The influence of board diversity on firm's financial performance: A comparison between firms from the Netherlands and the United Kingdom

The case of gender, age, and nationality diversity

Master thesis

Name:	Jasper ten Dam
Student number:	1472194
Email address:	j.tendam-1@student.utwente.nl
First supervisor:	Dr.ing. H.C. van Beusichem
Second supervisor:	Prof.dr. M.R. Kabir
Programme:	MSc. Business Administration
Track:	Financial Management
Date:	10-12-2018

Preface

This thesis is the final part of the master in Business Administration, track financial management at the University of Twente. The thesis has been written in the period June 2017-December 2018. A few people have been cooperative in succeeding this thesis. I would like to thank these people.

First of all, I want to thank dr.ing. H.C. van Beusichem for his critical advise in the last phase of the thesis. His guidance was necessary to make it to a good end. Next to that, I would like to thank prof.dr. M.R. Kabir, who acted as the second supervisor of this thesis. His feedback also helped to fulfil it. Also I would like to thank all fellow students that were cooperative in the process to finish this master thesis. Besides them, I would like to thank my family and others who supported me while doing this research.

Jasper ten Dam

December 2018

Abstract

This study analyses the impact of board diversity on financial performance in the Netherlands and United Kingdom for the years 2009, 2010, 2016 and 2017. The sample consists of 93 Dutch listed firms and 98 listed firms from United Kingdom. The firms from the Netherlands are all the listed firms located in the Netherlands listed on the Euronext Amsterdam. The 98 listed firms from the United Kingdom are the largest firms in terms of market capitalisation from the London Stock Exchange (LSE). Financial performance has been measured by Tobin's q, Return on Assets using net income (ROA NI), and Return on Assets using earnings before interest and taxes (ROA EBIT). Three robustness tests have been presented, which are Return on Equity using net income (ROE NI) and using earnings before interest and taxes (ROE EBIT), and stock return (RET). The diversity characteristics that have faced attention are gender, age and nationality diversity. Gender diversity is especially interesting because of the fact that a mandatory gender quota is present in the Netherlands since 2013. The results show that gender diversity is significantly related to firm performance in United Kingdom, measured by Tobin's q and ROA NI. In the Netherlands, a significant relationship between gender diversity and financial performance, measured by ROA NI and ROE NI, is present. Next to that, gender diversity has a negative impact on RET. Next to that, a negative, significant influence of age diversity on financial performance has been found in the United Kingdom, for Tobin's q and RET. Nationality diversity has shown to be a positive predictor of Tobin's q in the Netherlands. In the United Kingdom, it positively influences Tobin's q and RET. Nationality diversity has a negative influence on ROA NI, ROA EBIT, ROE NI, and ROE EBIT in the Netherlands.

Keywords: Board diversity, gender diversity, age diversity, nationality diversity, financial performance, Tobin's q, ROA, ROE, RET, the Netherlands, United Kingdom.

Table of contents

1 Introduction

Throughout the last decades, a lot of research has been done in the field of corporate governance. One of the mechanisms that drives corporate governance is board diversity. Carter, Simkins, and Simpson (2003) mention that the relationship between board diversity and shareholder value creation is a critical factor in good corporate governance. The underlying thought of the research on board diversity is the fact that board composition is increasingly accepted as an important influencer of firm performance (Kang, Cheng, & Gray, 2007). There are different forms of board diversity. Erhardt, Werbel, and Shrader (2003) mention that there exists a classification of diversity aspects in two groups, being observable and non-observable diversity. Observable diversity consists of demographic characteristics such as gender, age, race and ethnicity, whereas non-observable diversity consists of characteristics such as knowledge, education, and values. These aspects have been considered in various studies. For example, Liu, Wei, and Xie (2014) consider gender diversity, where Mahadeo, Soobaroyen, and Hanuman (2012) explore age and education diversity. Next to that, Erhardt et al. (2003) study ethnic diversity and Kaczmarek (2009) has a look at nationality diversity. Each of the mentioned articles were interested in the relationship between board diversity and firm's financial performance.

In what way can companies benefit from diversity? According to Gyapong, Monem, and Hu (2016) and Carter et al. (2003), two primary arguments support the necessity for board diversity. These two arguments are social equity and shareholder value. What is also mentioned by those researchers is that the most important objective of corporate boards is to increase shareholder value; if a business case for board diversity is made, firms will voluntarily embrace it. But, how can board members have influence on firm value? Faleye, Hoitash, and Hoitash (2011) mention that performing advisory and monitoring functions are the key aspects in the relationship between board members and firm value, therefore coming with one solution to the question raised before.

Existing research on the topic of board diversity focuses on a variety of characteristics that assess board composition, with gender diversity being the most investigated (Adams & Ferreira, 2009; Carter, D'Souza, Simkins, & Simpson, 2010; Liu et al., 2014; Lückerath-Rovers, 2013; Marinova, Plantenga, & Remery, 2016; Sabatier, 2015). Gender diversity considers the distribution of men and women within a board of directors. When researching the advantages of having females on boards of directors, Hillman, Canella, and Harris (2002) contribute to existing research by stating that women have different backgrounds and characteristics that make them unique. Carter et al. (2003) observed that women monitor better due to a higher level of curiosity that females possess. Garcia Lara, Garcia Osma, Mora, and Scapin (2017) add to this discussion by arguing that females are better monitors than males due to various reasons. These reasons stem from behavioural, ethical and organizational issues. Behavioural reasons include women being less overconfident and more risk averse.

Next to that, Garcia Lara et al. (2017) state that women are more ethical, whereas an organizational reason for women being better monitors is that women promote communications. Liu et al. (2014) examined the effect of board gender diversity in China. A positive and significant relation with firm performance has been found in the period between 1999 and 2011. One explanation for that is given by Hillman, Shropshire, and Canella (2007), who noticed that female directors improve the quality of board decisions and enhance the legitimacy of firm practices, since female directors can bring different perspectives and experiences. The inclusion of females in corporate boards improves decision quality because a more diverse board can bring more alternative solutions (Dutton & Duncan, 1987). Cook and Glass (2014) add to this by stating that women have abilities that are suited in case of crisis, particularly since women's emotional sensitivity, relational style, and social skills are highly valued in struggling organisations. Adding females to corporate boards also enhances legitimacy because several different stakeholders put pressure on firms to increase gender diversity. Hillman et al. (2007) mention that institutional investors select on diversity within boards. Therefore, a more diversified board enhances legitimacy of firms. The influence of gender diversity has possibly changed throughout the last few years due to the introduction of mandatory gender quotas for boards of directors, which is introduced further on in this introduction. It is interesting to see the results of this quota for the Netherlands.

Another fascinating characteristic of boardrooms is age diversity. Age diversity is analysed by comparing the variation of age of the directors within a corporate board. Deloitte, a multinational professional services firm and one of the Big Four accounting firms, did research on boardroom diversity. It mentions that board members tend to be older, because age equates with experience. One should consider that older directors bring knowledge, and that younger directors bring a fresh perspective into the board (Diversity in the Boardroom, 2017). Age diversity is not researched widely in the context of board of directors. One of the authors that did research age diversity were Mahadeo et al. (2012), who find a positive relationship between age diversity and financial firm performance in Mauritanian firms.

A characteristic that also faced little attention in prior research is the difference in home country from directors in boards. The arguments that are in favour of adding directors of different nationalities are extensive. Randøy, Thomsen, and Oxelheim (2006) and Oxelheim and Randøy (2003) name a larger group of (experienced) candidates and the addition of diverse expertise, that domestic board members do not possess, as possible advantages. According to Kaczmarek (2009), nationality diversity has a positive influence on firm performance. Kaczmarek (2009) based the findings on research of firms located in the United Kingdom, the Netherlands and Switzerland. Erhardt et al. (2003) also investigated firms in terms of influence of ethnic diversity on the performance of large US firms. In that research, the percentage of minorities to white Anglo-Saxons has been analysed by dividing the number of non-whites by the total number of directors. It finds a positive relationship

between board diversity and firm performance with the implication that it is not clear whether board diversity is the cause or the result of performance.

The impact of board diversity on financial firm performance is analysed in this study by making use of three different theoretical frameworks. The approaches that are used are the resource dependency theory, agency theory and the tokenism theory. The resource dependency theory is an approach that argues that corporate boards are an essential link between the company, its environment, and the external resources on which a company depends. Agency theory consists of problems that arise when desires of principals and agents' conflict with each other and that it is difficult, or expensive, for the principal to verify what the agent is doing. Both actors are acting rational and aim to maximize own benefits, which can result in conflicts between the actors (Eisenhardt, 1989). The third theory, tokenism theory, mentions that tokens are individuals who represent a group based on characteristics such as race and gender (Kanter, 1977). Tokenism refers to the individuals that form a minority. In this research, the tokenism theory is combined with the critical mass theory. The critical mass theory stresses that minorities (such as women) have power in the boards of directors only when their extent is sufficiently high (Low, Roberts, & Whiting, 2015). Liu et al. (2014) claim that three women on a board should bring a voice, two is a presence, and one is a token, when speaking in terms of the tokenism theory. This indicates that there should be three female directors to have a major influence in the decision-making process, and two to have any influence.

Board diversity can influence firm performance, as mentioned before. Diversity can result out of voluntary actions – a board of directors identifying the benefits of having female directors in the board - but also on basis of regulation. This study focuses on a sample of listed firms from the Netherlands and United Kingdom. For that reason, the Dutch corporate governance codes are important. In 2013, articles 2:166 and 2:276 have been added to the Dutch Civil Law as a temporary law. These articles imply that the management and supervisory board of Dutch companies must consist of at least 30% female and 30% male directors. This limit of 30% is based on the critical mass theory, which states that one outsider cannot influence the decision-making within a group (EU-Voorstel: Richtlijn verbeteren gendergelijkheid, 2018). To prevent ambiguity, this quota is implemented by the Netherlands on basis of domestic decision-making and is not obligatory due to possible regulation from the European Union. From 1 January 2016, the articles that include the limit of 30% have expired, and therefore disappeared out of the Dutch Civil Law. On the 13th of April 2017, the articles returned into the Dutch Civil Law (Invoering streefcijfer, 2017); large companies still must fulfil the requirement that 30% of the directors has to be female. If firms do not fulfil the legal target, they have to explain it in the director's report. The articles have been implemented again because the Ministry of Education, Culture and Science was satisfied with the effects of the quota in the period 2013-2016 (Invoering streefcijfer, 2017). The percentage of female directors has risen from 7.4% to 9.6% in executive boards and from 9.8% to 11.2% in supervisory boards. The reintroduction of the legal target makes

research on board diversity an up-to-date topic. In the United Kingdom, there is no mandatory gender quota for firms. The government of the United Kingdom states that self-regulation is more effective. A voluntary business-led strategy is the most effective manner of treating the problem gender diversity (Gov.uk, 2018).

This research predicts the impact of board diversity on firm's financial performance by making use of three aspects from board diversity – age diversity, gender diversity and nationality diversity – and three proxies for financial performance, being Return on Assets using net income (ROA NI), Return on Assets using EBIT (ROA EBIT), and Tobin's q. By analysing the impact of board diversity on firm performance, this study considers a sample from all listed firms from the Netherlands on the Euronext Amsterdam. In 2017, 93 Dutch firms are listed on that stock exchange. In addition, it takes roughly the same number of listed firms from the United Kingdom (98). These firms are included at the London Stock Exchange (LSE).

The characteristics of board diversity discussed before – gender, age and nationality – did not have much attention in existing literature, especially not when it comes to a sample consisting of Dutch firms. Next to that, research that combines these three characteristics is also missing in current literature. That brings the inspiration behind this study. Research on board diversity and its influence on the performance of Dutch firms is lacking. What is also lacking is a comparison between firms from the Netherlands and from the United Kingdom. This is especially interesting because the government of the Netherlands support diversity, for example with the mandatory gender quota, where the government of the United Kingdom leaves the choice to the companies. Therefore, the focus of this study is on the topic of board diversity and its influence on firm's financial performance, with a comparison between the Netherlands and United Kingdom. It also makes a comparison between the time periods 2016-2017 and 2009-2010 in the Netherlands to see the influence of the mandatory gender quota.

The research question that this study tries to tackle is:

What is the influence of board diversity on the financial firm performance of Dutch and UK listed firms?

The research question is answered with help of ordinary least squares (OLS) regression on a sample of 93 Dutch and 98 British firms for 2009, 2010, 2016 and 2017. Board diversity is measured by gender, age and nationality diversity. The hypothesis for the expected influence can be found in chapter 2.5. The research provides mixed results. Evidence has been found for a positive relationship of gender diversity and firm performance measured by Tobin's q in the United Kingdom. In the Netherlands, evidence has been found for a significant relationship with ROA NI, ROE NI, ROE EBIT, and RET as the measure for financial performance. ROA NI, ROE NI, and ROE EBIT are positively influenced by gender diversity, whereas RET is negatively influenced. The results for ROA NI, ROE NI, and ROE EBIT are consistent with the hypothesis. No evidence has been found for a negative influence of the

mandatory gender quota in the Netherlands. Next to that, no evidence has been found for a relationship between age diversity and firm performance in the Netherlands, whereas age diversity negatively influences financial performance measured by Tobin's q and RET in the United Kingdom. The results for RET are robust in the regression analysis with age bands as measure for age diversity. Nationality diversity has shown to be a positive predictor of Tobin's q in the Netherlands and United Kingdom. In addition, it also positively influences RET and ROA EBIT in the United Kingdom. In contradiction, it has a negative influence on ROA NI, ROA EBIT, ROE NI, and ROE EBIT in the Netherlands.

The results show some evidence to accept the statements from the critical mass and token-status theory. In the Netherlands, the presence of three female directors has a positive influence on Tobin's q. However, a relationship already exists when there is one female director. That is not in line with the theory. In the United Kingdom, the presence of one, two and three or more female directors is associated with an increase in ROA NI. This is in line with the theory, except for the first measure. For nationality diversity the same conclusion holds. The presence of two and three or more foreign directors is associated positively with Tobin's q in the Netherlands, and from two to three foreign directors an increase is observable. In the United Kingdom, the presence of two and three or more foreign directors is associated with a decrease in stock return.

This research adds to existing literature on the influence of board diversity by offering a comparison between Dutch and British firms. What is so interesting about these two countries is that the Netherlands uses a Continental corporate governance model and the United Kingdom works upon an Anglo-Saxon approach of corporate governance. Therefore, this research does not only compare between two countries, but also between two different corporate governance models. These models are defined by Cernat (2004). With the help of existing literature, it is assumed that there are differences between the two countries regarding board diversity. First, diversity in terms of gender can be affected by the mandatory female quota that is present in the Netherlands which can have possible downside effects according to Ferreira (2015). Firms are forced to hire female directors to reach the quota, which does not automatically imply that these female directors have the right qualities. Bøhren and Staubo (2014) and Adams and Ferreira (2009) add to this discussion that forced gender balance is costly and results in decreased efficiency due to over-monitoring. This mandatory quota is not present in the United Kingdom.

Next to empirical contributions, the research also has practical contributions. It offers a framework for companies and supervisory boards to see the influence of employing a diverse board of directors, and whether to attract a director with certain characteristics. Next to that, interesting results for policy makers have been offered. When the current mandatory gender quota is discussed in a future point, it is very useful to have access to financial results of these quotas. Decisions can be based upon the outcomes of this research.

This research is divided into different chapters. Chapter 2 presents a review of the relevant literature that exists. It also presents the theoretical framework that is used. In chapter 3 the research methodology is presented. It includes the regression methods, the definition of the

dependent and independent variables and next to that the sample is presented. In chapter 4 the results are discussed, followed by chapter 5 that includes the conclusion, limitations and recommendations for further research.

2 Literature review

Various research has been done in the field of board diversity and its impacts on firm's financial performance, however, as presented in the introduction, most research is focused on one element of diversity, for example gender. What is also noticeable is that most of the research focuses on sample firms from only one country. This chapter gives an overview on the existing literature on board of directors and board diversity. After that, the three different theories used in this research are presented.

2.1 Corporate governance

Corporate governance is one of the most investigated themes that exist within a firm, especially in the last couple of years. Take for example the developments in the mandatory gender quota (Ferreira, 2015). Claessens and Yurtoglu (2013) state that the definitions of corporate governance can be placed in two different categories, being a set of definitions that identify behavioural patterns and one set identifying itself with the normative framework. These behavioural patterns concern the actual behaviour of corporations. Actual behaviour exists of measures such as performance, efficiency, growth and treatment of shareholders and stakeholders. The normative framework consists of the rules under which firms operate. These rules stem from financial and labour markets, but also from the legal and judicial system.

A couple of interesting definitions of corporate governance exist, as identified by Claessens and Yurtoglu (2013). Shleifer and Vishny (1997) describe corporate governance as the way how investors get the managers to give them back their money. Goergen (2012) defines corporate governance as: "*corporate governance deals with the conflicts of interests between the providers of finance and the managers; the shareholders and the stakeholders; different types of shareholders (mainly the large shareholder and the minority shareholders); and the prevention or mitigation of these conflicts of interest*". It thus considers possible conflicts of interests between several actors and the prevention and mitigation of these conflicts. Corporate governance offers a variety of roles. De Jong, DeJong, Mertens, and Washley (2005) mention that corporate governance enables companies to raise funds, both in debt and equity markets. The cost of capital that is provided by outside investors will thereby be determined by corporate governance practices. This is supported by Claessens and Yurtoglu (2013), who mention that better corporate governance enables firms to greater access to financing and lower cost of capital. Next to that, two other advantageous effects have been mentioned in that study: better firm performance and more favourable treatment of all stakeholders.

After discussing the concept of corporate governance, it is interesting to point out various aspects that corporate governance consists of. It mainly includes relationships between firms, shareholders and creditors, between firms, financial markets and institutions, and between firms and employees (Claessens & Yurtoglu, 2013). Weir, Laing, and McKnight (2002) mention that corporate governance mechanisms can be roughly divided in two main

categories. The first category includes internal, firm-oriented mechanisms such as board of directors, debt financing, and director shareholdings. These internal mechanisms monitor firm's activities. The monitoring activities are undertaken by the board of directors and large shareholders. The second category, external, market-oriented mechanisms, consists mainly of the market for corporate control. Entities outside the organisation set these external mechanisms. Examples of external mechanisms are the market for corporate control, managers and products and services, disclosure, but also regulation (Cuervo, 2002). Disclosure is the release of information, being financial and non-financial (Healy & Palepu, 2001). According to Cuervo (2002), other mechanisms that are of importance are the legal system and the codes of good governance. The legal system regulate the behaviour of the firm and protects the rights of minority shareholders and influences the development of capital markets. Legal systems can be classified into two categories, being common law and civil law. Common law is mainly applied in Anglo-Saxon countries and is regarded as case-based law, whereas civil law is mainly based on codes and applied in Continental European countries (Kock & Min, 2016). As said before, codes of good governance are also external mechanisms that are of importance. Codes of good governance are recommendations regarding behaviour and structure of the board of directors. The legal system has influence on the application of the codes of good governance. In common law countries, the codes can be directly applied by judges. In civil law countries, the parliament need to turn the codes into laws before a judge can apply the scope of a code. Corporate governance is a very broad concept. Claessens and Yurtoglu (2013) remark that corporate social responsibility is also part of corporate governance. Corporate social responsibility is, according to Oh, Chang, and Martynov (2011), the *''corporate integrated responsibilities including economic, legal, ethical, and discretionary (or philanthropic) expectations that the society has of organizations''.* This indicates that corporate governance covers a wide variety of topics related to firms.

The Organisation for Economic Co-operation and Development (OECD) also contributed to existing literature of corporate governance. The OECD is an institution promoting policies that improves economic and social well-being of people around the world. The OECD has published the Principles of Corporate Governance in which it mentions six main areas that corporate governance exists of, according to them. These are: ensuring the basis for an effective corporate governance framework (1); the rights of shareholders (2); the equitable treatment of shareholders (3); the role of stakeholders in corporate governance (4); disclosure and transparency (5); and the responsibilities of the board (6). The last aspect considers board of directors. The board of directors has large effects on the corporate governance policies of a firm (OECD, 2017).

2.1.1 Corporate governance in the Netherlands

In this chapter, the corporate governance mechanisms that are specific for the Netherlands are described. In chapter 2.1 is mentioned that corporate governance mechanisms can be divided into two broad categories, being internal and external.

Examples of internal mechanisms are board of directors and director shareholdings, as discussed before. Before 2013, the Dutch corporate governance system was based on a two-tier board structure, consisting of a supervisory board and an executive board. Since then, it is not mandatory anymore. Firms can also work with a one-tier board structure, consisting of executive and non-executive board members (van Beusichem, de Jong, DeJong, & Mertens, 2016). The board of directors receive more attention in chapter 2.2. In the Netherlands, it is possible for directors to hold shareholdings in a company. This is mainly the case in family-owned companies, where the directors regularly hold 50% or more of the shares (Kleijn, Verduyn, van Montfort, & Masurel, 2008).

There are various external mechanisms that have their importance in the Netherlands, including disclosure, legal system and corporate governance codes. Disclosure includes financial reporting. All listed firms in the European Union have to apply International Financial Reporting Standards (IFRS). This is in contradiction to non-listed firms, which base their financial reporting on the rules of the Dutch Accounting Standards Board (DASB). The IFRS rules are stricter than the DASB rules, reducing discretion of management (van Beusichem et al., 2016). With regard to the legal system, the civil law system is applied in the Netherlands. It is mainly based on the principle that judges have to apply laws when making decisions rather than using codes. In Book 2 of the Dutch Civil Law, most corporate governance laws are described. These laws try to maintain a good relationship between shareholders, executive boards and supervisory boards. However, there are also open standards present in the Dutch Civil Law. The open standards that are present in Book 2 of the Dutch Civil Law are mostly filled up by the Dutch Corporate Governance Codes (DCGC). According to the Supreme Court of the Netherlands, the DCGC is an important source for a proper performance of the tasks that a director has. Therefore, the civil law has also some additions from the common law in the Netherlands, because directors also have to apply some codes and can be judged upon these codes. Corporate governance codes are part of the external mechanisms. In the Netherlands, The Dutch Corporate Governance Code (DCGC) is the official source for standards of good governance that firms have to apply. The Code is originally implemented in 2003 as the Code-Tabaksblat and has been modified in 2008 (Code-Frijns) and 2016 (Code-van Manen). Listed firms are obliged to apply the codes and can only deviate from the DCGC under strict conditions. The codes work as a voluntary guideline for other firms (Strikwerda, 2013). It is also an important source for the demands of a decent performance of tasks to which each director is pursuant on basis of article 2:9 from the Dutch Civil Law. Strikwerda (2013) mentions that the DCGC is one of the best applied codes in Europe, therefore implying that corporate governance faces attention in Dutch listed firms. The purpose of the DCGC is to enhance transparency within annual reports, better accountability to the supervisory board and the strengthening of the rights of shareholders. The DCGC includes 5 main principles, being long-term value creation, effective management and supervision, rewards of directors, the general meetings, and the one-tier board structure. To conclude, the most important aspects of the corporate governance framework in the Netherlands are the DCGC and Book 2 of the Dutch Civil Law. Both are built on the vision of assuring a good relationship between shareholders, supervisory board and executive board and are focused on long-term value creation (Strikwerda, 2013).

2.1.2 Corporate governance in the United Kingdom

In chapter 2.1 is mentioned that corporate governance mechanisms can be divided into two broad categories, being internal and external. In the United Kingdom, there are several mechanisms that influence firms.

As discussed before, examples of internal mechanisms are board of directors and director shareholdings. In the United Kingdom, boards are built upon the one-tier structure (Cernat , 2004). This indicates that a board consists of executive and non-executive directors within one board. As stated by Filatotchev and Bishop (2002), share ownership is also possible in the United Kingdom for executive and non-executive directors. In their research, executive directors hold 24% of the total outstanding shares, and non-executives hold 7%. This indicates that it is possible for a director to hold a large amount of shares.

The external mechanisms that are important in the United Kingdom include disclosure, legal system and corporate governance codes. As stated in chapter 2.1.1, listed firms that are located in the European Union apply the IFRS rules for disclosure of financial information. British listed firms apply these rules since 2005. Other firms use the UK Generally Accepted Accounting Practices (UK GAAP). The legal system that is applied in the United Kingdom is the common law system. This system provides strong rights for minority shareholders (Aguilera, 2005). Common law system is based upon case-based law, and therefore relying on judicial decisions. Corporate governance codes are important in the United Kingdom, since UK is a pioneer and trend-setter of these codes (Aguilera, 2005). To improve the classic corporate governance mode, the Cadbury Committee produced the first version of the UK Corporate Governance Code in 1992. The Cadbury Committee (1992) presented a broad definition of corporate governance, by stating that corporate governance is the system by which companies are directed and controlled. According to the UK Corporate Governance Code from 2016, corporate governance is about what the board of a company does and how it sets the values of the company. The aim is to facilitate effective, entrepreneurial and rational management to ensure long-term success of the firm (Financial Reporting Council, 2018). Next to the UK Corporate Governance Code, two different developments of the corporate governance regime in United Kingdom are important to distinguish. In 2006, a new version of the Companies Act has been introduced. It forms the primary source of company law in the United Kingdom. In April 2016, the most recent UK corporate governance code has been published by the Financial Reporting Council (Financial Reporting Council, 2018). Several laws present in the United Kingdom are interesting for this research. In October 2013, an addition to the Company Act of 2006 has been introduced; the Regulations 2013 (SI 2013/1970) (Gov.uk Regulations 2013, 2018). This law forces companies to state in the year report how many persons of each sex are present within the firm, being split up into directors, senior managers and employees. This act has been followed by the introduction of an addition to the Equality Act of 2010 in October 2016. This addition requires firms to publish the pay gap in gender. As of today, it is not yet accepted and implemented into the UK law (Gov.uk Equality Act, 2018).

2.2 Board of directors

Bhagat and Bolton (2008) mention that the board of directors is a key corporate governance mechanism. The board of directors is responsible for the performance of a firm. Regarding boards of directors, Cernat (2004) proposed two main models explaining corporate governance within boards. These two models are the Anglo-Saxon model of corporate governance and the Continental model of corporate governance. The models stem from differences in terms of ownership structure and market for corporate control. The United Kingdom is generally seen as the economy that has the most similarities with the economy in the United States. A typical characteristic of the economy in the UK and US is the presence of hostile takeovers on the stock market. On the other hand, countries such as Germany and the Netherlands do suffer only very little hostile takeovers on the stock market. The UK and US are countries employing the Anglo-Saxon model whereas Germany and the Netherlands work on basis of the Continental model of corporate governance.

The Anglo-Saxon model views relationships between shareholders and managers on a fiduciary basis. Major insights behind the Anglo-Saxon model are that self-interest and decentralized markets can function in a self-regulating manner. It stimulates short-term, profit-oriented behaviour and individualism. Ownership is usually widely dispersed, with a large emphasis on dividends. As Saberwal and Smith (2008) mention, the equity market is the primary governance mechanism in the Anglo-Saxon economies. According to Cernat (2004), minority shareholders account for 50% of the total shares outstanding. Hostile takeovers, as presented before, are a correction mechanism for management failure. Next to that, the Anglo-Saxon model builds upon one-tier management boards. The one-tier management board makes a distinction between executive and non-executive directors, but both are included in the same management board. The primary task of the non-executive directors is supervising the executive directors, who are on their turn in charge of the daily management. Anglo-Saxon models of corporate governance are generally applied in the United Kingdom and the United States.

The Continental European model relies on the underlying principle of stakeholder theory of the firm. It considers not only interests of shareholders but also input from the relevant stakeholders. According to Cernat (2004), the most important stakeholders are employees. Employees take part in decision-making through trade unions and works councils. Distinctive aspects of the Continental European corporate governance model regarding the ownership structure are that banks and other corporations are often major shareholders and that there is less focus on dividends. Besides that, the role of the stock exchange is reduced in comparison to the Anglo-Saxon model and takeovers are restricted. Due to the influence of banks and other corporations, firms and the economic environment are both more secured and that allows firms to focus on profits in the long-term range. There are fewer individual shareholders compared to the Anglo-Saxon model; the number of freely traded shares is limited and therefore stock markets are less liquid. The consequence from that is that hostile takeovers are difficult to set in place. The Continental European model consists of a two-tier

board structure: the executive board and the supervisory board. The executive board is charged with the daily business of a firm. The executive board is monitored by a separate supervisory board. The difference between a separate supervisory board from the two-tier board and the non-executive directors from the one-tier board is that the non-executive directors can have more influence because of the direct involvement with the decision-making within the board. The supervisory board is a separate board that is not directly involved with decision-making of the executive board. This could indicate that directors of the supervisory board have less responsibilities than the non-executive directors because the supervisory directors are not directly involved in decision-making within the board, but that does not fully hold, since the supervisory board takes decisions that are otherwise made at the annual shareholder meeting. Continental European models of corporate governance are generally applied in countries such as Germany, Austria and the Netherlands.

It is important to recognise what the functions of boards are. Adams and Ferreira (2007) mention that the board of directors is the ultimate legal authority in decision-making within firms. This includes reviewing and approving operating and financial decisions, plans and strategies. According to Carter et al. (2010), boards have four significant functions. These functions are: monitoring and controlling management (1), providing information and advice to managers (2), monitoring compliance with applicable laws and regulations (3), and linking the corporation to the environment (4). Minichilli, Zattoni, and Zona (2009) assess board task performance with the ability of the board to perform tasks related to service and control. Service tasks include advice, networking and strategic participation, whereas control tasks include behavioural, output and strategic control. Forbes and Milliken (1999) apply the same distinction to define board tasks. The advice task that boards have has an internal focus. Corporate boards are groups of people that try to help to enhance the decision-making process by their competences and experiences (Minichilli et al., 2009). Networking is an external task and is based on the resource dependency theory. This resource dependency theory is discussed later in this study. Networking is done by maintaining relationships with stakeholders of the firm. It enhances legitimacy of the firm. The last service task, strategic participation, has a strategic focus and consists the involvement of directors with the strategic decision-making process. It can bring competitive advantage to the firm (Minichilli et al., 2009). The three control tasks, behavioural, output and strategic control, also offer opportunities for directors to enhance quality of the firm.

2.2.1 Board of directors in the Netherlands

After elaborating theoretical approaches on board of directors, it is important to know how the board of directors is structured within the company law of the Netherlands, since this research focuses partially on Dutch firms.

Since 1971, the Dutch Civil Law includes the Structure Act (Structuurregeling). The Structure Act has been implemented in the Dutch Law and perpetuates the division of power within large companies. Supervisory and executive directors gained more influence, in comparison to the shareholders who lost influence. The Structure Act consists of different regimes that

must be adopted by firms, which are based on different conditions. The regime that has the most obligations is called the full structured regime. When firms meet the following conditions, the full structured regime is obligatory:

1. Equity of minimum € 16 million for three or more subsequent years;
2. An established works council and;
3. Employing 100 or more employees (van Gils, 2005).

These conditions did not change after 2004. The other regimes have less obligations (Boot, 2017). When the structured regime is obligatory, a supervisory board must be put in place. The supervisory board, indirectly implying that the two-tier structure has to be applied, was mandatory for the listed firms in the Netherlands when the firms fulfil the conditions. The mandatory implementation of a supervisory board is an example of the Continental model of corporate governance. The Continental European model implies that a two-tier board structure has to be applied, in which the management board is responsible for the day-to-day operations, whereas the activities of the supervisory board differ upon the legal regime that is adopted by the firm. The Continental European model is compulsory in countries such as Germany, Austria and the Netherlands (Cernat, 2004). When the mandatory supervisory board is in place, it will take over a few functions from the shareholders. These functions are the establishment and approval of annual reports, the election of the directors of the management board and the election of the directors of the supervisory board itself, which is called co-optation (de Jong et al., 2005). As mentioned before, the supervisory board also has the authority over the management board. This indicates that supervisory board can revise decisions made by the management board. Firms that do not have to apply the full structured regime can choose between an one-tier and a two-tier board structure.

In January 2013, the Wet vereenvoudiging en flexibilisering bv-recht (Flex-Wet) has been introduced. This Flex-Wet is included in the Wet Bestuur en Toezicht. The purpose of this act is the simplification of the company law of the Netherlands (Wet vereenvoudiging en flexibilisering bv-recht, 2012). Since then, every Dutch firm can also choose for a one-tier board, even when a firm was obliged to adopt the structural regime. According to Grondhuis and de Kluiver (2017), the one-tier board structure gains increasing attention. Firms are exploring the opportunities to implement such a board. That study mentions that firms may settle a one-tier board but are restricted in the way that most of the directors must be non-executive.

Another important aspect from the Dutch Civil Law is the female quota that is currently active. On the 13th of April 2017, articles 2:166 and 2:276 returned into the Dutch Civil Law (Invoering streefcijfer, 2017) after an absence of one year due to expiration in 2016. In 2013 these articles have been implemented into the Dutch Civil Law with the intention to stay in the law until 2016. According to the Ministry of Education, Culture and Science, the quota has provided positive benefits and that is the reason it came back into the law in 2017 (Invoering streefcijfer, 2017). The articles imply that ‘’large’’ companies must fulfil the

requirements that 30% of the directors are female and 30% of the directors are male. Firms are large when two of the three following criteria are fulfilled for two sequential years: 1) the value of the assets are worth more than € 20 million, 2) the net sales are more than € 40 million and 3) the average number of employees is higher than 250 (article 2:397 from Dutch Civil Law). For firms that do not fulfil these criteria the minimum limit of 30% is not an obligation but when possible, these firms should try to reach the minimum limit too. If the legal target of 30% is not reached, firms have to explain the reason for not reaching the target. Next to that, firms have to explain what they did to achieve the limit of 30% and have to elaborate on future intentions. The purpose of the gender quota is to improve the career and growth opportunities of females. According to Mrs. Bussemaker (former Minister of Education, Culture and Science), the target number of 30% is based on the critical mass theory; one female cannot change the culture in a large group of male directors (EU-Voorstel: Richtlijn verbeteren gendergelijkheid, 2018). That document presents the vision that the purpose of the EU is to oblige European firms to employ 40% female directors, which is in contradiction with the 30%-quota that is implemented in the Netherlands (EU-Voorstel: Richtlijn verbeteren gendergelijkheid, 2018). In chapter 2.4.2, the influence of gender quotas in other countries are discussed with help of empirical evidence.

2.2.2 Board of directors in the United Kingdom

After elaborating on Dutch legislation in the field of board of directors, an analysis on the United Kingdom is offered here. Corporate governance in United Kingdom differs from the Netherlands. A part of the influence in terms of corporate governance comes from the British government by the UK Corporate Governance Code. The UK Corporate Governance Code of 2016 names the definition of corporate governance, in which it includes a substantial place for board of directors. It mentions: *''boards of directors are responsible for the governance of their companies''* (Financial Reporting Council, 2018). The different responsibilities that board of directors have, according to the UK Corporate Governance Code, include setting strategic aims, providing leadership, supervising day-to-day management and reporting to shareholders. To enable the long-term success of companies, The UK CG Code tries to facilitate effective, entrepreneurial and prudent management. It stresses the importance of board diversity by stating that board should have a balance of skills, experience, independence and knowledge (Liao, Luo, & Tang, 2015).

Next to the UK Corporate Governance Code, two different developments of the corporate governance regime in United Kingdom are important to distinguish. In 2006, a new version of the Companies Act has been introduced. It forms the primary source of company law in the United Kingdom. In April 2016, the most recent UK corporate governance code has been published by the Financial Reporting Council (Financial Reporting Council, 2018). The first point that earns attention is that corporate boards work with a one-tier structure. As already presented before, United Kingdom applies an Anglo-Saxon model of corporate governance and therefore this one-tier structure is appropriate. The one-tier boards in the UK consist of executive and non-executive directors, who both have different roles.

In contrast to the Netherlands, United Kingdom did not implement a gender quota for boardrooms. Though, there seems to be a voluntary increase in female directors in the United Kingdom, especially in the FTSE 350 companies, which are the largest listed firms on the London Stock Exchange. In the first 100 FTSE firms, the number of women on boards has risen from 12.5% in 2011 to 26.1% in 2015; more interesting may be that there are no all-male boards in this sample of firms (Davies, 2018). The government of United Kingdom has reacted on the European Commission consultation considering gender imbalance in corporate boards, by stating that the United Kingdom is not an advocate of a mandatory gender quota. Rather, it states that self-regulation to address the issue is more effective. Businesses can effect change without regulation. A voluntary business-led strategy is seen as an effective manner of treating the problem of absence of female board directors (Gov.uk, 2018). This business-led strategy does not have a binding objective. Flexibility is crucial to ensure that firms do not appoint women for wrong reasons, but on the other hand also make progress on this agenda. The self-regulation that the United Kingdom applies here, is a typical example of the Anglo-Saxon corporate governance model.

2.3 Board diversity and firm performance

There are diverse theoretical approaches that can help to create an idea of the influence of board diversity on financial firm performance. These theoretical approaches are discussed in this chapter.

2.3.1 Theories on board diversity

As Terjesen, Sealy, and Singh (2009) and Carter et al. (2010) conclude, there is no single theory that predicts the nature of the relationship between board diversity and firm performance. Therefore, most existing studies consider multiple theories to provide insight. Liu et al. (2014) consider the resource dependency theory, agency theory and tokenism theory to explain the influence of board gender diversity on firm's financial performance. These theories are discussed in chapters 2.3.2 – 2.3.4. Carter et al. (2010) use four different theories to predict the diversity-performance relationship: resource dependency theory, human capital theory, agency theory, and social psychological theory. Human capital theory addresses the role of a person's education, experience and skills that can benefit an organisation (Carter et al., 2010). Social psychological theory states that demographic differences cause lower cohesion between groups and therefore social barriers reduce the possibility that minorities influence group decisions (Carter et al., 2010).

Low et al. (2015) also explored the relationship between board diversity and firm performance and used the agency theory, the stakeholder theory, the resource dependency theory, legitimacy theory, behavioural theory, stewardship theory, and the tokenism theory in combination with the critical mass theory. The stakeholder theory holds the vision that the board does not only represent shareholders' interest, but also that of other stakeholders such as employees, customers and suppliers. These all have wider concerns than just financial (Low et al., 2015). The legitimacy theory addresses the fact that companies are under pressure due to a social contract with the society in which the company functions and

thus must respond to institutional investors and labour markets that have additional demands. Behavioural theory focuses on the interaction and behavioural processes among persons that are directly involved with boardrooms and not on the outcomes of these boardrooms. Last, stewardship theory mentions that agents work towards the collective interests of the firm and do not work opportunistic (Low et al., 2015). The agency theory, resource dependency theory, tokenism theory and critical mass theory are explained in chapter 2.3.

Gyapong et al. (2016) also use the tokenism theory in combination with the critical mass theory, and next to that resource dependency theory is also applied in that study. In a study from Lückerath-Rovers (2013), which focuses on Dutch firms, the resource dependency theory is used. Marinova et al. (2016) also consider Dutch firms and build arguments on basis of the agency theory.

In the light of this research, insights from the critical mass theory are added to the tokenism theory. Both theories are essentially focusing on minorities and therefore fit perfectly in this research, due to the fact that gender diversity and nationality diversity both are measures that take into account a minority group. Gender diversity and nationality diversity take into account minorities because the percentage of female and foreign directors is extremely smaller than the percentage of male and domestic directors. Next to the combination of those theories, resource dependency theory and agency theory offer interesting approaches to board diversity and therefore these theories are used here. Due to the presence of gender-diverse, age-diverse and nationality-diverse boards, firms are assumed to have more access to external resources because of better linkages with the environment, which can make resource dependency theory an worthful theory to take into account. Next to that, the presence of these directors can result into conflicts, because the interests of directors that are from different gender, age and nationality may differ. Therefore, agency theory is an interesting theory to take into account. In general, if firms refuse to pay attention to diversity, it means that the talents and skills from a large part of society are disregarded. Firms take the best suitable possibility within a delimited group. The influence of each of the theoretical approaches are elaborated on the diversity characteristics presented afterwards to substantiate the hypotheses.

2.3.2 Resource dependency theory

"Resource-dependence theory views organisations as being dependent on their external environment and suggests that organisational effectiveness results not only from the firm's ability to manage resources but more importantly from its capacity to secure crucial resources from the environment" (Ruigrok, Peck, & Tacheva, 2007). Resource dependency theory has been introduced by Pfeffer and Salancik (1978). It regards corporate boards as an essential link between the company and its environment and the external resources on which a company depends, which is necessary for good performance. The resource dependency theory provides firms with four advantages that raise from the linking

mechanism which connects a firm with the external environment. These four advantages are:

1. directors supply resources such as information and expertise;
2. they may provide a communication channel with the network important to the firm;
3. the linkage is helpful in obtaining commitments of support from the environment; and
4. the linkage has a value in legitimizing organisations (Pfeffer & Salancik, 1978).

Pfeffer and Salancik (1978) mention that boards of directors perform a service task and are supposed to bring diverse resources to an organisation. Advice, counsel, external legitimacy and networking are valuable for firms (Hillman & Dalziel, 2003). Advice and counsel force board of directors to evaluate and select strategic alternatives and supply suggestions to improve quality of decision-making. With respect to external legitimacy and networking, co-opting outside directors helps to increase legitimacy in the environment in the firm and helps to improve relationships with stakeholders (Pfeffer & Salancik, 1978). What also results from better linkages with external environment is that firms reach customer and supplier appreciation, higher cash flows and acceptance from community (Mahadeo, Oogarah-Hanuman, & Soobaroyen, 2011). What can also be a benefit of better linkages is the reduction of transaction costs associated with environmental interdependency (Williamson, 1984). It also lessens environmental uncertainty (Pfeffer, 1972). Resource dependency theory finally helps in the survival of the firm. Altering the internal power distribution to match changes in critical contingencies over time is a way how organisations can change to stay aligned with modifying environmental conditions (Singh, House, & Tucker, 1986).

Arguments from the resource dependency theory offers support for a positive link between board diversity and financial performance (Carter et al., 2010). By employing directors with various backgrounds, a firm is better able to have access to the four advantages presented before. According to Hillman et al. (2007), the board of directors is a primary linking mechanism for connecting a firm with external resources. Hillman, Canella, and Paetzold (2000) suggest that different types of directors provide different beneficial resources to a firm. This ultimately results in higher firm performance (Hillman et al., 2007), because a more diverse board will provide more valuable resources. The fourth linkage that Pfeffer and Salancik (1978) propose proves that firms can increase value by enhanced legitimacy. Mahadeo et al. (2011) mention that organisations can gain legitimacy by demonstrating harmony with social goals. Firms can do this by appointing female and ethnic minority directors (Carter et al., 2003). The plausibility that important and unique links to the labour and product markets can be created by the inclusion of female directors results in a positive influence of board diversity on firm performance. Next to that, by adding female directors, boards may be able to take more innovative, creative, and non-traditional decisions since women change group dynamics of communication, interpersonal interaction and decision-making (Simpson, Carter, & D'Souza, 2010).

2.3.3 Agency theory

The first sense-making introduction to the agency theory comes from Jensen and Meckling (1976). This study defines the agency relationship as*: ''a contract under which one or more persons, being the principal(s), engage another person, the agent(s), to perform some service on their behalf which involves delegating some decision-making authority to the agent''* (Jensen & Meckling, 1976). Eisenhardt (1989) defines agency theory as a problem that arises when desires of principals and agents conflict with each other and that it is difficult or expensive for the principal to verify what the agent is doing. Both actors are acting rational and aim to maximize own benefits. As Jensen and Meckling (1976) mention, agents are opportunistic and are motivated to take profit from emerging information asymmetry in respect to the relationship with principals. This can result in conflicts between the principal and the agent; managers will not perform in the best interest of the shareholder. The consequence from this is costs arising from the conflict, because corporate managers will try to pursue own interests at the expense of shareholders. The costs of agency conflicts are: (1) the monitoring expenditures by the principal, (2) the bonding expenditures by the agent and (3) the residual loss. These costs lead to undesirable outcomes. It is thus clear that firms try to lower the possibility that agency conflicts can occur. Shleifer and Vishny (1997) mention that the primary task of corporate boards is to protect interests of shareholders from misappropriation of management. From this point of view, corporate boards are independent from top management. Minichilli et al. (2009) state that boards have some additional tasks next to controlling managers which include controlling firm performance and monitoring the activities performed by the company.

Fama and Jensen (1983) and Carter et al. (2003) claim that firms can overcome agency conflicts in two ways. The first approach is greater oversight and monitoring of firm management. It includes the decisions made by boards and consequentially the implementation (Datta, Musteen, & Herrmann, 2009). This is affected by board composition, which can influence firm's strategic behaviour. The second approach to overcome agency conflicts is by using incentive mechanisms such as linking compensation structure to long-term performance and offering equity ownership.

As stated before, firms can overcome agency, among other things, by board composition. Therefore, it is important to understand how board diversity can mitigate agency conflicts and ultimately improve firm performance. Carter et al. (2010) mention that agency theory does not provide such a clear prediction of the link between board diversity and financial performance as resource dependency theory does, but it is mentioned that agency theory does not rule out the possibility that firms gain benefits by having a diverse board. What is argued by them is that a more diverse board may be better in monitoring activities because board diversity enhances board independency, and independent boards are better in monitoring (Carter et al., 2010). Adams and Ferreira (2009) state that greater diversity enhances the ability of the board to control and monitor managers. To effectively perform monitoring activities, a board should consist of enough independent members. What Adams

and Ferreira (2009) also state is that diversity is preferable only when extra monitoring is warranted. Gyapong et al. (2016) mention that the effect of board diversity on firm value may be less in better-governed firms, as might be expected in the Netherlands.

2.3.4 Tokenism and critical mass theory

The tokenism theory has had his first contribution by Kanter (1977). The rarity of females or minorities in board of directors are described as “tokens”. In extreme situations, these are labelled “solos”; someone who is the sole representative of a group. A female director may be treated as a token, and her impact on decisions is limited. Low et al. (2015) describe tokens as persons who meet the formal requirements but do not possess the auxiliary characteristics expected for a job. Their contributions are limited and often treated as representation of a category because they are in many cases treated as representations of their category, are not allowed to participate fully in decision-making and sometimes hired to fulfil legislative requirements or to prevent lawsuits appearing because of discrimination. The legislative requirements can be related to the female quota that is currently present in the Dutch Civil Law. This law implies that 30% of the directors from large firms must be female. Kanter (1977) mentions that these tokens undergo stress when maintaining a relationship with colleagues. Being a token has three behavioural consequences, being visibility, assimilation and polarization. Visibility means that someone is under the impression of being watched all time, which results in performance pressure. Assimilation means that tokens are forced into categories dependent on stereotypes, which implies that the tokens are not seen as who they really are. Polarization indicates that dominant group feels uncomfortable around tokens. The result of this is that the dominant group exaggerates the differences of tokens (Kanter, 1977).

The critical mass theory elaborates on the tokenism theory by adding that a numerical proportion of tokens must be significant enough to allow the voice to be heard and truly valued (Low et al., 2015). Before any significant difference in performance can be observed, a critical mass is essential (Torchia, Calabro, & Huse, 2011). Liu et al. (2014) explain the critical mass theory by stating that *‘’one is a token, two is a presence, and three is a voice’’*. This indicates that when the number of tokens grow, the influence of these tokens also increases. Torchia et al. (2011) add to this by stating that when 3 female directors are present, women are no longer seen as outsiders and can influence the content and process of discussions. Women are then being individuals with different personalities, rather than the woman’s point of view. Torchia et al. (2011) describe one or two women as a few tokens and three or more females as a consistent minority representing a critical mass. Elstad & Ladegard (2012) argue that in situations where three or more women are present, being a women is normalized. Jia and Zhang (2013) also state that three tokens of a minority form a critical mass. Schwartz-Ziv (2017) tested the critical mass theory and found that the presence of at least three female directors results in more active and effective behaviour of the female directors in meetings for at least 79% of the cases.

Liu et al. (2014) show that boards with a critical mass in terms of gender diversity have a solider impact on financial firm performance. On the other hand, Low et al. (2015) mention that tokenism can hinder women's ability to perform in a successful way, therefore indicating that gender diversity can have a positive influence, but only when a critical mass is present. Only then, board diversity has a positive influence on firm performance. Gyapong et al. (2016) state that to gain the full benefit of having gender and nationality diverse boards, a critical mass has to be present. A critical mass is seen as the presence of three tokens. The presence of two tokens should have a more pronounced effect than the presence of one token, according to Gyapong et al. (2016). Thus, tokenism and critical mass theory seem to predict the influence of board diversity on firm performance. To conclude, the presence of three or more tokens (female or foreign directors) should have more impact than the presence of two tokens, and the presence of one token should not have a significant influence. The influence of two tokens is based on token-status theory, whereas the influence of three tokens is based on the critical mass theory. However, there is no predicted relationship with age as the measure of board diversity.

2.4 Board diversity: demographic characteristics

In this section, the diversity of the board of directors is discussed with help of 3 key characteristics. These characteristics are gender diversity, age diversity and nationality diversity. Before that, the concept of board diversity is explained. Gender diversity is analysed due to look at the mandatory gender quota that is currently present in the Netherlands. Age diversity has been taken into account due to discussions about the added value of young directors that tend to offer other insights. Diversity in nationalities is an interesting factor since the increasing amount of immigrants in both the Netherlands and United Kingdom.

2.4.1 Board diversity

Different meanings of diversity exist in current literature. One valuable definition of diversity is offered by Herring (2009). It refers to policies and practices that seek to include people, who are considered in some way dissimilar to traditional members. Harrison and Klein (2007) contribute to this by stating that diversity is the distribution of differences among members of a unit with respect to a common attribute. However, this is a very general operationalisation; for this research, a narrow explanation on the unit, board of directors, is needed. Van der Walt and Ingley (2003) refer to boardroom diversity by stating that it is the mix of human capital that a board of directors comprises collectively and draws upon in undertaking its governance function. Erhardt et al. (2003) and Brammer, Millington, and Pavelin (2009) mention that there is a distinction made between two types of diversity in existing research: observable and non-observable diversity. Observable diversity consists of demographic characteristics such as gender, age, race and ethnicity, whereas non-observable diversity consists of characteristics such as knowledge, education, and values. Brammer et al. (2009) state that observable aspects of diversity receive the most attention in existing literature. In the light of this research, diversity can be defined as the

representation of gender, age and nationality differences on boards of directors. This means only observable aspects of diversity are considered. Carter et al. (2010) state that the dynamics in the boardroom are dependent on the board composition. Therefore, it is relevant to research whether diversity in boards of directors has a positive influence on business.

2.4.2 Gender diversity

As already presented in the introduction, gender is the most researched characteristic for diversity and its influence on firm's financial performance. Important to distinguish is why boards need gender diversity. What is already presented before, is that women bring characteristics and backgrounds that make them unique (Hillman et al., 2002). Next to that, insufficient competent male directors' results into the need for female directors to have enough competent directors, in combination with the capabilities of woman and their availability for director positions (Burke & Mattis, 2000). Lückerath-Rovers (2009) state that ignoring female directors can influence the financial performance of firms, because the most suitable candidate must always be chosen, regardless of the sex of a candidate.

In addition, employing female directors improves company image with stakeholder groups (Burgess & Tharenou, 2002). Moreover, women can carry different perspectives into the boardroom (Baranchuk & Dybvig, 2009) and women carry the abilities needed in times of crisis, because women are being understanding, intuitive, and creative, and therefore better crisis managers (Cook & Glass, 2014; Ryan & Haslam, 2007). Next to that, women are more risk averse, less overconfident and focus more on the prolonged perspective (Marinova et al., 2016). Carter et al. (2003) state that females monitor better because of curiosity. Garcia Lara et al. (2017) give a variety of other reasons why females are better monitors, including women being more risk averse, just as Marinova et al. (2016) stated. Besides that, women are more ethical and promote communication more. According to van Tongeren, who was a member of the Dutch House of Representatives until 2018, research from Harvard University has shown that mixed teams perform the best, and especially on the long term. Male directors are aggressive and tend to expand a lot, where female directors are more conservative. The combination between those two characteristics makes the perfect combination (EU-Voorstel: Richtlijn verbeteren gendergelijkheid, 2018). Other research from Harvard proves that value is added by female directors through contribution to business by participation on company boards (Sweetman, 1996). Dutton and Duncan (1987) add that corporate boards can gain enhanced decision quality because a board that is diverse in terms of gender bring more alternative solutions. The last argument comes from Hillman et al. (2007), who found that institutional investors select on gender diversity within boards.

From a resource dependency perspective, gender diversity has positive influences on firm's financial performance. By the inclusion of female directors, links to labour and product markets can be created. Next to that, women can enhance innovation and creativeness due to the fact that they can change dynamics, interaction and decision-making (Simpson et al., 2010). Arguments from the tokenism and critical mass theory on gender diversity are that a

member of a minority group, in this case a female director, will not have a positive influence on firm performance. Female directors are member of a minority group since the percentage of female directors is minuscule. Critical mass theory states that first a certain mass of the minority group has to be reached before any influence will be visible. Torchia et al. (2011) mention that a critical mass on a board of directors give women significant power to alter decision making. Carter et al. (2010) state that from an agency perspective, gender diversity does not have a definite relationship with financial performance, but it does also not rule out the benefits. Adams and Ferreira (2009) state that gender diversity can result into better monitoring. However, there is also a possibility of over-monitoring due to specific characteristics of females, therefore indicating a negative relationship of gender diversity and firm performance. According to Ruigrok et al. (2007), gender-diverse boards are more independent because women are not part of the old boys network.

Empirical evidence on the influence of gender diversity on firm's financial performance provide mixed results, partially due to different samples. Interesting research from the Netherlands on gender diversity comes from Lückerath-Rovers (2013). That research investigates the relationship between women directors and company performance in the Netherlands. It finds evidence for a positive causal relationship between women directors and company performance. The results are based upon a sample of 99 Dutch firms, from which only 31 have one or more female directors. The same results have been found in older research from the same author (Lückerath-Rovers, 2009). Interesting research from the United Kingdom comes from Haslam, Ryan, Kulich, Trojanowski, and Atkins (2010) who researched UK companies. Haslam et al. (2010) found a negative link between firms that employed at least one female director and Tobin's q. No evidence has been found for ROA and Return on Equity (ROE).

Sabatier (2015) found a positive relationship between ROE and Tobin's q and gender diversity within French listed companies in 2012. It does not find statistical evidence for ROA. Dezső and Ross (2012) focused on female representation in top management and its effect on firm performance. The sample consists of U.S. listed companies from the S&P 1.500 firms. A positive relationship with gender diversity has been found. Conyon and He (2017) also find a statistical relationship between gender diversity and firm's financial performance for a sample of US firms. Tobin's q is positively influenced by the percentage of women on boards, whereas ROA has been negatively influenced. Bennouri, Chtioui, Nagati, and Nekhili (2018) find a positive relationship between gender diversity and both ROE and ROA, but find a negative relationship for Tobin's q. Next to Bennouri et al. (2018), Adams and Ferreira (2009) find a negative relationship between board gender diversity and financial performance with an US sample. This negative relationship holds for firms that have strong corporate governance practices.

There is also empirical research that fails to find a relationship between board gender diversity and financial firm performance. Based on a US sample, Carter et al. (2010) could not find a statistical relationship for Tobin's q. When ROA is used as the dependent variable,

a positive and significant relationship is found. Other research with a Dutch, combined with Danish, sample comes from Marinova et al. (2016). However, no relationship has been found. Rose (2007) tried to find evidence for the influence of female board representation on firm performance for Danish listed companies for the period 1998-2001. The results imply that gender diversity does not influence firm performance.

Influence of female gender quota

In chapter 2.2.1, the Dutch civil legislation concerning board of directors has been discussed, with a discussion on female gender quota. This quota has been implemented in 2013, and with an absence of one year in 2016, returned in 2017. The quota indicates that 30% of the directors must be male and 30% of the directors must be female. In United Kingdom, no mandatory board gender quota is present. The government of the United Kingdom states that self-regulation is more effective (Gov.uk, 2018).

The Netherlands are not the first country to introduce a mandatory board gender quota. Norway implemented a law in 2008 that requires 40% of the directors to be female (Ahern & Dittmar, 2012). In 2007, Spain followed Norway by requiring also 40% of the directors to be women in 2015 (Adams & Ferreira, 2009. In 2010, Iceland and Finland also introduced a female gender quota. Bøhren and Staubo (2016) mention that France and Germany also implement gender quotas and that Australia, Belgium, Canada, Italy, and the EU Commission are in the proposal phase of setting a quota. In 2015, there were 14 countries with a mandatory gender quota, whereas there are 16 other countries that stimulate gender balance by means of codes (Adams, de Haan, Terjesen, & van Ees, 2015).

According to Catalyst (The Bottom Line: Corporate performance and women's representation on boards, 2018), Fortune 500 companies that have an equal representation of female directors have higher firm performance than firms that do not have this representation. This indicates positive effects of gender quota. On the other hand, Ferreira (2015) proposes a few downside effects that mandatory gender quotas can have. Firms that are forced to hire female directors hire directors that are not certainly the incumbent ones. Therefore, it reduces firm performance. Ferreira (2015) presents one event that can prevent a firm from downside effects and that is that good directors are in excess supply, which is not likely.

In the section before, positive and negative effects of gender quota have been presented. There also exists empirical evidence in the field of mandatory gender quota and its influence on financial performance. Adams and Ferreira (2009) use a sample of US listed firms to find evidence and found a positive relation between gender diversity and firm performance, but saw that the relation is much more complex than before thought of. They find that in firms with strong governance, gender quotas in boardrooms can decrease shareholder value. The same conclusion has been found by Bøhren and Staubo (2014), who discovered that forced gender balance is costly and results in decreased efficiency of boardrooms. An explanation that is given by Adams and Ferreira (2009) on the negative effects is that greater gender

diversity can lead to over-monitoring. Adams and Ferreira (2009) also mention that adding a woman to a board does not automatically improve firm performance. Bøhren & Staubo (2014) did also research, for Norwegian firms. After the implementation of the gender quota in Norway, firms perform weaker than before. Another insight is that gender balance can be reached by a quota only when the regulator accepts negative side effects; in Norway, half of the exposed firms changed their organisational form to avoid subjection to the quota. Ahern and Dittmar (2012) also investigated Norwegian firms and discovered that the announcement of the law had a negative effect on firm performance. Low et al. (2015) suggest that firm performance is reduced in countries with strong cultural resistance when gender quotas are mandatory.

2.4.3 Age diversity

Age is another characteristic that can describe diversity within a board of directors. It has faced little attention in existing research. According to Randøy et al. (2006), board members tend to be in their fifties due to the fact that business experience is believed to contribute to competencies of directors. Kang et al. (2007) state that the nature of company management and career progress plays a role in having mature, experienced directors in a board of directors. Also Deloitte did research on boardroom diversity and state that older directors bring knowledge and that younger directors bring a fresh perspective (Diversity in the Boardroom, 2017). Age diversity also brings negative effects. Ali, Ng, and Kulik (2014) name that members of a diverse group can have problems to interact with each other and Twenge, Campbell, Hoffman, and Lance (2010) mention that interaction between board members with the same age is easier since the chance is larger that they share the same expectations and values. These two negative effects are tackled by Pelled, Eisenhardt, and Xin (1999) who found that age similarity leads to career comparisons which can lead to rivalry among directors. Carter et al. (2010) state that agency theory does not predict the relationship between age diversity and firm performance. From the resource dependency theory, it is argued that a more diverse board results in better linkages with external environment and therefore enhances financial performance. Directors from different ages have other backgrounds, networks and skills (Mahadeo et al., 2012). However, Talavera, Yin, and Zhang (2018) mention that age diversity results in less strategic change and therefore in reduced financial performance. It can be argued that tokenism and critical mass theory can also be applied on the relationship of age diversity and firm performance, but there is no evidence to substantiate this relationship.

There is not much empirical research done in the field of age diversity. Simons, Pelled, and Smith (1999) did research on top management with a sample of manufacturing firms. It did not find interaction between debate and age diversity to influence financial performance. Mahadeo et al. (2012) investigated various diversity characteristics, including age, and the influence on financial firm performance in Mauritania. The results show a positive relationship between age diversity and ROA. In addition, there exists research that find a negative relationship. Shehata, Salhin, and El-Helaly (2017) based the findings on a sample of

U.K. SMEs and a negative association between age diversity and firm performance opened up. One explanation for that is that age diversity can lead to psychological groupings of young and old directors, which stimulates negative behaviour and that drives down performance. Murray (1989) also found a negative association between age diversity and financial firm performance. A possible explanation is that directors of a board that scores low on diversity share similar values and might be more familiar with the company and its values, on the condition that the directors are older (Murray, 1989). Ahern and Dittmar (2012) found a negative relationship for a sample of Norwegian firms. This was partially caused by the implementation of a gender quota balance for boardrooms in Norway, which forced firms to employ younger female directors to boards. The firms employ younger female directors because the older, more experienced directors who are interested in a board function were already working in other firms. Ali et al. (2014) also found a negative linear relationship, with firm performance measured by ROA. Faleye (2007) also reports a negative relationship between Tobin's q and average director age. Bunderson and Sutcliffe (2002) failed to find a significant effect of age diversity on firm's financial performance. Other research that does not find evidence for a causal relationship between age diversity and firm performance comes from Carter et al. (2010). Carter et al. (2010) looked at average age of directors and financial firm performance for a sample of roughly 500 US firms.

2.4.4 Nationality diversity

The relationship between nationality diversity and firm's financial performance has not been investigated a lot. The results of the existing studies are presented below. Estélyi and Nisar (2016) describe the positive effect that a nationality-diverse board can have: these directors are likely to be better monitors for managers. This conclusion holds because nationality-diverse directors want to identify themselves with firm owners and often have the knowledge to advise managers. Van Veen and Elbertsen (2008) found similar effects of nationality diversity. Boards should consist of a diverse group in terms of nationality to stay competitive. Resource dependency theory states that a diverse board has better access to resources and therefore can reduce environmental uncertainty and can reduce transaction costs. Boardrooms with directors from different nationalities have linkages in more countries than boards that do not, thus improving firm performance. Firms that have a more diverse board can mitigate agency conflicts and therefore improve firm performance, indicating that from an agency perspective nationality diversity has a positive influence. Tokenism and critical mass theory state that before any significant difference can be observed, a critical mass is essential (Torchia et al., 2011). Firms that have only one director from another nationality will therefore not see the influence of this director in the boardroom.

Interesting empirical evidence on the relationship between nationality diversity and firm value comes from Oxelheim and Randøy (2003). The study conducts research with a sample of Nordic and Swedish firms. It finds higher firm values for firms having outsider Anglo-American board members incorporated in their firms. However, the fact that the research only considers Anglo-American directors makes it less applicable for this purpose. Carter et

al. (2003) also focus on the relationship between board diversity and firm value. It takes the effect of the percentage of minorities (African Americans, Asians, and Hispanics) on board of directors of Fortune 1000 firms as the independent variable. It finds a positive relationship between the fraction of minorities on board and firm value. Erhardt et al. (2003) also investigate the percentage of minorities (African, Hispanic, Asian, & Native Americans) on boards and the influence on financial performance for US companies and find a positive association. Most interesting evidence in this context comes from Estélyi and Nisar (2016), who base the results on a sample of UK listed companies. A positive relationship has been found. Kaczmarek (2009) also found a positive influence of nationality diversity on firm performance. The research of Kaczmarek (2009) includes firms from UK, the Netherlands and Switzerland. Rose (2007) also investigated the relationship between foreign nationals on a board of directors and firm performance. It uses a sample of Danish firms in the period between 1998 and 2001. It does not find a significant link between nationality and firm performance, measured by Tobin's q.

2.5 Hypothesis development

In this chapter the hypotheses are presented. The influence of gender, age, and nationality diversity on firm's financial performance are predicted with the help of insights of existing theory and prior empirical research.

2.5.1 Hypothesis gender diversity

From an agency theory perspective, Adams and Ferreira (2009) state that having female directors on board results into better monitoring. This is partially because of curiosity (Carter et al. (2003). Next to that, women are more risk averse, are more ethical and promote communication more (Garcia Lara et al., 2017). The resource dependency perspective adds to the benefits of gender diversity by stating that female directors make it possible to create links to labour and product markets and that women enhance innovation and creativeness (Simpson et al., 2010). From an agency theory, Ruigrok et al. (2007) argue that gender-diverse boards are more independent because women are not part of the old boys network. Next to that, Erhardt et al. (2003) argue that women could act as a symbolic value and therefore enhancing relationships of the company with shareholders. Therefore, there are a couple of arguments that state that gender diversity results in a positive influence on financial performance.

As mentioned before, a lot of research has been done in the field of gender diversity. Luckerath-Rovers (2009) did research and found a positive relationship between gender diversity and financial performance for a sample of 99 Dutch firms. Next to that, Sabatier (2015) also found positive results for gender diversity and firm performance for a sample of French listed firms. Conyon and He (2017) also found evidence for a positive influence of gender diversity on financial performance. Dezső and Ross (2012) also found evidence for a positive relationship between gender diversity and financial performance. When combining arguments from agency theory and resource dependency theory with the empirical evidence

on gender diversity gathered in chapter 2.4.2, one can argue that having a gender-diverse board has positive influence on financial firm performance.

H1: Gender diversity has a positive influence on financial firm performance

From 2013 onwards, a mandatory gender quota is present in the Netherlands. It is interesting to know whether this quota has effects on the relationship between board diversity and financial performance. The literature presented on mandatory gender quota in chapter 2.4.2 proves negative effects. According to Ferreira (2015), firms are forced to hire female directors and therefore will also hire directors that are not obvious ones. This is the fact because firms have to hire directors on basis of gender and not on basis of quality. Therefore, it is possible that a director will be chosen who does not have suitable characteristics. There is also empirical evidence that researched the same subject. Bøhren and Staubo (2014; 2016) found that in firms with strong governance, gender quotas can decrease firm value and mention that forced gender balance is costly. The research from Ahern and Dittmar (2012) proves that the announcement and implementation of a gender quota has negative effects on firm performance. Therefore, it can be concluded that a mandatory gender quota has a negative influence on financial firm performance.

H2: The mandatory gender quota has a negative influence on financial firm performance

2.5.2 Hypothesis age diversity

According to Ali et al. (2014), members of a diverse group in terms of age can have problems to interact with each other. Twenge et al. (2010) add to this by stating that interaction between board members of the same age is easier since they share the same expectations and values. Shehata et al. (2017) state that age diversity can lead to psychological groupings of directors and argue that this stimulates negative behaviour.

There is a variety of research that have found a negative relationship between age diversity and financial performance. Old research on age diversity comes from Murray (1989), who found a negative relationship between age diversity and firm performance and argues that this relationship comes from the fact that directors of the same age share same values, which results in better communication. Shehata et al. (2017) found a negative relationship between age diversity and firm performance for a sample of U.K. SMEs. Ahern and Dittmar (2012) also found a negative relationship for a sample of Norwegian firms and Ali et al. (2014) came to the same conclusion.

Combining arguments and empirical evidence results in the fact that a negative relationship between age diversity and financial performance is expected.

H3: Age diversity within a board of directors has a negative influence on firm's financial performance

2.5.3 Hypothesis nationality diversity

Based on the theoretical frameworks that are presented in this research, a positive influence can be expected for nationality diversity on firm performance. From a resource dependency theory perspective, Hillman et al. (2007) state that the board of directors is a primary linking mechanism for connecting a firm with external resources. This is necessary for good performance. Next to that, a more diversified board reduces transaction costs associated with environmental interdependency (Williamson, 1984). It also reduces environmental uncertainty (Pfeffer, 1972). It is expected that a more diverse board in terms of nationality has better access to resources. Ruigrok et al. (2007) argue that foreign directors are effective in monitoring because they appear to be more independent and therefore enhancing financial performance. Besides resource dependency theory, agency theory argues that greater diversity enhances controlling and monitoring functions which can enable a firm to perform better (Adams & Ferreira, 2009). Greater diversity is easier to reach by employing directors with a different nationality. Outside directors put a greater emphasis on monitoring board performance. Next to that, having a nationality diverse board can work as a signal to investors and markets that the board can tackle challenges posed by complex nature of the operations (Estélyi & Nisar, 2016).

Empirical research in the field of nationality diversity offers the same conclusion in a lot of cases. According to Estélyi and Nisar (2016), Kaczmarek (2009), Erhardt et al. (2003), Oxelheim and Randøy (2003), and Carter et al. (2003), a diverse board in terms of nationality results in a higher financial performance.

Combining arguments from the resource dependency perspective and agency theory with empirical evidence, nationality diversity is assumed to be positively related with financial firm performance.

H4: Nationality diversity in the boardroom has a positive influence on the financial firm performance

3 Methodology

In this chapter the research methodology is presented. It includes an elaboration on the sample and an explanation on the variables that are used in this research.

3.1 Research methodology

According to Adams and Ferreira (2009), the outcome of the regression is heavily dependent on the statistical method applied. Therefore, it is important to choose the right method. A review of methodology will be presented hereafter.

3.1.1 Review of methodology

Many scholars try to measure the influence of board diversity on financial performance of firms. Most use multiple regression to come to results. Hair, Black, Babin, & Anderson (2010) mention that multiple regression is a statistical technique that analyses relationships between a single dependent variable and multiple independent variables. It enables to conduct analysis of cause. There are different kinds of multiple regression. Hair et al. (2010) mention a few forms of regression analysis. Probit regression is a form of multiple regression. In a probit model, the dependent variable can only take two values (Hair et al., 2010). Hair et al. (2010) also mention the possibility of a logistic regression. In logistic regression, the dependent variable is categorical and can take one of a few fixed values. Linear regression is mostly used when the dependent variable is metric and continuous. An example of linear regression is ordinary least squares regression (OLS). OLS produces simple solutions that are easily analysed, but cannot overcome problems that occur due to endogeneity.

Liu et al. (2014) and Gyapong et al. (2016) mention that two estimation methods are commonly used in board diversity literature. These two methods are the pooled ordinary least squares regression (OLS), which controls for industry effects, and the panel regression with fixed effects. To analyse which of the two is applicable in this situation, F-test can be performed (Liu et al., 2014). It compares a fixed effects model and OLS to see how much the goodness-of-fit can be improved by the fixed effects model. This F-test contains the null hypothesis that the firm fixed effect does not exist. When the panel regression is used, firm fixed effects are used to eliminate constant omitted variable bias and year fixed effects are also included to eliminate yearly fluctuations in economy (Liu et al., 2014). Gyapong et al. (2016) run the Breusch and Pagan (1980) Lagrange-Multiplier (LM) test to determine which of the two methods is suitable. It compares a random effect model with OLS. If the test rejects the null hypothesis of zero variance, pooled OLS is not applicable. Random effects regression model is suitable in such situation. Next to that, Gyapong et al. (2016) perform a Hausman test. The Hausman test looks at correlation between individual effects and regressors (Hausman, 1978). The Hausman test will be conducted when the null hypothesis of the F-test and the LM test are rejected. If both hypotheses are not rejected, the pooled OLS is suitable.

Shehata et al. (2017) mention that a fixed effects (FE) model is not able to estimate time-invariant variables. This is because a FE model does not deal with between variance for estimation (Hsiao, 2003). Shehata et al. (2017) use the fixed effects vector decomposition (FEVD) of Plümper and Troeger (2007) to estimate the fixed effects model. The FEVD method aims to decompose the vector of fixed effects in two components: the part that is explained by time-invariant and a part that is explained by time-variant variables. If the fixed effects model is appropriate according to the F-test, then the FEVD method of Plümper and Troeger (2007) must be used in combination with the FE model.

Carter et al. (2010) use two versions of the regression model, being OLS regression and a three stage least squares (3SLS) regression analysis. The OLS regression method is used with firm and time fixed effects because firm and time fixed effects can mitigate omitted variables and address unobserved changes over time. They use 3SLS regression analysis to overcome reverse causality problems. The advantage of 3SLS is that it addresses endogeneity and cross-correlation between equations. Low et al. (2015) run OLS regression models by using robust standard errors, which Carter et al. (2010) also did. Low et al. (2015) run these regression models in various ways. The first measurement includes the complete sample of firms that were originally present in the study. Next to that, the researchers also run a regression model with firms that have at least one female director. To control for the effect of the critical mass theory and token status theory, it also repeats the OLS regression with a subset of firms that have over 30% of female directors on the board.

In this section, a description of used methods in board diversity literature has been presented. There is no doubt that there exist more possible methods to come to results, but due to the high number of studies that have been performed in board diversity literature, the focus was on the few that have been used most in the literature that has been reviewed in this research.

3.1.2 Ordinary least squares regression method

In section 3.1.1., a description has been presented of possible methods that can be used in order to perform research on the influence of board diversity on financial performance. In this research, the relationship between board diversity and firm performance and the subsequent hypotheses are measured via multiple regression analysis. Each of the factors of diversity - gender, age and nationality – are tested separately and combined. The control variables are used in the combined regression. Firm size, leverage, and firm age are the control variables. The definitions of these variables are presented in chapter 3.4.3. Since this research uses metric dependent variables, a linear regression seems most appropriate to use. OLS is the most common method of linear regression. It is used by other scholars in existing literature on the influence of board diversity and firm's financial performance and it pops up that OLS is an appropriate method to analyse the influence of diversity on firm performance (Low et al., 2015; Shehata et al., 2017; Adams & Ferreira, 2009; Carter et al., 2003, Rose, 2007). Next to that, it is not possible to determine whether a random effects or fixed effects model is suitable in a situation with the student version of SPSS that is available

for this research. The advantages of OLS are that it is easy to interpret and analyse. However, there are also problems that can occur while using OLS, such as endogeneity of relationships. To overcome problems, the assumptions for OLS have to be fulfilled. These assumptions include that the error term should have a constant variance and must be normally distributed. Next to that, the model should be linear in the coefficients and the error term, and next to that the model should not suffer from multicollinearity (Hair et al., 2010). These assumptions will be checked in this research.

To avoid reverse causality problems, lagged board variables should be used. This is advised by Liu et al. (2014). In the field of gender and nationality diversity, the underlying reason for checking for reverse causality is that firm performance can affect both the motivation of a board to hire women or foreign directors, but Carter et al. (2010) propose that firms that perform well attract more diverse board members. Farrell and Hersch (2005) suggest that firms want to build a public image of inclusiveness and therefore employ minority directors. Liu et al. (2014), Carter et al. (2010) and Farrell and Hersch (2005) hypothesize that the effect of diversity in boards on the financial firm performance occurs over time. On advice of Carter et al. (2010), an one-year lag must be used because existing theory is not able to predict the time that is needed for effects to take place. Liu et al. (2014) use lagged independent variables in a panel regression with fixed effects. According to Renders, Gaeremynck, and Sercu (2010), lagging independent variables may reduce simultaneity problems. This research follows Liu et al. (2014) and Renders et al. (2010) using one-year lagged variables for gender, age, and nationality diversity.

The model to test the hypotheses is as follows and is used by others (Carter et al., 2003, Low et al., 2015, Liu et al., 2014):

$$\text{Financial performance}_{i,t} = \alpha + \beta 1\text{Board diversity}_{i,t-1} + \beta 2\text{leverage}_{i,t} + \beta 3\text{firm size}_{i,t} + \beta 4\text{firm age}_{i,t} + \beta 5\text{Ind}_{i,t} + \beta 6\text{Year} + \varepsilon_{i,t}$$

Where financial performance is measured by Tobin's q, ROA NI, and ROA EBIT and board diversity is measured with three independent variables, being gender, age and nationality diversity, each of the three lagged one-year. Ind is the industry in which the firm performs, year is the firm year, ε is the error term, and α is the intercept. The definitions of the variables are presented in table 1. When a coefficient is statistically significant and is in accordance with the direction of the hypothesis, the hypothesis is accepted. In all other situations, the hypothesis is rejected.

3.2 Tokenism and critical mass theory

To find evidence for the tokenism and critical mass theory, alternative methods have been used. These methods are applied on gender diversity and nationality diversity and are described hereafter.

Gender diversity

Three gender diversity dummies have been used to find evidence for the critical mass theory and tokenism theory. This research follows Liu et al. (2014) and Gyapong et al. (2016), who

also considered those tests to look at the influence of adding more female directors to a boardroom. The dummies are called GD1, GD2 and GD3 and its definitions are presented in chapter 3.4.2.

Nationality diversity

For nationality diversity, three dummy variables have been created. These dummies are added to look for evidence for the critical mass and tokenism theory, just as for gender diversity. Gyapong et al. (2016) found that critical mass theory is not applicable to nationality diversity, but this research wants to show the opposite. The dummies are added to measure the influence of employing more foreign board members. The three dummy variables are named ND1, ND2 and ND3 and are presented in chapter 3.4.2.

3.3 Robustness test

In this research, a few robustness tests are performed. These robustness tests are included to decrease the possibility that results are based on chance (Lu & White, 2014). Each robustness test are explained in detail below.

Return on equity (ROE)

As a robustness check, the variable Return on Equity (ROE) is added as an alternative proxy for firm performance, like other research (Marinova et al., 2016; Low et al., 2015; Gyapong et al., 2016; Sabatier, 2015, Haslam et al., 2010). ROE is an accounting-based measure of historic performance. It is measured in two ways in this research. The first is called ROE NI and is measured by dividing the net income by the total shareholder's equity (Sabatier, 2015; Haslam et al., 2010). Next to that, an alternative measure of ROE, ROE EBIT, is also added to the research, which is measured by dividing the net income before interest and tax divided by the shareholder's equity (Bennouri et al., 2018).

Stock return (RET)

Stock return has been used by various scholars in the field of corporate governance (Huang & Hillary, 2018; Harjoto, Laksmana, & Lee, 2015; Bhagat & Bolton, 2008). It is calculated as the stock price difference between the end and beginning of the year, plus dividend, divided by the stock price at the beginning of the year (Kabir & Thai Minh, 2017; Harjoto et al., 2015).

Age bands

As a robustness test for age diversity, the number of age bands present in a boardroom are used. Mahadeo et al. (2012) and Siciliano (1996) also used this method to measure age diversity. 6 age bands have been created, which are: (1) directors younger than 36, (2) directors between 36 and 45, (3) directors between 46 and 55, (4) directors between 56 and 65, (5) directors between 66 and 75, and (6) directors older than 75. If the ages of the directors of a firm fall in only one age band, the boardroom scores low on age diversity, whereas the presence of directors out of all the six age bands indicates a very diverse board.

3.4 Measurement of variables

In this chapter an elaboration on the variables that are used in the research is presented. In chapter 3.4.1, the dependent variables that are used in this research are explained. Thereafter, in 3.4.2, a description of the independent variables is offered. In 3.4.3, an overview of the control variables is given.

3.4.1 Dependent variables

The dependent variable in this research is the financial firm performance. To measure the financial firm performance, this research uses four measures to come to results. The main measures that are used are Tobin's q and ROA. Next to that, ROE NI, ROE EBIT and RET are used as robustness tests. Tobin's q is the predominant measure used in corporate governance research (Rose, 2007). Tobin's q is a market-based measure, while the other performance indicator (ROA) is an accounting-based measure. Due to the fact that Tobin's q is calculated by using the market capitalisation instead of replacement value, Tobin's q is a hybrid measure in this research.

ROA has been used extensively in existing literature (Adams & Ferreira, 2009; Carter et al., 2010; Sabatier, 2015). Two different methods to measure ROA have been used in this research. The first one considers the return on assets based on net income (ROA NI) and the second uses return on assets based on EBIT (ROA EBIT). ROA NI is calculated as dividing the net income of a firm by the total assets of a firm. It is important to notice that net income is the annual net income after deduction of depreciation, interest and taxes. Total assets is the book value of these assets at the end of the year (Adams & Ferreira, 2009). ROA EBIT is calculated by taking net income before interest and tax divided by the book value of the total assets at the end of the year (Bhagat & Bolton, 2008). ROA gives an indication of the accounting income produced for the shareholders (Carter et al., 2010). Other researchers criticise the use of an accounting-based measure for firm performance. Benston (1985) argues that accounting rates of return are distorted by a failure to consider differences in systematic risk, temporary disequilibrium effects, tax laws, and accounting conventions regarding R&D and advertisement. Such measures are easily subject to manipulation for short-term earnings activities (Gyapong et al., 2016). For that reason, Tobin's q is also used. ROA is still included in the research because it can indicate past performance. Next to that, it is better to rely on two performance measures.

The q ratio measures the market value of a company compared to the replacement value of the firm's assets (Tobin, 1978). Tobin hypothesized that the combined market value of every company on a stock market should roughly equal their replacement costs (Tobin & Brainard, 1977). Tobin's q reflects the market's expectations of future performance (Demsetz & Villalonga, 2001). Another advantage of Tobin's q is that it uses the right discount rate and diminishes various tax regulations and accounting practices (Wernerfelt & Montgomery, 1988). Because of the difficulty in finding replacement values and to determine the market value of debt, Tobin's q is calculated as dividing the market capitalisation plus the book value of debt by the book value of the total assets of a firm (Rose, 2007). Total assets is used as a

proxy for replacement costs. A q ratio between 0-1 is a low q ratio, whereas a q ratio above 1 indicates a high q ratio. A low q ratio indicates that it costs more to replace a firm's assets than what a firm is worth. In comparison to that, a high q ratio means that the costs of the assets are lower than the firm's value. A higher q ratio points towards a better financial firm performance, because the firm is worth more than what the firm paid for the assets (Hillier, Grinblatt, & Titman, 2012).

ROE NI and ROE EBIT are used as a robustness test for firm performance. ROE NI is calculated by dividing the net income by the total shareholders' equity (Sabatier, 2015). Net income is calculated as net income after deduction of depreciation, interest and taxes and total shareholders' equity includes all capital that is present for the shareholders. It includes common stock, preferred stock, but also retained earnings and reserves. ROE is an accounting-based measure of historic performance. In addition to ROE NI, ROE EBIT has also been added to the research. ROE EBIT is calculated by dividing earnings before interest and taxes divided by the total shareholders' equity (Bennouri et al., 2018).

The other robustness test is stock return (RET). RET has been used by various scholars in the field of corporate governance (Huang & Hillary, 2018; Harjoto et al., 2015; Bhagat & Bolton, 2008). It is calculated as the stock price difference between the end and beginning of the year, plus dividend, divided by the stock price at the beginning of the year (Kabir & Thai Minh, 2017; Harjoto et al., 2015).

The dependent variables – Tobin's q, ROA NI, ROA EBIT, ROE NI, ROE EBIT and RET - are winsorized on advice of Shehata et al. (2017) and Liu et al. (2014). The purpose of winsorization is to mitigate the effect of outliers that can be present in the data. Winsorization has been performed on the top and bottom 2.5% of the sample to keep 95% of the original values, and therefore not losing observations.

3.4.2 Independent variables

There are various measures used as independent variables to measure the influence on financial firm performance. These measures are gender, nationality, and age diversity. Each of them is discussed hereafter.

Gender diversity

To specify gender diversity, the percentage of female directors in each firm in each year is used, following the approach of Sabatier (2015). Next to Sabatier (2015), Dezső and Ross (2012), Marinova et al. (2016), Adams and Ferreira (2009), Campbell & Minguez-Vera (2008), Erhardt et al. (2003) and Carter et al. (2003) also use the percentage of female representatives. It is calculated as the total number of female directors divided by the total number of directors.

Liu et al. (2014) and Gyapong et al. (2016) use the same dummy variable as presented before ('1' for presence of one women director, '0' otherwise), but add two more: '1' for presence of two women directors on the board and '0' otherwise; and '1' for the presence of three or more women directors and '0' otherwise. Both also measure gender as a percentage of total

board size. The dummy variables are implemented in this research too to find evidence for the tokenism and critical mass theory.

Low et al. (2015) and Haslam et al. (2010) apply another method for gender diversity, which is a dummy variable that indicates whether a firm employs at least one female director or not. That method is followed in this research by making use of variable GD4.

To conclude, three measures are used for the independent variable gender diversity: (1) the percentage of female directors (Fem_dir), (2) the number of female directors (by using dummies), and (3) the presence of at least one female director (GD4). The number of female directors is measured with 3 dummy variables (presence of one female director (GD1)/presence of two female directors (GD2)/presence of three or more female directors (GD3).

Age diversity

A newer method to measure age diversity is that from Ali et al. (2014), which was also used by Shehata et al. (2017) and Talavera et al. (2018. It uses the coefficient of variation, calculated by dividing the standard deviation of the ages of the directors by the mean of their age. This measure is used here, because the field of interest lies in various ages, and not only in the difference between the youngest and oldest director (Age_coef). Next to that, the effect of absolute size of the boardroom can be reduced.

Mahadeo et al. (2012) use a measure for age diversity that is based on age bands present in the board. The age bands are distributed into six categories. Diversification is measured by taking the number of bands that is present within a board. That measure is used as a robustness test in this research and is presented before.

Nationality diversity

Nationality diversity is measured with the help of the methodology that Liu et al. (2014) and Gyapong et al. (2016) presented. Both use two methods. The first method is the percentage of foreign directors (For_dir), which can be calculated by dividing the number of foreign directors by the total number of board members. This method has also been applied by Talavera et al. (2018), Rose (2007), and Randøy et al. (2006). A foreign director is a non-Dutch director for the Dutch sample and a non-British director for the U.K. sample. The second method is the approach that Gyapong et al. (2016) and Liu et al. (2014) use for the critical mass theory and tokenism theory. In order to do that, three dummy variables are added: the first variable (ND1) can take the value “1” for presence of one director from a different nationality and “0” otherwise, the second variable (ND2) can be “1” indicating two directors from a different nationality and “0” otherwise, and the third variable (ND3) can also be “1” and “0”, whereas the first indicates three directors from a different nationality and the latter otherwise. The presence of at least one foreign director is also taken into account (GD4).

3.4.3 Control variables

A couple of control variables are considered in this research. Campbell and Minguez-Vera (2008), Carter et al. (2003), and Mahadeo et al. (2012) use three control variables, being board size, leverage, and firm size. These often have a significant effect on firm performance. Shehata et al. (2017) add a fourth and fifth control variable, being firm age and sector.

Following previous research (Shehata et al., 2017; Campbell & Minguez-Vera, 2008; Carter et al., 2003; Mahadeo et al., 2012), industry, firm size, firm age, and leverage are used as control variables in this research. To control for the industry of the firms, the classification that Duffhues and Kabir (2008) apply has been used. Duffhues and Kabir (2008) use four major industry groups being manufacturing (1), transportation, trade & services (2), information and communication technology (3) and financial institutions (4). Firm size is measured by the natural logarithm of the book value of the total assets at the end of the year, just as Cheng (2008) has done. The natural logarithm is used to minimize the effect of outliers. Firm age is measured by the natural logarithm of the number of years since the incorporation of the firm. It is calculated also with a natural logarithm to minimize the effect outliers. Leverage is calculated by non-current liabilities at the end of the year divided by the book value of the total assets at the end of the year, which gives a leverage coefficient. This leverage ratio presents the financial risk that a firm bears (Campbell & Minguez-Vera, 2008). Non-current liabilities consists of long-term debt and other long-term liabilities. It does not include provisions and current liabilities.

Table 1 Variable measurement

Variable	Variable name	Measure
Dependent variable		
Financial firm performance	Tobin's q	Market value of equity + book value of debt / Total assets
	ROA NI	Net income / Total assets
	ROA EBIT	Net income before interest and tax / Total assets
	ROE NI	Net income / Total shareholders' equity
	ROE EBIT	Net income before interest and tax / Total shareholders' equity
	RET	(Stock price at end of year – Stock price at start of year + dividend) / stock price at start of year
Independent variables		
Gender diversity	GD1	"1" = only one female director, "0" otherwise
	GD2	"1" = two female directors, "0" otherwise
	GD3	"1" = three or more female directors, "0" otherwise
	GD4	"1" = at least one female director, "0" otherwise
	Fem_dir	Number of female board members / total board members (percentage)
Age diversity	Age_coef	Standard deviation of age / mean age
	Age_band	Sum of age bands in which directors of a board are present
Nationality diversity	ND1	"1" = only one director from a different nationality, "0" otherwise
	ND2	"1" = two directors from a different nationality, "0" otherwise
	ND3	"1" = three or more directors from a different nationality, "0" otherwise
	ND4	"1" = at least one foreign director, "0" otherwise
	For_dir	Number of foreign directors / total board members (percentage)
Control variables		
Leverage	Leverage	Non-current liabilities / total assets
Firm size	LnAssets	Natural logarithm of book value of total assets at end of the year
Firm age	LnFirmage	Natural logarithm of the number of years since incorporation

Notes: This table contains the definitions of the variables that are used in this research. In the first column, the specific variable is mentioned. In the second column, the name of the variable in the statistical procedures have been offered. In the third column, the measurements of the variables are offered.

3.5 Data sources and sample

This chapter discusses the sampling criteria and the data sources that have been used in this research.

This research collected information from firms that have their headquarters and statutory domicile in the Netherlands and the United Kingdom and are listed on a stock exchange in the home country. Dutch firms that are listed on three different stock market indices from Euronext: Amsterdam Exchange Index (AEX), Amsterdam Midcap Index (AMX), and Amsterdam Small Cap Index (AScX). The AEX contains 25 firms that have the highest market capitalization, AMX contains the firms that are 26-50 and AScX represent the firms that are 51-75 on the list. 67 Dutch firms from these indices have been included in the sample. Next to that, Euronext Amsterdam contains some other firms located in the Netherlands that do not participate in the indices. These are roughly 35 firms. Together, there are 102 Dutch firms that can be used in this research. In total, 93 Dutch firms offered useful data. The firms can be found in Appendix A.

The firms from the United Kingdom that are used in this research are several firms that are listed on the London Stock Exchange (LSE) from the Financial Times Stock Exchange (FTSE) index. The number of firms from the United Kingdom are roughly equal to the Dutch sample; 100 firms have been taken. These firms are the largest 100 firms in terms of market capitalization that have their statutory domicile in the United Kingdom and are listed on the FTSE. The list of firms from the United Kingdom can be found in Appendix B.

A few companies have been excluded from the sample due to their specific accounting and special nature of these firms. According to Marinova et al. (2016), such firms pose difficulties for the calculation of the performance measures. Firms that have been excluded are football clubs and investment funds.

What can be derived from multiple articles, such as Low et al. (2015), Campbell and Minguez-Vera (2008), Liu et al. (2014), and Gyapong et al. (2016), is that data must be collected from multiple years, to overcome the problem that data is not generalizable for other periods. Thus, data is collected cross-sectional from four years. This study considers data from two different couples of years, namely 2009 and 2010 and 2016 and 2017. There is a period in between the sample years to look for possible differences over time.

Data is collected from annual reports to find information on corporate governance aspects such as board of directors and board models. Financial data are derived from ORBIS, which is an online database containing company data.

4 Results

In this chapter, the descriptive statistics of the board members' age, nationality and gender are presented, in addition to the collected data on the dependent and control variables. After that, the correlation analysis is presented. This is followed by the results from the regression analyses and the robustness tests. Next to that, a comparison between the Dutch and English firms is presented.

4.1 Descriptive statistics

The descriptive statistics are presented in this section to give a general overview of the data that is collected. Table 2 reports the descriptive statistics of the Dutch and British firms. The table includes the dependent, independent, and control variables. The values that are described hereafter are the means for the years 2009, 2010, 2016 and 2017. If a comparison is made between the years, it will be mentioned explicitly.

Tobin's q, ROA NI, ROA EBIT, ROE NI, ROE EBIT and RET are the dependent variables in this research that are used as a proxy for firm's financial performance. Tobin's q is the first variable that receives attention. The mean value for Dutch firms is 1.577 (SD = 0.747). This is quite different than the Tobin's q found by Marinova et al. (2016), who found a value of 2.139 for the sample year 2007. Tobin's q is slightly higher for the British sample, being 1.584 (SD = 0.724). Dutch and British firms do not significantly differ in Tobin's q (p-value = 0.907). Both countries score higher than 1 in terms of Tobin's q. This indicates that the market value of the equity and the book value of debt of the firm is larger than the book value of the assets, indicating that the firms are worth more than the book value of the assets. Stock return (RET) has been used as a robustness test for financial performance. The mean RET in the Netherlands is 18.4%, whereas the mean in the United Kingdom is 19.9%. Next to stock return and Tobin's q, ROA NI, ROA EBIT, ROE NI and ROE EBIT have been used. The mean of ROA NI is 2.497% (SD = 11.810) for Dutch firms and 7.762% (SD = 9.103) for British firms. The mean for British companies is higher than the ROA found by Shehata et al. (2017) for a sample of U.K. SMEs, which was 5.76%. The difference is possibly due to the difference between listed firms and SMEs. ROA NI is significantly higher within the British sample (p-value = < 0.001). Within the countries, there are large differences in ROA NI, varying from -55.29% to 60.96% in the Netherlands to -28.16% to 45.08% in the United Kingdom. This indicates that there are large differences between the companies. The other measure for ROA, ROA EBIT, presents a mean of 3.4% for Dutch firms (SD = 9.814) and 7.0 (SD = 6.522) for British firms. This indicates a lower ROA EBIT than ROA NI in United Kingdom, and a higher ROA EBIT than ROA NI in the Netherlands. These differences can for example occur due to differences in tax rates. ROE NI, which is used for the robustness tests, has a mean value of 3.7% in Dutch firms. This mean value is quite different than the results found by Lückerath-Rovers (2013), who found a ROE NI of 14.9% for Dutch listed firms in the time period 2005-2007. Therefore, the average ROE NI has been decreasing since then. The ROE NI of British firms is 14.55% and is therefore higher than the Dutch firms. This difference is significant at the 1% level. ROE EBIT is also researched. The mean for Dutch firms is 5.2%,

whereas the mean ROE EBIT for British firms is 23.3%. The overall results indicate that the British firms perform better in terms of the accounting-based measures.

Each independent variable (gender, age, and nationality diversity) has also received attention. 11.3% of the directors in the Netherlands is female. This is interesting, since the Dutch government forces large firms to employ 30% female directors. This percentage is higher than the percentage of female directors that has been found by Lückerath-Rovers (2013), who found that 4% of the directors were female in 2005-2007. Marinova et al. (2006) observed that in 2007, 3.8% of the directors was female. Therefore, the percentage of female directors has risen in the Netherlands. There are a variety of firms which employ no female directors, including Amsterdam Commodities N.V. in 2009 and Tie Kinetix in all years. The Dutch firm with the most female directors (50%) is Vastned Retail N.V. In British firms, the share of female directors is higher; 17.7% of the directors is female. This percentage has changed from 10.2% in 2009-2010 to 24.1% in 2016-2017 (see Appendix C, panel B). This rise is in line with the results found by Haslam et al. (2010), who observed an increase from 6.5% in 2001 to 10.5% in 2005 for a sample of 100 UK firms. Next to that, it is interesting to see that the percentage of female directors in U.K. SMEs is like to the percentage in listed firms, because Shehata et al. (2017) found that 17% of the board members in U.K. SMEs was female for a period between 2005-2013. The minimum percentage of female directors is 0%, for example within Pendragon plc and TI Fluid Systems plc, and a maximum of 50% (Asos Plc). The difference between these samples is significant (p-value = < 0.001). As can be concluded, no boardroom consists just of females. Next to that, there is no firm that consists of a majority of female directors. The time periods make a significant difference in both countries. Appendix C presents that the percentage of female directors has risen from 6.6% in 2009-2010 to 14.9% in 2016-2017 in the Netherlands, whereas in the United Kingdom the rise is from 10.2% to 24.1%. Surprisingly, the percentage of female directors is higher in the country where no mandatory gender quota is present (United Kingdom). This can be due to the fact that the mandatory gender quota is not present for a long time. Another reason for the high percentage is that the percentage of working females is lower in the Netherlands, compared to the United Kingdom.

The descriptive statistics of the measures for gender diversity for the tokenism and critical mass theory are also presented in table 2. 31% of the Dutch firms consist of a board with only one female director, whereas 25% of the British boards consist of just one female (both GD1). 16% of the boards in the Netherlands consist of two female directors, where this is higher in British firms (28%) (GD2). There is a large gap in firms that employ three or more female directors (GD3) between the Netherlands and the United Kingdom (12% versus 30%). 83% of the British boardrooms consist of a female director, whereas this is only 59% within Dutch boardrooms (GD4). Within the time periods, the presence of at least one female director has seen a major increase (see Appendix C). In 2016-2017, 71% of the Dutch firms consisted of at least one female director, whereas this was only 44% in 2009-2010. In the

United Kingdom an increase has occurred from 65% to 98%. These results indicate that firms employ females more and more in their boardrooms.

Age coefficient is the used measure for age diversity and is calculated by dividing the mean directors' age in a boardroom by the standard deviation of the age of the directors in a board (Age_coef). The age coefficient is significantly higher (p-value = < 0.001) for Dutch firms (0.130) than for British firms (0.118). The firms with the lowest diversity in age are C/TAC N.V. (0.039) and Pendragon plc (0.044), in contrast to AND International Publishers N.V. (0.297) and Sky plc (0.214). The age coefficient for listed UK firms is significantly lower than in smaller companies, because a coefficient of 0.15 has been found in the United Kingdom by Shehata et al. (2017). The mean boardroom age is roughly 57 in both countries. The Dutch firm with the highest board mean age is Roodmicrotec (66 years) and Carnival plc consists of the oldest British directors (64.5 years), whereas the boardrooms with the youngest mean age are Refresco Group (45 years) and Asos plc (45.2 years).

As a robustness test for age diversity, age bands have been used, just as Mahadeo et al. (2012) have done. The mean age band is roughly the same in both countries, with 3.19 in the Netherlands and 3.18 in the United Kingdom. There is no firm that consists of directors from each age band. There are 10 firm years that have directors from 5 different bands in their boardroom. In contradiction to that, there are also firms that employ directors from only one age band. An example of such a firm is Koninklijke Brill N.V. in 2010.

Nationality diversity is measured by the percentage of foreign directors (For_dir). 25.7% of the directors in Dutch firms are not born in that country, whereas this is 27.1% for British firms, but this difference is not significant. The maximum percentage of foreign directors is 100% in the Netherlands. Advanced Metallurgical Group N.V. (in 2009 and 2010) and Curetis N.V. (2016 and 2017) consisted of only foreign directors. The British firm with the most foreign directors is BHP Billiton Plc in 2009 and 2010 with roughly 93% of the directors as foreigners. The measures for tokenism and critical mass theory test have also been presented. Within the sample of Dutch boardrooms, 15% employ one foreign director (ND1), whereas 6% of the firms consist of two foreign directors (ND2) and 39% of the boardrooms in the sample consist of three or more foreign directors (ND3). 60% employ at least one foreign director (ND4). Within the British sample, 20% of the boardrooms consist of one foreign director, 14% employ two foreign directors, and 44% employ three or more foreign directors. 78% of the boardrooms consist of at least one foreign director. No interesting differences are observed between the time periods 2009-2010 and 2016-2017.

Firm size, firm age, and leverage are the control variables used in this research. Firm size is measured by the book value of the assets that a firm possesses (T_Assets). The mean value of the assets that the sample firms own is € 22,035 million (Dutch firms) and € 62,182 million (British firms), which is shown in table 2. The largest firm consists of a book value of the assets of € 882,119 million (Dutch sample, ING Groep N.V.) and € 2,253,094 million (British sample, HSBC Holdings plc). Within the Dutch sample, no major differences occurred within

the time periods. In the British sample, a major increase has appeared (see Appendix C). The mean was € 30,842 million in 2009-2010 and € 83,184 million in 2016-2017. The natural logarithm of total assets present a value of 13.66 in the Netherlands. This is slightly higher than the results found by Marinova et al. (2016) for Dutch firms (12.148). The natural log for United Kingdom is 15.91, and thus higher than the Dutch. Firm age is the second control variable that is used (Firmage). Table 2 shows that Dutch firms are on average 62.4 years old, whereas the British firms are 56.890 years old. The oldest Dutch firm, Brill N.V., is 334 years, whereas the oldest British firms is 327 years old (Barclays plc). No major increases have occurred in the subsequent time periods 2016-2017 and 2009-2010 (Appendix C). The natural logarithm of firm age are 3.59 for Dutch firms and 3.54 for British firms. The age of the firms is quite likely to what Shehata et al. (2017) found for a sample of UK SMEs (3.13). Reported in table 2, the Dutch sample firms are leveraged with non-current liabilities that sum up to 31.9% of the total assets, whereas this is 35.1% of the total assets in British firms (Leverage). The range in the Netherlands is from roughly 0% (Curetis N.V.) to 91.4% (MKB Nedsense N.V.). In the United Kingdom, the range is smaller; from 0% (Schroders plc) to 80.7% (Severn Trent plc). The difference in means between United Kingdom and the Netherlands is significant at the 5% level (p-value = < 0.001). The level of borrowed money has not changed a lot within the time periods for both countries (Appendix C).

Table 2 Summary of descriptive statistics for Dutch and British firms

	Dutch firms						British firms						Difference in means
	Mean	Median	SD	Min	Max	N	Mean	Median	SD	Min	Max	N	P-value
Variables													
Tobin's q	1.577	1.402	0.747	0.660	4.620	271	1.584	1.366	0.724	0.700	4.100	312	0.907
ROA NI (%)	2.497	3.856	11.810	-55.290	60.960	318	7.762	5.596	9.103	-28.160	45.081	365	0.000***
ROA EBIT (%)	3.407	5.020	9.814	-27.470	33.600	305	7.013	5.860	6.522	-10.950	24.970	351	0.000***
ROE NI (%)	3.651	9.611	33.113	-143.205	148.070	317	14.546	11.252	20.546	-80.420	108.700	359	0.000***
ROE EBIT (%)	5.202	11.880	35.947	-158.270	165.180	303	23.284	18.930	28.228	-95.160	142.390	341	0.000***
RET	0.184	0.146	0.407	-0.830	1.420	278	0.199	0.095	0.482	-0.073	2.530	323	0.690
Fem_dir	0.113	0.111	0.114	0.000	0.500	319	0.177	0.182	0.115	0.000	0.500	338	0.000***
GD1	0.310	0.000	0.463	0.000	1.000	319	0.250	0.000	0.435	0.000	1.000	338	0.094*
GD2	0.160	0.000	0.367	0.000	1.000	319	0.280	0.000	0.447	0.000	1.000	338	0.000***
GD3	0.120	0.000	0.324	0.000	1.000	319	0.300	0.000	0.461	0.000	1.000	338	0.000***
GD4	0.590	1.000	0.493	0.000	1.000	319	0.830	1.000	0.375	0.000	1.000	338	0.000***
Mean age	57.221	57.454	4.113	45.000	66.000	317	57.037	57.232	3.263	45.167	64.500	338	0.526
Age_coef	0.130	0.126	0.041	0.039	0.297	316	0.118	0.113	0.027	0.044	0.214	338	0.000***
Age_band	3.185	3.000	0.709	1.000	5.000	314	3.183	3.000	0.659	2.000	5.000	345	0.969
For_dir	0.257	0.167	0.271	0.000	1.000	319	0.271	0.222	0.239	0.000	0.929	338	0.487
ND1	0.150	0.000	0.358	0.000	1.000	319	0.200	0.000	0.399	0.000	1.000	338	0.107
ND2	0.060	0.000	0.237	0.000	1.000	319	0.140	0.000	0.350	0.000	1.000	338	0.000***
ND3	0.390	0.000	0.488	0.000	1.000	319	0.440	0.000	0.497	0.000	1.000	338	0.201
ND4	0.600	1.000	0.491	0.000	1.000	319	0.780	1.000	0.416	0.000	1.000	338	0.000***
T_Assets	22,035	875	97,651	0.619	882,119	321	62,182	5,529	216,013	93,031	2,253,094	360	0.002***
LnAssets	13.660	13.682	2.701	6.430	20.600	321	15.910	15.526	1.767	11.440	21.540	360	0.000***
Firmage	62.400	38.000	66.944	2.000	334.000	355	56.890	33.000	59.865	1.000	327.000	380	0.237
LnFirmage	3.590	3.638	1.146	0.690	5.810	355	3.538	3.497	1.069	0.690	5.790	380	0.524
Leverage	0.216	0.188	0.182	0.000	0.914	323	0.291	0.297	0.189	0.000	0.807	366	0.000***

Notes: This table contains a summary of the descriptive statistics of the Dutch and British firms that are used in this research. The statistics contain information from sample years 2009, 2010, 2016, and 2017. For each variable, the mean, median, standard deviation, minimum, maximum, and number of observations are presented, split by country. In the last column, the results of the t-test between the means of the Dutch and British firms are presented. The definitions of the variables can be found in table 1. In this table, total assets is presented in millions of euros for presentation purposes.

4.2 Correlation analysis

In table 3, the correlations among the variables that are used in this research are presented. Panel A represents the correlations from the Dutch sample, where panel B represents the British sample. Brooks (2008) states that the variables must not be highly correlated with each other to be useful for OLS regressions. Therefore, the correlation table has been produced. Studenmund (2014) reports that a variable is perfectly correlated with another variable if the coefficient is -1 or +1. The closer the value is to 1, the stronger the correlation is between two variables.

First, the Dutch sample will be analysed (panel A). A few correlations appear to be quite high. ROE NI and ROA NI are highly correlated (r = 0.870). Next to that, ROA EBIT is correlated with ROA NI, ROE NI, and ROE EBIT. ROE EBIT, ROE NI, and ROA NI are also correlated. This may result in regression coefficients that are quite similar. The percentage of female directors is highly associated with the presence of three or more female directors (GD3) and the presence of at least one female director (GD4). GD4 is also associated with the presence of one female director (GD1). This makes sense, since each variable measures the presence of female directors. The percentage of foreign directors (For_dir) is associated with the presence of three or more foreign directors (ND3, r = 0.863) and the presence of at least one foreign director (ND4, r = 0.775). These associations also make sense since they measure each nationality diversity. The logarithm of total assets is associated with the presence of three or more foreign directors (r = 0.452). The presence of three or more foreign directors is also associated with the presence of at least one foreign director (ND4). None of the correlations indicate that there can be multicollinearity problems.

Panel B presents the correlation matrix for the British sample. The highest correlation coefficients will be analysed here. First, ROA EBIT is correlated with Tobin's q, ROA NI, ROE NI, and ROE EBIT. These are dependent variables that are not used simultaneously in the regression analysis. Next to that, the percentage of female directors (Fem_dir) is highly associated with both the presence of at least three female directors (GD3) and the presence of at least one female director (GD4). These variables all take into account the number of female directors and are not used in the same regression analysis. The presence of three or more female directors is also associated with the natural logarithm of total assets (r = 0.457). There are other high correlations that stem from the nationality diversity measures. The percentage of foreign directors (For_dir) is highly associated with the presence of three or more foreign directors (ND3), the presence of at least one foreign director (ND4) and with the log of total assets (r = 0.508). ND3 is also correlated with ND1, the natural log of assets and the presence of at least one foreign director (ND4). None of the correlations indicate that there will be severe problems due to multicollinearity.

Table 3 Correlation matrix

Panel A: Dutch firms

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Tobin's q	1.000																				
2	ROA NI	-0.152*	1.000																			
3	ROA EBIT	-0.019	**0.933****	1.000																		
4	ROE NI	-0.163**	**0.870****	**0.826****	1.000																	
5	ROE EBIT	-0.148*	**0.834****	**0.839****	**0.976****	1.000																
6	RET	0.037	-0.009	0.010	-0.028	0.020	1.000															
7	Fem_dir	0.034	0.171**	0.126*	0.229**	0.215**	-0.179*	1.000														
8	GD1	0.081	0.032	0.020	0.015	-0.010	-0.067	0.155**	1.000													
9	GD2	-0.064	0.007	-0.015	0.058	0.057	-0.040	0.373**	-0.293**	1.000												
10	GD3	0.046	0.152**	0.121*	0.183**	0.182**	-0.085	**0.608****	-0.247**	-0.160**	1.000											
11	GD4	0.064	0.138*	0.088	0.180**	0.154**	-0.152*	**0.825****	**0.560****	0.364**	0.307**	1.000										
12	Age_coef	0.028	-0.054	-0.049	-0.048	-0.073	-0.030	-0.035	-0.052	0.014	-0.038	-0.063	1.000									
13	Age_band	-0.041	0.007	-0.028	0.030	-0.007	0.060	0.133*	0.038	0.115*	0.095	0.185**	**0.519****	1.000								
14	For_dir	0.146*	-0.132*	-0.153**	-0.124**	-0.138*	0.034	0.180**	-0.092	0.085	0.283**	0.162**	-0.105	0.084	1.000							
15	ND1	-0.096	-0.013	-0.085	0.013	-0.016	-0.007	0.024	0.078	0.032	-0.128*	0.013	-0.048	-0.074	-0.135*	1.000						
16	ND2	0.146*	-0.031	0.000	-0.009	-0.006	-0.073	-0.033	0.060	-0.001	-0.093	-0.005	-0.064	-0.068	0.030	-0.106	1.000					
17	ND3	0.132*	-0.071	-0.073	-0.075	-0.075	0.052	0.221*	-0.118*	0.179**	0.322**	0.234**	-0.068	0.147**	**0.863****	-0.336**	-0.201**	1.000				
18	ND4	0.130*	-0.099	-0.137*	-0.072	-0.091	0.012	0.221*	-0.031	0.200**	0.183*	0.240**	-0.124*	0.059	**0.775****	0.327**	0.206**	**0.653****	1.000			
19	LnAssets	-0.107	0.121*	0.163**	0.248**	0.304**	0.063	0.369**	-0.172**	0.347**	0.380**	0.355**	-0.117*	0.231**	0.339**	-0.115*	-0.006	**0.452****	0.362**	1.000		
20	Lnfirmage	-0.065	0.094	0.092	0.088	0.112	-0.019	0.261**	0.019	0.179**	0.097	0.216**	-0.122*	-0.048	-0.126*	0.094	-0.036	-0.080	-0.035	0.142*	1.000	
21	Leverage	-0.088	-0.156*	-0.126*	-0.120*	-0.119*	-0.038	-0.022	0.006	-0.022	0.027	0.007	0.089	0.126*	0.291**	-0.048	0.079	0.259**	0.260**	0.138*	-0.265**	1.000

Panel B: British firms

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Tobin's q	1.000																				
2	ROA NI	0.355**	1.000																			
3	ROA EBIT	**0.596****	**0.713****	1.000																		
4	ROE NI	0.382**	0.358**	**0.619****	1.000																	
5	ROE EBIT	**0.445****	**0.602****	**0.697****	**0.877****	1.000																
6	RET	0.119*	0.016	0.107	-0.016	0.035	1.000															
7	Fem_dir	0.189**	-0.126*	-0.065	0.078*	-0.037	-0.213**	1.000														
8	GD1	-0.099	0.113*	0.018	-0.028	0.046	-0.024	-0.310**	1.000													
9	GD2	0.024	-0.062	-0.005	0.023	-0.069	-0.067	0.176**	-0.358**	1.000												
10	GD3	0.114	-0.082	-0.063	0.028	-0.016	-0.112	**0.706****	-0.382**	-0.399**	1.000											
11	GD4	0.047	-0.044	-0.061	0.031	-0.049	-0.249**	**0.701****	0.268**	0.281**	0.299**	1.000										
12	Age_coef	-0.097	0.065	-0.055	-0.037	-0.008	-0.037	-0.132*	0.090	-0.006	-0.123*	-0.051	1.000									
13	Age_band	0.011	0.103	0.010	-0.001	0.022	-0.070	-0.063	-0.021	0.018	0.011	0.011	**0.629****	1.000								
14	For_dir	0.010	-0.024	0.055	-0.071	-0.042	0.064	0.129*	-0.159*	-0.056	0.281**	0.090	-0.157	0.013	1.000							
15	ND1	0.044	0.065	0.034	0.063	0.035	0.013	-0.027	0.151**	-0.001	-0.109*	0.041	0.085	0.024	-0.325*	1.000						
16	ND2	0.093	-0.074	-0.139*	-0.035	-0.100	-0.049	0.007	-0.086	0.012	-0.011	-0.098	-0.071	0.001	-0.097	-0.205**	1.000					
17	ND3	-0.009	-0.025	0.015	-0.077	-0.030	-0.003	0.134*	-0.161**	-0.021	0.288**	0.138*	-0.065	0.069	**0.841****	**-0.440****	-0.355**	1.000				
18	ND4	0.113	-0.029	-0.060	-0.060	-0.082	-0.033	0.140**	-0.118*	-0.016	0.228*	0.121*	-0.054	0.106*	**0.605****	0.270**	0.218**	**0.467****	1.000			
19	LnAssets	-0.221**	-0.170**	-0.212**	-0.103	-0.122*	-0.139*	0.265**	-0.200**	0.062	**0.457****	0.261**	-0.085	0.101	**0.508****	-0.227**	-0.106	**0.541****	0.340**	1.000		
20	Lnfirmage	0.056	-0.010	0.038	-0.011	-0.027	-0.055	0.116**	-0.008	0.054	0.113*	0.193**	-0.138*	0.064	0.049	0.028	0.046	0.109*	0.197**	0.222**	1.000	
21	Leverage	-0.035	-0.024	0.003	0.114*	0.146**	0.059	-0.032	0.022	0.048	-0.057	0.014	-0.011	-0.046	0.134*	-0.049	0.083	0.083	0.122*	-0.017	-0.008	1.000

Notes: The table presents the results of the correlations between the variables for both countries, in which the correlation coefficients above 0.4 are marked in bold. Panel A includes the correlations of the Dutch sample and panel B contains the British sample. The definitions of the variables can be found in table 1.

4.3 Regression analysis

This chapter contains the empirical results of the research. The main regression analysis table is presented in this section, which is table 4. This table consists of three panels. Panel A contains the influence of board diversity on firm's financial performance with Tobin's q as a proxy, panel B with ROA NI as a proxy for the dependent variable and panel C with ROA EBIT as the proxy. In the panels, the OLS regression results for the relationship between board diversity and respectively Tobin's q, ROA NI, and ROA EBIT can be found. Each diversity aspect, being gender, age, and nationality, has been analysed separately (models 1-3 and 5-7) and together (models 4 and 8). The expected relationship is presented in a separate column. Noticeable is that each model has been analysed with industry dummies to eliminate the effect of the industry in which a firm operates. Next to that, year dummies have been added to eliminate the year effects. Kennedy (1992) states that a variance inflation factor (VIF) higher than 10 indicates harmful collinearity. No variable has offered a multicollinearity problem, because no high VIF has been found after the extensive analysis that has been done.

4.3.1 Gender diversity

The first analysed diversity aspect is gender diversity. It is measured by calculating the percentage of female directors that are present in a boardroom. In chapter 2.5.1, the hypothesis (H1) for the influence of gender diversity on firm's financial performance has been presented. The relationship between gender diversity and firm performance is expected to be positive. This relationship is likely to be negative after the introduction of the mandatory gender quota in the Netherlands, thus in 2016-2017 (H2). Both hypotheses are tested in this section.

First, the Dutch sample will be analysed. The main regression models are presented in table 4, with panel A including Tobin's q, panel B including ROA NI, and panel C including ROA EBIT. For Dutch firms, models 1 and 4 contain the relationships between gender diversity in both panels. For Tobin's q, the overall results suggest that gender diversity is not significantly related to firm's financial performance. It is not related in both the separate (column 1) and the full model (column 4). Therefore, gender diversity has no influence on firm performance, measured by Tobin's q. This is in contradiction with the presented hypothesis, because the influence of gender diversity was expected to be strongly positive in the full sample. The results for ROA NI (panel B) are different, because the overall results suggest that female directors have a positive and significant impact on firm's financial performance in the full model. In the separate model, no significant relationship has been observed. But in the full model (column 4), a 1% increase in the percentage of female directors results in a rise of ROA NI of 12.1%. This provides evidence for hypothesis 1, which expected a positive relationship between gender diversity and firm's financial performance. The results for ROA EBIT are different than ROA NI and are quite likely to the results found for Tobin's q. No influence of gender diversity on ROA EBIT has been observed in both models, therefore both contradicting the hypothesis.

The main regression results for the British sample are presented in models 5 and 8 from panel A, B, and C. Panel A includes the results for Tobin's q. The results provide evidence for

hypothesis 1, because the relationship between gender diversity and Tobin's q is positive in both models. A 1% increase in the percentage of female directors results in an increase of 1.9% in Tobin's q in the separate model and 1.8% in the full model. These results are significant at the 1% level. The regression results for ROA NI are comparable. In the full model, a significant relationship has been observed between gender diversity and financial performance. This relationship holds at the 10% level. The results for ROA EBIT are quite different. No significant relationship between gender diversity and ROA EBIT has been found in both models. Therefore, the hypothesis can be accepted for both Tobin's q and ROA NI, but rejected for ROA EBIT.

In general, it can be concluded that the empirical evidence provides mixed results. For Dutch firms, insignificant results are found for Tobin's q. Rose (2007) also did not find a significant relationship between gender diversity and Tobin's q and stated that it may be the result of a process of socialisation, in which board members that are not conventional adopt the behaviour of the conventional board members and therefore the gains from female directors are not realised at all. If ROA NI is used, a significant, positive relationship has been found in the full model. These results are also found by Bennouri et al. (2018) and Carter et al. (2010). Within British firms, gender diversity has a positive influence on firm's performance, measured by Tobin's q and ROA NI. This is consistent with the results found by Sabatier (2015), Conyon and He (2017), and Dezső and Ross (2012). For ROA EBIT, no significant relationship has been found. This is in line with the results found by Sabatier (2015) and Haslam et al. (2010), who could not find a statistical relationship for ROA.

Appendix D presents the results for hypothesis 2, which argues that the implementation of the mandatory gender quota has a negative impact on financial performance in the Netherlands. This implies that the coefficients for the years 2016-2017 have to turn in a negative direction compared to the coefficients for the years 2009-2010. The results of the can be found in models 1-12, from which models 1 and 2 include Tobin's q, 3 and 4 ROA NI, and models 5 and 6 ROA EBIT. Also, the robustness tests of the dependent variable, being ROE NI, ROE EBIT, and RET, have been presented in this table. These can be found in models 7 and 8 (ROE NI), 9 and 10 (ROE EBIT), and 11 and 12 (RET). The relationship between gender diversity and Tobin's q and RET is not significant in both time periods. The results for ROA NI, ROA EBIT, ROE NI, and ROE EBIT present a significant relationship between gender diversity and firm performance in 2016-2017, therefore contradicting hypothesis 2. The results for ROA NI, ROA EBIT, ROE NI, and ROE EBIT are in contradiction with the results found by Adams and Ferreira (2009), Bøhren and Staubo (2014) and Ahern and Dittmar (2012), who stated that the presence of a mandatory gender quota negatively impacts firm performance. To conclude, hypothesis 2 can be rejected since none of the regression results present a negative relationship after the implementation of the mandatory gender quota.

4.3.2 Age diversity

In chapter 2.5.2, the hypothesis (H2) for age diversity has been presented. The effect of age diversity on firm's financial performance was expected to be negative. Again, Tobin's q, ROA NI, and ROA EBIT are used as the measures of firm performance.

In panel A, B and C of table 4, the results for the relationship between age diversity and financial performance is presented. For Dutch firms, the models 2 and 4 from all three panels present the main regression results. The results for Tobin's q (panel A) present no significant relationship in both the separate and full model. The same results have been found for ROA NI in panel B and ROA EBIT in panel C. All coefficients are insignificant. Therefore, no evidence has been found for a significant relationship between age diversity and financial performance in the Netherlands.

For United Kingdom, models 6 and 8 of panel A, B and C present the results of the regression analysis. In contradiction to the Dutch sample, a significant relationship has been found for age diversity and Tobin's q in both models (table 4). The coefficient is negative in each model, therefore indicating that age diversity has a negative influence on financial performance. The results for firm performance measured by ROA NI and ROA EBIT present only insignificant results. Thus, no significant relationship between age diversity and financial performance, measured by ROA, has been found in the United Kingdom.

To conclude, the results provide only slight evidence for hypothesis 3. No significant relationship has been found for the Dutch sample for ROA NI, ROA EBIT and Tobin's q. This is consistent with the results found by Carter et al. (2010), who used ROA as a proxy for financial performance and found no statistical relationship. It contradicts the results found by Mahadeo et al. (2012), because that research found a significant, positive relationship between age diversity and ROA. For the British sample, a negative relationship has been found when Tobin's q is used as the proxy for financial performance. This is in line with the results found by Shehata et al. (2017), Ahern and Dittmar (2012), and Ali et al. (2014). It also results in the fact that hypothesis 3 can be accepted. For ROA NI and ROA EBIT, no significant relationship has been observed, therefore rejecting hypothesis 3 for those measures.

4.3.3 Nationality diversity

The third board diversity measure is nationality diversity, which is measured by the percentage of foreign board members that are involved in a boardroom. In chapter 2.5.3 has been hypothesized that nationality diversity has a positive influence on firm's financial performance (H4). In panel A, B and C of table 4, the results for the relationship between nationality diversity and respectively Tobin's q, ROA NI and ROA EBIT are presented.

Models 3 and 4 of both panels present the results of nationality diversity for the Dutch sample. The results for Tobin's q (panel A) are interesting. It seems that nationality diversity has a positive influence on firms located in the Netherlands. In the separate model (column 3), an 1% increase in the percentage of foreign directors results in an increase of roughly 0.6% in Tobin's q. The same increase has been found in the full model (column 4). The results for ROA NI (panel B) present a significant, negative relationship in both the separate model (column 3) and the full model (column 4). All relationships are significant at the 1% level. For ROA EBIT, the same results have been found as for ROA NI. In both models, the relationship is significant and negative. To conclude, nationality diversity is only having positive influence on the financial performance of Dutch firms when the hybrid measure (Tobin's q) is used, and presents a negative influence when an accounting-based measure is used, being ROA NI and ROA EBIT.

The results for the United Kingdom are presented in columns 7 and 8 of both panels. When firm performance is measured by Tobin's q (panel A), a significant relationship has been found in both models. An increase of 1% in the percentage of foreign directors results in an increase of roughly 0.6% in Tobin's q in both models. These relationships are significant at the 1% level. The results for ROA NI are different. No significant relationship has been found in both models. For ROA EBIT, a positive, significant relationship has been found in both models, just as with Tobin's q.

The last hypothesis (H4) expected a positive effect of nationality diversity on firm's financial performance. The empirical results show that this hypothesis holds for both Dutch and British firms when Tobin's q is used as the measure for firm's financial performance. Next to that, ROA EBIT is also positively related to nationality diversity within the firms from the United Kingdom. The positive relationships are consistent with the results found by Oxelheim and Randøy (2003), Kaczmarek (2009), and Estélyi and Nisar (2016). The results indicate that an increase in the percentage of foreign directors results in a decrease in ROA NI and ROA EBIT in the Netherlands, which contradicts hypothesis 4. No relationship has been found for the relationship between nationality diversity and ROA NI in the United Kingdom. This again contradicts hypothesis 4.

4.3.4 Control variables

The control variables that are considered are leverage, firm size, and firm age. In the Dutch sample, leverage has a significant, negative influence on financial performance for Tobin's q, ROA NI, and ROA EBIT in almost all models, except for model 1 and 2 of panel A (Tobin's q). Firm size (LnAssets) is negatively influencing Tobin's q in models 3 and 4. In contradiction to that, firm size increases ROA NI and ROA EBIT in all models. Firm age (Lnfirmage) is not related to Tobin's q, ROA NI and ROA EBIT within the Dutch sample. In the British sample, leverage is not significant in all models. Firm size (LnAssets) has a negative influence in all models of Tobin's q, ROA NI and ROA EBIT, except for model 5 of ROA EBIT. Firm age (Lnfirmage) has no influence in all models for the sample of United Kingdom.

Table 4 Ordinary least squares regression

Panel A: Tobin's q

	Tobin's q (Market value / Total asset book value)							
		The Netherlands				United Kingdom		
	Expected (+/-)	Gender diversity	Age diversity	Nationality diversity	Full model	Gender diversity	Age diversity	Nationality diversity	Full model
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fem_dir	+	0.266 (0.607)			0.038 (0.086)	1.892*** (4.082)			1.848*** (4.064)
Age_coef	-		0.537 (0.495)		0.902 (0.840)		-4.053** (-2.420)		-3.398** (-2.095)
For_dir	+			0.605*** (3.334)	0.619*** (3.347)			0.605*** (2.858)	0.541*** (2.629)
Leverage		-0.377 (-1.220)	-0.394 (-1.269)	-0.532* (-1.739)	-0.562* (-1.817)	0.330 (1.228)	0.375 (1.361)	0.284 (1.039)	0.360 (1.357)
LnAssets		-0.026 (-1.145)	-0.020 (-0.953)	-0.047** (-2.109)	-0.046** (-2.005)	-0.143*** (-4.617)	-0.132*** (-4.176)	-0.170*** (-4.722)	-0.203*** (-5.715)
Lnfirmage		-0.058 (-1.220)	-0.050 (-1.083)	-0.030 (-0.653)	-0.028 (-0.588)	0.029 (0.663)	0.038 (0.853)	0.063 (1.417)	0.043 (0.997)
Constant		2.486*** (7.935)	2.363*** (6.734)	2.566*** (8.493)	2.433*** (6.898)	3.198*** (6.611)	3.865*** (6.815)	3.757*** (7.089)	4.275*** (7.511)
Adjusted R^2		0.059	0.059	0.099	0.094	0.089	0.053	0.061	0.124
Industry dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations		255	255	255	255	277	277	277	277

Panel B: ROA NI

		ROA (Net income/assets)							
		The Netherlands				United Kingdom			
	Expected (+/-)	Gender Diversity	Age diversity	Nationality diversity	Full model	Gender diversity	Age diversity	Nationality diversity	Full model
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fem_dir	+	9.489 (1.556)			12.106** (1.988)	7.616 (1.635)			7.758* (1.661)
Age_coef	-		-1.659 (-0.111)		-8.250 (-0.562)		6.099 (0.392)		8.833 (0.567)
For_dir	+			-7.914*** (-3.230)	-8.711*** (-3.472)			1.872 (0.901)	1.977 (0.949)
Leverage		-14.834*** (-3.801)	-14.654*** (-3.691)	-13.320*** (-3.428)	-12.569*** (-3.201)	-0.618 (-0.241)	-0.594 (-0.230)	-0.782 (-0.303)	-0.947 (-0.366)
LnAssets		1.086*** (3.883)	1.222*** (4.585)	1.597*** (5.653)	1.425*** (4.823)	-0.713** (-2.474)	-0.612** (-2.143)	-0.771** (-2.354)	-0.854** (-2.572)
Lnfirmage		0.407 (0.680)	0.718 (1.193)	0.397 (0.684)	0.117 (0.191)	0.175 (0.417)	0.188 (0.446)	0.244 (0.573)	0.261 (0.611)
Constant		-11.986*** (-2.918)	-13.468*** (-2.861)	-15.466*** (-3.856)	-12.822*** (-2.711)	16.348*** (3.576)	15.863*** (3.120)	18.242*** (3.740)	16.691*** (3.152)
Adjusted R^2		0.113	0.106	0.137	0.143	0.347	0.342	0.343	0.345
Industry dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations		297	296	297	296	327	327	327	327

Panel C: ROA EBIT

		ROA (EBIT/Assets)							
		The Netherlands				United Kingdom			
	Expected (+/-)	Gender Diversity	Age diversity	Nationality diversity	Full model	Gender diversity	Age diversity	Nationality diversity	Full model
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fem_dir	+	2.946 (0.562)			5.681 (1.104)	0.946 (0.221)			1.058 (0.249)
Age_coef	-		0.449 (0.034)		-6.639 (-0.514)		-11.250 (-0.844)		-8.250 (-0.622)
For_dir	+			-8.960*** (-4.205)	-9.346*** (-4.324)			4.724*** (2.645)	4.635** (2.579)
Leverage		-14.683*** (-4.335)	-14.696*** (-4.328)	-12.576*** (-3.785)	-12.367*** (-3.705)	-1.855 (-0.824)	-1.749 (-0.777)	-2.443 (-1.092)	-2.373 (-1.056)
LnAssets		1.226*** (5.091)	1.271*** (5.569)	1.660*** (6.940)	1.583*** (6.355)	-0.395 (-1.584)	-0.405* (-1.661)	-0.758*** (-2.721)	-0.782*** (-2.732)
Lnfirmage		0.108 (0.204)	0.177 (0.344)	-0.192 (-0.379)	-0.361 (-0.387)	0.293 (0.800)	0.282 (0.772)	0.485 (1.315)	0.468 (1.263)
Constant		-10.053*** (-2.803)	-10.547** (-2.600)	-12.290*** (-3.587)	-10.522** (-2.606)	13.890*** (3.540)	15.474*** (3.563)	17.654*** (4.273)	18.735*** (4.170)
Adjusted R^2		0.160	0.159	0.210	0.208	0.065	0.067	0.086	0.081
Industry dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations		284	284	284	284	311	311	311	311

Notes: The presented results are from OLS regression analysis, with t-statistics in parentheses The control variables are leverage, firm age and firm size. Gender diversity is measured by the percentage of female directors, age diversity is measured with age coefficient and nationality diversity is measured by the percentage of foreign directors, each of the three one-year lagged. Leverage is measured by non-current liabilities divided by the total assets, firm age with the natural logarithm of the years since incorporation and firm size is measured as the natural log of the total book value of the assets at the end of the year. The dependent variable in panel A is Tobin's q, calculated as the market value of equity plus the book value of debt divided by the total asset book value. In panel B, ROA NI is the dependent variable, calculated as the net income divided by the total book value of the assets. In panel C, ROA EBIT is the dependent variable, calculated as the earnings before interest and taxes divided by the total book value of the assets.

∗ Significance at the 10% level. ∗∗ Significance at the 5% level. ∗∗∗ Significance at the 1% level.

4.4 Tokenism and critical mass theory

This section contains the regression analysis for the tokenism and critical mass theory. As a start, gender diversity is analysed with dummy variables, and after that nationality diversity undergoes the same treatment.

4.4.1 Gender diversity dummies

To test the critical mass and tokenism theory three gender diversity dummies have been used, just as Liu et al. (2014) and Gyapong et al. (2016) did. The critical mass theory states that: *''one is a token, two is a presence, three is a voice''* (Gyapong et al., 2016). Therefore, the effect of gender diversity on firm performance should thus increase when the number of females within boardrooms increases. The dummies indicate whether one female (GD1), two females (GD2) or three or more females (GD3) are present in the boardroom of a firm. The regression results can be found in table 5. Models 1-6 present the results for the Dutch sample and models 7-12 for the British sample.

First, the results of the Dutch sample are analysed hereafter. The results for the proxies of financial performance in relation with the presence of one female director present no significant relationship. These results are in line to what Liu et al. (2014) state. Gender diversity is a barrier for firms and the influence of female directors should be present when there are three or more female directors on a board. The results for GD1 and GD2 can be seen as supporting token-status and critical mass theory, because no significant relationship has been found. However, the presence of three or more female directors also presents no significant relationship. This is not consistent with the results found by Gyapong et al. (2016). When Tobin's q is used as the proxy for financial performance, other results have been found. The presence of one female director is associated with a positive increase in financial performance. This relationship can result from the legitimacy benefits that firms obtain when the appointment of a female director is announced, as described by Carter et al. (2003). However, it is in contradiction to the tokenism and critical mass theory. The presence of two female directors is not associated with financial performance. The third measure, the presence of three or more female directors, is associated with financial performance. This is in line with the critical mass theory, which states that two is a presence and three is a voice. Therefore, evidence has been offered for the critical mass theory and token-status theory for Tobin's q, but not for the other measures.

The results for the British sample are presented in models 7-12. The results for Tobin's q are not comparable to the Dutch sample, because no significant relationship has been found for the presence of one female director (GD1), two female directors (GD2) or three or more female directors (GD3). For ROA EBIT, ROE NI, ROE EBIT, and RET, the results are comparable to the Dutch sample, since no significant relationship has been found either. The results for ROA NI are quite different. These provide evidence for the tokenism and critical mass theory. The presence of one female director (GD1) is associated with a positive influence on ROA NI. This positive relationship can be explained due to legitimacy benefits that firms obtain when the appointment of a female director is announced (Carter et al., 2003). The presence of two female directors is associated with a higher increase in ROA NI, being 4.3%. The presence of three or more female directors presents the highest effect; 6.7%. This is in line with the

critical mass theory, which states that a positive effect should be present when three or more female directors are assigned to the board and that the increase should be higher when there are three or more female directors compared to the situation when two female directors are present. Therefore, partial has been found for the critical mass and token-status theory for ROA NI.

Low et al. (2015) and Haslam et al. (2010) apply another method for gender diversity, which includes a dummy variable that indicates whether a firm employs at least one female director or not. To test this relationship, variable GD4 has been included in the dataset. The results of this dummy variable can be found in Appendix E. The relationship between GD4 and financial performance is absent for all measures in both countries. This indicates that employing a female director does not result in different financial performance. Only for RET of the firms from the United Kingdom, a significant relationship has been found. This relationship appears to be negative. This is in line with the results found by Low et al. (2015) and Haslam et al. (2010), who found that the presence of at least one woman on the board results in a negative influence on firm performance.

Table 5 Gender diversity

		Gender diversity											
		The Netherlands						United Kingdom					
	+/-	Tobin's q	ROA NI	ROA EBIT	ROE NI	ROE EBIT	RET	Tobin's q	ROA NI	ROA EBIT	ROE NI	ROE EBIT	RET
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
GD1		0.305*	0.212	-1.996	-4.500	-12.826	-0.057	-0.157	3.047*	0.775	1.871	2.154	-0.179
		(1.675)	(0.084)	(-0.939)	(-0.605)	(-1.623)	(-0.532)	(-0.870)	(1.701)	(0.493)	(0.388)	(0.301)	(-1.582)
GD2		0.387	-0.787	-3.260	-11.184	-22.739*	-0.076	-0.139	4.347*	1.543	1.142	-2.882	-0.151
		(1.325)	(-0.198)	(-0.973)	(-0.947)	(-1.822)	(-0.458)	(-0.526)	(1.682)	(0.679)	(0.165)	(-0.281)	(-0.935)
GD3	+	0.648*	0.848	-3.353	-10.269	-24.824	-0.070	-0.112	6.650*	2.891	4.600	4.133	-0.182
		(1.663)	(0.160)	(-0.752)	(-0.650)	(-1.489)	(-0.316)	(-0.302)	(1.855)	(0.914)	(0.477)	(0.291)	(-0.816)
Fem_dir		-1.603	11.232	15.753	77.524*	110.252**	-0.325	2.057*	-9.150	-6.680	-6.114	-0.677	0.560
		(-1.489)	(0.748)	(1.255)	(1.752)	(2.379)	(-0.514)	(1.908)	(-0.872)	(-0.715)	(-0.217)	(-0.016)	(0.867)
Leverage		-0.544*	-12.307***	-12.082***	-29.316**	-32.825**	-0.117	0.356	-1.222	-2.400	16.850**	27.197***	0.192
		(-1.749)	(-3.106)	(-3.591)	(-2.465)	(-2.593)	(-0.702)	(1.338)	(-0.472)	(-1.065)	(2.424)	(2.645)	(1.172)
LnAssets		-0.059**	1.425***	1.649***	6.091***	7.971***	0.006	-0.200***	-1.103***	-0.901***	-1.861*	-3.195**	-0.055**
		(-2.299)	(4.342)	(5.942)	(6.326)	(7.745)	(0.411)	(-5.096)	(-3.063)	(-2.889)	(-1.921)	(-2.248)	(-2.485)
Lnfirmage		-0.026	0.165	-0.337	-1.434	-1.538	0.009	0.050	0.197	0.452	0.232	0.609	0.012
		(-0.541)	(0.266)	(-0.634)	(-0.787)	(-0.782)	(0.035)	(1.137)	(0.458)	(1.198)	(0.202)	(0.356)	(0.450)
Constant		2.567***	-13.176**	-11.400**	-59.819***	-73.513***	0.215	4.270***	20.104***	20.587***	45.732***	66.577***	1.034***
		(6.397)	(-2.474)	(-2.509)	(-3.878)	(-4.423)	(0.975)	(6.878)	(3.529)	(4.235)	(2.988)	(2.967)	(2.969)
Adjusted R^2		0.095	0.136	0.203	0.183	0.250	0.159	0.119	0.346	0.075	0.073	0.034	0.216
Industry dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations		255	296	284	296	282	235	277	328	311	325	305	289

Note: The t-statistics are reported in parentheses.

∗ Significance at the 10% level. ∗∗ Significance at the 5% level. ∗∗∗ Significance at the 1% level.

4.4.2 Nationality diversity dummies

In this section, the nationality dummies are tested to find evidence for the critical mass theory just as Gyapong et al. (2016) have done. Gyapong et al. (2016) found that critical mass theory is not applicable to nationality diversity. Hopefully, this research can offer evidence that critical mass theory can predict the influence of nationality diversity. Three dummy variables are constructed as alternative for the percentage of foreign directors, with ND1 indicating the presence of one foreign board member, ND2 denoting two foreign board members and ND3 demonstrating three or more foreign board members. The results of the regression analysis can be found in table 6. Models 1-6 consist of results for Dutch firms and models 7-12 consist of empirical results from the United Kingdom.

The Dutch sample is analysed first. Model 1 presents the results for nationality diversity and Tobin's q. The presence of one foreign director (ND1) is not significantly related to Tobin's q (t-value = 1.002). This is in line with the critical mass theory, because the presence of one token should not influence financial performance. The presence of two foreign directors (ND2) is related to a higher Tobin's q. This relationship is significant at the 1% level. The influence is the highest when three or more foreign directors are present in a boardroom, because that relationship is significant at the 1% level. These results are in line with the critical mass theory, that states that when three people of a minority group are present in a boardroom, the influence should be positive and significant. The results are quite different for ROA NI, ROE NI and RET. The presence of one foreign director (ND1) is not associated with an increase in financial performance. This is in line with the critical mass theory, because Liu et al. (2014) argue that sole directors should have no impact on firm performance. The results for the presence of two foreign directors (ND2) and three or more foreign directors (ND3) are both not significant, therefore indicating that the critical mass theory does not hold when the proxy ROA NI, ROE NI or RET is used. When using ROA EBIT, the presence of one foreign director is associated with a decrease in financial performance. However, ND2 and ND3 do not present evidence for the critical mass theory in combination with ROA EBIT.

The results for the British firms are presented in models 6-10. The results are quite different in comparison to Dutch firms for Tobin's q, because none of the relationships is significant. This is partially in line with the critical mass theory, because no influence should be observed when one foreign director is present (Gyapong et al., 2017; Liu et al., 2014; Low et al., 2015). However, the presence of three or more foreign directors should be positively influencing financial performance. For ROA NI, the same results have been found. Therefore, the critical mass theory does not hold for Tobin's q and ROA NI in United Kingdom. ROA EBIT, ROE NI and RET are also used in the regression analysis as dependent variables. The presence of two foreign directors has a significant, negative influence on ROE NI for British firms. The other two dummy variables do not present a significant relationship. Therefore, the results for ROE NI do not provide evidence for the critical mass theory. When RET and ROA EBIT are used as the proxy, no evidence has been found for a relationship between the presence of one foreign director and financial performance. Besides that, a negative, significant relationship has been found for the presence of two foreign directors and three or more foreign directors. This indicates that the more foreign directors are present, the worse the financial

performance is. It can be argued that this is in line with the critical mass, because three is a voice, and the voice is negative in this situation.

With the help of variable ND4, the method that Low et al. (2015) presented for gender diversity has been followed for nationality diversity. The dummy variable indicates whether there is at least one foreign director present in a boardroom. The results of the analysis have been presented in Appendix F. The results show that the presence of at least one foreign director has no significant influence in the Netherlands and United Kingdom on financial performance, measured by Tobin's q, ROA NI, ROE NI, ROE EBIT, and RET. The presence of at least one foreign director also has no influence on ROA EBIT in the Netherlands. On the other hand, ROA EBIT is negative and significantly influenced within United Kingdom. This relationship holds at the 10% significance level.

Table 6 Nationality diversity

		Nationality diversity											
		The Netherlands						United Kingdom					
	+/-	Tobin's q	ROA NI	ROA EBIT	ROE NI	ROE EBIT	RET	Tobin's q	ROA NI	ROA EBIT	ROE NI	ROE EBIT	RET
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ND1		0.149	-0.709	-3.009*	-0.380	-6.187	-0.010	0.151	0.240	-1.107	-0.080	-3.721	-0.072
		(1.002)	(-0.346)	(-1.743)	(-0.063)	(-0.969)	(-0.117)	(1.087)	(0.170)	(-0.925)	(-0.021)	(0.676)	(-0.814)
ND2		0.652***	1.350	2.139	4.548	5.052	-0.021	0.232	-2.071	-4.873***	-9.813**	-19.654***	-0.237**
		(2.896)	(0.440)	(0.838)	(0.504)	(0.532)	(-0.158)	(1.359)	(-1.218)	(-3.256)	(-2.139)	(-2.858)	(-2.219)
ND3	+	0.824***	-1.639	-1.850	-10.008	-14.252	-0.001	0.283	0.077	-3.382*	-6.919	-9.135	-0.353**
		(3.225)	(-0.472)	(-0.631)	(-0.987)	(-1.317)	(-0.008)	(1.236)	(0.034)	(-1.741)	(-1.139)	(-1.047)	(-2.468)
For_dir		-0.593	-6.371	-7.004	-21.691	-23.177	0.117	0.163	1.734	9.149***	6.677	13.038	0.835***
		(-1.439)	(-1.141)	(-1.462)	(-1.327)	(-1.309)	(0.492)	(0.417)	(0.445)	(2.733)	(0.646)	(0.860)	(3.395)
Leverage		-0.621**	-12.744***	-12.495***	-31.575***	-36.091***	-0.121	0.296	-0.429	-1.136	18.994***	31.777***	0.246
		(-2.041)	(-3.207)	(-3.739)	(-2.648)	(-2.847)	(-0.729)	(1.095)	(-0.164)	(-0.506)	(2.740)	(3.098)	(1.496)
LnAssets		-0.067***	1.454***	1.565***	6.041***	7.598***	0.005	-0.201***	-0.903***	-0.779***	-1.657*	-3.076**	-0.057***
		(-2.868)	(4.712)	(6.065)	(6.753)	(7.982)	(0.393)	(-5.566)	(-2.691)	(-2.741)	(-1.848)	(-2.360)	(-2.797)
Lnfirmage		-0.038	0.099	-0.354	-1.683	-1.617	0.008	0.024	0.322	0.741*	0.732	1.631	0.021
		(-0.811)	(0.159)	(-0.675)	(-0.929)	(-0.827)	(0.319)	(0.519)	(0.721)	(1.929)	(0.614)	(0.927)	(0.769)
Constant		2.756***	-13.258***	-9.962**	-59.098***	-69.493***	0.222	4.298***	17.798***	18.477***	42.077***	64.886***	0.972***
		(7.665)	(-2.701)	(-2.376)	(-4.157)	(-4.514)	(1.076)	(7.348)	(3.269)	(4.069)	(2.907)	(3.089)	(2.950)
Adjusted R^2		0.131	0.137	0.216	0.188	0.252	0.158	0.121	0.345	0.107	0.090	0.058	0.229
Industry dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations		255	296	284	296	282	235	277	328	311	325	305	289

Note: The t-statistics are reported in parentheses.

∗ Significance at the 10% level. ∗∗ Significance at the 5% level. ∗∗∗ Significance at the 1% level.

4.5 Robustness tests

This section contains the robustness tests. First, the alternative measure return on equity is presented. Second, an analysis of stock return has been presented. A robustness test decreases the possibility that results are based on chance (Lu & White, 2014).

4.5.1 Return on equity

To increase the reliability of the results that are presented before, a fourth and fifth proxy for firm's financial performance has been added to the regression analysis as a robustness check. These alternative variables are two measures for ROE (ROE NI and ROE EBIT). These are just as ROA accounting-based measures (Low et al., 2015). In panel A of table 7, the results of the regression analysis with ROE NI as the dependent variable are presented. Panel B includes the results for ROE EBIT. In both panels, models 1-4 include the results for the Netherlands, and models 5-8 for the United Kingdom.

The main regression results for gender diversity within Dutch boardrooms are presented in model 1 and 4. For ROE NI (panel A), the separate gender diversity model provides evidence for a statistical relationship between gender diversity and ROE at the 10% significance level. In addition to that, in the full model gender diversity is also positively associated with ROE NI at the 1% level (t-value = 2.611). An 1% increase in the percentage of foreign directors results in an increase of 47.3% in ROE. For ROE EBIT (panel B), the separate model does not present a significant relationship. However, gender diversity is positive and significantly related to financial performance in the full model, at the 5% significance level. This indicates that gender diversity is significantly related to firm performance. The positive influence is consistent with hypothesis 1 and with the results found by Bennouri et al. (2018) and Sabatier (2015). Models 5 and 8 present the results for the British sample. No significant relationship has been observed in both the separate (column 5) and full model (column 8) for ROE NI and ROE EBIT. These results contradict hypothesis 1, which states that gender diversity has a positive influence on firm performance. The regression results are in line with the results found by Haslam et al. (2010).

The coefficient of variation in age of the directors is the measure for age diversity. Within Dutch boardrooms, age diversity has no influence in both the separate and full model (columns 2 and 4) for ROE NI and ROE EBIT. Therefore, age diversity is not associated with ROE in Dutch firms. This contradicts hypothesis 2, which expected a negative relationship. Models 6 and 8 present the results for the British sample. Again, no significant relationship has been found in the separate and full model for both measures. These results are also not in line with hypothesis 3, that expected a negative relationship between age diversity and firm's financial performance. Therefore, hypothesis 2 can be rejected for both measures of ROE.

Nationality diversity is measured by the percentage of foreign directors. In model 3 and 4, the results for the Dutch sample are presented. For both ROE NI and ROE EBIT, in the separate model the percentage of foreign directors negatively influences financial performance. This relationship is also present in the full model at a significance level of 1%. An 1% increase in the percentage of foreign directors results in a decrease of 36.5% in ROE NI and -43.6% in ROE EBIT. These results are contradicting hypothesis 4, which expected a

positive relationship between nationality diversity and firm performance. In models 7 and 8, the main regression results for United Kingdom are presented. In none of the models, a significant relationship has been observed. Therefore, in the United Kingdom the percentage of foreign directors has no influence on financial performance, measured by ROE NI or ROE EBIT. These results are in contradiction to the formulated hypothesis for nationality diversity, because the expected direction was positive.

In this robustness test, the same control variables have been used as in the regular regression analysis. These variables are leverage, firm size and firm age. Leverage has a negative, significant influence on ROE NI and ROE EBIT in the Dutch sample at the 1% level, denoting that the level of borrowed money decreases ROE. In the British sample, the effect of leverage on financial performance is positive at the 1% significance level in almost all models of ROE NI and ROE EBIT. The measure for firm size, the natural logarithm of total assets (LnAssets), has a positive influence on all models which include the Dutch sample. In the British sample, firm size has a negative influence on ROE NI and ROE EBIT. The last measure is firm age. Firm age is measured by the natural logarithm of the years since incorporation of a firm (Lnfirmage). In the Dutch and British sample, firm age does not significantly influence ROE NI and ROE EBIT.

4.5.2 Stock return

A sixth measure for firm's financial performance has been added to the regression analysis as a robustness check, which is stock return (RET). It is a market-based measure (Low et al., 2015). In panel B of table 7, the results of the regression analysis with RET as the dependent variable are presented. Models 1-4 include the results for the Netherlands and models 5-8 for the United Kingdom.

The results for gender diversity in the Netherlands are presented in models 1 and 4. In model 1, gender diversity is significantly associated with stock return. Also in model 4, a significant relationship has been observed. Both relationships are negative, indicating that an increase in the percentage of female directors decreases stock return of Dutch firms. For the United Kingdom, models 5 and 8 present the regression results on gender diversity. In both models, no significant relationship has been observed. Therefore, gender diversity has no significant influence in United Kingdom. This is in contradiction with hypothesis 1, that expected a significant, positive association between gender diversity and financial performance. The results for the Dutch sample are also in contradiction to hypothesis 1, because the regression coefficients are negative instead of positive.

Models 2, 4, 6 and 8 present the regression results for age diversity. For the Netherlands, no significant relationship has been observed. Again, this contradicts the hypothesis for age diversity (H3), which expected a negative relationship. In the United Kingdom, the influence of age diversity on stock return seems to be negative. In both models, the age coefficient significantly decreases financial performance. This results into the fact that hypothesis 3 can be accepted for United Kingdom, when RET is used as the proxy for financial performance.

For nationality diversity, models 3 and 4 present the data for the Netherlands. The results do not show a significant relationship between nationality diversity and financial performance,

measured by RET. For United Kingdom, models 7 and 8 present the regression results. In contradiction to the results for the Netherlands, a significant, positive relationship has been found in both models. Therefore, evidence has been found for hypothesis 4 in the United Kingdom, because the hypothesis 4 expected a positive relationship between nationality diversity and financial performance. For the Netherlands, no evidence has been found for hypothesis 4, therefore it can be rejected.

The same control variables have been used as in the main regression analysis. The only control variable that presents a significant relationship is the natural logarithm of total assets in the United Kingdom. In all models (5-8), a negative relationship of total assets with firm performance has been observed. This indicates that if more assets are owned, financial performance will be lower.

4.5.3 Age bands

In accordance with the method that has been used by Mahadeo et al. (2012) to measure age diversity, age bands have been used to judge the level of age diversity within a boardroom as a robustness test for the coefficient of variation. A boardroom can consist of directors from 6 different age bands, being (1) under 36, (2) 36-45, (3) 46-55, (4) 56-65, (5) 66-75, and (6) above 75. When a boardroom consists of directors from 6 age bands, it is very diverse. When only 1 one age band is present, it is not diverse at all. The results from the regression analysis with age bands as measure for age diversity is presented in table 8.

For the Dutch sample, models 1-6 present the results from the regression analysis. The results show that age diversity measured by age bands has a negative, significant influence on ROE EBIT at the 10% significance level. However, it is not robust to the results found for the relationship between the age coefficient and ROE EBIT, because no significant relationship has been found for that measures. Twenge et al. (2010) mention that the negative relationship can come from the fact that interaction between board members of the same age is easier since they share the same expectations and values, thus indicating negative evidence of age diversity

Models 7-12 present the results for the sample of the United Kingdom. Two significant relationships have been found, which are contradicting each other. First, a significant, positive relationship between age diversity and firm performance, measured by ROA NI has been found. This contradicts hypothesis 3, since a negative relationship was expected. It also contradicts the results from the coefficient of variation, because no significant relationship has been observed between that measure and ROA NI. On the other hand, it is similar to the results found by Mahadeo et al. (2012), who found a positive relationship between age diversity measured by age bands and ROA. An explanation for this is that a wide range of resources can be accessed due to the presence of directors of various ages. Young directors bring fresh insights and old directors bring experience and networks. The other significant relationship that has been found is for stock return (RET). Age diversity seems to have a negative impact on RET at the 10% significance level, therefore providing evidence for hypothesis 3. These results are consistent with the results found for age diversity measured by the coefficient of variation, which also presented a negative relationship between age diversity and RET.

Table 7

Panel A: Ordinary least squares regression ROE NI

		ROE (Net income/Total shareholders' equity)							
		The Netherlands				United Kingdom			
	Expected (+/-)	Gender Diversity	Age diversity	Nationality diversity	Full model	Gender diversity	Age diversity	Nationality diversity	Full model
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fem_dir	+	34.608* (1.863)			47.285*** (2.611)	5.499 (0.441)			5.121 (0.409)
Age_coef	-		3.533 (0.078)		-21.498 (-0.495)		-33.438 (-0.785)		-35.814 (-0.833)
For_dir	+			-32.858*** (-4.536)	-36.469*** (-4.957)			-2.958 (-0.535)	-3.512 (-0.630)
Leverage		-39.250*** (-3.276)	-39.381*** (-3.237)	-31.463*** (-2.674)	-30.597** (-2.598)	16.209** (2.362)	16.512** (2.407)	16.643** (2.415)	16.888** (2.442)
LnAssets		4.347*** (5.196)	4.912*** (6.210)	6.400*** (7.732)	5.784*** (6.717)	-1.906** (-2.479)	-1.895** (-2.500)	-1.604* (-1.828)	-1.674* (-1.880)
Lnfirmage		-0.020 (-0.011)	0.759 (0.419)	-0.221 (-0.126)	-1.550 (-0.858)	0.418 (0.374)	0.365 (0.326)	0.316 (0.279)	0.239 (0.210)
Constant		-50.357*** (-4.075)	-56.290*** (-4.019)	-64.386*** (-5.441)	-54.738*** (-3.978)	40.857*** (3.339)	45.702*** (3.383)	38.669*** (2.958)	42.785*** (3.022)
Adjusted R^2		0.125	0.114	0.173	0.189	0.082	0.084	0.083	0.079
Industry dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations		296	296	296	296	325	325	325	325

Panel B: Ordinary least squares regression ROE EBIT

		ROE (EBIT/Total shareholders' equity)							
		The Netherlands				United Kingdom			
	Expected (+/-)	Gender Diversity	Age diversity	Nationality diversity	Full model	Gender diversity	Age diversity	Nationality diversity	Full model
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fem_dir	+	25.143 (1.255)			39.548** (2.052)	7.124 (0.372)			7.089 (0.369)
Age_coef	-		-18.258 (-0.363)		-51.946 (-1.078)		-49.909 (-0.810)		-48.480 (-0.780)
For_dir	+			-40.671*** (-5.130)	-43.639*** (-5.456)			2.303 (0.285)	1.718 (0.211)
Leverage		-47.516*** (-3.668)	-46.547*** (-3.565)	-36.892*** (-2.938)	-35.421*** (-2.815)	27.317** (2.683)	27.683** (2.722)	27.147*** ((2.653)	27.303*** (2.658)
LnAssets		5.774*** (6.349)	6.159*** (7.205)	7.917*** (8.967)	7.361*** (8.023)	-2.757** (-2.452)	-2.759** (-2.505)	-2.851** (-2.233)	-2.988** (-2.287)
Lnfirmage		-0.706 (-0.354)	1.179 (0.601)	-0.433 (-0.229)	-1.630 (-0.834)	0.565 (0.344)	0.512 (0.311)	0.674 (0.402)	0.564 (0.335)
Constant		-66.940*** (-4.960)	-68.063*** (-4.481)	-78.790*** (-6.215)	-65.491*** (-4.423)	54.742*** (3.068)	61.927*** (3.123)	56.791*** (2.982)	63.002*** (3.038)
Adjusted R^2		0.171	0.167	0.240	0.248	0.039	0.041	0.039	0.035
Industry dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations		282	282	282	282	305	305	305	305

Panel C: Ordinary least squares regression RET

	RET ((stock price difference + dividend) / stock price beginning of the year)							
		The Netherlands				United Kingdom		
	Expected (+/-)	Gender Diversity	Age diversity	Nationality diversity	Full model	Gender diversity	Age diversity	Nationality diversity	Full model
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fem_dir	+	-0.521** (-2.130)			-0.556** (-2.239)	0.237 (0.809)			0.199 (0.687)
Age_coef	-		-0.144 (-0.232)		0.080 (0.128)		-2.055** (-2.065)		-1.757* (-1.765)
For_dir	+			0.090 (0.854)	0.116 (1.089)			0.335*** (2.594)	0.305** (2.351)
Leverage		-0.107 (-0.665)	-0.107 (-0.653)	-0.135 (-0.821)	-0.123 (-0.747)	0.204 (1.232)	0.214 (1.300)	0.176 (1.069)	0.187 (1.141)
LnAssets		0.010 (0.864)	0.002 (0.167)	-0.002 (-0.158)	0.005 (0.418)	-0.033* (-1.870)	-0.035** (-2.002)	-0.057*** (-2.826)	-0.061*** (-3.001)
Lnfirmage		-0.001 (-0.051)	-0.012 (-0.436)	-0.008 (-0.325)	0.008 (0.306)	-0.007 (-0.255)	-0.008 (-0.295)	0.007 (0.280)	0.004 (0.154)
Constant		0.220 (1.294)	0.311 (1.624)	0.316* (1.868)	0.218 (1.119)	0.602** (2.138)	0.906*** (2.875)	0.865*** (2.923)	1.093*** (3.377)
Adjusted R^2		0.177	0.155	0.163	0.169	0.194	0.204	0.211	0.216
Industry dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations		236	235	236	235	289	289	289	289

Notes: The presented results are from OLS regression analysis, with t-statistics in parentheses. The control variables are leverage, firm age and firm size. Gender diversity is measured by the percentage of female directors, age diversity is measured with age coefficient and nationality diversity is measured by the percentage of foreign directors, each of the three one-year lagged. Leverage is measured by non-current liabilities divided by the total assets, firm age with the natural logarithm of the years since incorporation and firm size is measured as the natural log of the total book value of the assets at the end of the year. The dependent variable in panel A is ROE NI, calculated as the net income divided by the total shareholders' equity. In panel B, ROE EBIT is used, calculated as the net income before interest and tax divided by the total shareholders' equity. In Panel C, RET, calculated as the stock price difference + dividend divided by the stock price at the beginning of the year, is used.
∗ Significance at the 10% level. ∗∗ Significance at the 5% level. ∗∗∗ Significance at the 1% level.

Table 8 Age diversity

		Age diversity											
		The Netherlands						United Kingdom					
	+/-	Tobin's q	ROA NI	ROA EBIT	ROE NI	ROE EBIT	RET	Tobin's q	ROA NI	ROA EBIT	ROE NI	ROE EBIT	RET
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age_band	-	-0.004	-0.134	-0.752	-1.773	-4.772*	0.032	0.041	1.092*	0.206	0.525	0.510	-0.071*
		(-0.070)	(-0.156)	(-1.038)	(-0.690)	(-1.747)	(0.931)	(0.627)	(1.766)	(0.379)	(0.311)	(0.204)	(-1.825)
Leverage		-0.533*	-12.627***	-12.008***	-30.373**	-33.278***	-0.130	0.300	-0.796	-2.457	16.579**	27.012***	0.174
		(-1.716)	(-3.183)	(-3.582)	(-2.547)	(-2.627)	(-0.788)	(1.129)	(-0.472)	(-1.095)	(2.399)	(2.629)	(1.064)
LnAssets		-0.047**	1.451***	1.644***	5.943***	7.750***	0.003	-0.196***	-0.901***	-0.780***	-1.693*	-2.964**	-0.056***
		(-2.001)	(4.824)	(6.492)	(6.744)	(8.251)	(0.244)	(-5.508)	(-2.721)	(-2.724)	(-1.891)	(-2.264)	(-2.769)
Lnfirmage		-0.034	0.136	-0.372	-1.692	-1.685	0.010	0.047	0.200	0.471	0.298	0.637	0.010
		(-0.702)	(0.218)	(-0.710)	(-0.927)	(-0.866)	(0.382)	(1.070)	(0.471)	(1.268)	(0.262)	(0.378)	(0.373)
Constant		2.592***	-13.845***	-9.810**	-53.777***	-62.492***	0.141	3.649***	15.084***	17.137***	37.095***	55.362***	1.035***
		(7.465)	(-2.988)	(-2.510)	(-3.973)	(-4.351)	(0.731)	(6.732)	(2.956)	(3.929)	(2.701)	(2.744)	(3.333)
Adjusted R^2		0.088	0.143	0.212	0.190	0.254	0.165	0.111	0.351	0.081	0.078	0.033	0.216
Industry dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations		253	293	282	293	280	233	277	328	311	325	305	289

Note: The t-statistics are reported in parentheses. Age diversity is measured by taking into account the number of age bands within the age of directors lies.

∗ Significance at the 10% level. ∗∗ Significance at the 5% level. ∗∗∗ Significance at the 1% level.

5 Conclusion

The main research question presented in chapter 1.4. is as follows; *What is the influence of board diversity on the financial firm performance of Dutch and UK listed firms?* This research question has been investigated with the help of three different board diversity aspects. being gender, age, and nationality diversity for the years 2009, 2010, 2016 and 2017 and takes into account all listed firms (93) from the Netherlands on the Euronext Amsterdam and 98 firms from the United Kingdom that have the largest market capitalisation on the London Stock Exchange. The different hypotheses on these board diversity aspects are formulated with the help of the agency theory, resource dependency theory, tokenism theory and critical mass theory. Financial performance is measured with help of Tobin's q, return on assets for net income (ROA NI), return on assets for EBIT (ROA EBIT), return on equity for net income (ROE NI), return on equity for EBIT (ROE EBIT), and stock return (RET). The outcomes are discussed in this section.

The aspect that receives attention first is gender diversity, which has been measured in two ways. First, the percentage of female directors has been taken as a proxy for gender diversity, following existing literature on gender diversity. It was hypothesized that gender diversity would have a positive influence on firm's financial performance (H1). Within the Dutch sample, the results for Tobin's q and ROA EBIT are insignificant. In contrast, gender diversity has a positive influence on ROA NI. When ROE NI and ROE EBIT are used as the measure for firm performance, a positive relationship pops up. For RET, a significant, negative relationship can be found. Therefore, the results are contradicting in the Netherlands, thus indicating that hypothesis 1 can be partially accepted, only for ROA NI and ROE NI. For Tobin's q, ROA EBIT, and RET, it can be rejected. Within British firms, gender diversity has proven to be positively influencing firm performance measured by Tobin's q, ROA NI, and ROA EBIT. This result disappears when ROE NI, ROE EBIT, and RET are used as the proxy for financial performance. Therefore, hypothesis 1 can be partially accepted for British firms. A negative relationship between gender diversity and firm performance was expected in the Netherlands after the introduction of the mandatory gender quota (H2). The quota does not show to have negative effects on Dutch firms. In 2016-2017, gender diversity has a positive, significant influence on ROA NI, ROA EBIT, ROE NI, and ROE EBIT. For Tobin's q and RET, no significant relationship has been found. Therefore, hypothesis 2 can be rejected.

Gender diversity is also analysed by using dummy variables, just as Gyapong et al. (2016) and Liu et al. (2014) have done in earlier research to find evidence for the critical mass and tokenism theory. The idea behind these theories is that the influence of female directors is the highest when there are three or more board members that are female, and that the relationship is absent when only one female director, a token, is present. When using Tobin's q as the proxy, the results from the Netherlands show that the influence is the highest when three or more female directors are present. This is in line with the results found by Gyapong et al. (2016) and Liu et al. (2014). Therefore, evidence has been found for the presence of the critical mass and tokenism theory. However, the positive relationship

between the presence of one female director and financial performance indicates that the theory is only partially true. When using the other measures as the proxy for financial performance, no evidence has been found in the Netherlands. Within the British sample, little evidence has been found for the critical mass and token-status theory. The positive influence of the presence of one, two and three or more female directors on ROA NI present mixed results for the theories. The positive influence of one female director on financial performance contradicts the token status theory. However, the increase of the influence from one to two female directors and from two to three female directors show some arguments for the presence of the tokenism and critical mass theory. For the other measures, no evidence has been found.

The hypothesis for age diversity (H3) predicted a negative influence of age diversity on firm's financial performance. The measure that is used for age diversity is the age coefficient. The results for the Dutch sample present no evidence for the hypothesis. Age diversity has no significant relationship with all proxies for financial performance. Within British firms, different results have been found for age diversity. No evidence has been found for a relationship between age diversity and financial performance, measured by ROA NI, ROA EBIT, ROE NI, and ROE EBIT. However, age diversity has a negative influence on Tobin's q and RET. The results for RET hold for both measures of age diversity, being the coefficient of variation and the age bands that are presented in chapter 4.5.3. Therefore, hypothesis 3 can be accepted for Tobin's q and RET.

The last aspect of diversity that is tested in this research is diversity in terms of nationality. Nationality diversity has been measured in the same way as gender diversity, by using a percentage of foreign directors and dummy variables that look for the influence of the critical mass and tokenism theory. Hypothesized has been that nationality diversity positively influences financial firm performance (H4). Within the Dutch sample, nationality diversity positively influences firm performance when using Tobin's q, but not when using ROA NI, ROA EBIT, ROE NI, and ROE EBIT. The last measures present a significant, negative relationship with nationality diversity. For RET, no significant relationship has been found. In the British sample, nationality diversity has a positive evidence on Tobin's q, ROA EBIT, and RET. In the other regression analyses, no evidence has been found for a statistical relationship. Therefore, hypothesis 4 is accepted for Tobin's q the Dutch sample, and for Tobin's q, ROA EBIT, and RET in the British sample.

Nationality diversity is also measured by dummy variables. The results show that for Dutch firms the influence of nationality diversity on Tobin's q is the highest when three or more foreign directors are present. Therefore, evidence has been found for the tokenism theory. This influence is higher compared to the influence of two foreign directors. The results of ROA NI, ROE NI, ROE EBIT and RET are not consistent with the tokenism theory, because the presence of three or more foreign directors has no influence. Within the British sample, little evidence has been found for the critical mass and tokenism theory. The presence of two and three or more foreign directors negatively influence financial performance, measured by

ROA EBIT and RET. This indicates that there is a voice from the foreign directors, but that these directors do not have a positive influence on firm performance.

Another method that has been performed is the same as Low et al. (2015) have done; checking for the influence of employing at least one female director or at least one foreign director. The results present the following findings. The presence of at least one female director is not related to financial performance within Dutch and British firms, except for the situation that RET is used for British firms. For RET, a negative relationship has been found, indicating that employing a female director results into negative effects. When looking at the influence of employing at least one foreign director, it pops up that the presence of at least one foreign directors does only result in a decrease in ROA EBIT. For the other measures, no significant relationships with financial performance have been found in both countries.

This research faces a few limitations. The first limitation is that it lacks a test for reverse causality. The reason for the fact that reverse causality must be checked is that Low et al. (2015) mention that gender diversity can be endogenous in OLS regression models. Other research succeeded to overcome these reverse causality problems. Liu et al. (2014) mention that three alternative models are used to check for endogeneity between women directors and firm performance. One of the alternatives uses instrument variables and estimates the main regression model via the 2SLS method. which is like the method that Low et al. (2015) used to check for endogeneity. Low et al. (2015) finds non-significant results and argues that it could be the result of the fact that gender diversity can be endogenous in the OLS model. It re-estimates the specification using IV techniques. It mentions that defining valid instruments for the IV techniques is difficult (Adams & Ferreira. 2009). Low et al. (2015) use the proportion of female managers as an instrument, whereas Adams and Ferreira (2009) use the fraction of male directors with board connections to female directors. Adams and Ferreira (2009) mention that an instrument is needed that is correlated with the fraction of female directors on the board, which is the independent variable in their research. but that is uncorrelated with firm performance. except through the control variables. To check for the validity of the measuring instrument, the Hansen's J instrument test is used. which is known as the over identification test, Gyapong et al. (2016) also look for potential reverse causality problems. It employs the Heckman two-stage model and 2SLS to look for endogeneity. In the first stage of the 2SLS, the instruments are used as independent variables. In stage two, it uses the predicted gender and race to estimate the relationship between these variables and firm value. Carter et al. (2010) take a different approach. The researchers use 3SLS estimation instead of 2SLS estimation because the first addresses, next to potential endogeneity problems, cross-correlation between equations. Further research with the same approach as this research can consider the mentioned methods.

Another limitation that this research faces is that the sample only consists of firms from both the Netherlands and United Kingdom that are listed. Therefore, it is possible that the results may not hold for firms that are unlisted. Next to that, only the 100 largest firms UK from the FTSE are selected. Even though there is no recognisable reason why the results are different for smaller firms, further research is needed to look for the impact of diversity on smaller

listed firms. It can be possible that diversity has a different effect on firms that are smaller. Since only Dutch and British firms are in the sample, it may be possible that the results may not hold for other countries. Further research can therefore consider multiple countries to overcome this problem.

This research adds to existing literature on the influence of board diversity by offering a comparison between Dutch and British firms. What is so interesting about these two countries is that the Netherlands uses a Continental corporate governance model and the United Kingdom works upon an Anglo-Saxon approach of corporate governance. Therefore, this research does not only compare between two countries, but also between two different corporate governance models. With the help of existing literature, it is assumed that there are differences between the two countries regarding board diversity. First, diversity in terms of gender can be affected by the mandatory female quota that is present in the Netherlands which can have possible downside effects according to Ferreira (2015). This mandatory quota is not present in the United Kingdom. Next to empirical contributions, the research also has practical contributions. It offers a framework for companies and supervisory boards to see the influence of employing a diverse board of directors, and whether to attract a director with certain characteristics. Besides that, interesting results for policy makers have been offered. When the current mandatory gender quota is evaluated in a future point, it is very useful to have access to financial effects of these quotas. Decisions can be based upon the outcomes of this research.

6 References

Adams, R. B., & Ferreira, D. (2007). A theory of friendly boards. *Journal of Finance, 62*(1), 217-250.

Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics, 94*(2), 291-309.

Adams, R. B., de Haan, J., Terjesen, S., & van Ees, T. (2015). Board diversity: Moving the field forward. *Corporate Governance: An International Review, 23*(2), 77-82.

Aguilera, R. V. (2005). Corporate governance and director accountability: An institutional comparative perspective. *British Journal of Management, 16*(1), 39-53.

Ahern, K. R., & Dittmar, A. K. (2012). The changing of the boards: The impact on firm valuation of mandated female board representation. *Quarterly Journal of Economics, 127*(1), 137-197.

Ali, M., Ng, Y. L., & Kulik, C. T. (2014). Board age and gender diversity: A test of competing linear and curvilinear predictions. *Journal of Business Ethics, 125*(3), 497-512.

Baranchuk, N., & Dybvig, P. H. (2009). Consensus in diverse corporate boards. *The Review of Financial Studies, 22*(2), 715-747.

Bennouri, M., Chtioui, T., Nagati, H., & Nekhili, M. (2018). Female board directorship and firm performance: What really matters? *Journal of Banking & Finance, 88*, 267-291.

Benston, G. J. (1985). The validity of profits-structure studies with particular reference to the FTC's line of business data. *American Economic Review, 75*(1), 37-67.

Beusichem, H. v., Jong, A. d., DeJong, D. V., & Mertens, G. (2016). Transparency, corporate governance and firm performance in The Netherlands. *Maandblad voor Accountancy en Bedrijfseconomie, 90*(7/8), 308-322.

Bhagat, S., & Bolton, B. (2008). Corporate governance and firm performance. *Journal of Corporate Finance, 14*, 257-273.

Bøhren, Ø., & Staubo, S. (2014). Does mandatory gender balance work? Changing organizational form to avoid board upheaval. *Journal of Corporate Finance, 28*, 152-168.

Bøhren, Ø., & Staubo, S. (2016). Mandatory gender balance and board independence. *European Financial Management, 22*(1), 3-30.

Boot, A. (2017). Onderneming en governance. *Maandblad voor Accountancy en Bedrijfseconomie, 91*(5/6), 154-162.

Brammer, S., Millington, A., & Pavelin, S. (2009). Corporate reputation and women on the board. *British Journal of Management, 20*(1), 17-29.

Brooks, C. (2008). *Introductory econometrics for finance.* Cambridge: Cambridge University Press.

Bunderson, J. S., & Sutcliffe, K. M. (2002). Comparing alternative conceptualizations of functional diversity in management teams: Process and performance effects. *Academy of Management Journal, 45*(5), 875-893.

Burgess, Z., & Tharenou, P. (2002). Women board directors: Characteristics of the few. *Journal of Business Ethics, 37*(1), 39-49.

Burke, R. J., & Mattis, M. C. (2000). Women on corporate boards of directors: Where do we go from here? In R. J. Burke, & M. C. Mattis, *Women on corporate boards of directors* (pp. 3-10). Dordrecht: Kluwer Academic Publishers.

Cadbury Committee. (1992). *Report of the committee on the financial aspects of corporate governance.* London: Gee & Co. Ltd.

Campbell, K., & Minguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of Business Ethics, 83*(3), 435-451.

Carter, D. A., D'Souza, F., Simkins, B. J., & Simpson, W. (2010). The gender and ethnic diversity of US boards and board committees and firm financial performance. *Corporate Governance: An International Review, 18*(5), 396-414.

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *The Financial Review, 38*(1), 33-53.

Cernat, L. (2004). The emerging European corporate governance model: Anglo-Saxon, Continental, or still the century of diversity? *Journal of European Public Policy, 11*(1), 147-166.

Cheng, S. (2008). Board size and the variability of corporate governance. *Journal of Financial Economics, 87*(1), 157-176.

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

Conyon, M., & He, L. (2017). Firm performance and boardroom gender diversity: A quantile regression approach. *Journal of Business Research, 79*, 198-211.

Cook, A., & Glass, C. (2014). Above the glass ceiling: When are women and racial/ethnic minorities promoted to CEO? *Strategic Management Journal, 35*(7), 1080-1089.

Cuervo, A. (2002). Corporate governance mechanisms: a plea for less code of good governance and more market control. *Corporate Governance: An International Review, 10*(2), 84-93.

Datta, D. K., Musteen, M., & Herrmann, P. (2009). Board characteristics, managerial incentives, and the choice between foreign acquisitions and international joint ventures. *Journal of Management, 35*(4), 928-953.

Davies, L. (2018, March 27). *Women on boards: 5 year summary (Davies review).* Retrieved from Government UK: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/482059/BIS-15-585-women-on-boards-davies-review-5-year-summary-october-2015.pdf

Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of Corporate Finance, 7*(3), 209-233.

Dezső, C. L., & Ross, D. G. (2012). Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal, 33*(9), 1072-1089.

Diversity in the Boardroom. (2017, November 29). Retrieved from Deloitte: https://www2.deloitte.com/content/dam/Deloitte/za/Documents/governance-risk-compliance/ZA_Board_Diversity_1.PDF

Duffhues, P., & Kabir, R. (2008). Is the pay – performance relationship always positive? Evidence from the Netherlands. *Journal of Multinational Financial Management, 18*(1), 45-60.

Dutton, J. E., & Duncan, R. B. (1987). The creation of momentum for change through the process of strategic issue diagnosis. *Strategic Management Journal, 8*(2), 279-295.

Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review, 14*(1), 57-74.

Elstad, B., & Ladegard, G. (2012). Women on corporate boards: Key influencers or tokens? *Journal of Management & Governance, 16*(4), 595-615.

Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate Governance: An International Review, 11*(2), 102-111.

Estélyi, K. S., & Nisar, T. M. (2016). Diverse boards: Why do firms get foreign nationals on their boards? *Journal of Corporate Finance, 39*, 174-192.

EU-Voorstel: Richtlijn verbeteren gendergelijkheid. (2018, January 23). Retrieved from Overheid.nl: https://zoek.officielebekendmakingen.nl/dossier/33483/kst-33483-5?resultIndex=7&sorttype=1&sortorder=4

Faleye, O. (2007). Classified boards, firm value, and managerial entrenchment. *Journal of Financial Economics, 83*(2), 501-529.

Faleye, O., Hoitash, R., & Hoitash, U. (2011). The cost of intense monitoring. *Journal of Financial Economics, 101*(1), 160-181.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law & Economics, 26*(2), 301-325.

Farrell, K., & Hersch, P. (2005). Additions to corporate boards: The effect of gender. *Journal of Corporate Finance, 11*, 85-106.

Ferreira, D. (2015). Board diversity: Should we trust research to inform policy? *Corporate Governance: An International Review, 23*(2), 108-111.

Filatotchev, I., & Bishop, K. (2002). Board composition, share ownership, and 'underpricing' of U.K. IPO firms. *Strategic Management Journal, 23*(10), 941-955.

Financial Reporting Council. (2018, March 27). *The UK Corporate Governance Code 2016.* Retrieved from Financial Reporting Council: https://www.frc.org.uk/getattachment/ca7e94c4-b9a9-49e2-a824-ad76a322873c/UK-Corporate-Governance-Code-April-2016.pdf

Forbes, D. P., & Milliken, F. J. (1999). Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups. *Academy of Management Review, 24*(3), 489-505.

Garcia Lara, J., Garcia Osma, B., Mora, A., & Scapin, M. (2017). The monitoring role of female directors over accounting quality. *Journal of Corporate Finance, 45*, 651-668.

Gils, A. V. (2005). Management and governance in Dutch SMEs. *European Management Journal, 23*(5), 583-589.

Goergen, M. (2012). *International corporate governance.* Harlow: Pearson Education Prentice Hall.

Gov.uk. (2018, March 27). *Women on boards: UK response to the European Commission consultation on gender imbalance in corporate boards in the EU.* Retrieved from Government UK: https://www.gov.uk/government/publications/european-commission-consultation-on-gender-imbalance-in-corporate-boards-in-the-eu-uk-government-response

Gov.uk Equality Act. (2018, March 27). *The equality act 2010 (gender pay gap information) regulations 2017.* Retrieved from Government UK: https://www.legislation.gov.uk/ukdsi/2017/9780111152010/pdfs/ukdsiem_9780111152010_en.pdf

Gov.uk Regulations 2013. (2018, March 27). *The Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013.* Retrieved from Government UK: http://www.legislation.gov.uk/uksi/2013/1970/pdfs/uksi_20131970_en.pdf

Grondhuis, M., & de Kluiver, H.-J. (2017). De ontwikkeling van de Corporate Governance Code en zijn juridische betekenis. *Maandblad voor Accountancy en Bedrijfseconomie, 91*(5/6), 126-136.

Gyapong, E., Monem, R. M., & Hu, F. (2016). Do women and ethnic minority directors influence firm value? Evidence from Post-Apartheid South Africa. *Journal of Business Finance & Accounting, 43*(3), 370-413.

Hair, J., Black, W., Babin, B., & Anderson, R. (2014). *Multivariate data analysis.* London: Pearson Education Limited.

Harjoto, M., Laksmana, I., & Lee, R. (2015). Board diversity and corporate social responsibility. *Journal of Business Ethics, 132*(4), 641-660.

Harrison, D., & Klein, K. (2007). What's the difference? Diversity constructs as separation, variety, or disparity in organizations. *Academy of Management Review, 32*(4), 1199-1228.

Haslam, S., Ryan, M., Kulich, C., Trojanowski, G., & Atkins, C. (2010). Investing with prejudice: The relationship between women's presence on company boards and objective and subjective measures of company performance. *British Journal of Management, 21*(2), 484-497.

Healy, P., & Palepu, K. (2001). nformati-on asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting & Economics, 31*, 405-440.

Herring, C. (2009). Does diversity pay?: Race, gender, and the business case for diversity. *American Sociological Review, 74*(2), 208-224.

Hillier, D., Grinblatt, M., & Titman, S. (2012). *Financial markets and corporate strategy: Second European edition.* Maidenhead: McGraw-Hill Education.

Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review, 28*(3), 383-396.

Hillman, A. J., Canella, A. A., & Harris, I. C. (2002). Women and racial minorities in the boardroom: How do directors differ? *Journal of Management, 28*(6), 747-763.

Hillman, A. J., Canella, A. A., & Paetzold, R. L. (2000). The resource dependent role of corporate directors: Strategic adoption of board composition in response to environmental change. *Journal of Management Studies, 37*(2), 235-255.

Hillman, A. J., Shropshire, C., & Canella, A. A. (2007). Organizational predictors of women on corporate boards. *Academy of Management Journal, 50*(4), 941-952.

Huang, S., & Hilary, G. (2018). Zombie board: Board tenure and firm performance. *Journal of Accounting Research, 56*(4), 1285-1329.

Invoering streefcijfer. (2017, November 29). Retrieved from Overheid.nl: https://zoek.officielebekendmakingen.nl/dossier/34435/stb-2017-68?resultIndex=0&sorttype=1&sortorder=4

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305-360.

Jia, M., & Zhang, Z. (2013). Critical mass of women on BODs, multiple identities, and corporate philanthropic disaster response: Evidence from privately owned Chinese firms. *Journal of Business Ethics, 118*(2), 303-317.

Jong, A. d., DeJong, D. V., Mertens, G., & Wasley, C. E. (2005). The role of self-regulation in corporate governance: Evidence and implications from The Netherlands. *Journal of Corporate Finance, 11*, 473-503.

Kabir, R., & Minh Thai, H. (2017). Does corporate governance shape the relationship between corporate social responsibility and financial performance? *Pacific Accounting Review, 29*(2), 227-258.

Kaczmarek, S. (2009). *Nationality, international experience diversity and firm internationalisation: The implications for performance.*

Kang, H., Cheng, M., & Gray, S. J. (2007). Corporate governance and board composition: Diversity and independence of Australian boards. *Corporate Governance: An International Review, 15*(2), 194-207.

Kanter, R. M. (1977). *Men and women of the corporation.* New York: Basic Books.

Kennedy, P. (1992). *A guide to econometrics.* Oxford: Blackwell.

Kleijn, E., Verduyn, K., Montfort, K. v., & Masurel, E. (2008). Commissaris en familiebedrijf. *Maandblad voor Accountancy en Bedrijfseconomie, 82*(9), 396-403.

Kock, C. J., & Min, B. S. (2016). Legal origins, corporate governance, and environmental outcomes. *Journal of Business Ethics, 138*(3), 507-524.

Liao, L., Luo, L., & Tang, Q. (2015). Gender diversity, board independence, environmental committee and greenhouse gas disclosure. *The British Accounting Review, 47*(4), 409-424.

Liu, Y., Wei, Z., & Xie, F. (2014). Do women directors improve firm performance in China? *Journal of Corporate Finance, 28*, 169-184.

Low, D. C., Roberts, H., & Whiting, R. H. (2015). Board gender diversity and firm performance: Empirical evidence from Hong Kong, South Korea, Malaysia and Singapore. *Pacific-Basin Finance Journal, 35*(A), 381-401.

Lu, X., & White, H. (2014). Robustness checks and robustness tests in applied economics. *Journal of Econometrics, 178*(1), 194-206.

Lückerath-Rovers, M. (2009). Gender-diversiteit: De Nederlandse business case. *Maandblad voor Accountancy en Bedrijfseconomie, 83*(3), 92-103.

Lückerath-Rovers, M. (2013). Women on boards and firm performance. *Journal of Management & Governance, 17*(2), 491-509.

Mahadeo, J. D., Oogarah-Hanuman, V., & Soobaroyen, T. (2011). A longitudinal study of corporate social disclosures in a developing economy. *Journal of Business Ethics, 104*(4), 545-558.

Mahadeo, J. D., Soobaroyen, T., & Hanuman, V. O. (2012). Board composition and financial performance: Uncovering the effects of diversity in an emerging economy. *Journal of Business Ethics, 105*(3), 375-388.

Marinova, J., Plantenga, J., & Remery, C. (2016). Gender diversity and firm performance: Evidence from Dutch and Danish boardrooms. *The International Journal of Human Resource Management, 27*(15), 1777-1790.

Minichilli, A., Zattoni, A., & Zona, F. (2009). Making boards effective: An empirical examination of board task performance. *British Journal of Management, 20*(1), 55-74.

Murray, A. I. (1989). Top management group heterogeneity and firm performance. *Strategic Management Journal, 10*(7), 125-141.

OECD. (2017, November 24). *G20/OECD Principles of Corporate Governance.* Retrieved from OECD: https://www.oecd.org/daf/ca/Corporate-Governance-Principles-ENG.pdf

Officiele bekendmakingen. (2011, June 14). Retrieved from Overheid.nl: https://zoek.officielebekendmakingen.nl/stb-2011-275.html

Oh, W. Y., Chang, Y. K., & Martynov, A. (2011). The effect of ownership structure on Corporate Social Responsibility: Empirical evidence from Korea. *Journal of Business Ethics, 104*(2), 283-297.

Oxelheim, L., & Randøy, T. (2003). The impact of foreign board membership on firm value. *Journal of Banking & Finance, 27*(12), 2369-2392.

Pelled, L. H., Eisenhardt, K., & Xin, K. R. (1999). Exploring the black box: An analysis of work group diversity, conflict, and performance. *Administrative Science Quarterly, 44*(1), 1-28.

Pfeffer, J. (1972). Size and composition of corporate board of directors. *Administrative Science Quarterly, 17*(2), 218-228.

Pfeffer, J., & Salancik, G. (1978). *The external control of organizations: A resource dependence perspective.* New York: Harper & Row.

Plümper, T., & Troeger, V. E. (2007). Efficient estimation of time-invariant and rarely changing variables in finite sample panel analyses with unit fixed effects. *Political Analysis, 15*(2), 124-139.

Randøy, T., Thomsen, S., & Oxelheim, L. (2006, November). *A Nordic perspective on corporate board diversity.* Retrieved from Nordic Innovation Centre: http://www.nordicinnovation.org/Global/_Publications/Reports/2006/The%20performance%20effects%20of%20board%20diversity%20in%20Nordic%20Firms.pdf

Renders, A., Gaeremynck, A., & Sercu, F. (2010). Corporate governance ratings and performance: A cross-European study. *Corporate Governance: An International Review, 18*(2), 87-106.

Rose, C. (2007). Does female board representation influence firm performance? The Danish evidence. *Corporate Governance: An International Review, 15*(2), 404-413.

Ruigrok, W., Peck, S., & Tacheva, S. (2007). Nationality and gender diversity on Swiss corporate boards. *Corporate Governance: An International Review, 15*(4), 546-557.

Ryan, M., & Haslam, S. (2007). The glass cliff: Exploring the dynamics surrounding the appointment of women to precarious leadership positions. *Academy of Management Review, 32*(2), 549-572.

Sabatier, M. (2015). A women's boom in the boardroom: Effects on performance? *Applied Economics, 47*(26), 2717-2727.

Saberwal, S., & Smith, S. (2008). Concentrated shareholders as substitutes for outside analysts. *Corporate Governance: An International Review, 16*(6), 562-577.

Schwartz-Ziv, M. (2017). Gender and board activeness: The role of a critical mass. *Journal of Financial and Quantitative Analysis, 52*(2), 751-780.

Shehata, N., Salhin, A., & El-Helaly, M. (2017). Board diversity and firm performance: Evidence from the U.K. SMEs. *Applied Economics, 49*(48), 4817-4832.

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *Journal of Finance, 52*(2), 737-783.

Siciliano, J. (1996). The relationship of board member diversity to organizational performance. *Journal of Business Ethics, 15*(12), 1313-1320.

Simons, T., Pelled, L. H., & Smith, K. (1999). Making use of difference: Diversity, debate and decision comprehensiveness in top management teams. *Academy of Management Journal, 42*(6), 662-673.

Simpson, W. G., Carter, D. A., & D'Souza, F. (2010). What do we know about women on boards? *Journal of Applied Finance, 20*(2), 27-39.

Singh, J., House, R., & Tucker, D. (1986). Organizational change and organizational mortality. *Administrative Science Quarterly, 31*(4), 587-611.

Strikwerda, H. (2013). De Nederlandse corporate governance code: Noodzaak voor correctie en vernieuwing. *Maandblad voor Accountancy en Bedrijfseconomie, 87*(1/2), 43-57.

Studenmund, A. (2014). *Using econometrics, a practical guide* (6th ed.). Harlow: Pearson Education Limited.

Sweetman, K. J. (1996). Women in boardrooms: Increasing numbers qualify to serve. *Harvard Business Review, 74*(1), 1-15.

Talavera, O., Yin, S., & Zhang, M. (2018). Age diversity, directors' personal values, and bank performance. *International Review of Financial Analysis, 55*, 60-79.

Terjesen, S., Sealy, R., & Singh, V. (2009). Women directors on corporate boards: A review and research agenda. *Corporate Governance: An International Review, 17*(3), 320-337.

The Bottom Line: Corporate performance and women's representation on boards. (2018, February 21). Retrieved from Catalyst: http://www.catalyst.org/system/files/The_Bottom_Line_Corporate_Performance_and_Womens_Representation_on_Boards.pdf

Tobin, J. (1978). Monetary policies and the economy: The transmission mechanism. *Southern Economic Journal, 44*(3), 421-431.

Tobin, J., & Brainard, W. (1977). *Asset markets and the cost of capital.* New Haven: Yale University.

Torchia, M., Calabro, A., & Huse, M. (2011). Women directors on corporate boards: From tokenism to critical mass. *Journal of Business Ethics, 102*(2), 299-317.

Twenge, J. M., Campbell, S. M., Hoffman, B. J., & Lance, C. E. (2010). Generational differences in work values: Leisure and extrinsic values increasing, social and intrinsic values decreasing. *Journal of Management, 36*(5), 1117-1142.

Veen, K. v., & Elbertsen, J. (2008). Governance regimes and nationality diversity in corporate boards: A comparative study of Germany, the Netherlands and the United Kingdom. *Corporate Governance: An International Review, 16*(5), 386-399.

Walt, N. V., & Ingley, C. (2003). Board dynamics and the influence of professional background, gender and ethnic diversity of directors. *Corporate Governance: An International Review, 11*(3), 218-234.

Weir, C., Laing, D., & McKnight, P. J. (2002). Internal and external governance mechanisms: Their impact on the performance of large UK public companies. *Journal of Business Finance & Accounting, 29*(5), 579-611.

Wernerfelt, B., & Montgomery, C. (1988). Tobin's Q and the importance of focus in firm performance. *American Economic Review, 78*(1), 246-250.

Wet vereenvoudiging en flexibilisering bv-recht. (2012, July 5). Retrieved from Overheid.nl: https://zoek.officielebekendmakingen.nl/stb-2012-299

Williamson, O. (1984). Corporate governance. *Yale Law Journal, 93*(7), 1197-1229.

7 Appendices

Appendix A: List of Dutch firms in the study

AALBERTS INDUSTRIES NV	CURETIS N.V.	KENDRION N.V.	POSTNL N.V.
ABN AMRO GROUP N.V.	DGB GROUP N.V.	KIADIS PHARMA N.V.	RANDSTAD HOLDING NV
ACCELL GROUP NV	DPA GROUP N.V.	KONINKLIJKE AHOLD DELHAIZE N.V.	REFRESCO GROUP N.V.
ADVANCED METALLURGICAL GROUP N.V.	EASE2PAY N.V.	KONINKLIJKE BAM GROEP NV	RELX NV
AEGON NV	ESPERITE N.V.	KONINKLIJKE BOSKALIS WESTMINSTER NV	ROODMICROTEC N.V.
AKZO NOBEL NV	FLOW TRADERS NV	KONINKLIJKE BRILL NV	SBM OFFSHORE N.V.
ALFEN N.V.	FNG N.V	KONINKLIJKE DSM N.V.	SIF HOLDING N.V.
ALTICE N.V.	FORFARMERS N.V.	KONINKLIJKE KPN NV	SLIGRO FOOD GROUP N.V.
AMSTERDAM COMMODITIES N.V.	FUGRO NV	KONINKLIJKE PHILIPS N.V.	SNOWWORLD N.V.
AND INTERNATIONAL PUBLISHERS NV	GEMALTO N.V.	KONINKLIJKE VOLKERWESSELS N.V.	STERN GROEP NV
ARCADIS NV	GRANDVISION N.V	KONINKLIJKE VOPAK N.V.	TAKEAWAY.COM N.V.
ASM INTERNATIONAL NV	GROOTHANDELSGEBOUWEN NV	LUCAS BOLS N.V	TIE KINETIX N.V.
ASML HOLDING N.V.	HEIJMANS NV	MKB NEDSENSE N.V.	TKH GROUP N.V.
ASR NEDERLAND NV	HEINEKEN HOLDING NV	N.V. KONINKLIJKE PORCELEYNE FLES	TOMTOM NV
AVANTIUM N.V.	HEINEKEN NV	N.V. NEDERLANDSCHE APPARATENFABRIEK "NEDAP"	WOLTERS KLUWER NV
BASIC-FIT N.V.	HOLLAND COLOURS NV	NEWAYS ELECTRONICS INTERNATIONAL NV	VALUE8 NV
BATENBURG TECHNIEK N.V.	HYDRATEC INDUSTRIES N.V.	NIBC HOLDING NV	VAN LANSCHOT KEMPEN NV
BE SEMICONDUCTOR INDUSTRIES NV	ICT GROUP N.V.	NN GROUP NV	VASTNED RETAIL N.V.
BETER BED HOLDING NV	IEX GROUP N.V.	NOVISOURCE N.V.	WERELDHAVE NV
BEVER HOLDING NV	IMCD N.V.	NSI N.V.	WESSANEN N.V.
BINCKBANK NV	ING GROEP NV	OCI N.V	
BRUNEL INTERNATIONAL NV	INTERTRUST N.V.	ORANJEWOUD N.V.	
C/TAC NV	KARDAN N.V.	ORDINA NV	
CORBION N.V.	KAS BANK NV	PHARMING GROUP NV	

Appendix B: List of British firms in the study

ANGLO AMERICAN PLC	COBHAM PLC	JD SPORTS FASHION PLC	ROYAL DUTCH SHELL PLC
ANTOFAGASTA PLC	COMPUTACENTER PLC	JOHNSON MATTHEY PLC	ROYAL MAIL PLC
ASHTEAD GROUP PUBLIC LIMITED COMPANY	CONNECT GROUP PLC	JUST GROUP PLC	SCHRODERS PLC
ASOS PLC	COSTAIN GROUP PLC	KIER GROUP PLC	SERCO GROUP PLC
ASSOCIATED BRITISH FOODS PLC	DEBENHAMS PLC	KINGFISHER PLC	SEVERN TRENT PLC
ASTRAZENECA PLC	DIAGEO PLC	LEGAL & GENERAL GROUP PLC	SKY PLC
AVIVA PLC	DIRECT LINE INSURANCE GROUP PLC	WM MORRISON SUPERMARKETS PLC	SMITH & NEPHEW PLC
BABCOCK INTERNATIONAL GROUP PLC	DIXONS CARPHONE PLC	MARKS AND SPENCER GROUP P.L.C.	SMITHS GROUP PLC
BAE SYSTEMS PLC	DS SMITH PLC	MARSHALL MOTOR HOLDINGS PLC	SPORTS DIRECT INTERNATIONAL PLC
BALFOUR BEATTY PLC	EVRAZ PLC	MEGGITT PLC	SSP GROUP PLC
BARCLAYS PLC	G4S PLC	MITCHELLS & BUTLERS PLC	STANDARD CHARTERED PLC
WILLIAM HILL PLC	GALLIFORD TRY PLC	MONDI PLC	TATE & LYLE PUBLIC LIMITED COMPANY
BEAZLEY PLC	GKN PLC	MORGAN SINDALL GROUP PLC	TAYLOR WIMPEY PLC
BELLWAY P L C	GLAXOSMITHKLINE PLC	NATIONAL EXPRESS GROUP PLC	TESCO PLC
BERKELEY GROUP HOLDINGS PLC (THE)	GREENE KING PLC	NATIONAL GRID PLC	THE GO-AHEAD GROUP PLC
BHP BILLITON PLC	HSBC HOLDINGS PLC	NEXT PLC	THE SAGE GROUP PLC.
BP PLC	IMI PLC	OLD MUTUAL PLC	THOMAS COOK GROUP PLC
BRITISH AMERICAN TOBACCO P.L.C.	IMPELLAM GROUP PLC	PENDRAGON PLC	TI FLUID SYSTEMS PLC
BT GROUP PLC	IMPERIAL BRANDS PLC	PERSIMMON PUBLIC LIMITED COMPANY	TRAVIS PERKINS PLC
BUNZL PUBLIC LIMITED COMPANY	INCHCAPE PLC	PRUDENTIAL PLC	UNILEVER PLC
BURBERRY GROUP PLC	INFORMA PLC	RECKITT BENCKISER GROUP PLC	VESUVIUS PLC
CAPITA PLC	INTERSERVE PLC	WHITBREAD PLC	VODAFONE GROUP PUBLIC LIMITED COMPANY
CARILLION PLC	INTERTEK GROUP PLC	RENTOKIL INITIAL PLC	
CARNIVAL PLC	ITV PLC	RIO TINTO PLC	
CENTRICA PLC	J SAINSBURY PLC	ROLLS-ROYCE HOLDINGS PLC	

Appendix C: Descriptive statistics split by periods

Panel A: Dutch firms

	2016-2017						2009-2010						Difference in means
	Mean	Median	SD	Min	Max	N	Mean	Median	SD	Min	Max	N	P-value
Variables													
Tobin's q	1.744	1.541	0.826	0.720	4.620	150	1.369	1.214	0.574	0.660	4.530	121	0.000***
ROA NI (%)	2.014	3.853	12.519	-54.900	60.960	183	3.151	3.947	10.785	-55.290	60.960	135	0.387
ROA EBIT (%)	2.879	5.140	10.123	-27.470	33.600	176	4.128	4.970	9.366	-27.470	33.600	129	0.267
ROE NI (%)	3.649	10.108	35.859	-143.205	148.070	180	3.653	8.699	29.244	-143.205	70.976	137	0.999
ROE EBIT (%)	4.336	12.970	39.004	-158.720	165.180	173	6.353	11.245	31.534	-158.720	75.660	130	0.619
RET	0.130	0.081	0.353	-0.073	1.420	159	0.256	0.202	0.462	-0.083	1.420	119	0.010**
Fem_dir	0.149	0.167	0.121	0.000	0.500	178	0.066	0.000	0.085	0.000	0.333	141	0.000***
GD1	0.350	0.000	0.478	0.000	1.000	178	0.260	0.000	0.442	0.000	1.000	141	0.097*
GD2	0.190	0.000	0.390	0.000	1.000	178	0.130	0.000	0.335	0.000	1.000	141	0.156
GD3	0.170	0.000	0.380	0.000	1.000	178	0.050	0.000	0.218	0.000	1.000	141	0.000***
GD4	0.710	1.000	0.456	0.000	1.000	178	0.440	0.000	0.498	0.000	1.000	141	0.000***
Mean age	57.255	57.500	4.421	45.500	65.600	177	57.179	57.317	3.702	45.000	66.000	140	0.867
Age_coef	0.130	0.128	0.039	0.039	0.285	177	0.131	0.122	0.044	0.039	0.297	139	0.902
Age_band	3.165	3.000	0.710	1.000	5.000	176	3.210	3.000	0.709	1.000	4.000	138	0.574
For_dir	0.276	0.211	0.278	0.000	1.000	178	0.233	0.143	0.260	0.000	1.000	141	0.151
ND1	0.150	0.000	0.354	0.000	1.000	178	0.160	0.000	0.364	0.000	1.000	141	0.806
ND2	0.080	0.000	0.270	0.000	1.000	178	0.040	0.000	0.186	0.000	1.000	141	0.092*
ND3	0.400	0.000	0.491	0.000	1.000	178	0.380	0.000	0.486	0.000	1.000	141	0.677
ND4	0.620	1.000	0.487	0.000	1.000	178	0.570	1.000	0.496	0.000	1.000	141	0.433
T_Assets	25,940	1,087	106,398	0.619	846,216	184	17,056	0,852	85,402	5,167	882,119	137	0.422
LnAssets	13.757	13.898	2.794	6.430	20.560	184	13.529	13.656	2.574	8.550	20.600	137	0.457
Firmage	65.310	41.000	65.803	2.000	334.000	185	61.740	35.000	67.040	3.000	327.000	170	0.613
LnFirmage	3.728	3.714	0.984	0.690	5.810	185	3.542	3.555	1.154	1.100	5.790	170	0.106
Leverage	0.216	0.175	0.193	0.000	0.914	184	0.216	0.193	0.167	0.000	0.664	0.216	0.994

Panel B: British firms

	2016-2017						2009-2010						Difference in means
	Mean	Median	SD	Min	Max	N	Mean	Median	SD	Min	Max	N	P-value
Variables													
Tobin's q	1.616	1.416	0.717	0.700	4.100	165	1.549	1.319	0.732	0.760	4.100	147	0.411
ROA NI (%)	5.004	4.281	6.029	-28.160	26.612	198	11.031	8.486	10.895	-15.343	45.081	167	0.000***
ROA EBIT (%)	6.360	5.225	6.135	-10.950	24.970	188	7.766	6.560	6.883	-10.950	24.970	163	0.046**
ROE (%)	17.017	15.188	23.249	-80.420	108.700	196	11.573	8.010	16.306	-42.736	108.700	163	0.012**
ROE EBIT (%)	21.548	17.620	29.216	-95.160	142.390	188	25.418	20.650	26.906	-46.710	142.390	153	0.205
RET	0.032	0.007	0.329	-0.073	2.320	180	0.409	0.290	0.557	-0.580	2.530	143	0.000***
Fem_dir	0.241	0.231	0.086	0.000	0.500	182	0.102	0.103	0.096	0.000	0.429	156	0.000***
GD1	0.150	0.000	0.362	0.000	1.000	182	0.370	0.000	0.483	0.000	1.000	156	0.000***
GD2	0.370	0.000	0.484	0.000	1.000	182	0.170	0.000	0.374	0.000	1.000	156	0.000***
GD3	0.460	0.000	0.500	0.000	1.000	182	0.120	0.000	0.328	0.000	1.000	156	0.000***
GD4	0.980	1.000	0.128	0.000	1.000	182	0.650	1.000	0.477	0.000	1.000	156	0.000***
Mean age	57.916	58.000	2.970	50.583	64.500	182	56.010	56.236	3.299	45.167	63.786	156	0.000***
Age_coef	0.113	0.111	0.027	0.044	0.204	182	0.122	0.119	0.026	0.068	0.214	156	0.002***
Age_band	3.136	3.000	0.676	2.000	5.000	184	3.236	3.000	0.638	2.000	5.000	161	0.159
For_dir	0.291	0.240	0.236	0.000	0.909	182	0.249	0.167	0.242	0.000	0.929	156	0.112
ND1	0.170	0.000	0.377	0.000	1.000	182	0.230	0.000	0.432	0.000	1.000	156	0.169
ND2	0.160	0.000	0.372	0.000	1.000	182	0.120	0.000	0.321	0.000	1.000	156	0.190
ND3	0.470	0.000	0.501	0.000	1.000	182	0.400	0.000	0.491	0.000	1.000	156	0.177
ND4	0.810	1.000	0.395	0.000	1.000	182	0.740	1.000	0.438	0.000	1.000	156	0.162
T_Assets	83,184	6,425	279,106	0.370	2,253,094	192	30,842	3,641	74,892	93,031	433,239	168	0.013**
LnAssets	16.199	15.675	1.752	12.820	21.540	192	15.578	15.108	1.729	11.440	19.890	168	0.001***
Firmage	66.760	37.500	74.120	2.000	327.000	196	55.700	29.500	60.006	1.000	320.000	184	0.112
LnFirmage	3.757	3.624	0.947	0.690	5.790	196	3.485	3.384	1.093	0.700	5.770	184	0.010**
Leverage	0.280	0.298	0.186	0.000	0.807	196	0.303	0.297	0.194	0.000	0.791	170	0.253

Notes: This table contains a summary of the descriptive statistics of the Dutch (panel A) and British (panel B) firms that are used in this research. The statistics contain information per year couple (2016-2017 and 2009-2010). For each variable, the mean, median, standard deviation, minimum, maximum, and number of observations are presented. In the last two columns, the results of the t-test between the means of the years 2016-2017 and 2009-2010 are presented. The definitions of the variables can be found in table 1. In this table, total assets is presented in millions of euros for presentation purposes.

Appendix D: Influence of mandatory gender quota

	The Netherlands											
	Tobin's q		**ROA NI**		**ROA EBIT**		**ROE NI**		**ROE EBIT**		**RET**	
	2016-2017	**2009-2010**	**2016-2017**	**2009-2010**	**2016-2017**	**2009-2010**	**2016-2017**	**2009-2010**	**2016-2017**	**2009-2010**	**2016-2017**	**2009-2010**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Fem_dir	0.027 (0.048)	0.050 (0.071)	15.921** (2.071)	1.433 (0.128)	11.956** (1.999)	-13.394 (-1.264)	62.783*** (2.678)	19.227 (0.606)	56.881** (2.334)	7.965 (0.224)	-0.311 (-1.200)	-0.927 (-1.570)
Leverage	-0.652 (-1.583)	-0.972** (-2.082)	-10.426** (-2.041)	-17.022** (-2.279)	-8.329** (-2.070)	-17.943** (-2.596)	-27.083* (-1.707)	-44.315** (-2.157)	-25.401 (1.526)	-52.948** (-2.340)	-0.088 (0.491)	-0.053 (-0.140)
LnAssets	-0.085*** (-2.721)	0.037 (1.092)	1.251*** (3.322)	1.895*** (3.425)	1.442*** (4.912)	1.994*** (3.909)	-4.985*** (4.315)	7.511** (5.016)	6.927*** (5.763)	8.433*** (5.071)	0.004 (0.324)	-0.001 (-0.025)
Lnfirmage	0.006 (0.096)	-0.126* (-1.949)	0.168 (0.202)	-0.098 (-0.100)	-0.123 (-0.189)	-0.847 (-0.914)	-2.138 (-0.854)	-1.306 (-0.477)	6.927*** (5.763)	-1.786 (-0.573)	-0.031 (-1.060)	0.085* (1.708)
Constant	2.910*** (5.688)	1.225*** (2.647)	-9.118 (-1.414)	-17.285** (-2.331)	-8.810* (-1.730)	-13.233* (-1.918)	-42.936** (-2.238)	-75.536*** (-3.501)	-62.649*** (-3.097)	-69.550*** (-2.993)	0.369* (1.725)	0.312** (0.724)
Adjusted R^2	0.119	0.031	0.157	0.084	0.273	0.120	0.180	0.164	0.268	0.180	0.107	0.164
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	140	113	172	125	164	125	167	126	161	120	147	87

Notes: The t-statistics are reported in parentheses. The presented results are from OLS regression analysis in which the independent variable gender diversity is measured split up by the year couples 2016-2017 and 2009-2010.

∗ Significance at the 10% level.

∗∗ Significance at the 5% level.

∗∗∗ Significance at the 1% level.

Appendix E: Gender diversity dummy

	Gender diversity dummy											
	The Netherlands						United Kingdom					
	Tobin's q	**ROA NI**	**ROA EBIT**	**ROE NI**	**ROE EBIT**	**RET**	**Tobin's q**	**ROA NI**	**ROA EBIT**	**ROE NI**	**ROE EBIT**	**RET**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
GD4	0.169	-0.202	-1.589	-2.789	-8.994	-0.053	-0.174	1.696	-0.053	0.246	-0.634	-0.166*
	(1.105)	(-0.095)	(-0.879)	(-0.447)	(-1.342)	(-0.600)	(-1.142)	(1.082)	(-0.039)	(0.058)	(-0.102)	(-1.686)
Fem_dir	-0.548	12.806	11.154	56.909**	70.669**	-0.374	2.225***	4.169	1.177	4.595	8.459	0.538
	(-0.799)	(1.337)	(1.381)	(2.021)	(2.345)	(-0.953)	(3.962)	(0.728)	(0.226)	(0.298)	(0.360)	(1.530)
Constant	2.389***	-12.777***	-10.196**	-54.238***	-63.751***	0.232	4.226***	16.857***	18.724***	42.819***	62.919***	1.045***
	(6.733)	(-2.683)	(-2.514)	(-3.923)	(-4.295)	(1.177)	(7.408)	(3.183)	(4.152)	(3.017)	(3.026)	(3.227)
Adjusted R^2	0.095	0.140	0.207	0.186	0.251	0.167	0.125	0.345	0.078	0.076	0.032	0.221
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	255	297	284	296	282	235	277	327	311	325	305	289

Notes: The t-statistics are reported in parentheses. The presented results are from OLS regression analysis in which the independent variable gender diversity is measured by a dummy variable indicating that boards consist of at least one female director or not. The results of the control variables have been left out of the table for brevity.

$*$ Significance at the 10% level. $**$ Significance at the 5% level. $***$ Significance at the 1% level.

Appendix F: Nationality diversity dummy

	Nationality diversity dummy											
	The Netherlands						United Kingdom					
	Tobin's q	ROA NI	ROA EBIT	ROE NI	ROE EBIT	RET	Tobin's q	ROA NI	ROA EBIT	ROE NI	ROE EBIT	RET
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ND4	0.188	0.185	-1.925	1.561	-2.935	-0.013	0.163	-0.577	-2.074*	-2.690	-8.254	-0.096
	(1.294)	(-0.095)	(-1.168)	(0.272)	(-0.481)	(-0.163)	(1.237)	(-0.434)	(-1.804)	(-0.749)	(-1.564)	(-1.134)
For_dir	0.364	-8.457**	-6.673**	-38.609***	-39.577***	0.134	0.355	2.624	6.920***	-0.551	10.660	0.409**
	(1.349)	(-2.303)	(-2.120)	(-3.583)	(-3.400)	(0.875)	(1.391)	(1.024)	(3.155)	(-0.081)	(1.074)	(2.575)
Constant	2.417***	-12.799***	-10.386**	-54.925***	-65.263***	0.218	4.242***	16.659***	18.625***	42.430***	61.609***	1.085***
	(6.857)	(-2.698)	(-2.568)	(-3.980)	(-44.399)	(1.112)	(7.453)	(3.141)	(4.161)	(2.993)	(2.975)	(3.352)
Adjusted R^2	0.096	0.140	0.209	0.186	0.246	0.166	0.125	0.343	0.088	0.078	0.040	0.216
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	255	297	284	296	282	235	277	327	311	325	305	289

Notes: The t-statistics are reported in parentheses. The presented results are from OLS regression analysis, in which the independent variable nationality diversity is measured by a dummy variable indicating that boards consist of at least one foreign director or not. The results of the control variables have been left out of the table for brevity.

∗ Significance at the 10% level.

∗∗ Significance at the 5% level.

∗∗∗ Significance at the 1% level.