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Determinants of Financial Performance Evidence from the Leading US Technology Companies

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Abstract

The technology sector's dynamic nature highlights its critical role in promoting innovation and economic progress. This article seeks to provide stakeholders with important insights by carefully examining and identifying the critical elements affecting the prosperity and profitability of top technology companies in the United States. For investors, legislators, and corporate executives looking to improve organizational performance and maintain competitive advantages in a market that is changing quickly, understanding these aspects is crucial. Using extensive information from Thomson Reuters and Morningstar, our research centers on 20 leading US IT businesses between 2013 and 2022. We investigate the financial standing, research approaches, and performance measures that characterize business success in this industry through an empirical analysis. We evaluated different influences on return on assets, equity, and other variables using nine econometric models. The results show that competitive advantages, creative goods or services, and successful marketing tactics have a greater influence on financial performance than supplier payment timelines. More specifically, technology companies' financial results are not much impacted by the pace at which suppliers pay. These revelations emphasize how crucial marketing and strategic innovation are to attaining better results. All things considered, our study highlights the crucial factors that propel success in the technology industry and provides useful advice for raising profitability and maintaining expansion. Policymakers, investors, and industry experts gain from this study's improved understanding of the elements that support technology businesses' strong performance.

Keywords: Performance, Profitability, Technology, ROA, ROE

Introduction

Performance is a fundamental concept in evaluating and measuring an organization's success in achieving its goals. Regardless of the field of activity, performance is a key indicator of efficiency and effectiveness. In a world dominated by innovation, the technology sector is a vital component of economic development and sustainable growth. The technological sector ofThe United States of America is recognized worldwide as one of the most dynamic

and innovative sectors. Because of its ability to generate innovation and rapidly adapt to technological change, the US technology sector continues to be a driver of economic progress and development. Being at the center of digital transformation and new technological paradigms, this sector has a crucial role in the creation and development of innovative products and services that shape the future of our society.

The purpose of this paper is to analyze the performance of companies in the technology sector and the determinants of profitability in this field. In this regard, we selected 20 leading US companies in this sector, which had a significant influence on the industry and which had a strong presence in the market. The analysis period covered 10 years, namely 2013-2022, and the data used in the study were collected from the Morningstar and Thomson Reuters platforms.

The concept of performance has a multitude of definitions and interpretations found in the specialized literature, so we will present below some of the most popular approaches.

Drucker (1993), argues that "enterprise performance is the result of its ability to transform resources into economic results", in his work "Post-Capitalist Society". Another definition of the term performance is given by Neely (2002), who believes that "enterprise performance is the result of achieving and exceeding the objectives and expectations set by the organization and its stakeholders".

In the view of Eccles (1991), "enterprise performance is its ability to achieve a sustainable competitive advantage while satisfying the needs and expectations of customers, employees, shareholders and the community in which it operates."

The specialized literature classified the determining factors of a company's profitability into two distinct categories. The first category includes internal factors, such as company size, liquidity, financial leverage, growth rate, financial solvency, company age, capital structure, and other management decisions (Anbar and Alper, 2011). The second category includes external factors, which can be expressed either at the industry level, such as sector growth rate, market concentration and import growth rate, or at the macro level, such as interest rate, inflation, growth rate of GDP, the return on the financial market (Grau and Reig, 2018).

The Current State of Scientific Research in the Field

The financial performance of companies is a hotly debated topic in the specialized literature. Kant (2018) aimed to investigate the relationship between the profitability of US companies in the manufacturing industry and several indicators, including company size, R&D intensity, productivity, growth, seniority, net asset turnover, debt ratio and current. To conduct this research, the author used a sample of 221 manufacturing companies active in the United States during the period 2012-2017. The results obtained from this study indicated the existence of a significant positive relationship between investment in research and development, company growth, productivity, debt ratio, current ratio and profitability of companies. In contrast, no significant relationship was found between the age and size of firms and their profitability. This may indicate that the age and size of companies are not determinants of profitability in the manufacturing industry. Also, a negative relationship was found between the turnover rate of net assets and profitability. This suggests that a high net asset turnover rate can negatively affect profitability, and the costs associated with replacing assets or using them inefficiently may be one reason.

Weidmann et al (2019) compared the importance of net profit margin and asset turnover ratio as determinants of ROE in US, German and Japanese manufacturing companies. Based on data for all companies in the manufacturing industry, net profit margin

was found to be the most important determinant of ROE in all three countries. Since the electronics industry is the most important manufacturing industry in all three countries, the authors applied the empirical tests to data on electronics manufacturing firms. Net profit margin is the most important determinant of ROE in electronics firms in all three countries, so in Germany a 10% increase in NPM leads to about a 9.8% increase in ROE, in the US an increase of of approximately 8.3% in ROE, and in Japan an increase of approximately 6.9% in ROE. At the same time, in Germany a 10% increase in asset turnover leads to an increase of about 2.2% in ROE, while in Japan an increase of about 1.5% in ROE.

The study conducted by Saleem and Rehman (2011) aimed to reveal the relationship between liquidity and profitability using data of 26 oil and gas companies listed on the Karachi Stock Exchange (KSE) in Pakistan, taking into consideration a period of 5 years (2004-2009). In this study, the relationships between return on assets, return on equity and return on invested capital were investigated, with current liquidity, immediate liquidity and solvency ratios as independent variables. They found that there is a significant influence of liquidity rates on the return on invested capital. This suggests that the level of liquidity of companies in the oil and gas industry in Pakistan has a significant impact on the efficiency with which they use their invested capital to generate profit. Regarding the return on assets, the study reveals that it is significantly influenced only by the solvency rate. Thus, the ability of businesses to honor their financial obligations and meet payment requirements plays an important role in achieving a high return on assets. In contrast, return on equity was not significantly influenced by any of the three liquidity variables analyzed.

Lee (2009) analyzed the determinants of a company's performance, focusing specifically on the role of firm size for profitability. In this regard, a panel data model was used, applied to a sample of more than 7,000 public companies in the United States, in a time span between the years 1987-2006. Industry-level factors such as market concentration and barriers to entry and their impact on firm profitability were also analyzed. The results obtained indicate that these industry factors have a significant role in explaining the profitability of firms. An important aspect highlighted in the paper is that the United States market is characterized by strong competition, as approximately 45% of the companies in the sample experience average losses over a 20-year period. This suggests that the competitive environment can significantly influence the financial performance of firms. Furthermore, the results of economic analysis indicate that firms' profits are short-lived instead of persistent over time. This aspect suggests that factors such as changes in the market, technological innovations or other external influences can have a significant impact on the profitability of firms in a relatively short period of time. As for the size of the firm, together with its market share, they play a dominant role in explaining variations in profitability. The estimation results support the conventional theory of a positive relationship between firm size and profit. However, it has been observed that this relationship is non-linear, i.e. profitability decreases as the size of the company increases.

Pervan (2019) proposed a model that incorporated three types of determinants of firm profitability: firm-specific (age, liquidity and labor costs), industry-specific (industry concentration and capital intensity) and macroeconomic variables (inflation rate and GDP growth). The research sample consisted of companies operating in the manufacturing industry in Croatia, in the period 2006-2015. According to the evaluated model, the firm age variable had a positive sign, suggesting that older manufacturing firms operate with a higher level of profitability, as older firms exploit the benefits of accumulated knowledge and business reputation through cost savings and higher profitability big. The labor cost variable

was found to negatively influence the performance of firms in the manufacturing industry, indicating that an increase in unit labor cost leads to lower firm profitability. Another finding of the study was that the market concentration variable negatively affects profitability, suggesting that firms operating in the Croatian economy are unlikely to collaborate and increase the price of their products based on their market power. Although capital intensity may represent an entry barrier and different capital investments may ensure the implementation of advanced technology, the inclusion of which may affect firms' productivity and profitability, this variable was not considered statistically significant. At the same time, the estimated model confirmed the importance of the macroeconomic environment for the production companies in Croatia, and the economic growth positively influenced the companies' profitability. Given favorable economic conditions, demand for a firm's goods increases, contributing to increased sales and ultimately higher profitability. The opposite was true in the case of the downward trend of the economy. Inflation rates had a positive impact on firm performance because a firm's costs fell more with inflation than revenues, resulting in higher profitability.

The research conducted by Dogan (2013), with the aim of examining the impact of firm size on profitability, 200 companies listed on the Istanbul Stock Exchange, Turkey, for the period 2008-2011 were analyzed. ROA (return on assets) was used as a performance indicator along with several independent variables including total assets, total sales, number of employees, degree of liquidity, degree of indebtedness and age of firms. To analyze the influence of these variables on financial performance, three multiple regression models were built. The research results showed that there is a positive relationship between size indicators, such as total assets, total sales and number of employees, and firm profitability in all three analyzed models. In other words, larger companies in terms of these variables generally recorded superior financial performance. At the same time, it was found that the age of the company and the leverage effect (the degree of indebtedness) had a negative effect on profitability. This suggests that firms with longer tenure or higher levels of debt have experienced lower profitability. It was also observed that liquidity had a positive effect on profitability. This means that firms with a greater ability to convert their assets into cash and meet their financial obligations experienced higher profitability.

Korkmaz and Karaca (2014) examined the relationship between financial indicators and profitability variables, as well as to investigate the influence of financial indicators on the level of profitability. The analysis was carried out on the basis of the financial data of 78 companies listed in the BIST-Index of the manufacturing industry, in an extended period, covering the years 2000-2011. To assess the relationship between the variables, the researchers used three distinct regression models. Dependent variables included earnings per share, return on equity and return on assets, while independent variables included the following indicators: net sales/assets ratio, product/inventory cost ratio, net sales/trade receivables ratio, property, plant and equipment/term liabilities long and leverage ratio. The empirical analysis led to the following important conclusions: first, it was found that earnings per share decrease significantly as the leverage ratio of companies increases. This result indicates that a high level of debt can negatively affect the financial performance of companies, reducing the profitability per share. Second, it has been observed that an increase in the level of debt of companies leads to a decrease in the return on equity. This result suggests that a balanced capital structure and an adequate level of debt can positively influence the return on equity of companies in the manufacturing industry. These conclusions highlight the importance of properly managing debt levels and capital structure in achieving optimal financial

performance. Companies need to consider the impact leverage has on earnings per share and find a balance between the use of borrowed resources and equity capital.

The study by Asimakopoulos et al (2009) looked over the determinants of profitability by means of a panel regression, using data from the period 1995-2003, for companies listed on the Athens Stock Exchange. Conducting an empirical analysis, they examined several factors that can influence the profitability of companies, and their results revealed important findings. First of all, it was found that the size of the companies has a positive impact on their profitability. This suggests that larger firms, which have a greater volume of resources and activities, tend to achieve higher returns. Second, the researchers observed that an increase in sales also has a positive impact on profitability. This result indicates that firms that succeed in expanding their sales volume can achieve higher profitability. Regarding investments, it was found that they have a positive impact on profitability. On the other hand, leverage and current assets have been observed to have a negative impact on profitability. This result may indicate that firms that rely too much on debt and have a high level of current assets relative to their revenues may have lower profitability. Another important aspect highlighted in the study is the negative relationship between participation in the European Union (EU) and the adoption of the euro as a single currency and the profitability of firms. This finding can be interpreted to mean that EU integration and the adoption of the euro may bring general economic benefits, but may have a negative impact on firm profitability due to specific factors such as increased competition and changes in the economic environment.

Focusing on determining the influence of indebtedness on the financial performance of pharmaceutical companies in Nigeria Enekwe et al. (2014) analyzed data from three pharmaceutical companies over a 12-year period (2001-2012). They sought to examine the relationship between debt levels and return on assets. The independent variables used were debt ratio, debt-equity ratio and interest coverage ratio, and return on assets represented as the dependent variable of the model. The results of the study indicated a significant negative relationship between the level of indebtedness and the financial performance of the analyzed pharmaceutical companies. This means that an increase in the level of indebtedness of companies has led to a decrease in the return on assets. These findings are consistent with existing literature suggesting that high levels of debt can put pressure on companies' cash flows, which can negatively affect financial performance.

A recent study conducted by Mansour (2023) evaluated the impact of capital structure on the performance of Jordanian firms. The analysis was based on financial data collected over an extended period of time, covering the period 2010-2018. Another aspect investigated in this paper was the extent to which firm size influences the relationship between capital structure and performance. The dependent variable used in the study was the firms' market share, while the main independent variables included the total book value of debt and firm-specific factors such as firm size, firm age, firm growth, and market value to book value of own capital. The results obtained from the analysis revealed a significantly positive relationship between the accounting value of the capital and the market share of the companies. This result suggests that a balanced capital structure and a higher value of invested capital can contribute to a higher market share for Jordanian firms. An appropriate capital structure can influence investor confidence and secure the financial resources needed for business expansion and development. It was also found that firm size, sales growth, and market value of equity have a significantly positive relationship with firms' market share. These results indicate that larger firms, which experience growth in sales and have a higher market value of equity capital, are more likely to achieve a higher market share. These aspects

can be interpreted as indicators of the success and financial soundness of the companies, thus attracting the trust of investors and consumers. In contrast, firm age did not significantly contribute to financial performance. This result may indicate that, in the specific context of the Jordanian market, factors such as firm size and sales growth have a greater influence on financial performance than the sheer age of the firm.

In terms of liquidity, debt and profitability ratios' impact on the financial performance of a company Borhan et al (2013) analysed a dataset of companies activating in the chemical industry. This research was based on quarterly data recorded over an extended time period (2004-2011). The results obtained from this study provided significant information regarding the relationship between the analyzed financial indicators and the financial performance of the company. First, a significant positive correlation was found between current liquidity and the company's financial performance. This indicates that a higher current ratio is associated with better financial performance. Current liquidity represents a company's ability to meet its short-term obligations and can be considered a measure of solvency and ability to pay. Thus, greater liquidity can provide the necessary resources to support and develop the business, which contributes to improving financial performance. Second, a significant positive relationship was observed between net profit margin and financial performance. This result suggests that a higher net profit margin is associated with better financial performance. Net profit margin represents the company's efficiency in generating profits, taking into account total costs and expenses. A higher net profit margin may indicate higher operational efficiency and a better ability to capitalize on market resources and opportunities. At the same time, a significant negative correlation was identified between financial leverage and financial performance. This result indicates that a higher level of debt can have a negative impact on financial performance. Financial leverage represents the proportion of borrowed capital in the financial structure of the company and involves costs associated with debt service and risks related to their payment. An excessive level of indebtedness can impose a financial burden on the company and affect its ability to achieve solid financial results.

Rahman and Liu (2021) investigated the relationship between firm size, firm age and profitability in the Chinese stock market. For this, they analyzed a sample consisting of the data of all public companies listed on the Chinese stock market, for the period 2008-2018. The results of the study demonstrated the existence of a positive relationship between firm size and profitability. In other words, larger firms, in terms of assets or revenue, generally have higher returns. This finding is consistent with previous studies conducted in other countries, suggesting that there is a general trend globally regarding the influence of size on the financial performance of firms. The researchers also observed a negative relationship between firm age and profitability. This result indicates that older firms with a longer existence in the market experienced lower profitability compared to newer firms. These findings may be relevant to investors, managers and business decision-makers, giving them a deeper understanding of the relationship between a firm's characteristics and its financial performance in the Chinese stock market.

The impact of firm-specific determinants on financial performance in the energy industry was examined by (Mafumbate et al., 2017). The firm-specific determinants used in this study as independent variables were: capital structure, firm size and liquidity. The results showed a negative but significant relationship between capital structure and financial performance and support the pecking order theory suggesting that capital and firm size and financial performance were also negatively correlated. However, a significant positive relationship was established between liquidity and financial performance.

Banchuenvijit (2012) aimed to investigate the effects of employee compensation, firm age, firm size, capital intensity and export factor on the financial performance of listed companies in Vietnam. To achieve this, the author analyzed the relationships between these variables and financial performance, quantified by the rate of return on assets and the rate of return on equity. The results of the study indicated that there is a significant positive correlation between employee compensation and ROA, suggesting that providing higher compensation to employees can contribute to better financial performance of companies. Also, a positive correlation was found between firm age and ROA, which may indicate a relationship of trust and experience accumulated over time, which may support financial performance. At the same time, a positive correlation was found between the export factor and ROA, indicating that companies with a greater export orientation can register a better financial performance. However, a negative correlation between total assets and ROA was identified, suggesting that an excessive increase in firm size may negatively affect return on assets. In terms of ROE, a positive correlation with net sales was noted, suggesting that an increase in sales can contribute to a higher return on equity. In contrast, a negative correlation was found between the number of employees and ROE, which may suggest higher labor costs and lower efficiency.

Empirical study on the determinants of performance in the technology sector

The second chapter provides an empirical perspective on the determinants of performance in the technology sector, for the case of firmsApple, Microsoft, Alphabet (Google), Meta Platforms (Facebook), NVIDIA, Broadcom, Adobe, Cisco Systems, Salesforce, Oracle, Paypal, Intel, Qualcomm, Intuit, Texas Instruments, Advanced Micro Devices, Applied Materials, ServiceNow, Micron Technology and Automatic Data Processing. The results obtained and related discussions contribute to the development of knowledge in the field and can provide valuable guidance and information for managers and decision-makers in the technology sector. The chapter is structured in three sub-chapters covering aspects related to the analysis of the companies' financial statements, the research methodology used and the presentation of the main results.

Research Methodology

We analyzed the performance and its drivers for selected companies, namely Apple, Microsoft, Alphabet (Google), Meta Platforms (Facebook), NVIDIA, Broadcom, Adobe, Cisco Systems, Salesforce, Oracle, Paypal, Intel, Qualcomm, Intuit, Texas Instruments, Advanced Micro Devices, Applied Materials, ServiceNow, Micron Technology and Automatic Data Processing. Thus, we analyzed the following factors from the perspective of the possibility of determining the ROA, ROE, ROIC profitability.

The independent variables that were included in the econometric model for the analysis and evaluation of the determining factors of the financial performance of companies in the technology sector can be found in the table below.

Table 1
Independent Variables

Symbol	Variable	Description	Formula
LEV	Financial leverage	Financial leverage is an indicator that reflects the extent to which a company's assets are financed by debt	Total liabilities/Equity
MPB	Gross profit margin	Gross profit margin highlights the amount a company makes from the sale of its products and services before deducting any selling and administrative expenses	Gross Profit/CA
MPN	Net profit margin	The net profit margin shows the net profitability of the company's activities	Net Profit/Turnover
EBIT/CA	EBIT margin	This margin is a measure of a company's profitability and is calculated excluding the influence of interest and taxes	(Net Profit + Interest Expenses + Tax Expenses)/Turnover
Vt fz	Turnover speed of suppliers	Supplier turnover is a financial indicator that measures how quickly a company pays its suppliers as part of its business operations	Balance of suppliers/Turnover*365
R at	Asset turnover rate	The asset turnover ratio is a financial indicator that highlights the efficiency of using a company's assets in generating revenue	Turnover/Total assets
EBITDA/CA	EBITDA margin	EBITDA margin is a measure used to evaluate a company's operating efficiency and refers to operating profit relative to total revenue.	(Net Profit + Interest Expenses + Tax Expenses + Depreciation and Depreciation Expenses)/Turnover
P/S	Price/sales ratio	This ratio reflects how much investors are willing to pay for each dollar of a company's sales.	Share price/(Turnover/No. of shares)
EBITDA	EBITDA	EBITDA is a financial measure used to evaluate a company's performance and represents operating profit before interest, taxes, depreciation and amortization.	Net Profit + Interest Expenses + Tax Expenses + Depreciation and Depreciation Expenses

Source: Author's analysis

Table 2
Matrix of correlation coefficients

Variables	LEV	MPB	MPN	EBIT/CA	Vt fz	R at	EBITDA/ THAT	P/S	EBITDA
LEV	1.00								
MPB	-0.21	1.00							
MPN	-0.27	0.18	1.00						
EBIT/CA	-0.20	0.26	0.89	1.00					
Vt fz	-0.02	-0.04	-0.07	-0.09	1.00				
R at	-0.05	0.30	0.03	0.06	-0.02	1.00			
EBITDA/CA	-0.23	0.17	0.86	0.92	-0.11	-0.01	1.00		
P/S	-0.12	0.49	0.04	-0.01	-0.02	0.10	-0.06	1.00	
EBITDA	-0.05	-0.13	0.34	0.36	-0.08	-0.13	0.35	-0.11	1.00

Source: Author's analysis based on data from Morningstar

After analyzing the correlation matrix, we can see the existence of strong correlations between the variables P/S and MPB (0.49), EBIT/CA and MPN (0.89), EBITDA/CA and MPN (0.86), as well as EBITDA /CA and EBIT/CA (0.92). For this reason, these variables will not be used in the same regression model.

Results and Discussion

In order to analyze the determinants of the performance of companies in the technology sector, we used panel data, collected over a period of 10 years, for a sample of 20 companies in the US. Given the relationships observed from the correlation matrix, we built three regression models for each dependent variable, which are detailed in the tables below. These models will allow us to further examine the impact of independent variables on companies' performance, providing a deeper understanding of the relationships and influences within the technology sector.

In order to provide a more detailed and precise analysis of the regression models and the statistical significance of the independent variables, in the tables presented below we will find the coefficient of each variable, accompanied by the t-statistic, and the significance levels of 10%, 5% and 1 % are represented by the symbols *, **, ***.

ROA Regression Models

Table 3

ROA regression models

	ROA	ROA	ROA
R SQUARED	0.91	0.63	0.68
CONSTANT	-13.07 *** (-2.61)	-3.89*** (-2.58)	-1.52 (-1.78)
LEV	-0.12 (-1.27)	-0.31** (-2.49)	-0.34*** (-3.18)
MPB	0.21** (2.22)		
PMPN	0.59*** (10.83)		
EBIT/CA			0.53*** (16.04)
VT FZ	-0.005 (-1.13)	-0.001 (-0.73)	-0.002 (-1.10)
R AT	0.26*** (4.45)	0.19*** (4.48)	0.15*** (3.86)
EBITDA/CA		0.43*** (12.38)	
P/S		0.20** (2.13)	0.14* (1.66)
EBITDA	0.06*** (3.15)	0.06*** (2.83)	0.53** (2.06)
NO. REMARKS	two hundred	two hundred	two hundred

Source: Author's analysis in EViews

We observe that financial leverage is statistically significant for two of the three regression models with ROA as the dependent variable. Across the 20 companies analyzed, financial leverage has a negative impact on return on assets, as companies that take on more debt have larger assets. It is therefore essential that companies carefully manage their debt levels and identify an optimal balance between debt utilization and return on assets.

In addition, gross profit margin positively influences ROA, in the case of companies in the technology sector analyzed. Since this margin reflects a company's ability to generate more revenue than the direct costs associated with producing or providing goods and services, a high value can indicate that the company is using its resources and production processes efficiently, leading to higher profitability of assets. At the same time, the net profit margin ratio is positively correlated with financial performance as quantified by return on assets, because a high net profit margin ratio indicates that the firm is managing its costs efficiently and that it has opportunities for reinvestment and development. At the same time, it can attract more investors, signaling the fact that a company is efficient, competitive and capable of generating sustainable profits, which will positively impact the share price and market value of the company.

EBIT and EBITDA margins have a positive impact on performance quantified by the rate of return on assets,because a high value of these indicators reveals a high level of income and operational efficiency in generating profit from the main activities of the companies. On the other hand, supplier turnover rate was not statistically significant in any of the three models.

Moreover, asset turnover rate is directly related to ROA and is significant in all three regression models. A high asset turnover ratio indicates that a company is efficiently using its assets to generate revenue, and by using assets efficiently, the company can achieve a higher level of revenue relative to the value of its assets, which can contribute to a their higher profitability.

We can see that the price/sales ratio exerts a positive influence on ROA. This finding suggests that shareholders have a strong interest in each unit of revenue generated by the company, being willing to pay a higher price. Thus, a positive influence of price/sales ratio on ROA suggests that investors and shareholders perceive the company as capable of generating solid earnings relative to market value.

The EBITDA indicator has a strong positive influence on the performance quantified by ROA. This link was expected because, by directly measuring operating income and expenses, EBITDA can indicate how efficiently the company is using its assets to generate profits.

ROE Regression Models

Table 4

ROE regression models

	ROE	**ROE**	**ROE**
R SQUARED	0.64	0.67	0.65
CONSTANT	-64.85** (-2.05)	-30.93*** (-4.78)	-22.19*** (-4.05)
LEV	1.76 (1.20)	1.95*** (3.69)	1.80*** (3.52)
MPB	0.78 (1.34)		
MPN	1.68*** (5.04)		
EBIT/CA			1.39*** (8.85)
VT FZ	-0.02 (-1.02)	0.01 (0.65)	0.004 (0.47)
R AT	0.68** (2.43)	0.55*** (2.87)	0.43** (2.27)
EBITDA/CA		1.21*** (8.15)	
P/S		0.64 (1.56)	0.46 (1.14)
EBITDA	0.42* (1.82)	0.34*** (3.80)	0.29*** (3.40)
NO. REMARKS	two hundred	two hundred	two hundred

Source: Author's analysis in EViews

In terms of ROE, financial leverage was found to have a positive influence. Financial leverage can help increase the return on equity. When a company uses debt to finance part of its assets, the interest costs paid on that debt are deducted from net profit. Thus, the analyzed companies used their debt efficiently and generated more profit for shareholders

Net profit margin, which is the difference between total revenues and total costs expressed as a percentage of total revenues, plays an important role in determining financial performance as measured by ROE. This has a positive impact on the return on capital of the 20 companies in the technology sector. A higher net profit margin indicates better efficiency in cost management and revenue generation, which can lead to a higher ROE.

Also, EBIT and EBITDA margins, asset turnover ratio and EBITDA have a positive impact on financial performance measured by ROE, just like ROA. EBIT margin and EBITDA margin reflect the company's operational efficiency in generating revenue and managing costs. A higher EBIT and EBITDA margin indicates higher operational efficiency, which contributes to better financial performance as measured by ROE. At the same time, the asset turnover ratio represents a company's ability to efficiently use its assets to generate revenue. A higher asset turnover ratio indicates greater efficiency in the use of assets, which can contribute to superior financial performance as measured by ROE.

Additionally, EBITDA, which strips out the influence of interest, tax, depreciation and amortization costs, provides a clearer picture of a company's operating performance. Thus, a higher EBITDA value indicates better operational performance and can contribute to a higher return on equity.

On the other hand, gross profit margin, which is the difference between total revenues and direct costs expressed as a percentage of total revenues, supplier turnover and P/S ratio are not significant in terms of ROE. These measures can provide relevant information about operating efficiency and market valuation, but do not have a direct and meaningful relationship to ROE.

In essence, financial leverage, net profit margin, EBIT and EBITDA margins, asset turnover ratio and EBITDA are factors that can positively influence financial performance as measured by ROE, marking the importance of effective cost management, revenue generation and appropriate asset utilization in achieving superior returns for shareholders.

ROIC Regression Models

Table 5

ROIC regression models

	ROIC	ROIC	ROIC
R SQUARED	0.75	0.69	0.73
CONSTANT	10.33*** (4.52)	-4.39** (-2.87)	-3.85** (-2.43)
LEV	0.19 (1.47)	-0.12 (-1.08)	0.04 (0.25)
MPB	-0.15 (-1.16)		
MPN	0.86*** (20.09)		
EBIT/CA			0.64*** (11.81)
VT FZ	-0.0004 (-0.20)	0.001 (0.28)	0.0004 (0.14)
R AT	0.42*** (8.41)	0.39*** (5.46)	0.33*** (5.02)
EBITDA/CA		0.51*** (9.33)	
P/S		0.15 (0.99)	0.07 (0.53)
EBITDA	0.05** (2.04)	0.11*** (3.46)	0.09*** (2.82)
NO. REMARKS	two hundred	two hundred	two hundred

Source: Author's analysis in EViews

Analysing the table above, we can see that financial leverage does not have a significant impact on the return on invested capital. This means that the use of debt to finance a company's activities does not have a significant effect on ROIC. In addition, net profit margin, EBIT and EBITDA margins, asset turnover ratio and EBITDA have a positive influence on financial performance as measured by ROIC.

On the other hand, gross profit margin, supplier turnover speed, and price/sales ratio do not have a statistically significant influence on ROIC. These measures can provide important information about profitability, operational efficiency and the structure of prices in relation to sales, but they are not decisive factors in determining the return on invested capital, in the case of the analyzed companies. Thus, understanding the interaction between these financial indicators can provide a more complete picture of a company's performance and return on invested capital. Gross profit margin and net profit margin, EBIT and EBITDA margins, asset turnover and EBITDA are factors that can positively influence financial performance as measured by ROIC, while financial leverage, supplier turnover and price/sales ratio do not a significant impact in this regard.

Following the 9 econometric models analyzed, it could be observed that the speed of rotation of suppliers does not have a significant influence on the financial performance of companies in the technology sector. This suggests that whether businesses pay their debts to

suppliers at a faster or slower rate does not have a significant impact on return on assets, equity or invested capital. Thus, in the technology industry, aspects such as innovation, developing high-quality products or services, effective marketing, or creating competitive advantages can have a greater influence on financial performance than the speed of supplier turnover.

Conclusions

Performance and profitability are critical to a company's success. They ensure market survival and attract investors, facilitating access to finance and opening doors for expansion. A high-performing company can invest in innovation and development, motivating and retaining employees. Performance and profitability also contribute to building a solid reputation and trust among customers and business partners.

The performance of a company is affected by a multitude of factors, and their importance can vary depending on the activity sector and even on each individual company. Identifying the determinants of performance is particularly important for a company, as it allows improving performance, prioritizing resources, adapting to change, setting realistic goals and gaining a competitive advantage. By understanding the key factors that influence performance, a company can focus on the essentials and allocate resources efficiently, achieving superior results, adaptability to the business environment and competitive advantage in the market.

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