ERASMUS UNIVERSITY ROTTERDAM
Erasmus School of Economics

Bachelor Thesis Strategy Economics

"The Effect of Business Strategies and Organizational Structure on Firm Performance: A Comparative Analysis of the United States and Europe"

Abstract

This study examines the effect of business strategies (differentiation, cost leadership, growth strategy, and asset parsimony) and organizational structure (the level of centralization) on firm performance (measured by ROA and Tobin's Q). In today's dynamic economic environment, a firm's strategy and structure are essential for achieving sustainable growth, maintaining a competitive edge, adapting to market changes, and maximizing performance. Aiming to examine potential differences in strategy- and structure-making between the United States and Europe, secondary data was collected for the period 2010 to 2020 for large U.S. and European companies. Along with graphical examination and panel data regression analysis, the results show significant differences in the effects on firm performance between the United States and Europe. However, inconsistencies in the findings impede the establishment of a definitive conclusion regarding the overall impact of strategies and structure on firm performance.

***Keywords*:** Business strategies, organizational structure, firm performance, large enterprises.

Name student: Saskia Visser
Student ID number: 569203

Supervisor: Prof. Dr. Ajay Bhaskarabhatla
Second assessor:

Date final version:

Table of contents

1. Introduction

In today's dynamic and highly competitive global business landscape, large firms face increasing challenges to sustain success and maintain a competitive edge. The forces of globalization have intensified competition, blurring the boundaries between national and international markets, resulting in a growing gap between small and large companies. Over the past decades, the largest companies in the United States have consistently outpaced overall economic growth, solidifying their dominance (Flowers, 2015). According to the Bureau of Economic Analysis, in 2013, the revenues of the Fortune 500 companies contributed to 73% of the U.S.' nominal gross domestic product (GDP). However, the changing business landscape, driven by factors such as sustainability requirements and climate regulations, has compelled firms to reassess their strategies and organizational structures. Adapting to rapid technological advancements and evolving customer preferences has become crucial for survival. While established firms may have relied on long-standing strategies and organizational structures, the speed of technological changes necessitates continuous self-reflection and potential adjustments.

This research aims to examine the effect of four key business strategies and the role of organizational structure on the performance of large businesses. Organizational structure, an integral aspect of strategic management, plays a vital role in determining a firm's ability to effectively execute its chosen strategy. It encompasses the arrangement of roles, responsibilities, and decision-making processes within an organization. Therefore, the central question in this study is:

"What is the effect of business strategies combined with a centralized organizational structure on the performance of large businesses, and is there a different effect between the United States and Europe?"

The interaction between strategy and structure and its impact on firm performance has received limited attention in the literature, particularly at the business level. Moreover, there is a scarcity of research that explores such interactions comparing major economies such as the United States and Europe. This study aims to fill this gap in knowledge and provide insights into the unique dynamics between strategy, structure, and performance in different contexts. The findings of this research not only contribute to the academic understanding of these relationships but also offer practical implications for managers and executives. The results can guide strategic decision-making processes, inform the design of effective organizational

structures, and highlight potential differences in strategic outcomes between the United States and Europe.

This paper is organized as follows: Chapter 2 provides a comprehensive review of the existing literature pertaining to the research objectives and presents the formulated hypotheses. Chapter 3 explains the data sample and outlines the main variables utilized in the study. In Chapter 4, the methodology section elaborates on the approaches employed to address the research question. Chapter 5 presents the findings obtained from the analysis. Finally, Chapter 6 encompasses the conclusion and discussion, offering a synthesis of the key findings and their implications.

2. Theoretical framework

2.1 United States versus Europe

Understanding the dynamics and nuances of different business environments is crucial for organizations seeking to thrive in diverse markets. The United States and Europe represent two major global economies with distinctive business landscapes, characterized by variations in management practices, work-life balance, government-business relationships, labor relations, and education and training (Megginson, 1963). More specifically, Kakabadse and Kakabadse (2002) argue that European companies focus on cost discipline and gaining economies of scale through outsourcing, with decisions made at the board level and the outsourced areas seen as less of a commodity. In contrast, U.S. companies adopt a developmental approach, aiming for best practices, service quality improvement, core competency focus, and accessing new technology and skills. Furthermore, they also prioritize headcount reduction, view outsourcing as an operational tool, and make decisions at the senior line or functional levels, considering the outsourced areas more as commodities. This implies potential differences in organizational structures, business strategies, and ultimately, firm performance. Exploring these differences is essential to shed light on the factors that shape success and to develop insights for managers and policymakers operating in these regions as well as for strategy analysts when exploring international opportunities. Additionally, Choudhry, Hassan, and Shabi (2020) found that U.S. economic uncertainty significantly influences EU business cycles, especially during the global financial crisis, highlighting the interdependence and spillover effects between the United States and European economies. Consequently, analyzing performance measures within

European and U.S. contexts provides valuable insights into the impact of different business strategies and organizational structures on achieving superior outcomes.

Business Strategies

Douglas and Rhee (1989) note that similar generic competitive strategy types can be identified among industrial businesses in both the United States and Europe, suggesting that the fundamental components of competitive strategy are consistent across these markets. While specific characteristics of these strategy types might differ between markets, the core approach is similar. Manu (1992) agrees that similar strategic innovation types can be identified in both markets, however, there are distinct differences in their environments and associated performance levels for different strategic innovation orientation types in the United States as opposed to Europe. More specifically, Crescenzi et al. (2007) argue that the United States has a strong innovative capacity, leading in R&D investments, technological output, and entrepreneurial culture compared to Europe. The United States benefits from easier access to venture capital, more adaptable firms, and a more integrated market for innovation. In contrast, Europe faces challenges with fragmented initiatives, national/regional systems of innovation, and bureaucratic hurdles. This follows the results of Archibugi & Coco (2004) that U.S. firms have substantially increased their participation in strategic technology partnerships, including partnerships with European firms. Whereas European firms have shown a greater tendency towards partnerships with American firms compared to partnerships with other European firms. They suggest that this is due to the perceived reliability of U.S. firms as knowledge generators and the lesser likelihood of direct competition within the European market. Within this research, these insights lead to the following sub-question:

Sub-question 1A: *"Is there a different effect on firm performance between the United States and Europe for each of the four business strategies?"*

Organizational Structure

Differences in organizational structure between the United States and Europe are found in the adoption of the multidivisional model. Franko (1974) points out that while the United States has early and fully embraced this model with profit responsibility assigned to general managers, a central strategic office, and no specific product or industry commitments at the executive level, Europe adopted a similar structure but with variations later on. He shows that European companies have central staff groups and corporate planning departments instead of a general office, and they reorganize by forming product groups from functional departments. These

differences suggest variations in central oversight and departmental organization, driven by changes in the competitive environment.

In terms of administrative coordination, monitoring, and resource allocation Chandler Jr. and Daems (1979) argue that in the United States, structured hierarchical multi-unit organizations were created to effectively coordinate and monitor activities, aided by new accounting concepts, whereas European businesses were more influenced by social, economic, and legal factors (such as traditions, privileged status, and accumulated wealth), with the family serving as the basic building block and thus, placing less emphasis on administrative coordination and monitoring. According to Megginson (1963), European firms lean towards more centralized decision-making processes, where executives bear routine administrative duties and maintain tight control over various functions. Conversely, American firms adopt a different approach by employing specialist teams and engaging in collective decision-making through committees, leading to a more diversified and spread-out power structure. This is followed by the next sub-question:

Sub-question 1B: *"Is there a different effect of organizational structure on firm performance between the United States and Europe?"*

2.2 Business Strategies & Firm Performance

Porter (1980) emphasizes the strong link between a company's competitive strategy and its performance and describes three generic strategies: "Differentiation", "Cost leadership, and "Focus". Islami, Mustafa, and Latkovikj (2020) show that all three strategies can positively impact firm performance when properly implemented. Therefore, the second sub-question in this research is as follows:

Sub-question 2: *"What is the individual effect of each business strategy on firm performance?"*

The business strategies analyzed within this research are "Differentiation", "Cost Leadership", "Growth Strategy", and "Asset Parsimony".

A. Differentiation

A differentiation strategy is a competitive approach where a company aims to create unique products or services that stand out in their market and attract customer loyalty (Guo, Wang & Wei,2018). The strategy often requires heavy investment in activities such as research and development (R&D), marketing, and high-quality materials or processes but it allows firms to

command higher prices for their unique products or services, potentially leading to greater profit margins. Guo, Wang, and Wei (2018) state that the success of a differentiation strategy depends on the company's ability to convince customers that the additional cost of unique features offers a comparable or superior value. Thus, R&D expenses are often higher in companies pursuing a differentiation strategy, as innovation is an integral part of creating unique value (Banker, Mashruwala, & Tripathy, 2014). R&D intensity, the ratio of R&D to net sales, is therefore considered an appropriate indication of differentiation because it indicates the firm's level of investment in creating new, innovative products or services (Miller, 1986). When a firm invests heavily in R&D, it shows its commitment to fostering innovation and developing unique products or services that can offer superior value to customers, allowing the firm to differentiate itself from competitors. According to Miller (1986), a well-executed differentiation strategy can have a positive impact on firm performance in several ways, such as enhanced profit margins, market share gains, increased customer loyalty, and better financial performance.

Thus, following the positive association between a firm's success and R&D spending, the corresponding hypothesis is as follows:

Hypothesis 2.1: Higher R&D intensity positively influences firm performance.

B. Cost leadership

A cost leadership strategy refers to a business approach where a company aims to become the lowest-cost producer in its industry, focusing on efficiencies in operations, economies of scale, technological advancements, and optimal outsourcing (Hambrick, 1983). Such firms offer similar products or services at lower prices than their competitors. However, risks associated with this strategy are that it can be easily imitated by competitors, is often only temporarily successful as it tends to focus on operational efficiencies which don't necessarily lead to long-term sustainable performance, and thirdly, a sole focus on cost-cutting could lead to a compromise on product quality or innovation (Banker et al., 2014). Although Hambrick (1983) agrees that a differentiation strategy may be more profitable than cost leadership strategies, the latter can enable a firm to achieve efficiencies and potentially a significant market share due to lower prices for customers which could improve firm performance if successfully implemented. The measure used for this strategy is cost efficiency, calculated by the ratio of cost of goods sold (COGS) to sales. The COGS includes production costs (such as raw materials, labor, and overhead costs), so a low ratio suggests that the firm is managing its production and operating costs well. It can sell a high volume of products without incurring too much cost, which indicates efficient operations and alignment with a cost leadership strategy. A cost leadership

strategy, when effectively implemented, can have a positive impact on a firm's financial performance through increased profit margins, competitive pricing, greater market positions, and risk reduction (Berman, Wicks, Kotha, & Jones, 1999). This leads to the following hypothesis:

Hypothesis 2.2: *Lower cost intensity positively influences firm performance.*

C. Growth strategy

In the context of a firm's strategic orientation, if a firm has higher than industry average sales growth, it might be following a growth-oriented strategy (Zhou & Park, 2020). They argue that sales growth is an indicator of a firm's ability to expand its business and gain market share. Therefore, higher-than-average sales growth can suggest that a firm is effectively capitalizing on market opportunities, potentially outperforming competitors. According to Brush, Bromley, and Hendrickx (2000), sales growth can provide several insights about a firm. Firstly, it can enhance managerial wealth and power by increasing control over resources. Additionally, it signifies successful business expansion and potential market share gains, particularly in growing industries. Moreover, sales growth grants the firm increased market power, which can contribute to improved performance. Finally, it may also lead to higher profitability through more efficient cost allocation as capacity is utilized more fully. Therefore, the accompanying hypothesis is as follows:

Hypothesis 2.3: *Sales growth positively influences firm performance.*

D. Asset parsimony

Asset parsimony has been identified as a fourth dimension of firms' realized strategies, alongside Porter's generic strategies of cost leadership, differentiation, and focus (Greckhamer & Gur, 2021). They define the strategy as the "fewness of assets per unit of output" which, in practice, means optimizing the usage of resources in the production process to achieve efficiency – in essence, achieving more with less. Firms that practice asset parsimony would closely monitor employee productivity, resource use, and discretionary overheads, and aim to improve their financial performance by minimizing costs and assets per unit of output, achieved through careful use of capital investments, which is a key indicator of a firm's efficiency (Banker et al., 2014). According to Miller (1986), asset intensity, measured as the ratio of current assets to total revenues, is a good indicator for an asset parsimony strategy where a lower ratio indicates fewer assets being used per unit of output or revenue, which signifies a high level of asset parsimony. The concept of asset parsimony suggests that greater asset

intensity can make a firm less flexible due to potential structural inertia, thus possibly leading to reduced performance. However, Greckhamer and Gur (2021) emphasize that it is important to note that the impact of asset parsimony on a firm's performance is interdependent with the firm's choice of generic strategy.

Firms following a differentiation strategy can benefit from asset parsimony to potentially increase firm performance (Hambrick & MacMillan, 1984). Differentiation often requires flexibility to quickly react and adapt to the changing needs of customers or the market (Miller, 1986). Having fewer assets per unit of output (i.e., asset parsimony) means there are fewer committed resources and less inertia, thereby enabling such flexibility. This improved flexibility can be particularly beneficial in highly dynamic and unpredictable industries. The resulting hypothesis is as follows:

Hypothesis 2.4.1: *A differentiation strategy combined with a low asset intensity positively influences firm performance.*

However, for firms pursuing a cost leadership strategy, asset parsimony might not be the most suitable approach. Instead, these firms often benefit from asset intensity, as it can provide greater efficiency that aligns with their goal of minimizing costs (Miller, 1986). He also states that while asset parsimony encourages flexibility, cost leaders typically operate in more stable environments where flexibility is less required. Cost leaders aim to utilize their resources efficiently to maintain low-cost production. These firms make significant investments in assets (such as plant and equipment) to achieve cost efficiencies and economies of scale, and they usually have high inventory levels (Ward, Bickford, & Leong, 1996). Therefore, the following hypothesis is stated:

Hypothesis 2.4.2: *A cost leadership strategy combined with a high asset intensity positively influences firm performance.*

Asset parsimony strategy impacts firm performance by minimizing the resources required for producing output. This efficiency allows assets to be used more economically, thus potentially improving profitability. Reducing asset intensity can be a strategy for growth. According to Turner (2005), companies like Procter & Gamble are favorably positioned for growth because of their low asset intensity, which affords them higher operating margins. So, it can be inferred that, generally, an asset parsimony strategy can be conducive to growth. However, too much parsimony might hinder the firm's capacity to invest in areas that could drive future growth (Berman et al., 1999). This leads to the following hypothesis:

Hypothesis 2.4.3: *A growth strategy combined with a low asset intensity positively influences firm performance.*

This balance between flexibility and efficiency underscores the importance of aligning operational strategy (like asset parsimony) with the overall strategic orientation of the firm.

2.3 Organizational Structure & Firm Performance

The organizational structure of a firm plays a pivotal role in shaping its operations, decision-making processes, and overall performance. A key aspect of organizational structure is the degree of centralization versus decentralization, referring to the concentration of authority and power within the firm. Contributing to this research is the following sub-question proposed:

Sub-question 3: *"What is the effect of a centralized organizational structure on firm performance?"*

In highly centralized organizations, decision-making power for strategic and operational matters is typically held by a few high-level executives (Baum & Wally, 2003). A centralized organizational structure gives a firm the systemic capacity to actively exploit synergies and transfer skills and competencies across its different business units (Markides & Williamson, 1996). This is because the central office systematically controls strategic and financial aspects and makes operating decisions for its divisions. Therefore, implying that centralization can foster the transfer of essential expertise across units and facilitate the sharing of strategic assets and thus, potentially improving overall firm performance. Baum and Wally (2003) agree that firm performance improves when strategic decisions are centralized because such structure allows for expedited strategic decisions due to efficient information processing and reduced political activity. This is likely because centralized strategic management enables a clearer definition of business strategy and the resolution of power and communication hierarchies. A downside of centralization, particularly in larger organizations, is that organizations can become too bureaucratic and find it harder to control costs due to organizational diseconomies of scale (Mookherjee, 2006). However, he argues that the advantages such as limiting the monopsony power of intermediaries or combating issues related to externalities, public goods, increasing returns, and distributional equity outweigh the disadvantages. Therefore, the hypothesis regarding the level of centralization within this research is stated as follows:

Hypothesis 3.1: *A higher level of centralization positively influences firm performance.*

2.4 Strategy-Structure Interaction

If a firm's structure does not align with its strategy, it leads to inefficiency and negatively affects the firm's performance (Hall & Saias, 1980). Many studies agree that business strategies are interdependent with organizational structures and must complement each other (described as "strategy-structure-fit") to achieve superior performance (Olson, Slater & Hult, 2005; Miller, 1987; Jennings & Hindle, 2004; Hamilton & Shergill, 1992). More specifically, Mack and Szulanski (2017) argue that the level of centralization can influence how business strategies are formulated and implemented, leading to the following sub-question within this research:

Sub-question 4: *"What is the effect on firm performance for each business strategy combined with a centralized structure?"*

A. Differentiation & Centralization

The degree of decentralization or centralization as an organizational structure should align with its strategy for optimal effectiveness (Govindarajan, 1986). As mentioned earlier, in a centralized organizational structure, decision-making power is consolidated at the top rather than dispersed among employees. Zeng et al. (2017) discuss that this structure provides tight management control and is particularly effective for implementing "hard" quality management, which focuses on increasing consistency, reducing waste, and speeding up work. Additionally, they highlight that the concentration of power in a centralized setup can serve as a major hurdle to innovation adoption because it restricts flexibility, openness, and the encouragement of new ideas. As a differentiation strategy often requires flexibility, creativity, and responsiveness, an increase in centralization is likely to harm an organization's effectiveness (Govindarajan, 1986). Therefore, the following hypothesis has been proposed:

Hypothesis 4.1: *A differentiation strategy combined with a lower level of centralization positively influences firm performance.*

B. Cost Leadership & Centralization

Cost leaders pay attention to asset use, employee productivity, and discretionary expenses as a cost leadership strategy often involves efficiency, scale, and uniformity. This may suggest a need for a rigid, standardized, and well-coordinated structure to efficiently manage resources and operations, which is usually fostered by a more centralized structure (Ward et al., 1996). Govindarajan (1986) suggests that when Strategic Business Units follow a cost leadership strategy, an increase in centralization is likely to positively influence its effectiveness. Therefore, the corresponding hypothesis within this research is as follows:

Hypothesis 4.2: *A cost leadership strategy combined with a higher level of centralization positively influences firm performance.*

C. Growth Strategy & Centralization

Rajaratnam and Chonko (1995) investigate four business strategy types, based on the Miles and Snow (1979) typology, and their relationship with organizational structure, growth strategies, and firm performance. They found that a growth strategy is most vital for “Prospector” type firms which value being "first in" in new product and market areas, responding rapidly to new opportunities, and often sparking new competitive actions. Furthermore, they propose that prospector organizations tend to have product structures to facilitate growth through product development and typically tend to be more decentralized, giving room for rapid response and adaptability to changes in the marketplace. Decentralization is necessary for these firms since they frequently experiment with potential responses to evolving environmental trends. Combining these findings leads to the following hypothesis:

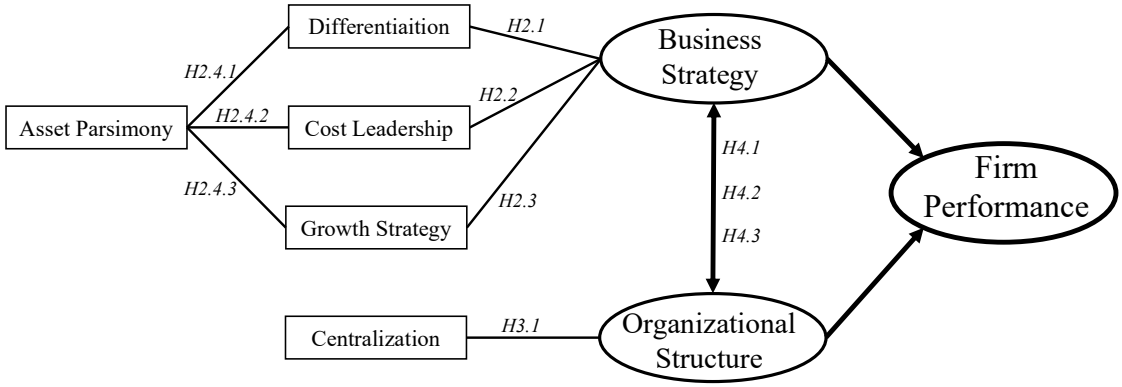
Hypothesis 4.3: *A growth strategy combined with a lower level of centralization positively influences firm performance.*

2.5 Conceptual model

Combining the insights from the literature with the purpose of this research has been compounded in a conceptual model, presented in Figure 1.

Figure 1

Conceptual model



The conceptual model in Figure 1 provides a visual representation of the theoretical foundations of my research and helps guide the empirical analysis by outlining the expected associations between business strategies, organizational structure, and firm performance.

3. Data

3.1 Sample

The European countries analyzed in this research are Germany, France, Italy, Spain, the United Kingdom, the Netherlands, and Belgium. These countries together have a total population size that is approximately similar to that of the United States. Furthermore, these countries belong in the top ten countries with the largest share of European GDP in 2017 (Eurostat, 2018) and thus, represent major economies for both Europe and globally allowing for a meaningful comparison.

Separate datasets for the United States and Europe are collected from the Bureau van Dijk – Orbis database within the company size classifications "large companies" and "very large companies" aiming for a broad representable sample of European and American firms.

The data collection period spans from 2010 to 2020. This choice of a large panel dataset offers several advantages for my research. Firstly, working with an extensive dataset allows for a more comprehensive analysis of the research variables and their relationships. The larger the sample size, the greater the statistical power and the more reliable the findings. By focusing specifically on large businesses, I intend to gain insights into the performance and strategies of significant players in the respective economies. Secondly, by selecting a sample period from 2010 to 2020, I aim to mitigate the influence of major economic events. The financial crisis of 2008 had a profound impact on the global economy and starting the analysis from 2010 helps reduce the lingering effects of that crisis. Additionally, by including data up until 2020, there will be no variation in the variables due to the COVID-19 pandemic. This allows for a clearer assessment of the long-term effects of business strategies and organizational structures on firm performance.

I collected 125,000 firm-year observations for each of the United States and Europe, resulting in a total sample size of 2,750,000 observations. However, following the definition of "large enterprises" from the European Commission, observations of less than 250 employees and observations with an operating revenue of less than $50 million were removed from the sample. Consequently, the final panel data sample consists of 800,544 European observations and 1,356,386 U.S. observations.

3.2 Variables

The variables included in the analysis will capture business strategies and organizational structure, as well as firm performance. Furthermore, Zajac and Shortell (1989) show that companies often change their strategies in response to environmental shifts. Hence, strategy dummy variables are conducted by comparing the firm's strategy measures to its sector average value for each year in the sample period.

3.2.1 Firm Performance

The dependent variables used to assess firm performance include an accounting-based measure, the return on assets (ROA), and a market value measure, Tobin's Q, which provide insights into a firm's profitability, efficiency, and market value.

A. Return on Assets (ROA)

The ROA ratio is a financial performance measure that indicates a firm's profitability to its total assets.

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

It is commonly used as a measure of firm performance to assess how effectively a company generates profit from its investments in assets, including in the works by Brush et al. (2000) and Wright et al. (1995). Moreover, research examining the impact of Porter's generic strategies on firm performance, such as the studies conducted by Guo et al. (2018) and Banker et al. (2014), have also used ROA as an important metric. Attaining a high ROA, achieved through effective strategy implementation, is a primary objective for most businesses (Hambrick, 1983; Berman et al., 1999) and holds significant value for a firm's managers and analysts (Bettis, 1981).

B. Tobin's Q

Tobin's Q, named after economist James Tobin, is a financial metric used to assess the market value of a company relative to its book value. The firm's market value is determined by the market price of its outstanding shares multiplied by the number of shares outstanding (or also the market capitalization).

$$Tobin's\ Q = \frac{Market\ Value}{Total\ Assets}$$

Tobin's Q can provide a more comprehensive assessment of firm performance because accounting rates of return can be distorted due to several factors which are likely to vary more across industries than across individual firms such as differences in systematic risk, temporary disequilibrium effects, tax laws, and accounting conventions regarding R&D and advertising

(Wernerfelt & Montgomery, 1988). Additionally, Bharadwaj, Bharadwaj, and Konsynski (1999) discuss several advantages of using market-based measures compared to traditional accounting measures, including their alignment with stockholder value, reflection of all available performance aspects, objectivity and availability for publicly traded firms, resistance to manipulation, adjustability for market movements, inflation, and market risk, and their ability to evaluate investors' assessment of managerial decisions. They emphasize the shift towards future-oriented measures in evaluating firm performance, particularly in the context of rapidly changing environments and global competition. This is in line with Ayadi, Dufrene, and Obi (1996) who argue that traditional performance measures based on accounting data suffer from the limitation of solely reflecting historical patterns. They propose that a robust performance measure should capture the market's perception of the riskiness and timing of expected returns on a firm's current investments.

3.2.2 Business Strategies

A. Differentiation

Following Miller (1986) and Banker et al. (2014), *Differentiation* is calculated as the ratio of R&D expenses to total sales.

$$Differentiation_{it} = \frac{R\&D\ expenses_{it}}{Sales_{it}}$$

A higher ratio implies that a firm is more likely to follow a differentiation strategy. Therefore, the variable *Differentiation Dummy* is created which takes the value 1 if the value of *Differentiation* for a firm in a specific year is higher than the average value for *Differentiation* within the sector it operates in that same year and 0 otherwise.

$$Differentiation\ Dummy_{it} = 1 \quad if\ Differentiation_{it} > Sector\ average_{Differentiation_{it}}$$

B. Cost Leadership

Following Berman et al. (1999) and Balsam et al. (2017), the *Cost Leadership* variable is calculated by the cost efficiency measure as the ratio of cost of goods sold (COGS) to total sales.

$$Cost\ Leadership_{it} = \frac{COGS_{it}}{Sales_{it}}$$

When a firm follows a cost leadership strategy, its operating efficiency increases as the ratio decreases. This implies an inverse relationship and thus the *Cost Leadership Dummy* variable takes the value 1 if a firm's cost ratio in a specific year is smaller than the sector average value in that same year and 0 otherwise.

$$Cost\ Leadership\ Dummy_{it} = 1 \quad if\ Cost\ Leadership_{it} < Sector\ average_{Cost\ leadership_{it}}$$

C. Growth Strategy

The last strategy variable measures the focus on growth which is determined by the yearly sales growth rate.

$$Sales\ Growth_{it} = \frac{Sales_{it} - Sales_{i(t-1)}}{Sales_{i(t-1)}}$$

If a firm's yearly sales growth is higher than the average sector sales growth in the same year, the *Growth Strategy Dummy* takes the value 1.

$$Growth\ Strategy\ Dummy_{it} = 1 \quad if\ Sales\ Growth_{it} > Sector\ average_{Sales\ growth_{it}}$$

D. Asset Parsimony

The asset parsimony strategy is measured by the current asset intensity as the ratio of current assets per total revenues, following Miller (1986).

$$Asset\ Parsimony_{it} = \frac{Current\ Assets_{it}}{Total\ Revenues_{it}}$$

In general, higher levels of asset or capital intensity limit a firm's adaptability and often leads to a decrease in performance. Similar to the cost leadership strategy, the *Asset Parsimony Dummy* equals 1 if the asset intensity of a firm in a specific year is smaller than the average value in that same year and within the sector in which it operates.

$$Asset\ Parsimony\ Dummy_{it} = 1 \quad if\ Asset\ Parsimony_{it} < Sector\ average_{Asset\ Parsimony_{it}}$$

3.2.3 Organizational Structure

To measure the organizational structure of a firm, this research focuses on how decision-making authority is distributed within a firm and the extent to which decision-making power is concentrated at the top (centralized) or dispersed across various levels and units (decentralized).

A. Centralization index

Based on Sah and Stiglitz (1991), the level of centralization (hierarchy) is calculated intuitively by the following *Centralization Index*:

$$Centralization\ index_{it} = \frac{Directors\ \&\ Managers_i}{Employees_{it}} * \left[1 - \left(\frac{Subsidiaries_i}{Total\ subsidiaries\ in\ industry}\right)\right]$$

A higher value indicates a more centralized authority. Consequently, the *Centralized Structure Dummy* equals 1 when a firm has a higher *Centralization* value for a given year than its sector average value.

$$Centralized\ Structure\ Dummy_{it} = 1 \quad if\ Centralization_{it} > Sector\ average_{Centralization_{it}}$$

3.2.4 Control Variables

The control variables used in this research are *Firm age*, *Firm size*, *Capital structure*, *Ownership structure*, and *Sector*. Including these variables in the regression helps to isolate the specific effects of the independent variables (the four business strategies and organizational structure) on firm performance, by controlling for the potential confounding effects. It enhances the robustness of the analysis and allows for a more accurate assessment of the relationships between the main variables of interest and firm performance.

A. Firm Age

$$Firm\ age_{it} = Year_t - Year\ of\ incorporation_i$$

By including firm age as a control variable, differences due to the potential influence of experience and learning are accounted for, as older firms typically have accumulated knowledge that can impact their performance and their willingness to change strategies or organizational structure. Additionally, it captures the potential impact of resource accumulation which can influence a firm's competitive advantage.

B. Firm Size

$$Firm\ size_{it} = Number\ of\ employees_{it}$$

Including firm size, measured by the number of employees, as a control variable helps to account for inherent differences in resources, market power, and scale effects among firms of varying sizes. Firstly, larger firms generally have greater access to financial resources, technological capabilities, and human capital. These resources can enable firms to invest in research and development, expand their operations, and pursue growth opportunities. Secondly, larger firms may have a stronger market position, brand recognition, and bargaining power with suppliers and customers. These factors can affect a firm's ability to generate higher sales, secure favorable contracts, and achieve better financial performance. Thirdly, larger firms often benefit from economies of scale, which can lead to cost advantages, greater market power, and higher profitability.

C. Capital Structure

$$Capital\ Structure_{it} = D/E\ ratio_{it}$$

Capital structure, as measured by the debt-to-equity (D/E) ratio, reflects the proportion of a firm's financing that comes from debt compared to equity. It provides insight into the firm's financial risk profile as higher D/E ratios indicate greater reliance on debt financing, which can lead to higher financial risk due to interest obligations, debt repayment requirements, and

potential default risks. Next to that, the D/E ratio also reflects the firm's cost of capital where a higher D/E ratio may indicate higher borrowing costs and interest expenses, which can impact profitability and overall financial performance. Lastly, differences in capital structure decisions and financial management practices can be captured by this ratio as higher or lower leverage (D/E) can affect a firm's ability to invest in growth opportunities, pursue strategic initiatives, and manage financial resources effectively.

D. Ownership Structure

$$Ownership\ Structure_i = Listing\ status_i$$

The ownership structure is measured by the dummy variable listing status, where 'listed' indicates a public firm and 'unlisted' stands for a private company. Including ownership structure helps to control for differences in governance and accountability mechanisms, access to capital, and market discipline. The listing status of a firm indicates whether it is publicly traded on a stock exchange or privately held. Publicly listed firms are subject to greater regulatory requirements, disclosure obligations, and scrutiny from shareholders, which can enhance governance practices and accountability. On the other hand, privately held firms may have more flexibility in decision-making but potentially lower transparency and accountability. The listing status also relates to a firm's access to capital, where publicly listed firms have the opportunity to raise capital through public offerings and equity markets, which can provide them with financial resources for growth, investment, and strategic initiatives. Conversely, privately held firms may rely more on internal funding sources, bank loans, or private investments. Also, the market perception of a firm's value and growth prospects are reflected by the listing status. Publicly listed firms are subject to market valuation and investor expectations, which can incentivize them to pursue strategies that enhance shareholder value. The market discipline imposed by public markets can influence a firm's strategic decisions and operational performance.

E. Sector

Different sectors or industries often exhibit unique characteristics, market dynamics, and competitive environments. By including a sector variable as a control, any inherent differences among sectors that may influence firm performance independently of the variables of interest are accounted for. Furthermore, firms within the same sector may have similarities in terms of their operations, customer base, technology, regulations, and market conditions, thus controlling for the sector allows to capture this heterogeneity and avoid confounding effects. The sector in which a firm operates is conducted from the first three digits of the Standard

Industrial Classification (SIC) code, as shown in Table 1 (*SEC.gov | Division of Corporation Finance: Standard Industrial Classification (SIC) Code List*, 2021).

Table 1

Sector classification

Sector	US SIC code
(1) Agriculture, Forestry, Fishing	11 - 97
(2) Mining	101 - 149
(3) Construction	152 - 179
(4) Manufacturing	201 - 399
(5) Transportation & Public Utilities	401 - 497
(6) Wholesale Trade	501 - 519
(7) Retail Trade	521 - 599
(8) Finance, Insurance, Real Estate	601 - 679
(9) Services	701 - 899
(10) Public Administration	911 - 999
(11) Other/Unknown	

3.3 Descriptive Statistics

Table 2

Descriptive statistics total sample

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
Company ID	2,156,930				
ROA	402,402	0.0351	0.1070	-1	1
Tobin's Q	32,110	-0.4022	1.2295	-6.9078	10.8347
Differentiation	26,021	0.0534	0.1018	-0.0393	1.2790
Cost Leadership	40,979	0.5109	2.1009	-318.24	126.99
Asset Parsimony	356,741	-0.8362	1.0581	-17.1432	18.5867
Sales Growth	241,281	0.0646	0.4102	-1	9.9994
Centralization Index	287,523	0.0789	0.1349	0	12.8125
Firm Age	736,274	27.6537	21.9706	1	356
Firm Size	287,524	3,683.647	23,469.11	250	2,300,000
Capital Structure	364,333	-0.5375	1.8544	-13.7132	40.602
Ownership Structure	2,146,788	1.0190	0.1365	1	2
Industry Class	2,156,930	6.5255	2.8268	1	11

Table 2 provides a summary of the distribution of the described variables in the total dataset so for the sample period of 2010 to 2020. This can give insights into the characteristics of the variables and how they relate to each other. The standard deviations in Table 2 show that there is great variability in Tobin's Q measure as well as in firm age and firm size.

The main variables of interest in this research can be, on the one hand, time-sensitive due to the macroeconomic environment as well as within business-related circumstances. On the other hand, industry-related factors can also affect the variables. Therefore, it is important to observe these potential differences before conducting further analyses.

It is important to note that these statistics can also vary between the United States and European data and so, these statistics are conducted for both datasets separately to observe potential differences (see Appendix C Table C1 and C2). Furthermore, yearly variations within the variables are perceived by graphically examining the means for both datasets (see Appendix C Figure C1). In addition, variations between industries are graphically explored for the main variables and for both samples (see Appendix C Figure C2). Lastly, to obtain better insights into how the variables are related to each other, the pairwise correlations, as shown in Table 3, are analyzed.

Table 3

Pairwise correlations of main variables

	ROA	Tobin's Q	Differentiation	Cost Leadership	Asset Parsimony	Sales Growth	Centralization	Firm Age	Firm Size	Capital Structure	Ownership Structure	Industry Class
ROA	1.000											
Tobin's Q	0.2509***	1.000										
Differentiation	-0.3203***	0.3497***	1.000									
Cost Leadership	0.0267***	-0.0294***	-0.2983***	1.000								
Asset Parsimony	-0.0579***	0.0117***	0.3575***	-0.0680***	1.000							
Sales Growth	0.0434***	0.1086***	0.1763***	-0.0083*	-0.0137***	1.000						
Centralization Index	0.0083***	0.1196***	0.3927***	-0.0181***	0.1195***	0.0559***	1.000					
Firm Age	-0.0022	-0.0657***	-0.2158***	0.0048	0.0149***	-0.0561***	0.0333***	1.000				
Firm Size	0.0001	-0.0130***	-0.1720***	0.0201***	-0.0467***	-0.0048**	-0.2182***	0.0456***	1.000			
Capital Structure	-0.1900***	-0.2066***	-0.0107*	-0.0069	0.0308***	0.0208***	-0.0071***	-0.1140***	-0.0118***	1.000		
Ownership Structure	-0.0254***	0.0183***	-0.1562***	0.0047	0.0218***	0.0255***	0.0472***	0.0077***	0.4102***	-0.0893***	1.000	
Industry Class	0.0142***	0.1823***	0.0452***	-0.0137***	-0.1539***	0.0079***	0.0107***	-0.0812***	-0.0146***	0.0460***	-0.0516***	1.000

Note. ***p < 0.01; **p < 0.05; *p < 0.1

Table 3 shows that the independent variables (Differentiation, Cost Leadership, Asset Parsimony, Sales Growth, and Centralization) are strongly correlated with the dependent variables (ROA and Tobin's Q) which indicates a statistical relationship. Furthermore, it shows that the association between the strategy variables is not the same direction and/or strength for both firm performance measures. An important observation is that the independent variables are also correlated with each other, indicating that they capture similar information and can cause multicollinearity in the regression analyses. Other variables that are correlated with the independent and dependent variables can be included as control variables to enhance the robustness and accuracy of the regression analysis by accounting for their potential influences and isolating the effects of the other variables on the dependent variable.

4. Methodology

4.1 Differences between the United States and Europe

To explore potential differences between the United States and the European sample, t-tests are conducted to compare the means of the main variables between the two samples (see Table 6). A t-test assesses whether the difference observed in the sample means is larger than what would be expected due to random chance. Regarding the sub-research questions 1A and 1B, this leads to the following five hypotheses:

Hypothesis 1.1: *A differentiation strategy is the same in the United States as in Europe.*

Hypothesis 1.2: *A cost leadership strategy is the same in the United States as in Europe.*

Hypothesis 1.3: *An asset parsimony strategy is the same in the United States as in Europe.*

Hypothesis 1.4: *A growth strategy is the same in the United States as in Europe.*

Hypothesis 1.5: *A centralized structure is the same in the United States as in Europe.*

The regression analysis is conducted for the total data sample including a "country dummy" variable as a control to observe the differences between the U.S. and Europe. Further analyses into these differences are conducted through a graphical comparison of the strategy, structure, and performance variables. As mentioned in the data section, dummy variables are conducted indicating whether a firm follows a specific strategy or not, measured by the strategy values compared to the firm's sector average value in each year. The same approach holds for a centralized organizational structure. In each year, the average ROA and Tobin's Q are calculated for the dummy variable when equal to 1 (i.e., a firm follows that strategy/ structure) and when equal to 0. This is presented graphically for the total period (2010 – 2020) and the European and U.S. data separately to observe differences in time as well as country differences.

4.2 Regression analysis

Regression analysis is used as the primary methodology to examine the relationship between business strategies, organizational structure, and firm performance. As, on the one hand, the literature is broadly interested in the theoretical insights and characteristics of the strategy-structure-performance models and variables, empirical studies to identify and quantify the associations between these variables are just as important.

4.3 Modeling

Given the presence of correlations among the strategy variables, as shown in Table 3, separate regressions are conducted for each variable to mitigate multicollinearity, following Islami, Mustafa, and Latkovikj (2020). This approach allows for a focused examination of the unique effects of each strategy variable on firm performance. However, as mentioned in the theoretical framework, an asset parsimony strategy is interdependent with the generic business strategy and is therefore analyzed in combination with each of the three business strategy dummy variables. Furthermore, a regression analysis is performed with the centralization index, to examine the effect of the degree of centralization within the organization on firm performance. Subsequently, the combined effect of each strategy variable with a centralized structure on firm performance is analyzed, following Zhou & Park (2020). This results in ten regression models for each performance measure, summarized in Table 4.

Table 4

Regression models

(1)	$Firm\ performance_{it} = \beta_0 + \beta_1 * Differentiation_{it} + \beta_2 * D_{US} + \beta_3 * Firm\ age_{it} + \beta_4 * Firm\ size_{it} + \beta_5 * Capital\ structure_{it} + \beta_6 * Ownership\ structure_{it} + \beta_7 * Sector_{it} + \epsilon_{it}$
(2)	$Firm\ performance_{it} = \beta_0 + \beta_1 * Cost\ Leadership_{it} + \beta_2 * D_{US} + \beta_3 * Firm\ age_{it} + \beta_4 * Firm\ size_{it} + \beta_5 * Capital\ structure_{it} + \beta_6 * Ownership\ structure_{it} + \beta_7 * Sector_{it} + \epsilon_{it}$
(3)	$Firm\ performance_{it} = \beta_0 + \beta_1 * Growth\ Strategy_{it} + \beta_2 * D_{US} + \beta_3 * Firm\ age_{it} + \beta_4 * Firm\ size_{it} + \beta_5 * Capital\ structure_{it} + \beta_6 * Ownership\ structure_{it} + \beta_7 * Sector_{it} + \epsilon_{it}$
(4)	$Firm\ performance_{it} = \beta_0 + \beta_1 * Asset\ Parsimony_{it} + \beta_2 * D_{Differentiation_{it}} + \beta_3 * D_{US} + \beta_4 * Firm\ age_{it} + \beta_5 * Firm\ size_{it} + \beta_6 * Capital\ structure_{it} + \beta_7 * Ownership\ structure_{it} + \beta_8 * Sector_{it} + \epsilon_{it}$
(5)	$Firm\ performance_{it} = \beta_0 + \beta_1 * Asset\ Parsimony_{it} + \beta_2 * D_{Cost\ Leadership_{it}} + \beta_3 * D_{US} + \beta_4 * Firm\ age_{it} + \beta_5 * Firm\ size_{it} + \beta_6 * Capital\ structure_{it} + \beta_7 * Ownership\ structure_{it} + \beta_8 * Sector_{it} + \epsilon_{it}$
(6)	$Firm\ performance_{it} = \beta_0 + \beta_1 * Asset\ Parsimony_{it} + \beta_2 * D_{Growth\ Strategy_{it}} + \beta_3 * D_{US} + \beta_4 * Firm\ age_{it} + \beta_5 * Firm\ size_{it} + \beta_6 * Capital\ structure_{it} + \beta_7 * Ownership\ structure_{it} + \beta_8 * Sector_{it} + \epsilon_{it}$
(7)	$Firm\ performance_{it} = \beta_0 + \beta_1 * Centralization_{it} + \beta_2 * D_{US} + \beta_3 * Firm\ age_{it} + \beta_4 * Firm\ size_{it} + \beta_5 * Capital\ structure_{it} + \beta_6 * Ownership\ structure_{it} + \beta_8 * Sector_{it} + \epsilon_{it}$
(8)	$Firm\ performance_{it} = \beta_0 + \beta_1 * Centralization_{it} + \beta_2 * D_{Differentiation_{it}} + \beta_3 * D_{US} + \beta_4 * Firm\ age_{it} + \beta_5 * Firm\ size_{it} + \beta_6 * Capital\ structure_{it} + \beta_7 * Ownership\ structure_{it} + \beta_8 * Sector_{it} + \epsilon_{it}$
(9)	$Firm\ performance_{it} = \beta_0 + \beta_1 * Centralization_{it} + \beta_2 * D_{Cost\ Leadership_{it}} + \beta_3 * D_{US} + \beta_4 * Firm\ age_{it} + \beta_5 * Firm\ size_{it} + \beta_6 * Capital\ structure_{it} + \beta_7 * Ownership\ structure_{it} + \beta_8 * Sector_{it} + \epsilon_{it}$
(10)	$Firm\ performance_{it} = \beta_0 + \beta_1 * Centralization_{it} + \beta_2 * D_{Growth\ Strategy_{it}} + \beta_3 * D_{US} + \beta_4 * Firm\ age_{it} + \beta_5 * Firm\ size_{it} + \beta_6 * Capital\ structure_{it} + \beta_7 * Ownership\ structure_{it} + \beta_8 * Sector_{it} + \epsilon_{it}$

Note. $D_{Differentiation}$; $D_{Cost\ Leadership}$; $D_{Growth\ Strategy}$ are the strategy dummies and D_{US} is the country dummy.

4.4 Panel data analysis

The Breusch-Pagan Lagrange Multiplier (LM) Test is used to assess the appropriateness of panel data methods, specifically Random Effects (RE) models, compared to Ordinary-Least-Squared (OLS) regression. The null hypothesis states that there is no heteroskedasticity, meaning that the variance of the errors is not systematically related to the values of the independent variables. The results of the LM-test indicate the suitability of the panel data method for all regression models with a significance level of 1% and therefore the unobserved heterogeneity across firms be captured (see Appendix B Table B1).

Additionally, the Hausman test was performed to examine whether a Fixed Effects (FE) model is preferred over a Random Effects model, based on the nature of the unobserved individual effects. The null hypothesis assumes that there is no systematic difference between the fixed effects and random effects in terms of their relationship with the independent variables. The

results of the Hausman test indicate for all regression models that the FE-model is appropriate at a 1% significance level (see Appendix B Table B2). Including firm-fixed effects in the regression analysis will control for time-invariant factors that may differ between firms and have an impact on firm performance, such as managerial quality, organizational culture, brand reputation, firm-specific resources, and industry-specific factors.

5. Results

To examine the effect of business strategies combined with a centralized organizational structure on the performance of large businesses and potential differences between the United States and Europe, 15 hypotheses were formulated which are summarized in Table 5.

Table 5
Hypotheses overview

Sub research question 1A: *Is there a different effect on firm performance between the U.S. and Europe for each of the generic business strategies?*

	Hypothesis	**Method**
$H1.1_0$:	A differentiation strategy is the same in the U.S. as in Europe.	T-test & Graphical analysis
$H1.2_0$:	A cost leadership strategy is the same in the U.S. as in Europe.	T-test & Graphical analysis
$H1.3_0$:	An asset parsimony strategy is the same in the U.S. as in Europe.	T-test & Graphical analysis
$H1.4_0$:	A growth strategy is the same in the U.S. as in Europe.	T-test & Graphical analysis

Sub research question 1B: *Is there a different effect of organizational structure on firm performance between the U.S. and Europe?*

	Hypothesis	**Method**
$H1.5_0$:	A centralized organizational structure is the same in the U.S. as in Europe.	T-test & Graphical analysis

Sub research question 2: *What is the individual effect of each business strategy on firm performance?*

	Hypothesis	**Method**
$H2.1_0$:	Higher R&D intensity positively influences firm performance.	FE Regression analysis
$H2.2_0$:	Lower cost intensity positively influences firm performance.	FE Regression analysis
$H2.3_0$:	Sales growth positively influences firm performance.	FE Regression analysis
$H2.4.1_0$:	A differentiation strategy combined with a low asset intensity positively influences firm performance.	FE Regression analysis
$H2.4.2_0$:	A cost leadership strategy combined with a high asset intensity positively influences firm performance.	FE Regression analysis
$H2.4.3_0$:	A growth strategy combined with a low asset intensity positively influences firm performance.	FE Regression analysis

Sub research question 3: *What is the effect of a centralized organizational structure on firm performance?*

	Hypothesis	**Method**
$H3.1_0$:	A higher level of centralization positively influences firm performance.	FE Regression analysis

Sub research question 4: *What is the effect on firm performance for each business strategy combined with a centralized structure?*

	Hypothesis	**Method**
$H4.1_0$:	A differentiation strategy combined with a lower level of centralization positively influences firm performance.	FE Regression analysis
$H4.2_0$:	A cost leadership strategy combined with a higher level of centralization positively influences firm performance.	FE Regression analysis
$H4.3_0$:	A growth strategy combined with a lower level of centralization positively influences firm performance.	FE Regression analysis

Table 6

T-test (difference in means) results

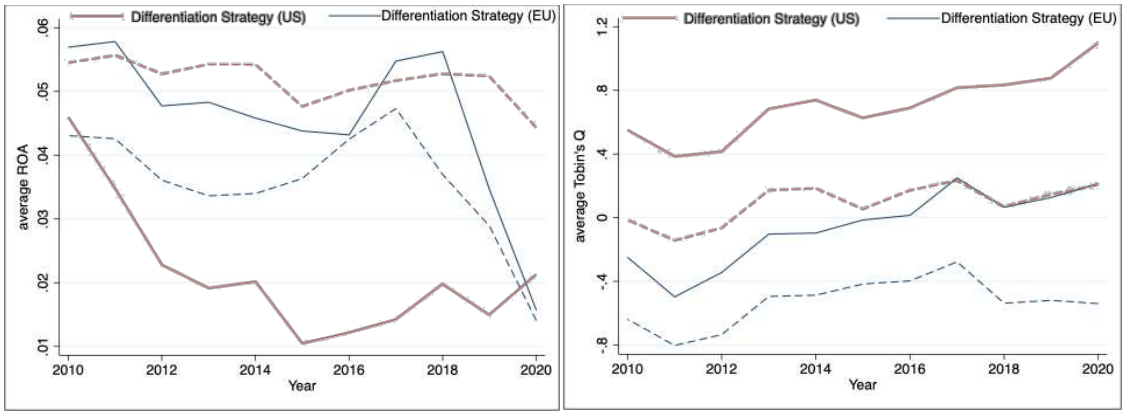
	Europe (1)	United States (2)	Difference (3)
Strategy variables			
Differentiation	0.0174	0.1000	-.0827***
	(14,689)	(11,332)	(26,021)
Cost Leadership	0.5112	0.5108	0.0003
	(13,895)	(27,084)	(40,979)
Asset Parsimony	-0.8341	-0.8603	0.0262***
	(328,658)	(28,083)	(356,741)
Sales Growth	0.0580	0.1169	-0.0589***
	(214,512)	(26,769)	(241,281)
Structure variable			
Centralization	0.0709	0.1345	-0.0635***
	(251,448)	(36,075)	(287,523)
Firm performance			
ROA	0.0382	0.0188	0.0194***
	(338,320)	(64,082)	(402,402)
Tobin's Q	-0.5812	-0.2719	-0.4022***
	(13,525)	(18,585)	(32,110)

Note. ***p < 0.01; **p < 0.05; *p < 0.1 and number of observations are in the parentheses.

The results in Table 6 show that there is a significant variance at the 1% level between the U.S. and European datasets in all variables, except for cost leadership. Hence, hypotheses 1.1, 1.3, 1.4, and 1.5 are rejected and hypothesis 1.2 is not rejected implying that the strategy and structure variables potentially lead to different performance results for the United States compared to Europe, which is further analyzed graphically.

Figure 2

Average ROA and Tobin's Q for a differentiation strategy

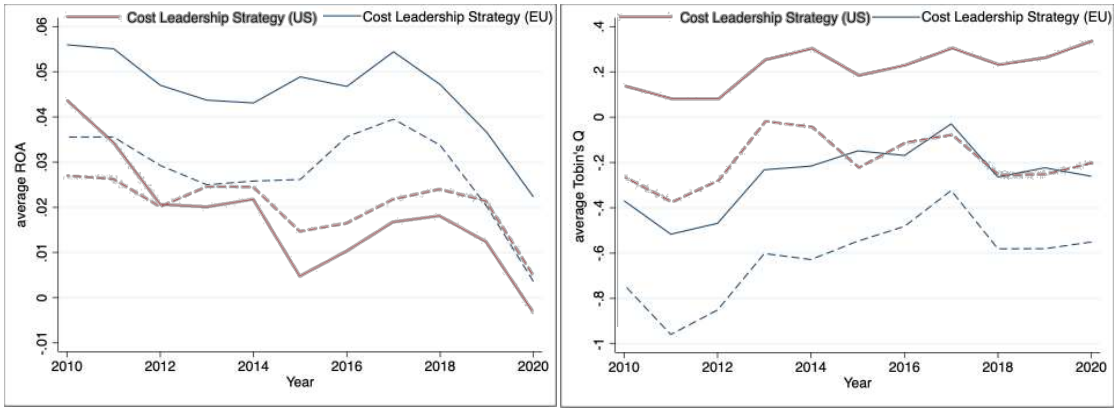


Note. 'Differentiation strategy' implies that a firm's ratio of R&D expenses to Sales is larger than its sector average value.

Figure 2 shows that following a differentiation strategy in Europe leads to a better ROA, whereas the opposite is true for the United States. Though this strategy results in a better Tobin's Q for both.

Figure 3

Average ROA and Tobin's Q for a cost leadership strategy

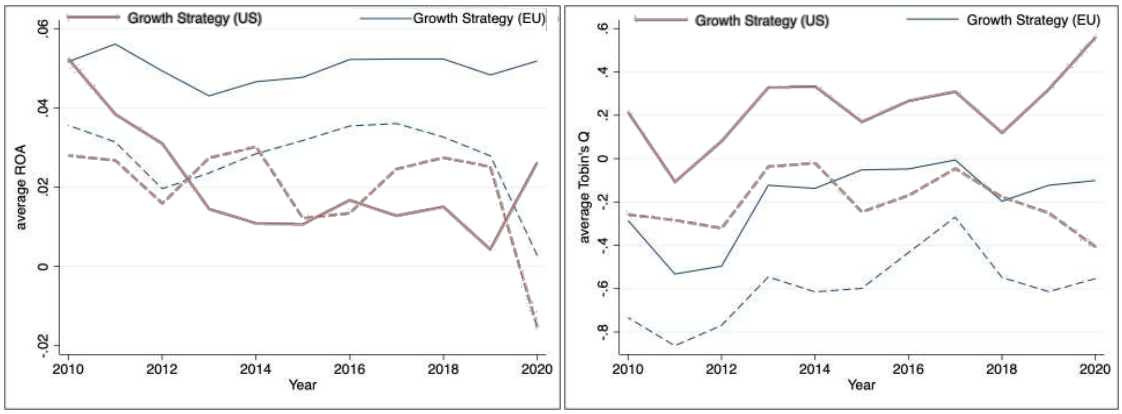


Note. 'Cost leadership strategy' implies that a firm's ratio of COGS to Sales is smaller than its sector average value.

From Figure 3 it can be concluded that European cost leader firms will outperform non-cost leaders based on ROA and Tobin's Q. The same holds for U.S. firms regarding Tobin's Q measure, however, a cost leader's ROA will mostly not be better.

Figure 4

Average ROA and Tobin's Q for a growth strategy

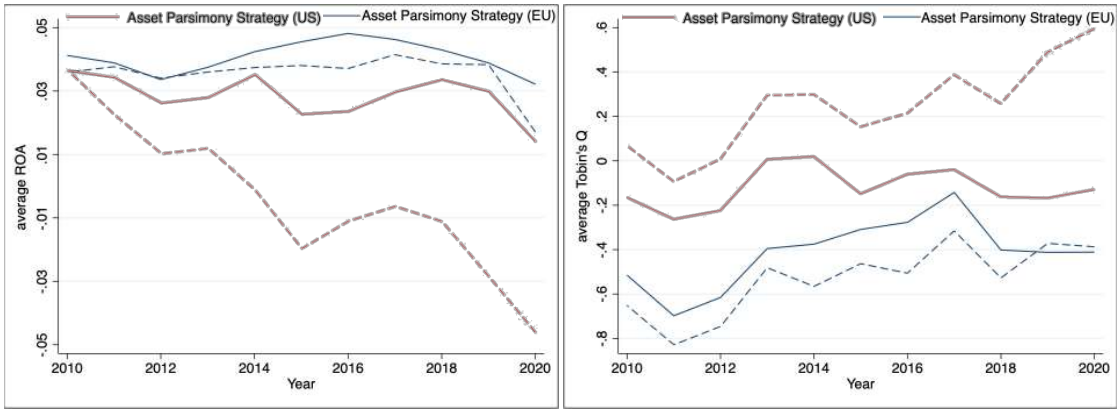


Note. 'Growth strategy' implies that a firm's sales growth percentage is larger than its sector average value.

Although Figure 4 shows a fluctuating trend for U.S. growth firms relating to the ROA measure, it mainly suggests a significantly better firm performance for firms following a growth strategy.

Figure 5

Average ROA and Tobin's Q for an asset parsimony strategy

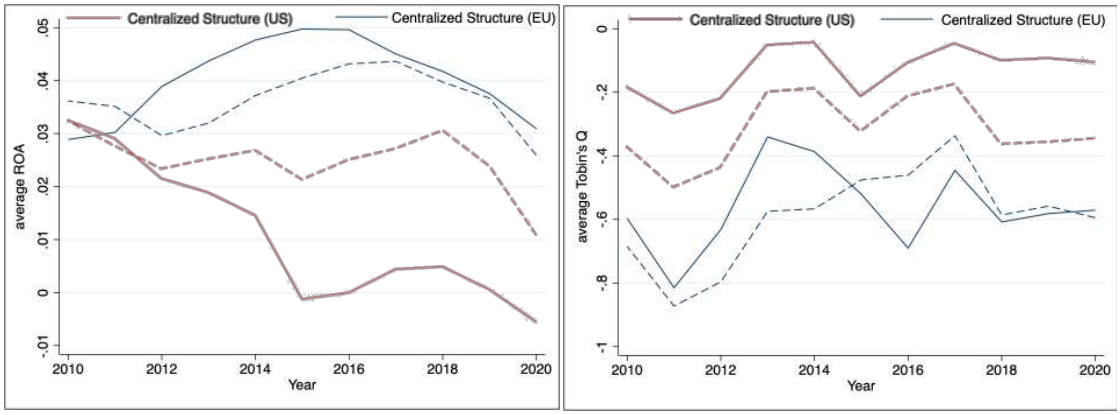


Note. 'Asset parsimony strategy' implies that a firm's ratio of Current assets to Total revenues is smaller than its sector average value.

Figure 5 presents the average effect on firm performance for asset parsimony as an individual strategy, meaning a lower ratio of current assets to total revenues compared to the sector average. For European firms, it can be seen that this strategy mostly results in better performance, albeit with minor differences. In the United States, there appears to be a major difference in which performance measure is chosen as the ROA will increase contrary to a decrease in Tobin's Q for pursuing an asset parsimony strategy.

Figure 6

Average ROA and Tobin's Q for a centralized structure



Note. 'Centralized structure' implies that a firm's centralization index is larger than its sector average value.

For the organizational structure differences, Figure 6 shows the opposite effect of centralization on ROA for U.S. and European firms, in favor of a centralized structure for Europe. On the contrary, centralization increases a firm's Tobin's Q in the United States which was also true for European firms until 2015.

The regression results for firm performance measured as ROA and Tobin's Q are presented in Tables 7 and 8 respectively. It is important to note that the control variables *Country*, *Ownership structure*, and *Industry class* are omitted due to collinearity which suggests that the firm-fixed effects are adequately accounting for the systematic differences in firm performance associated with differences within these variables.

Table 7

Fixed Effects regression results for ROA as a firm's performance measure

	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA	(8) ROA	(9) ROA	(10) ROA
Business Strategies										
(1) Differentiation	-0.7012***									
	(0.0671)									
(2) Cost Leadership		-0.0013								
		(0.0012)								
(3) Growth Strategy			0.0206***							
			(0.0013)							
(4) Asset Parsimony				0.0024	-0.0121***	-0.0120***				
				(0.0058)	(0.0033)	(0.0016)				
Strategy Dummies										
(1) Differentiation Dummy				-0.0662***				-0.0663***		
				(0.0082)				(0.0085)		
(2) Cost Leadership Dummy					0.0292***				0.0282***	
					(0.0039)				(0.0038)	
(3) Growth Strategy Dummy						0.0165***				0.0170***
						(0.0005)				(0.0005)
Organizational Structure										
Centralization							-0.0310**	-0.0590**	-0.0560***	-0.0541***
							(0.0158)	(0.0255)	(0.0210)	(0.0199)
Control Variables										
Firm Age	-0.0013***	-0.0023***	-0.0018***	-0.0017***	-0.0026***	-0.0019***	-0.0021***	-0.0018***	-0.0027***	-0.0020***
	(0.0005)	(0.0003)	(0.0001)	(0.0005)	(0.0003)	(0.0001)	(0.0001)	(0.0005)	(0.0003)	(0.0001)
Firm Size	0.0050	0.0126***	0.0038**	0.0115**	0.0122***	0.0027	-0.0010	-0.0036	0.0027	-0.0008
	(0.0054)	(0.0039)	(0.0019)	(0.0059)	(0.0038)	(0.0018)	(0.0018)	(0.0065)	(0.0044)	(0.0021)
Capital Structure	-0.0082***	-0.0111***	-0.0112***	-0.0081***	-0.0111***	-0.0111***	-0.0124***	-0.0081***	-0.0111***	-0.0113***
	(0.0014)	(0.0010)	(0.0006)	(0.0014)	(0.0010)	(0.0006)	(0.0005)	(0.0014)	(0.0010)	(0.0006)
Constant	0.0699*	-0.0264	0.0538***	-0.0114	-0.0368	0.0481***	0.1032***	0.1208**	0.0629*	0.0905***
	(0.0399)	(0.0290)	(0.0114)	(0.0428)	(0.0285)	(0.0113)	(0.0121)	(0.0512)	(0.0354)	(0.0138)
Observations	10,560	22,175	144,612	10,560	22,175	144,555	220,863	10,560	22,175	144,612
Number of Company ID's	1,528	3,122	25,115	1,528	3,122	25,108	34,916	1,528	3,122	25,115
R-squared	0.1044	0.0270	0.0375	0.0307	0.0341	0.0406	0.0302	0.0364	0.0358	0.0397
Adjusted R-squared	0.104	0.027	0.037	0.030	0.034	0.041	0.030	0.036	0.036	0.040

*Note. ***p < 0.01; **p < 0.05; *p < 0.1.* Robust standard errors are in parentheses. The control variables '*Country Dummy*', '*Ownership Structure*', and '*Sector*' are omitted due to collinearity.

Table 8

Fixed Effects regression results for Tobin's Q as a firm's performance measure

	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q	(4) Tobin's Q	(5) Tobin's Q	(6) Tobin's Q	(7) Tobin's Q	(8) Tobin's Q	(9) Tobin's Q	(10) Tobin's Q
Business Strategies										
(1) Differentiation	-0.7391**									
	(0.2885)									
(2) Cost Leadership		0.0005								
		(0.0014)								
(3) Growth Strategy			0.1660***							
			(0.0265)							
(4) Asset Parsimony				-0.0546	-0.0953***	-0.0885***				
				(0.0420)	(0.0242)	(0.0231)				
Strategy Dummies										
(1) Differentiation Dummy				-0.1703***				-0.1729***		
				(0.0562)				(0.0556)		
(2) Cost Leadership Dummy					0.1852***				0.1787***	
					(0.0274)				(0.0275)	
(3) Growth Strategy Dummy						0.1629***				0.1658***
						(0.0120)				(0.0119)
Organizational Structure										
Centralization							-0.0565	0.0664	-0.0512	-0.0360
							(0.0680)	(0.0704)	(0.0697)	(0.0673)
Control Variables										
Firm Age	0.0272***	0.0071**	0.0093***	0.0270***	0.0055*	0.0079***	0.0071**	0.0268***	0.0051*	0.0075***
	(0.0040)	(0.0029)	(0.0029)	(0.0040)	(0.0029)	(0.0028)	(0.0028)	(0.0040)	(0.0029)	(0.0028)
Firm Size	-0.1115***	-0.0702***	-0.0720***	-0.1090***	-0.0746***	-0.0845***	-0.0798***	-0.0892*	-0.0758**	-0.0836***
	(0.0408)	(0.0262)	(0.0261)	(0.0410)	(0.0268)	(0.0265)	(0.0300)	(0.0465)	(0.0305)	(0.0300)
Capital Structure	-0.0204**	-0.0469***	-0.0455***	-0.0208**	-0.0457***	-0.0452***	-0.0493***	-0.0206**	-0.0469***	-0.0461***
	(0.0097)	(0.0072)	(0.0072)	(0.0097)	(0.0072)	(0.0072)	(0.0073)	(0.0097)	(0.0072)	(0.0072)
Constant	0.3211	0.3345*	0.2622	0.2633	0.2771	0.3032	0.4058*	0.1285	0.3879	0.3894*
	(0.2957)	(0.1955)	(0.1942)	(0.2943)	(0.1989)	(0.1944)	(0.2358)	(0.3533)	(0.2403)	(0.2346)
Observations	7,162	14,568	14,676	7,162	14,568	14,664	14,839	7,162	14,568	14,676
Number of Company ID's	852	1,616	1,637	852	1,616	1,636	1,649	852	1,616	1,637
R-squared	0.0341	0.0125	0.0243	0.0362	0.023	0.037	0.014	0.0354	0.0190	0.034
Adjusted R-squared	0.034	0.012	0.024	0.036	0.023	0.037	0.013	0.035	0.019	0.033

Note. ***p < 0.01; **p < 0.05; *p < 0.1.* Robust standard errors are in parentheses. The control variables '*Country Dummy*', '*Ownership Structure*', and '*Sector*' are omitted due to collinearity.

Model 1 in Tables 7 and 8 shows a negative differentiation coefficient at a significance level of 1% and 5% respectively, implying the opposite effect than suggested in hypothesis 2.1. From these results it can therefore be concluded that a 1% increase in *Differentiation* (R&D expenses/ Sales), results on average in a 0.701% decrease in ROA and 0.739% decrease in Tobin's Q, holding all other variables constant. Hypothesis 2.2, the effect of a cost leadership strategy, is tested in model 2, however, the regression coefficient is not statistically significant in both Tables 7 and 8 so no causal effect can be concluded. At the 1% significance level, the positive *Growth Strategy* coefficient in Model 3 supports hypothesis 2.3 for both performance measures. The regression results indicate that a 1% increase in sales growth, on average, increases a firm's ROA by 0.021% and Tobin's Q by 0.166%, considering all other variables constant. The effect of asset intensity on firm performance for differentiators, shown in model 4 in Tables 7 and 8, is inconclusive as the *Asset Parsimony* coefficient is not significant for both performance measures. Hence no conclusion can be drawn for hypothesis 2.4.1. For cost leaders, hypothesis 2.4.2 reports a high asset intensity for increased performance. However, in both Tables 7 and 8, the regression results of Model 5 suggest the opposite effect. For a positive firm performance measured by ROA, cost leaders should, on average, have an asset intensity lower than 2.413, and lower than 1.943 for a positive Tobin's Q (all other variables considered constant). For firms that follow a growth strategy, hypothesis 2.4.3 states that lower asset intensity should increase firm performance. The results in model 6 support this hypothesis for both the ROA (Table 7) and Tobin's Q (Table 8) measure. On average, firms should have an asset intensity lower than 1.375 or lower than 1.841 to result in a positive ROA and Tobin's Q respectively.

For the organizational structure, hypothesis 3.1 states a positive effect of centralization on firm performance which contradicts the results in Table 7. The *Centralization* coefficient in model 7 suggests that, on average, a firm's ROA decreases by 0.031% when the centralization increases by 1% (holding all other variables constant). Furthermore, the results in Table 8 suggest no causal relationship between centralization and a firm's Tobin's Q.

The results in model 8 from Table 7 show that for differentiator firms, a *Centralization index* lower than 1.124 results on average in an increased ROA which supports hypothesis 4.1. For cost leader firms to have a positive ROA, it can be concluded from model 9 (Table 7) that the *Centralization index* should be lower than 0.504 on average which contradicts hypothesis 4.2. Then, for firms following a growth strategy, presented in model 10, a *Centralization index* lower than 0.314 results on average in a positive ROA (all other variables considered constant).

This result supports hypothesis 4.3. On the other hand, no causal effects can be concluded for models 8, 9, and 10 with Tobin's Q as a performance measure (Table 8) because the *Centralization* coefficients are not statistically significant.

Since the country dummy variable is omitted in the FE-regressions and a primary aspect of my research is analyzing differences between the United States and Europe, secondary RE-regressions are conducted to further analyze the results. In doing so, additional conclusions can be conducted for the proposed hypotheses.

Table 9

Random Effects regression results for ROA as a firm's performance measure

	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA	(8) ROA	(9) ROA	(10) ROA
Business Strategies										
(1) Differentiation	-0.5526***									
	(0.0376)									
(2) Cost Leadership		0.0008								
		(0.0013)								
(3) Growth Strategy			0.0189***							
			(0.0012)							
(4) Asset Parsimony				-0.0029	-0.0209***	-0.0125***				
				(0.0047)	(0.0028)	(0.0010)				
Strategy Dummies										
(1) Differentiation Dummy				-0.0679***				-0.0683***		
				(0.0065)				(0.0065)		
(2) Cost Leadership Dummy					0.0182***				0.0154***	
					(0.0032)				(0.0032)	
(3) Growth Strategy Dummy						0.0165***				0.0169***
						(0.0005)				(0.0005)
Organizational Structure										
Centralization							0.0161*	-0.0279	-0.0344**	-0.0575***
							(0.0087)	(0.0204)	(0.0167)	(0.0140)
Country Dummy										
U.S.	0.0173*	-0.0214***	-0.0434***	-0.0178**	-0.0195***	-0.0400***	-0.0467***	-0.0142*	-0.0144**	-0.0341***
	(0.0104)	(0.0071)	(0.0031)	(0.0082)	(0.0071)	(0.0031)	(0.0032)	(0.0084)	(0.0071)	(0.0034)
Control Variables										
Firm Age	-0.0001	-0.0001	-0.0001***	-0.0001	-0.0001*	-0.0000*	-0.0002***	-0.0001	-0.0001**	-0.0001***
	(0.0001)	(0.0001)	(0.0000)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0000)
Firm Size	0.0101***	0.0177***	0.0047***	0.0168***	0.0164***	0.0039***	0.0031***	0.0136***	0.0148***	0.0023***
	(0.0022)	(0.0016)	(0.0006)	(0.0024)	(0.0016)	(0.0006)	(0.0006)	(0.0025)	(0.0018)	(0.0007)
Capital Structure	-0.0093***	-0.0121***	-0.0117***	-0.0096***	-0.0122***	-0.0116***	-0.0126***	-0.0095***	-0.0121***	-0.0117***
	(0.0012)	(0.0009)	(0.0005)	(0.0013)	(0.0009)	(0.0005)	(0.0004)	(0.0013)	(0.0009)	(0.0005)
Ownership Structure	0.0109*	0.0091**	0.0137***	0.0058	0.0108***	0.0141***	0.0133***	0.0088	0.0122***	0.0161***
- Public Company	(0.0063)	(0.0042)	(0.0037)	(0.0065)	(0.0041)	(0.0037)	(0.0037)	(0.0066)	(0.0043)	(0.0037)
Sector										
- Construction	-0.0163	-0.0285*	0.0139**	0.0030	-0.0163	0.0191***	0.0043	0.0020	-0.0290*	0.0147**
	(0.0364)	(0.0156)	(0.0062)	(0.0358)	(0.0163)	(0.0062)	(0.0045)	(0.0358)	(0.0151)	(0.0061)
- Finance, Insurance, Real Estate	-0.0044	-0.0117	0.0078	0.0004	-0.0191	0.0112*	-0.0006	-0.0054	-0.0222	0.0094
	(0.0323)	(0.0146)	(0.0061)	(0.0314)	(0.0149)	(0.0061)	(0.0044)	(0.0320)	(0.0140)	(0.0060)
- Manufacturing	0.0080	-0.0336**	0.0079	0.0004	-0.0251*	0.0110*	0.0003	-0.0035	-0.0377***	0.0100*
	(0.0281)	(0.0139)	(0.0060)	(0.0266)	(0.0142)	(0.0060)	(0.0043)	(0.0271)	(0.0132)	(0.0060)
- Mining	-0.0248	-0.0514***	-0.0122	-0.0253	-0.0515***	-0.0107	-0.0239***	-0.0286	-0.0585***	-0.0125
	(0.0298)	(0.0160)	(0.0086)	(0.0283)	(0.0161)	(0.0086)	(0.0070)	(0.0288)	(0.0154)	(0.0085)
- Public Administration			-0.0018			0.0010	0.0026			0.0022
			(0.0095)			(0.0095)	(0.0078)			(0.0094)
- Retail Trade	-0.0039	-0.0412***	0.0025	-0.0117	-0.0493***	-0.0019	-0.0037	-0.0122	-0.0432***	0.0043
	(0.0376)	(0.0149)	(0.0063)	(0.0374)	(0.0152)	(0.0064)	(0.0046)	(0.0378)	(0.0143)	(0.0062)
- Services	-0.0038	-0.0685***	0.0041	-0.0260	-0.0665***	0.0051	0.0024	-0.0288	-0.0748***	0.0060
	(0.0287)	(0.0144)	(0.0061)	(0.0275)	(0.0147)	(0.0061)	(0.0043)	(0.0278)	(0.0138)	(0.0060)
- Transportation & Public Utilities	-0.0126	-0.0218	0.0049	-0.0171	-0.0318**	0.0050	-0.0030	-0.0198	-0.0300**	0.0078
	(0.0305)	(0.0140)	(0.0061)	(0.0282)	(0.0143)	(0.0061)	(0.0044)	(0.0288)	(0.0134)	(0.0060)
- Wholesale Trade	0.0175	-0.0196	0.0131**	0.0250	-0.0190	0.0124**	0.0046	0.0196	-0.0216	0.0152**
	(0.0302)	(0.0150)	(0.0061)	(0.0293)	(0.0152)	(0.0062)	(0.0044)	(0.0296)	(0.0143)	(0.0061)
Constant	-0.0518	-0.0871***	-0.0125*	-0.0951***	-0.1049***	-0.0245***	0.0137**	-0.0652*	-0.0675***	-0.0007
	(0.0341)	(0.0191)	(0.0070)	(0.0336)	(0.0192)	(0.0070)	(0.0058)	(0.0342)	(0.0193)	(0.0074)
Observations	10,560	22,175	144,612	10,560	22,175	144,555	220,863	10,560	22,175	144,612
Number of Company ID's	1,528	3,122	25,115	1,528	3,122	25,108	34,916	1,528	3,122	25,115
R-squared	0.1855	0.0929	0.0528	0.1385	0.1119	0.0615	0.0456	0.1375	0.0946	0.0609

*Note. ***p < 0.01; **p < 0.05; *p < 0.1.* Robust standard errors are in parentheses. The '*Country Dummy'* variable equals 1 for U.S. firms and 0 for European firms. The '*Ownership Structure'* variable presents values for public companies compared to private companies. The reference category for *'Sector'* is the 'Agriculture, Forestry, Fishing' sector.

Table 10

Random Effects regression results for Tobin's Q as a firm's performance measure

	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q	(4) Tobin's Q	(5) Tobin's Q	(6) Tobin's Q	(7) Tobin's Q	(8) Tobin's Q	(9) Tobin's Q	(10) Tobin's Q
Business Strategies										
(1) Differentiation	0.5540***									
	(0.1792)									
(2) Cost Leadership		-0.0009								
		(0.0018)								
(3) Growth Strategy			0.1684***							
			(0.0262)							
(4) Asset Parsimony				0.0200	-0.0437**	-0.0311				
				(0.0388)	(0.0209)	(0.0204)				
Strategy Dummies										
(1) Differentiation Dummy				0.0159				0.0231		
				(0.0510)				(0.0497)		
(2) Cost Leadership Dummy					0.2605***				0.2573***	
					(0.0253)				(0.0254)	
(3) Growth Strategy Dummy						0.1793***				0.1811***
						(0.0119)				(0.0118)
Organizational Structure										
Centralization							0.1239**	0.1165*	0.1418**	0.1598***
							(0.0545)	(0.0603)	(0.0582)	(0.0542)
Country Dummy										
U.S.	0.7079***	0.4599***	0.5471***	0.7481***	0.4940***	0.5548***	0.5781***	0.7317***	0.4735***	0.5304***
	(0.1202)	(0.1158)	(0.1178)	(0.1214)	(0.1127)	(0.1163)	(0.1140)	(0.1208)	(0.1131)	(0.1164)
Control Variables										
Firm Age	0.0046***	0.0015	0.0020*	0.0044***	0.0005	0.0014	0.0012	0.0044***	0.0006	0.0014
	(0.0013)	(0.0011)	(0.0011)	(0.0013)	(0.0010)	(0.0010)	(0.0011)	(0.0013)	(0.0010)	(0.0010)
Firm Size	-0.0450**	-0.0408***	-0.0351**	-0.0505**	-0.0384**	-0.0396***	-0.0236	-0.0369*	-0.0183	-0.0185
	(0.0199)	(0.0152)	(0.0151)	(0.0203)	(0.0151)	(0.0149)	(0.0162)	(0.0207)	(0.0160)	(0.0157)
Capital Structure	-0.0202**	-0.0509***	-0.0495***	-0.0197**	-0.0515***	-0.0504***	-0.0537***	-0.0194**	-0.0521***	-0.0508***
	(0.0094)	(0.0071)	(0.0071)	(0.0094)	(0.0070)	(0.0070)	(0.0072)	(0.0094)	(0.0070)	(0.0070)
Ownership Structure	0.5852***	0.7844	0.7935	0.6076***	0.6919	0.7932	0.8424*	0.6112***	0.7515	0.8673*
- Public Company	(0.0650)	(0.5486)	(0.5430)	(0.0678)	(0.5527)	(0.5218)	(0.5086)	(0.0643)	(0.5289)	(0.4937)
Sector										
- Construction	-0.8107*	-0.1481	-0.2129	-0.8441*	-0.1298	-0.2225	-0.2134	-0.8357*	-0.1686	-0.2560
	(0.4863)	(0.5092)	(0.5097)	(0.4892)	(0.5017)	(0.5082)	(0.5102)	(0.4963)	(0.5006)	(0.5072)
- Finance, Insurance, Real Estate	-0.5884	0.2166	0.2261	-0.6108	0.0430	0.2124	0.1741	-0.5773	0.0291	0.2022
	(0.5905)	(0.5067)	(0.5053)	(0.5923)	(0.4980)	(0.5036)	(0.5061)	(0.5912)	(0.4974)	(0.5028)
- Manufacturing	-0.3967	0.5503	0.5339	-0.3961	0.5239	0.5457	0.5375	-0.3694	0.4940	0.5247
	(0.4361)	(0.4977)	(0.4981)	(0.4350)	(0.4894)	(0.4970)	(0.4990)	(0.4375)	(0.4882)	(0.4958)
- Mining	-0.8534*	-0.0342	-0.1043	-0.8701*	-0.0809	-0.0950	-0.0990	-0.8455*	-0.0922	-0.1254
	(0.4460)	(0.5030)	(0.5087)	(0.4452)	(0.4952)	(0.5073)	(0.5084)	(0.4472)	(0.4940)	(0.5063)
- Public Administration							-1.4405***			
							(0.5048)			
- Retail Trade	0.1318	0.5459	0.5174	0.1386	0.4793	0.5153	0.5021	0.1386	0.4727	0.5057
	(0.5075)	(0.5042)	(0.5042)	(0.5070)	(0.4953)	(0.5025)	(0.5051)	(0.5093)	(0.4946)	(0.5018)
- Services	0.1686	0.7770	0.7634	0.2036	0.6620	0.7567	0.7675	0.2264	0.6249	0.7259
	(0.4391)	(0.4985)	(0.4989)	(0.4391)	(0.4905)	(0.4979)	(0.4998)	(0.4409)	(0.4894)	(0.4966)
- Transportation & Public Utilities	-0.5666	0.0508	0.0469	-0.5718	-0.0957	0.0477	0.0405	-0.5571	-0.1050	0.0366
	(0.4524)	(0.5007)	(0.5012)	(0.4521)	(0.4926)	(0.4996)	(0.5020)	(0.4544)	(0.4920)	(0.4988)
- Wholesale Trade	-0.4438	0.2763	0.2660	-0.4564	0.2606	0.2634	0.2676	-0.4227	0.2513	0.2567
	(0.4712)	(0.5049)	(0.5054)	(0.4707)	(0.4962)	(0.5041)	(0.5062)	(0.4729)	(0.4952)	(0.5030)
Constant	-0.5134	-1.4569*	-1.6164**	-0.4714	-1.4533*	-1.6319**	-1.7667**	-0.6226	-1.6182**	-1.8340***
	(0.4715)	(0.7452)	(0.7426)	(0.4730)	(0.7424)	(0.7266)	(0.7210)	(0.4758)	(0.7268)	(0.7085)
Observations	7,160	14,565	14,673	7,160	14,565	14,661	14,836	7,160	14,565	14,673
Number of Company ID's	851	1,615	1,636	851	1,615	1,635	1,648	851	1,615	1,636
R-squared	0.1320	0.0885	0.1035	0.1109	0.1321	0.1126	0.1124	0.1175	0.1517	0.1306

*Note. ***p < 0.01; **p < 0.05; *p < 0.1.* Robust standard errors are in parentheses. The '*Country Dummy'* variable equals 1 for U.S. firms and 0 for European firms. The '*Ownership Structure'* variable presents values for public companies compared to private companies. The reference category for '*Sector'* is the 'Agriculture, Forestry, Fishing' sector.

Contrary to what was concluded for Model 1 from Table 8, the positive and significant (at the 1% level) coefficient of *Differentiation* in Table 10 supports hypothesis 2.1. The results indicate an average increase in a firm's Tobin's Q with 0.554% for a 1% increase in *Differentiation*. Furthermore, the RE-regression results support hypothesis 3.1 (model 7) for both performance measures. From Tables 9 and 10 can be concluded that a 1% increase in *Centralization* on average increases a firm's ROA with 0.016% and its Tobin's Q with 0.124%, holding all other variables constant. Although there was no causal effect concluded for models 9 and 10 in Table 8, the *Centralization* coefficients for these models in Table 10 are statistically significant at the

5% and 1% levels respectively. The results support hypothesis 4.2 that a cost leadership strategy combined with a higher level of centralization increases a firm's Tobin's Q. Hypothesis 4.3, however, is not supported as the results indicate that a growth strategy combined with higher levels of centralization leads to higher performance, measured by Tobin's Q.

Regarding differences between the United States and Europe, the regression results in Tables 9 and 10 show contradictory conclusions for each performance measure. Table 9 shows a higher ROA of 0.017% in the United States compared to Europe for firms following a differentiation strategy (model 1). However, the overall results indicate a significantly lower ROA for U.S. firms compared to European firms. Yet, when firm performance is measured by Tobin's Q (Table 10), the results show a significant increase in performance for U.S. firms in each model at the 1% significance level.

6. Discussion & Conclusion

6.1 Internal validity

To verify the stability of the regression results, three robustness tests are conducted.

6.1.1 Random Effects Regression

RE models can provide additional insights and help validate the findings from FE models. The results of both models (Tables 7, 8, 9, and 10) are compared to assess the robustness of the conclusions and to evaluate whether the effects of the independent variables remain consistent across different modeling approaches. FE models control for time-invariant characteristics at the individual level, while RE models account for both time-invariant and time-varying characteristics at the individual level. In model 8 with ROA as a performance measure and models 5 and 6 with Tobin's Q measure, the coefficients are significant in the FE model but not significant in the RE model. This suggests that the relationship between the variables varies across firms and may not hold at the aggregate level. However, the overall results of the RE models are consistent with the FE model, thus strengthening the validity of the findings.

6.1.2 Strategy & Structure Dummy Variables

Including dummy variables indicating whether a firm follows a strategy and/or has a centralized structure helps to assess whether the observed relationships in the main analysis hold when using different measures or criteria for defining strategy and structure. This approach helps mitigate concerns about potential measurement biases or idiosyncrasies. The overall results of

the FE regressions (see Appendix A Table A1 and A2) show a consistency of the main variables, except for Model 4 in Table A1, and therefore support the observed relationships' reliability. The RE regression results with ROA as a firm performance measure (see Appendix A Table A3) indicate steadiness in the coefficients, whereas Table A4, with Tobin's Q as dependent variable, results in some inconsistencies in Models 2, 4, 7, and 8, albeit overall mostly stable.

6.1.3 Country Interaction Effect

To test whether the effect of the independent variables on firm performance differs between the United States and Europe, an interaction effect of the country dummy variable and the strategy and structure variables is included in the regressions (see Appendix A Table A5 and A6). As in the FE models, the country dummy is omitted due to collinearity, these regressions are conducted through the RE approach and compared to the RE regression models (as shown in Tables 9 and 10). The results show general consistency in the individual variables, although the coefficients in Tobin's Q models are mostly less significant. Furthermore, all of Tobin's Q models indicate that the strategy and structure effects on firm performance are similar in the United States and Europe due to the insignificant interaction coefficients. However, the coefficients for the individual country dummy variable do indicate a significant difference at the 1% significance level for all models except for the Cost Leadership strategy, which is consistent with the t-test results (Table 6). The results of the ROA models show that the effect on firm performance of a differentiation strategy, an asset parsimony strategy, and a centralized structure significantly differs between the United States and Europe.

6.2 External validity & Limitations

This research is focused on large enterprises implying that the results might not apply to SMEs. The data consists of approximately 77,000 U.S. firms and 33,500 European firms for the period 2010 to 2020, ensuring a representative sample with recent measurements. Still, only 3,300 U.S. firms and 23,000 European firms within the data are known to have more than 250 employees, which, according to the North American Industry Classification System (NAICS) Association statistics, does not represent a significant proportion of the large enterprises in the United States. The European data, however, does significantly represent the true total firms (retrieved from Eurostat and Gov.UK). Though, the results might not be true for all European countries as the data consists of firms in Germany, France, Spain, Italy, the U.K., Belgium, and the Netherlands. Nevertheless, the data represents firms from all the sectors (based on the SIC)

which allows for a more comprehensive understanding of the relationship between business strategies, organizational structure, and firm performance.

The availability of data from secondary sources significantly influences the outcomes of the study. Despite collecting information from 125,000 U.S. and European firms using Orbis, the lack of available values resulted in a substantial reduction of the sample and an unbalanced panel dataset.

Within this research, a dummy variable indicating whether a firm adopts a strategy or not was conducted by comparing a firm's strategy variables to its sector average value. This signifies a key disadvantage of using secondary data because it might be the case that a firm does follow a differentiation strategy even though these measurements indicate that it does not. This could potentially explain the negative effect of *Differentiation* and the insignificant effect of *Cost Leadership* as, firstly, their effectiveness depends on the industry and market conditions. For example, in a competitive and mature market, cost leadership could be more pivotal for performance, however, in a more dynamic market, differentiation might be more crucial for success (Hambrick, 1983). Secondly, for differentiator firms, increased R&D spending can lead to technical innovations that boost development and profitability, whereas for firms adopting a cost leadership strategy, which emphasizes efficiency and strict cost control, excessive R&D spending might be detrimental (Guo, Wang, & Wei, 2018).

6.3 Conclusion

Through this research, I aimed to answer the following question: *"What is the effect of business strategies combined with a centralized organizational structure on the performance of large businesses, and is there a different effect between the United States and Europe?"* which was divided into four sub-questions. Most importantly, it can be concluded that the outcomes can differ substantially depending on how firm performance is measured. Overall, the results indicate differences in strategy and structure values as well as differences in their effect on firm performance between firms in the United States and Europe. It is shown that the strategy-structure effects are superior for European firms when measuring performance as ROA, whereas Tobin's Q measure indicates an increased performance for U.S. firms. Furthermore, it can be concluded that a growth strategy, individually and combined with a low asset intensity, positively influences firm performance. Conversely, firms that pursue a differentiation strategy or a cost leadership strategy combined with high asset intensity could both be negatively affecting their performance. Regarding a firm's organizational structure, lower levels of

centralization are positively associated with firm performance for differentiator firms, cost leaders, or firms following a growth strategy. However, these results namely hold for a firm's ROA, and the opposite effect, increasing performance by higher centralization, might in some cases be true for firms' Tobin's Q measure.

Therefore, it can be concluded that more thorough research should be conducted into the different strategies affecting firm performance and if/how they are related to its organizational structure. Future research could examine and combine different strategy measures to determine a firm's strategy more precisely. Additionally, the effect of adopting multiple strategies could be considered, for example as Yamin, Gunasekaran, and Mavondo (1999) did.

7. References

Archibugi, D., & Coco, A. (2004). International partnerships for knowledge in business and academia. *Technovation*, *24*(7), 517–528. https://doi.org/10.1016/s0166-4972(03)00141-x

Ayadi, O. F., Dufrene, U. B., & Obi, C. P. (1996). Firm Performance Measures: Temporal Roadblocks to Innovation? *Managerial Finance*, *22*(8), 18–32. https://doi.org/10.1108/eb018574

Balsam, S., Fernando, G. D., & Tripathy, A. (2011). The impact of firm strategy on performance measures used in executive compensation. *Journal of Business Research*, *64*(2), 187–193. https://doi.org/10.1016/j.jbusres.2010.01.006

Banker, R. D., Mashruwala, R., & Tripathy, A. (2014). Does a differentiation strategy lead to more sustainable financial performance than a cost leadership strategy? *Management Decision*, *52*(5), 872–896. https://doi.org/10.1108/md-05-2013-0282

Baum, J. R., & Wally, S. (2003). Strategic decision speed and firm performance. *Strategic Management Journal*, *24*(11), 1107–1129. https://doi.org/10.1002/smj.343

Berman, S., Wicks, A. C. B., Kotha, S., & Jones, T. (1999). DOES STAKEHOLDER ORIENTATION MATTER? THE RELATIONSHIP BETWEEN STAKEHOLDER MANAGEMENT MODELS AND FIRM FINANCIAL PERFORMANCE. *Academy of Management Journal*, *42*(5), 488–506. https://doi.org/10.2307/256972

Bettis, R. A. (1981). Performance differences in related and unrelated diversified firms. *Strategic Management Journal*, *2*(4), 379–393. https://doi.org/10.1002/smj.4250020406

Bharadwaj, A. S., Bharadwaj, S. G., & Konsynski, B. R. (1999). Information Technology Effects on Firm Performance as Measured by Tobin's q. *Management Science, 45*(7), 1008–1024. https://www.jstor.org/stable/2661698

Brush, T., Bromiley, P., & Hendrickx, M. (2000). The free cash flow hypothesis for sales growth and firm performance. *Strategic Management Journal*, *21*(4), 455–472. https://doi.org/10.1002/(sici)1097-0266(200004)21:4

Chandler, A. D., & Daems, H. (1979). Administrative coordination, allocation and monitoring: A comparative analysis of the emergence of accounting and organization in the U.S.A. and Europe. *Accounting Organizations and Society*. https://doi.org/10.1016/0361-3682(79)90003-5

Choudhry, T., Hassan, S. A., & Shabi, S. (2019). U.S. economic uncertainty, EU business cycles, and the global financial crisis. *International Journal of Finance & Economics*, *25*(1), 28–42. https://doi.org/10.1002/ijfe.1726

Crescenzi, R., Rodríguez-Pose, A., & Storper, M. (2007). The territorial dynamics of innovation: a Europe United States comparative analysis. *Journal of Economic Geography*, *7*(6), 673–709. https://doi.org/10.1093/jeg/lbm030

Douglas, S. P., & Rhee, D. K. (1989). Examining Generic Competitive Strategy Types in U.S. and European Markets. *Journal of International Business Studies*, *20*(3), 437–463. https://doi.org/10.1057/palgrave.jibs.8490855

Eurostat. (2018, May 11). Which Member States have the largest share of EU's GDP? *Eurostat*. https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20180511-1

Flowers, A. (2016, March 15). Big Business Is Getting Bigger. *FiveThirtyEight*. https://fivethirtyeight.com/features/big-business-is-getting-bigger/#:~:text=If%20it%20seems%20like%20big,larger%20share%20of%20the%20growth

Franko, L. G. (1974). The Move Toward a Multidivisional Structure in European Organizations. *Administrative Science Quarterly*. https://doi.org/10.2307/2391807

Govindarajan, V. (1986). Decentralization, Strategy, and Effectiveness of Strategic Business Units in Multibusiness Organizations. *Academy of Management Review*, *11*(4), 844–856. https://doi.org/10.5465/amr.1986.4284099

Greckhamer, T., & Gur, F. A. (2021). Disentangling combinations and contingencies of generic strategies: A set-theoretic configurational approach. *Long Range Planning*, *54*(2), 101951. https://doi.org/10.1016/j.lrp.2019.101951

Guo, B., Wang, J., & Wei, S. H. (2018). R&D spending, strategic position and firm performance. *Frontiers of Business Research in China*, *12*(1). https://doi.org/10.1186/s11782-018-0037-7

Halal, W. E. (1994). From hierarchy to enterprise: Internal markets are the new foundation of management. *Academy of Management Perspectives*, *8*(4), 69–83. https://doi.org/10.5465/ame.1994.9412071706

Hall, D. H., & Saias, M. (1980). Strategy follows structure! *Strategic Management Journal*, *1*(2), 149–163. https://doi.org/10.1002/smj.4250010205

Hambrick, D. C. (1983). High Profit Strategies in Mature Capital Goods Industries: A Contingency Approach. *Academy of Management Journal*, *26*(4), 687–707. https://doi.org/10.5465/255916

Hambrick, D. C., & MacMillan, I. C. (1984). Asset parsimony--managing assets to manage profits. *Sloan Management Review (pre-1986), 25*(2), 67–74.

Hamilton, R. T., & Shergill, G. S. (1992). THE RELATIONSHIP BETWEEN STRATEGY-STRUCTURE FIT AND FINANCIAL PERFORMANCE IN NEW ZEALAND: EVIDENCE OF GENERALITY AND VALIDITY WITH ENHANCED CONTROLS. *Journal of Management Studies*, *29*(1), 95–113. https://doi.org/10.1111/j.1467-6486.1992.tb00654.x

Islami, X., Mustafa, N., & Latkovikj, M. T. (2020). Linking Porter's generic strategies to firm performance. *Future Business Journal*, *6*(1). https://doi.org/10.1186/s43093-020-0009-1

Jennings, D. T., & Hindle, K. (2004). CORPORATE ENTREPRENEURSHIP AND EQUIFINALITY: AN EMPIRICAL ANALYSIS OF STRATEGY-STRUCTURE-PERFORMANCE. *Proceedings - Academy of Management*, *2004*(1), H1–H6. https://doi.org/10.5465/ambpp.2004.13862972

Kakabadse, A., & Kakabadse, N. K. (2002). Trends in Outsourcing: *European Management Journal*, *20*(2), 189–198. https://doi.org/10.1016/s0263-2373(02)00029-4

Mack, D. E., & Szulanski, G. (2017). Opening Up: How Centralization Affects Participation and Inclusion in Strategy Making. *Long Range Planning*, *50*(3), 385–396. https://doi.org/10.1016/j.lrp.2016.08.004

Manu, F. (1992). Innovation Orientation, Environment and Performance: A Comparison of U.S. and European Markets. *Journal of International Business Studies*, *23*(2), 333–359. https://doi.org/10.1057/palgrave.jibs.8490271

Markides, C. C., & Williamson, P. R. (1996). Corporate Diversification And Organizational Structure: A Resource-Based View. *Academy of Management Journal*, *39*(2), 340–367. https://doi.org/10.5465/256783

Megginson, L. C. (1963). Lessons from Europe for American Business. *The Southwestern Social Science Quarterly, 44*(1), 3–13. https://www.jstor.org/stable/42866937

Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, H. J. (1978). Organizational Strategy, Structure, and Process. *Academy of Management Review*, *3*(3), 546–562. https://doi.org/10.5465/amr.1978.4305755

Miller, D. (1986). Configurations of strategy and structure: Towards a synthesis. *Strategic Management Journal*, *7*(3), 233–249. https://doi.org/10.1002/smj.4250070305

Miller, D. (1987). STRATEGY MAKING AND STRUCTURE: ANALYSIS AND IMPLICATIONS FOR PERFORMANCE. *Academy of Management Journal*, *30*(1), 7–32. https://doi.org/10.2307/255893

Mookherjee, D. (2006). Decentralization, Hierarchies, and Incentives: A Mechanism Design Perspective. *Journal of Economic Literature*, *44*(2), 367–390. https://doi.org/10.1257/jel.44.2.367

Olson, E. N., Slater, S. F., & Hult, G. T. M. (2005). The Performance Implications of Fit among Business Strategy, Marketing Organization Structure, and Strategic Behavior. *Journal of Marketing*, *69*(3), 49–65. https://doi.org/10.1509/jmkg.69.3.49.66362

Porter, M. E. (1980). Industry Structure and Competitive Strategy: Keys to Profitability. *Financial Analysts Journal*, *36*(4), 30–41. https://doi.org/10.2469/faj.v36.n4.30

Rajaratnam, D., & Chonko, L. B. (1995). The Effect of Business Strategy Type on Marketing Organization Design, Product-Market Growth Strategy, Relative Marketing Effort, and Organization Performance. *The Journal of Marketing Theory and Practice*, *3*(3), 60–75. https://doi.org/10.1080/10696679.1995.11501696

Sah, R. K., & Stiglitz, J. E. (1991). The Quality of Managers in Centralized Versus Decentralized Organizations. *Quarterly Journal of Economics*, *106*(1), 289–295. https://doi.org/10.2307/2937917

SEC.gov | Division of Corporation Finance: Standard Industrial Classification (SIC) Code List. (2021, June 3). https://www.sec.gov/corpfin/division-of-corporation-finance-standard-industrial-classification-sic-code-list

Turner, I. (2005). In Pursuit of Growth. *Henley Manager Update*. https://doi.org/10.1177/174578660501600405

Venkatraman, N., & Ramanujam, V. (1986). Measurement of Business Performance in Strategy Research: A Comparison of Approaches. *Academy of Management Review*, *11*(4), 801–814. https://doi.org/10.5465/amr.1986.4283976

Ward, P. A. (1996). Configurations of manufacturing strategy, business strategy, environment and structure. *Journal of Management*, *22*(4), 597–626. https://doi.org/10.1016/s0149-2063(96)90026-4

Wernerfelt, B., & Montgomery, C. A. (1988). Tobin's q and the Importance of Focus in Firm Performance. *The American Economic Review, 78*(1), 246–250. https://www.jstor.org/stable/1814713

Wright, P., Kroll, M. W., Pray, B., & Lado, A. A. (1995). Strategic orientations, competitive advantage, and business performance. *Journal of Business Research*, *33*(2), 143–151. https://doi.org/10.1016/0148-2963(94)00064-l

Yamin, S., Gunasekaran, A., & Mavondo, F. T. (1999). Relationship between generic strategies, competitive advantage and organizational performance: an empirical analysis. *Technovation*, *19*(8), 507–518. https://doi.org/10.1016/s0166-4972(99)00024-3

Zajac, E. J., & Shortell, S. M. (1989). Changing generic strategies: Likelihood, direction, and performance implications. *Strategic Management Journal*, *10*(5), 413–430. https://doi.org/10.1002/smj.4250100503

Zeng, J., Zhang, W., Matsui, Y., & Zhao, X. (2017). The impact of organizational context on hard and soft quality management and innovation performance. *International Journal of Production Economics*, *185*, 240–251. https://doi.org/10.1016/j.ijpe.2016.12.031

Zhou, N., & Park, S. W. (2020). Growth or profit? Strategic orientations and long-term performance in China. *Strategic Management Journal*, *41*(11), 2050–2071. https://doi.org/10.1002/smj.3193

Appendix A. Robustness tests

Including strategy and structure dummies

Table A1

Fixed Effects Regressions with ROA as a firm performance measure

	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA	(8) ROA	(9) ROA	(10) ROA
Business Strategies										
(1) Differentiation	-0.6668***									
	(0.0682)									
(2) Cost Leadership		-0.0012								
		(0.0011)								
(3) Growth Strategy			0.0142***							
			(0.0013)							
(4) Asset Parsimony				-0.0011	-0.0131***	-0.0122***				
				(0.0060)	(0.0034)	(0.0016)				
Strategy Dummies										
(1) Differentiation Dummy	-0.0268***			-0.0660***				-0.0663***		
	(0.0087)			(0.0082)				(0.0085)		
(2) Cost Leadership Dummy		0.0286***			0.0292***				0.0282***	
		(0.0039)			(0.0039)				(0.0038)	
(3) Growth Strategy Dummy			0.0126***			0.0165***				0.0170***
			(0.0005)			(0.0005)				(0.0005)
(4) Asset Parsimony Dummy				-0.0162**	-0.0071	-0.0065				
				(0.0077)	(0.0061)	(0.0059)				
Organizational Structure										
Centralization							-0.0329*	-0.0588**	-0.0549**	-0.0522**
							(0.0171)	(0.0265)	(0.0221)	(0.0215)
Structure Dummy										
Centralized Structure Dummy							0.0026	-0.0005	-0.0027	-0.0034
							(0.0043)	(0.0079)	(0.0058)	(0.0058)
Control Variables										
Firm Age	-0.0013***	-0.0026***	-0.0019***	-0.0018***	-0.0026***	-0.0019***	-0.0021***	-0.0018***	-0.0027***	-0.0020***
	(0.0005)	(0.0003)	(0.0001)	(0.0005)	(0.0003)	(0.0001)	(0.0001)	(0.0005)	(0.0003)	(0.0001)
Firm Size	0.0053	0.0130***	0.0032*	0.0110*	0.0121***	0.0026	-0.0010	-0.0036	0.0025	-0.0009
	(0.0054)	(0.0038)	(0.0018)	(0.0059)	(0.0038)	(0.0018)	(0.0018)	(0.0064)	(0.0043)	(0.0021)
Capital Structure	-0.0082***	-0.0111***	-0.0113***	-0.0081***	-0.0111***	-0.0111***	-0.0124***	-0.0081***	-0.0111***	-0.0113***
	(0.0014)	(0.0010)	(0.0006)	(0.0014)	(0.0010)	(0.0006)	(0.0005)	(0.0014)	(0.0010)	(0.0006)
Constant	0.0731*	-0.0316	0.0573***	0.0073	-0.0299	0.0546***	0.1034***	0.1213**	0.0645*	0.0906***
	(0.0399)	(0.0287)	(0.0113)	(0.0442)	(0.0295)	(0.0127)	(0.0121)	(0.0498)	(0.0346)	(0.0137)
Observations	10,560	22,175	144,612	10,560	22,175	144,555	220,863	10,560	22,175	144,612
Number of Company ID's	1,528	3,122	25,115	1,528	3,122	25,108	34,916	1,528	3,122	25,115
R-squared	0.1071	0.0322	0.0424	0.0317	0.0342	0.041	0.0302	0.0364	0.0359	0.0397
Adjusted R-squared	0.107	0.032	0.042	0.031	0.034	0.041	0.030	0.036	0.036	0.040

Note. ***p < 0.01; **p < 0.05; *p < 0.1. Robust standard errors are in parentheses. The control variables '*Country Dummy*', '*Ownership Structure*', and '*Sector*' are omitted due to collinearity.

Table A2

Fixed Effects Regressions with Tobin's Q as a firm performance measure

	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q	(4) Tobin's Q	(5) Tobin's Q	(6) Tobin's Q	(7) Tobin's Q	(8) Tobin's Q	(9) Tobin's Q	(10) Tobin's Q
Business Strategies										
(1) Differentiation	-0.5337*									
	(0.2861)									
(2) Cost Leadership		0.0013								
		(0.0012)								
(3) Growth Strategy			0.0846***							
			(0.0225)							
(4) Asset Parsimony				-0.0668	-0.0929***	-0.0902***				
				(0.0419)	(0.0246)	(0.0229)				
Strategy Dummies										
(1) Differentiation Dummy	-0.1413**			-0.1693***				-0.1732***		
	(0.0568)			(0.0563)				(0.0555)		
(2) Cost Leadership Dummy		0.1796***			0.1852***				0.1789***	
		(0.0275)			(0.0274)				(0.0275)	
(3) Growth Strategy Dummy			0.1377***			0.1631***				0.1658***
			(0.0133)			(0.0121)				(0.0120)
(4) Asset Parsimony Dummy				-0.0527	0.0156	-0.0113				
				(0.0523)	(0.0420)	(0.0402)				
Organizational Structure										
Centralization							-0.0611	0.0552	-0.0582	-0.0361
							(0.0672)	(0.0660)	(0.0694)	(0.0659)
Structure Dummy										
Centralized Structure Dummy							0.0094	0.0277	0.0143	0.0001
							(0.0308)	(0.0424)	(0.0306)	(0.0302)
Control Variables										
Firm Age	0.0271***	0.0051*	0.0086***	0.0268***	0.0055*	0.0079***	0.0071**	0.0268***	0.0051*	0.0075***
	(0.0040)	(0.0029)	(0.0028)	(0.0040)	(0.0029)	(0.0028)	(0.0028)	(0.0040)	(0.0029)	(0.0028)
Firm Size	-0.1091***	-0.0670**	-0.0778***	-0.1111***	-0.0744***	-0.0847***	-0.0792***	-0.0862*	-0.0750**	-0.0836***
	(0.0410)	(0.0264)	(0.0261)	(0.0409)	(0.0268)	(0.0265)	(0.0302)	(0.0469)	(0.0307)	(0.0302)
Capital Structure	-0.0205**	-0.0468***	-0.0455***	-0.0207**	-0.0457***	-0.0452***	-0.0493***	-0.0206**	-0.0469***	-0.0461***
	(0.0097)	(0.0072)	(0.0072)	(0.0097)	(0.0072)	(0.0072)	(0.0073)	(0.0097)	(0.0072)	(0.0072)
Constant	0.3278	0.3046	0.3008	0.3294	0.2611	0.3149	0.4009*	0.1028	0.3803	0.3894
	(0.2970)	(0.1971)	(0.1929)	(0.2998)	(0.2019)	(0.1978)	(0.2380)	(0.3592)	(0.2427)	(0.2366)
Observations	7,160	14,565	14,673	7,160	14,565	14,661	14,836	7,160	14,565	14,673
Number of Company ID's	851	1,615	1,636	851	1,615	1,635	1,648	851	1,615	1,636
R-squared	0.0367	0.019	0.0359	0.0366	0.0232	0.0371	0.014	0.0356	0.0190	0.0335
Adjusted R-squared	0.036	0.019	0.036	0.036	0.023	0.037	0.013	0.035	0.019	0.033

Note. ***p < 0.01; **p < 0.05; *p < 0.1. Robust standard errors are in parentheses. The control variables '*Country Dummy'*, '*Ownership Structure*', and '*Sector*' are omitted due to collinearity.

Table A3

Random Effects Regressions with ROA as a firm performance measure

	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA	(8) ROA	(9) ROA	(10) ROA
Business Strategies										
(1) Differentiation	-0.5351***									
	(0.0432)									
(2) Cost Leadership		0.0008								
		(0.0013)								
(3) Growth Strategy			0.0123***							
			(0.0012)							
(4) Asset Parsimony				-0.0041	-0.0202***	-0.0119***				
				(0.0049)	(0.0029)	(0.0009)				
Strategy Dummies										
(1) Differentiation Dummy	-0.0096			-0.0678***				-0.0684***		
	(0.0077)			(0.0065)				(0.0065)		
(2) Cost Leadership Dummy		0.0156***			0.0181***				0.0154***	
		(0.0032)			(0.0032)				(0.0032)	
(3) Growth Strategy Dummy			0.0130**			0.0165***				0.0169***
			(0.0005)			(0.0005)				(0.0005)
(4) Asset Parsimony Dummy				-0.0054	0.0057	0.0200***				
				(0.0074)	(0.0058)	(0.0057)				
Organizational Structure										
Centralization							0.0143	-0.0307	-0.0330*	-0.0528***
							(0.0110)	(0.0225)	(0.0187)	(0.0161)
Structure Dummy										
Centralized Structure Dummy							0.0021	0.0053	-0.0022	-0.0069
							(0.0044)	(0.0081)	(0.0062)	(0.0060)
Country Dummy										
U.S.	0.0175*	-0.0190***	-0.0425***	-0.0180**	-0.0192***	-0.0391***	-0.0467***	-0.0145*	-0.0144**	-0.0340***
	(0.0103)	(0.0070)	(0.0032)	(0.0082)	(0.0071)	(0.0031)	(0.0032)	(0.0084)	(0.0071)	(0.0034)
Control Variables										
Firm Age	-0.0002	-0.0001*	-0.0001**	-0.0001	-0.0001*	-0.0000*	-0.0002***	-0.0001	-0.0001**	-0.0001***
	(0.0001)	(0.0001)	(0.0000)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0000)
Firm Size	0.0101***	0.0181***	0.0047***	0.0168***	0.0165***	0.0039***	0.0030***	0.0138***	0.0147***	0.0023***
	(0.0022)	(0.0016)	(0.0006)	(0.0024)	(0.0016)	(0.0006)	(0.0006)	(0.0024)	(0.0017)	(0.0007)
Capital Structure	-0.0093***	-0.0122***	-0.0117***	-0.0096***	-0.0122***	-0.0116***	-0.0126***	-0.0095***	-0.0121***	-0.0117***
	(0.0012)	(0.0009)	(0.0005)	(0.0013)	(0.0009)	(0.0005)	(0.0004)	(0.0013)	(0.0009)	(0.0005)
Ownership Structure	0.0104*	0.0092**	0.0132***	0.0057	0.0108***	0.0144***	0.0133***	0.0086	0.0123***	0.0161***
- Public Company	(0.0063)	(0.0042)	(0.0037)	(0.0066)	(0.0041)	(0.0036)	(0.0037)	(0.0066)	(0.0043)	(0.0037)
Sector										
- Construction	-0.0164	-0.0292*	0.0137**	0.0039	-0.0162	0.0190***	0.0043	0.0016	-0.0288*	0.0147**
	(0.0363)	(0.0151)	(0.0062)	(0.0359)	(0.0163)	(0.0062)	(0.0045)	(0.0359)	(0.0151)	(0.0061)
- Finance, Insurance, Real Estate	-0.0032	-0.0218	0.0086	0.0012	-0.0187	0.0112*	-0.0006	-0.0056	-0.0221	0.0096
	(0.0322)	(0.0141)	(0.0060)	(0.0315)	(0.0149)	(0.0061)	(0.0044)	(0.0321)	(0.0140)	(0.0060)
- Manufacturing	0.0091	-0.0371***	0.0090	0.0011	-0.0251*	0.0110*	0.0003	-0.0034	-0.0376***	0.0100*
	(0.0280)	(0.0133)	(0.0060)	(0.0268)	(0.0141)	(0.0060)	(0.0043)	(0.0272)	(0.0132)	(0.0060)
- Mining	-0.0248	-0.0565***	-0.0121	-0.0248	-0.0515***	-0.0111	-0.0238***	-0.0287	-0.0584***	-0.0125
	(0.0297)	(0.0155)	(0.0086)	(0.0284)	(0.0161)	(0.0086)	(0.0070)	(0.0289)	(0.0154)	(0.0085)
- Public Administration			-0.0010			0.0010	0.0026			0.0023
			(0.0094)			(0.0095)	(0.0078)			(0.0094)
- Retail Trade	-0.0029	-0.0448***	0.0038	-0.0114	-0.0491***	-0.0017	-0.0038	-0.0122	-0.0430***	0.0044
	(0.0377)	(0.0144)	(0.0063)	(0.0375)	(0.0152)	(0.0063)	(0.0046)	(0.0378)	(0.0143)	(0.0062)
- Services	-0.0012	-0.0765***	0.0045	-0.0254	-0.0662***	0.0053	0.0024	-0.0290	-0.0746***	0.0061
	(0.0286)	(0.0139)	(0.0060)	(0.0276)	(0.0146)	(0.0061)	(0.0043)	(0.0279)	(0.0138)	(0.0060)
- Transportation & Public Utilities	-0.0118	-0.0304**	0.0062	-0.0166	-0.0317**	0.0050	-0.0030	-0.0196	-0.0299**	0.0078
	(0.0303)	(0.0135)	(0.0061)	(0.0283)	(0.0143)	(0.0061)	(0.0044)	(0.0289)	(0.0134)	(0.0060)
- Wholesale Trade	0.0177	-0.0208	0.0140**	0.0254	-0.0190	0.0125**	0.0046	0.0199	-0.0216	0.0152**
	(0.0301)	(0.0145)	(0.0061)	(0.0294)	(0.0152)	(0.0061)	(0.0044)	(0.0297)	(0.0143)	(0.0061)
Constant	-0.0510	-0.0929***	-0.0174**	-0.0911***	-0.1110***	-0.0438***	0.0140**	-0.0664*	-0.0673***	-0.0011
	(0.0341)	(0.0188)	(0.0069)	(0.0343)	(0.0199)	(0.0089)	(0.0059)	(0.0340)	(0.0192)	(0.0075)
Observations	10,560	22,175	144,612	10,560	22,175	144,555	220,863	10,560	22,175	144,612
Number of Company ID's	1,528	3,122	25,115	1,528	3,122	25,108	34,916	1,528	3,122	25,115
R-squared	0.1833	0.0922	0.0572	0.1377	0.1134	0.0632	0.0456	0.1377	0.0947	0.0610

*Note. ***p < 0.01; **p < 0.05; *p < 0.1.* Robust standard errors are in parentheses. The '*Country Dummy'* variable equals 1 for U.S. firms and 0 for European firms. The '*Ownership Structure'* variable presents values for public companies compared to private companies. The reference category for '*Sector'* is the 'Agriculture, Forestry, Fishing' sector.

Table A4

Random Effects Regressions with Tobin's Q as a firm performance measure

	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q	(4) Tobin's Q	(5) Tobin's Q	(6) Tobin's Q	(7) Tobin's Q	(8) Tobin's Q	(9) Tobin's Q	(10) Tobin's Q
Business Strategies										
(1) Differentiation	0.6361***									
	(0.1973)									
(2) Cost Leadership		0.0001								
		(0.0015)								
(3) Growth Strategy			0.0803***							
			(0.0220)							
(4) Asset Parsimony				-0.0039	-0.0441**	-0.0360*				
				(0.0388)	(0.0212)	(0.0202)				
Strategy Dummies										
(1) Differentiation Dummy	-0.0384			0.0190				0.0222		
	(0.0538)			(0.0511)				(0.0496)		
(2) Cost Leadership Dummy		0.2537***			0.2610***				0.2576***	
		(0.0253)			(0.0253)				(0.0254)	
(3) Growth Strategy Dummy			0.1524***			0.1796***				0.1807***
			(0.0132)			(0.0119)				(0.0119)
(4) Asset Parsimony Dummy				-0.1051**	-0.0051	-0.0327				
				(0.0512)	(0.0413)	(0.0396)				
Organizational Structure										
Centralization							0.0987*	0.0922	0.1125**	0.1394***
							(0.0532)	(0.0566)	(0.0574)	(0.0533)
Structure Dummy										
Centralized Structure Dummy							0.0430	0.0454	0.0494	0.0346
							(0.0303)	(0.0408)	(0.0301)	(0.0298)
Country Dummy										
U.S.	0.7066***	0.4940***	0.5543***	0.7434***	0.4937***	0.5521***	0.5755***	0.7286***	0.4710***	0.5284***
	(0.1203)	(0.1132)	(0.1168)	(0.1210)	(0.1127)	(0.1162)	(0.1139)	(0.1207)	(0.1131)	(0.1164)
Control Variables										
Firm Age	0.0044***	0.0006	0.0017	0.0043***	0.0005	0.0014	0.0012	0.0044***	0.0006	0.0014
	(0.0013)	(0.0010)	(0.0011)	(0.0013)	(0.0010)	(0.0010)	(0.0011)	(0.0013)	(0.0010)	(0.0010)
Firm Size	-0.0444**	-0.0348**	-0.0361**	-0.0520***	-0.0382**	-0.0397***	-0.0223	-0.0349*	-0.0169	-0.0175
	(0.0198)	(0.0149)	(0.0147)	(0.0201)	(0.0150)	(0.0149)	(0.0162)	(0.0208)	(0.0160)	(0.0158)
Capital Structure	-0.0204**	-0.0520***	-0.0500***	-0.0198**	-0.0516***	-0.0504***	-0.0537***	-0.0194**	-0.0522***	-0.0508***
	(0.0094)	(0.0071)	(0.0070)	(0.0094)	(0.0070)	(0.0070)	(0.0072)	(0.0094)	(0.0071)	(0.0070)
Ownership Structure	0.5811***	0.6777	0.7846	0.6053***	0.6920	0.7966	0.8360*	0.6093***	0.7438	0.8620*
- Public Company	(0.0645)	(0.5641)	(0.5277)	(0.0673)	(0.5526)	(0.5224)	(0.5078)	(0.0642)	(0.5281)	(0.4930)
Sector										
- Construction	-0.8083*	-0.1594	-0.2398	-0.8246*	-0.1299	-0.2210	-0.2190	-0.8424*	-0.1750	-0.2604
	(0.4871)	(0.5004)	(0.5074)	(0.4944)	(0.5018)	(0.5085)	(0.5106)	(0.4996)	(0.5011)	(0.5076)
- Finance, Insurance, Real Estate	-0.5882	0.0352	0.2083	-0.5956	0.0423	0.2118	0.1709	-0.5787	0.0251	0.1996
	(0.5905)	(0.4972)	(0.5031)	(0.5932)	(0.4980)	(0.5038)	(0.5065)	(0.5928)	(0.4978)	(0.5032)
- Manufacturing	-0.3935	0.4954	0.5243	-0.3853	0.5238	0.5472	0.5357	-0.3681	0.4918	0.5232
	(0.4359)	(0.4879)	(0.4960)	(0.4393)	(0.4894)	(0.4972)	(0.4993)	(0.4394)	(0.4887)	(0.4961)
- Mining	-0.8538*	-0.0984	-0.1257	-0.8630*	-0.0810	-0.0939	-0.1014	-0.8461*	-0.0951	-0.1274
	(0.4457)	(0.4939)	(0.5067)	(0.4495)	(0.4953)	(0.5074)	(0.5088)	(0.4491)	(0.4945)	(0.5066)
- Public Administration							-1.4427***			
							(0.5052)			
- Retail Trade	0.1316	0.4848	0.5203	0.1404	0.4789	0.5144	0.4991	0.1380	0.4692	0.5033
	(0.5072)	(0.4943)	(0.5019)	(0.5113)	(0.4953)	(0.5026)	(0.5055)	(0.5110)	(0.4950)	(0.5021)
- Services	0.1759	0.6363	0.7400	0.2077	0.6611	0.7561	0.7632	0.2247	0.6198	0.7225
	(0.4393)	(0.4890)	(0.4967)	(0.4434)	(0.4906)	(0.4980)	(0.5003)	(0.4428)	(0.4898)	(0.4970)
- Transportation & Public Utilities	-0.5663	-0.0954	0.0466	-0.5641	-0.0962	0.0476	0.0391	-0.5556	-0.1068	0.0354
	(0.4522)	(0.4916)	(0.4990)	(0.4561)	(0.4926)	(0.4997)	(0.5024)	(0.4562)	(0.4924)	(0.4991)
- Wholesale Trade	-0.4416	0.2508	0.2570	-0.4458	0.2604	0.2639	0.2663	-0.4194	0.2497	0.2556
	(0.4711)	(0.4950)	(0.5033)	(0.4745)	(0.4962)	(0.5043)	(0.5066)	(0.4747)	(0.4956)	(0.5033)
Constant	-0.5078	-1.4129*	-1.6244**	-0.3737	-1.4493*	-1.6047**	-1.7666**	-0.6362	-1.6179**	-1.8336***
	(0.4709)	(0.7495)	(0.7296)	(0.4776)	(0.7454)	(0.7304)	(0.7205)	(0.4776)	(0.7262)	(0.7081)
Observations	7,160	14,565	14,673	7,160	14,565	14,661	14,836	7,160	14,565	14,673
Number of Company ID's	851	1,615	1,636	851	1,615	1,635	1,648	851	1,615	1,636
R-squared	0.1310	0.1394	0.1189	0.1130	0.1323	0.1126	0.1137	0.1185	0.1532	0.1315

*Note. ***p < 0.01; **p < 0.05; *p < 0.1.* Robust standard errors are in parentheses. The '*Country Dummy'* variable equals 1 for U.S. firms and 0 for European firms. The '*Ownership Structure'* variable presents values for public companies compared to private companies. The reference category for '*Sector'* is the 'Agriculture, Forestry, Fishing' sector.

Including an interaction effect with the country dummy

Table A5

Random Effects Regressions with ROA as a firm performance measure

	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA
Business Strategies					
(1) Differentiation	0.0531				
	(0.0810)				
(2) Cost Leadership		0.0046			
		(0.0528)			
(3) Growth Strategy			0.0185***		
			(0.0012)		
(4) Asset Parsimony				-0.0087***	
				(0.0008)	
Organizational Structure					
Centralization					0.0718***
					(0.0061)
Interaction Effects					
(1) Differentiation * US	-0.6366***				
	(0.0857)				
(2) Cost Leadership * US		-0.0038			
		(0.0528)			
(3) Growth Strategy * US			0.0026		
			(0.0049)		
(4) Asset Parsimony * US				-0.0180***	
				(0.0028)	
(5) Centralization * US					-0.1361***
					(0.0153)
Country Dummy					
U.S.	0.0340***	-0.0197	-0.0437***	-0.0584***	-0.0330***
	(0.0082)	(0.0261)	(0.0032)	(0.0040)	(0.0035)
Control Variables					
Firm Age	-0.0002	-0.0001	-0.0001***	-0.0002***	-0.0002***
	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0000)
Firm Size	0.0098***	0.0177***	0.0047***	0.0013**	0.0034***
	(0.0022)	(0.0016)	(0.0006)	(0.0005)	(0.0005)
Capital Structure	-0.0093***	-0.0121***	-0.0117***	-0.0126***	-0.0127***
	(0.0012)	(0.0009)	(0.0005)	(0.0004)	(0.0004)
Ownership Structure	0.0103	0.0091**	0.0138***	0.0158***	0.0155***
- Public Company	(0.0063)	(0.0042)	(0.0037)	(0.0036)	(0.0036)
Sector					
- Construction	-0.0173	-0.0284*	0.0139**	0.0080*	0.0043
	(0.0369)	(0.0157)	(0.0062)	(0.0045)	(0.0045)
- Finance, Insurance, Real Estate	-0.0044	-0.0116	0.0078	0.0026	0.0011
	(0.0324)	(0.0146)	(0.0061)	(0.0044)	(0.0044)
- Manufacturing	0.0075	-0.0335**	0.0079	0.0030	0.0006
	(0.0282)	(0.0140)	(0.0060)	(0.0043)	(0.0043)
- Mining	-0.0244	-0.0513***	-0.0123	-0.0202***	-0.0251***
	(0.0300)	(0.0160)	(0.0086)	(0.0070)	(0.0070)
- Public Administration			-0.0019	0.0071	0.0013
			(0.0095)	(0.0080)	(0.0079)
- Retail Trade	-0.0016	-0.0411***	0.0025	-0.0077*	-0.0032
	(0.0376)	(0.0150)	(0.0063)	(0.0046)	(0.0046)
- Services	-0.0037	-0.0684***	0.0041	0.0041	0.0021
	(0.0288)	(0.0145)	(0.0061)	(0.0044)	(0.0043)
- Transportation & Public Utilities	-0.0107	-0.0217	0.0049	-0.0036	-0.0029
	(0.0307)	(0.0141)	(0.0061)	(0.0044)	(0.0044)
- Wholesale Trade	0.0155	-0.0195	0.0131**	0.0039	0.0047
	(0.0303)	(0.0151)	(0.0061)	(0.0044)	(0.0044)
Constant	-0.0616*	-0.0890***	-0.0128*	0.0163***	0.0079
	(0.0341)	(0.0323)	(0.0069)	(0.0053)	(0.0055)
Observations	10,560	22,175	144,612	219,507	220,863
Number of Company ID's	1,528	3,122	25,115	34,867	34,916
R-squared	0.1889	0.0929	0.0525	0.0496	0.0531

*Note. ***p < 0.01; **p < 0.05; *p < 0.1.* Robust standard errors are in parentheses. The '*Country Dummy'* variable equals 1 for U.S. firms and 0 for European firms. The '*Ownership Structure'* variable presents values for public companies compared to private companies. The reference category for '*Sector'* is the 'Agriculture, Forestry, Fishing' sector.

Table A6

Random Effects Regressions with Tobin's Q as a firm performance measure

	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q	(4) Tobin's Q	(5) Tobin's Q
Business Strategies					
(1) Differentiation	0.7277				
	(0.5667)				
(2) Cost Leadership		-0.2742			
		(0.3678)			
(3) Growth Strategy			0.1244*		
			(0.0729)		
(4) Asset Parsimony				-0.1255	
				(0.0954)	
Organizational Structure					
Centralization					-3.2290
					(2.0492)
Interaction Effects					
(1) Differentiation * US	-0.1884				
	(0.5922)				
(2) Cost Leadership * US		0.2733			
		(0.3678)			
(3) Growth Strategy * US			0.0472		
			(0.0780)		
(4) Asset Parsimony * US				0.0900	
				(0.0976)	
(5) Centralization * US					3.3463
					(2.0461)
Country Dummy					
U.S.	0.7142***	0.3301	0.5426***	0.6508***	0.4384***
	(0.1231)	(0.2090)	(0.1156)	(0.1290)	(0.1366)
Control Variables					
Firm Age	0.0046***	0.0015	0.0020*	0.0012	0.0012
	(0.0013)	(0.0011)	(0.0011)	(0.0011)	(0.0011)
Firm Size	-0.0451**	-0.0406***	-0.0349**	-0.0416***	-0.0291*
	(0.0199)	(0.0152)	(0.0151)	(0.0152)	(0.0163)
Capital Structure	-0.0202**	-0.0510***	-0.0495***	-0.0531***	-0.0535***
	(0.0094)	(0.0071)	(0.0071)	(0.0071)	(0.0072)
Ownership Structure	0.5863***	0.7851	0.7937	0.7934	0.8429*
- Public Company	(0.0652)	(0.5490)	(0.5431)	(0.5320)	(0.5103)
Sector					
- Construction	-0.8113*	-0.1562	-0.2131	-0.1664	-0.2154
	(0.4863)	(0.5103)	(0.5097)	(0.5110)	(0.5099)
- Finance, Insurance, Real Estate	-0.5887	0.2075	0.2274	0.2038	0.1800
	(0.5901)	(0.5075)	(0.5052)	(0.5062)	(0.5056)
- Manufacturing	-0.3974	0.5405	0.5340	0.5689	0.5410
	(0.4358)	(0.4988)	(0.4981)	(0.4998)	(0.4983)
- Mining	-0.8542*	-0.0415	-0.1040	-0.0837	-0.1043
	(0.4458)	(0.5039)	(0.5087)	(0.5088)	(0.5078)
- Public Administration				-1.0829*	-1.4495***
				(0.5734)	(0.5039)
- Retail Trade	0.1325	0.5357	0.5172	0.5144	0.5083
	(0.5072)	(0.5053)	(0.5042)	(0.5055)	(0.5046)
- Services	0.1685	0.7631	0.7635	0.8068	0.7719
	(0.4389)	(0.5001)	(0.4989)	(0.5007)	(0.4992)
- Transportation & Public Utilities	-0.5662	0.0404	0.0468	0.0565	0.0416
	(0.4522)	(0.5019)	(0.5012)	(0.5024)	(0.5013)
- Wholesale Trade	-0.4450	0.2663	0.2662	0.2826	0.2732
	(0.4711)	(0.5061)	(0.5054)	(0.5069)	(0.5057)
Constant	-0.5176	-1.3174*	-1.6143**	-1.6813**	-1.5853**
	(0.4717)	(0.7726)	(0.7425)	(0.7377)	(0.7275)
Observations	7,160	14,565	14,673	14,821	14,836
Number of Company ID's	851	1,615	1,636	1,648	1,648
R-squared	0.1316	0.0896	0.1036	0.0992	0.1119

*Note. ***p < 0.01; **p < 0.05; *p < 0.1.* Robust standard errors are in parentheses. The '*Country Dummy'* variable equals 1 for U.S. firms and 0 for European firms. The '*Ownership Structure'* variable presents values for public companies compared to private companies. The reference category for '*Sector'* is the 'Agriculture, Forestry, Fishing' sector.

Appendix B. Panel data analyses

Table B1

Breusch-Pagan Lagrange Multiplier (LM) test results

Breusch and Pagan Lagrangian Multiplier (LM) test H_0 : Var(u) = 0 (no heteroskedasticity)								
	Y = ROA				Y = Tobin's Q			
	Var(u)	Chi^2	p-value	Type	Var(u)	Chi^2	p-value	Type
Model (1)	0.0117	4932.80	0.0000	Panel data method	4.2362	6323.00	0.0000	Panel data method
Model (2)	0.0119	9668.48	0.0000	Panel data method	3.5084	13980.71	0.0000	Panel data method
Model (3)	0.0055	68931.46	0.0000	Panel data method	3.2220	13329.93	0.0000	Panel data method
Model (4)	0.0117	4935.19	0.0000	Panel data method	4.1987	6355.54	0.0000	Panel data method
Model (5)	0.0113	9674.68	0.0000	Panel data method	3.2869	13236.00	0.0000	Panel data method
Model (6)	0.0054	68584.53	0.0000	Panel data method	3.0980	12859.91	0.0000	Panel data method
Model (7)	0.0064	1.2E+05	0.0000	Panel data method	3.2840	12651.54	0.0000	Panel data method
Model (8)	0.0117	4799.18	0.0000	Panel data method	4.1318	5694.87	0.0000	Panel data method
Model (9)	0.0118	9592.36	0.0000	Panel data method	3.3082	12214.20	0.0000	Panel data method
Model (10)	0.0054	67728.83	0.0000	Panel data method	3.0731	11896.33	0.0000	Panel data method

Table B2

Hausman test results

Hausman test H_0 : Firm-specific effects are uncorrelated with independent variables						
	Y = ROA			Y = Tobin's Q		
	Chi^2	p-value	Type	Chi^2	p-value	Type
Model (1)	139.20	0.0000	Fixed Effects method	319.80	0.0000	Fixed Effects method
Model (2)	220.77	0.0000	Fixed Effects method	105.73	0.0000	Fixed Effects method
Model (3)	689.03	0.0000	Fixed Effects method	233.78	0.0000	Fixed Effects method
Model (4)	228.78	0.0000	Fixed Effects method	335.21	0.0000	Fixed Effects method
Model (5)	300.88	0.0000	Fixed Effects method	205.21	0.0000	Fixed Effects method
Model (6)	674.62	0.0000	Fixed Effects method	295.88	0.0000	Fixed Effects method
Model (7)	1033.81	0.0000	Fixed Effects method	199.18	0.0000	Fixed Effects method
Model (8)	152.09	0.0000	Fixed Effects method	371.22	0.0000	Fixed Effects method
Model (9)	295.97	0.0000	Fixed Effects method	195.45	0.0000	Fixed Effects method
Model (10)	892.67	0.0000	Fixed Effects method	316.84	0.0000	Fixed Effects method

Appendix C. Descriptive statistics

Table C1

Descriptive statistics of European data sample

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
Company ID	800,544			1	125,000
ROA	338,320	0.0382	0.1075	-1	1
Tobin's Q	12,752	-0.5934	1.2010	-6.9078	4.3594
Differentiation	14,689	0.0174	0.0516	-0.0393	1.2790
Cost Leadership	13,895	0.5112	0.4511	-0.7634	45.9630
Asset Parsimony	328,658	-0.8341	1.0740	-17.1432	18.5867
Sales Growth	214,512	0.0580	0.4048	-1	9.9994
Centralization Index	251,448	0.0709	0.1191	0	12.8125
Firm Age	660,285	27.2274	21.1692	1	356
Firm Size	251,449	2,595.942	14,971.1	250	709,720
Capital Structure	336,034	-0.5062	1.8733	-13.7132	40.602
Ownership Structure	790,435	1.0218	0.1461	1	2

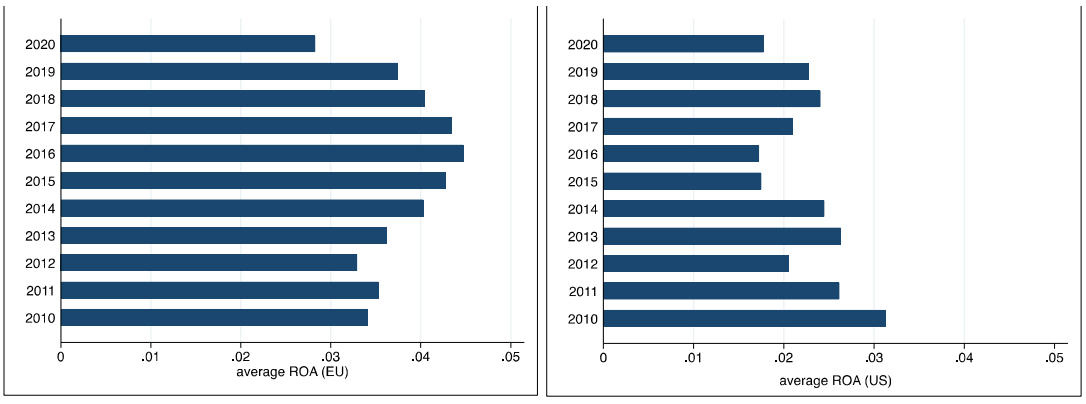
Table C2

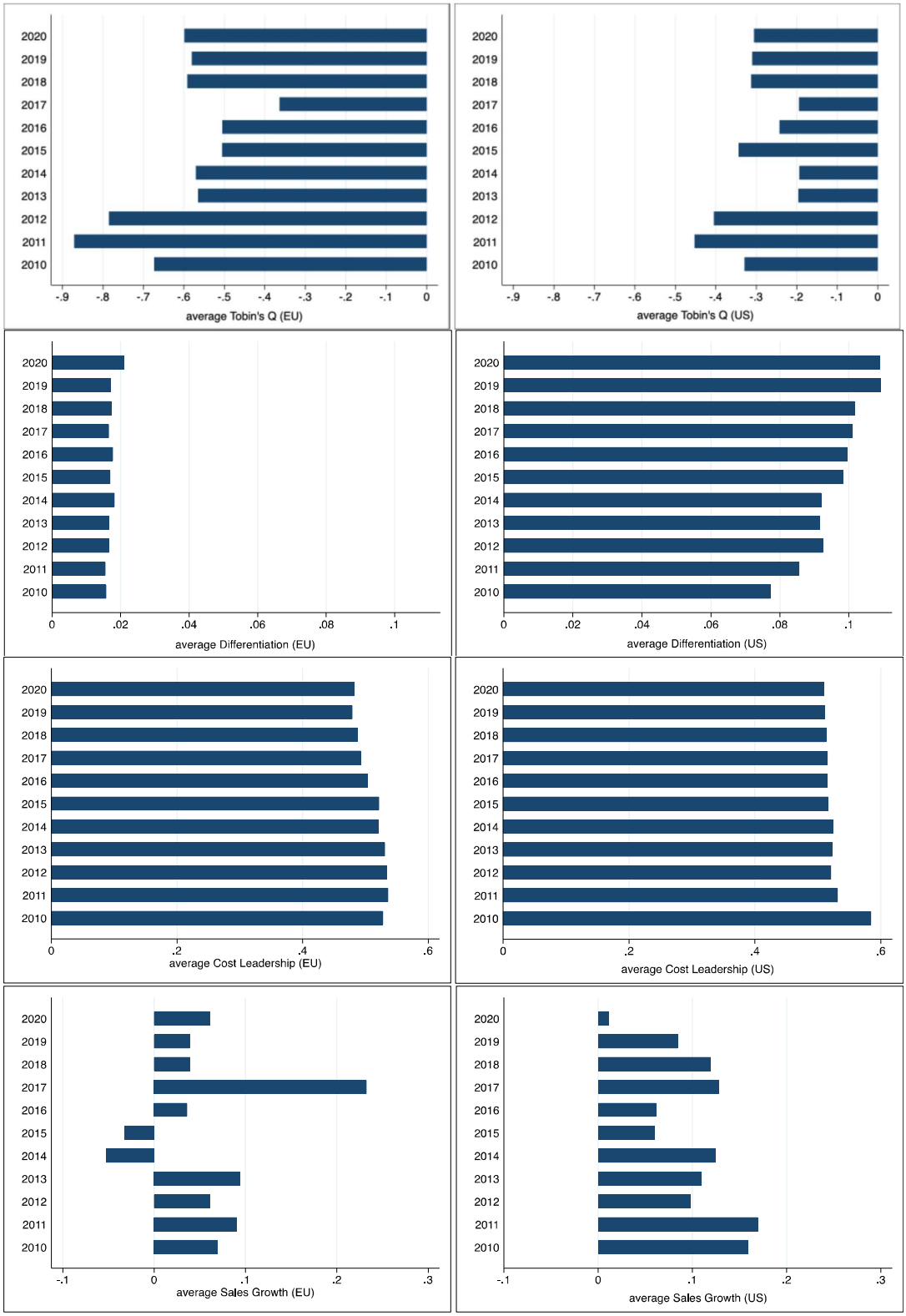
Descriptive statistics of U.S. data sample

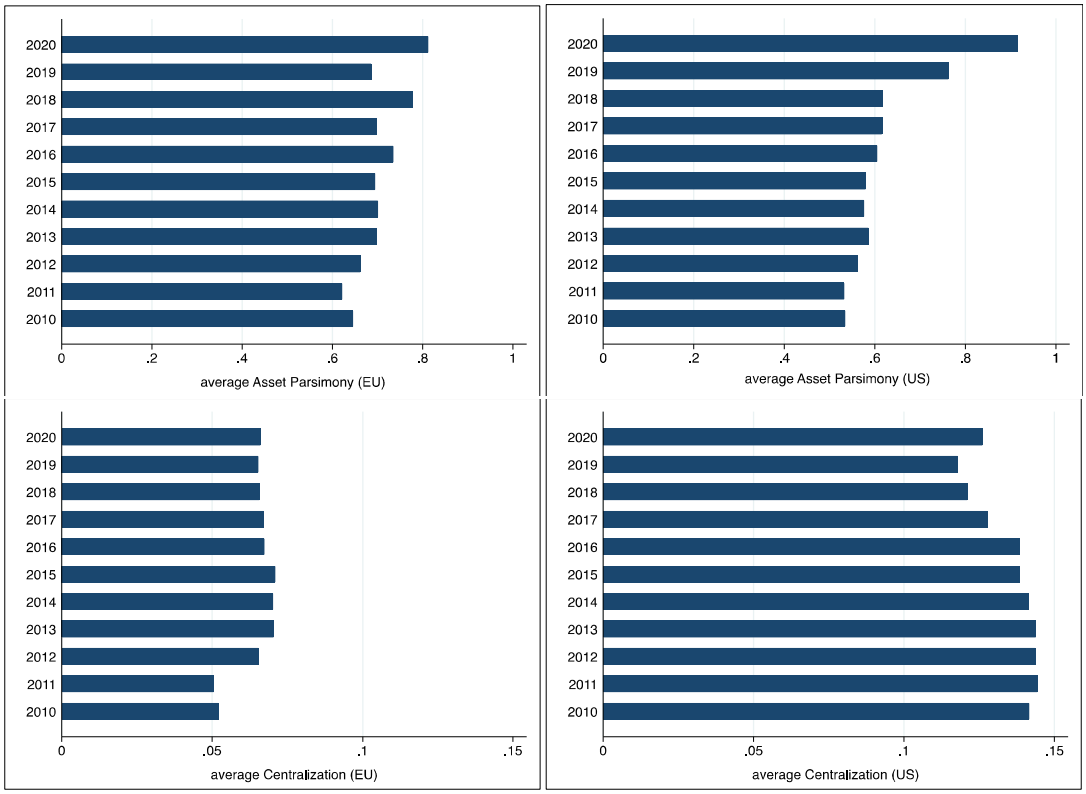
Variable	Observations	Mean	Standard deviation	Minimum	Maximum
Company ID	1,356,386			1	125,000
ROA	64,082	0.0188	0.1030	-0.9981	0.9948
Tobin's Q	17,640	-0.2953	1.1813	-6.9078	7.9030
Differentiation	11,332	0.1000	0.1284	0	0.9894
Cost Leadership	27,084	0.5108	2.5640	-318.24	126.99
Asset Parsimony	28,083	-0.8603	0.8499	-10.2353	8.1837
Sales Growth	26,769	0.1169	0.4472	-1	9.8611
Centralization Index	36,075	0.1345	0.2065	0	6.1888
Firm Age	75,989	31.3579	27.7097	1	236
Firm Size	36,075	11,265.14	52,555.23	250	2,300,000
Capital Structure	28,299	-0.9097	1.5655	-11.9181	8.6352
Ownership Structure	1,356,353	1.0174	0.1306	1	2

Figure C1

Means of variables per year




2020
2019
2018
2017
2016
2015
2014
2013
2012
2011
2010
-.9 -.8 -.7 -.6 -.5 -.4 -.3 -.2 -.1 0
average Tobin's Q (EU)
average Tobin's Q (US)
0 .02 .04 .06 .08 .1
average Differentiation (EU)
average Differentiation (US)
0 .2 .4 .6
average Cost Leadership (EU)
average Cost Leadership (US)
-.1 0 .1 .2 .3
average Sales Growth (EU)
average Sales Growth (US)

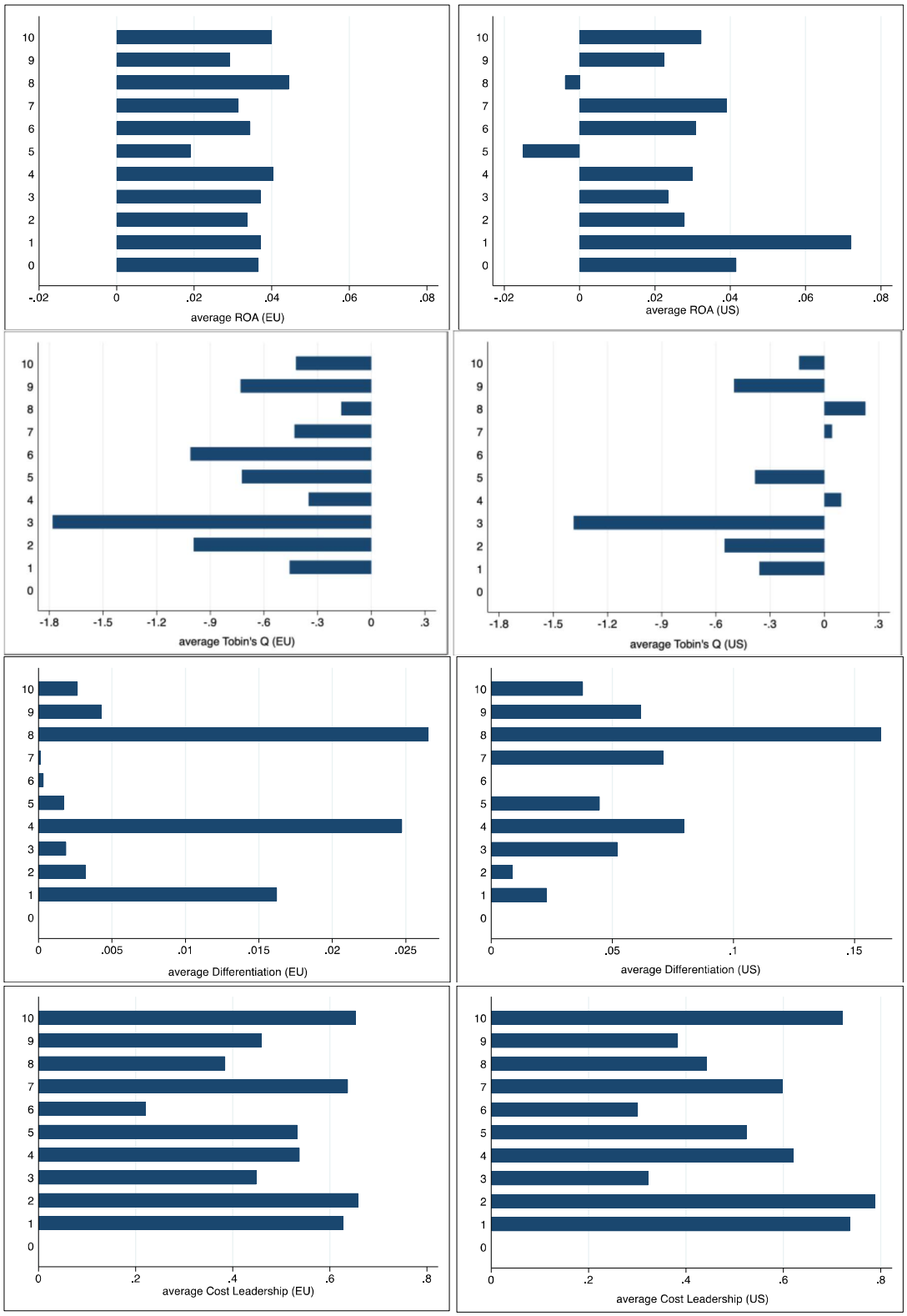


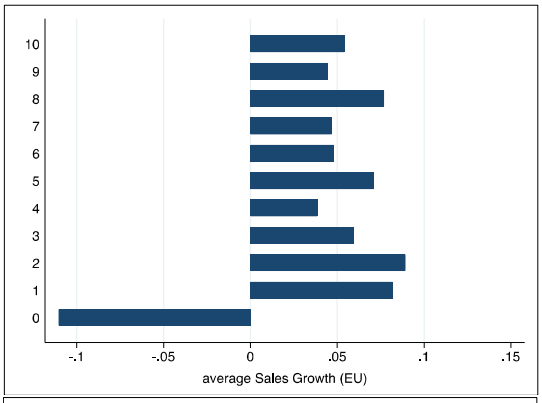
The average values of the main variables for each sector, separately for the U.S. and European dataset, are presented in Figure C2. The sectors are on the y-axis with the following numbering:

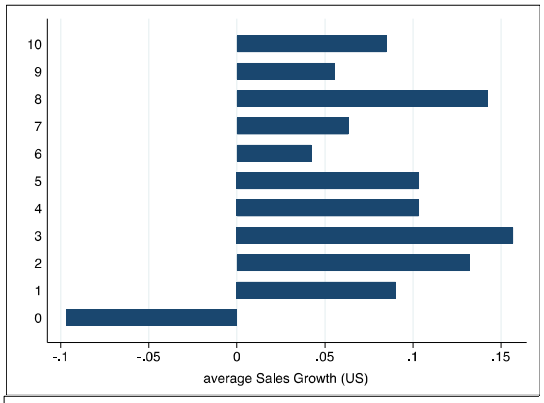
0. Unknown/ other
1. Agriculture, Forestry, Fishing
2. Construction
3. Finance, Insurance, Real Estate
4. Manufacturing
5. Mining
6. Public Administration
7. Retail Trade
8. Services
9. Transportation & Public Utilities
10. Wholesale Trade

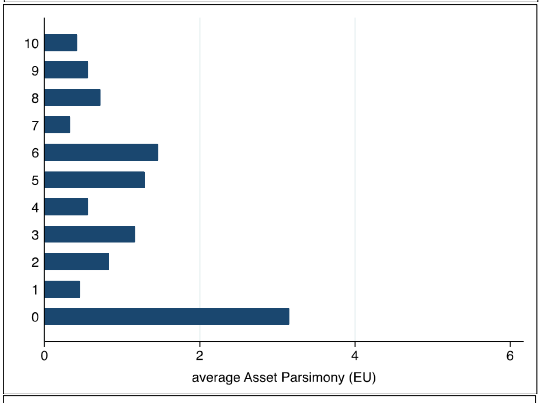
Figure C2

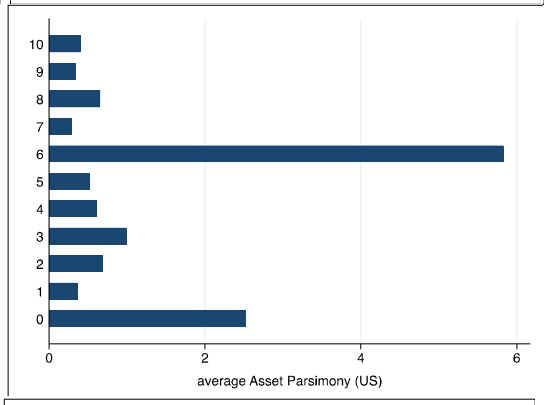
Means of variables per sector

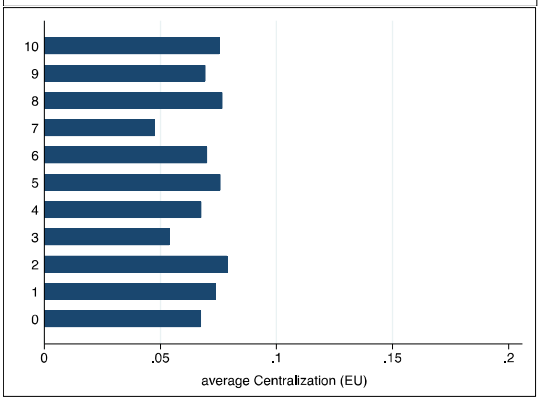


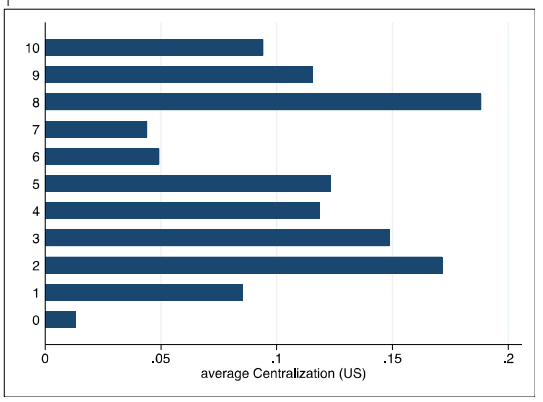

10
9
8
7
6
5
4
3
2
1
0
-.1
-.05
0
.05
.1
.15
average Sales Growth (EU)


10
9
8
7
6
5
4
3
2
1
0
-.1
-.05
0
.05
.1
.15
average Sales Growth (US)


10
9
8
7
6
5
4
3
2
1
0
0
2
4
6
average Asset Parsimony (EU)


10
9
8
7
6
5
4
3
2
1
0
0
2
4
6
average Asset Parsimony (US)


10
9
8
7
6
5
4
3
2
1
0
0
.05
.1
.15
.2
average Centralization (EU)


10
9
8
7
6
5
4
3
2
1
0
0
.05
.1
.15
.2
average Centralization (US)