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The effect of the transition from a male CEO to a female CEO on firm profitability, growth, and capital structure

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PREFACE AND ACKNOWLEDGEMENTS

As the end of my academic journey approached, I wanted to complete it with a thesis that allowed me to research something I found truly interesting. This thesis explores the topic of gender diversity in top corporate leadership positions. As a woman, I found this subject particularly compelling, and I enjoyed researching and writing about it.

I would like to thank my supervisor, Dr. R. de Bliek, for his guidance and feedback throughout this process. I am also grateful to Dr. F. Urzúa Infante, who really helped me with the data.

I hope this thesis provides valuable insights and that readers find it both informative and enjoyable.

Maria de Jager

The views stated in this thesis are those of the author and not necessarily those of the supervisor, second assessor, Erasmus School of Economics or Erasmus University Rotterdam.

ABSTRACT

This study investigates the effects of transitioning from a male CEO to a female CEO on firm profitability, growth, and capital structure, comparing France and the Netherlands, which have high and low proportions of female CEOs, respectively. I analysed 12 dependent variables for companies that experienced this transition using data from Amadeus. A regression analysis and a comparative analysis were conducted. The results show no significant impact on profitability but they reveal a significant positive effect on asset growth. The transition leads to a more conservative capital structure characterized by lower leverage. The comparative analysis indicates no significant differences between the two countries in terms of the transition from a male to a female CEO. These findings suggest that while the transition to female leadership can foster growth and stability, it does not affect overall profitability.

Keywords: Gender diversity, CEO transition, profitability, growth, capital structure

JEL Classification: G32, J16, M12, L25

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1 Introduction

In 2023, a significant milestone was achieved as the number of women CEOs finally outnumbered the count of CEOs named John (The CEO magazine, 2024). This achievement not only signifies that the number of female CEOs is growing, but it also highlights the persisting gender disparity in corporate leadership. The importance of gender diversity in the business world has been increasing over the years. Many European countries have implemented board gender quotas to address the gender disparity problem. However, despite these additional requirements, the number of female CEOs compared to male CEOs remains disproportionately low. Europe may be the region with the highest percentage of women in CEO roles, but the percentage of women in CEO roles was still only 7.9% in 2021 (Laidlaw & Sandberg, 2023). While some countries have made strides in increasing female representation, the underlying reasons for the persistent underrepresentation of women in leadership roles remain unclear.

This paper aims to investigate the reasons behind the underrepresentation of women in top leadership positions. It will examine the effects of the transformation from a male CEO to a female CEO on three key aspects: firm profitability, growth, and capital structure. The study will focus on companies operating in two contrasting countries: one country with a high proportion of female CEOs and another country with a low proportion of female CEOs. It will compare, in this regard, the countries France and the Netherlands. The research question this paper seeks to answer is: ‘’*What is the effect of the transition from a male CEO to a female CEO on firm profitability, growth, and capital structure, and are there differences between countries with a high proportion of female CEOs and those with a low proportion?’’*

In December 2005, Norway became the first European country to implement a gender quota. This new law required publicly listed companies to raise the proportion of women on their boards to 40%. The number of women in top leadership positions is increasing worldwide, but there are significant variations across countries. France and the Netherlands represent contrasting examples in terms of female representation in the corporate world. France is one of the countries with the highest proportion of female CEOs, while the Netherlands, on the other hand, belongs to one of the countries with the lowest proportion of female CEOs (*S&P Global Broad Market Index, 2022*). Due to these different landscapes in terms of female

participation in corporate leadership positions, France and the Netherlands are ideal candidates for a comparative analysis.

Researchers have been investigating the effects of increased female representation on corporate boards on firm valuation. After the implementation of the gender quota in Norway, Ahern and Dittmar (2012) researched the impact of mandated female board representation on firm value. They used a panel of 248 publicly listed Norwegian firms and conducted an event study to analyse the stock price reaction and estimate the effect of the quota on Tobin's Q. The results of their study revealed a negative effect of the board gender quota on firm value. The study by Eckbo et al. (2022) provided new evidence that contradicted Ahern and Dittmar's findings. They adjusted Ahern and Dittmar's event study to examine stock market reactions following the implementation of the board gender quota law. Their results were contrary to the study of Ahern and Dittmar because they found no significant negative market reaction. The evidence suggested that the implication of the board gender quota is a regulatory constraint with no significant effect on firm value.

Numerous studies have investigated the impact of increased female board representation, resulting in completely different outcomes, as confirmed by the results of the studies by Ahern and Dittmar (2012) and Eckbo et al. (2022). However, there is a gap in research focusing on the specific effect of transitioning from a male CEO to a female CEO on firm profitability, growth, and capital structure. By researching the effect of the CEO transition instead of the effect of the change in board representation, this study will specifically focus on the ultimate top positions and provide new insights. France and the Netherlands are ideal candidates for a comparative analysis because of their different landscapes in terms of female participation in corporate leadership positions. By comparing these two countries, I aim to investigate not only the effect of CEO transitions on firm profitability, growth, and capital structure, but also whether this effect varies across distinct socio-economic contexts.

Building on prior research, this paper will conduct an event study to investigate the impact of the transition from a male CEO to a female CEO on firm profitability, growth, and capital structure. The study focuses specifically on companies located in France and the Netherlands that have experienced such a change in leadership. The data utilized in this study is obtained from Amadeus, accessed through Wharton Research Data Services (WRDS), and covers a diverse range of companies in France and the Netherlands. The study focuses on CEO

transitions occurring between January 1, 2000, and December 31, 2023. This dataset provides the Bureau van Dijk numbers of the companies that have undergone a CEO transition from male to female. Financial data for these companies is also obtained from Amadeus using the Bureau van Dijk numbers of the companies for identification. I analyse a total of 12 dependent variables to measure different aspects of firm profitability, growth, and capital structure. The study includes two independent variables and various control variables to ensure robustness and reliability. To observe the effects of the transition, the analysis will span two years before and two years after the appointment date of the new female CEO. A regression analysis will be employed to assess the impact of the transition from a male CEO to a female CEO on firm profitability, growth, and capital structure. Additionally, a comparative analysis will be conducted to statistically test the differences in the effects observed between France and the Netherlands. This comparative analysis will utilize z-scores to determine the significance of differences in coefficients between the two countries.

Female underrepresentation is very pronounced. This could imply that the transition from a male CEO to a female CEO negatively impacts firm profitability and growth. Based on the latest research, I expected that the transition from a male CEO to a female CEO would not necessarily have a negative effect on firm profitability and growth. The results of this study indicated mixed outcomes. The transition from a male CEO to a female CEO has no significant effects on profitability metrics but shows a highly significant positive effect on employee growth and asset growth. I also expected that the transition from a male CEO to a female CEO would lead to a more conservative capital structure characterized by lower leverage. The results of this study supported this expectation by indicating that the transition from a male CEO to a female CEO has a highly significant negative effect on the debt ratio, suggesting a more conservative capital structure. I expected that the transition would influence firm profitability and growth differently in France and the Netherlands. The comparative analysis showed that the impact of the transition does not significantly differ between the countries. I did expect that the transition would not influence the capital structure of the firms differently in France and the Netherlands due to the risk-averse nature of female CEOs. The results of this study supported this expectation.

This study has several limitations. Firstly, the dataset may not capture all factors that could influence firm profitability, growth, and capital structure. Secondly, there may be limitations related to the completeness of the data, which could impact the reliability of the conclusions.

Lastly, the analysis only focuses on two countries, which may limit the generalizability of the findings.

This research contributes to the existing literature on gender diversity in corporate leadership positions by specifically examining the effects of the transition from a male CEO to a female CEO. It provides new insights into the impact of gender in the top leadership positions within different socio-economic contexts by comparing a country with a high proportion of female CEOs and a country with a low proportion of female CEOs. This paper offers valuable insights for policymakers and companies aiming to promote gender diversity in leadership positions.

The structure of this paper is as follows: Chapter 2 presents the theoretical framework, discussing the earlier literature and the hypotheses. The data used in this study is discussed in Chapter 3, while Chapter 4 elaborates on the empirical strategy. Chapter 5 presents the main results, and Chapter 6 contains the discussion. Finally, Chapter 7 concludes the paper.

2 Theoretical Framework

This chapter starts with a comprehensive overview of the background of management composition and female representation, focusing on the specific contexts of France and the Netherlands. It reviews previous studies on female representation as well as studies that examine the impact of female leadership on firm profitability, growth, and capital structure. The empirical review in this chapter summarizes the key findings from earlier empirical research. Additionally, this chapter integrates the development of hypotheses based on insights gained from the literature.

2.1 Management composition

Management composition plays a crucial role in corporate governance. Diversity in corporate top positions has been an important topic of discussion and research in recent years. Gender diversity is one of the topics gaining popularity. Despite the growing attention to gender diversity, females remain underrepresented in these positions. This section provides a background on management composition and examines the state of female representation, with a focus on France and the Netherlands.

2.1.1 Background

Management composition refers to the structure of the executive team and the board of directors within an organization. It is a critical aspect of corporate governance, as it can significantly influence a company's strategic direction and performance. The executive team and the board of directors are responsible for making important decisions and hold substantial influence over the company's operations and policies.

The importance of management composition has been extensively studied in the field of management. The paper by Hambrick and Mason (1984) is a foundational work within this field and introduced the Upper Echelons Theory. This theory posits that the characteristics of the top management team shape the outcomes of the organization. This paper emphasizes the importance of management composition due to its significant effects on the firm's outcomes.

Diversity has become increasingly important in recent years, and so has diversity in management. Management diversity is distinct from general workforce diversity. General workforce diversity focuses on the inclusion of diverse individuals in various roles within the

company. Management diversity specifically addresses diversity within the highest level of corporate leadership. These two concepts address different layers of organizational hierarchy.

The study of management composition has evolved significantly over the years. The paper by Carter et al. (2003) was one of the first studies to examine whether board diversity was associated with improved financial performance. They defined diversity as the percentage of women, African Americans, Asians, and Hispanics on the board of directors. Much of the earlier research in this field focused on board composition and only a few studies focused solely on CEOs. This study focuses solely on CEOs and the transition from male to female. It examines diversity in top executive positions, specifically focusing on gender diversity.

2.1.2 Female representation

In the Netherlands, since 2006, women have outnumbered men in universities (Central Bureau of Statistics, 2023). However, the Netherlands still belongs to the countries with the lowest proportions of female CEOs despite this educational advantage. This underrepresentation of women in top leadership positions is not only seen in the Netherlands; it is a widespread issue. Female CEOs are globally underrepresented, accounting for only 5.4% of all CEOs at the largest 8,000 companies globally (S&P Global, 2023). This significant gender gap in corporate top positions highlights the barriers that women face in the corporate world.

European countries have recognized the importance of increasing female representation in the corporate world. Norway was the first country to pass a law to increase the representation of women in top positions in the corporate sector in 2003 (Bertrand et al. 2019). Publicly listed companies were required, due to the gender quota, to raise the proportion of women on their boards to 40 percent. The implementation of this gender quota is seen as an important step towards gender equality in top positions.

Several European countries followed and adopted measures to promote gender diversity. Each country had its own rules, and the strictness varied. In some countries, such as France and Belgium, noncompliant firms can be fined, while countries like the Netherlands and Spain had soft quotas and no sanctions (Mateos et al., 2019). In 2022, the European Parliament and the Council reached a political agreement on gender balance on corporate boards. The Directive sets ambitious targets for European companies listed on the EU stock exchange. The Directive mandates that at least 40% of the underrepresented gender be represented in non-executive

boards or 33% among all directors (European Commission, 2022). The Directive highlights the importance of gender equality and aims to create a balanced representation of genders in top leadership roles across Europe. This paper focuses on France and the Netherlands. Their specific rules regarding gender quotas will be elaborated further.

2.1.3 Female representation: France and the Netherlands

France ranks among the countries with the highest proportion of female CEOs in the world (S&P Global Broad Market Index, 2022). This achievement can be attributed to the proactive measures taken by the French government. France adopted the Copé-Zimmermann law in 2011, a new law that introduced board-gender quotas.

The Copé-Zimmermann law required companies, both listed and non-listed, with revenues or a total of assets exceeding 50 million euros to have at least 40% female representation on their boards by 2017. The announcement of this law in 2010 led to an immediate increase in the proportion of female directors on boards from 10% to 15.4% within the same year (AFEP-MEDEF, 2010). This increase demonstrates the impact that legislative measures can have on improving gender diversity. By 2016, the 140 largest listed companies had 36.7% female representation on their boards. These statistics show that French firms have actively responded to the law, resulting in positive changes in female board representation over the years (Zenou et al., 2017).

The positive outcomes observed in France highlight the effects of legislative pressure on gender diversity. The success of the Copé-Zimmermann law has not only increased female representation in France, but it also serves as a model for other countries that want to increase female representation and are considering similar legislative approaches.

In contrast, the Netherlands ranks among the countries with the lowest proportion of female CEOs in the world (S&P Global Broad Market Index, 2022). In the Netherlands, the responsibility to increase female board representation falls on companies themselves. While the Dutch government has been hesitant to implement mandatory gender quotas, it did introduce a temporary gender quota in 2013, which lasted until 2016. This quota required larger companies to have at least 30% female representation on their corporate boards. It was a soft-gender quota, so there were no strict sanctions for non-compliance.

The results of the 2013 gender quota were disappointing. There was an increase in female representation, but it did not come close to meeting the gender quota (Kruisinga & Senden, 2017). The percentage of women on the boards of directors of companies was 9.6% and increased to 10.2%, not even an increase of 1% (Hendrikse & Pouwels, 2016). Similarly, the percentage of women on the supervisory board was 11.2% and has increased to 13.1% (Hendrikse & Pouwels, 2016).

On February 11, 2021, the introduction of a new gender quota was approved because there was a need for more effective measures. This quota requires that at least one-third of the representation on the supervisory boards of Dutch-listed companies be both women and men. Unlike the previous quota, the new quota has a more permanent nature, a higher threshold and requires companies to regularly report on their progress in meeting the gender diversity targets. While the initial efforts had limited success, the Dutch government aims to promote diversity in leadership positions and achieve a more balanced representation of genders.

2.2 Empirical studies

In this section, the literature of earlier research is reviewed to provide valuable insights into how women influence firm profitability, growth, and capital structure. It highlights the complex impact of female representation in top corporate positions on various aspects. Additionally, several hypotheses are developed regarding the effect of the transition from a male CEO to a female CEO on firm profitability, growth, and capital structure. These hypotheses are based on insights gained from the empirical studies. Previous studies suggested that female leadership has positive effects on various aspects of firm performance. Women remain significantly underrepresented in corporate top positions despite these positive effects. This discrepancy is unexpected if the positive effects of female leadership were widely recognized. There is limited literature that focuses specifically on the level of CEOs. This study focuses solely on the transition from a male CEO to a female CEO to research the effect of this change in the highest executive role.

2.2.1 The influence of female representation on firm profitability

Following the introduction of the new law that was required in Norway in 2003, Ahern and Dittmar (2012) conducted a study to evaluate its effects on firm value. They examined 248 publicly listed Norwegian companies to research the impact of the new law. They found that

the quota led to a large decline in stock prices and had a significantly large negative effect on Tobin's Q. One potential explanation for this negative impact is that the boards became younger and less experienced due to the quota. This could have negatively affected the overall quality of decision-making.

Building on this research, Eckbo et al. (2022), used the short-run event study of Ahern and Dittmar (2012) and provided new evidence. Their findings suggest that the law served as a value-neutral regulatory constraint. Contrary to initial expectations, a decline in firm value was mitigated due to the presence of enough qualified female director candidates. This indicates that increased female representation in top leadership positions did not have a detrimental effect on firm value. Khan and Vieito (2013) focused specifically on CEOs. Their research aimed to determine whether the gender of the CEO influences overall firm performance. The results indicated that firms led by female CEOs are associated with an increase in performance compared to those firms managed by male CEOs. This suggests that female leadership at the very top of the corporate hierarchy can have a positive impact.

Further evidence supporting the positive influence of female representation comes from the research done by Erhardt et al. (2003). Their research focused on Fortune 500 firms and revealed that companies with a higher number of female executives tend to exhibit higher profitability. Their study highlights the positive correlation between increased female representation and improved financial performance. Similarly, Krishnan and Parsons (2008) discovered that firms with a higher proportion of women in senior management positions tend to be more profitable. These studies highlight the benefits of gender diversity at the top management level.

Earlier research on the influence of women in top leadership positions provided mixed but generally positive evidence regarding their impact on firm performance and profitability. Ahern and Dittmar (2012) highlighted the initial concerns about the negative effects of gender quotas, but other researchers have shown the opposite. The presence of women in top management positions appears to be associated with higher profitability. There is no research that focuses solely on CEOs and their effect on profitability, but studies on CEOs have shown positive outcomes on firm performance. In conclusion, the first hypothesis is proposed:

H1: *The transition from a male CEO to a female CEO will have a positive effect on firm profitability.*

2.2.2 The influence of female representation on firm growth

Research suggests that having gender-diverse management teams can lead to improved performance, especially when it's focused on growth strategies. The study by Dwyer et al. (2003) provides evidence that supports the notion that gender diversity in management can significantly impact firm performance, particularly for those aiming for growth. The study indicates that gender-diverse teams implement more effective growth strategies. Miller and Triana (2009) found a positive correlation between the presence of female board members and the firm's expenditures on research and development (R&D). Their research suggests that female directors are more likely to invest in innovation. Innovation is an important driver for growth, and Porter (1992) highlights that innovation productivity is essential because it attracts attention from a large number of stakeholders, managers, employees, investors, and regulators. Later research by Chen et al. (2018) supports this idea and finds that companies with more female directors tend to invest more in innovation. Investing in innovation is a key factor when it comes to competitive advantage and long-term success, which could lead to higher growth rates.

However, challenges in terms of agency problems arise in innovation management. Risk-averse managers may prioritize less risky projects over innovation investments (O'Connor & Rafferty, 2012), while others may resist innovation efforts due to the associated costs and disruptions (Bertrand & Mullainathan, 2003). Consequently, there is a need for enhanced monitoring to improve innovation management and ensure that firms remain committed to their growth-oriented strategies.

Research by Adams and Ferreira (2009) states that increased representation of women on boards correlates with heightened monitoring effects. This implies that a greater presence of female directors could have a positive influence on the amount of monitoring within firms. This leads to improved oversight within firms and better innovation management. Combined with their tendency to invest more in innovation, gender diversity in leadership roles can play a significant role in fostering innovation and driving firm growth.

Earlier research indicates that gender diversity in top positions can have a positive influence on the growth trajectories of the firm. Female leaders are often associated with higher investments in R&D and innovation (Miller & Triana, 2009). Both are important components of a firm's growth strategies. Women ensure better monitoring and help firms stay focused on their growth strategies. Higher female representation appears to have a positive outcome for firm growth. In conclusion, the second hypothesis is proposed:

H2: *The transition from a male CEO to a female CEO will have a positive effect on firm growth.*

2.2.3 The influence of female representation on firm capital structure

Research indicates that females are generally more risk-averse than males. Studies by Vandergift and Brown (2005) and Wei (2007) confirm this tendency. These different risk attitudes affect the types of financial decisions made. The study by Niessen and Ruenzi (2006) discovered that women take less systemic risk than men. Khan and Vieito (2013) also found that the firm's risk level is lower when the CEO is a woman.

However, not all studies find evidence that supports the notion that female executives are more risk-averse. For instance, the study by Adams and Funk (2012) indicates that female directors are more risk-loving compared to their male counterparts. Safiullah et al. (2022) conducted research in Spain and observed that firms with more female directors on their boards exhibit higher risk levels. This suggests that the relationship between gender and risk-taking behaviour is complex.

These differences in risk-taking behaviour are crucial as they directly influence capital structure decisions within firms. More risk-averse executives are likely to prefer lower levels of debt to mitigate potential financial distress, while risk-loving executives may adopt entirely different approaches.

In the context of capital structure, Huang and Kisgen (2013) found that US firms led by female executives, including CEOs and CFOs, issue less debt than firms managed by male executives. This finding is supported by Graham et al. (2013). Their paper documented that

firms led by male CEOs tend to carry higher levels of debt. The study by Faccio et al. (2016) also found that firms led by female CEOs have lower leverage.

The study by Schopohl et al. (2021) found similar results when comparing firms managed by female CFOs to firms managed by male CFOs. Their analysis indicated that firms with female CFOs used less debt. The findings of these studies suggest that female executives prefer more conservative capital structures. This aligns with the notion that females have a generally lower risk tolerance than men.

The paper by Huang et al. (2024) contradicts these findings. They conducted research on the firm's capital structure decisions made by CEOs and found that female CEOs make similar capital structure decisions as their male counterparts. The study also had an unexpected finding. They noticed that when there is a transition from a male CEO to a female CEO, the level of debt increases. Faccio et al. (2016) also looked at the transition of a male CEO to a female CEO, but they found that the transition resulted in a reduction in risk-taking.

Earlier research suggests that female executives tend to be more conservative in their capital structure decisions. The recent paper by Huang et al. (2024) focused solely on CEOs and found that female CEOs make similar decisions regarding capital structure as their male counterparts. Some cases even showed that the transition led to an increase in the debt levels. Faccio et al. (2016) also examined male-to-female CEO transitions and observed a reduction in risk-taking. These mixed findings indicate that the influence of gender on capital structure decisions is complex. In conclusion, given that most research suggests that women are generally more risk-averse, the third hypothesis is proposed:

H3: *The transition from a male CEO to a female CEO will lead to a more conservative capital structure, characterized by lower leverage.*

2.3.4 Differences among countries with high and low proportion of female CEOs

The impact of gender quotas has been more pronounced in France than in the Netherlands. This suggests that countries with a higher proportion of female CEOs can experience different effects than countries with a lower proportion of female CEOs. Countries with a higher

proportion of female CEOs may be more accustomed to female leadership, which can enhance the positive effects. In conclusion, the fourth hypothesis is proposed:

H4: *In countries with a higher proportion of female CEOs, there will be larger effects on profitability and growth compared to countries with a lower proportion of female CEOs.*

Given that most research suggests that women are generally more risk-averse and prefer less debt, it is expected that this risk aversion would influence capital structure decisions consistently across different countries. It is hypothesized that there will be no differences in the effects of the CEO transition on capital structure between countries with a higher proportion of female CEOs and countries with a lower proportion of female CEOs. In conclusion, the fifth hypothesis is proposed:

H5: *There will be no significant difference in the impact on capital structure, characterized by lower leverage, between countries with a high proportion of female CEOs and those with a low proportion of female CEOs.*

3 Data

This chapter provides an overview of the data utilized in the analysis. It begins by outlining the composition of the sample, followed by an explanation of the variables utilized. These include dependent, independent, and control variables, each of which plays a crucial role in this research. Finally, it concludes with an overview of the summary statistics to provide a comprehensive understanding of the dataset.

3.1 Sample

The purpose of this research is to investigate the effects of the transition from a male CEO to a female CEO on firm profitability, growth and capital structure in France and the Netherlands. The data utilized for this analysis is obtained from Amadeus, accessed through Wharton Research Data Services (WRDS). Amadeus is a rich database containing detailed information on approximately 21 million companies across Europe. It serves as a valuable resource for conducting research on individual companies and identifying firms with specific characteristics.

This research exclusively focuses on male-to-female CEO transitions. The initial step in the sample selection process is to identify the companies that have undergone a transition from a male CEO to a female CEO using the management data from Amadeus. The study focuses on CEO transitions occurring between January 1, 2000, and December 31, 2023. This timeframe captures a diverse range of transition scenarios.

Once the companies undergoing a transition from a male CEO to a female CEO are identified, the next step involves obtaining their financial data. Each company has a Bureau van Dijk number that serves as a unique identifier. By utilizing the Bureau van Dijk numbers of the companies that experienced a transition, the Amadeus financial data was extracted to obtain the financials of the companies. The financial data provides essential insights into the performance and characteristics of the selected firms.

The analysis focuses on a time frame consisting of two years preceding and two years following the CEO transition. This approach allows for a focus on the effects of the transition on firm profitability, growth, and capital structure.

The sample consists of both public and private companies. Firms with missing values relevant to the analysis are excluded from the sample to maintain the accuracy and reliability of the results. To mitigate the influence of outliers, all accounting variables are winsorized at the 1% and 99% levels before conducting the analysis. This statistical technique ensures that extreme values do not affect the results and enhances the robustness of the findings.

Separate samples are used for France and the Netherlands, but the procedures for data collection and analysis are identical for both. This consistency allows for a comparison of the findings between the two countries and observation of the differences in the effects of the transition from a male CEO to a female CEO within different national contexts.

3.2 Variables

In this study various dependent, independent, and control variables are used. With the combination of these variables, the aim is to provide a robust framework to analyse the effects of the transition from a male CEO to a female CEO. The dependent variables measure outcomes related to firm profitability, growth, and capital structure. The independent variables focus on the occurrence of the CEO transition and the gender of the CEO. The control variables help to enhance the precision and reliability of the findings.

3.2.1 Dependent variables

A total of 12 dependent variables are utilized to assess the effects of the transition from a male CEO to a female CEO. These variables cover different facets, allowing for a comprehensive understanding of how the CEO transition affects the profitability, growth, and capital structure of the firm. This approach enables thorough testing of the hypotheses.

To examine the effect of the CEO transition on firm profitability, three dependent variables are used: return on assets, profit margin, and operating margin. These variables measure different aspects of the financial performance of the firms. The return on assets is frequently used by analysts to gain more insights into a company's performance (Shrader et al., 1997). The return on assets is calculated as the net income divided by the total assets. The profit margin is calculated as the net income divided by the operating revenue, while the operating margin is calculated by dividing earnings before interest and tax by the operating revenue.

Five dependent variables are utilized to assess the effect of the CEO transition on firm growth: revenue growth, profit growth, employee growth, and asset growth. Revenue growth represents the year-over-year growth of total revenue, while profit growth represents the year-over-year growth of total profit. Employee growth captures the year-over-year growth of the number of employees. Asset growth is a good indicator that reflects growth orientation (Dwyer et al., 2003) and represents the year-over-year growth of total assets.

A total of five dependent variables are employed to examine the effect of the CEO transition on the capital structure of the firm. Firstly, the level of debt is assessed, focusing on the following three variables: debt-to-equity ratio, debt ratio, and short-term debt ratio. The debt-to-equity ratio represents the proportion of the total amount of debt to the total amount of equity. The debt ratio indicates the proportion of the total amount of debt to the total amount of assets. The short-term debt ratio represents the proportion of the total amount of short-term debt (current liabilities) to the total debt. Secondly, the growth of the capital structure is analysed using two dependent variables: debt growth and equity growth. These variables represent the year-over-year growth of total debt and total equity.

3.2.2 Independent variables

This study utilizes two dummy variables as independent variables that can take on a value of 0 or 1. The first independent variable is the variable “appointment”, which indicates whether a CEO transition has occurred. This variable takes on a value of 1 when a transition occurs and a value of 0 otherwise. The second independent variable is the variable “fem_ceo”, which indicates the gender of the CEO. This variable takes on a value of 1 when the CEO is a female and a value of 0 if the CEO is a male.

3.2.3 Control variables

Various control variables are incorporated in this regression analysis to address potential endogeneity issues, enhance the precision of the estimates, and consider external factors that could impact the dependent variables. The aim is to mitigate biases and improve the reliability and robustness of the findings by employing this diverse set of control variables.

To begin, firm size is controlled for because it is a critical control variable within this research domain. Firm size is a frequently employed variable in similar studies, such as those by Ahern and Dittmar (2012) and Eckbo et al. (2022). Krishan and Parsons (2008) also emphasize the

importance of controlling for firm size to mitigate the concerns that the research outcomes might be driven by this factor. Firm size is addressed in this study by taking the natural logarithm of 1 plus the total assets. This proxy has been widely used in many studies, including those by Anderson and Bizjak (2003) and Grinstein and Hribar (2004).

In terms of firm characteristics, firm age is controlled for, aligning with prior research by Schopohl et al. (2021). Firm age is an important variable because it indicates the maturity and experience of a firm. These two factors may influence firm performance and behaviour. Firm age is calculated as the difference between the observation year and the year of incorporation.

Tangibility is another crucial control variable incorporated into this analysis. The methodology employed by Faccio et al. (2016) is used for the control variable tangibility, which is defined as the ratio of tangible fixed assets to total assets. This variable provides valuable insight into the operational structure of the firm and indicates the degree to which the assets of the firm are tangible.

Several fixed effects are controlled for in this regression model. Firm fixed effects are included to control for time-invariant characteristics of the firms that might influence the dependent variable.

Industry fixed effects are also controlled for as previous studies suggest that a firm's reputation should be assessed relative to its industry (Brammer and Millington, 2005; Fombrun and Shanley, 1990). The importance of considering industry fixed effects is emphasized in various research studies, such as those by Ahern and Dittmar (2012) and Erhardt et al. (2003).

In addition to controlling for firm and industry fixed effects, year fixed effects are also incorporated in the regression, as demonstrated in the research by Krishnan and Parsons (2008). Year fixed effects help to control for temporal variations and capture changes in the economic environment, market conditions, and other time-specific factors.

3.3 Descriptive statistics

This section provides an overview of the descriptive statistics for the datasets. The descriptive statistics give a comprehensive overview and information on the variables used in this study. The descriptive statistics are presented separately for the two countries investigated in this study: France and the Netherlands.

3.3.1 Descriptive statistics of France

Table 1 presents the descriptive statistics for the sample of firms located in France. All variables have been winsorized at the 1% and 99% levels to mitigate the impact of outliers and provide a more realistic interpretation of the data. Some key metrics and the number of observations are included in the table for each variable. The variation in the number of observations across variables is due to incomplete data for some firms.

The appointment variable shows that 40% of the firms experienced a CEO transition. The data on female CEOs shows that 26% of firms have female CEOs. This reflects a higher proportion compared to many other regions, but it still represents a minority. The profitability metrics show significant variability. The mean return on assets and profit margin are positive, indicating overall financial health across firms. The operating margin has a negative mean but a positive median. The minimum value of -214.33 for the operating margin is very low, indicating that some firms face significant operational challenges. The high standard deviations of the profit margin and operating margin suggest variation between firms. The extremes of the profit margin, ranging from -34.34 to 77.45, confirm this variability.

The growth metrics have positive means. Revenue and profit growth show considerable variability. This indicates that while many firms are growing, others are experiencing revenue and profit declines. The capital structure metrics also show variation. The debt-to-equity ratio has a high standard deviation, highlighting diverse leveraging strategies across firms. Both debt growth and equity growth show positive means but with wide ranges. This suggests that the strategy in managing capital structures varies across firms. The size of the firms has a high standard deviation and a mean of 14.39, indicating a mix of small and large firms. The average firm age of 17.82 years reflects a mix of both older firms and younger firms.

Table 1: Descriptive statistics France

Variable	Obs.	Mean	SD.	Min.	P25	Median	P75	Max
appointment	87974	0.40	0.49	0	0	0	1	1
fem_ceo	87974	0.26	0.44	0	0	0	1	1
return on assets	70461	0.04	0.22	-1.30	0	0.04	0.11	0.62
profit margin	64458	0.68	9.17	-34.34	0.00	0.04	0.12	77.45
operating margin	64458	-2.76	22.55	-214.83	-0.01	0.04	0.11	0.77
revenue growth	43626	0.25	1.77	-6.06	-0.05	0.04	0.20	11.22
profit growth	28863	0.11	1.17	-3.78	-0.35	0.07	0.54	4.10
employee growth	13560	0.03	0.28	-1.20	-0.04	0	0.09	1.42
asset growth	55868	0.11	0.37	-0.85	-0.05	0.04	0.18	2.03
debt-to-equity ratio	87949	2.90	10.86	-31.20	0.34	1.02	2.62	76.36
debt ratio	87955	0.57	0.38	0	0.32	0.54	0.76	2.55
short-term debt ratio	87757	0.81	0.27	0.01	0.69	0.97	1	1
debt growth	55760	0.10	0.71	-2.37	-0.14	0.03	0.26	3.62
equity growth	50877	0.13	0.47	-1.39	-0.02	0.07	0.23	2.35
size	87971	14.39	2.06	8.86	13.23	14.33	15.55	20.15
age	87974	17.82	16.43	0	4	13	27	65
tangibility	87965	0.14	0.21	0	0	0.05	0.18	0.92

Notes: This table presents the summary statistics, rounded to two decimals, derived from the sample of firms located in France. All the variables are winsorized at the 1% and 99% levels. The variation in the number of observations across variables is due to missing values.

3.3.2 Descriptive statistics of the Netherlands

Table 2 presents the descriptive statistics for the sample of firms located in the Netherlands. Similar to the descriptive statistics of the sample in France, all variables are winsorized at the 1% and 99% levels to mitigate the impact of outliers. Some key metrics and the number of observations are included in the table for all variables. The variation in the number of observations across variables is due to incomplete data for some firms.

The appointment variable reveals that 63% of the firms experienced a CEO transition. This indicates a higher turnover rate in executive positions compared to France. The representation of female CEOs is notably lower than in France. This aligns with expectations as the Netherlands is one of the countries with the lowest proportion of female CEOs. The profitability metrics show means close to zero. The mean return on assets and profit margin are positive, but the operating margin has a negative mean. This suggests that some firms are struggling with operational efficiency.

The growth metrics reveal a positive trend with positive means. Profit growth has a larger standard deviation compared to revenue and employee growth. This indicates that there is variation across firms in profit growth. Some firms grow rapidly in profit while others face declines. Employee growth, with a mean of 0.05, suggests stability or modest increases in employment levels. The capital structure metrics also show variation. The debt-to-equity ratio has a high mean of 4.55 and a very high standard deviation of 53.15. The high standard deviation indicates that firms have widely varying levels of debt relative to equity. This suggests that firms have diverse leveraging strategies. Both debt growth and equity growth show positive averages. Equity growth has a higher mean and a higher standard deviation, indicating more variation across firms and greater growth in equity than in debt. The size of the firms has a standard deviation of 1.97 and a mean of 12.37, showing a mix of small and large firms. The average firm age of 6.06 years reflects a prevalence of younger firms. Tangibility, with a mean of 0.32, suggests that a portion of the firm’s assets are tangible.

Table 2: Descriptive statistics the Netherlands

Variable	Obs.	Mean	SD.	Min.	P25	Median	P75	Max
appointment	312481	0.63	0.48	0	0	1	1	1
fem_ceo	312481	0.09	0.28	0	0	0	0	1
return on assets	6050	0.05	0.20	-1.05	0	0.05	0.12	0.73
profit margin	2646	0.02	0.44	-2.60	0	0.03	0.07	2.26
operating margin	2645	-0.01	0.45	-3.41	0	0.03	0.08	0.82
revenue growth	1398	0.10	0.35	-0.97	-0.03	0.06	0.17	1.84
profit growth	2454	0.12	0.98	-3.18	-0.29	0.12	0.53	3.46
employee growth	49920	0.05	0.26	-0.78	0	0	0.06	1.22
asset growth	182352	0.36	1.01	-1.35	-0.03	0.13	0.45	6.57
debt-to-equity ratio	99692	4.55	53.15	-196.10	0.09	1.00	3.26	396.89
debt ratio	99767	0.83	0.67	0.05	0.47	0.73	0.99	5.00
short-term debt ratio	99766	0.43	0.31	0	0.14	0.39	0.71	0.99
debt growth	47368	0.07	0.45	-1.22	-0.13	0.01	0.22	1.84
equity growth	141195	0.40	0.91	-2.14	0.00	0.23	0.63	4.96
size	311672	12.37	1.96	5.17	11.37	12.47	13.55	17.07
age	312481	6.06	11.36	0	1	2	5	69
tangibility	312475	0.32	0.35	0	0.01	0.15	0.60	1

Notes: This table presents the summary statistics, rounded to two decimals, derived from the sample of firms located in the Netherlands. All the variables are winsorized at the 1% and 99% levels. The variation in the number of observations across variables is due to missing values.

4 Method

This chapter outlines the methodological approach adopted to explore the effects of transitioning from a male CEO to a female CEO on firm profitability, growth, and capital structure. A regression analysis is utilized to examine the effects of the CEO transition and to explore the differential impacts in France and the Netherlands.

4.1 Regression analysis framework

To investigate the effects of the transition from a male CEO to a female CEO on firm profitability, growth, and capital structure, a regression analysis is utilized. The key event in this study is the transition from a male CEO to a female CEO. The first variable is "appointment", which indicates whether a CEO transition has occurred. This variable takes on a value of 1 when a transition occurs and a value of 0 otherwise. The interaction term, "appointment * fem_ceo" is included to specifically explore the effects associated with transitioning to female CEOs. The variable "fem_ceo" indicates the gender of the CEO. This variable takes on a value of 1 when the CEO is a female and a value of 0 when the CEO is a male. This analysis helps to test the hypotheses by examining the effects of the CEO transition on firm profitability, growth, and capital structure. The regression model used is as follows:

Regression model:

$$Y_{i,t} = \alpha + \beta_1\, appointment_{i,t} + \beta_2\, (appointment * fem\_ceo)_{i,t} + \beta_3 X_{i,t} + \phi_i + \mu_{j,t} + \lambda_t + \varepsilon_{i,t}$$

In this empirical model $Y_{i,t}$ represents the dependent variables for firm i at time t. The dependent variables include measures of profitability, growth, capital structure. The dummy variable $appointment_{i,t}$ indicates when a CEO transition occurred (0 = no transition, 1 = transition). The dummy variable fem_ceo denotes the gender of the CEO (0 = male, 1 = female). The vector $X_{i,t}$ includes all the control variables. Firm fixed effects are denoted by ϕ_i , industry fixed effects by $\mu_{j,t}$, year fixed effects by λ_t, and $\varepsilon_{i,t}$ is the error term.

4.2 Comparative analysis method

A statistical method is employed to test the equality of coefficients from two separate regression models. This allows for a statistical determination of whether the effects observed in France, a country with a high proportion of female CEOs, differ from those in the Netherlands, a country with a low proportion of female CEOs. Following the method outlined in the paper by Clogg et al. (1995), z-scores are calculated to determine whether the differences in coefficients between the two countries are significant. The z-score is calculated using the following formula:

$$z = \frac{(\beta_1 - \beta_2)}{\sqrt{(SE_1^2 + SE_2^2)}}$$

In this formula, β_1 and β_2 are the coefficients from France and the Netherlands. The respective standard errors are SE_1^2 and SE_2^2.

A high z-score, greater than 1.96 or lower than -1.96 at a 95% confidence level, suggests a statistically significant difference between the coefficients. This indicates that the impacts of the CEO transitions are significantly different between the two countries. A low z-score, lower than 1.96 or higher than -1.96 at a 95% confidence level, suggests similar effects across the countries.

5 Results

This chapter presents the empirical findings on how the transition from a male CEO to a female CEO affects firm profitability, growth, and capital structure in France and the Netherlands. The chapter is structured to first address the impact on profitability, followed by growth, and finally, capital structure, using regression analysis with various control variables and fixed effects. The results of the comparative analysis are also included.

5.1 Impact of CEO transition on firm profitability

This section presents the empirical results on how the transition from a male CEO to a female CEO influences the profitability metrics, as shown in Table 3 for France and Table 4 for the Netherlands. These metrics include the return on assets, profit margin, and operating margin. The regression analysis incorporates various control variables along with firm, industry, and year fixed effects.

5.1.1 Firm profitability in France

Table 3 illustrates that the coefficient for the appointment variable is positive and marginally significant ($\beta = 0.0048$, $p < 0.10$). This indicates that the transition of a new CEO has a positive effect on the return on assets with an increase of 0.48 percentage points. The interaction term appointment * fem_ceo is not significant ($\beta = -0.0018$, $p > 0.10$). This implies that transitioning to a female CEO does not significantly differ from transitioning to a male CEO in terms of the impact on the return on assets.

The appointment variable is not significantly associated with profit margin ($\beta = -0.1167$, $p > 0.10$). This suggests that CEO transitions do not generally affect profit margins. The interaction term appointment * fem_ceo also shows an insignificant effect ($\beta = -0.1192$, $p > 0.10$). This indicates that there is no differential impact on profit margins when the incoming CEO is female.

The coefficient for the appointment variable on operating margin is positive but insignificant ($\beta = 0.1531$, $p > 0.10$). This result suggests that CEO transitions may not substantially influence operational efficiency. The interaction term shows a negative and insignificant coefficient ($\beta = -0.0653$, $p > 0.05$). This indicates that the change to a female CEO does not have a significant impact on the operating margin compared to its male counterparts.

Size is a control variable that shows a strong positive association with all profitability metrics (return on assets: $\beta = 0.0871$, $p < 0.01$; profit margin: $\beta = 1.0338$, $p < 0.01$; operating margin:

β = 1.9536, p < 0.01). This indicates that larger firms tend to have better profitability. The control variable age shows a negative marginally significant effect on the profitability metrics return on assets (β = -0.0090, p < 0.05) and operating margin (β = -0.2620, p < 0.05). This suggests that older firms might be less efficient than younger firms. The tangibility control variable shows a strong negative significant impact on the return on assets and profit margin.

The analysis of firm profitability in France indicates that CEO transitions have a positive marginally significant impact on the return on assets but do not significantly affect the profit margin and operating margin. The interaction term between CEO appointment and female CEO is not significant in any of the models. This indicates that transitioning to a female CEO does not significantly differ from male transitions in terms of influencing profitability. In conclusion, Hypothesis 1, which stated that the transition from a male CEO to a female CEO will have a positive effect on firm profitability, is rejected based on these results.

Table 3: Effects of CEO transition on profitability in France

	return on assets	**profit margin**	**operating margin**
appointment	0.0048*	-0.1167	0.1531
	(0.0027)	(0.1230)	(0.2263)
appointment * fem_ceo	-0.0018	-0.1192	-0.0653
	(0.0036)	(0.1950)	(0.4153)
size	0.0871***	1,0338***	1.9536***
	(0.0040)	(0.1661)	(0.4757)
age	-0.0090*	0.1452	-0.2620*
	(0.0048)	(0.1714)	(0.1558)
tangibility	-0.1810***	-3.2785***	2.9265
	(0.0210)	(0.6336)	(1.8971)
constant	-1.0442***	-16,8774***	-26.1494***
	(0.1029)	(4.0459)	(7.3094)
firm FE	YES	YES	YES
industry FE	YES	YES	YES
year FE	YES	YES	YES
observations	65244	59035	59035
R^2	0.6513	0.6032	0.6585
adjusted R^2	0.4940	0.4229	0.5033

*Notes: This table shows the estimation of the regression equation for the dependent variables of firm profitability, which are return on assets (column 1), profit margin (column 2), and operating margin (column 3). The control variables are firm size, age, and tangibility. All variables are winsorized at the 1 and 99% levels, and firm, industry, and year fixed effects are included. Standard errors are robust, and the significance levels are represented by * p<0.10; ** p<0.05; *** p<0.01. The number of observations deviates from the descriptive statistics due to missing values.*

5.1.2 Firm profitability in the Netherlands

Table 4 presents the analysis for the sample of firms in the Netherlands. The coefficient for the appointment variable associated with the return on assets is negative and insignificant ($\beta = -0.0076$, $p > 0.10$). This suggests that a CEO transition does not significantly impact the return on assets. The interaction term shows a positive coefficient but is also insignificant ($\beta = 0.0101$, $p > 0.10$). This hints at a potential improvement in the return on assets when the new CEO is a female, but this effect is not statistically robust.

The coefficient for the appointment variable on profit margin is negative and insignificant ($\beta = -0.0240$, $p > 0.10$). The interaction term appointment * fem_ceo shows a positive coefficient but also an insignificant effect ($\beta = 0.0508$, $p > 0.10$). This could suggest a potential positive effect on profit margin when the CEO is a female, but the results lack statistical significance.

The coefficient for the appointment variable on operating margin is also negative and insignificant ($\beta = -0.0034$, $p > 0.10$). The interaction term shows a positive and insignificant coefficient ($\beta = 0.0235$, $p > 0.10$). The results provide no clear evidence that female CEOs influence operating margins differently compared to male CEOs.

The control variables show mixed effects across the models. A larger firm size positively influences the return on assets and operating margin significantly ($\beta = 0.0614$, $p < 0.01$; $\beta = 0.0673$, $p < 0.05$). The control variable age shows a slight positive effect on profit margin but is marginally significant ($\beta = 0.0161$, $p < 0.10$). Tangibility shows a significant negative effect on the return on assets ($\beta = -0.1501$, $p < 0.01$).

The analysis on firm profitability for firms located in the Netherlands shows that the CEO transition has a negative but not significant effects on the profitability metrics. This suggests that the transition of a new CEO could have a negligible negative impact on the profitability of the firm, but this is not statistically robust. The interaction term between CEO appointment and female CEO is positive but also not significant in any of the models. This indicates that a female CEO could potentially lead to positive changes in profitability, but the statistical evidence is not robust. In conclusion, Hypothesis 1, which stated that the transition from a male CEO to a female CEO will have a positive effect on firm profitability, is also rejected based on these results.

Table 4: Effects of CEO transition on profitability in the Netherlands

	return on assets	profit margin	operating margin
appointment	-0.0076	-0.0240	-0.0034
	(0.0067)	(0.0194)	(0.0170)
appointment * fem_ceo	0.0101	0.0508	0.0235
	(0.0154)	(0.0619)	(0.0845)
size	0.0614***	0.0333	0.0673**
	(0.0178)	(0.0313)	(0.0306)
age	-0.0036	0.0161*	0.0041
	(0.0056)	(0.0093)	(0.0090)
tangibility	-0.1501***	-0.0923	0.0863
	(0.0559)	(0.1050)	(0.1187)
constant	-0.8261***	-0.8722*	-1.2209**
	(0.3149)	(0.5088)	(0.4898)
firm FE	YES	YES	YES
industry FE	YES	YES	YES
year FE	YES	YES	YES
observations	5282	2158	2151
R^2	0.7045	0.7674	0.7944
adjusted R^2	0.5444	0.6167	0.6608

*Notes: This table shows the estimation of the regression equation for the dependent variables of firm profitability, which are return on assets (column 1), profit margin (column 2) and operating margin (column 3). The control variables are firm size, age, and tangibility. All variables are winsorized at the 1 and 99% levels, and firm, industry, and year fixed effects are included. Standard errors are robust, and the significance levels are represented by * p<0.10; ** p<0.05; *** p<0.01. The number of observations deviates from the descriptive statistics due to missing values.*

5.1.3 Comparative analysis on firm profitability

In this section, the coefficients of the appointment variable and interaction term between France and the Netherlands are compared. The z-score for each coefficient pair is calculated to statistically test the differences. The calculations of the z-scores are detailed in Appendix B.

Return on assets

The coefficient of the appointment variable is positive and marginally significant in France ($\beta = 0.0048$, $p < 0.10$). The Netherlands shows a negative and insignificant coefficient ($\beta = -0.0076$, $p > 0.10$). The z-score is 1.70, indicating that there are no statistically significant differences between the effects of CEO transitions on the return on assets in the two countries. The coefficient of the interaction term is negative in France ($\beta = -0.0018$, $p > 0.10$) but positive in the Netherlands ($\beta = 0.0101$, $p > 0.10$), and insignificant in both countries. The z-

score is -0.75, indicating that the impact of transitioning to a female CEO on the return on assets does not significantly differ between the countries.

Profit Margin

The coefficient of the appointment variable is negative and insignificant in both France (β = -0.1167, $p > 0.10$) and the Netherlands (β = -0.0240, $p > 0.10$). The z-score is -0.74, indicating that there are no statistically significant differences between the effects of CEO transitions on the profit margin.

The coefficient of the interaction term is negative in France (β = -0.0240, $p > 0.10$) but positive in the Netherlands (β = 0.0508, $p > 0.10$), and insignificant in both countries. The z-score is -0.83, indicating that the impact of transitioning to a female CEO on the profit margin does not significantly differ between the countries.

Operating margin

The coefficient of the appointment variable is positive in France (β = 0.1531, $p > 0.10$) and negative in the Netherlands (β = -0.0034, $p > 0.10$), and insignificant in both countries. The z-score is 0.69, indicating that there are no statistically significant differences between the effects of CEO transitions on the operating margin.

The coefficient of the interaction term is negative in France (β = -0.0653, $p > 0.10$) but positive in the Netherlands (β = 0.0235, $p > 0.10$), and insignificant in both countries. The z-score is -0.21, indicating that the impact of transitioning to a female CEO on the operating margin does not significantly differ between the countries.

The comparative analysis shows that the effects of CEO transitions on the profitability metrics do not significantly differ between France and the Netherlands. This suggests that the transition to a female CEO does not have a significantly different impact on firm profitability between a country with a high proportion of female CEOs and a country with a low proportion of female CEOs. In conclusion, Hypothesis 4, which stated that there will be larger effects on profitability and growth in countries with a higher proportion of female CEOs compared to countries with a lower proportion of female CEOs, is rejected based on these results.

5.2 Impact of CEO transition on firm growth

This section presents the empirical results on how the transition from a male CEO to a female CEO influences the growth metrics, as shown in Table 5 for France and Table 6 for the Netherlands. These metrics include revenue growth, profit growth, employee growth, and asset growth. The regression analysis includes various control variables along with firm, industry, and year fixed effects.

5.2.1 Firm growth in France

Table 5 presents the analysis of the growth metrics for firms located in France. The analysis of revenue growth shows that the coefficient of the appointment variable indicates a slight increase in revenue growth, but this effect is not significant ($\beta = 0.0085$, $p > 0.10$). The interaction term appointment * fem_ceo shows a more noticeable increase when the new CEO is a female ($\beta = 0.0242$, $p > 0.10$), but this also fails to reach statistical significance. This indicates a trend towards growth under female leadership that is not robustly supported by the data.

Profit growth responds more positively to CEO transitions. The coefficient for appointment is significantly positive ($\beta = 0.1281$, $p < 0.01$). This suggests that a new CEO tends to successfully boost the profitability of the firm. The interaction term shows a negative but insignificant impact ($\beta = -0.0386$, $p > 0.10$). This implies that the transition to a female CEO might not enhance profit growth as much as male counterparts.

The coefficient for the appointment variable on employee growth is negative and insignificant ($\beta = -0.0090$, $p > 0.10$). The appointment * fem_ceo coefficient is positive and insignificant ($\beta = 0.0123$, $p > 0.10$). This suggest potential positive impacts on employment levels under female leadership, but these effects are not statistically significant.

The CEO transition appears to have a minor positive effect on asset growth ($\beta = 0.0072$, $p > 0.10$), which becomes more pronounced and statistically significant with the transition to a female CEO ($\beta = 0.0179$, $p < 0.05$). This indicates that a new female CEO may be more effective in managing and expanding firm assets compared to a new male CEO.

The control variables show different effects across the models. Size shows a consistently strong and significant positive impact across all growth metrics. This indicates that larger firms generally experience greater growth than smaller firms. Age shows a significant negative impact on asset growth ($\beta = -0.0421$, $p < 0.01$). Tangibility significantly influences

all growth metrics in different ways. There is notably positive effect on revenue growth and employee growth ($\beta = 1.5789$, $p < 0.01$; $\beta = 0.7114$, $p < 0.05$) and a notably negative effect on profit growth and asset growth ($\beta = -1.5374$, $p < 0.01$; $\beta = -0.2651$, $p < 0.05$)

The findings from this analysis of growth metrics in France underscore the varied but mostly slight insignificant positive effects of CEO transitions. The CEO transition has a significant positive effect on profit growth, and the specific impact of transitioning to a female CEO presents a significant positive effect on asset growth. In conclusion, Hypothesis 2, which stated that the transition from a male CEO to a female CEO will have a positive effect on firm growth, is partially supported based on these results. While there is a significant positive effect on asset growth from transitioning to a female CEO, the overall effects on other growth metrics are insignificant.

Table 5: Effects of CEO transition on growth in France

	revenue growth	**profit growth**	**employee growth**	**asset growth**
appointment	0.0085	0.1281***	-0.0090	0.0072
	(0.0448)	(0.0402)	(0.0143)	(0.0065)
appointment * Fem_ceo	0.0242	-0.0386	0.0123	0.0179**
	(0.0470)	(0.0411)	(0.0143)	(0.0079)
aize	0.6303***	0.5854***	0.1679***	0.4147***
	(0.0497)	(0.0577)	(0.0300)	(0.0201)
age	-0.0601	-0.0110	-0.0066	-0.0421***
	(0.0395)	(0.0660)	(0.0196)	(0.0099)
tangibility	1.5789***	-1.5374***	0.7114***	-0.2651***
	(0.2399)	(0.2284)	(0.1289)	(0.0528)
constant	-8.1666***	-8.3608***	-2.5277***	-5.1166***
	(1.0737)	(1.6878)	(0.6758)	(0.3505)
firm FE	YES	YES	YES	YES
industry FE	YES	YES	YES	YES
year FE	YES	YES	YES	YES
observations	36289	22472	10418	47040
R^2	0.3345	0.2355	0.3137	0.5044
adjusted R^2	N/A	N/A	N/A	0.2545

*Notes: This table shows the estimation of the regression equation for the dependent variables of firm growth, which are revenue growth (column 1), profit growth (column 2), employee growth (column 3), and asset growth (column 4). The control variables are firm size, age, and tangibility. All variables are winsorized at the 1 and 99% levels, and firm, industry, and year fixed effects are included. Standard errors are robust, and the significance levels are represented by * p<0.10; ** p<0.05; *** p<0.01. The number of observations deviates from the descriptive statistics due to missing values.*

5.2.2 Firm growth in the Netherlands

The impact of CEO transitions on the growth metrics for firms located in the Netherlands is illustrated in Table 6. The appointment variable shows a positive but statistically insignificant increase in revenue growth ($\beta = 0.0426$, $p > 0.10$). This suggests a potential but statistically insignificant improvement in revenue growth following CEO transitions. The interaction term appointment * fem_ceo indicates a decrease but is also not statistically significant ($\beta = -0.0927$, $p > 0.10$). This highlights that the impact of female CEO transitions on revenue growth compared to their male counterparts is unclear.

The coefficient for the appointment variable on profit growth is positive but also not significant ($\beta = 0.0270$, $p > 0.10$). This indicates, similar to revenue growth, a potential but statistically insignificant improvement following CEO transitions. The interaction term shows a more positive coefficient, but the effect is still insignificant ($\beta = 0.1252$, $p > 0.10$). This suggests a potential advantage in profit growth when transitioning to a female CEO, but this effect is not statistically significant.

The coefficient for the appointment variable on employee growth is positive and highly significant ($\beta = 0.0326$, $p < 0.01$). This indicates that a new CEO has a positive effect on the employment levels of the firm. The coefficient for the interaction term is positive but insignificant ($\beta = 0.0121$, $p > 0.10$). This result does not support differential effects based on CEO gender.

Similar to employee growth, the coefficient for the appointment variable on asset growth is positive and highly significant ($\beta = 0.3424$, $p < 0.01$). This indicates that the impact of CEO transitions is positive on the firm's asset expansion. The interaction term also shows a positive and highly significant coefficient ($\beta = 0.0938$, $p < 0.01$). This suggests that transitioning to a female CEO leads to higher asset growth. This indicates that female CEOs may drive asset growth more effectively than their male counterparts.

The control variable size shows a positive and highly significant coefficient across almost all growth metrics, except for revenue growth. This indicates that larger firms tend to experience more growth compared to smaller firms. Age has a negative and highly significant coefficient across almost all variables, except for profit growth. This suggests that older firms may face

challenges in maintaining or increasing growth compared to younger firms. Tangibility shows mixed but mostly negative effects. It has a significant negative effect on profit growth and asset growth ((β = -1.3399, p < 0.10; β = -0.1865, p < 0.01) but a significant positive effect on employee growth (β = 0.0578, p < 0.05). This illustrates varied influences depending on the specific growth metric.

The findings from the Netherlands suggest a significant positive effect of the CEO transition on employee growth and asset growth. The additional effect of transitioning to a female CEO is highly significant and positive in terms of asset growth. This indicates potential unique contributions by female CEOs to firm dynamics. In conclusion, Hypothesis 2, which stated that the transition from a male CEO to a female CEO will have a positive effect on firm growth, is also partially supported based on these results. While there is a significant positive effect on asset growth from transitioning to a female CEO, the overall effects on other growth metrics are insignificant.

Table 6: Effects of CEO transition on growth in the Netherlands

	revenue growth	**profit growth**	**employee growth**	**asset growth**
appointment	0.0426	0.0270	0.0326***	0.3424***
	(0.0460)	(0.1166)	(0.0077)	(0.0124)
appointment * Fem_ceo	-0.0927	0.1252	0.0121	0.0938***
	(0.0662)	(0.1851)	(0.0162)	(0.0261)
size	0.2278	0.9293***	0.0386***	0.6615***
	(0.1614)	(0.1992)	(0.0070)	(0.0127)
age	-0.0696***	0.0831	-0.0172***	-0.1877***
	(0.0261)	(0.0964)	(0.0062)	(0.0126)
tangibility	-0.3561	-1.3399*	0.0578**	-0.1865***
	(0.4603)	(0.6929)	(0.0282)	(0.0254)
constant	-1.9500	-17.1242***	-0.2724**	-6.7579***
	(2.7026)	(4.1446)	(0.1234)	(0.1951)
firm FE	YES	YES	YES	YES
industry FE	YES	YES	YES	YES
year FE	YES	YES	YES	YES
observations	1111	1904	33480	132512
R^2	0.4260	0.2733	0.4127	0.5655
adjusted R^2	N/A	N/A	N/A	0.2364

*Notes: This table shows the estimation of the regression equation for the dependent variables of firm growth, which are revenue growth (column 1), profit growth (column 2), employee growth (column 3), and asset growth (column 4). The control variables are firm size, age, and tangibility. All variables are winsorized at the 1 and 99% levels, and firm, industry, and year fixed effects are included. Standard errors are robust, and the significance levels are represented by * p<0.10; ** p<0.05; *** p<0.01. The number of observations deviates from the descriptive statistics due to missing values.*

5.2.3 Comparative analysis on firm growth

In this section, the coefficients of the appointment variable and interaction term between France and the Netherlands are compared. The z-score for each coefficient pair is calculated to statistically test the differences. The calculations of the z-scores are detailed in Appendix B.

Revenue growth

The coefficient of the appointment variable is positive but not significant in France ($\beta = 0.0085$, $p > 0.10$) and positive but not significant in the Netherlands ($\beta = 0.0426$, $p > 0.10$). The z-score is -0.49, indicating that there are no statistically significant differences between the effects of CEO transitions on revenue growth in the two countries.

The coefficient of the interaction term is positive in France ($\beta = 0.0242$, $p > 0.10$) but negative in the Netherlands ($\beta = -0.0927$, $p > 0.10$), and insignificant in both countries. The z-score is 1.46, indicating that the impact of transitioning to a female CEO on revenue growth does not significantly differ between the countries.

Profit growth

The coefficient of the appointment variable is significantly positive in France ($\beta = 0.1281$, $p < 0.01$) and positive but not significant in the Netherlands ($\beta = 0.0270$, $p > 0.10$). The z-score is 0.82, indicating that there are no statistically significant differences between the effects of CEO transitions on profit growth.

The coefficient of the interaction term is negative in France ($\beta = -0.0386$, $p > 0.10$) but positive in the Netherlands ($\beta = 0.1252$, $p > 0.10$), and insignificant in both countries. The z-score is -0.66, indicating that the impact of transitioning to a female CEO on profit growth does not significantly differ between the countries.

Employee growth

The coefficient of the appointment variable is negative and not significant in France ($\beta = -0.0090$, $p > 0.10$) and positive and highly significant in the Netherlands ($\beta = 0.0326$, $p < 0.01$). The z-score is -3.06, indicating that there are statistically significant differences between the effects of CEO transitions on employee growth. This implies that CEO transitions in the Netherlands lead to a larger increase in employee growth compared to France.

The coefficient of the interaction term is positive in both France ($\beta = 0.0123$, $p > 0.10$) and the Netherlands ($\beta = 0.0121$, $p > 0.10$), and insignificant in both countries. The z-score is 0.01, indicating that the impact of transitioning to a female CEO on employee growth does not significantly differ between the countries.

Asset growth

The coefficient of the appointment variable is positive but not significant in France ($\beta = 0.0072$, $p > 0.10$) and positive and highly significant in the Netherlands ($\beta = 0.3424$, $p < 0.01$). The z-score is -7.15, indicating that there are statistically significant differences between the effects of CEO transitions on asset growth in the two countries. This implies transitions in the Netherlands lead to a larger increase in asset growth compared to France.

The coefficient of the interaction term is positive and significant in France ($\beta = 0.0179$, $p < 0.05$) and positive and highly significant in the Netherlands ($\beta = 0.0938$, $p < 0.01$). The z-score is -1.94, indicating that the impact of transitioning to a female CEO on asset growth does not significantly differ between the countries.

The comparative analysis shows that the effects of CEO transitions on growth exhibit some statistically significant differences between France and the Netherlands. There are significant differences in the impact on employee growth and asset growth. CEO transitions in the Netherlands are associated with a larger increase in both employee and asset growth compared to France. The impact of transitioning to a female CEO does not significantly differ between the countries for any of the growth metrics. This suggests that while the CEO transition has different effects on firm growth in France and the Netherlands, the gender of the CEO does not contribute significantly to these differences. In conclusion, Hypothesis 4, which stated that there will be larger effects on profitability and growth in countries with a higher proportion of female CEOs compared to countries with a lower proportion of female CEOs, is also rejected based on these results.

5.3 Impact of CEO transition on the capital structure of the firm

This section presents the empirical results on how the transition from a male CEO to a female CEO influences the capital structure metrics, as shown in Table 7 for France and Table 8 for the Netherlands. These metrics include the debt-to-equity ratio, debt ratio, short-term debt

ratio, debt growth, and equity growth. The regression analysis accounts for various control variables along with firm, industry, and year fixed effects.

5.3.1 Capital structure of firms in France

The impact of CEO transitions on the capital structure metrics for firms located in France is illustrated in Table 7. The analysis of capital structure changes reveals nuanced effects of CEO transitions. The coefficient for the appointment variable on the debt-to-equity ratio shows a negative but not statistically significant coefficient ($\beta = -0.0629$, $p > 0.10$). This suggests that CEO transitions might not significantly alter this ratio. The interaction term appointment * fem_ceo is also negative and insignificant ($\beta = -0.1333$, $p > 0.10$). This indicates that there is no clear differential impact when the transition is to a female CEO.

The appointment variable shows a highly significant positive effect on the debt ratio ($\beta = 0.0072$, $p < 0.01$). This indicates that CEO transitions can lead to a slight increase in the firm's debt ratio. The interaction term shows a highly significant negative impact on the debt ratio ($\beta = -0.0164$, $p < 0.01$). This suggests that transitioning to a female CEO might reduce the debt ratio compared to theirr male counterparts.

The coefficient for the appointment variable on the short-term debt ratio is negative and highly significant ($\beta = -0.0100$, $p < 0.01$). This indicates that the transition to a new CEO can lead to a slight decrease in the firm's short-term debt ratio. The coefficient for the interaction term is negative and significant ($\beta = -0.0086$, $p < 0.05$). This implies that when a female CEO takes over, the use of short-term debt decreases.

The coefficient for the appointment variable on debt growth is negative but not significant ($\beta = -0.0020$; $p > 0.10$). This suggests that a CEO transition does not have a significant impact on how the firm's debt levels change. The coefficient of the interaction term is positive but also insignificant ($\beta = 0.0027$; $p > 0.10$). This implies that gender does not significantly influence debt growth.

Equity growth presents a different picture compared to debt growth. The appointment variable shows a highly significant and positive effect on equity growth ($\beta = 0.0266$, $p < 0.01$). This indicates that new CEOs are associated with an increase in equity levels. The interaction term is also positive but not significant ($\beta = 0.0147$, $p > 0.10$). This suggests that the gender of the CEO does not significantly influence equity growth.

The control variable size has a consistently significant impact across all growth metrics. The coefficient for size is negative for the debt ratio and short-term debt ratio ($\beta = -0.0406$, $p < 0.01$ and $\beta = -0.0210$, $p < 0.01$) but positive for the debt-to-equity ratio, debt growth, and equity growth. This indicates that larger firms tend to experience more growth in debt and equity compared to smaller firms. The coefficient for age is negative across all metrics except for the debt ratio. The only significant impact of age is on debt growth ($\beta = -0.0683$, $p < 0.01$), indicating that older firms do not grow debt as much as younger firms do. Tangibility shows a significant positive effect on the debt ratio ($\beta = 0.2075$, $p < 0.01$), but a significantly negative effect on short-term debt ratio and equity growth ($\beta = -0.2381$, $p < 0.01$ and $\beta = -0.6643$, $p < 0.01$). This indicates varied significant influences depending on the specific growth metrics.

The findings from the French data suggest that CEO transitions can significantly influence certain aspects of a firm's capital structure, but the effect varies across different metrics. The transition to female CEOs specifically has significant effects on the debt ratio and short-term debt ratio. These results that female CEOs manage debt ratios more conservatively compared to their male counterparts. In conclusion, Hypothesis 3, which stated that the transition from a male CEO to a female CEO will lead to a more conservative capital structure, characterized by lower leverage, is supported based on these results.

Table 7: Effects of CEO transition on capital structure in France

	debt-to-equity ratio	debt ratio	short-term debt ratio	debt growth	equity growth
appointment	-0.0629	0.0072***	-0.0100***	-0.0020	0.0266***
	(0.1353)	(0.0027)	(0.0024)	(0.0154)	(0.0096)
appointment *	-0.1333	-0.0164***	-0.0086**	0.0027	0.0147
fem_ceo	(0.1539)	(0.0039)	(0.0038)	(0.0167)	(0.0100)
size	0.9050***	-0.0406***	-0.0210***	0.5054***	0.3233***
	(0.1326)	(0.0062)	(0.0025)	(0.0251)	(0.0168)
age	-0.3230	0.0020	-0.0030	-0.0683***	-0.0158
	(0.1921)	(0.0065)	(0.0063)	(0.0227)	(0.0175)
tangibility	0.3253	0.2075***	-0.2381***	0.1626	-0.6643***
	(0.7288)	(0.0231)	(0.0164)	(0.1006)	(0.0661)
constant	-4.3113	1.0847***	1.2148***	-5.9597***	-4.2728***
	(3.9515)	(0.1449)	(0.1212)	(0.5965)	(0.4448)
firm FE	YES	YES	YES	YES	YES
industry FE	YES	YES	YES	YES	YES
year FE	YES	YES	YES	YES	YES
observations	82668	82683	82469	46925	42802
R^2	0.5766	0.8418	0.7510	0.3331	0.4139
adjusted R^2	0.3913	0.7726	0.6420	N/A	0.1172

*Notes: This table shows the estimation of the regression equation for the dependent variables of capital structure, which are debt-to-equity ratio (column 1), debt ratio (column 2), short-term debt ratio (column 3), debt growth (column 4), and equity growth (column 5). The control variables are firm size, age, and tangibility. All variables are winsorized at the 1 and 99% levels, and firm, industry, and year fixed effects are included. Standard errors are robust, and the significance levels are represented by * p<0.10; ** p<0.05; *** p<0.01. The number of observations deviates from the descriptive statistics due to missing values.*

5.3.2 Capital structure of firms in the Netherlands

The analysis of capital structure changes for firms in the Netherlands is detailed in Table 8. The coefficient of the appointment variable on the debt-to-equity ratio is negative but not statistically significant ($\beta = -0.3120$, $p > 0.10$). This suggests that a CEO transition might lead to a reduction in the debt-to-equity ratio, but this evidence is not conclusive. The interaction term appointment * fem_ceo shows a substantial negative effect, but it remains statistically insignificant ($\beta = -1.7069$, $p > 0.10$). This indicates that the transition to a female CEO could lead to a lower debt-to-equity ratio, but this is not robustly supported by the data.

The appointment variable shows a highly significant positive effect on the debt ratio ($\beta = 0.0057$, $p < 0.01$). This suggests that a new CEO tends to slightly increase the firm's debt ratio. The coefficient of the interaction term is also highly significant but negative ($\beta = -0.0410$, $p < 0.01$). This indicates a potential reduction in the debt ratio under female leadership compared to male counterparts.

The coefficient for the appointment variable on the short-term debt ratio is positive and highly significant ($\beta = 0.0057$, $p < 0.01$). This indicates that a CEO transition can slightly increase the short-term debt ratio of the firm. The coefficient of the interaction term is minimal and not statistically significant ($\beta = 0.0017$, $p > 0.10$).

The appointment variable also shows a highly significant positive effect on debt growth ($\beta = 0.0504$, $p < 0.01$). This indicates that new CEOs tend to increase the firm's use of debt and thereby increase the debt growth rate. The coefficient of the interaction term is also positive but not statistically significant ($\beta = 0.0237$, $p > 0.10$).

Equity growth responds very positively and highly significantly to a new CEO ($\beta = 0.3360$, $p < 0.01$). This suggests that new CEOs are associated with a substantial increase in the firm's equity levels. The coefficient of the interaction term is positive but not significant ($\beta = 0.0009$, $p > 0.10$). This implies that the gender of the CEO might not significantly influence equity growth.

The control variables show mixed effects across the growth metrics. Size has significant and positive effects across all capital structure metrics except for the debt ratio ($\beta = -0.3492$, $p < 0.01$). This indicates that larger firms tend to increase their debt and equity more than smaller firms. Age shows a significant positive impact on the debt ratio ($\beta = 0.0234$, $p < 0.01$) and a significant negative impact on debt growth and equity growth ($\beta = -0.0631$, $p < 0.01$; $\beta = -0.1301$, $p < 0.01$). This implies that older firms might be more conservative in their borrowing strategies. Tangibility shows a significant positive effect on the debt-to-equity ratio and debt ratio ($\beta = 3.7103$, $p < 0.05$; $\beta = 0.0844$, $p < 0.01$), but a significantly negative effect on short-term debt ratio and equity growth ($\beta = -0.1282$, $p < 0.01$; $\beta = -0.1486$, $p < 0.01$).

The findings from the analysis of firms in the Netherlands highlight that the appointment of a new CEO has a significant positive effect on all capital structure metrics except the debt-to-equity ratio. This indicates that the transition to a new CEO can influence the capital structure of the firm, typically leading to an increased use of debt and equity. The impact of a female CEO compared to a male CEO is significant only for the debt ratio. The negative coefficient suggests that female CEOs take on less debt than male CEOs. In conclusion, Hypothesis 3, which stated that the transition from a male CEO to a female CEO will lead to a more conservative capital structure, characterized by lower leverage, is supported based on these results.

Table 8: Effects of CEO transition on capital structure in the Netherlands

	debt-to-equity ratio	debt ratio	short-term debt ratio	debt growth	equity growth
appointment	-0.3120	0.0201***	0.0057***	0.0504***	0.3360***
	(0.6898)	(0.0040)	(0.0019)	(0.0122)	(0.0139)
appointment *	-1.7069	-0.0410***	0.0017	0.0237	0.0009
fem_ceo	(1.8294)	(0.0127)	(0.0059)	(0.0341)	(0.0295)
size	1.6574***	-0.3492***	0.0198***	0.4474***	0.5081***
	(0.5954)	(0.0118)	(0.0028)	(0.0323)	(0.0150)
age	-0.6495	0.0234***	0.0035	-0.0631***	-0.1301***
	(0.4859)	(0.0074)	(0.0045)	(0.0139)	(0.0157)
tangibility	3.7103**	0.0844***	-0.1282***	-0.0459	-0.1486***
	(1.7626)	(0.0161)	(0.0068)	(0.0357)	(0.0268)
constant	-13.3162	5.2400***	0.1867***	-5.3876***	-5.2865***
	(8.6079)	(0.1622)	(0.0517)	(0.4701)	(0.2436)
firm FE	YES	YES	YES	YES	YES
industry FE	YES	YES	YES	YES	YES
year FE	YES	YES	YES	YES	YES
observations	78997	79056	79056	29751	99550
R^2	0.5532	0.8835	0.8859	0.5173	0.5037
adjusted R^2	0.2630	0.8078	0.8118	0.1388	0.1255

*Notes: This table shows the estimation of the regression equation for the dependent variables of capital structure, which are debt-to-equity ratio (column 1), debt ratio (column 2), short-term debt ratio (column 3), debt growth (column 4), and equity growth (column 5). The control variables are firm size, age, and tangibility. All variables are winsorized at the 1 and 99% levels and firm, industry, and year fixed effects are included. Standard errors are robust, and the significance levels are represented by * p<0.10; ** p<0.05; *** p<0.01. The number of observations deviates from the descriptive statistics due to missing values.*

5.3.3 Comparative analysis on firm capital structure

In this section, the coefficients of the appointment variable and interaction term between France and the Netherlands are compared. The z-score for each coefficient pair is calculated to statistically test the differences. The calculations of the z-scores are detailed in Appendix B.

Debt-to-equity ratio

The coefficient of the appointment variable is negative and insignificant in both France (β = -0.0629, p > 0.10) and the Netherlands (β = -0.3120, p > 0.10). The z-score is 0.35, indicating that there are no statistically significant differences between the effects of CEO transitions on the debt-to-equity ratio in the two countries.

The coefficient of the interaction term is negative and insignificant in both France (β = -0.1333, p > 0.10) and the Netherlands (β = -1.7069, p > 0.10). The z-score is 0.86, indicating

that the impact of transitioning to a female CEO on the debt-to-equity ratio does not significantly differ between the countries.

Debt ratio

The coefficient of the appointment variable is positive and highly significant in both France ($\beta = 0.0072$, $p < 0.01$) and the Netherlands ($\beta = 0.0201$, $p < 0.01$). The z-score is -2.69, indicating that there are statistically significant differences between the effects of CEO transitions on the debt ratio in the two countries. This implies that CEO transitions in the Netherlands lead to a larger increase in the debt ratio compared to France.

The coefficient of the interaction term is highly significant and negative in both countries (France: $\beta = -0.0164$, $p < 0.01$; Netherlands: $\beta = -0.0410$, $p < 0.01$). The z-score is 1.85, indicating that the impact of transitioning to a female CEO on the debt ratio does not significantly differ between the countries.

Short-term debt ratio

The coefficient of the appointment variable is highly significant in both countries but positive in the Netherlands ($\beta = 0.0057$, $p < 0.01$) and negative in France ($\beta = -0.0100$, $p < 0.01$). The z-score is -5.06, indicating that there are statistically significant differences between the effects of CEO transitions on the short-term debt ratio in the two countries. This implies that CEO transitions in France are associated with a reduction in short-term debt ratio, but in the Netherlands, they are associated with an increase.

The coefficient of the interaction term is negative in France ($\beta = -0.0086$, $p < 0.05$) and positive in the Netherlands ($\beta = 0.0017$, $p > 0.10$), and insignificant in both countries. The z-score is -1.47, indicating that the impact of transitioning to a female CEO on the short-term debt ratio does not significantly differ between the countries.

Debt growth

The coefficient of the appointment variable is negative and insignificant in France ($\beta = -0.0020$, $p > 0.10$) and positive and highly significant in the Netherlands ($\beta = 0.0504$, $p < 0.01$). The z-score is -2.67, indicating that there are statistically significant differences between the effects of CEO transitions on debt growth in the two countries. This implies that CEO transitions in the Netherlands are associated with a significant increase in debt growth compared to France.

The coefficient of the interaction term is positive and insignificant in both countries (France: $\beta = 0.0027$, $p > 0.10$; Netherlands: $\beta = 0.0237$, $p > 0.10$). The z-score is -0.55, indicating that the impact of transitioning to a female CEO on debt growth does not significantly differ between the countries.

Equity growth

The coefficient of the appointment variable is highly significant and positive in France ($\beta = 0.0266$, $p < 0.01$) and the Netherlands ($\beta = 0.3360$, $p < 0.01$). The z-score is -17.18, indicating that there are statistically significant differences between the effects of CEO transitions on equity growth in the two countries. This implies that CEO transitions in the Netherlands are associated with a larger increase in equity growth compared to France.

The coefficient of the interaction term is positive and insignificant in both France ($\beta = 0.0147$, $p > 0.10$) and the Netherlands ($\beta = 0.0009$, $p > 0.10$). The z-score is 0.47, indicating that the impact of transitioning to a female CEO on debt growth does not significantly differ between the countries.

The comparative analysis shows that the effects of CEO transitions on the capital structure metrics exhibit some significant differences between France and the Netherlands. There are significant differences in the impact on the debt ratio, short-term debt ratio, debt growth, and equity growth. The impact of transitioning to a female CEO does not significantly differ between the countries for any of the capital structure metrics. This suggests that while the CEO transition had different effects on capital structure in France and the Netherlands, the gender of the CEO did not contribute significantly to these differences. In conclusion, Hypothesis 5, which stated that there will be no significant difference in the impact on capital structure, characterized by lower leverage, between countries with a high proportion of female CEOs and those with a low proportion of female CEOs, is supported based on these results.

6 Discussion

This chapter conducts an analysis of the empirical results presented in Chapter 5. The aim is to understand the broader implications of the findings and how they relate to existing literature. The theoretical implications of the results, limitations and suggestions for future research are also included in this chapter.

6.1 Impact of CEO transition

The analysis revealed that there was only a marginally significant effect of the CEO transition on the return on assets. The interaction term between the CEO transition and gender showed no significant effects on any of the profitability metrics. This indicates that the transition to a female CEO does not have a specific effect on firm profitability. There is no precise study that examines the direct impact of a CEO transition from male to female on firm profitability. Other studies have explored the broader effects of female representation. Ahern and Dittmar (2012) observed a negative effect on firm performance with more women on board. The results contradict this finding but align with Eckbo et al. (2022), who found no detrimental effects after the implementation of board gender quotas. Several studies suggest that more female representation improves profitability, and the study by Khan and Vieito (2013) found that firms led by female CEOs saw an increase in performance. The results of this study do not align with the expectations derived from previous studies that the transition from a male to a female CEO would positively affect the firm's profitability.

The growth metrics analysis showed mixed outcomes. The appointment of a new CEO in France has a highly significant positive effect on profit growth. In the Netherlands, the appointment of a new CEO has a highly significant positive effect on employee and asset growth. The interaction for transitioning to a female CEO has a positive and significant effect on asset growth in both countries. This result aligns with research by Miller and Triana (2009) and Chen et al. (2018). They suggest that female leadership can lead to higher investments in growth. Asset growth is one of the growth metrics that shows a significant effect of female CEOs compared to male CEOs. This means that the expectation that the transition from a male CEO to a female CEO would have a positive effect on the firm's growth is partially supported by the findings.

The analysis of the firm's capital structure revealed significant effects of CEO transitions in both countries. The CEO transition showed in France a highly significant positive effect on the debt ratio and equity growth and a highly significant negative effect on the short-term debt

ratio. The CEO transition had in the Netherlands a highly significant positive effect on the debt ratio, short-term debt ratio, debt growth, and equity growth. The interaction term for transitioning to a female CEO had a significant negative effect on the short-term debt ratio in France and a highly significant negative effect on the debt ratio in both countries. These findings align with the studies by Huang and Kisgen (2013) and Graham et al. (2013). They found that male executives use more debt and tend to carry higher levels of debt. The study by Schopohl et al. (2021) on CFOs found that female CFOs use less debt and manage it more conservatively. This supports the notion that women are more risk-averse. The findings support the expectation that the transition from a male CEO to a female CEO will lead to a more conservative capital structure that is characterized by lower leverage.

6.2 Comparative country analysis

The comparative analysis shows that the impact of transitioning to a female CEO does not significantly differ between the countries for any of the profit, growth, and capital structure metrics. This suggests that the findings do not align with the expectation that in countries with a higher proportion of female CEOs, the effects on profitability and growth would be greater compared to countries with a lower proportion of female CEOs. However, the findings do align with the expectation regarding capital structure. It was expected that there would be no significant differences in the impact on capital structure, characterized by lower leverage, between countries with a high proportion of female CEOs and those with a low proportion of female CEOs.

6.3 Implications and future research directions

This study contributes to the existing literature on gender diversity in corporate leadership by specifically examining the transition from male to female CEOs. The lack of significant effects on the profitability metrics suggests that other factors may play a more crucial role in determining firm profitability than the gender of the CEO. The significant positive effects on certain growth and capital structure metrics align with theories that propose that female leaders are more conservative in their financial strategies. These conservative strategies can contribute to more stable growth and a reduction of risk.

The study has several limitations. One potential limitation is the influence of unobserved variables that were not accounted for in the regression analysis, such as cultural factors or other unaccounted influences. These factors might have affected the results. Another limitation is the presence of missing values in the dataset. This could have impacted the

reliability of the findings. The reduced data may lead to less robust conclusions. Furthermore, the study focuses on only two countries, which may limit the generalizability of the findings.

Future research should consider including a broader range of countries with varying proportions of female CEOs to enhance the generalizability of the findings. This would provide a more comprehensive view of how gender diversity in leadership affects firm performance across different cultural and economic contexts. Future studies could delve deeper into the effects of transitions from male CEOs to female CEOs on various aspects of firm operations, such as management practices, corporate culture, and stakeholder relationships. A final recommendation for future research is to conduct longitudinal studies that track the long-term effects of CEO transitions.

7 Conclusion

Women are underrepresented in top corporate leadership positions. In this thesis, I aimed to provide insights into whether the gender of a CEO influences firm profitability, growth, and capital structure, and if these influences vary between countries with differing levels of representation in corporate leadership. Previous research has broadly focused on female representation but has rarely examined the specific transition from a male CEO to a female CEO. Therefore, the question studied in this paper was: ‘’*What is the effect of the transition from a male CEO to a female CEO on firm profitability, growth, and capital structure, and are there differences between countries with a high proportion of female CEOs and those with a low proportion?’’*

To answer this research question, I utilized regression analysis and comparative analysis. I examined data from Amadeus and focused on 12 dependent variables related to profitability, growth, and capital structure for companies that experienced a CEO transition from male to female. The results showed that the transition to a female CEO had no significant impact on profitability metrics but did have a significant positive effect on asset growth. Additionally, the transition led to a more conservative capital structure characterized by lower leverage. The comparative analysis indicated no significant differences in the impact of the CEO transition between France and the Netherlands.

This study concludes that while the transition from a male CEO to a female CEO can foster growth aspects and stability, it does not significantly affect overall profitability. The lack of significant differences between countries with high and low proportions of female CEOs implies that gender diversity initiatives may yield consistent benefits across different socio-economic contexts.

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APPENDIX A - Variable definitions

Table A presents the variables used in this paper along with their corresponding definitions. This provides an overview and clarity on the metrics and computations employed in this study.

Table A: Variable definitions

Variable	Definition
appointment	A dummy variable indicating whether a CEO transition has occurred (1 = transition occurred, 0 = no transition).
fem_ceo	A dummy variable indicating the gender of the CEO (1 = female CEO, 0 = male CEO).
return on assets	Net income divided by total assets.
profit margin	Net income divided by operating revenue.
operating margin	Earnings before interest and tax (EBIT) divided by operating revenue.
revenue growth	Year-over-year growth of total revenue.
profit growth	Year-over-year growth of total profit.
employee growth	Year-over-year growth of the number of employees.
asset growth	Year-over-year growth of total assets.
debt-to-equity ratio	Total amount of debt divided by the total amount of equity.
debt ratio	Total amount of debt divided by the total amount of assets.
short-term debt ratio	Total amount of short-term debt (current liabilities) divided by the total debt.
debt growth	Year-over-year growth of total debt.
equity growth	Year-over-year growth of total equity.
size	Natural logarithm of 1 plus the total assets.
age	Difference between the observation year and the year of incorporation.
tangibility	Ratio of tangible fixed assets to total assets.

Notes: This table presents the definitions and computations of the different variables employed in this study. All data is retrieved from Amadeus.

APPENDIX B - Z-score calculations

This appendix presents the z-score calculations used to test the equality of coefficients from regression models conducted separately for France and the Netherlands. The method followed the approach outlined by Clogg et al. (1995). Z-scores are calculated to determine whether the differences in coefficient between the two countries are significant. The z-scores are calculated using the following formula:

$$z = \frac{(\beta_1 - \beta_2)}{\sqrt{(SE_1^2 + SE_2^2)}}$$

In this formula, β_1 and β_2 are the coefficients from France and the Netherlands. The respective standard errors are SE_1^2 and SE_2^2. A z-score greater than 1.96 or lower than -1.96 at a 95% confidence level suggests a statistically significant difference between the coefficients. A z-score lower than 1.96 or higher than -1.96 at a 95% confidence level suggests similar effects across the countries.

Calculations profitability metrics:

Return on assets

- Appointment variable:

  France: β = 0.0048, SE = 0.0027

  Netherlands: β = -0.0076, SE = 0.0067

  z-score = (0.0048 - (-0.0076)) / √((0.0027²) + (0.0067²)) = **1.70, p > 0,01**

- Interaction term:

  France: β = -0.0018, SE = 0.0036

  Netherlands: β = 0.0101, SE = 0.0154

  z-score = (-0.0018 - 0.0101) / √((0.0036²) + (0.0154²)) = **-0.75, p > 0,01**

Profit margin

- Appointment variable:

  France: β = -0.1167, SE = 0.1230

  Netherlands: β = -0.0240, SE = 0.0194

  z-score = (-0.1167 - (-0.0240)) / √((0.1230²) + (0.0194²)) = **-0.74, p > 0,01**

- Interaction term:

  France: β = -0.1192, SE = 0.1950

  Netherlands: β = 0.0508, SE = 0.0619

  z-score = (-0.1192 - 0.0508) / √((0.1950²) + (0.0619²)) = **-0.83, p > 0,01**

Operating margin

- Appointment variable:

  France: β = 0.1531, SE = 0.2263

  Netherlands: β = -0.0034, SE = 0.0170

  z-score = (0.1531 - (-0.0034)) / √((0.2263²) + (0.0170²)) = **0.69, p > 0,01**

- Interaction term:

  France: β = -0.0653, SE = 0.4153

  Netherlands: β = 0.0235, SE = 0.0845

  z-score = (-0.0653 - 0.0235) / √((0.4153²) + (0.0845²)) = **-0.21, p > 0,01**

Calculations growth metrics:

Revenue growth

- Appointment variable:

  France: β = 0.0085, SE = 0.0448

  Netherlands: β = 0.0426, SE = 0.0460

  z-score = (0.0085 - 0.0426) / √((0.0448²) + (0.0460²)) = **-0.49, p > 0,01**

- Interaction term:

  France: β = 0.0242, SE = 0.0470

  Netherlands: β = -0.0927, SE = 0.0662

  z-score = (0.0242 - (-0.0927)) / √((0.0470²) + (0.0662²)) = **1.46, p > 0,01**

Profit growth

- Appointment variable:

  France: $\beta = 0.1281$, SE = 0.0402

  Netherlands: $\beta = 0.0270$, SE = 0.1166

  z-score = $(0.1281 - 0.0270) / \sqrt{((0.0402^2) + (0.1166^2))}$ = **0.82, p > 0,01**

- Interaction term:

  France: $\beta = -0.0386$, SE = 0.0411

  Netherlands: $\beta = 0.1252$, SE = 0.1851

  z-score = $(-0.0386 - 0.1252) / \sqrt{((0.0411^2) + (0.1851^2))}$ = **-0.66, p > 0,01**

Employee growth

- Appointment variable:

  France: $\beta = -0.0090$, SE = 0.0143

  Netherlands: $\beta = 0.0326$, SE = 0.0077

  z-score = $(-0.0090 - 0.0326) / \sqrt{((0.0143^2) + (0.0077^2))}$ = **-3.06, p < 0,01**

- Interaction term:

  France: $\beta = 0.0123$, SE = 0.0143

  Netherlands: $\beta = 0.0121$, SE = 0.0162

  z-score = $(0.0123 - 0.0121) / \sqrt{((0.0143^2) + (0.0162^2))}$ = **0.01, p > 0,01**

Asset growth

- Appointment variable:

  France: $\beta = 0.0072$, SE = 0.0065

  Netherlands: $\beta = 0.3424$, SE = 0.0124

  z-score = $(0.0072 - 0.3424) / \sqrt{((0.0065^2) + (0.0124^2))}$ = **-7.15, p < 0,01**

- Interaction term:

  France: $\beta = 0.0179$, SE = 0.0079

  Netherlands: $\beta = 0.0938$, SE = 0.0261

  z-score = $(0.0179 - 0.0938) / \sqrt{((0.0079^2) + (0.0261^2))}$ = **-1.94, p > 0,01**

Calculations capital structure metrics:

Debt-to-equity ratio

- Appointment variable:

  France: $\beta = -0.0629$, SE = 0.1353

  Netherlands: $\beta = -0.3120$, SE = 0.6898

  z-score = $(-0.0629 - (-0.3120)) / \sqrt{((0.1353^2) + (0.6898^2))}$ = **0.35, p > 0,01**

- Interaction Term:

  France: $\beta = -0.1333$, SE = 0.1539

  Netherlands: $\beta = -1.7069$, SE = 1.8294

  z-score = $(-0.1333 - (-1.7069)) / \sqrt{((0.1539^2) + (1.8294^2))}$ = **0.86, p > 0,01**

Debt ratio

- Appointment variable:

  France: $\beta = 0.0072$, SE = 0.0027

  Netherlands: $\beta = 0.0201$, SE = 0.0040

  z-score = $(0.0072 - 0.0201) / \sqrt{((0.0027^2) + (0.0040^2))}$ = **-2.69, p < 0 ,01**

- Interaction term:

  France: $\beta = -0.0164$, SE = 0.0039

  Netherlands: $\beta = -0.0410$, SE = 0.0127

  z-score = $(-0.0164 - (-0.0410)) / \sqrt{((0.0039^2) + (0.0127^2))}$ = **1.85, p > 0,01**

Short-term debt ratio

- Appointment variable:

  France: $\beta = -0.0100$, SE = 0.0024

  Netherlands: $\beta = 0.0057$, SE = 0.0019

  z-score = $(-0.0100 - 0.0057) / \sqrt{((0.0024^2) + (0.0019^2))}$ = **-5.06, p < 0,01**

- Interaction term:

  France: $\beta = -0.0086$, SE = 0.0038

  Netherlands: $\beta = 0.0017$, SE = 0.0059

  z-score = $(-0.0086 - 0.0017) / \sqrt{((0.0038^2) + (0.0059^2))}$ = **-1.47, p > 0,01**

Debt growth

- Appointment variable:

  France: $\beta = -0.0020$, SE = 0.0154

  Netherlands: $\beta = 0.0504$, SE = 0.0122

  z-score = $(-0.0020 - 0.0504) / \sqrt{((0.0154^2) + (0.0122^2))}$ = **-2.67, p < 0,01**

- Interaction term:

  France: $\beta = 0.0027$, SE = 0.0167

  Netherlands: $\beta = 0.0237$, SE = 0.0341

  z-score = $(0.0027 - 0.0237) / \sqrt{((0.0167^2) + (0.0341^2))}$ = **-0.55, p > 0,01**

Equity growth

- Appointment variable:

  France: $\beta = 0.0266$, SE = 0.0096

  Netherlands: $\beta = 0.3360$, SE = 0.0139

  z-score = $(0.0266 - 0.3360) / \sqrt{((0.0096^2) + (0.0139^2))}$ = **-17.18, p < 0,01**

- Interaction term:

  France: $\beta = 0.0147$, SE = 0.0100

  Netherlands: $\beta = 0.0009$, SE = 0.0295

  z-score = $(0.0147 - 0.0009) / \sqrt{((0.0100^2) + (0.0295^2))}$ = **0.47, p > 0,01**