	0.681	0.870	0.382	0.691	0.960	0.400	-0.310	-2.424**
Domestic	0.319	0.130	0.382	0.308	0.040	0.400	0.310	2.424**
State	0.091	0.000	0.242	0.061	0.000	0.209	1.630	3.854***
Institutional	0.800	0.940	0.313	0.840	0.990	0.292	-1.625	-4.121***
Bank	0.600	0.760	0.416	0.635	0.840	0.417	-1.005	-1.942*
Family/Individual	0.051	0.000	0.160	0.066	0.000	0.173	-1.034	0.464
Manager/Director	0.036	0.000	0.154	0.021	0.000	0.119	1.407	1.611
Public	0.083	0.000	0.188	0.082	0.000	0.187	0.068	1.500
Private	0.917	1.000	0.188	0.910	1.000	0.203	0.685	-1.214
HH Index	0.856	0.922	0.173	0.887	1.000	0.182	-2.063**	-3.793***
Panel B. Banks in the EU countries which became members in 2007							T-test	Mann-Whitney
Number Observations	2000-2006			2007-2016				
	62 Observations			140 Observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
A. Ownership Variables								
Foreign	0.644	0.920	0.384	0.796	0.990	0.320	-2.909***	-3.914***
Domestic	0.355	0.080	0.384	0.204	0.010	0.319	2.909***	3.914***
State	0.113	0.000	0.271	0.000	0.000	0.000	4.943***	6.854***
Institutional	0.754	0.950	0.314	0.901	0.990	0.219	-3.819***	-3.364***
Bank	0.501	0.560	0.432	0.694	0.940	0.378	-3.202***	-2.807***
Family/Individual	0.125	0.000	0.234	0.085	0.000	0.186	1.304	1.092
Manager/Director	0.000	0.000	0.004	0.002	0.000	0.004	-1.271	-1.862*
Public	0.084	0.000	0.232	0.100	0.000	0.224	-0.450	-1.316
Private	0.884	1.000	0.283	0.830	1.000	0.320	1.159	1.842*
HH Index	0.821	0.923	0.203	0.901	0.980	0.168	-2.953***	-2.744***
Panel C. Banks in the EU countries which became members in 2013							T-test	Mann-Whitney
Number Observations	2000-2012			2013-2016				
	64 Observations			24 Observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
A. Ownership Variables								
Foreign	0.917	0.970	0.214	0.990	1.000	0.015	-1.652*	-2.084**
Domestic	0.083	0.030	0.214	0.010	0.000	0.015	1.652*	2.084**
State	0.003	0.000	0.006	0.003	0.000	0.008	-0.318	-0.060
Institutional	0.975	1.000	0.036	0.987	1.000	0.021	-1.414	0.190
Bank	0.887	0.970	0.266	0.969	1.000	0.060	-1.490	-1.827*
Family/Individual	0.021	0.000	0.035	0.010	0.000	0.015	1.494	1.472
Manager/Director	0.000	0.000	0.000	0.000	0.000	0.000	-	-
Public	0.000	0.000	0.000	0.000	0.000	0.000	-	-
Private	1.000	1.000	0.000	1.000	1.000	0.000	-	-
HH Index	0.955	1.000	0.062	0.974	1.000	0.041	-1.438	-1.290

Note: \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

According to the descriptive statistics in panel A of Table 6.4, the percentage of shares of banks owned by foreign individuals and firms is 67.4% whereas the percentage of shares held by domestic investors is 32.6% during the sample period. These results are very close to the findings of prior empirical studies (e.g., Bonin, 2004; Barisitz, 2005; Bonin et al., 2015 and Andries and Brown, 2017). For instance, the findings of the study of Andries and Brown (2017) are similar to the results of this chapter. They found the share of foreign ownership in the CEE region 73% on average. Furthermore, Barisitz, (2005) for a sample of CEE region nations' banks found the similar results although he provide the percentage of foreign ownership for each country separately. Only 7.7% of shares of sample banks owned by state or governmental institutions. The percentage of shares held by family/individual investors is also 5.9%. Bonin et al., (2015) argued that state ownership of banks dramatically decreased over a ten year period on the beginning of the 2000s and the findings of this study supports this change. Institutional ownership is very high in sample banks with a share of 83.1%. The increase in foreign ownership of banks has brought the increase also in institutional ownership of sample banks as many of banks are owned by foreign BHCs. This is also indicated in some previous empirical studies (e.g., Andries and Brown, 2017). The percentage of shares owned by other bank and bank holding companies in sample banks is 60% whereas managerial ownership is very low in sample banks and just 1.5%. Last, of all, the percentage of shares publicly traded is 7.7% and privately owned is 91.3%. Based on the Herfindahl–Hirschman Index (HHI), ownership concentration of sample banks is 0.871, which means ownership of those banks highly concentrated. Bonin et al., (2015) also stated that the three-firm concentration ratios radically increasing in CEE region nations and the result of this chapter proved that bank concentration has been increasing.

Univariate comparison results for the banks in EU member and candidate nations are provided in panel B of Table 6.4. According to the results, there are significant differences between banks in member nations and banks in candidate nations for all variables except managerial and public ownership. According to the T-tests results, the percentage of shares owned by foreigners significantly different and higher in banks in member nations compared to banks in candidate nations. The percentage of shares held by domestic owners significantly higher in banks of candidate nations compare to banks in member nations. The percentage of shares owned by state/government institutions higher in banks in candidate nations which 10.3% shares of banks in candidate nations owned by these institutions.

TABLE 6.4

### Univariate Comparison and Descriptive Statistics of Ownership Structure of Banks in Member and Candidate Nations

Panel A. Descriptive statistics for Full Sample								
	Total Observations			Mean			Median	Std. Dev.
A. Ownership Variables								
Foreign	1845			0.674			0.950	0.397
Domestic	1845			0.326			0.050	0.397
State	1845			0.077			0.000	0.234
Institutional	1845			0.831			0.900	0.289
Bank	1845			0.600			0.790	0.430
Family/Individual	1845			0.059			0.000	0.152
Manager/Director	1845			0.015			0.000	0.098
Public	1845			0.077			0.000	0.171
Private	1845			0.913			1.000	0.194
HH Index	1845			0.871			0.980	0.185
Dominant Shareholder	1845			0.913			0.990	0.140
Panel B. Univariate Comparison of EU member and candidate nation banks								
	Member Nations Banks			Candidate Nations Banks			T-test	Mann-Whitney
Number Observations	926 observations			919 observations				
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.		
A. Ownership Variables								
Foreign	0.715	0.980	0.388	0.633	0.880	0.401	-4.440***	-4.844***
Domestic	0.285	0.020	0.388	0.367	0.120	0.400	4.440***	4.844***
State	0.050	0.000	0.191	0.103	0.000	0.268	4.930***	4.926***
Institutional	0.853	0.990	0.280	0.810	0.960	0.296	-3.261***	-5.810***
Bank	0.653	0.900	0.410	0.546	0.740	0.443	-5.375***	-4.485***
Individual	0.067	0.000	0.174	0.051	0.010	0.127	-2.413**	3.317***
Manager	0.018	0.000	0.108	0.013	0.000	0.088	-1.045	2.721***
Public	0.082	0.000	0.191	0.071	0.000	0.150	-1.359	2.049**
Private	0.900	1.000	0.225	0.926	1.000	0.155	2.881**	-1.106**
HH Index	0.891	1.000	0.178	0.851	0.961	0.191	-4.735***	5.346***
Dominant Shareholder	0.925	1.000	0.138	0.901	0.980	0.141	-3.652***	-5.230***

Note: \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

Institutional ownership is close to each other that is 85.3% for banks in member nations and 81.0% for banks in candidate nations. The percentage of shares owned by the bank, family/individual, managerial/directorial slightly higher in banks in member nations compared to banks in candidate nations. The percentage of shares publicly held slightly higher again in banks in member nations that is 8.2% of shares of this group banks publicly held and the percentage of shares privately held is 90% for this group of banks and 92.6% for banks in candidate nations. Last but not least, the HH Index for banks in member nations higher than banks in candidate nations. There is a significant difference and means that bank ownership in

member nations more concentrated than in candidate nations.

### *6.3.2 Multivariate analysis results*

The results of the panel probit model are provided in Table 6.5A (coefficients) and Table 6.5B (marginal effects), in Table 6.6A (coefficients) and Table 6.6B (marginal effects). Probit model results are documented in Table 6.5A and Table 6.5B for the sample of all member and candidate nations banks and in Table 6.6A and Table 6.6B for the only sample of member nations banks. Due to the nature of probit models, the signs of coefficients are only interpreted but not the magnitudes of each variable. So the signs of each variable in Table 6.5A and Table 6.6A and the results of marginal effects in Table 6.5B and Table 6.6B are documented in this subsection.

According to these results, the coefficient of foreign ownership is positive for EU membership that means that banks in EU members are likely owned by foreigners as expected and the marginal effects results highlight that the sample banks in EU membership period are 7.6% more likely have foreign ownership. This result is supportive of univariate analysis reveals that foreign ownership is significantly higher for banks in member nations than banks in candidate nations. After controlling for board and bank level variables, the results show that there are positive relationships between foreign ownership and board size (large), bank size (weak but large), loan loss provision (not significant) and operation (high) ratios. Contrary to that there are negative relationships between this ownership type and board independence (low), female directors (low), capital (low) and ROA (insignificant) ratios. Parallel to that, domestic ownership is less likely found in membership period and the marginal effects result displays that banks in EU membership period are 10.6% less likely have domestic ownership. After controlling for board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), board independence (high), loan loss provision (not significant) and ROA ratios (high). Contrary to that there are negative relationships between this ownership type and female directors (not significant), bank size (small), capital (low) and operation (insignificant) ratios.



TABLE 6.5A

### The impact of EU Accession on Ownership Structure of Banks in Candidate and Member Nations

This table provides Probit regression analysis results. The bank-clustered robust standard errors are in parentheses. The table comprises banks from the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia, and Turkey. 1, 2, 3, 4, 5, 6, 7, and 8 indicate foreign, domestic, institutional, state, individual, manager, private and public ownerships, respectively. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

MEMBER AND CANDIDATE NATIONS BANKS								
Variables	1	2	3	4	5	6	7	8
EU Membership	0.480*** (0.111)	-0.298*** (0.095)	0.963*** (0.161)	-0.757*** (0.115)	-0.041 (0.093)	0.282 (0.205)	-1.344*** (0.496)	0.233* (0.122)
Board Size	0.807*** (0.156)	0.546*** (0.116)	0.760*** (0.214)	0.693*** (0.141)	0.466*** (0.111)	0.221 (0.168)	2.609*** (0.485)	0.761*** (0.115)
Board Independence	-0.472** (0.225)	1.867*** (0.242)	-0.410 (0.294)	1.042*** (0.229)	1.233*** (0.213)	0.986*** (0.300)	-0.848 (0.673)	2.299*** (0.210)
Female Directors	-0.450* (0.261)	-0.101 (0.223)	-1.396*** (0.315)	0.631** (0.279)	-0.102 (0.230)	-0.102 (0.323)	2.631** (1.143)	-0.973*** (0.277)
Bank Size	0.070** (0.036)	-0.171*** (0.029)	-0.197*** (0.052)	0.044 (0.035)	-0.103*** (0.028)	0.111*** (0.050)	0.230** (0.095)	0.214*** (0.027)
Loan Loss Provision	0.079 (0.053)	0.064 (0.043)	-0.126 (0.081)	0.169*** (0.054)	0.060 (0.040)	-0.080 (0.070)	-0.037 (0.106)	0.145*** (0.047)
Capital	-0.463*** (0.120)	-0.373*** (0.088)	-0.932*** (0.145)	0.192* (0.115)	-0.477*** (0.087)	0.443*** (0.141)	-0.079 (0.178)	-0.405*** (0.100)
Operation	0.493** (0.236)	-0.010 (0.166)	1.176*** (0.305)	-0.316 (0.210)	-0.042 (0.167)	-0.028 (0.254)	-0.432 (0.437)	0.625*** (0.181)
ROA	-0.038 (0.043)	0.102*** (0.027)	0.079* (0.047)	0.020 (0.034)	0.076*** (0.027)	0.073 (0.054)	-0.080 (0.086)	0.153*** (0.034)
Financial Crisis Dummy	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Cons	-2.315* (1.287)	2.450** (0.997)	1.306 (1.635)	-2.750** (1.257)	1.640 (1.002)	-9.706** (4.052)	21.353*** (9.542)	-16.194*** (2.643)
Wald $\chi^2$	215.00***	343.87***	148.87***	251.47***	328.78***	231.10***	110.51***	415.14***
Pseudo R-sq	0.19	0.16	0.29	0.14	0.13	0.23	0.46	0.23
Log-likelihood	-564.95	-1001.10	-278.28	-741.88	-1078.95	-388.27	-52.195	-858.18
Number of Observation	1845	1845	1845	1845	1845	1845	1845	1845

Both managerial ownership and institutional ownership are also more likely high again in the membership period. The marginal effect of institutional ownership indicates that sample banks in the member nations are 4% more likely to have institutional owners. After controlling for board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large) and operation ratio (high). Contrary to that there are negative relationships between this ownership type and board independence (not significant), female directors (low), bank size (small), loan loss provision (not significant) capital (low) and ROA (weak low) ratios. The managerial ownership is 4.6% more likely seen in sample banks

in membership period but this result is insignificant. For board and bank level variables, the results show that there are positive relationships between this ownership type and board size (insignificant), board independence (high), bank size (large), capital (high) and ROA (insignificant) ratios. Contrary to that there are negative relationships between this ownership type and female directors (not significant), loan loss provision (not significant) and operation (insignificant) ratios.

Banks in member nations are less likely to privately-owned that the results of the marginal effect show that this type of ownership is 1.2% less likely observed in these banks but the result is insignificant. For board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), female directors (high), bank size (large). Contrary to that there are negative relationships between this ownership type and board independence (not significant), loan loss provision (not significant), capital (insignificant) and ROA (not significant) and operation (insignificant) ratios. The public ownership is 7.1% more likely seen in member banks. After controlling for board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), board independence (high), ROA (high), operation ratio (high), bank size (large) and loan loss provision ratio (high). Contrary to that there are negative relationships between this ownership type and female directors (low) and capital ratio (low).

State ownership is less likely observed in sample banks in member nation and the sample banks in the EU have 16.8% less likely state ownership. For board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), board independence (high), female directors (high), bank size (insignificant), loan loss provision (high), capital (high) and ROA (not significant) ratios. Contrary to that there are negative relationships between this ownership type and only operation ratio (not significant). Lastly, the individual ownership is less likely seen in member banks which also shows that sample banks in EU membership period have 1.6% less likely (but insignificant) individual ownership compared to banks in candidate nations. After controlling for board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), board independence (high), loan loss provision (not significant) and ROA (high) ratios. Contrary to that there are negative relationships between this ownership type and female directors (not significant), bank size (small), capital (low) and operation (insignificant) ratios.

**TABLE 6.5B**

**The impact of EU Accession on Ownership Structure of Banks in Candidate and Member Nations (Marginal Effects)**

This table provides the marginal effects of the results of probit regression analysis. The bank-clustered robust standard errors are in parentheses. The table comprises banks from the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia, Albania, FYROM, Montenegro, Serbia, and Turkey. 1, 2, 3, 4, 5, 6, 7, and 8 indicate foreign, domestic, institutional, state, individual, manager, private and public ownerships, respectively. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

MEMBER AND CANDIDATE NATIONS BANKS								
AT MEANS (PANEL A)								
Variables	1	2	3	4	5	6	7	8
EU Membership	0.076*** (0.018)	-0.106*** (0.034)	0.040*** (0.010)	-0.168*** (0.025)	-0.016 (0.035)	0.046 (0.024)	-0.012*** (0.006)	0.071* (0.037)
Board Size	0.128*** (0.024)	0.194*** (0.041)	0.032*** (0.010)	0.154*** (0.031)	0.178*** (0.042)	0.072 (0.032)	0.010*** (0.005)	0.233*** (0.035)
Board Independence	-0.075** (0.036)	0.662*** (0.085)	-0.017 (0.014)	0.231*** (0.051)	0.470*** (0.081)	0.176*** (0.054)	-0.006 (0.004)	0.704*** (0.065)
Female Directors	-0.071* (0.042)	-0.036 (0.079)	-0.058*** (0.018)	0.140** (0.062)	-0.039 (0.088)	-0.081 (0.061)	0.010** (0.005)	-0.298*** (0.084)
Bank Size	0.011* (0.006)	-0.061*** (0.011)	-0.010*** (0.005)	0.010 (0.008)	-0.039*** (0.011)	0.020** (0.009)	0.005** (0.006)	0.065*** (0.011)
Loan Loss Provision	0.013 (0.083)	0.023 (0.015)	-0.006 (0.005)	0.038*** (0.012)	0.023 (0.015)	-0.032 (0.012)	-0.005 (0.004)	0.044*** (0.014)
Capital	-0.073*** (0.018)	-0.132*** (0.031)	-0.039*** (0.010)	0.042* (0.025)	-0.182*** (0.033)	0.076*** (0.028)	-0.004 (0.003)	-0.124*** (0.031)
Operation	0.078** (0.037)	-0.010 (0.059)	0.049*** (0.014)	-0.070 (0.046)	-0.016 (0.064)	-0.026 (0.053)	-0.007 (0.005)	0.191*** (0.056)
ROA	-0.010 (0.007)	0.036*** (0.010)	0.005* (0.004)	0.010 (0.008)	0.029*** (0.010)	0.018 (0.010)	-0.004 (0.003)	0.047*** (0.011)
Number of Observation	1845	1845	1845	1845	1845	1845	1845	1845
AVERAGE (PANEL B)								
EU Membership	0.082*** (0.020)	-0.092*** (0.030)	0.080*** (0.015)	-0.170*** (0.025)	-0.014 (0.031)	0.048 (0.026)	-0.025*** (0.010)	0.061* (0.032)
Board Size	0.137*** (0.026)	0.168*** (0.035)	0.062*** (0.019)	0.156*** (0.032)	0.155*** (0.037)	0.076 (0.033)	0.048*** (0.011)	0.199*** (0.029)
Board Independence	-0.080** (0.038)	0.575*** (0.071)	-0.034 (0.028)	0.234*** (0.051)	0.409*** (0.069)	0.184*** (0.064)	-0.016 (0.012)	0.600*** (0.050)
Female Directors	-0.077* (0.045)	-0.031 (0.069)	-0.115*** (0.032)	0.141** (0.063)	-0.034 (0.076#)	-0.084 (0.064)	0.048** (0.022)	-0.254*** (0.072)
Bank Size	0.012** (0.006)	-0.053*** (0.010)	-0.016*** (0.007)	0.012 (0.008)	-0.034*** (0.010)	0.021** (0.010)	0.010** (0.009)	0.056*** (0.008)
Loan Loss Provision	0.014 (0.010)	0.020 (0.013)	-0.006 (0.005)	0.038*** (0.012)	0.020 (0.013)	-0.034 (0.013)	-0.005 (0.004)	0.038*** (0.012)
Capital	-0.079*** (0.020)	-0.115*** (0.027)	-0.077*** (0.013)	0.043* (0.026)	-0.159*** (0.028)	0.080*** (0.029)	-0.004 (0.003)	-0.106*** (0.026)
Operation	0.084** (0.040)	-0.010 (0.051)	0.097*** (0.025)	-0.071 (0.047)	-0.014 (0.055)	-0.027 (0.055)	-0.007 (0.005)	0.163*** (0.047)
ROA	-0.010 (0.007)	0.031*** (0.010)	0.007* (0.006)	0.011 (0.009)	0.025*** (0.009)	0.019 (0.011)	-0.004 (0.003)	0.040*** (0.009)
Number of Observation	1845	1845	1845	1845	1845	1845	1845	1845

A separate sample including only banks in member nations was used to see the ownership changes within this group for pre and post-accession periods. The results in Table 6.6A and

Table 6.6B provide the coefficients and marginal effects of each ownership type for this sample.

According to these results, the coefficient of foreign ownership is positive for EU membership that means that banks in EU members are likely owned by foreigners as expected and the marginal effects results highlight that the sample banks in EU membership period are 1.4% more likely have foreign ownership but the result is not significant. After controlling for board and bank level variables, the results show that there are positive relationships between foreign ownership and board size (large), bank size (large), ROA (not significant) and operation (high) ratios. Contrary to that there are negative relationships between this ownership type and board independence (low), female directors (low), loan loss provision (not significant), capital (weak low). Parallel to that, domestic ownership is less likely found in membership period and the marginal effects result displays that banks in EU membership period are 7.3% less likely have domestic ownership. After controlling for board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), board independence (high), loan loss provision (weak significant), operation (insignificant) and ROA (high) ratios. Contrary to that there are negative relationships between this ownership type and female directors (not significant), bank size (small), capital ratio (low).

Both managerial ownership and institutional ownership are also more likely high (weak significant) again in the membership period. The marginal effect of institutional ownership indicates that sample banks in the member nations are 1.4% more likely to have institutional owners. After controlling for board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), operation (high) and ROA (weak high) ratios. Contrary to that there are negative relationships between this ownership type and board independence (low), female directors (low), bank size (not significant), loan loss provision (low) capital (low) ratios. The managerial ownership is 1.3% more likely seen in sample banks in membership period but this result is insignificant. For board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), board independence (high), capital (high), ROA (weak high) and loan loss provision (not significant) ratios. Contrary to that there are negative relationships between this ownership type and female directors (not significant), bank size (small) and operation ratio (insignificant).

**TABLE 6.6A**

**The impact of EU Accession on Ownership Structure of Banks in Candidate and Member Nations**

This table provides probit regression analysis results. The bank-clustered robust standard errors are in parentheses. The table comprises banks from the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, and Croatia. 1, 2, 3, 4, 5, 6, 7, and 8 indicate foreign, domestic, institutional, state, individual, manager, private and public ownerships, respectively. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

MEMBER NATIONS BANKS								
Variables	1	2	3	4	5	6	7	8
EU Membership	0.117 (0.180)	-0.201* (0.121)	0.370** (0.187)	-0.703*** (0.124)	-0.028 (0.214)	0.241 (0.186)	-0.448 (0.567)	0.378*** (0.144)
Board Size	1.303*** (0.236)	0.640*** (0.133)	0.843*** (0.241)	0.822*** (0.163)	0.716*** (0.135)	0.394* (0.208)	2.223*** (0.531)	0.833*** (0.139)
Board Independence	-0.736** (0.296)	2.326*** (0.296)	-1.552*** (0.307)	1.542*** (0.237)	1.280*** (0.250)	0.930** (0.378)	-0.977 (0.650)	2.305*** (0.258)
Female Directors	-1.547*** (0.334)	-0.598** (0.262)	-1.819*** (0.336)	0.532 (0.348)	-0.534* (0.306)	-0.704* (0.382)	1.971** (0.962)	-2.278*** (0.414)
Bank Size	0.301*** (0.066)	-0.305*** (0.042)	-0.010 (0.058)	0.150*** (0.046)	-0.244*** (0.046)	-0.210*** (0.059)	0.284*** (0.096)	0.310*** (0.046)
Loan Loss Provision	-0.065 (0.067)	0.103* (0.053)	-0.204** (0.093)	-0.070 (0.066)	0.176*** (0.056)	0.010 (0.082)	0.024 (0.136)	-0.086 (0.062)
Capital	-0.310* (0.175)	-0.303*** (0.115)	-0.692*** (0.171)	0.370** (0.154)	-0.645*** (0.122)	0.547*** (0.183)	-0.418** (0.188)	-0.640*** (0.162)
Operation	0.816*** (0.298)	0.175 (0.221)	0.880** (0.171)	0.731** (0.292)	-0.320 (0.243)	-0.357 (0.362)	-0.526 (0.551)	1.329*** (0.292)
ROA	0.028 (0.053)	0.111*** (0.032)	0.096* (0.056)	-0.013 (0.042)	0.108*** (0.034)	0.127* (0.066)	-0.103 (0.105)	0.284*** (0.055)
Financial Crisis Dummy	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Cons	-1.754 (1.887)	2.794** (1.388)	-0.766 (2.386)	-8.224*** (1.728)	3.535** (1.507)	0.160 (2.480)	-2.112 (2.991)	-13.020*** (3.658)
Wald $\chi^2$	1814.36***	300.68***	160.37***	192.21***	320.42***	240.10***	88.80***	270.36***
Pseudo R-sq	0.33	0.20	0.31	0.19	0.20	0.32	0.46	0.29
Log-likelihood	-279.92	-643.56	-172.52	-454.43	-643.04	-207.29	-50.278	-497.73
Number of Observation	1226	1226	1226	1226	1226	1226	1226	1226

Banks in member nations are less likely to privately-owned that the results of the marginal effect show that this type of ownership is 1.1% less likely observed in these banks but the result is insignificant. For board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), female directors (high), bank size (large). Contrary to that there are negative relationships between this ownership type and board independence (not significant), loan loss provision (not significant), capital (low), ROA (not significant) and operation (insignificant) ratios. The public ownership is 9.4% more likely seen in member banks. After controlling for board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), board independence (high), ROA (high), operation ratio (high) and bank size (large). Contrary to that

there are negative relationships between this ownership type and female directors (low) loan loss provision (low) and capital (low) ratios.

**TABLE 6.6B**

**The impact of EU Accession on Ownership Structure of Banks in Candidate and Member Nations (Marginal Effects)**

This table provides the marginal effects of the results of probit regression analysis. The bank-clustered robust standard errors are in parentheses. The table comprises banks from the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria, Romania, Croatia. 1, 2, 3, 4, 5, 6, 7, and 8 indicate foreign, domestic, institutional, state, individual, manager, private and public ownerships, respectively. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1% levels, respectively.

MEMBER NATIONS BANKS								
AT MEAN (PANEL A)								
Variables	1	2	3	4	5	6	7	8
EU Membership	0.014 (0.010)	-0.073* (0.044)	0.014* (0.008)	-0.141*** (0.026)	-0.010 (0.077)	0.013 (0.010)	-0.011 (0.007)	0.094*** (0.036)
Board Size	0.035*** (0.011)	0.231*** (0.048)	0.033*** (0.010)	0.165*** (0.031)	0.258*** (0.048)	0.021* (0.013)	0.009*** (0.004)	0.207*** (0.034)
Board Independence	-0.020** (0.085)	0.840*** (0.105)	-0.060*** (0.016)	0.310*** (0.048)	0.461*** (0.091)	0.050*** (0.018)	-0.006 (0.004)	0.573*** (0.067)
Female Directors	-0.042*** (0.010)	-0.216** (0.095)	-0.071*** (0.017)	0.107 (0.070)	-0.192* (0.110)	-0.038* (0.020)	0.011** (0.006)	-0.567*** (0.097)
Bank Size	0.018*** (0.012)	-0.110*** (0.015)	-0.011 (0.005)	0.030*** (0.009)	-0.088*** (0.016)	-0.011*** (0.003)	0.004** (0.002)	0.077*** (0.011)
Loan Loss Provision	-0.005 (0.005)	0.037* (0.019)	-0.008** (0.004)	-0.014 (0.013)	0.063*** (0.020)	0.005 (0.003)	-0.005 (0.004)	-0.021 (0.015)
Capital	-0.010* (0.007)	-0.106*** (0.042)	-0.027*** (0.008)	0.074** (0.031)	-0.233*** (0.044)	0.029*** (0.010)	-0.004** (0.003)	-0.160*** (0.039)
Operation	0.022*** (0.010)	0.063 (0.080)	0.034** (0.015)	0.147** (0.058)	-0.115 (0.087)	-0.019 (0.018)	-0.006 (0.004)	0.330*** (0.073)
ROA	0.011 (0.009)	0.040*** (0.012)	0.005* (0.004)	-0.003 (0.008)	0.039*** (0.012)	0.007* (0.004)	-0.004 (0.003)	0.071*** (0.013)
Number of Observation	1226	1226	1226	1226	1226	1226	1226	1226
AVERAGE (PANEL B)								
EU Membership	0.015 (0.023)	-0.060* (0.036)	0.028* (0.014)	-0.145*** (0.025)	-0.009 (0.063)	0.022 (0.017)	-0.012 (0.007)	0.086*** (0.033)
Board Size	0.165*** (0.028)	0.190*** (0.039)	0.064*** (0.019)	0.170*** (0.033)	0.211*** (0.039)	0.036* (0.020)	0.048*** (0.014)	0.190*** (0.031)
Board Independence	-0.093** (0.037)	0.690*** (0.081)	-0.117*** (0.025)	0.312*** (0.047)	0.377*** (0.071)	0.086*** (0.034)	-0.021 (0.017)	0.525*** (0.052)
Female Directors	-0.196*** (0.042)	-0.177** (0.077)	-0.138*** (0.027)	0.110 (0.072)	-0.157* (0.090)	-0.065* (0.035)	0.042** (0.027)	-0.519*** (0.091)
Bank Size	0.038*** (0.016)	-0.091*** (0.012)	-0.010 (0.004)	0.031*** (0.009)	-0.072*** (0.013)	-0.019*** (0.005#)	0.006** (0.004)	0.071*** (0.010)
Loan Loss Provision	-0.017 (0.011)	0.031* (0.016)	-0.015** (0.007)	-0.014 (0.014)	0.052*** (0.016)	0.007 (0.005)	-0.005 (0.004)	-0.020 (0.014)
Capital	-0.040* (0.022)	-0.090*** (0.034)	-0.052*** (0.013)	0.076** (0.032)	-0.190*** (0.035)	0.050*** (0.016)	-0.009** (0.008)	-0.146*** (0.036)
Operation	0.103*** (0.038)	0.052 (0.066)	0.067** (0.029)	0.150** (0.060)	-0.094 (0.071)	-0.033 (0.032)	-0.011 (0.016)	0.303*** (0.065)
ROA	0.013 (0.011)	0.033*** (0.011)	0.008* (0.006)	-0.004 (0.009)	0.032*** (0.010)	0.012* (0.006)	-0.009 (0.004)	0.065*** (0.012)
Number of Observation	1226	1226	1226	1226	1226	1226	1226	1226

State ownership is less likely observed in sample banks in member nation and the sample banks in the EU have 14.1% less likely state ownership. For board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), board independence (high), female directors (not significant), bank size (high), operation (high) and capital (high) ratios. Contrary to that there are negative relationships between this ownership type and loan loss provision (not significant) and ROA (not significant). Lastly, the individual ownership is less likely seen in member banks which also shows that sample banks in EU membership period have 1.0% less likely (but insignificant) individual ownership compared to banks in candidate nations. After controlling for board and bank level variables, the results show that there are positive relationships between this ownership type and board size (large), board independence (high), loan loss provision (high) and ROA (high) ratios. Contrary to that there are negative relationships between this ownership type and female directors (weak significant low), bank size (small), capital (low) and operation (insignificant) ratios.

## **6.4 Discussion and conclusion**

The banking industry in the EU member and candidate countries has shown significant change during the globalisation period in over the last three decades. Those nations had experienced rapid and dramatic institutional transformation in many different areas in a quite short period. During this transformation process especially after the privatisation period, many of those countries moved to the accession process to the EU immediately. Consequently, not only going through the command economy to a liberal market economy, but the accession process itself also caused many institutional and political changes in those countries. This chapter, however, different from previous studies, investigates the EU member and candidate nations within a broader theoretical context. The focus is given on the influence of the EU accession process on bank ownership structure based on political economy and institutional perspectives. As a result, the main contribution of this chapter to the literature is by using unique hand-collected dataset, documents the influence of the political process on the ownership of banks.

The bank ownership structure of candidate nations and new member nations during accession and membership periods were compared. Based on the results, institutional owners have the highest percentage of shares of sample banks. Individual/family ownership, state ownership, and managerial/directorial ownership are very low in sample banks both in member and candidate nations. Based on HH Index that shows ownership concentration, ownership of sample banks is highly concentrated. When HH indices of sample banks in a candidate and member nations are compared, it is documented that sample banks in member nations are more concentrated than sample banks in candidate nations. The percentage of shares of banks in member nations held by foreigners were higher than banks in candidate nations. It is reported that the sample banks in member nations mostly and widely owned by other EU banks/bank holding companies or other institutions.

To conclude based on the results of the chapter, besides other economic and political factors, the political process of joining the EU is a significant factor influencing change in the ownership structure of banks in member nations. This change mainly exists as an increase in foreign ownership of sample banks. Foreign ownership could positively influence local banks effectiveness in general. They could improve the performance of banks (although the results show that there is no significant relationship between performance of bank which is proxied by ROA and foreign ownership), the productivity of its personnel and general strategies by transferring their knowledge. The recent global financial crisis and Eurozone crisis, however, raise concerns at contagion. This crisis could spread and grow through specifically big banking groups and adversely affect local subsidiaries. Foreign owners also might not give direct attention to the performance of a local bank if the bank is not so crucial for this banking group but very important for the local/host economy. In the event of an economic turmoil in the home nation, the financial structure of a bank in a host nation might be affected negatively. Another issue is the high amount of the shares held by blockholders. Yu and Ashton (2015) state that large shareholders decrease the wealth of minority shareholders by tunnelling in especially emerging markets that do not have adequate tools to protect minority shareholders rights. Subsequently increasing the number of independent directors from the host country who do not have direct or indirect relations with owners could increase the efficiency of monitoring and decrease the negative influence of directors appointed by an owner banks management team which is generally observed in the board of directors of sample banks. As it could be seen from the results that there are significant relationships between ownership types and board characteristics. For instance, there are important negative links between foreign ownership and



bank independence and female directors. Thus it should be noted that the two generally accepted good practices of corporate governance which are also strongly promoted by the EU are negatively influenced by foreign ownership. These findings are important in the sense that they could be a guiding results for the policymakers. Lastly, governments of host countries should effectively monitor the intrabank activities of parent and local bank especially controlling for the transfer of items that could negatively influence the performance of local banks in that case. The EU policymakers (including EC, ECB, and European Parliament) in cooperation with national authorities could deal with these issues by providing prominent directives, rules or recommendations on such activities to force banks to disclose these activities.

## **Chapter 7. Conclusion**

### **7.1 Introduction**

The thesis investigates the influence of EU accession on bank corporate governance and performance between 2000 and 2015, risk management and risk in banks between 2000 and 2016, and the change in ownership of banks before and after membership between 2000 and 2016. The sample banks include the banks from the new member and candidate nations of the EU. Three main research questions are addressed in the empirical chapters of the thesis. Chapter four asks whether the EU political process (accession and membership) influences corporate governance structure and performance of banks. Chapter five examines whether this process affects the risk management structures and stability of banks in member and candidate nations and chapter six explores whether the ownership of banks in member and candidate nations changed during accession and the EU membership. The additional analyses were applied to investigate the relationship between the EU membership and corporate governance structure of banks in chapter four and the findings of those analyses provide important links between corporate governance characteristics and the EU membership and also bank level and nation level features and those corporate governance characteristics. Likewise, in chapter five again, further analyses were employed to examine the relationships between risk management characteristics of banks and the EU membership. The results of those analyses display significant association between those characteristics and the EU membership. The results also highlight that the bank risk and stability are significantly influenced by the bank level variables and the selected macroeconomic conditions. Lastly, the findings of chapter six, especially for foreign ownership of banks, document that there are some important links between ownership structure and corporate governance, bank and country specific variables. Overall, it is believed that the related parties (e.g., policymakers, researchers) could benefit from this thesis.

The thesis introduces the background and motivation behind the research and presents the main empirical findings. In chapter two the theoretical framework, the institutional background of the EU and political context of the EU accession process are discussed. Although some other institutional bodies exist, the European Commission is the leading organisation to regulate corporate governance-related issues across the European Union. Several action plans, directives, rules, regulations and laws have been produced since the 1970s, but there has been

an increasing effort for improving corporate governance practices including board structure, risk management, corporate disclosure, corporate control, and ownership since the end of 1990s.

Following institutional theory and the political economy of corporate governance, the influence of those institutions on corporate governance, risk management and ownership of banks is examined. Different from previous studies these empirical chapters contribute to the literature by introducing interdisciplinary perspective of the political economy of corporate governance, the institutional theory of corporate governance and the influence of the EU political process.

The next section gives a summary of the empirical findings. The third section offers policy recommendations for the regulatory bodies of the EU and specifically the Commission and the ECB. The concluding section discusses the limitations of the thesis and provides suggestions for future research.

## **7.2 The summary of empirical results**

Three empirical studies examine the effects of the EU accession and membership on corporate governance and performance of banks, risk management and risk of banks and ownership structure of banks in member and candidate nations between 2000 and 2016. The key findings of chapter four indicate that the accession process has influenced the take up of beneficial corporate governance practices. Distinctly, long-term membership of the EU has little further influence on the dissemination of these corporate governance characteristics. Over the sample period, banks in candidate nations involved in the accession process display better financial performance whereas the financial performance of banks in member nations has been weaker. When focusing on the influence of corporate governance variables on the financial performance of banks, the most significant result displayed that female board members have a significant positive influence on financial performance, which is important because the EU gives strong emphasis on women presence in boards of European companies and motivate firms through this direction. In addition to that, the board size, board independence and foreign directors also have mixed significant effects on bank performance. This chapter also displays

significant associations between the selected bank and nation specific variables and the bank performance. Lastly, the results of additional analyses document that there are some links between the EU and selected corporate governance variables.

Chapter five examines the influence of the EU on bank risk and risk management and the effects of risk management structure on risk performance of banks. The chapter reports that the accession process has positively influenced bank risk and stability. While the accession to the EU has engendered sound risk management's structures, this progress is less than experienced by banks in member nations. This chapter also provides evidence that the political processes joining the EU have a significant influence over risk behaviours of the bank. This political process appears to explain some of the currently unexplained variations in bank risk management observed across Europe in recent years. The results include that female chief risk officers, and the proportion of female board members both had a positive influence on the risk of banks by decreasing the NPL ratio and increasing Z-Score. Similarly, the positive relationships are also reported between the presence of a chief risk officer and Z-Score and the NPL ratio and between executive chief risk officer and NPL ratio which means that this variable decreases this ratio in some cases. Furthermore, considering board level variables, the board size, board independence, and foreign directors have positive impacts on bank Z-Score and both board size and foreign directors have positive effects on NPL ratio that means these variable decrease this ratio. This chapter also shows important connections between the selected bank and country specific variables and the bank stability and risk. Lastly, the results of additional analyses present that there are some links between the EU and selected risk management variables.

Chapter six explores the change in bank ownership structure and ownership concentration during EU accession and membership. The results show that bank ownership is highly concentrated in both member and candidate nations where foreign ownership was significantly higher for banks in member nations than for banks in candidate nations. Ownership concentration was significantly higher for banks in member nations compared to banks in candidate nations. Due to increasing bank holding company (BHC) ownership of banks in sample nations during the accession process and joining EU, the percentage of shares held by financial institutions increased where individual/family, state and managerial ownerships remained very low. It is reported that the political process of joining the EU influenced the ownership structure of banks. Foreign, institutional, manager, and public ownership were

higher in membership period whereas, domestic, individual, private and state ownership less likely high in this period. This chapter also finds the important relationship between bank specific features and ownership structure and macroeconomic factors and ownership structure of banks.

### **7.3 Policy recommendations**

This section proposes policy recommendations. Chapter four reports that the accession process influences corporate governance characteristics. Board independence is higher for banks in candidate nations compared to banks in member nations. Although the European Commission (COM/2005/162) highlighted the importance of board independence, this corporate governance characteristic remains low in banks in member nations. This issue might be explained by foreign ownership of many of the sample banks in member nations. Foreign owners of the banks prefer to appoint their executives to the supervisory board of subsidiary banks to increase the control that would subsequently decrease board independence. The number of female directors on boards, an issue recently promoted by the EC (COM/2012/614) remains low in banks in member nations. The results for all samples suggest that female directors have a significant positive influence on the performance of banks in sample nations. The recommendation of the Commission for increasing the percentage of females on boards should be supported. While banks in member nations might improve to the recommended corporate governance practices, following the completion of economic and monetary union some factors may limit this progress. Foreign ownership of subsidiary banks may show a preference for relatively less independent boards to enhance control over local banks. To address this issue, the EU policymakers should present recommendations or regulations accordingly. By using its regulatory power, the Commission could fruitfully introduce regulations to enhance the number of independent directors, female directors and domestic directors on boards.

Chapter five investigates the relationship between the EU accession process, bank risk management, and risk performance. While existing literature has outlined the importance of politics and institutions (legal and political) on banking, the results differ from each other, and

the influence of political institutions in this context have been underestimated. This gap in the literature is spanned considering the EU accession process, which is observed to be influential. Indeed, the process of amending national laws, regulation, and approaches incorporated in EU accession and membership influences banks. The accession provides an experiment for considering the efficacy of the regulations required by laws, rules, regulations, and directives with different nations moving through different regulatory requirements as part of this process. It could be reported that much of the regulation demanded by the accession process has had a positive impact. The positive influence of female chief risk officers and female board members on bank risk performance indicate that increasing the number of women on board could be beneficial and companies should be encouraged in these directions. It is also reported that the presence of chief risk officers also improved bank risk performance. The appointment of CROs should be compulsory for banks.

Chapter six addresses the influence of EU accession and membership on bank ownership structure. EU membership facilitates mergers, and acquisitions and financial operations cross-border. The political process of joining the EU influences the ownership structure of member nations banks. This change reflects an escalation in foreign ownership. Foreign ownership could positively influence local banks improving bank performance, the productivity of its personnel and strategies for transferring the knowledge. However, financial contagion could spread and amplify through such big banking groups and adversely affect local subsidiaries performance. It is also possible that BHCs allocate less importance to the performance of a local bank if the bank is not central to the banking group. While the local banks are crucial for local economies and their negative performance can harm local economies, this may not be a concern for a BHC. Another issue is bank competition. Foreign entry to the local banking sector could improve the competition and thus the efficiency of domestic banks (Bonin et al., 1998). However, the growing existence of foreign banks could engage in competition and cause fall in the overall performance of domestic banks (Claessens et al., 2001).

Allen et al., (2013) investigated the intra-group transaction activities of banks in the EU and found that the foreign parent bank may cause a negative influence on the stability and performance of its subsidiary bank. This negative effect could be alleviated in subsidiary banks due to the weak governance structure that is imposed by their parent banks. Another possible answer to poor performance of banks following EU membership is reported by Dermine (2013) who stated that *“according to ECB (2006 and 2007a) in several countries in Central and*

*Eastern Europe, for example, banks were allowed to lend massively in foreign currency (mostly Swiss francs, euro, and yen) on the individual mortgage market. This created a large source of systemic risk, as the devaluation of the local currency would raise the default rate across the entire banking system”*. This could have occurred due to the ownership structure of sample banks, which are mostly owned by foreign BHCs from Eurozone nations.

Although the *comply-or-explain* approach is preferred by regulatory bodies both on EU and national level (EC, 2009), the findings of this thesis suggest that policymakers of the EU should actively improve good practices in risk management, corporate governance and ownership structure of banks because of the critical role of banks in EU economy. This is important for the future economic and financial performance of the EU, and the success of the Monetary and Banking Union. Bank activities are subject to much more regulatory restrictions and regulatory capital than nonfinancial firms which many national and supranational authorities apply regulatory actions including designing internal governance structure of banks as well (De Haan and Vlahu, 2016). To sum up, good and balanced cooperation between the authorities of home and host nations and the institutions of EU could improve monitoring and thus competition and overall performance of banks in both groups.

#### **7.4 Limitations of the thesis and recommendations for future research**

In this section, the limitations of the thesis are addressed which opens avenues for future research. The first limitation of the research is the limited information on corporate governance, risk management and ownership structures of banks in databases such as Bloomberg, Bankscope, Thomson Financials, BoardEx. Thus, the data for corporate governance, risk management and ownership structure of banks were collected manually from annual reports, financial statements and corporate governance reports of sample banks and documents on websites of regulatory bodies of each sample nation. Although this is one of the significant contributions of this research, data unavailability decreased the number of sample banks. If more information would be provided in the future, the number of banks and observations will be higher, and research implications could be extended to entire corporate governance and risk management practices and detailed ownership information in each nation.

The data unavailability produced another limitation that prevents the applications of additional econometrical analysis. The third limitation of the thesis is the variable specification. Compared to studies of the US, it is hard to obtain other relevant variables in corporate governance, risk management, and ownership. This presents challenges in providing specific policy recommendations. The stock markets are underdeveloped in many of the sample nations. Developed stock markets increase transparency and disclosure of annual reports of firms which make more accessible to reach a significant amount of information on banks such as market data (such as Tobin's Q and stock prices) which is unavailable in this thesis, so financial and risk performance variables are only accounting variables. The stock markets in many of the sample nations will be developed in the future, which will increase transparency and disclosure practices and provide further stock market variables in future studies.

One other limitation is the relevance of the literature review. There are plenty of past empirical studies in the literature of banking and finance in developed European nations and the US. However, the research on corporate governance and risk management of banking and finance in European nations is limited. The integration of European nations, enlargement in the EU and increases in cross-border trade and investments amplifies the importance of these countries. Another limitation of this research is time-related. The actions taken by the EU in corporate governance, risk management, and corporate ownership have mostly been produced during the last two decades, and all sample nations became EU member and candidate nations in the 1990s and early 2000s. It is expected that those actions may become more effective in the future.

The last limitation of the research is related to financial information provided by the sample banks. The financial and risk performance of sample banks have been getting worse after the nations joined the EU. Although foreign ownership of banks is high in both group of banks, foreign ownership of banks in member nations is higher compared to banks in candidate nations and financial, and risk performance of banks in member nations are worse than banks in candidate nations. Allen et al., (2013) focused on banks in CEE region nations and their intra-group transactions and estimated negative influence on local bank performance. This thesis includes the additional number of banks from all the new EU member and candidate nations and finds the negative influence of the EU membership on the bank performance and bank risk and stability in member nations. The results of multivariate explorations where the interaction terms used demonstrate that the influence of EU membership on both bank financial performance and bank risk and stability does not relate how the banks are managed. The



findings of chapter five especially report that bank risk and stability is prominently impacted by board, bank and nation level variables. For future research, the relationships between intra-group transactions and bank corporate governance and performance, risk management and risk and bank ownership structure could be investigated.

This chapter concludes the thesis. Following the introduction section, a summary of the main results is introduced. Overall, the financial and risk performance of banks in member nations declined during the membership period compared to the accessions period of nations and compared to the performance of banks in candidate nations. The results on corporate governance, risk management, and ownership structures are mixed, but both banks in member and candidate nations have a low percentage of independent and female board members, despite EU efforts to increase these aspects. Risk management structures have been improving in both groups of banks. Foreign ownership is very high in both group and higher for banks in member nations compared to banks in candidate nations. State ownership is lower in banks in member nations compared to banks in candidate nations. These results are expected for EU accession and membership periods. The third section provides policy recommendations, and the last section addresses the limitations of the thesis and suggestions for future research.

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# Appendices

## Appendix I: List of Sample Banks

BANKS IN MEMBER NATIONS				
BANKSCOPE ID	NAME	SIZE (000' € )	NATION	TYPE
40950	UNICREDIT BULBANK	9700000	BG	COM
48221	DSK BANK PLC	5800000	BG	SVG
43151	FIRST INVESTMENT BANK	4600000	BG	COM
51222	UNITED BULGARIAN	3400000	BG	COM
36710	EUROBANK BULGARIA	3000000	BG	COM
27970	RAIFFEISENBANK EAD	3300000	BG	COM
43048	SG EXPRESSBANK	2900000	BG	COM
52477	CCB	2500000	BG	COO
10123	PIRAEUS BANK	1500000	BG	COM
33081	ZAGREBACKA BANKA	17000000	CR	COM
31139	PRIVREDNA BANKA	10000000	CR	COM
25546	ERSTE BANK	9000000	CR	COM
44997	RAIFFEISENBANK AUSTRIA	4600000	CR	COM
48157	HYPO ALPE-ADRIA-BANK	3700000	CR	COM
15871	ADDIKO BANK	3300000	CR	COM
35887	SLAVONSKA BANKA	1500000	CR	COM
33189	CESKA SPORITELNA	36000000	CZ	COM
30747	CSO BANKA	35000000	CZ	COM
42320	KOMERCNI BANKA	33000000	CZ	COM
33360	HVB BANKA	6300000	CZ	COM
46381	UNICREDIT BANK	20000000	CZ	COM
43987	RAIFFEISENBANK	9200000	CZ	COO
17683	HYPOTECNI BANKA A.S.	8700000	CZ	COM
14078	CS SPORITELNA	5700000	CZ	COM
32996	ŽIVNOSTENSKÁ BANKA	1900000	CZ	COM
45119	AS SWEDBANK	9700000	ET	COM
36731	SEB PANK	5200000	ET	COM
47362	DANSKE-SAMPO BANK	2400000	ET	COM
51789	AS LHV PANK	739303	ET	INV
51143	DNB PANK AS	723134	ET	COM
40442	VERSOBANK AS	353972	ET	COM
27257	BIGBANK AS	352947	ET	COM

<b>38516</b>	ESTONIAN CREDIT BANK	305350	ET	COM
<b>19162</b>	TALLINN BUSINESS BANK	205842	ET	COM
<b>14741</b>	FUND KREDEX	173642	ET	INV
<b>44850</b>	OTP BANK PLC	34000000	HU	COM
<b>33965</b>	K&H BANK ZRT	8300000	HU	COM
<b>35888</b>	HVB BANK HUNGARY	5300000	HU	COM
<b>33844</b>	UNICREDIT BANK ZRT	8700000	HU	COM
<b>15027</b>	TAKAREKBANK	2500000	HU	COM
<b>33925</b>	RAIFFEISEN BANK ZRT	6600000	HU	COM
<b>44318</b>	MKB BANK ZRT	6300000	HU	COM
<b>48242</b>	ERSTE BANK	6200000	HU	COM
<b>37332</b>	CIB BANK ZRT	5400000	HU	COM
<b>45298</b>	AB SEB BANKAS	6900000	LT	COM
<b>17026</b>	HANSABANKAS	1100000	LT	COM
<b>46673</b>	SWEDBANK AB	6700000	LT	COM
<b>38058</b>	AB DNB BANKAS	3900000	LT	COM
<b>38681</b>	SIAULIU BANKAS	1700000	LT	COM
<b>45043</b>	CITADELE BANKAS	404600	LT	COM
<b>47638</b>	MEDICINOS BANKAS	243400	LT	COM
<b>32949</b>	SWEDBANK AS	5400000	LV	COM
<b>45088</b>	ABLV BANK AS	5000000	LV	COM
<b>44200</b>	RIETUMU BANKA	3800000	LV	COM
<b>46622</b>	SEB BANKA AS	3500000	LV	COM
<b>12215</b>	AS CITADELE	3000000	LV	COM
<b>29977</b>	NORD BANKA	1100000	LV	COM
<b>33110</b>	AS DNB BANKA	2300000	LV	COM
<b>45089</b>	NORVIK BANKA	1100000	LV	COM
<b>26760</b>	LATEKO BANKA	377100	LV	COM
<b>19514</b>	BALTIKUMS BANK	755700	LV	COM
<b>33088</b>	PKO BP SA	63000000	PL	SVG
<b>31008</b>	BANK PEKAO SA	40000000	PL	COM
<b>37335</b>	WIELKOPOLSKI BANK KREDYTOWY SA	7100000	PL	COM
<b>32473</b>	BANK ZACHODNI	33000000	PL	COM
<b>33964</b>	MBANK-BRE BANK	29000000	PL	COM
<b>48129</b>	ING BANK SLASKI	26000000	PL	COM
<b>10357</b>	GETIN NOBLE BANK	17000000	PL	COM
<b>29286</b>	BIG BANK GDANSKI	4600000	PL	COM
<b>45307</b>	BANK MILLENNIUM	16000000	PL	COM
<b>32453</b>	FORTIS BANK POLSKA	4700000	PL	COM
<b>45438</b>	BNP PARIBAS BANK	9500000	PL	COM
<b>34219</b>	BANK BGZ-BNP	15000000	PL	COM
<b>35083</b>	RAIFFEISEN POLSKA	15000000	PL	COM
<b>38557</b>	BANCA COMERCIALA	14000000	RO	COM
<b>36742</b>	BRD-GROUPE SG SA	11000000	RO	COM

44741	BANCA TRANSILVANIA SA	8000000	RO	COM
19835	RAIFFEISEN BANK SA	7000000	RO	SVG
48924	UNICREDIT BANK SA	5700000	RO	COM
51742	UNICREDIT TIRIAC BANK SA	7700000	RO	COM
35909	SLOVAK SAVINGS BANK	14000000	SK	COM
35884	VSEOBECNA UVEROVA BANKA	13000000	SK	COM
37500	TATRA BANKA A.S.	11000000	SK	COM
25582	CSOB	7800000	SK	COM
47716	HVB BANK SLOVAKIA A.S.	1700000	SK	COM
12393	UNICREDIT BANK	4000000	SK	COM
15627	POST BANK JSC	4200000	SK	COM
51070	FIRST BUILDING BANK	2700000	SK	SVG
44132	PRIMA BANKA	2000000	SK	COM
16512	J&T BANKA	849200	SK	COM
31238	NOVA LJUBLJANSKA BANKA	12000000	SN	COM
31186	NOVA KREDITNA BANKA	4200000	SN	COM
49396	ABANKA D.D	1600000	SN	COM
35837	ABANKA- VIPA D.D	3800000	SN	COM
35960	SKB BANKA DD	2700000	SN	COM
56221	UNICREDIT SLOVENIJA	2500000	SN	COM
48179	BANKA KOPER D.D.	2600000	SN	COM
47420	VOLKSBANK-LJUDSKA BANKA - D.D	1000000	SN	COO
47421	SBERBANK BANKA	1900000	SN	COO
<b>BANKS IN CANDIDATE NATIONS</b>				
17265	BANKA KOMBETARE TREGTARE	2500000	AL	COM
49940	RAIFFEISEN BANK SH.A	2100000	AL	SVG
17263	AMERICAN BANK OF ALBANIA	479967	AL	COM
17264	INTESA SANPAOLO BANK	1000000	AL	COM
40932	CREDINS BANK SH.A	1000000	AL	COM
17266	TIRANA BANK SA	594822	AL	COM
35919	KOMERCIJALNA BANKA	1600000	MK	COM
30961	STOPANSKA BANKA A.D.	1400000	MK	COM
44793	NLB TUTUNSKA BANKA	1100000	MK	COM
46717	OHRIDSKA BANKA AD OHRID	536305	MK	COM
19934	HALK BANKA AD SKOPJE	491583	MK	COM
42981	INVESTBANKA A.D.	103320	MK	COM
42980	SPARKASSE BANK MAKEDONIJA	284771	MK	COM
49841	BANK FOR DEVELOPMENT	264340	MK	COM
19075	CKB BANK-PODGORICA	594800	MN	COM
27968	NLB MONTENEGROBANKA	486600	MN	COM
40802	OPPORTUNITY BANK	165600	MN	COM
40803	ERSTE BANK AD PODGORICA	369200	MN	COM
29075	SOCIETE GENERALE BANKA	410500	MN	COM
28971	HIPOTEKARNA BANKA	410500	MN	COM

23969	ATLAS BANK AD PODGORICA	262800	MN	COM
40824	KOMERCIJALNA BANKA AD BUDVA	110400	MN	COM
46134	BANCA INTESA AD BEOGRAD	3400000	SR	COM
12565	KOMERCIJALNA BANKA BEOGRAD	3400000	SR	COM
40493	UNICREDIT BANK SRBIJA A.D	2500000	SR	COM
12890	S. GENERALE BANKA SRBIJA AD	1900000	SR	COM
17760	RAIFFEISEN BANKA BEOGRAD	1900000	SR	COM
16829	AIK BANKA AD NIS	1500000	SR	COM
40823	EUROBANK A.D. BEOGRAD	1200000	SR	COM
31338	VOJVODJANSKA BANKA	993478	SR	COM
30739	IS BANKASI A.S.	100000000	TR	COM
30963	ZIRAAT BANKASI A.S.	98000000	TR	COM
31302	GARANTI BANKASI	88000000	TR	COM
31259	AKBANK T.A.S.	80000000	TR	COM
31274	YAPI-KREDI BANKASI	74000000	TR	COM
48323	VAKIFLAR BANKASI	59000000	TR	COM
31028	HALK BANKASI A.S.	60000000	TR	COM
46367	DENIZBANK A.S.	36000000	TR	COM
33817	FINANSBANK A.S.	28000000	TR	COM
33161	T. EKONOMISI BANKASI	23000000	TR	COM
43692	OYAK BANK	6400000	TR	COM
36338	ING BANK A.S.	17000000	TR	COM
18874	ODEA BANK AS	10000000	TR	COM
40997	HSBC BANK A.S.	10000000	TR	COM
32539	SEKERBANK T.A.S.	8100000	TR	COM
46749	ANADOLUBANK A.S.	4100000	TR	COM
36863	ALTERNATIFBANK A.S.	4400000	TR	COM
27060	EUROBANK TEKFEN	2100000	TR	COM
36056	BURGAN BANK AS	3700000	TR	COM
51662	MILLENIUM BANK	433317	TR	COM
36837	FIBABANKA AS	3500000	TR	COM
16869	CITIBANK A.S.	2600000	TR	COM
29472	AKTIF BANK AS	2400000	TR	INV
48669	MNG BANK	370932	TR	COM
37021	T- BANK	1800000	TR	COM
48612	TEKSTIL BANKASI A.S.	1300000	TR	COM
33384	ICBC TURKEY BANK A S.	2100000	TR	COM
31429	ARAP TURK BANKASI	1300000	TR	COM
52351	BANK OF TOKYOTURKEY	1800000	TR	COM
33882	DEUTSCHE BANK AS	950914	TR	COM
<b>BANKS IN LONG-STANDING MEMBER NATIONS (Control Group Except for Sample of Chapter 6)</b>				
28002	CREDIT MUTUEL ARKEA	64213500	FR	COO
11040	CRÉDIT DU NORD SA	43091700	FR	COM
11278	BRED BANQUE POPULAIRE	45625500	FR	COM



11955	BPIFRANCE FINANCEMENT	44031600	FR	INV
12024	CRÉDIT MUTUEL NORD EUROPE	41736900	FR	COM
23469	RCI BANQUE SA	31219600	FR	COM
12991	CIC LYONNAISE DE BANQUE	31068600	FR	COM
23505	BANQUE POPULAIRE RIVES DE PARIS	20232400	FR	COM
10662	CRÉDIT COOPÉRATIF	14942600	FR	COO
10512	ROTHSCHILD & CO	9022300	FR	INV
17573	FONCIÈRE DE PARIS SIIC	2503500	FR	COM
10370	BLOM BANK FRANCE SA	1577600	FR	COM
19838	BANQUE SBA SA	696700	FR	COM
10901	BANQUE BIA SA	435900	FR	COM
11069	FRANSABANK SA	319400	FR	COM
23504	BANQUE D'ESCOMPTE & WORMSER	169200	FR	COM
16827	HSH NORDBANK AG	96973000	DE	INV
14020	WGZ-BANK AG	51354400	DE	COO
13213	DEUTSCHE APOTHEKER- UND AERZTEBANK	36444400	DE	COO
45917	IKB DEUTSCHE INDUSTRIEBANK AG	21742800	DE	INV
29867	SPARKASSE KÖLN	29325900	DE	SVG
40170	VEREINSBANK UND WESTBANK AG	24194500	DE	COM
13973	HSBC TRINKAUS&BURKHARDT AG	21670500	DE	COM
18619	DVB BANK SE	26178400	DE	INV
43869	COMDIRECT BANK	16516000	DE	COM
56461	OLDENBURGISCHE LANDESBANK	13749500	DE	INV
14304	BERLINER VOLKSBANK EG	11714200	DE	COO
17662	DAB BANK AG	4711100	DE	COM
22570	AKBANK AG	4774300	DE	COM
15706	ISBANK AG	1206200	DE	COM
13092	BREMER KREDITBANK AKTIENGESELLSCHAFT	1894400	DE	COM
47958	BAADER BANK AG	578800	DE	COM
20033	NATIONAL BANK OF GREECE SA	77131000	GR	COM
20012	PIRAEUS BANK SA	83002000	GR	COM
49514	EUROBANK ERGASIAS SA	64195000	GR	COM
20022	ALPHA BANK AE	69296200	GR	COM
20020	EMPORIKI BANK	28100300	GR	COM
20006	ATTICA BANK SA	3674000	GR	COM
16817	AEGEAN BALTIC BANK	391500	GR	COM
22725	BANCO POPULAR ESPANOL SA	148777600	ES	COM
14014	IBERCAJA BANCO SAU	58912700	ES	SVG
22712	BANKINTER SA	60011900	ES	COM
52481	KUTXABANK SA	48849200	ES	SVG
11968	BANCO MARE NOSTRUM SA	40794200	ES	SVG
51882	CAJAMAR CAJA RURAL	37273100	ES	SVG
52881	LIBERBANK SA	28883100	ES	SVG
45161	BANCO COOPERATIVO ESPANOL	17442800	ES	COO

<b>22617</b>	BANCA MARCH SA	11995300	ES	COM
<b>50007</b>	CECABANK SA	11988200	ES	COM
<b>44978</b>	CAJA RURAL DE NAVARRA COOPERATIVA	9728100	ES	COO
<b>15542</b>	RENTA 4 BANCO, S.A.	1025356	ES	COM
<b>45465</b>	ARESBANK SA	794000	ES	INV

(Sources: Bankscope, and National Financial Authorities

Abbreviations of Bank Type: COM: Commercial; COO: Cooperative; INV: Investment; SVG: Savings)

## **Appendix II: List of Policy Documents on EU Corporate Governance, Risk Management and Ownership Framework**

(Sources: Horn, P. 184-185, 2012 and European Commission)

### **EARLY PERIOD: 1968-1989 (INITIAL ACTIONS)**

- *First Council Directive 68/151/EEC on coordination of safeguards which, for the protection of the interests of members and others, are required by Member States of companies within the meaning of the second paragraph of Article 58 of the Treaty, with a view to making such safeguards equivalent throughout the Community*
- *Second Council Directive 77/91/EEC on coordination of safeguards which, for the protection of the interests of members and others, are required by Member States of companies within the meaning of the second paragraph of Article 58 of the Treaty, in respect of the formation of public limited liability companies and the maintenance and alteration of their capital, with a view to making such safeguards equivalent*
- *Third Council Directive 78/855/EEC based on Article 54 (3) (g) of the Treaty concerning mergers of public limited liability companies*
- *Fourth Council Directive 78/660/EEC based on Article 54 (3) (g) of the Treaty on the annual accounts of certain types of companies*
- *Sixth Council Directive 82/891/EEC based on Article 54 (3) (g) of the Treaty, concerning the division of public limited liability companies*
- *Seventh Council Directive 83/349/EEC based on Article 54 (3) (g) of the Treaty on consolidated accounts*
- *Eighth Council Directive 84/253/EEC based on Article 54 (3) (g) of the Treaty on the approval of persons responsible for carrying out the statutory audits of accounting documents*
- *Eleventh Council Directive 89/666/EEC concerning disclosure requirements in respect of branches opened in a Member State by certain types of company governed by the law of another state*

- *Twelfth Council Company Law Directive 89/667/EEC on single-member private limited-liability companies*

#### **MEDIUM TERM: 1990-2007**

- *Council Directive 1994/45/EC on the establishment of a European Works Council or a procedure in Community-scale undertakings and Community-scale groups of undertakings for the purposes of informing and consulting employees*
- *Communication from the commission COM/1999/232 Implementing the framework for financial markets: Action plan*
- *Regulation EC/2001/2157 on the Statute for a European company (SE)*
- *Directive 2001/24/EC of the European Parliament and of the Council on the reorganisation and winding up of credit institutions*
- *Directive 2001/86/EC supplementing the Statute for a European company with regard to the involvement of employees*
- *European Commission 2002. Report of the high level group of company law experts on a modern regulatory framework for company law in Europe*
- *Directive 2002/47/EC of the European Parliament and of the Council on financial collateral arrangements*
- *European Commission 2003. EU corporate governance action plan*
- *European Commission COM/2003/6 of the European Parliament and of the Council on insider dealing and market manipulation (market abuse)*
- *European Commission COM/2003/284. Modernising company law and enhancing corporate governance in the European Union: A plan to move forward*
- *European Commission COM/2003/703 final proposal for a Directive of the European Parliament and of the Council on cross-border mergers of companies with share capital*
- *Regulation EC/1435/2003 on the Statute for a European Cooperative Society (SCE)*
- *Directive 2003/58/EC amending Council Directive 68/151/EEC, as regards disclosure requirements in respect of certain types of companies*
- *Directive 2004/25/EC on takeover bids (text with EEA relevance)*

- **Directive 2004/109/EC** of the European Parliament and of the Council on the harmonisation of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market and amending Directive 2001/34/EC
- **European Commission COM/2004/725 final proposal for a Directive** amending Council Directives 78/660/EEC and 83/349/EEC concerning the annual accounts of certain types of companies and consolidated accounts
- **Commission Recommendation 2004/913/EC** on fostering an appropriate regime for the remuneration of directors of listed companies
- **Commission Recommendation 2005/162/EC** on the role of nonexecutive or supervisory directors of listed companies and on the committees of the (supervisory) board
- **Directive 2005/56/EC** on cross-border mergers of limited liability companies (Tenth Company Law Directive)
- **Commission Green Paper COM/2005/177** on financial services policy (2005-2010)
- **Directive 2006/43/EC** of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts, amending Council Directives 78/660/EEC and 83/349/EEC and repealing Council Directive 84/253/EEC
- **Directive 2006/46/EC** of the European Parliament and of the Council of 14 June 2006. Consultation Document
- **Directive 2006/68/EC** amending Council Directive 77/91/EEC as regards the formation of public limited liability companies and the maintenance and alteration of their capital
- **Directive 2007/36/EC** on the exercise of certain rights of shareholders in listed companies
- **Directive 2007/63/EC** amending Council Directives 78/855/EEC and 82/891/EEC as regards the requirement of an independent expert's report on the occasion of merger or division of public limited liability companies

## POST-CRISIS PERIOD-RECENT DEVELOPMENTS: 2008-2018

- ***Directive 2009/101/EC** of the European Parliament and of the Council on coordination of safeguards which, for the protection of the interests of members and third parties, are required by Member States of companies within the meaning of the second paragraph of Article 48 of the Treaty, with a view to making such safeguards equivalent*
- ***Directive 2009/102/EC** of the European Parliament and of the Council in the area of company law on single-member private limited liability companies*
- ***Commission Recommendation 2009/384/EC** on remuneration policies in the financial services sector*
- ***Commission Recommendation 2009/385/EC** complementing Recommendations 2004/913/EC and 2005/162/EC as regards the regime for the remuneration of directors of listed companies*
- ***Directive 2009/109/EC** amending Council Directives 77/91/EEC, 78/855/EEC and 82/891/EEC, and Directive 2005/56/EC as regards reporting and documentation requirements in the case of mergers and divisions*
- ***European Commission COM/2009/974-975 final proposal for directive** of the European Parliament and of the Council of amending Directives 2006/48/EC and 2006/49/EC as regards capital requirements for the trading book and for re-securitisations, and the supervisory review of remuneration policies*
- ***Communication from the Commission for the spring European Council COM/2009/114 final** driving European recovery*
- ***Regulation EU/2010/1093** of the European Parliament and of the Council on establishing a European Supervisory Authority (European Banking Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/78/EC*
- ***Commission Green Paper COM/2010/284 final** Corporate governance in financial institutions and remuneration policies*
- ***Report from the Commission COM/2010/286 final** to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Report on the application by Member States of the EU of the Commission 2009/384/EC Recommendation on remuneration policies in the financial services sector (2009 Recommendation on remuneration policies in the financial services sector)*

- **Directive EU/2011/35** of the European Parliament and of the Council concerning mergers of public limited liability companies
- **Commission Green Paper COM/2011/164 final** the EU corporate governance framework
- **Regulation EU/2012/648** of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories
- **Directive EU/2012/30** of the European Parliament and of the Council on coordination of safeguards which, for the protection of the interests of members and others, are required by Member States of companies within the meaning of the second paragraph of Article 54 of the Treaty on the Functioning of the European Union, in respect of the formation of public limited liability companies and the maintenance and alteration of their capital, with a view to making such safeguards equivalent
- **Communication from the Commission COM/2012/740 final** to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Report Action Plan: European company law and corporate governance- A modern legal framework for more engaged shareholders and sustainable companies
- **Directive EU/2013/34** of the European Parliament and of the Council on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC
- **Regulation EU/2013/575** of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms and amending Regulation EU/2012/648 (**CRR**)
- **Directive EU/2013/36** of the European Parliament and of the Council on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC (**CRD IV**)
- **Directive EU/2014/59** of the European Parliament and of the Council on establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012, of the European Parliament and of the Council

- ***Commission Recommendation 2014/208/EU on the quality of corporate governance reporting “comply or explain”***
- ***European Commission COM/2014/213 final proposal for directive of the European Parliament and of the Council amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement and Directive 2013/34/EU as regards certain elements of the corporate governance statement***
- ***Commission Green Paper COM/2015/63 Building a Capital Markets Union***
- ***Commission COM/2016/854 proposal for directive of the European Parliament and of the Council of amending Directive 2013/36/EU as regards exempted entities, financial holding companies, mixed financial holding companies, remuneration, supervisory measures and powers and capital conservation measures***
- ***Directive EU/2017/1132 of the European Parliament and of the Council of relating to certain aspects of company law (codification)***
- ***Directive EU/2017/828 of the European Parliament and of the Council amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement***
- ***Commission final proposal COM/2017/791 for a directive of the European Parliament and of the Council on the prudential supervision of investment firms and amending Directives 2013/36/EU and 2014/65/EU***
- ***Commission final proposal COM/2017/790 for a regulation of the European Parliament and of the Council on the prudential requirements of investment firms and amending Regulations (EU) No 575/2013, (EU) No 600/2014 and (EU) No 1093/2010***
- ***Commission final proposal COM/2018/241 for a directive of the European Parliament and of the Council amending Directive (EU) 2017/1132 as regards cross-border conversions, mergers and divisions***
- ***Commission Implementing Regulation EU/2018/1212 laying down minimum requirements implementing the provisions of Directive 2007/36/EC of the European Parliament and of the Council as regards shareholder identification, the transmission of information and the facilitation of the exercise of shareholders rights***



**List of Basel Committee on Banking Supervision (BCBS) Documents on Principals for Corporate Governance and Risk Management Practices in Banks**

- *Enhancing Corporate Governance for Banking Organisations* 1999
- *Enhancing Corporate Governance for Banking Organisations* 2006
- *Principles for Enhancing Corporate Governance* 2010
- *Corporate governance principles for banks* 2015

**List of Organisation for Economic Co-operation and Development (OECD) Documents on Principles for Corporate Governance**

- *Principles of Corporate Governance* 1999
- *Principles of Corporate Governance* 2004
- *Accountability and Transparency: A Guide for State Ownership* 2010
- *Board Practice: Incentives and Governing Risks* 2011
- *Supervision and Enforcement in Corporate Governance* 2013
- *Boards of Directors of State-Owned Enterprises* 2013
- *Risk Management and Corporate Governance* 2014
- *G20/OECD Principles of Corporate Governance* 2015
- *Risk Management by State-Owned Enterprises and their Ownership* 2016

## **Appendix III: EU Political and Legal Institutions**

(Source: The EU Approach to Corporate Governance, International Finance Corporation (IFC), 2008 and the European Commission)

### **Political Institutions**

#### ***The European Commission***

*“The European Commission is the EU's politically independent executive arm. It is alone responsible for drawing up proposals for new European legislation, and it implements the decisions of the European Parliament and the Council of the EU. The EC Promotes the general interest of the EU by proposing and enforcing legislation as well as by implementing policies and the EU budget. The Commission also seeks the opinions of national parliaments and governments. To get the technical details right, the Commission consults experts through its various committees and groups.”*

#### ***The European Parliament:***

*“The European Parliament is the EU's law-making body. EU voters directly elect it every 5 years. The EP passes European laws—jointly with the Council of the EU in many policy areas. The EP can veto legislation in specific policy areas. The European Parliament has the power of “co-decision” with the Council of the European Union, a power granted in 1993 and expanded in 1999. The Parliament has 3 main roles, which are legislative, supervisory and budgetary.”*

#### ***The European Council:***

*“The European Council brings together EU leaders to set the EU's political agenda. It represents the highest level of political cooperation between EU countries.”*

### ***The Council of the European Union***

*“The Council is the voice of EU member governments, adopting EU laws and coordinating EU policies. In the Council, government ministers from each EU country meet to discuss, amend and adopt laws, and coordinate policies. The ministers have the authority to commit their governments to the actions agreed on in the meetings. Together with the European Parliament, the Council is the main decision-making body of the EU.”*

### **Legal Institutions:**

#### ***Green Paper:***

*“A green paper is a discussion document released by the European Commission European Commission intended to stimulate debate and launch a process of consultation, at European level, on a particular topic. A green paper usually presents a range of ideas and is meant to invite interested individuals or organizations to contribute views and information. It may be followed by a White paper recommendation, an official set of proposals or lead to a new directive.”*

#### ***Position Papers:***

*“Position papers are views and information presented to the Commission in response to a consultation process.”*

#### ***Recommendation:***

*“A nonbinding act of the EU, which explains current EU policy and recommends further Member State actions. Since differing approaches to corporate governance are deeply rooted in national traditions, particular care has been taken to provide for maximum flexibility in the ways Member States can apply the principles in the Recommendation. The Recommendation*

*takes account of efforts already made in Member States and aims by identifying best practices to foster convergence on these issues in the EU. The Commission closely monitors the application of its Recommendations to identify whether additional measures may be desirable in the medium term.”*

***Regulation:***

*“An act of the Council or joint act of the Council and the Parliament, which has direct and general application in Member States. The Commission may also issue regulations limited to certain sectors. The Commission considers regulations only when it believes an EU-level remedy is necessary for a problem that cannot be solved by national or local governments.”*

***Directive:***

*“The most common type of EU legislation, not directly applicable, but may have direct effect; binding upon Member States as to the objectives to be achieved but leaving to the Member States the choice of form and method; preferred means of harmonization of laws; usually enacted by the Commission.”*

***Decisions:***

*“They are binding in their entirety upon those to whom they are addressed—Member States, companies, or persons.”*

***Legislation:*** *All of the European jurisdictions have companies’ acts that regulate the activities of companies. These laws typically draw clear “lines” to distinguish legal from illegal activity.*

***Soft law:*** *Soft law is typically composed of corporate governance codes that contain “recommendations” for good and responsible governance. Typically, companies are required to report to their shareholders on a comply-or-explain basis.*

***Comply or explain:*** *If a company chooses to depart from a corporate governance code, the company must explain in its annual report to shareholders which parts of the code it has departed from and why it has done so. A comply-or-explain approach provides companies with flexibility to adapt their corporate governance to their specific situation. Technically, “apply or explain” (associated with the King Reports in Southern Africa) is a more accurate term than “comply or explain,” but it is rarely used in Europe other than in the Netherlands (which is the country that first brought in this expression). (Source: Pierce, 2010 and IFC, 2015)*

## **Appendix IV: Corporate Governance and Risk Management Documents of EU: The Detailed Information on Good Practices on Board of Directors, Risk Management**

### **1999 The Financial Services Action Plan (FSAP) (Source: EC, 1999; IFC, 2015)**

The FSAP the first step aims to modernise and harmonise corporate governance across EU in the beginning of 2000s. It highlighted the importance of convergence of corporate governance practices across EU for healthy development of financial markets in EU.

*Corporate governance:*

*“Investors in the single market may experience unnecessary uncertainty due to differences in corporate governance arrangements. Differences in corporate governance arrangements could give rise to legal or administrative barriers, which might frustrate the development of an EU financial market (e.g. practical arrangements for the exercise of voting rights by shareholders in partner countries). However, the term "corporate governance" covers a wide series of issues whose ramifications for the single financial market are at present unclear. Furthermore, national arrangements spring from long-standing legal and socio-economic traditions. At the present juncture, any EU involvement in this area should be confined to identifying any barriers to the development of the EU financial market resulting from corporate governance arrangements.”*

### **2003 Modernising Company Law and Enhancing Corporate Governance in the European Union - A Plan to Move Forward (Source: EC, 2003; IFC, 2015)**

Following the Winter Report in 2002, the final version of plan was published. The reasons were introduced as follows:

- *“To make Internal Market more efficient and expedite freedom of establishment and cross-border restructuring of companies.*
- *To increase capital markets integration across the EU.*
- *To respond the financial outrages at the beginning of 2000s.*
- *To be prepared for enlargement in 2004 and in 2007.*
- *To make EU companies ready for adapting new technologies”.*

The key objectives in corporate governance area:

- ***“Strengthening shareholders rights:*** *Shareholders should have equivalent rights in the EU.*
- ***Enhancing corporate governance disclosure:*** *All listed companies in the EU to include in their annual report a comprehensive corporate governance statement covering the key elements of their governance structures and practices. The Commission set ‘comply or explain’ rules for this objective.*
- ***Modernising the board of directors:*** *The Commission set ‘comply or explain’ rules for this objective as well. The listed companies should enhance independence of board of directors and create non-executive-executive balanced board of directors, disclose remuneration of directors and enhance cooperation between directors.*
- ***Harmonising corporate governance practices in member states:*** *The commission highlighted the importance of harmonisation of corporate governance codes of EU nations.”*

## **2005 Commission Recommendation on the Role of Non-Executive or Supervisory Directors (Source: EC, 2005)**

In this recommendation document, the Commission recommends the following criteria for an independent director.

- *“not to be an executive or managing director of the company or an associated company, and not having been in such a position for the previous five years*
- *not to be an employee of the company or an associated company, and not having been in such a position for the previous three years, except when the non-executive or supervisory director does not belong to senior management and has been elected to the (supervisory) board in the context of a system of codetermination*
- *not to receive, or have received, significant additional remuneration from the company or an associated company apart from a fee received as non-executive or supervisory director*
- *not to be or to represent in any way the controlling shareholder(s)*
- *not to have, or have had within the last year, a significant business relationship with the company or an associated company, either directly or as a partner, shareholder, director or senior employee of a body having such a relationship. Business relationships include the situation of a significant supplier of goods or services (including financial, legal, advisory or consulting services), of a significant customer, and of organisations that receive significant contributions from the company or its group*
- *not to be, or have been within the last three years, partner or employee of the present or former external auditor of the company or an associated company*
- *not to be executive or managing director in another company in which an executive or managing director of the company is non-executive or supervisory director, and not to have other significant links with executive directors of the company through involvement in other companies or bodies*
- *not to be executive or managing director in another company in which an executive or managing director of the company is non-executive or supervisory director, and not to have other significant links with executive directors of the company through involvement in other companies or bodies*
- *not be a close family member of an executive or managing director of the company”*



## **2010 Green Paper Corporate Governance in Financial Institutions and Remuneration Policies (Source: EC, 2010)**

This Green Paper was a response to recent financial crisis 2007/2008. Risk management is one of the main concern of this paper along with board diversity and board independence in financial institutions. The paper highlighted the deficiencies of corporate governance and risk management structures and provided best practices and recommendations to the EC.

Some deficiencies of board structures and suggestions on solutions for these deficiencies:

- *“Lack of expertise and diversity in the board*
  - *Ensuring that recruitment policies identify clearly the profile of non-executive directors, including the Chairman (where he/she is non-executive), and ensure sufficiently strong financial expertise and diversity.*
  - *Regular, tailor-made training of non-executive board members*
  - *Recourse to external advice for non-executive board members*
- *Lack of effective risk oversight and accountability on risk matters*
  - *Stand-alone Risk Committee at board level, expertise in risk in the Risk Committee*
  - *To ensure coherence in examination of connected issues, cross participation in the Risk Committee/Audit Committee*
  - *Attendance of and report by the Chairman of Risk Committee to the AGM*
- *Lack of understanding of risk at board level, risk profile and appetite not or improperly defined and not effectively monitored*
  - *Definition, validation and disclosure of the risk appetite/ profile/ the parameters of the risk management system through a Risk Statement being part of the Annual Report.*
- *Proper weight not been given to risk function (RF). RF often not respected at the same level as operational/ trade function. CRO not always in a position to speak up or to bring upwards any concern due to hierarchical limitation*

- *Strengthening the independence and authority of the CRO by setting up its position at a level at par with the CFO in terms of institutional gravitas. The CRO should be member of the executive committees.. CRO to attend all meetings of the Risk Committee at the board and this way have direct reporting line to it.”*

## **2012 Proposal for a Directive of the European Parliament and of the Council on Improving the Gender Balance among Non-Executive Directors of Companies Listed on Stock Exchanges and Related Measures**

In recent years, EC has focused on gender diversity on European companies` boards and worked on several documents related to gender diversity (*Commission report “More women in senior positions”, Commission Staff Working Paper “The Gender Balance in Business Leadership”, Progress Report “Women in economic decision-making in the EU” and Commission Staff Working Document “Progress on equality between women and men)”*).

This proposal was one of the advisory documents has been published in recent years.” *The proposal aims to raise the number of female directors on boards in the EU by agreeing a minimum objective of a 40% presence of the underrepresented sex among the non-executive directors of companies listed on stock exchanges.”*

- *“The quantified objective of 40% set by this Directive only applies to non-executive directors in order to strike the right balance between the necessity to increase the gender diversity of boards on the one hand and the need to minimise interference with day-to-day management of a company on the other hand*
- *This Directive aims to improve the gender balance among directors of companies listed on stock exchanges and thus to contribute to the*

*realisation of the principle of equal treatment between men and women, recognised as a fundamental right of the Union. Listed companies should therefore be required to disclose, upon the request of an unsuccessful candidate, not only the qualification criteria upon which the selection was based, but also the objective comparative assessment of those criteria and, where relevant, the considerations tilting the balance in favour of a candidate who is not of the under-represented sex”*

**2012 Action Plan: European Company Law and Corporate Governance- A Modern Legal Framework for More Engaged Shareholders and Sustainable Companies**  
(Source: EC, 2012; IFC, 2015)

The *Europe 2020* agenda requires development of the business environment in Europe. To satisfy the objectives in this agenda the Commission worked on new action plan for creating “a modern and efficient company law and corporate governance framework for European companies, investors and employees.” This plan considered the influence of Global Financial Crisis and different from the Action Plan 2003 it included risk management objectives and highlighted the board diversity. The key points of this plan are as follows:

- **“Enhancing transparency:** Companies need to provide better information about their corporate governance to their investors and society at large
  - Disclosure of board diversity policy and management of non-financial risks
  - Improving corporate governance reporting
  - Strengthening transparency rules for institutional investors”
- **“Engaging shareholders:** Shareholders should be encouraged to engage more in corporate governance. They should be offered more possibilities to oversee

*remuneration policy and related party transactions, and shareholder cooperation to this end should be made easier.*

- *Better shareholder oversight of remuneration policy*
- *Better shareholder oversight of related party transactions*
- *Regulating proxy advisors*
- *Clarification of the relationship between investor cooperation on corporate governance issues and the 'acting in concert' concept*
- *Employee share ownership”*

- ***“Supporting companies’ growth and their competitiveness:*** *There is a need to simplify cross-border operations of European businesses, particularly in the case of small and medium-sized companies.*

- *Transfer of seat ( providing rules enabling companies to transfer their registered office across borders in a way which would preserve the company’s legal personality)*
- *Improving the mechanism for cross-border mergers*
- *Enabling cross-border divisions”*