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DIGITALIZATION AND COST OF CORPORATE DEBT:  
AN ANALYSIS OF THE EUROPEAN LANDSCAPE AT A  
GENERAL, COUNTRY, AND INDUSTRY LEVEL.

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## **Abstract**

Digitalization has totally revolutionised our life over the last years. But to which extent has it impacted companies' financials?

This thesis tries to understand, at a European level, the ramifications of digitalization on the cost of corporate debt. It scrutinizes this impact from three distinct angles: a general viewpoint, a country-specific analysis, and an industry-based examination. The empirical analysis leverages data from firms listed in the STOXX600 index. The degree of digitalization within the European Union is gauged using the annually published Digital Intensity Level in Businesses Index by EUROSTAT. The study encompasses a comprehensive sample of 19,752 observations, spanning 15 countries and 55 industries over a decade from 2015 to 2024. A panel data regression model serves as the analytical framework for this investigation. The lack of statistical significance at conventional levels, and the consequent non reliability of the results failed to reject the null hypothesis for the three hypotheses tested. Despite these limitations, some relevant insights can be extracted from this work at a macro level: an augmentation in digitalization is directly correlated with an escalation in the cost of corporate debt. Subsequently, at a country and industry level, it has been noticed that the findings obtained differ, in both the cases, in terms of sign and magnitude, showing heterogeneity on the impact of digitalization. The complexity of the digitalization phenomenon and its multifaceted implications for corporate finance are highlighted by these findings. This work, therefore, tries to contribute to the research in this dynamic and consequential field.

**Keywords:** Cost of debt, digitalization, European Union, country, industry

**Title:** Digitalization and Cost of Corporate Debt: an analysis of the European landscape at a general, country, and industry level.

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## **Resumo**

A digitalização revolucionou totalmente a nossa vida nos últimos anos. Mas até que ponto isso impactou as empresas financeiramente?

Esta tese tenta entender, a nível europeu, as ramificações da digitalização no custo da dívida corporativa. É analisado o impacto sob três ângulos distintos: uma perspectiva geral, uma análise específica por país e uma análise baseada na indústria. A análise empírica utiliza dados das empresas listadas no índice STOXX600. O grau de digitalização dentro da União Europeia é avaliado usando o Índice de Nível de Intensidade Digital em Empresas publicado anualmente pelo EUROSTAT. O estudo abrange uma amostra de 19.752 observações, abrangendo 15 países e 55 indústrias ao longo de uma década, de 2015 a 2024. Um modelo de regressão de dados em painel serve como estrutura analítica para esta investigação. A falta de significância estatística em níveis convencionais e a consequente não confiabilidade dos resultados falharam em rejeitar a hipótese nula para as três hipóteses testadas. Apesar dessas limitações, algumas conclusões relevantes podem ser extraídas deste trabalho a nível macro: um aumento na digitalização está diretamente correlacionado com um aumento no custo da dívida corporativa. Posteriormente, a nível de país e indústria, notou-se que os resultados obtidos diferem, em ambos os casos, em termos de sinal e magnitude, mostrando heterogeneidade no impacto da digitalização. A complexidade do fenómeno da digitalização e suas implicações multifacetadas para as finanças corporativas são destacadas por esses resultados. Este trabalho, portanto, tenta contribuir para a investigação neste campo dinâmico e relevante.

**Palavras-chave:** Custo da dívida, digitalização, União Europeia, país, indústria

**Título:** Digitalização e Custo da Dívida Corporativa: uma análise da paisagem europeia a nível geral, de país e de indústria.

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## **Table of Contents**

<b>Table of Contents</b>	<b>4</b>
<b>List of Tables</b>	<b>5</b>
<b>1. Introduction</b>	<b>6</b>
<b>2. Literature Review</b>	<b>8</b>
2.1 Cost of Debt	8
2.2 Digitalization, Fintech, and Digital Finance	10
2.3 Digitalization in the European Union	11
<b>3. Methodology</b>	<b>13</b>
3.1 “Digital finance development level and corporate debt financing cost”	13
3.2 Research Design	16
3.3 Data Collection	18
3.4 Variables Construction	19
<b>4. Empirical Analysis</b>	<b>21</b>
4.1 Descriptive Statistical Analysis	21
4.2 Correlation Analysis	24
<b>5. Results</b>	<b>25</b>
5.1 H1 Result	25
5.2 H2 Result	27
5.3 H3 Result	30
5.4 Robustness considerations	33
<b>6. Conclusions</b>	<b>35</b>
<b>7. References</b>	<b>37</b>
<b>8. List of Appendices</b>	<b>42</b>
<b>9. Appendices</b>	<b>45</b>

## **List of Tables**

<b>Table 1 Variables' definition Table</b>	<b>19</b>
<b>Table 2 Variables' Descriptive Statistic</b>	<b>21</b>
<b>Table 3 Cost of Debt's Descriptive Statistic</b>	<b>22</b>
<b>Table 4 Digitalization Index's Descriptive Statistic</b>	<b>23</b>
<b>Table 5 Digitalization Index and Cost of Debt's Correlation</b>	<b>24</b>
<b>Table 6 H1 Regression's Results</b>	<b>26</b>
<b>Table 7 H2 Regression's Summary Results</b>	<b>28</b>
<b>Table 8 H3 Regression's Summary Results</b>	<b>31</b>

## 1. Introduction

A paradigm shift in the way businesses operate has been brought by the digital revolution during the last decades, which transforming business models, enhancing operational efficiency, improving customer experience, enabling innovation, and promoting collaboration. Digitalization, in fact, is not reshaping the way companies work just under an operative and productive point of view, but also on a more complete one, going to influence their organizational and financial dimensions. In recent years, the emergence of the Fintech sector, a novel entity focused on devising faster and more convenient solutions to existing financial problems, has laid its foundation on the innovative developments ushered in by the third industrial revolution.

Given, nowadays, the conspicuous impact of these innovations on the global markets, this thesis has the scope of understanding how much influence they exert on companies' financials. This work, thus, is mainly focused on trying to understand which weight they can have on the cost of corporate debt in large firms operating in the European Union.

In order to try to understand the sign and magnitude of this relationship, a model adopting a panel regression has been implemented on data of firms composing the *STOXXX600*, and on data retrieved from the *EUROSTAT* database. The model has firstly been used to understand if an increase in digitalization allows for a decrease in the cost of debt. Then the same investigation has been conducted more deeply at country and sector levels. The study has been based on the following three hypothesis:

*H1. Can digital impact reduce the cost of corporate debt financing?*

*H2. Is digital impact on corporate debt's cost heterogeneous among European countries?*

*H3. Is digital impact on the cost of corporate debt industry heterogeneous?*

The paper has been structured presenting in *Chapter 4* the literature review related to the Cost of Debt, to Digitalization, Fintech, and Digital Finance, and to Digitalization in the European Union, for understanding at which point the research about this topic has arrived, and for setting the basis of this work. Subsequently in *Chapter 5*, the methodology used has been presented, along with the analysis conducted by *Tang and Geng (2024)* on which this work was initially

inspired. Additionally, this chapter also provides an insight about data, its sources, explaining the motivation behind its choice, and presenting the variables construction used in this study. *Chapter 6* is mainly focused on the descriptive statistical analysis of the new variables constructed, and briefly explains possible macro-economic factors that may have influenced them. The results for the three hypotheses are finally presented in *Chapter 7*, along with their interpretations, comments, and robustness considerations. Lastly the conclusions, related to all the work conducted, are presented in *Chapter 8*.

Ultimately, this thesis presents an investigation about the impact of *digitalization* on the *cost of corporate debt*, for large firms operating in the European Union, and tries to contribute to the broader discourse on the intersection of technology and finance.

## 2. Literature Review

This thesis ties together strands of literature related to the Cost of Debt, to Digitalization, Fintech, and Digital Finance, and to Digitalization in the European Union.

### 2.1 Cost of Debt

Findings over the last years have attributed to various factors the changes related to the cost of debt. Being a decisive constituent of a company's cost of capital, it strongly influences financial decisions. Will be shortly mentioned, in this literature, which are the main cardinal points, raised by various scholars, for elucidating the components of the cost of debt.

*Modigliani and Miller (1958, 1963)* highlighting the connections between the cost of debt and the firm value, explained that various factors have a strong impact on the last one. In fact, the effects of interest rate dynamics and market conditions have been considered relevant by *Chava and Purnanandam (2011)* who underscore the importance of considering macroeconomic factors and term structure in analyzing the cost of debt. In addition, it is also relevant to consider the influence that credit risk and credit ratings can have in determining this cost (*Campello et al., 2011*). Indirectly, as empirically proved by *Graham and Harvey (2001)* and *Lemmon, Roberts and Zender (2008)*, emphasizing the trade-offs between risk and return associated with different debt instruments and capital structure choices, also debt structure and leverage play a strong role in the cost composition. Finally, *Brunnermeier and Oehmke (2013)* and *Gennaioli, Martín and Rossi (2014)* have examined how market frictions, regulatory changes, and institutional factors affect borrowing costs and debt issuance behaviour. They conclude that the cost of debt is influenced, in addition, by market imperfections and the regulatory environment.

In conclusion, as emphasized also by *Van Binsbergen, Graham, and Yang (2010)*, the cost of debt is influenced, directly and not, by various factors as mentioned above. In the case analyzed in this thesis, it is necessary to concentrate on the institutions to understand how much the cost may vary by the increasing presence of fintech lenders. In fact, their development can reduce the financing cost by lowering the risk of corporate debt default, easing financing constraints, and improving the quality of corporate accounting information and decreasing financial risk.

Furtherly it is important to note that the cost of debt refers to the interest rate or total interest owed on loans and bonds, and in fact it depends on the borrower's creditworthiness, since those seen as riskier have to pay higher rates (*Van Binsbergen, Graham, and Yang, 2010*). On the other hand, a borrower failing to pay its obligation may incur into default risk and as a result, a higher risk leads to elevated interest rates. Default risk can change due to economic conditions or a company's finances; thus, these two concepts are connected but distinct. Competition, as underlined by *Valta (2012)*, also plays a crucial role in lowering financing costs, in fact, banking competition, leading to more favorable credit conditions, can reduce borrowing costs for both healthy and indebted firms. Lower interest rates and better terms for borrowers can result from an increase of market competition reducing the cost of debt.

The implementation of digitalization, and so the growing presence of fintech lenders, can make markets more competitive, potentially resulting in lower financing costs for borrowers (*He et al., 2023*). These lenders can also help reduce the risk of corporate debt defaults by easing financing constraints and improving the quality of corporate accounting information. Cost of debt and the risk of corporate debt default are impacted by numerous factors and reflect different elements of a company's financial health. The presence of new players, such as fintech lenders, can influence both of these factors, potentially resulting in lower financing expenses and reducing default risk, in fact it is important to denote, as underlined by *Zveryakov et al. (2019)*, that FinTech allows creating new services that are not provided by traditional financial intermediaries, going to expand the possibilities for companies of getting access to credit.

Even if not directly connected with the scope of this work, in my opinion, it is important to consider that the reduction of the cost of debt may induct the user companies of fintech products to modify their capital structure. In fact, according to *Modigliani and Miller (1958)* and the static tradeoff model, the reduction of the cost of debt will decrease the company tax shield leaving the companies to have to optimally rebalance their various costs and benefits. To the contrary, the possible access to less costly debts, will be in favor of the pecking order theory of *Myers and Majluf (1984)*, aimed at following a determined financing hierarchy to reduce the most possible adverse selection costs related to security issuance.

## 2.2 Digitalization, Fintech, and Digital Finance

Digitalization is the increasing use of digital technologies for connecting people, systems, companies, products, and services as stated by *Coreynen, Matthyssens and Van Bockhaven (2017)*, based on *Hsu (2007)*, and in fact, the dynamics of how companies operate, their value propositions, and their value demonstrations have been totally reshaped during last years (*Gandhi, Thota, Kuchembuck, Swartz (2018)*, and *Syam, Sharma (2018)*).

The main output of digitalization is *Big Data*, and as a matter of fact, as underlined by *Smolan (2012)*, more data exists today than have done so in history. Indeed, it is notable that roughly 5 billion gigabytes had been produced from the beginning of recorded history until 2003, whereas nowadays 328.77 million terabytes of data are created each day.

Digital finance denotes the use of digital technologies, as mobile or web advances, for delivering and managing financial services. It can also be associated with a variety of money-related and payment benefits, including e-money, mobile money, card payments, and electronic funds transfers (*Gomber, Koch and Siering, 2017*). Additionally, its rapid evolving application has the potential to transform the financial industry and improve access to financial services globally. Taking in consideration the previous existing literature, on this topic, different incoherent results have emerged.

Fintech, a clipped compound of “*financial technology*”, indicates the integration of technology into the creation of financial services and products. It comprehends breakthroughs in technology that have the potential to transform the provision of financial services, drive the creation of novel business models, applications, processes, and products, and lead to consumer gains (*Goldstein, Jiang, and Karolyi, 2019*). Fintech firms, in fact, have started competing with the old traditional banking system by presenting more convenient services, faster processing times, and delivering their services to an increasing number of clients due to the evolution of digital finance.

Some studies, such as *Philippon (2015)*, highlight the fact that advances in financial technology were not able to cut down intermediation costs. *Bartlett et al. (2019)*, instead, studying the characteristics of fintech lenders were able to denote that discrimination factors, usually present in the market, were not considered and for their analysis was applied a totally objective criteria

of choice. Their market share, in fact, according to *Buchak et al. (2018)*, has raised from roughly 3% in 2007 to 12% in 2015. This has made possible for fintech firms to make use of a broader set of information, acquired during the lending process, to determine applicable interest rates. Thus, they, from their part, resemble to offer products that consumers value greatly and which may have the potential to address ongoing regulatory challenges raised by *Philippon (2016)*.

### **2.3 Digitalization in the European Union**

In Europe, particularly, due to the strategic priorities, such as financing for growth, financial stability, and combating exclusion in access to credit, the sphere of digitalization, is gaining importance in academic research. Therefore, developing more this field in academic research, mainly related to this geographical area, can contribute to the better development of the sector and to the better knowledge of its criticalities and strengths. The European Union, in fact, has been putting significant effort into the adoption of digitalization, thanks to a combination of legislative measures and the definition of strategic objectives, aiming to empower businesses and people in a human-centred, sustainable, and more prosperous digital future. (*European Commission, 2024*).

Various robust and forward-looking legislative measures have been implemented focused on digitalization, such as the *Digital Services Act* and *Digital Markets Act* which are key pieces of legislation, applicable across the whole Union, aiming to create a safer and more open digital space, grounded in respect for fundamental rights. Additionally, the *European Digital Rights and Principles* provides guidance, complementing existing rights such as *Data Protection*, *ePrivacy*, and the *Charter of Fundamental Rights* for the EU and Member States as they adapt to the digital transformation (*European Parliament, 2022*). Moreover, as sign of its commitment to digitalization, several legislative initiatives regarding the justice, involving computerised systems for the cross-border exchange of data, have been adopted.

The *Digital Decade* policy outlined strategic objectives, such as spanning various areas, including skills development, digital transformation of businesses, secure and sustainable digital infrastructures, and digitalization of public services, which are set concrete targets and objectives for 2030 (*European Commission, 2024*). For instance, due to this policy, it is aimed to have 20 million Information and Communication Technology specialists and a minimum of

80% of the population with basic digital, and of the economical point of view it targets 75% of EU companies using Cloud, AI, or Big Data, and more than 90% of SMEs reaching at least a basic level of digital intensity.

The motivations behind all this digitalization effort are multifaceted, in fact digitalization provides a unique opportunity to improve European firms' global competitiveness, and it also helps them in passing through times of repeated economic shocks. However, the digital transition requires societal changes, and empowering workers to enhance their digital skills will be crucial to create an innovation-friendly environment within the European Union (*Eib, 2023*).

In conclusion, all the effort towards digitalization adoption is a comprehensive and strategic approach that combines robust legislative measures and ambitious objectives, with motivations behind this effort rooted in enhancing competitiveness, resilience, and societal well-being. Nevertheless, there are conflicting opinions regarding it, in fact there are good reasons to believe that investment in digital technologies should have strong positive effects on productivity (*Syverson (2011), Brynjolfsson, E and McAfee, A (2014)*). On the other hand, according to *Acemoglu et al. (2014), Bartelsman, Van Leeuwen and Polder (2016), De Stefano, Kneller and Timmis (2014), and Cetto, Lopez and Mairesse (2016)* presented the empirical evidence that these results have generally less importance at industry and firm levels.

### 3. Methodology

Digital finance in the last years has apported various changes in the financial landscape creating new operational methodologies and opportunities in terms of financing solutions. Algorithms and technologies have been the neuralgic centre of all these implementations used for streaming line processes, and maybe indirectly also responsible for a reduction of interest rates and transaction costs. The overall access to capital has been enlarged, by new players in the market, making it easily reachable by small and medium size enterprise and by Start-ups. In fact, due to a data driven decision making method in which extensive data analysis performed added to data sources creditworthiness fast availability and accessibility, the overall credit risk assessment processes became more agile and less pricy. In addition, the possibility of new products creation, tailored to costumers' need, and thus the emergency of new sources of financing are leading innovation in the banking system disrupting their traditional opponents.

Based in what mentioned above the research of this thesis has strongly been designed on the work of *Tang and Geng (2024)*, with the extent of trying to be focused on the European continent and conducting a more general analysis mainly focused on digitalization. In order to explain the methodology adopted for this work, will be first briefly explained the work conducted by *Tang and Geng (2024)*, and lately the research design, the data collection and the variable construction redesigned for this study.

#### 3.1 “Digital finance development level and corporate debt financing cost”

The paper “*Digital finance development level and corporate debt financing cost*” written by *Tang and Geng* and published in the “*Finance Research Letters 60 (2024)*”, aims to understand how, over the last years, the new presence of digital finance players in the Chinese market has influenced the corporate debt financing cost. In fact, since with the increasing maturity of Internet technology, digital finance generated by integrating digital technology and finance has brought new opportunities and challenges for the all-round development of society, the effective use of digital finance can solve the problem of information asymmetry and provide a suitable solution for both sides of the capital supply (*Li et al., 2022*). Compared with traditional finance, digital finance has comprehensive coverage, which can comprehensively and thoroughly promote the exchange of information, better alleviate the problem of

information asymmetry, and reduce the transaction costs between various subjects (*Lin and Ma, 2022*).

The positive effect brought by the development of digital finance expands the enterprise debt financing channels and also brings the possibility of reducing the cost of enterprise debt financing (*Liu et al., 2021*). Based on this, the authors retrieved the data of China's A-share listed companies, and the *Urban Digital Financial Inclusion Index*, provided by *Peking University's Digital Finance Research Centre*, for a time span going from 2012 to 2022. The authors once processed the sample excluding ST samples, financial industry data, and missing data, obtained 22784 valid observations selected from EPS, Wind, and CSMAR databases.

The variables were defined consequently: The *Cost of Debt financing (Debt)* is constructed using the proportion of finance cost expense in the total expenses of the period, to highlight that interest expenses mainly compose the finance cost. The *Digital Financial Inclusion Index (Index)*, in addition to the *Urban Digital Financial Inclusion Index*, takes in consideration three other secondary dimensions for measuring the development of digital inclusive finance: *Breadth of Coverage (cov)*, *Usage depth (usage)*, and *Digitalization degree (digt)*.

Considering that the emergence and rise of digital finance can make the assessment among market players more comprehensive and scientific. It reduces the adverse selection and moral risk due to information asymmetry and allow enterprises to have more information to support their choice of more advantageous financing products and institutions. which further reduce the cost of corporate debt financing, as stated by *Geng and He (2021)*, the first hypothesis emerged:

*H1. Can digital finance reduce the cost of corporate debt financing?*

Furtherly, in regions with a higher level of digital financial development, the degree of mutual integration between finance and digital is more profound, the resources of financial factors are more fully utilized, the degree of resource distortion is reduced to a greater extent, and the financial allocation efficiency and transaction efficiency are improved, so the effect of reducing the cost of corporate debt financing may be more significant (*Ding, Gu and Peng, 2022*). At the same time, regions with a high level of digital financial development have a more vital ability to innovate financial products and services and more intense competition among financial institutions, which can also better reduce the cost of corporate debt financing in their regions.

In regions where digital financial development is relatively backward, the financing psychology generated by market players, the financing scenarios, and the financial infrastructures provided by the market will also be relatively backward, which will adversely affect the reduction of the cost of corporate debt financing. Accordingly, the study proposes the following hypothesis:

*H2. Is digital finance's impact on corporate debt's cost regionally heterogeneous?*

Meanwhile, on the industrial sector point of view in which the firms are located, manufacturing firms having high capital needs, are more sensitive to financial products, financial services, and policies than other industries, and are more likely to be affected by the level of digital finance development (*Chen and Zhang, 2021*). On the other hand, the wholesale and retail industries are also subject to the significant impact of digital finance development. In fact, the digital economy represented by e-commerce squeezes the survival space of the wholesale and retail industry, and the decline in the performance of the wholesale and retail industry further worsens the financial assessment of financial institutions, which as consequence raises the cost of debt financing for the wholesale and retail industry (*Bollaert, Lopez-De-Silanes and Schwienbacher, 2021*). On this, the following third hypothesis has been proposed by the authors:

*H3. Is the impact of digital finance on the cost of corporate debt industry heterogeneous?*

In order to perform the analysis, and verify the relationship among digital finance and the corporate debt financing, the authors performed the following regression:

$$Debt_t = \beta_0 + \beta_1 Index_{i,t} + \beta Control_{i,t} + \sum Ind + \sum Year + \varepsilon_{i,t+1}$$

The dependent variable (*Debt*) is the “Cost of debt” extracted from the China’s A-share listed companies' data. The Digital Financial Inclusion Index was selected as independent variable (*Index*), and along with it, data from three other secondary dimensions were selected (Breadth of coverage, Usage depth, digitization degree) to gauge the development of digital inclusive finance. Firm size, firm age, sales growth rate, cash flow level, firm capital intensity, and return on assets and equity concentration were selected as the control variable (*Control*). Finally, the regression also took in consideration two fixed effects: one for the year (*t*) and one for the industry of the firms (*i*).

The authors find that the development of digital finance can significantly reduce the cost of corporate debt financing. The total index of digital inclusive finance (*Ind*) and the three sub-dimensions (*cov*, *usage*, *digit*) are all significant at the 1 % level, in which *cov* has the most apparent effect on Debt, followed by *usage* and *digit*. The coverage of the inclusive nature of digital inclusive finance is a necessary condition for its development, and only with increasingly more comprehensive coverage can the services of digital inclusive finance be brought to every corner of China. It can be seen that digital finance has a significant negative impact on the cost of corporate debt financing, which verifies hypothesis *H1*. This suggests that the more developed digital finance means that the more enterprises can obtain a lower cost of debt financing. Additionally, the impact of digital finance on the cost of corporate debt financing has regional heterogeneity, and the impact of digital finance on the cost of corporate debt financing has industry heterogeneity, verifying *H2* and *H3*.

In conclusion, the authors have found that the development of digital finance can significantly reduce the cost of corporate debt financing, and that its impact is regionally and industry heterogeneous.

### **3.2 Research Design**

In the interest of replicating the study conducted by *Tang and Geng (2024)* on European firms and digitalization, the methodology applied in this thesis was inspired by the one presented previously. Nevertheless, slight adjustments have been made for suiting it to the data available and used.

Due to the lack of valid sources of data for the European Union on something similar to the *Urban Digital Financial Inclusion Index* used in the paper described in the previous subsection, for analysing how much the cost of corporate debt financing is affected, a broader and more general analysis has been conducted. In fact, considering that digital finance implementation has totally been possible due to digitalization, it is generally definable digital finance as a specific ambit of digitalization. Accordingly, this thesis proposes the following hypothesis:

*H1. Can digital impact reduce the cost of corporate debt financing?*

Economic development varies enormously among European countries due to various factors, and it can be reflected in the cost of debt. In fact, GDP per capita exhibited is subjected to a huge difference between leader countries such as Switzerland, Luxembourg, and Norway and on the other side eastern countries. Also, the industrial sector is not developed homogeneously, and for this reason, some of these economies are based on developed manufacturing companies, while others rely more on services or agriculture. Technological advancement is also not equally spread since some countries are heavily investing in research than others and this also reflect the adaptability capacity to innovation and to some extent to digital finance. Accordingly, considering the idea that results may change be subjected to country variations, the following hypothesis is proposed:

*H2. Is digital impact on corporate debt's cost heterogeneous among European countries?*

Finally, since the data incorporates information about companies operating in various sectors, it is also important, for the scope of this work, to consider if differences are present at industry level. In fact, the ones which for operating are heavily reliant on physical assets, such as manufacturing and construction ones, may face higher costs when transitioning to digital technologies, having to upgrade all their machineries, and having to train newly their workforce. On the other hand, industries more oriented on providing services, such as finance and information technology ones, may be able to easily adopt digital technologies with less upfront investment, thereby mitigating the impact on their cost of debt. Furtherly, the competitive landscape within the industry can also be relevant, since in the highly ones, companies may be compelled to invest heavily in digital technologies to maintain their competitive edge, leading more expenses and thus to an increased debt levels and a higher cost of debt. Lastly, another factor to be consider is the level of digital maturity among different industries, and since they differ in characteristics some of which are at an advanced stage of digitalization may face a lower cost of debt, having already incurred the initial costs, others that are in the early stages of digitalization may face higher costs due to investments in new technologies and processes. Another related aspect, which needs to be stressed is that the availability of digital skills within the industry can highly impact the costs and time of adoption of new technologies given the fact that professionals need to be trained. The availability of digital skills may play a crucial role given by the need to invest in training or hiring new employees for some industries, while conversely, other ones in surplus may be able to transition to digital technologies with less

investment in human resources. Once considered all these aspects and understood that sectors may also not react in the same way to digitalization, for understanding until which extent it would be possible, the following last hypothesis is advanced:

*H3. Is digital impact on the cost of corporate debt industry heterogeneous?*

### **3.3 Data Collection**

For the scope of this thesis, data of *STOXXX600*, and *Digital intensity level in businesses* have been respectively retrieved from *Refinitiv Eikon Datastream* and the *EUROSTAT* databases, annually, for a time span going from 2015 to 2024.

*STOXXX600*, being a European index that takes in consideration the performance of 600 companies spread across different countries, and additionally, due to its characteristics, such as diversification, given by the exposure to a great number of sectors and industries, has been selected. Nevertheless, of the fact that it incorporates a significant market capitalization and trading volume, emerging from many large-cap, and mid-cap companies, it has been chosen as a benchmark for the European economy for the purpose of this study. So, annual data for *Interest Expense on Debt*, *Market Value*, *Net Sales or Revenues*, *Total Capital*, *Total Assets*, *EBITDA*, and *Total Debt* have been extracted for all the firms composing the *STOXXX600*, in order to proceed.

*Digital intensity level in businesses* was selected as measure of variation for digitalization, since no index as the one used by *Tang and Geng (2024)*, for considering the digital finance adoption in Europe was available. As previously explained, in fact, this thesis will broadly consider *digitalization* adoption, instead of *digital finance* one. For a matter of completion, we are briefly going to analyze how this index has been constructed. As reported by the *EUROSTAT (Digitalization in Europe - 2023 Edition, 2024)*, the digital intensity of businesses is monitored by the *Digital Intensity Index (DII)*, which measures the use of 12 different digital technologies by businesses, since integrating digital technologies into all areas of a business enables companies to improve their products and services, and to gain competitiveness. The index scores businesses depending on how many digital technologies they use (0-3: *very low*, 4-6: *low*, 7-9: *high*, 10-12: *very high*) considering a minimum score of 4 as a basic level of digital intensity.

### 3.4 Variables Construction

Data retrieved was processed winsorizing it at a 90% level and excluding missing data in order to proceed with the analysis. In fact, the Coefficient of Variation (CV) computed using the standard deviation and the mean of the raw data, once excluded the missing values, had an average higher than 2,5. Due to the presence of extreme values or outliers in the dataset, this method has been applied with the intent of enhancing the robustness and accuracy of data. Consequently, the following variables have been constructed, as presented in *Table 1*.

*Table 1 Variables' definition Table*

Variable type	Variable name	Variable symbol	Definition
<b>Dependent Variable</b>	<i>Cost of Debt</i>	<i>Debt</i>	Interest Expense on Debt / Total Debt
<b>Independent Variable</b>	<i>Digitalization Index</i>	<i>digit</i>	Annual Variation of ( Enterprises with high digital intensity index + Enterprises with very high digital intensity index )
<b>Control Variable</b>	<i>Market Value</i>	<i>val</i>	Annual Market Value / Total Assets
	<i>Revenue</i>	<i>rev</i>	Annual Net Sales or Revenue / Total Assets
	<i>Total Capital</i>	<i>capt</i>	Annual Total Capital / Total Assets
	<i>EBITDA</i>	<i>ebitda</i>	EBITDA / Total Assets
	<i>Total Assets</i>	<i>assets</i>	Log n ( Total Assets )

The *Cost of Debt (Debt)* was constructed from *STOXX600* firms' *Interest Expense on Debt*, and *Total Debt* data, by dividing the *Interest Expense on Debt* by *Total Debt*, for each company observation for each moment in time available.

The *Digitalization Index (digit)*, instead, was computed from the *Digital intensity level in businesses* data. Taking in consideration that the *Debt* variable was composed upon *STOXX600* data, the one retrieved from *EUROSTAT* was for companies employing 250 people or more, in order to better match. Finally for monitoring how digitalization varies, just the *Enterprises with high digital intensity index* and *Enterprises with very high digital intensity index* have been taken in consideration for each available *country* observation and moment in time. Then the annual percentage change among these observations was computed.

*Market Value (val)*, *Revenue (rev)*, *Total Capital (capt)*, *EBITDA (ebitda)*, and *Total Assets (assets)* have been selected as control variables during all the analysis conducted.

Furtherly, since some data mismatch was conceptually present, an additional filtration has been done. In fact, data from the *Cost of Debt (Debt)* presented observations for companies not in the European Union countries, such as Switzerland, or other ones for which the *Digitalization Index (digt)* data was not complete and accurate, as for example the United Kingdom. Finally, the ultimate sample accounts for 19752 observations taking in consideration 15 countries and 55 different industries.

## 4. Empirical Analysis

### 4.1 Descriptive Statistical Analysis

The summary statistics of the comprehensive dataset is provided in *Table 2* in order to understand its characteristics. The mean of *Debt* is 0,04565, with a standard deviation of 0,33877, indicating moderate variability, and the skewness and kurtosis are high, suggesting a distribution with a long tail and extreme values. The mean of the *Digitalization* is 0,06466, with a standard deviation of 0,29096, and its skewness suggests a distribution which extends towards more positive values. The mean of *Market Value* is relatively low at 0,00116, suggesting that most companies in the dataset have a low market value. The mean of *Revenue* is 0,61133, which is relatively high compared to other variables, except for *Total Assets*, indicating that the companies in the dataset, on average, generate revenues. The mean of *Total Capital* is 0,57308, also higher than most other variables, suggesting that the companies have substantial total capital. The *EBITDA* has a positive close to zero skewness, indicating a distribution that is approximately symmetrical. The mean of *Total Assets* is significantly higher than all other variables, standing at 16,95271, indicating that total assets have much larger values on average compared to other financial metrics.

*Table 2 Variables' Descriptive Statistic*

	Debt	Digitalization	Market Value	Revenue	Total Capital	EBITDA	Total Assets
<b>nobs</b>	3272,00000	120,00000	3272,00000	3272,00000	3272,00000	3272,00000	3272,00000
<b>mean</b>	0,04565	0,06466	0,00116	0,61133	0,57308	0,10409	16,95271
<b>std</b>	0,33877	0,29096	0,00159	0,49964	0,22702	0,08566	2,21606
<b>mode</b>	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000
<b>median</b>	0,02524	0,00398	0,00065	0,57050	0,63253	0,09945	16,96179
<b>min</b>	0,00000	-0,52647	0,00000	0,00000	0,00000	-0,53810	0,00000
<b>max</b>	13,55485	0,99698	0,01620	4,13772	0,99695	0,62519	22,60314
<b>skew</b>	35,50287	0,82148	3,49524	1,52496	-0,75541	0,39611	-2,38429
<b>kurtosis</b>	1361,40747	3,60243	20,50160	7,65278	2,75432	9,00738	21,24134
<b>range</b>	13,55485	1,52345	0,01620	4,13772	0,99695	1,16328	22,60314
<b>iqr</b>	0,02115	0,44072	0,00114	0,64090	0,29160	0,09199	2,44691
<b>25%</b>	0,01514	-0,16885	0,00028	0,21370	0,44497	0,05185	15,79461
<b>50%</b>	0,02524	0,00398	0,00065	0,57050	0,63253	0,09945	16,96179
<b>75%</b>	0,03630	0,27187	0,00142	0,85459	0,73658	0,14384	18,24151

Descriptive statistics of *Cost of Debt* presented in *Table 3* show 409 observations per year. The *Mean*, representing for this data the annual average cost of debt, presents its highest cost in 2017 (0,08201), and its lowest in 2021 (0,02516). The cost dispersion is more present in 2017

and 2018, respectively with a *Standard Deviation* of 0,64049 and 0,67662. The *Maximum* shows significant spikes mainly in 2017 (12,68259) and 2018 (13,55485), due to the presence of extreme values. The data distribution seems to be asymmetrical, in fact the *Skewness* presents two growing trends over the years (2016-2018, and 2019-2023), showing a right long tail, related to the fact that many companies had low costs while a few had very high ones. The *Kurtosis*, also, is extremely high for all years, mainly in 2018 (384,81763) showing a high occurrence of extreme values.

**Table 3** Cost of Debt’s Descriptive Statistic

<i>Debt</i>	2016	2017	2018	2019	2020	2021	2022	2023
<b>nobs</b>	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000
<b>mean</b>	0,04520	0,08201	0,07835	0,03287	0,02796	0,02516	0,02985	0,04378
<b>std</b>	0,11298	0,64049	0,67662	0,04368	0,03608	0,04508	0,08903	0,15010
<b>mode</b>	0,00000	0,00000	0,00000	0,00000	0,00000	0,01471	0,02797	0,03509
<b>median</b>	0,02777	0,02731	0,02590	0,02536	0,02218	0,02044	0,02256	0,03206
<b>min</b>	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000
<b>max</b>	1,25702	12,68259	13,55485	0,51409	0,46784	0,86885	1,77108	3,00012
<b>skew</b>	8,29663	18,68715	19,32945	7,38846	7,80004	16,16371	18,36168	18,74059
<b>kurtosis</b>	76,80560	366,46216	384,81763	71,31724	81,20992	300,34479	357,94494	368,16970
<b>range</b>	1,25702	12,68259	13,55485	0,51409	0,46784	0,86885	1,77108	3,00012
<b>iqr</b>	0,02636	0,02521	0,02424	0,02116	0,01857	0,01657	0,01768	0,02134
<b>25%</b>	0,01618	0,01532	0,01407	0,01612	0,01386	0,01274	0,01401	0,02215
<b>50%</b>	0,02777	0,02731	0,02590	0,02536	0,02218	0,02044	0,02256	0,03206
<b>75%</b>	0,04254	0,04053	0,03831	0,03728	0,03243	0,02931	0,03169	0,04349

Furtherly it is important to notice that the cost of debt apparently didn’t suffer the consequences of the COVID-19 pandemic. In reality various factors, implemented by the European Countries, helped to mitigate the impact of this crisis. Following the pandemic induced financial turmoil, European authorities responded swiftly with comprehensive economic relief initiatives. Monetary policymakers implemented accommodative measures to facilitate favorable borrowing conditions and alleviate debt burdens. Though initial economic contractions were severe, with the euro area GDP plummeting 11.6% in Q2 2020, a robust rebound of 12.5% occurred in the subsequent quarter, signaling resilience. However, growth moderated again with a 0.7% contraction in Q4, underscoring the complex trajectory of recovery. Notably, the full ramifications of such crises on economic variables like debt costs may manifest gradually over time, in fact the confluence of interventionist strategies, future projections, and the architecture of the debt marketplace may account for this phenomenon. In the European Union, in summary, the amalgamation of economic buttressing initiatives, accommodative financial landscapes, and

economic resurgence has played a pivotal role in mitigating the COVID-19 crisis' ramifications on the cost of debt until the 2023.

Descriptive statistic of *Digitalization Index* presented in *Table 4* shows 15 observations per year. A possible dip and a peak in digitalization effort are highlightable by the change of direction of the *Mean*, during the years 2018-2019, and 2022-2023, that shows us that these two periods are respectively negatively and positively significant. The *Standard Deviation* biggest value was in 2019 (0,29120), while the lowest one was in 2023 (0,10505).

*Table 4 Digitalization Index's Descriptive Statistic*

<i>Digitalization</i>	2016	2017	2018	2019	2020	2021	2022	2023
<b>nobs</b>	15,00000	15,00000	15,00000	15,00000	15,00000	15,00000	15,00000	15,00000
<b>mean</b>	-0,16548	0,28997	-0,21489	0,42448	-0,10997	0,14685	0,26406	-0,11778
<b>std</b>	0,11013	0,26800	0,16656	0,29120	0,11297	0,14103	0,16630	0,10505
<b>mode</b>	-0,35169	-0,14871	-0,52647	0,07541	-0,30532	-0,08460	0,00000	-0,21839
<b>median</b>	-0,17235	0,32143	-0,23447	0,38167	-0,09891	0,12451	0,28044	-0,14048
<b>min</b>	-0,35169	-0,14871	-0,52647	0,07541	-0,30532	-0,08460	0,00000	-0,21839
<b>max</b>	0,01509	0,91507	0,17744	0,99698	0,05610	0,38987	0,56942	0,19493
<b>skew</b>	0,26560	0,52144	0,46101	0,69408	-0,19606	0,19665	0,11626	1,86937
<b>kurtosis</b>	2,22621	3,28579	3,55187	2,34469	1,92674	2,09936	2,07263	6,28354
<b>range</b>	0,36678	1,06378	0,70391	0,92156	0,36142	0,47447	0,56942	0,41332
<b>iqr</b>	0,11787	0,28409	0,18193	0,33637	0,16953	0,19057	0,24033	0,08922
<b>25%</b>	-0,22477	0,09033	-0,30676	0,21291	-0,19456	0,06754	0,13306	-0,17768
<b>50%</b>	-0,17235	0,32143	-0,23447	0,38167	-0,09891	0,12451	0,28044	-0,14048
<b>75%</b>	-0,10690	0,37442	-0,12483	0,54928	-0,02503	0,25811	0,37339	-0,08845

A variety of events and factors potentially impacted digitalization over time. As the COVID-19 pandemic, which starting in 2020, imposed to various firms shifting their business online, increasing digital transformation globally, as also testified by the change in the digitalization index for that specific period. Furthermore, between 2015 and 2023, significant technological advancements occurred such as artificial intelligence, machine learning, and big data proliferated. These innovations conceivably contributed to the digitalization index's increase. European Union aimed for 80% of adults having basic digital abilities by 2030, thus also working toward that objective impacted the digitalization ranking. More tech graduates emerged, boosting the digital sector, and so influencing the *Digitalization Index*.

Descriptive statistic of control variables *Market Value (val)*, *Revenue (rev)*, *Total Capital (capt)*, *EBITDA (ebitda)*, and *Total Assets (assets)* are presented more specifically, on year base, in *Appendices*.

## 4.2 Correlation Analysis

The correlation matrix, presented in *Table 5*, shows a correlation coefficient of - 0,2112 between *Cost of Debt* and *Digitalization Index*. The fact that this result is negative, indicates a moderate inverse relation between the two variables, thus the *Cost of Debt* tends to decrease as

*Table 5 Digitalization Index and Cost of Debt's Correlation*

<b>Correlation</b>	<b>Digitalization Index</b>	<b>Cost of Debt</b>
<b>Digitalization Index</b>	1,0000	-0,2112
<b>Cost of Debt</b>	-0,2112	1,0000

the *digit* increases. Regardless the correlation being negative, since its result is not close to  $-1$ , other factors may influence the *Debt* value. In fact, it is important to denote that correlation does not imply causation. While these variables may move in opposite directions, we can't conclude from this data alone that changes in the digitalization index directly cause changes in the cost of debt, as a matter of facts the cost of debt is actually influenced by several important factors.

## 5. Results

### 5.1 H1 Result

The results reported in *Table 6* try to answer to the main hypothesis of this work, thus to *H1*, “*Can digital impact reduce the cost of corporate debt financing?*”. In this context, the hypothesis was tested employing a cross-panel regression analysis, in order to scrutinize the impact of the *Digitalization Index* variable across the *Cost of Debt* for all the considered firms over a temporal dimension of eight years. The model incorporated the five control variables: *Market Value (val)*, *Revenue (rev)*, *Total Capital (capt)*, *EBITDA (ebitda)*, and *Total Assets (assets)* selected to account for potential confounding influences that could distort the relationship between our independent and dependent variables. Alongside these control variables, our model also encompassed a constant term for enabling a more effective isolation of the effects analysed. The data used were composed of all the data available in the sample, while the *Digitalization Index* has been constructed, as mentioned above, using the country data of the companies considered.

Upon initial review it is notable that *H1* has not been confirmed, so that the regression failed to reject the null hypothesis due to lack of statistical significance at conventional levels. Additionally, the *Digitalization* coefficient, even not being statistically significant shows a slightly low positive impact on *Cost of Debt*, that goes against the main supposition of this research.

Furtherly, going deeply into these results, what emerged is that a unitary increase in *digit* corresponds with a slightly increase of 0,0505 in *Debt*, however even if the coefficient is positive the absence of statistical significance does not determine the certainty of this effect. Additionally, it is present a discrepancy in the statistical significance of this variable since the t-statistic is relatively high, typically indicating a significance. Nevertheless, the value of the p-value, and the confidence interval of the variable lead to believe that it is not possible to conclude that *Digitalization* has a statistically significant effect on the *Cost of Debt*. Various factors can have influenced this, as the sample size that not being extremely large can have made harder to detect its effectiveness. *Digitalization*, also, can be complex to be measured accurately since companies may have varying degrees of digital transformation, and capturing

this properly in a single variable can be challenging, and finally also the presence of possible omitted variables could have blurred the final output.

*Table 6 HI Regression's Results*

<b>VARIABLE</b>	<b>Tot obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	2806						
<b>(Constant)</b>		3,2664	0,9650	3,3860	0,1830	-8,9930	15,5250
<b>DIGITALIZATION</b>		0,0505	0,0220	2,3220	0,2590	-0,2260	0,3270
<b>MARKET CAPITAL</b>		-0,3840	0,1090	-3,5110	0,1770	-1,7740	1,0060
<b>EBITDA</b>		-1,0007	0,2830	-3,5400	0,1750	-4,5920	2,5910
<b>MARKET VALUE</b>		71,2308	37,9570	1,8770	0,3120	-411,0530	553,5140
<b>REVENUES</b>		-0,3068	0,6950	-0,4420	0,7350	-9,1320	8,5190
<b>TOT ASSETS</b>		-0,1621	0,0500	-3,2420	0,1900	-0,7980	0,4730

All the results, for all the control variables, emerged from this analysis appear to be non-significant; however, for a matter of completeness considerations about them needs to be done.

*Market Capital*'s coefficient expresses an inverse relationship between in and the *Cost of Debt*, in line with the fact that, larger firms, having a higher *Market Capital*, tend to have lower debt costs, since are perceived by creditors as more stable and less risky. Additionally, also non-linearity may have affected the output since the relationship between market capitalization and cost of debt may not be strictly linear, contributing to insignificance.

*EBITDA* and *Revenue* imply an inverse relationship with the *Cost of Debt*, in line with the common idea that higher profitability and returns leads to lower debt costs, since creditors prefer financially stable companies with strong earnings. However, since *EBITDA* does not account for debt composition, such as interest payments which are a crucial part of the debt structure, and *Revenues* alone may not fully represent a firm's financial position, not accounting for profitability margins, the effectiveness of the analysis may be affected.

*Total Assets* exhibit a negative value, testifying that creditors may prefer companies with the most possible number of collaterals available, nevertheless it is important to consider that the accuracy of the coefficient may be blurred since the variable includes both tangible and intangible assets, and does not differentiate between liquid and illiquid ones.

*Market Value*'s large positive coefficient suggests that as it increases, so does the cost of debt, but may not be a direct connection with the *Cost of Debt* because it might not fully capture a firm's financial health or risk profile mainly because the *Market Value* could be affected by external factors to the companies.

That said, we should recall that none of the coefficients is statistically significant, which implies that the relationships discussed in the preceding paragraphs are in truth not statistically different from zero.

## 5.2 H2 Result

The results summarized in *Table 7*, and full available in *Appendices*, try to answer to the second hypothesis of this work, thus to *H2*, “*Is digital impact on corporate debt's cost heterogeneous among European countries?*”. This hypothesis was tested employing a cross-panel regression analysis, for each of the 15 countries considered, in order to scrutinize the impact of the *Digitalization Index* variable across the *Cost of Debt* for all the considered firms over a temporal dimension of eight years. The model incorporated the five control variables: *Market Value (val)*, *Revenue (rev)*, *Total Capital (capt)*, *EBITDA (ebitda)*, and *Total Assets (assets)* selected to account for potential confounding influences that could distort the relationship between our independent and dependent variables. Alongside these control variables, our model also encompassed a constant term for enabling a more effective isolation of the effects analysed. The data used were composed of all the data available in the total sample grouped at country level for the following countries: *Austria, Belgium, Denmark, France, Finland, Germany, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, and Sweden*. The firms have been matched to each of the considered countries according to the location of their main headquarter. While the *Digitalization Index* has been constructed singularly for each of the nations analysed, as mentioned above, using the data retrieved.

Upon initial review it is notable that *H2* has not been confirmed, so that the outputs of the regressions failed to reject the null hypothesis due to lack of statistical significance at conventional levels for the majority of them. Furtherly, analysing the results, it is important to note that, in the evidence of statistical significance of the results the hypothesis would have been confirmed, since the results are not *homogeneous* neither in terms of sign, neither in terms

of magnitude of the effect. In fact, countries like *Austria, Belgium, Germany, Denmark, France, Ireland, Italy, Luxembourg, Netherlands, and Portugal*, react to an increase in digitalization reducing the *Cost of Debt*. On the other hand, positive coefficients for *Spain, Finland, Norway, Poland, and Sweden* suggest that it increases, presenting us a varied response to the impact of digitalization on the *Cost of Debt* among the European Continent.

Focusing just on *Ireland*, the analysis shows a significant negative coefficient of -0,0062, suggesting that as firms become more digitalized, they can potentially reduce their borrowing costs, in fact among the various reasons one could be that digitalization improves operational efficiency and transparency, thereby reducing the risk perceived by lenders. These valid results, available, could be connected to a variety of factors presents in the country. *Ireland*, in fact, has a unique economic and business environment that might be influencing these results, due to its favorable corporate tax rates which has attracted various multinational corporations, mainly in the technology and digital sectors. Additionally, since the Irish economy, as also sustained by *Cussen and O’Leary (2013)*, relies more on debt financing the registered effects of the *Digitalization Index* and other *Control Variables* on the *Cost of Debt* might be more pronounced.

**Table 7 H2 Regression’s Summary Results**

<b>DIGITALIZATION</b>					
<b>Country</b>	<b>Tot obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>
<b>AT</b>	392	-0,0078	0,0080	-1,0150	0,4950
<b>BE</b>	776	-0,0056	0,0090	-0,6490	0,6340
<b>DE</b>	3320	-0,0711	0,2910	-0,2440	0,8480
<b>DK</b>	1160	-0,3026	0,9940	-0,3040	0,8120
<b>ES</b>	1160	0,0215	0,0150	1,4620	0,3820
<b>FI</b>	920	0,0509	0,0540	0,9450	0,5180
<b>FR</b>	3800	-0,0254	0,0240	-1,0400	0,4870
<b>IE</b>	584	-0,0062 *	0,0000	-39,4280	0,0160
<b>IT</b>	1832	-0,0080	0,0050	-1,6580	0,3450
<b>LU</b>	296	-0,0092	0,0130	-0,7110	0,6070
<b>NL</b>	1256	-0,0077	0,0120	-0,6640	0,6270
<b>NO</b>	632	0,1719	0,3730	0,4610	0,7250
<b>PL</b>	488	0,1786	0,0440	4,0870	0,1530
<b>PT</b>	248	-0,0020	0,0050	-0,4010	0,7570
<b>SE</b>	2888	0,0223	0,0710	0,3140	0,8060

The regression analysis results provide an interesting insight into the varying impact, across different European countries, expressing how the estimated impact of digitalization on the cost of corporate debt, are both positive and negative according to different realities. Negative coefficients could be connected to several factors, as improvements in efficiency and productivity of businesses, which by automating routine tasks, improving decision-making with data analytics, and enabling new business models, can achieve higher profits. Secondly, digitalization can enhance transparency and information availability, reducing information asymmetry between companies and creditors, increasing the willingness to lend at lower rates.

On the other hand, positive coefficients express the opposite output, which may also be connected to the risks associated with digitalization, such as cybersecurity ones, that could increase the perceived riskiness of the firm. In fact, if a company's digital assets are compromised, it could strongly impact its operativeness, thereby increasing the risk of default and leading to a higher *Cost of Debt*. Additionally, firm may be influenced by the need of investments required for developing digital infrastructure, talent, and new business models, increasing firm's leverage, and leading to higher interest rates.

The various impacts of *Digitalization Index* on the *Cost of Debt* across different European countries, could be, from a broader perspective, due to the varying levels of digital maturity and the differences in the digital policies and regulations across these countries. Places with advanced digital infrastructure and favourable digital policies might experience a reduction in the cost of corporate debt due to digitalization, since they have previously invested in high-speed internet, data centres, and other digital infrastructure that enable businesses to leverage digital technologies effectively. Also having policies which encourage digital innovation and provide support for businesses undergoing digital transformation can lead to efficiency gains and risk reduction, thereby reduce the *Cost of Debt*. Other nations, in contrast, may lack the necessary digital infrastructure and supportive digital standards, making it more challenging for businesses to incorporate this innovation, and it might lead to face risks and investments associated with it.

Having analysed all the results, and dived into some of the possible causes, we can suggest that the impact of *Digitalization* on the *Cost of Debt* is complex and varies across different European countries. While it can lead to efficiency gains and costs reduction in some countries, it can also

imply several risks and investments in other ones. It is also important to denote that correlation does not imply causation, so these results do not necessarily mean that changes in *Digitalization* cause these changes in the *Cost of Debt*, since various other factors at macro economical and micro economical levels can act.

### 5.3 H3 Result

The results summarized in *Table 8*, and fully available in *Appendices*, try to answer to the third hypothesis of this work, thus to *H3*, “*Is digital impact on the cost of corporate debt industry heterogeneous?*”. As for the other two hypothesis this one was tested employing a cross-panel regression analysis, for understanding the impact of the *Digitalization Index* variable across the *Cost of Debt*, incorporating the five control variables: *Market Value (val)*, *Revenue (rev)*, *Total Capital (capt)*, *EBITDA (ebitda)*, and *Total Assets (assets)* and a constant term over a temporal dimension of eight years. The data used were composed of all the data available in the total sample grouped at industry level according to the *ISIC* standard. For each company, in fact, the first two digits of the *ISIC* code, which according to the standard indicate the industry in which the firms operate, have been taken in consideration. While the *Digitalization Index* has been constructed specifically using the data retrieved, as mentioned above, for each of the industries analysed, based on the countries of each firm composing them.

Upon initial review it is notable that *H3* has not been confirmed, so that the outputs of the regressions failed to reject the null hypothesis due to lack of statistical significance at conventional levels for the majority of them. Furtherly, analysing the results, it is important to note that, in the evidence of statistical significance of the results the hypothesis would have been confirmed, since the results are not *homogeneous* neither in terms of sign, neither in terms of magnitude of the effect. The regression analysis results provide a comprehensive and detailed view of the relationship between the *Digitalization Index* and the *Cost of Debt* across various industrial sectors, in the European continent, offering valuable insights into this relationship, and revealing a clear *heterogeneity* in the impact of digitalization.

**Table 8 H3 Regression's Summary Results**

ISIC code	Industry	Tot obs	DIGITALIZATION			
			coef	std err	t	P> t
55	Accommodation	104	0,0385	0,0040	10,8250	0,0590
67	Activities auxiliary to financial service activities, except insurance and pension funding	56	-0,0874	0,3450	-0,2530	0,8420
70	Activities of head offices; management consultancy activities	152	0,0061	0,0780	0,0780	0,9500
97	Activities of households as employers of domestic personnel	56	-0,0114 *	0,0000	-24,3930	0,0260
73	Advertising and market research	104	0,0133	0,0160	0,8120	0,5660
71	Architectural and engineering activities; technical testing and analysis	296	-0,0028	0,0070	-0,3870	0,7650
42	Civil engineering	200	-0,0007	0,0050	-0,1320	0,9160
62	Computer programming, consultancy, and related activities; information service activities	440	-0,0260	0,0230	-1,1470	0,4570
41	Construction of buildings	248	-5,6290	2,9630	-1,9000	0,3080
35	Electric power generation, transmission, and distribution	1112	0,0515	0,0790	0,6480	0,6340
78	Employment activities	56	-0,0194	0,0240	-0,7960	0,5720
64	Financial service activities, except insurance and pension funding	2888	-0,0396	0,0170	-2,3180	0,2590
56	Food and beverage service activities	56	-0,0706	0,0170	-4,1790	0,1500
92	Gambling and betting activities	56	0,0072	0,0260	0,2800	0,8260
86	Human health activities	104	-0,0087	0,0180	-0,4960	0,7070
63	Information service activities	248	-0,2099	0,1210	-1,7370	0,3320
65	Insurance, reinsurance, and pension funding, except compulsory social security	776	0,0017	0,0030	0,6450	0,6350
49	Land transport and transport via pipelines	104	0,2450	0,3680	0,6650	0,6260
24	Manufacture of basic metals	200	0,0300	0,0040	7,2530	0,0870
11	Manufacture of beverages	440	0,0000	0,0000	0,1020	0,9280
20	Manufacture of chemicals and chemical products	920	0,0443	0,0780	0,5670	0,6720
19	Manufacture of coke and refined petroleum products	104	-0,0061	0,0050	-1,2490	0,4300
26	Manufacture of computer, electronic, and optical products	680	0,0122	0,0580	0,2120	0,8670
27	Manufacture of electrical equipment	632	-0,0163	0,0140	-1,1500	0,4560
25	Manufacture of fabricated metal products, except machinery and equipment	56	-0,0557	0,0400	-1,4030	0,3940
10	Manufacture of food products	440	-0,0929	0,0680	-1,3730	0,4010
15	Manufacture of leather and related products	56	-0,0383	0,0060	-6,1600	0,1020
28	Manufacture of machinery and equipment not elsewhere classified	1016	-0,0131	0,0200	-0,6420	0,6370
29	Manufacture of motor vehicles, trailers, and semi-trailers	632	0,0103	0,0130	0,7820	0,5780
23	Manufacture of other non-metallic mineral products	296	-0,0190	0,0170	-1,1310	0,4610
30	Manufacture of other transport equipment	488	-0,0677	0,0200	-3,3600	0,1840

ISIC code	Industry	Tot obs	DIGITALIZATION			
			coef	std err	t	P> t
17	Manufacture of paper and paper products	104	0,0056	0,0200	0,2860	0,8230
21	Manufacture of pharmaceuticals, medicinal chemical, and botanical products	920	0,0557	0,8750	0,0640	0,9600
32	Manufacture of radio, television, and communication equipment and apparatus	536	0,0024	0,0040	0,5760	0,6670
22	Manufacture of rubber and plastics products	104	0,0095	0,0020	5,5590	0,1130
14	Manufacture of wearing apparel	248	-0,0067	0,0070	-0,9850	0,5050
59	Motion picture, video, and television programme production, sound recording, and music publishing activities	104	-0,0195	0,0410	-0,4780	0,7160
89	Other professional, scientific, and technical activities	56	-0,0158 *	0,0010	-24,5480	0,0260
53	Postal and courier activities	152	0,0012	0,0010	2,0250	0,2920
60	Programming and broadcasting activities	104	0,0142	0,0070	2,1870	0,2730
58	Publishing activities	200	-0,0072	0,0090	-0,7630	0,5850
68	Real estate activities	968	0,0505	0,0220	2,3220	0,2590
47	Retail trade, except of motor vehicles and motorcycles	680	-0,3597	0,7200	-0,4990	0,7050
72	Scientific research and development	248	0,0963	0,0170	5,6570	0,1110
80	Security and investigation activities	56	0,0284	0,0700	0,4030	0,7560
81	Services to buildings and landscape activities	56	-0,0119	0,0330	-0,3670	0,7760
37	Sewerage	56	-0,0187	0,0130	-1,4080	0,3930
43	Specialized construction activities	56	0,0068	0,0270	0,2550	0,8410
93	Sports activities and amusement and recreation activities	56	0,0982	0,0460	2,1410	0,2780
61	Telecommunications	920	-0,0017	0,0120	-0,1390	0,9120
79	Travel agency, tour operator, and other reservation service and related activities	56	-0,0466	0,0060	-7,5080	0,0840
52	Warehousing and storage	152	0,0009	0,0040	0,2060	0,8700
45	Wholesale and retail trade and repair of motor vehicles and motorcycles	56	-0,1248 *	0,0070	-17,2790	0,0370
51	Wholesale trade and commission trade, except of motor vehicles and motorcycles	104	0,0083	0,0010	6,6070	0,0960
46	Wholesale trade, except of motor vehicles and motorcycles	488	-0,0373	0,0640	-0,5800	0,6660

The majority of the industries presented in the results available do not show a statistically significant relationship between the *Digitalization Index* and the *Cost of Debt*, due to various reasons. Perhaps other events are overshadowing the influence of digitalization, or alternatively, the measure of digitalization used might not fully capture its effects. In fact, they underscore the importance of considering industrial specific factors when assessing the financial implications of digital transformation, highlighting the need for a nuanced understanding of the impact of digitalization, tailored to the unique characteristics and

dynamics of each industry. Plus, also the sample size of the dataset can significantly have impacted your results, leading to less accurate estimates of the coefficients and standard errors.

*Activities of households as employers of domestic personnel, Other professional, scientific, and technical activities, Wholesale and retail trade and repair of motor vehicles and motorcycles* are the only three industry that had a statistically significant coefficient for *digitalization*. All these cases reported a negative relationship between the two variables, testifying that an increase in *Digitalization* should be reflected in a decrease in the *Cost of Debt*. However, it is important to denote that these results cannot be considered valid for these three specific whole industries due to the very low dimension of the sample analysed.

#### **5.4 Robustness considerations**

Once analysed all the results presented in the previous chapter and noticed that for all the hypothesis the analysis computed lacked statistical significance, at conventional level, it is important to present some robustness considerations. However, it's important to highlight that a statistically significant result may not necessarily have a practical significance, not being meaningful in real-world applications, and vice versa.

Taking in consideration the sign and magnitude of the *Digitalization Index* coefficients, emerged in *H2* and *H3*, they appear consistent with the underlying theory and previous empirical findings as reported by the work of *Tang and Geng (2024)*. In both the analysis, the impact on the *Cost of Debt* suggests that the effect is not homogeneous, due to the possible influence of a variety of factors, including the level of digital maturity, the digital policies and regulations, and the specific economic and business environment in each country or industry. However, could have been other relevant variables that have not been included in the model, such as some company's financial ratios, the economic climate, or industry-specific factors, that in the European landscape have a way more relevant impact. The sample size, which due to the unavailability of digitalization data, was not conspicuous, can also have significantly influenced the results, leading to less accurate estimates of the coefficients and standard errors. Additionally, measurement errors in the variables can have led to biased and inconsistent estimates. In fact, different companies may have varying degrees of digital transformation, and capturing this properly in a single variable can be challenging, therefore, it's important to consider that this potential problematic may have impacted on the results. For a matter of completeness, it is also important to denote that the choice of which variables to include in the

model can greatly influence the results, and thus including irrelevant variables can reduce the model's accuracy, while excluding important ones can lead to biased estimates.

## 6. Conclusions

What has been observed from the results of this work is that, even not being statistically significant, they can provide us some interesting insights regarding the impact of digitalization on the cost of corporate debt.

Taking in consideration that the main idea of this thesis was to understand how much, in terms of sign and magnitude, the relationship among the considered variables was effective, it is important also to connect the output obtained with the, previously analysed, literature review. In fact, as also stated by *Modigliani and Miller (1958, 1963)* highlighting the connections between the cost of debt and the firm value, and by *Van Binsbergen, Graham, and Yang (2010)*, the cost of debt is influenced, directly and not, by various factors, and thus it is not possible to connect its variations to a single variable. Additionally, since *Philippon (2015)*, highlight the fact that advances in financial technology were not able to cut down intermediation costs, it could explain the *heterogenous* results related to *H2* and *H3*. Due to the scarcity of accuracy, under a statistical point of view, it not possible to define in the majority of the cases if the reduction of the cost of corporate debt was influenced by other factors and not by digitalization.

Both the three hypotheses failed to reject the null hypothesis due to lack of statistical significance at conventional levels, and this can be reconducted mainly to the *Digitalization Index* variable. In fact, different companies may have varying degrees of digital transformation, and capturing this properly in a single variable can be challenging, therefore, it's important to consider that this potential problematic may have impacted on the results.

Due to the lack of robustness, even if the results may provide some interesting insights, they cannot be considered reliable, and thus additional research needs to be conducted for understanding more what observed. The model in fact, could be implemented by collecting more data, exploring different measures of digitalization, considering additional control variables, or using different econometric techniques, also for understanding if various other factors at macroeconomic and microeconomic levels are influencing the results. Just in terms of robustness, it might be relevant to increase the sample size, if possible, for. improving the statistical power of the analysis, consider other potential nonlinear relationships or interactions between variables, explore different ways of measuring complex constructs like digitalization.

In conclusion, what can be said about this work is that some relevant information about the impact of digitalization specifically on the cost of corporate debt have been found. However, the lack of significance at conventional levels, and the consequent non reliability of the findings failed to reject the null hypothesis for all the three hypotheses formulated.

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## **8. List of Appendices**

<b>Appendix 1 Market Value Descriptive Statistic</b>	<b>45</b>
<b>Appendix 2 Revenue Descriptive Statistic</b>	<b>45</b>
<b>Appendix 3 Total Capital Descriptive Statistic</b>	<b>46</b>
<b>Appendix 4 EBITDA Descriptive Statistic</b>	<b>46</b>
<b>Appendix 5 Total Assets Descriptive Statistic</b>	<b>46</b>
<b>Appendix 6 H2 Result Denmark</b>	<b>47</b>
<b>Appendix 7 H2 Result Italy</b>	<b>47</b>
<b>Appendix 8 H2 Result Sweden</b>	<b>47</b>
<b>Appendix 9 H2 Result Netherlands</b>	<b>47</b>
<b>Appendix 10 H2 Result Spain</b>	<b>48</b>
<b>Appendix 11 H2 Results France</b>	<b>48</b>
<b>Appendix 12 H2 Result Belgium</b>	<b>48</b>
<b>Appendix 13 H2 Result Norway</b>	<b>48</b>
<b>Appendix 14 H2 Result Germany</b>	<b>49</b>
<b>Appendix 15 H2 Result Ireland</b>	<b>49</b>
<b>Appendix 16 H2 Result Poland</b>	<b>49</b>
<b>Appendix 17 H2 Result Austria</b>	<b>49</b>
<b>Appendix 18 H2 Result Luxemburg</b>	<b>49</b>
<b>Appendix 19 H2 Result Portugal</b>	<b>50</b>
<b>Appendix 20 H2 Result Finland</b>	<b>50</b>
<b>Appendix 21 H3 Result Manufacture of food products</b>	<b>50</b>
<b>Appendix 22 H3 Result Manufacture of beverages</b>	<b>51</b>
<b>Appendix 23 H3 Result Manufacture of wearing apparel</b>	<b>51</b>
<b>Appendix 24 H3 Result Manufacture of leather and related products</b>	<b>51</b>
<b>Appendix 25 H3 Result Manufacture of paper and paper products</b>	<b>51</b>
<b>Appendix 26 H3 Result Manufacture of coke and refined petroleum products</b>	<b>52</b>
<b>Appendix 27 H3 Result Manufacture of chemicals and chemical products</b>	<b>52</b>
<b>Appendix 28 H3 Result Manufacture of pharmaceuticals, medicinal chemical, and botanical products</b>	<b>52</b>
<b>Appendix 29 H3 Result Manufacture of rubber and plastics products</b>	<b>52</b>
<b>Appendix 30 H3 Result Manufacture of other non-metallic mineral products</b>	<b>53</b>

<b>Appendix 31 H3 Result Manufacture of basic metals</b>	<b>53</b>
<b>Appendix 32 H3 Result Manufacture of fabricated metal products, except machinery and equipment</b>	<b>53</b>
<b>Appendix 33 H3 Result Manufacture of computer, electronic, and optical products</b>	<b>53</b>
<b>Appendix 34 H3 Result Manufacture of electrical equipment</b>	<b>54</b>
<b>Appendix 35 H3 Result Manufacture of machinery and equipment not elsewhere classified</b>	<b>54</b>
<b>Appendix 36 H3 Result Manufacture of motor vehicles, trailers, and semi-trailers</b>	<b>54</b>
<b>Appendix 37 H3 Result Manufacture of other transport equipment</b>	<b>54</b>
<b>Appendix 38 H3 Result Manufacture of radio, television, and communication equipment and apparatus</b>	<b>55</b>
<b>Appendix 39 H3 Result Electric power generation, transmission, and distribution</b>	<b>55</b>
<b>Appendix 40 H3 Result Sewerage</b>	<b>55</b>
<b>Appendix 41 H3 Result Construction of buildings</b>	<b>55</b>
<b>Appendix 42 H3 Result Civil engineering</b>	<b>56</b>
<b>Appendix 43 H3 Result Specialized construction activities</b>	<b>56</b>
<b>Appendix 44 H3 Result Wholesale and retail trade and repair of motor vehicles and motorcycles</b>	<b>56</b>
<b>Appendix 45 H3 Result Wholesale trade, except of motor vehicles and motorcycles</b>	<b>56</b>
<b>Appendix 46 H3 Result Retail trade, except of motor vehicles and motorcycles</b>	<b>57</b>
<b>Appendix 47 H3 Result Land transport and transport via pipelines</b>	<b>57</b>
<b>Appendix 48 H3 Result Wholesale trade and commission trade, except of motor vehicles and motorcycles</b>	<b>57</b>
<b>Appendix 49 H3 Result Warehousing and storage</b>	<b>57</b>
<b>Appendix 50 H3 Result Postal and courier activities</b>	<b>58</b>
<b>Appendix 51 H3 Result Accommodation</b>	<b>58</b>
<b>Appendix 52 H3 Result Food and beverage service activities</b>	<b>58</b>
<b>Appendix 53 H3 Result Publishing activities</b>	<b>58</b>
<b>Appendix 54 H3 Result Motion picture, video, and television programme production, sound recording, and music publishing activities</b>	<b>59</b>
<b>Appendix 55 H3 Result Programming and broadcasting activities</b>	<b>59</b>
<b>Appendix 56 H3 Result Telecommunications</b>	<b>59</b>
<b>Appendix 57 H3 Result Computer programming, consultancy, and related activities; information service activities</b>	<b>59</b>

<b>Appendix 58 H3 Result Information service activities</b>	<b>60</b>
<b>Appendix 59 H3 Result Financial service activities, except insurance and pension funding</b>	<b>60</b>
<b>Appendix 60 H3 Result Insurance, reinsurance, and pension funding, except compulsory social security</b>	<b>60</b>
<b>Appendix 61 H3 Result Activities auxiliary to financial service activities, except insurance and pension funding</b>	<b>60</b>
<b>Appendix 62 H3 Result Real estate activities</b>	<b>61</b>
<b>Appendix 63 H3 Result Activities of head offices; management consultancy activities</b>	<b>61</b>
<b>Appendix 64 H3 Result Architectural and engineering activities; technical testing and analysis</b>	<b>61</b>
<b>Appendix 65 H3 Result Scientific research and development</b>	<b>61</b>
<b>Appendix 66 H3 Result Advertising and market research</b>	<b>62</b>
<b>Appendix 67 H3 Result Employment activities</b>	<b>62</b>
<b>Appendix 68 H3 Result Travel agency, tour operator, and other reservation service and related activities</b>	<b>62</b>
<b>Appendix 69 H3 Result Security and investigation activities</b>	<b>62</b>
<b>Appendix 70 H3 Result Services to buildings and landscape activities</b>	<b>63</b>
<b>Appendix 71 H3 Result Human health activities</b>	<b>63</b>
<b>Appendix 72 H3 Result Other professional, scientific, and technical activities</b>	<b>63</b>
<b>Appendix 73 H3 Result Gambling and betting activities</b>	<b>63</b>
<b>Appendix 74 H3 Result Sports activities and amusement and recreation activities</b>	<b>64</b>
<b>Appendix 75 H3 Result Activities of households as employers of domestic personnel</b>	<b>64</b>

## 9. Appendices

### *Appendix 1 Market Value Descriptive Statistic*

<i>Market Value</i>	2016	2017	2018	2019	2020	2021	2022	2023
<b>nobs</b>	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000
<b>mean</b>	0,00103	0,00106	0,00118	0,00098	0,00124	0,00131	0,00139	0,00108
<b>std</b>	0,00146	0,00136	0,00148	0,00131	0,00167	0,00195	0,00194	0,00138
<b>mode</b>	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000
<b>median</b>	0,00059	0,00065	0,00070	0,00056	0,00066	0,00061	0,00071	0,00062
<b>min</b>	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000
<b>max</b>	0,01070	0,01097	0,01026	0,00997	0,01242	0,01598	0,01620	0,01090
<b>skew</b>	3,50908	3,04863	2,73588	3,39136	3,27891	3,67108	3,43327	3,05009
<b>kurtosis</b>	18,84920	15,71035	12,28414	18,44164	17,23594	21,02944	19,60008	15,94208
<b>range</b>	0,01070	0,01097	0,01026	0,00997	0,01242	0,01598	0,01620	0,01090
<b>iqr</b>	0,00099	0,00108	0,00116	0,00104	0,00131	0,00135	0,00148	0,00101
<b>25%</b>	0,00024	0,00026	0,00031	0,00026	0,00032	0,00025	0,00032	0,00029
<b>50%</b>	0,00059	0,00065	0,00070	0,00056	0,00066	0,00061	0,00071	0,00062
<b>75%</b>	0,00123	0,00134	0,00146	0,00130	0,00163	0,00161	0,00180	0,00130

### *Appendix 2 Revenue Descriptive Statistic*

<i>Revenue</i>	2016	2017	2018	2019	2020	2021	2022	2023
<b>nobs</b>	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000
<b>mean</b>	0,63472	0,65078	0,64640	0,61036	0,56518	0,56466	0,60955	0,60899
<b>std</b>	0,55321	0,54051	0,53783	0,48886	0,45511	0,45333	0,47953	0,47399
<b>mode</b>	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000
<b>median</b>	0,57075	0,60350	0,59541	0,58174	0,51617	0,53212	0,58088	0,58107
<b>min</b>	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000
<b>max</b>	4,13772	4,05433	3,97298	3,18262	2,89295	2,78013	3,06285	2,99432
<b>skew</b>	1,72010	1,47894	1,61785	1,41763	1,43420	1,42865	1,35692	1,32439
<b>kurtosis</b>	8,86213	7,41744	8,12297	6,78440	6,76548	6,83643	6,54243	6,31006
<b>range</b>	4,13772	4,05433	3,97298	3,18262	2,89295	2,78013	3,06285	2,99432
<b>iqr</b>	0,70290	0,68345	0,65410	0,62771	0,58964	0,58254	0,61354	0,61184
<b>25%</b>	0,18485	0,21112	0,23240	0,22277	0,20311	0,20534	0,25246	0,23229
<b>50%</b>	0,57075	0,60350	0,59541	0,58174	0,51617	0,53212	0,58088	0,58107
<b>75%</b>	0,88775	0,89457	0,88650	0,85049	0,79275	0,78788	0,86600	0,84413

*Appendix 3 Total Capital Descriptive Statistic*

<b>Total Capital</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>nobs</b>	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000
<b>mean</b>	0,54571	0,56422	0,57242	0,57940	0,58557	0,57837	0,57665	0,58231
<b>std</b>	0,24122	0,23174	0,22474	0,22370	0,22285	0,22466	0,22374	0,22225
<b>mode</b>	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000
<b>median</b>	0,61524	0,62253	0,62589	0,64618	0,64687	0,63204	0,63152	0,64227
<b>min</b>	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000
<b>max</b>	0,98340	0,99692	0,99255	0,99326	0,99233	0,99695	0,98459	0,99358
<b>skew</b>	-0,69712	-0,71803	-0,72431	-0,76845	-0,79397	-0,75842	-0,78781	-0,76216
<b>kurtosis</b>	2,59301	2,74632	2,73026	2,72994	2,79662	2,77544	2,80959	2,76491
<b>range</b>	0,98340	0,99692	0,99255	0,99326	0,99233	0,99695	0,98459	0,99358
<b>iqr</b>	0,32941	0,30139	0,29425	0,29384	0,29435	0,28138	0,26411	0,28086
<b>25%</b>	0,38832	0,42595	0,43730	0,44976	0,45081	0,45860	0,47213	0,45894
<b>50%</b>	0,61524	0,62253	0,62589	0,64618	0,64687	0,63204	0,63152	0,64227
<b>75%</b>	0,71773	0,72734	0,73155	0,74359	0,74516	0,73998	0,73624	0,73980

*Appendix 4 EBITDA Descriptive Statistic*

<b>EBITDA</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>nobs</b>	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000
<b>mean</b>	0,10202	0,10880	0,10705	0,10714	0,09224	0,10787	0,10286	0,10471
<b>std</b>	0,08914	0,08989	0,08504	0,07975	0,08738	0,08254	0,08970	0,08069
<b>mode</b>	0,00000	0,00000	0,00000	0,12430	-0,46009	0,13818	0,12816	-0,33257
<b>median</b>	0,09461	0,10480	0,10023	0,10432	0,08732	0,10518	0,09781	0,10277
<b>min</b>	-0,19891	-0,34467	-0,16455	-0,34959	-0,46009	-0,47836	-0,53810	-0,33257
<b>max</b>	0,62519	0,57579	0,49666	0,46821	0,50267	0,46695	0,45461	0,39742
<b>skew</b>	1,52834	0,89339	1,08571	0,40560	0,17464	-0,21727	-0,89465	0,13347
<b>kurtosis</b>	9,27828	8,77667	6,33002	8,06162	10,14440	9,95870	11,99693	5,44532
<b>range</b>	0,82409	0,92045	0,66121	0,81780	0,96276	0,94531	0,99270	0,72998
<b>iqr</b>	0,08426	0,08947	0,08923	0,08284	0,08845	0,09498	0,09892	0,10430
<b>25%</b>	0,05192	0,05445	0,05158	0,06255	0,04288	0,05649	0,05240	0,04473
<b>50%</b>	0,09461	0,10480	0,10023	0,10432	0,08732	0,10518	0,09781	0,10277
<b>75%</b>	0,13619	0,14392	0,14082	0,14539	0,13133	0,15148	0,15132	0,14903

*Appendix 5 Total Assets Descriptive Statistic*

<b>Total Assets</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>nobs</b>	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000	409,00000
<b>mean</b>	16,28035	16,60866	16,85117	16,97468	17,08608	17,21988	17,29958	17,30127
<b>std</b>	3,41140	2,63142	2,02189	1,97828	1,75547	1,72771	1,70918	1,70454
<b>mode</b>	0,00000	0,00000	17,33271	17,64104	17,54967	17,69021	17,76267	13,17485
<b>median</b>	16,59067	16,64655	16,78526	16,89572	16,97697	17,14040	17,21881	17,22063
<b>min</b>	0,00000	0,00000	0,00000	0,00000	12,79765	12,92168	13,07960	13,17485
<b>max</b>	22,49506	22,46710	22,44555	22,48451	22,43932	22,49096	22,60314	22,59440
<b>skew</b>	-3,03685	-2,88851	-1,19669	-1,29366	0,33461	0,33992	0,33801	0,35829
<b>kurtosis</b>	15,64547	20,30751	13,90792	15,31880	3,01772	2,95192	2,95564	2,96561
<b>range</b>	22,49506	22,46710	22,44555	22,48451	9,64167	9,56928	9,52355	9,41956
<b>iqr</b>	2,71104	2,52977	2,48618	2,47045	2,39284	2,42990	2,45391	2,43151
<b>25%</b>	15,33213	15,52775	15,63405	15,76920	15,90418	16,01766	16,04142	16,05954
<b>50%</b>	16,59067	16,64655	16,78526	16,89572	16,97697	17,14040	17,21881	17,22063
<b>75%</b>	18,04318	18,05753	18,12022	18,23964	18,29702	18,44756	18,49532	18,49106

*Appendix 6 H2 Result Denmark*

<b>DK</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	192						
<b>Constant</b>		1,1558	7,9820	0,1450	0,9080	-100,2610	102,5730
<b>DIGITALIZATION</b>	8	-0,3026	0,9940	-0,3040	0,8120	-12,9350	12,3300
<b>MARKET CAPITAL</b>	192	0,7069	2,8290	0,2500	0,8440	-35,2350	36,6480
<b>EBITDA</b>	192	-0,0460	0,3440	-0,1340	0,9150	-4,4160	4,3240
<b>MARKET VALUE</b>	192	38,3820	91,9280	0,4180	0,7480	-1129,6680	1206,4320
<b>REVENUES</b>	192	-0,7827	1,8930	-0,4140	0,7500	-24,8300	23,2650
<b>TOT ASSETS</b>	192	-0,1222	0,4050	-0,3020	0,8130	-5,2700	5,0250

*Appendix 7 H2 Result Italy*

<b>IT</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	304						
<b>Constant</b>		0,7892	0,4230	1,8670	0,3130	-4,5830	6,1620
<b>DIGITALIZATION</b>	8	-0,0080	0,0050	-1,6580	0,3450	-0,0690	0,0530
<b>MARKET CAPITAL</b>	304	-0,0234	0,0790	-0,2940	0,8180	-1,0330	0,9860
<b>EBITDA</b>	304	0,1514	0,2670	0,5670	0,6720	-3,2430	3,5460
<b>MARKET VALUE</b>	304	-449,2495	135,1670	-3,3240	0,1860	-2166,7130	1268,2140
<b>REVENUES</b>	304	-0,0011	0,0450	-0,0250	0,9840	-0,5670	0,5650
<b>TOT ASSETS</b>	304	-0,0404	0,0230	-1,7210	0,3350	-0,3380	0,2580

*Appendix 8 H2 Result Sweden*

<b>SE</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	480						
<b>Constant</b>		2,0020	2,6790	0,7470	0,5910	-32,0390	36,0430
<b>DIGITALIZATION</b>	8	0,0223	0,0710	0,3140	0,8060	-0,8800	0,9250
<b>MARKET CAPITAL</b>	480	-0,1879	0,1540	-1,2200	0,4370	-2,1440	1,7690
<b>EBITDA</b>	480	-0,7603	1,0290	-0,7390	0,5950	-13,8410	12,3200
<b>MARKET VALUE</b>	480	15,7807	84,6340	0,1860	0,8830	-1059,5970	1091,1580
<b>REVENUES</b>	480	-1,0779	1,8820	-0,5730	0,6690	-24,9850	22,8290
<b>TOT ASSETS</b>	480	-0,0967	0,1400	-0,6900	0,6160	-1,8780	1,6850

*Appendix 9 H2 Result Netherlands*

<b>NL</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	208						
<b>Constant</b>		-1,2466	1,9140	-0,6510	0,6330	-25,5710	23,0780
<b>DIGITALIZATION</b>	8	-0,0077	0,0120	-0,6640	0,6270	-0,1560	0,1400
<b>MARKET CAPITAL</b>	208	0,0320	0,1340	0,2390	0,8510	-1,6700	1,7340
<b>EBITDA</b>	208	0,1508	0,7020	0,2150	0,8650	-8,7640	9,0650
<b>MARKET VALUE</b>	208	-28,9851	28,0660	-1,0330	0,4900	-385,5940	327,6240
<b>REVENUES</b>	208	0,3020	0,2470	1,2220	0,4370	-2,8380	3,4420
<b>TOT ASSETS</b>	208	0,0703	0,1120	0,6250	0,6440	-1,3590	1,4990

*Appendix 10 H2 Result Spain*

<b>ES</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	192						
<b>Constant</b>		2,4874	1,6300	1,5260	0,3690	-18,2250	23,1990
<b>DIGITALIZATION</b>	8	0,0215	0,0150	1,4620	0,3820	-0,1660	0,2090
<b>MARKET CAPITAL</b>	192	-0,2459	0,3540	-0,6940	0,6140	-4,7450	4,2530
<b>EBITDA</b>	192	-1,7283	0,4360	-3,9620	0,1570	-7,2720	3,8150
<b>MARKET VALUE</b>	192	101,6288	23,2340	4,3740	0,1430	-193,5890	396,8470
<b>REVENUES</b>	192	0,4926	0,1250	3,9510	0,1580	-1,0920	2,0770
<b>TOT ASSETS</b>	192	-0,1847	0,0950	-1,9370	0,3030	-1,3960	1,0270

*Appendix 11 H2 Results France*

<b>FR</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	632						
<b>Constant</b>		-0,2523	0,2460	-1,0250	0,4920	-3,3800	2,8750
<b>DIGITALIZATION</b>	8	-0,0254	0,0240	-1,0400	0,4870	-0,3350	0,2840
<b>MARKET CAPITAL</b>	632	-0,1311	0,2420	-0,5430	0,6840	-3,2010	2,9390
<b>EBITDA</b>	632	0,6812	1,5510	0,4390	0,7370	-19,0250	20,3880
<b>MARKET VALUE</b>	632	-13,5919	55,8460	-0,2430	0,8480	-723,1810	695,9970
<b>REVENUES</b>	632	0,0518	0,2370	0,2180	0,8630	-2,9660	3,0690
<b>TOT ASSETS</b>	632	0,0193	0,0150	1,2940	0,4190	-0,1700	0,2080

*Appendix 12 H2 Result Belgium*

<b>BE</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	128						
<b>Constant</b>		-0,0553	0,2280	-0,2420	0,8490	-2,9550	2,8440
<b>DIGITALIZATION</b>	8	-0,0056	0,0090	-0,6490	0,6340	-0,1160	0,1050
<b>MARKET CAPITAL</b>	128	0,0762	0,2060	0,3700	0,7740	-2,5430	2,6950
<b>EBITDA</b>	128	0,0920	0,2130	0,4320	0,7400	-2,6110	2,7950
<b>MARKET VALUE</b>	128	-11,4300	19,8270	-0,5760	0,6670	-263,3610	240,5010
<b>REVENUES</b>	128	-0,0123	0,0240	-0,5180	0,6960	-0,3150	0,2910
<b>TOT ASSETS</b>	128	0,0050	0,0220	0,2290	0,8570	-0,2710	0,2810

*Appendix 13 H2 Result Norway*

<b>NO</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	104						
<b>Constant</b>		-5,1024	8,7980	-0,5800	0,6650	-116,8900	106,6850
<b>DIGITALIZATION</b>	8	0,1719	0,3730	0,4610	0,7250	-4,5670	4,9110
<b>MARKET CAPITAL</b>	104	0,3426	0,3980	0,8610	0,5470	-4,7100	5,3950
<b>EBITDA</b>	104	-0,4201	0,7120	-0,5900	0,6610	-9,4630	8,6230
<b>MARKET VALUE</b>	104	271,1811	433,2500	0,6260	0,6440	-5233,7790	5776,1410
<b>REVENUES</b>	104	0,0340	0,1030	0,3300	0,7970	-1,2720	1,3400
<b>TOT ASSETS</b>	104	0,2518	0,4500	0,5590	0,6750	-5,4720	5,9760

*Appendix 14 H2 Result Germany*

<b>DE</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	552						
<b>Constant</b>		12,3119	17,0470	0,7220	0,6020	-204,2890	228,9120
<b>DIGITALIZATION</b>	8	-0,0711	0,2910	-0,2440	0,8480	-3,7740	3,6320
<b>MARKET CAPITAL</b>	552	-0,4169	21,8080	-0,0190	0,9880	-277,5110	276,6770
<b>EBITDA</b>	552	-7,6080	26,7250	-0,2850	0,8230	-347,1760	331,9610
<b>MARKET VALUE</b>	552	109,5966	301,0670	0,3640	0,7780	-3715,8230	3935,0160
<b>REVENUES</b>	552	0,0836	3,2410	0,0260	0,9840	-41,0970	41,2640
<b>TOT ASSETS</b>	552	-0,7503	0,4760	-1,5760	0,3600	-6,8000	5,2990

*Appendix 15 H2 Result Ireland*

<b>IE</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	96						
<b>Constant</b>		-0,2810 *	0,0130	-21,3870	0,0300	-0,4480	-0,1140
<b>DIGITALIZATION</b>	8	-0,0062 *	0,0000	-39,4280	0,0160	-0,0080	-0,0040
<b>MARKET CAPITAL</b>	96	-0,1594 *	0,0060	-25,4260	0,0250	-0,2390	-0,0800
<b>EBITDA</b>	96	0,0114	0,0020	6,3620	0,0990	-0,0110	0,0340
<b>MARKET VALUE</b>	96	-38,6190 *	0,4650	-83,1090	0,0080	-44,5230	-32,7150
<b>REVENUES</b>	96	0,0368 *	0,0010	46,4560	0,0140	0,0270	0,0470
<b>TOT ASSETS</b>	96	0,0264 *	0,0010	24,6450	0,0260	0,0130	0,0400

*Appendix 16 H2 Result Poland*

<b>PL</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	80						
<b>Constant</b>		-22,5127	6,7160	-3,3520	0,1850	-107,8540	62,8280
<b>DIGITALIZATION</b>	8	0,1786	0,0440	4,0870	0,1530	-0,3770	0,7340
<b>MARKET CAPITAL</b>	80	8,5850	2,5640	3,3490	0,1850	-23,9910	41,1610
<b>EBITDA</b>	80	-23,1879	8,5850	-2,7010	0,2260	-132,2710	85,8950
<b>MARKET VALUE</b>	80	-5000,3785	1883,3580	-2,6550	0,2290	-28900,0000	18900,0000
<b>REVENUES</b>	80	21,5523	6,3180	3,4110	0,1820	-58,7260	101,8310
<b>TOT ASSETS</b>	80	1,0168	0,3070	3,3080	0,1870	-2,8880	4,9220

*Appendix 17 H2 Result Austria*

<b>AT</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	64						
<b>Constant</b>		-2,6899	1,4530	-1,8520	0,3150	-21,1490	15,7690
<b>DIGITALIZATION</b>	8	-0,0078	0,0080	-1,0150	0,4950	-0,1060	0,0900
<b>MARKET CAPITAL</b>	64	-0,3097	0,1270	-2,4370	0,2480	-1,9240	1,3050
<b>EBITDA</b>	64	-1,4040	0,6580	-2,1340	0,2790	-9,7640	6,9560
<b>MARKET VALUE</b>	64	-217,9639	63,6260	-3,4260	0,1810	-1026,4130	590,4850
<b>REVENUES</b>	64	0,5408	0,2040	2,6480	0,2300	-2,0540	3,1360
<b>TOT ASSETS</b>	64	0,1836	0,0970	1,8900	0,3100	-1,0510	1,4180

*Appendix 18 H2 Result Luxembourg*

<b>LU</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	48						
<b>Constant</b>		-0,3097	1,8510	-0,1670	0,8940	-23,8270	23,2070
<b>DIGITALIZATION</b>	8	-0,0092	0,0130	-0,7110	0,6070	-0,1740	0,1560
<b>MARKET CAPITAL</b>	48	0,4142	0,3580	1,1550	0,4540	-4,1410	4,9690
<b>EBITDA</b>	48	0,3101	0,2570	1,2070	0,4400	-2,9550	3,5750
<b>MARKET VALUE</b>	48	15,0592	21,8370	0,6900	0,6160	-262,4070	292,5260
<b>REVENUES</b>	48	-0,0065	0,1360	-0,0470	0,9700	-1,7350	1,7220
<b>TOT ASSETS</b>	48	-0,0024	0,1010	-0,0240	0,9850	-1,2880	1,2830

*Appendix 19 H2 Result Portugal*

<b>PT</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	40						
<b>Constant</b>		-0,1806	0,3910	-0,4620	0,7240	-5,1440	4,7830
<b>DIGITALIZATION</b>	8	-0,0020	0,0050	-0,4010	0,7570	-0,0640	0,0600
<b>MARKET CAPITAL</b>	40	0,0369	0,2380	0,1550	0,9020	-2,9870	3,0610
<b>EBITDA</b>	40	0,2607	0,2500	1,0420	0,4870	-2,9190	3,4400
<b>MARKET VALUE</b>	40	13,3806	20,8520	0,6420	0,6370	-251,5750	278,3360
<b>REVENUES</b>	40	-0,0289	0,0780	-0,3690	0,7750	-1,0240	0,9670
<b>TOT ASSETS</b>	40	0,0139	0,0110	1,3090	0,4150	-0,1210	0,1490

*Appendix 20 H2 Result Finland*

<b>FI</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	152						
<b>Constant</b>		-4,4535	1,8320	-2,4300	0,2480	-27,7360	18,8290
<b>DIGITALIZATION</b>	8	0,0509	0,0540	0,9450	0,5180	-0,6330	0,7350
<b>MARKET CAPITAL</b>	152	0,4055	0,2610	1,5550	0,3640	-2,9080	3,7190
<b>EBITDA</b>	152	0,2509	0,2370	1,0600	0,4820	-2,7580	3,2590
<b>MARKET VALUE</b>	152	-23,8722	28,0670	-0,8510	0,5510	-380,4920	332,7480
<b>REVENUES</b>	152	0,2704	0,1470	1,8350	0,3180	-1,6010	2,1420
<b>TOT ASSETS</b>	152	0,2598	0,1140	2,2710	0,2640	-1,1940	1,7140

*Appendix 21 H3 Result Manufacture of food products*

<b>10</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	72						
<b>Constant</b>		8,3708	6,2310	1,3430	0,4070	-70,8080	87,5490
<b>DIGITALIZATION</b>	8	-0,0929	0,0680	-1,3730	0,4010	-0,9530	0,7670
<b>MARKET CAPITAL</b>	72	0,7328	1,2540	0,5840	0,6630	-15,2000	16,6650
<b>EBITDA</b>	72	-2,0717	2,6900	-0,7700	0,5820	-36,2480	32,1050
<b>VALUE</b>	72	153,4069	129,5120	1,1840	0,4460	-1492,2050	1799,0190
<b>REVENUES</b>	72	-1,6232	2,0970	-0,7740	0,5810	-28,2680	25,0210
<b>TOT ASSETS</b>	72	-0,5710	0,4520	-1,2630	0,4260	-6,3130	5,1710

*Appendix 22 H3 Result Manufacture of beverages*

<b>11</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	72						
<b>Constant</b>		0,0000	0,0000	-0,2650	0,8160	0,0000	0,0000
<b>DIGITALIZATION</b>	8	0,0000	0,0000	0,1020	0,9280	0,0000	0,0000
<b>MARKET CAPITAL</b>	72	0,0008 ***	0,0000	1,8900	0,0000	0,0010	0,0010
<b>EBITDA</b>	72	-0,0190 ***	0,0000	-6,9000	0,0000	-0,0190	-0,0190
<b>VALUE</b>	72	0,0000 ***	0,0000	-6,7600	0,0000	0,0000	0,0000
<b>REVENUES</b>	72	0,0022 ***	0,0000	3,4600	0,0000	0,0020	0,0020
<b>TOT ASSETS</b>	72	0,0001 ***	0,0000	9,0000	0,0000	0,0000	0,0000

*Appendix 23 H3 Result Manufacture of wearing apparel*

<b>14</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	40						
<b>Constant</b>		0,2774	0,3200	0,8670	0,5450	-3,7890	4,3440
<b>DIGITALIZATION</b>	8	-0,0067	0,0070	-0,9850	0,5050	-0,0930	0,0800
<b>MARKET CAPITAL</b>	40	0,0859	0,1320	0,6500	0,6330	-1,5940	1,7660
<b>EBITDA</b>	40	0,0486	0,0970	0,4990	0,7050	-1,1890	1,2870
<b>VALUE</b>	40	-6,9862	4,6470	-1,5040	0,3740	-66,0270	52,0540
<b>REVENUES</b>	40	0,0209	0,0260	0,7980	0,5710	-0,3130	0,3540
<b>TOT ASSETS</b>	40	-0,0189	0,0240	-0,7860	0,5760	-0,3250	0,2870

*Appendix 24 H3 Result Manufacture of leather and related products*

<b>15</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	8						
<b>Constant</b>		-1,8337	0,4310	-4,2560	0,1470	-7,3090	3,6410
<b>DIGITALIZATION</b>	8	-0,0383	0,0060	-6,1600	0,1020	-0,1170	0,0410
<b>MARKET CAPITAL</b>	8	0,6921	0,0920	7,5180	0,0840	-0,4780	1,8620
<b>EBITDA</b>	8	-0,5988	0,1450	-4,1240	0,1510	-2,4440	1,2460
<b>VALUE</b>	8	25,2450	10,7560	2,3470	0,2560	-111,4200	161,9100
<b>REVENUES</b>	8	0,3329	0,0450	7,4300	0,0850	-0,2360	0,9020
<b>TOT ASSETS</b>	8	0,0788	0,0270	2,8990	0,2110	-0,2670	0,4240

*Appendix 25 H3 Result Manufacture of paper and paper products*

<b>17</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	16						
<b>Constant</b>		1,5344	2,5120	0,6110	0,6510	-30,3890	33,4570
<b>DIGITALIZATION</b>	8	0,0056	0,0200	0,2860	0,8230	-0,2420	0,2540
<b>MARKET CAPITAL</b>	16	0,5555	0,6870	0,8090	0,5670	-8,1690	9,2800
<b>EBITDA</b>	16	0,3294	0,4350	0,7560	0,5880	-5,2030	5,8620
<b>VALUE</b>	16	-134,1859	116,4640	-1,1520	0,4550	-1614,0040	1345,6320
<b>REVENUES</b>	16	-0,1262	0,1640	-0,7690	0,5820	-2,2110	1,9580
<b>TOT ASSETS</b>	16	-0,1084	0,1790	-0,6050	0,6540	-2,3850	2,1680

*Appendix 26 H3 Result Manufacture of coke and refined petroleum products*

19	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	16						
Constant		-0,6325	0,0890	-7,1390	0,0890	-1,7580	0,4930
<b>DIGITALIZATION</b>	8	-0,0061	0,0050	-1,2490	0,4300	-0,0680	0,0560
<b>MARKET CAPITAL</b>	16	0,4492	0,0740	6,0360	0,1050	-0,4960	1,3950
<b>EBITDA</b>	16	0,6813	0,0870	7,8510	0,0810	-0,4210	1,7840
<b>VALUE</b>	16	166,8632	25,2840	6,5990	0,0960	-154,4050	488,1320
<b>REVENUES</b>	16	-0,1241	0,0190	-6,5490	0,0960	-0,3650	0,1170
<b>TOT ASSETS</b>	16	0,0187	0,0030	5,7330	0,1100	-0,0230	0,0600

*Appendix 27 H3 Result Manufacture of chemicals and chemical products*

20	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	152						
Constant		-3,7496	5,2090	-0,7200	0,6030	-69,9340	62,4340
<b>DIGITALIZATION</b>	8	0,0443	0,0780	0,5670	0,6720	-0,9470	1,0360
<b>MARKET CAPITAL</b>	152	0,0533	0,4550	0,1170	0,9260	-5,7240	5,8310
<b>EBITDA</b>	152	-0,1613	0,1990	-0,8090	0,5670	-2,6940	2,3710
<b>VALUE</b>	152	295,0544	398,9270	0,7400	0,5950	-4773,7890	5363,8970
<b>REVENUES</b>	152	-0,0064	0,1380	-0,0470	0,9700	-1,7570	1,7440
<b>TOT ASSETS</b>	152	0,1903	0,2790	0,6820	0,6190	-3,3540	3,7350

*Appendix 28 H3 Result Manufacture of pharmaceuticals, medicinal chemical, and botanical products*

21	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	152						
Constant		-0,4520	6,6930	-0,0680	0,9570	-85,4950	84,5910
<b>DIGITALIZATION</b>	8	0,0557	0,8750	0,0640	0,9600	-11,0670	11,1780
<b>MARKET CAPITAL</b>	152	0,9962	4,2070	0,2370	0,8520	-52,4580	54,4510
<b>EBITDA</b>	152	0,1020	1,1270	0,0910	0,9430	-14,2150	14,4190
<b>VALUE</b>	152	46,4571	223,2430	0,2080	0,8690	-2790,1090	2883,0230
<b>REVENUES</b>	152	-0,4417	1,7750	-0,2490	0,8450	-23,0010	22,1180
<b>TOT ASSETS</b>	152	-0,0287	0,2670	-0,1070	0,9320	-3,4240	3,3670

*Appendix 29 H3 Result Manufacture of rubber and plastics products*

22	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	16						
Constant		-0,0005	0,0140	-0,0350	0,9780	-0,1790	0,1780
<b>DIGITALIZATION</b>	8	0,0095	0,0020	5,5590	0,1130	-0,0120	0,0310
<b>MARKET CAPITAL</b>	16	-0,0592	0,0130	-4,4560	0,1410	-0,2280	0,1100
<b>EBITDA</b>	16	0,0345	0,0600	0,5750	0,6680	-0,7270	0,7960
<b>VALUE</b>	16	-16,2308	1,5640	-10,3750	0,0610	-36,1090	3,6470
<b>REVENUES</b>	16	-0,0076	0,0060	-1,3460	0,4070	-0,0790	0,0640
<b>TOT ASSETS</b>	16	0,0061	0,0010	6,6610	0,0950	-0,0060	0,0180

*Appendix 30 H3 Result Manufacture of other non-metallic mineral products*

23	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	48						
Constant		-2,3082	1,5830	-1,4580	0,3830	-22,4260	17,8100
<b>DIGITALIZATION</b>	8	-0,0190	0,0170	-1,1310	0,4610	-0,2330	0,1950
<b>MARKET CAPITAL</b>	48	-0,3184	0,1160	-2,7520	0,2220	-1,7880	1,1510
<b>EBITDA</b>	48	-1,1651	0,7700	-1,5130	0,3720	-10,9520	8,6210
<b>VALUE</b>	48	-193,6266	74,3580	-2,6040	0,2330	-1138,4300	751,1770
<b>REVENUES</b>	48	0,4881	0,2210	2,2060	0,2710	-2,3230	3,2990
<b>TOT ASSETS</b>	48	0,1589	0,1050	1,5100	0,3720	-1,1780	1,4960

*Appendix 31 H3 Result Manufacture of basic metals*

24	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	32						
Constant		3,7257	0,4480	8,3080	0,0760	-1,9730	9,4240
<b>DIGITALIZATION</b>	8	0,0300	0,0040	7,2530	0,0870	-0,0230	0,0830
<b>MARKET CAPITAL</b>	32	-0,0320	0,0370	-0,8620	0,5470	-0,5040	0,4400
<b>EBITDA</b>	32	-0,0233	0,0270	-0,8620	0,5470	-0,3660	0,3200
<b>VALUE</b>	32	98,8567	12,4320	7,9520	0,0800	-59,1100	256,8230
<b>REVENUES</b>	32	0,2868	0,0260	11,1660	0,0570	-0,0400	0,6130
<b>TOT ASSETS</b>	32	-0,2390	0,0270	-8,7270	0,0730	-0,5870	0,1090

*Appendix 32 H3 Result Manufacture of fabricated metal products, except machinery and equipment*

25	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		-2,6008	3,9590	-0,6570	0,6300	-52,9040	47,7030
<b>DIGITALIZATION</b>	8	-0,0557	0,0400	-1,4030	0,3940	-0,5600	0,4490
<b>MARKET CAPITAL</b>	8	-0,0252	0,0930	-0,2720	0,8310	-1,2020	1,1510
<b>EBITDA</b>	8	0,0408	0,1100	0,3720	0,7730	-1,3510	1,4320
<b>VALUE</b>	8	21,5149	60,4070	0,3560	0,7820	-746,0330	789,0630
<b>REVENUES</b>	8	0,0600	0,0700	0,8550	0,5500	-0,8320	0,9520
<b>TOT ASSETS</b>	8	0,1483	0,2250	0,6580	0,6300	-2,7160	3,0120

*Appendix 33 H3 Result Manufacture of computer, electronic, and optical products*

26	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	112						
Constant		1,7641	2,4520	0,7190	0,6030	-29,3960	32,9240
<b>DIGITALIZATION</b>	8	0,0122	0,0580	0,2120	0,8670	-0,7220	0,7460
<b>MARKET CAPITAL</b>	112	-0,8670	1,2510	-0,6930	0,6140	-16,7590	15,0250
<b>EBITDA</b>	112	0,0737	0,1740	0,4230	0,7450	-2,1410	2,2880
<b>VALUE</b>	112	25,8156	63,2940	0,4080	0,7530	-778,4060	830,0370
<b>REVENUES</b>	112	-0,0522	0,3920	-0,1330	0,9160	-5,0360	4,9310
<b>TOT ASSETS</b>	112	-0,0752	0,1680	-0,4470	0,7320	-2,2120	2,0620

*Appendix 34 H3 Result Manufacture of electrical equipment*

27	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	104						
Constant		-0,1082	0,5510	-0,1960	0,8770	-7,1070	6,8900
<b>DIGITALIZATION</b>	8	-0,0163	0,0140	-1,1500	0,4560	-0,1960	0,1630
<b>MARKET CAPITAL</b>	104	-0,0547	0,2150	-0,2550	0,8410	-2,7810	2,6720
<b>EBITDA</b>	104	0,2258	0,2730	0,8260	0,5610	-3,2480	3,7000
<b>VALUE</b>	104	-19,2197	7,2180	-2,6630	0,2290	-110,9280	72,4880
<b>REVENUES</b>	104	0,0329	0,0510	0,6410	0,6370	-0,6190	0,6850
<b>TOT ASSETS</b>	104	0,0091	0,0250	0,3610	0,7800	-0,3120	0,3310

*Appendix 35 H3 Result Manufacture of machinery and equipment not elsewhere classified*

28	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	168						
Constant		0,7283	0,5860	1,2420	0,4310	-6,7200	8,1770
<b>DIGITALIZATION</b>	8	-0,0131	0,0200	-0,6420	0,6370	-0,2720	0,2460
<b>MARKET CAPITAL</b>	168	0,0063	0,0750	0,0840	0,9470	-0,9460	0,9580
<b>EBITDA</b>	168	0,0399	0,1160	0,3450	0,7890	-1,4320	1,5110
<b>VALUE</b>	168	-7,2441	24,6930	-0,2930	0,8180	-320,9920	306,5040
<b>REVENUES</b>	168	0,0559	0,0510	1,1000	0,4700	-0,5900	0,7020
<b>TOT ASSETS</b>	168	-0,0480	0,0380	-1,2490	0,4300	-0,5360	0,4400

*Appendix 36 H3 Result Manufacture of motor vehicles, trailers, and semi-trailers*

29	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	104						
Constant		0,4325	0,3230	1,3400	0,4080	-3,6690	4,5340
<b>DIGITALIZATION</b>	8	0,0103	0,0130	0,7820	0,5780	-0,1570	0,1770
<b>MARKET CAPITAL</b>	104	0,2632	0,2280	1,1550	0,4540	-2,6320	3,1580
<b>EBITDA</b>	104	-0,2373	0,3440	-0,6900	0,6160	-4,6070	4,1330
<b>VALUE</b>	104	-6,2095	17,4930	-0,3550	0,7830	-228,4770	216,0580
<b>REVENUES</b>	104	0,0115	0,0410	0,2790	0,8270	-0,5140	0,5380
<b>TOT ASSETS</b>	104	-0,0259	0,0190	-1,3470	0,4070	-0,2700	0,2180

*Appendix 37 H3 Result Manufacture of other transport equipment*

30	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	80						
Constant		-1,0809	0,5050	-2,1410	0,2780	-7,4960	5,3340
<b>DIGITALIZATION</b>	8	-0,0677	0,0200	-3,3600	0,1840	-0,3240	0,1880
<b>MARKET CAPITAL</b>	80	-3,4309	1,1930	-2,8760	0,2130	-18,5860	11,7240
<b>EBITDA</b>	80	-7,8176	2,6170	-2,9870	0,2060	-41,0700	25,4350
<b>VALUE</b>	80	-45,6732	11,3960	-4,0080	0,1560	-190,4670	99,1200
<b>REVENUES</b>	80	1,7693	0,5650	3,1320	0,1970	-5,4090	8,9480
<b>TOT ASSETS</b>	80	0,2427	0,0540	4,5190	0,1390	-0,4400	0,9250

*Appendix 38 H3 Result Manufacture of radio, television, and communication equipment and apparatus*

32	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	88						
Constant		-0,1283	0,1200	-1,0700	0,4780	-1,6510	1,3950
<b>DIGITALIZATION</b>	8	0,0024	0,0040	0,5760	0,6670	-0,0500	0,0550
<b>MARKET CAPITAL</b>	88	0,0247	0,0240	1,0330	0,4900	-0,2790	0,3290
<b>EBITDA</b>	88	-0,0966	0,0540	-1,7810	0,3260	-0,7860	0,5920
<b>VALUE</b>	88	-0,6427	1,1720	-0,5480	0,6810	-15,5350	14,2500
<b>REVENUES</b>	88	0,0869	0,0450	1,9190	0,3060	-0,4890	0,6620
<b>TOT ASSETS</b>	88	0,0066	0,0070	1,0120	0,4960	-0,0760	0,0900

*Appendix 39 H3 Result Electric power generation, transmission, and distribution*

35	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	184						
Constant		0,7852	0,9790	0,8020	0,5700	-11,6530	13,2230
<b>DIGITALIZATION</b>	8	0,0515	0,0790	0,6480	0,6340	-0,9580	1,0610
<b>MARKET CAPITAL</b>	184	-0,0677	0,2490	-0,2720	0,8310	-3,2270	3,0920
<b>EBITDA</b>	184	1,3544	1,7980	0,7530	0,5890	-21,4940	24,2020
<b>VALUE</b>	184	-91,8066	128,0020	-0,7170	0,6040	-1718,2220	1534,6090
<b>REVENUES</b>	184	-0,2590	0,3960	-0,6540	0,6310	-5,2900	4,7720
<b>TOT ASSETS</b>	184	-0,0444	0,0550	-0,8040	0,5690	-0,7460	0,6580

*Appendix 40 H3 Result Sewerage*

37	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		0,6090	0,4180	1,4560	0,3830	-4,7080	5,9260
<b>DIGITALIZATION</b>	8	-0,0187	0,0130	-1,4080	0,3930	-0,1880	0,1500
<b>MARKET CAPITAL</b>	8	0,4002	0,2400	1,6670	0,3440	-2,6500	3,4500
<b>EBITDA</b>	8	0,8308	0,7560	1,0990	0,4700	-8,7790	10,4400
<b>VALUE</b>	8	-5,0433	28,2330	-0,1790	0,8870	-363,7830	353,6960
<b>REVENUES</b>	8	-0,1015	0,1540	-0,6600	0,6280	-2,0550	1,8520
<b>TOT ASSETS</b>	8	-0,0436	0,0270	-1,5850	0,3580	-0,3930	0,3060

*Appendix 41 H3 Result Construction of buildings*

41	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	40						
Constant		190,5557	63,8580	2,9840	0,2060	-620,8380	1001,9500
<b>DIGITALIZATION</b>	8	-5,6290	2,9630	-1,9000	0,3080	-43,2810	32,0230
<b>MARKET CAPITAL</b>	40	-53,3706	12,0240	-4,4390	0,1410	-206,1500	99,4090
<b>EBITDA</b>	40	79,2965	37,5470	2,1120	0,2820	-397,7850	556,3780
<b>VALUE</b>	40	-20560,0000	10100,0000	-2,0340	0,2910	-149000,0000	108000,0000
<b>REVENUES</b>	40	-30,5044	14,5870	-2,0910	0,2840	-215,8490	154,8410
<b>TOT ASSETS</b>	40	-8,7239	3,2550	-2,6800	0,2270	-50,0860	32,6380

*Appendix 42 H3 Result Civil engineering*

42	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	32						
Constant		-0,2613	0,1040	-2,5000	0,2420	-1,5890	1,0660
<b>DIGITALIZATION</b>	8	-0,0007	0,0050	-0,1320	0,9160	-0,0710	0,0690
<b>MARKET CAPITAL</b>	32	0,1793	0,0610	2,9320	0,2090	-0,5980	0,9560
<b>EBITDA</b>	32	-1,4332	0,4290	-3,3430	0,1850	-6,8810	4,0150
<b>VALUE</b>	32	-86,9780	20,0230	-4,3440	0,1440	-341,3930	167,4370
<b>REVENUES</b>	32	0,4997	0,1300	3,8360	0,1620	-1,1550	2,1550
<b>TOT ASSETS</b>	32	0,0054	0,0040	1,3440	0,4070	-0,0450	0,0560

*Appendix 43 H3 Result Specialized construction activities*

43	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		1,0056	0,9220	1,0900	0,4720	-10,7120	12,7230
<b>DIGITALIZATION</b>	8	0,0068	0,0270	0,2550	0,8410	-0,3340	0,3470
<b>MARKET CAPITAL</b>	8	0,0218	0,0570	0,3840	0,7670	-0,7000	0,7430
<b>EBITDA</b>	8	0,2534	0,2180	1,1620	0,4520	-2,5180	3,0250
<b>VALUE</b>	8	-5,0963	3,1490	-1,6180	0,3520	-45,1090	34,9170
<b>REVENUES</b>	8	-0,1774	0,1070	-1,6610	0,3450	-1,5340	1,1790
<b>TOT ASSETS</b>	8	-0,0671	0,0670	-0,9960	0,5010	-0,9220	0,7880

*Appendix 44 H3 Result Wholesale and retail trade and repair of motor vehicles and motorcycles*

45	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		4,6811	0,4900	9,5540	0,0660	-1,5450	10,9070
<b>DIGITALIZATION</b>	8	-0,1248 **	0,0070	-17,2790	0,0370	-0,2160	-0,0330
<b>MARKET CAPITAL</b>	8	-0,0570	0,0490	-1,1560	0,4540	-0,6830	0,5690
<b>EBITDA</b>	8	-0,1782	0,0530	-3,3310	0,1860	-0,8580	0,5010
<b>VALUE</b>	8	-512,3378 **	33,3200	-15,3760	0,0410	-935,7100	-88,9660
<b>REVENUES</b>	8	-0,0329	0,0160	-2,0280	0,2920	-0,2390	0,1730
<b>TOT ASSETS</b>	8	-0,2726	0,0280	-9,8090	0,0650	-0,6260	0,0810

*Appendix 45 H3 Result Wholesale trade, except of motor vehicles and motorcycles*

46	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	80						
Constant		-0,8942	0,8820	-1,0140	0,4960	-12,1010	10,3120
<b>DIGITALIZATION</b>	8	-0,0373	0,0640	-0,5800	0,6660	-0,8550	0,7810
<b>MARKET CAPITAL</b>	80	0,0978	0,1950	0,5020	0,7040	-2,3800	2,5750
<b>EBITDA</b>	80	0,3750	0,6010	0,6240	0,6450	-7,2670	8,0170
<b>VALUE</b>	80	-8,0098	14,3230	-0,5590	0,6750	-189,9990	173,9790
<b>REVENUES</b>	80	0,0646	0,0600	1,0770	0,4760	-0,6980	0,8270
<b>TOT ASSETS</b>	80	0,0500	0,0530	0,9380	0,5200	-0,6280	0,7280

*Appendix 46 H3 Result Retail trade, except of motor vehicles and motorcycles*

47	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	112						
Constant		12,6813	15,6470	0,8100	0,5660	-186,1310	211,4940
<b>DIGITALIZATION</b>	8	-0,3597	0,7200	-0,4990	0,7050	-9,5100	8,7910
<b>MARKET CAPITAL</b>	112	-2,0257	20,2970	-0,1000	0,9370	-259,9210	255,8690
<b>EBITDA</b>	112	-5,8820	24,6030	-0,2390	0,8510	-318,4960	306,7320
<b>VALUE</b>	112	120,5597	276,9720	0,4350	0,7390	-3398,7070	3639,8260
<b>REVENUES</b>	112	-0,0188	2,9940	-0,0060	0,9960	-38,0650	38,0280
<b>TOT ASSETS</b>	112	-0,7207	0,4430	-1,6270	0,3510	-6,3480	4,9060

*Appendix 47 H3 Result Land transport and transport via pipelines*

49	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	16						
Constant		8,7502	4,8750	1,7950	0,3240	-53,1910	70,6910
<b>DIGITALIZATION</b>	8	0,2450	0,3680	0,6650	0,6260	-4,4350	4,9240
<b>MARKET CAPITAL</b>	16	-0,9866	1,2210	-0,8080	0,5670	-16,5020	14,5290
<b>EBITDA</b>	16	1,9572	1,8380	1,0650	0,4800	-21,3970	25,3110
<b>VALUE</b>	16	33,1278	322,0200	0,1030	0,9350	-4058,5180	4124,7740
<b>REVENUES</b>	16	-0,1218	0,4730	-0,2570	0,8400	-6,1380	5,8940
<b>TOT ASSETS</b>	16	-0,5304	0,3050	-1,7380	0,3320	-4,4070	3,3460

*Appendix 48 H3 Result Wholesale trade and commission trade, except of motor vehicles and motorcycles*

51	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	16						
Constant		0,0402	0,0480	0,8340	0,5580	-0,5730	0,6530
<b>DIGITALIZATION</b>	8	0,0083	0,0010	6,6070	0,0960	-0,0080	0,0240
<b>MARKET CAPITAL</b>	16	-0,0800	0,0090	-9,0450	0,0700	-0,1920	0,0320
<b>EBITDA</b>	16	-0,0078	0,0060	-1,1980	0,4430	-0,0900	0,0740
<b>VALUE</b>	16	8,0705	1,3910	5,8030	0,1090	-9,6000	25,7410
<b>REVENUES</b>	16	0,0085	0,0030	2,4410	0,2480	-0,0360	0,0530
<b>TOT ASSETS</b>	16	0,0008	0,0030	0,3050	0,8120	-0,0340	0,0350

*Appendix 49 H3 Result Warehousing and storage*

52	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	24						
Constant		-0,0410	0,3680	-0,1120	0,9290	-4,7120	4,6290
<b>DIGITALIZATION</b>	8	0,0009	0,0040	0,2060	0,8700	-0,0520	0,0530
<b>MARKET CAPITAL</b>	24	0,0107	0,2420	0,0440	0,9720	-3,0680	3,0900
<b>EBITDA</b>	24	-0,4171	0,5380	-0,7750	0,5800	-7,2550	6,4210
<b>VALUE</b>	24	-7,1756	121,6170	-0,0590	0,9620	-1552,4610	1538,1100
<b>REVENUES</b>	24	0,0813	0,6910	0,1180	0,9250	-8,6950	8,8580
<b>TOT ASSETS</b>	24	0,0025	0,0190	0,1340	0,9150	-0,2390	0,2440

*Appendix 50 H3 Result Postal and courier activities*

<b>53</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	24						
<b>Constant</b>		0,0429	0,0510	0,8420	0,5540	-0,6040	0,6900
<b>DIGITALIZATION</b>	8	0,0012	0,0010	2,0250	0,2920	-0,0060	0,0090
<b>MARKET CAPITAL</b>	24	-0,0012	0,0150	-0,0790	0,9500	-0,1920	0,1890
<b>EBITDA</b>	24	-0,0136	0,0760	-0,1780	0,8880	-0,9820	0,9540
<b>VALUE</b>	24	30,9333	11,9490	2,5890	0,2350	-120,8980	182,7650
<b>REVENUES</b>	24	-0,0123	0,0130	-0,9120	0,5290	-0,1830	0,1590
<b>TOT ASSETS</b>	24	-0,0021	0,0030	-0,8400	0,5550	-0,0350	0,0300

*Appendix 51 H3 Result Accommodation*

<b>55</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	16						
<b>Constant</b>		0,9515	0,1160	8,1880	0,0770	-0,5250	2,4280
<b>DIGITALIZATION</b>	8	0,0385	0,0040	10,8250	0,0590	-0,0070	0,0840
<b>MARKET CAPITAL</b>	16	0,6594	0,0660	9,9850	0,0640	-0,1800	1,4980
<b>EBITDA</b>	16	-0,2808	0,0540	-5,1850	0,1210	-0,9690	0,4070
<b>VALUE</b>	16	-56,7158	6,3810	-8,8880	0,0710	-137,7990	24,3680
<b>REVENUES</b>	16	0,2943	0,0390	7,5130	0,0840	-0,2030	0,7920
<b>TOT ASSETS</b>	16	-0,0947	0,0090	-10,1010	0,0630	-0,2140	0,0240

*Appendix 52 H3 Result Food and beverage service activities*

<b>56</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	8						
<b>Constant</b>		0,4179	0,2200	1,8970	0,3090	-2,3800	3,2160
<b>DIGITALIZATION</b>	8	-0,0706	0,0170	-4,1790	0,1500	-0,2850	0,1440
<b>MARKET CAPITAL</b>	8	-0,2727	0,0720	-3,7960	0,1640	-1,1860	0,6400
<b>EBITDA</b>	8	0,2658	0,0820	3,2460	0,1900	-0,7750	1,3060
<b>VALUE</b>	8	-5,7761	1,6950	-3,4070	0,1820	-27,3170	15,7650
<b>REVENUES</b>	8	-0,1155	0,0450	-2,5710	0,2360	-0,6860	0,4550
<b>TOT ASSETS</b>	8	-0,0080	0,0110	-0,7230	0,6010	-0,1480	0,1320

*Appendix 53 H3 Result Publishing activities*

<b>58</b>	<b>N. obs</b>	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0,025</b>	<b>0,975]</b>
<b>COST OF DEBT</b>	32						
<b>Constant</b>		-1,1078	1,8030	-0,6140	0,6490	-24,0180	21,8020
<b>DIGITALIZATION</b>	8	-0,0072	0,0090	-0,7630	0,5850	-0,1280	0,1130
<b>MARKET CAPITAL</b>	32	0,0108	0,1340	0,0800	0,9490	-1,6920	1,7130
<b>EBITDA</b>	32	0,0860	0,6820	0,1260	0,9200	-8,5740	8,7460
<b>VALUE</b>	32	-25,0250	27,1700	-0,9210	0,5260	-370,2460	320,1960
<b>REVENUES</b>	32	0,2615	0,2300	1,1350	0,4600	-2,6650	3,1880
<b>TOT ASSETS</b>	32	0,0639	0,1060	0,6030	0,6550	-1,2830	1,4110

*Appendix 54 H3 Result Motion picture, video, and television programme production, sound recording, and music publishing activities*

59	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	16						
Constant		-3,2417	8,2450	-0,3930	0,7620	-108,0000	101,5160
<b>DIGITALIZATION</b>	8	-0,0195	0,0410	-0,4780	0,7160	-0,5370	0,4980
<b>MARKET CAPITAL</b>	16	0,3592	0,8150	0,4410	0,7360	-10,0000	10,7180
<b>EBITDA</b>	16	-0,1154	0,3520	-0,3280	0,7980	-4,5840	4,3530
<b>VALUE</b>	16	-36,4199	82,8540	-0,4400	0,7360	-1089,1850	1016,3450
<b>REVENUES</b>	16	0,2011	0,4350	0,4620	0,7240	-5,3250	5,7270
<b>TOT ASSETS</b>	16	0,1720	0,4400	0,3910	0,7630	-5,4230	5,7670

*Appendix 55 H3 Result Programming and broadcasting activities*

60	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	16						
Constant		5,9329	1,2130	4,8900	0,1280	-9,4820	21,3470
<b>DIGITALIZATION</b>	8	0,0142	0,0070	2,1870	0,2730	-0,0680	0,0970
<b>MARKET CAPITAL</b>	16	-0,1578	0,0260	-6,1390	0,1030	-0,4840	0,1690
<b>EBITDA</b>	16	0,0172	0,0520	0,3300	0,7970	-0,6460	0,6800
<b>VALUE</b>	16	29,2909	26,2570	1,1160	0,4650	-304,3380	362,9200
<b>REVENUES</b>	16	-0,5133	0,1020	-5,0450	0,1250	-1,8060	0,7800
<b>TOT ASSETS</b>	16	-0,2914	0,0610	-4,7600	0,1320	-1,0690	0,4860

*Appendix 56 H3 Result Telecommunications*

61	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	152						
Constant		-1,6189	1,4080	-1,1500	0,4560	-19,5080	16,2700
<b>DIGITALIZATION</b>	8	-0,0017	0,0120	-0,1390	0,9120	-0,1540	0,1510
<b>MARKET CAPITAL</b>	152	0,0979	0,2070	0,4740	0,7180	-2,5280	2,7240
<b>EBITDA</b>	152	0,0111	0,3630	0,0300	0,9810	-4,6040	4,6260
<b>VALUE</b>	152	48,8630	34,0390	1,4350	0,3870	-383,6500	481,3760
<b>REVENUES</b>	152	0,0511	0,0870	0,5860	0,6630	-1,0570	1,1590
<b>TOT ASSETS</b>	152	0,0797	0,0700	1,1420	0,4580	-0,8070	0,9670

*Appendix 57 H3 Result Computer programming, consultancy, and related activities; information service activities*

62	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	72						
Constant		-1,8576	1,2210	-1,5210	0,3700	-17,3710	13,6560
<b>DIGITALIZATION</b>	8	-0,0260	0,0230	-1,1470	0,4570	-0,3140	0,2620
<b>MARKET CAPITAL</b>	72	-0,2099	0,1210	-1,7370	0,3320	-1,7450	1,3250
<b>EBITDA</b>	72	0,0982	0,2570	0,3810	0,7680	-3,1720	3,3680
<b>VALUE</b>	72	-8,4829	107,3580	-0,0790	0,9500	-1372,5940	1355,6280
<b>REVENUES</b>	72	0,1659	0,2490	0,6650	0,6260	-3,0020	3,3340
<b>TOT ASSETS</b>	72	0,1262	0,0770	1,6380	0,3490	-0,8530	1,1050

*Appendix 58 H3 Result Information service activities*

63	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	40						
Constant		10,3142	2,5730	4,0080	0,1560	-22,3840	43,0130
<b>DIGITALIZATION</b>	8	0,0243	0,0400	0,6020	0,6550	-0,4880	0,5360
<b>MARKET CAPITAL</b>	40	2,2984	0,6090	3,7740	0,1650	-5,4400	10,0370
<b>EBITDA</b>	40	0,8581	0,8990	0,9550	0,5150	-10,5600	12,2770
<b>VALUE</b>	40	-52,6055	19,7350	-2,6660	0,2280	-303,3670	198,1560
<b>REVENUES</b>	40	-1,0888	0,5650	-1,9270	0,3050	-8,2670	6,0890
<b>TOT ASSETS</b>	40	-0,8083	0,2020	-3,9950	0,1560	-3,3790	1,7620

*Appendix 59 H3 Result Financial service activities, except insurance and pension funding*

64	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	480						
Constant		-0,3546	0,1480	-2,3940	0,2520	-2,2370	1,5270
<b>DIGITALIZATION</b>	8	-0,0396	0,0170	-2,3180	0,2590	-0,2560	0,1770
<b>MARKET CAPITAL</b>	480	-0,1176	0,1180	-0,9980	0,5010	-1,6140	1,3790
<b>EBITDA</b>	480	0,6743	0,7560	0,8920	0,5360	-8,9270	10,2750
<b>VALUE</b>	480	-0,0811	24,0120	-0,0030	0,9980	-305,1810	305,0190
<b>REVENUES</b>	480	0,0531	0,1210	0,4390	0,7370	-1,4840	1,5910
<b>TOT ASSETS</b>	480	0,0243	0,0090	2,6440	0,2300	-0,0930	0,1410

*Appendix 60 H3 Result Insurance, reinsurance, and pension funding, except compulsory social security*

65	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	128						
Constant		0,1371	0,4170	0,3280	0,7980	-5,1650	5,4390
<b>DIGITALIZATION</b>	8	0,0017	0,0030	0,6450	0,6350	-0,0320	0,0350
<b>MARKET CAPITAL</b>	128	-0,2619	0,0800	-3,2870	0,1880	-1,2740	0,7500
<b>EBITDA</b>	128	-0,3928	0,4320	-0,9100	0,5300	-5,8770	5,0910
<b>VALUE</b>	128	-21,5998	35,7720	-0,6040	0,6540	-476,1250	432,9250
<b>REVENUES</b>	128	0,0337	0,0200	1,6590	0,3450	-0,2250	0,2920
<b>TOT ASSETS</b>	128	-0,0036	0,0210	-0,1720	0,8920	-0,2720	0,2650

*Appendix 61 H3 Result Activities auxiliary to financial service activities, except insurance and pension funding*

67	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		-1,0871	31,6790	-0,0340	0,9780	-403,6030	401,4290
<b>DIGITALIZATION</b>	8	-0,0874	0,3450	-0,2530	0,8420	-4,4700	4,2950
<b>MARKET CAPITAL</b>	8	-0,8621	2,8410	-0,3030	0,8120	-36,9640	35,2400
<b>EBITDA</b>	8	-27,9778	87,9490	-0,3180	0,8040	-1145,4740	1089,5180
<b>VALUE</b>	8	-937,6157	2156,5040	-0,4350	0,7390	-28300,0000	26500,0000
<b>REVENUES</b>	8	10,4659	21,4960	0,4870	0,7120	-262,6610	283,5930
<b>TOT ASSETS</b>	8	0,0821	1,9190	0,0430	0,9730	-24,3030	24,4680

*Appendix 62 H3 Result Real estate activities*

68	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	160						
Constant		3,2664	0,9650	3,3860	0,1830	-8,9930	15,5250
<b>DIGITALIZATION</b>	8	0,0505	0,0220	2,3220	0,2590	-0,2260	0,3270
<b>MARKET CAPITAL</b>	160	-0,3840	0,1090	-3,5110	0,1770	-1,7740	1,0060
<b>EBITDA</b>	160	-1,0007	0,2830	-3,5400	0,1750	-4,5920	2,5910
<b>VALUE</b>	160	71,2308	37,9570	1,8770	0,3120	-411,0530	553,5140
<b>REVENUES</b>	160	-0,3068	0,6950	-0,4420	0,7350	-9,1320	8,5190
<b>TOT ASSETS</b>	160	-0,1621	0,0500	-3,2420	0,1900	-0,7980	0,4730

*Appendix 63 H3 Result Activities of head offices; management consultancy activities*

70	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	24						
Constant		-0,2510	0,3190	-0,7870	0,5760	-4,3050	3,8030
<b>DIGITALIZATION</b>	8	0,0061	0,0780	0,0780	0,9500	-0,9830	0,9950
<b>MARKET CAPITAL</b>	24	0,0983	0,1830	0,5370	0,6860	-2,2270	2,4240
<b>EBITDA</b>	24	0,0205	1,1520	0,0180	0,9890	-14,6200	14,6610
<b>VALUE</b>	24	-9,8481	39,9150	-0,2470	0,8460	-517,0200	497,3240
<b>REVENUES</b>	24	0,0623	0,1140	0,5450	0,6820	-1,3890	1,5130
<b>TOT ASSETS</b>	24	0,0105	0,0230	0,4610	0,7250	-0,2780	0,2990

*Appendix 64 H3 Result Architectural and engineering activities; technical testing and analysis*

71	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	48						
Constant		-1,2400	0,5090	-2,4380	0,2480	-7,7020	5,2220
<b>DIGITALIZATION</b>	8	-0,0028	0,0070	-0,3870	0,7650	-0,0950	0,0900
<b>MARKET CAPITAL</b>	48	-0,0442	0,0910	-0,4840	0,7130	-1,2050	1,1170
<b>EBITDA</b>	48	0,1786	0,0380	4,6480	0,1350	-0,3100	0,6670
<b>VALUE</b>	48	-25,6652	10,0730	-2,5480	0,2380	-153,6580	102,3270
<b>REVENUES</b>	48	0,1757	0,0580	3,0230	0,2030	-0,5630	0,9140
<b>TOT ASSETS</b>	48	0,0677	0,0260	2,6160	0,2320	-0,2610	0,3970

*Appendix 65 H3 Result Scientific research and development*

72	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	40						
Constant		-3,8870	0,4890	-7,9520	0,0800	-10,0980	2,3240
<b>DIGITALIZATION</b>	8	0,0963	0,0170	5,6570	0,1110	-0,1200	0,3130
<b>MARKET CAPITAL</b>	40	-0,7938	0,1480	-5,3580	0,1170	-2,6760	1,0890
<b>EBITDA</b>	40	-0,0537	0,0360	-1,5000	0,3740	-0,5080	0,4010
<b>VALUE</b>	40	252,6242	41,5710	6,0770	0,1040	-275,5810	780,8290
<b>REVENUES</b>	40	-0,7557	0,1030	-7,3480	0,0860	-2,0630	0,5510
<b>TOT ASSETS</b>	40	0,2594	0,0290	8,9520	0,0710	-0,1090	0,6270

*Appendix 66 H3 Result Advertising and market research*

73	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	16						
Constant		-1,3688	2,0820	-0,6570	0,6300	-27,8230	25,0850
<b>DIGITALIZATION</b>	8	0,0133	0,0160	0,8120	0,5660	-0,1950	0,2220
<b>MARKET CAPITAL</b>	16	0,0024	0,1200	0,0200	0,9870	-1,5160	1,5210
<b>EBITDA</b>	16	0,2321	0,5280	0,4400	0,7360	-6,4770	6,9410
<b>VALUE</b>	16	-81,4579	71,8220	-1,1340	0,4600	-994,0400	831,1240
<b>REVENUES</b>	16	0,1562	0,1370	1,1420	0,4580	-1,5820	1,8940
<b>TOT ASSETS</b>	16	0,0790	0,1220	0,6490	0,6330	-1,4680	1,6260

*Appendix 67 H3 Result Employment activities*

78	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		0,0568	0,5960	0,0950	0,9400	-7,5150	7,6290
<b>DIGITALIZATION</b>	8	-0,0194	0,0240	-0,7960	0,5720	-0,3300	0,2910
<b>MARKET CAPITAL</b>	8	-0,1451	0,1140	-1,2730	0,4240	-1,5930	1,3030
<b>EBITDA</b>	8	0,0506	0,1330	0,3810	0,7680	-1,6340	1,7360
<b>VALUE</b>	8	-11,3469	7,6600	-1,4810	0,3780	-108,6810	85,9870
<b>REVENUES</b>	8	0,0826	0,1480	0,5570	0,6770	-1,8030	1,9690
<b>TOT ASSETS</b>	8	0,0010	0,0320	0,0320	0,9800	-0,4020	0,4040

*Appendix 68 H3 Result Travel agency, tour operator, and other reservation service and related activities*

79	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		-0,9438	0,5120	-1,8440	0,3160	-7,4470	5,5590
<b>DIGITALIZATION</b>	8	-0,0466	0,0060	-7,5080	0,0840	-0,1250	0,0320
<b>MARKET CAPITAL</b>	8	-0,6320	0,0580	-10,9300	0,0580	-1,3670	0,1030
<b>EBITDA</b>	8	-0,1356	0,1640	-0,8260	0,5610	-2,2210	1,9500
<b>VALUE</b>	8	-84,5782	16,4200	-5,1510	0,1220	-293,2170	124,0610
<b>REVENUES</b>	8	0,0242	0,0400	0,6050	0,6540	-0,4830	0,5320
<b>TOT ASSETS</b>	8	0,0760	0,0320	2,3810	0,2530	-0,3300	0,4820

*Appendix 69 H3 Result Security and investigation activities*

80	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		0,6252	2,5850	0,2420	0,8490	-32,2190	33,4700
<b>DIGITALIZATION</b>	8	0,0284	0,0700	0,4030	0,7560	-0,8660	0,9230
<b>MARKET CAPITAL</b>	8	-0,0101	0,1760	-0,0580	0,9630	-2,2410	2,2210
<b>EBITDA</b>	8	-1,4883	2,7470	-0,5420	0,6840	-36,3900	33,4130
<b>VALUE</b>	8	-164,0100	306,1880	-0,5360	0,6870	-4054,4950	3726,4750
<b>REVENUES</b>	8	0,1988	0,3180	0,6250	0,6440	-3,8420	4,2400
<b>TOT ASSETS</b>	8	-0,0357	0,1380	-0,2590	0,8390	-1,7870	1,7150

*Appendix 70 H3 Result Services to buildings and landscape activities*

81	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		-0,6277	0,9790	-0,6410	0,6370	-13,0660	11,8110
<b>DIGITALIZATION</b>	8	-0,0119	0,0330	-0,3670	0,7760	-0,4250	0,4010
<b>MARKET CAPITAL</b>	8	-0,0364	0,1790	-0,2030	0,8720	-2,3100	2,2370
<b>EBITDA</b>	8	0,0264	0,1070	0,2470	0,8460	-1,3320	1,3850
<b>VALUE</b>	8	-7,0106	17,7570	-0,3950	0,7610	-232,6380	218,6170
<b>REVENUES</b>	8	0,1592	0,2320	0,6870	0,6170	-2,7850	3,1040
<b>TOT ASSETS</b>	8	0,0373	0,0610	0,6090	0,6520	-0,7410	0,8160

*Appendix 71 H3 Result Human health activities*

86	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	16						
Constant		0,5008	4,3410	0,1150	0,9270	-54,6590	55,6610
<b>DIGITALIZATION</b>	8	-0,0087	0,0180	-0,4960	0,7070	-0,2320	0,2150
<b>MARKET CAPITAL</b>	16	-0,3509	0,7730	-0,4540	0,7290	-10,1720	9,4700
<b>EBITDA</b>	16	0,1783	0,4910	0,3630	0,7780	-6,0580	6,4150
<b>VALUE</b>	16	-32,8388	82,4170	-0,3980	0,7590	-1080,0440	1014,3660
<b>REVENUES</b>	16	0,1188	0,3880	0,3060	0,8110	-4,8150	5,0520
<b>TOT ASSETS</b>	16	-0,0159	0,2460	-0,0650	0,9590	-3,1390	3,1070

*Appendix 72 H3 Result Other professional, scientific, and technical activities*

89	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		-1,7984 **	0,0860	-20,8450	0,0310	-2,8950	-0,7020
<b>DIGITALIZATION</b>	8	-0,0158 **	0,0010	-24,5480	0,0260	-0,0240	-0,0080
<b>MARKET CAPITAL</b>	8	-0,1935 **	0,0090	-21,1340	0,0300	-0,3100	-0,0770
<b>EBITDA</b>	8	0,1458 **	0,0030	42,1220	0,0150	0,1020	0,1900
<b>VALUE</b>	8	-48,2483 **	1,7530	-27,5260	0,0230	-70,5200	-25,9770
<b>REVENUES</b>	8	-0,1107 **	0,0030	-33,1570	0,0190	-0,1530	-0,0680
<b>TOT ASSETS</b>	8	0,1254 **	0,0060	21,5180	0,0300	0,0510	0,1990

*Appendix 73 H3 Result Gambling and betting activities*

92	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		-0,6671	0,6930	-0,9630	0,5120	-9,4680	8,1340
<b>DIGITALIZATION</b>	8	0,0072	0,0260	0,2800	0,8260	-0,3200	0,3350
<b>MARKET CAPITAL</b>	8	0,2204	0,3420	0,6450	0,6350	-4,1240	4,5640
<b>EBITDA</b>	8	0,3841	0,5430	0,7080	0,6080	-6,5090	7,2770
<b>VALUE</b>	8	-14,4440	25,7370	-0,5610	0,6740	-341,4690	312,5810
<b>REVENUES</b>	8	0,1692	0,2200	0,7700	0,5820	-2,6230	2,9620
<b>TOT ASSETS</b>	8	0,0269	0,0240	1,1290	0,4620	-0,2760	0,3300

*Appendix 74 H3 Result Sports activities and amusement and recreation activities*

93	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		-3,0901	1,3760	-2,2450	0,2670	-20,5790	14,3990
<b>DIGITALIZATION</b>	8	0,0982	0,0460	2,1410	0,2780	-0,4850	0,6810
<b>MARKET CAPITAL</b>	8	0,8347	0,2460	3,3920	0,1830	-2,2920	3,9610
<b>EBITDA</b>	8	-1,3753	0,8450	-1,6270	0,3510	-12,1140	9,3640
<b>VALUE</b>	8	-7,9026	6,9330	-1,1400	0,4580	-95,9950	80,1900
<b>REVENUES</b>	8	1,1958	0,6430	1,8610	0,3140	-6,9710	9,3630
<b>TOT ASSETS</b>	8	0,1365	0,0690	1,9670	0,2990	-0,7460	1,0190

*Appendix 75 H3 Result Activities of households as employers of domestic personnel*

97	N. obs	coef	std err	t	P> t	[0,025	0,975]
<b>COST OF DEBT</b>	8						
Constant		-0,0505	0,0320	-1,5690	0,3610	-0,4600	0,3590
<b>DIGITALIZATION</b>	8	-0,0114 **	0,0000	-24,3930	0,0260	-0,0170	-0,0050
<b>MARKET CAPITAL</b>	8	0,1005	0,0080	12,3270	0,0520	-0,0030	0,2040
<b>EBITDA</b>	8	-0,1415 **	0,0110	-13,3900	0,0470	-0,2760	-0,0070
<b>VALUE</b>	8	-37,6893 **	0,9950	-37,8610	0,0170	-50,3380	-25,0410
<b>REVENUES</b>	8	0,1052 **	0,0020	48,0520	0,0130	0,0770	0,1330
<b>TOT ASSETS</b>	8	-0,0034	0,0020	-1,7670	0,3280	-0,0280	0,0210