

Organizational Performance under Macroeconomic Pressure: An Empirical Analysis

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ABSTRACT: Previous studies have emphasized that many parents from marginalized communities experience a sense of disconnection from formal education, particularly in relation to school mathematics, which often appears abstract and unrelated to everyday experiences. This research investigates the influence of key macroeconomic variables on organizational performance, with a specific focus on small and medium-sized enterprises (SMEs), which are particularly susceptible to economic fluctuations. The study assessed the effects of four macroeconomic indicators—interest rate, inflation rate, Gross Domestic Product (GDP) growth, and investment—on the financial performance of 4,428 Portuguese SMEs over an eleven-year period. Firm performance was measured using the Return on Equity (ROE) financial indicator. A multiple linear regression model was applied to examine the relationship between ROE and the selected macroeconomic variables. The results indicated that the inflation rate and investment were statistically significant predictors of ROE. Specifically, a one-unit increase in the inflation rate was associated with an average rise of 22.303 in ROE, whereas a one-unit increase in investment corresponded to a decrease of 6.816. This reflects a positive relationship between inflation and ROE, and a negative one between investment and ROE. Interest rate and GDP growth, although included in the initial model, were ultimately excluded due to their lack of statistical significance.

Keywords: Inflation Rate, Investment, Interest Rate, GDP, ROE, Corporate Performance

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1. Introduction

The macroeconomic environment plays a crucial role in shaping the conditions under which businesses operate and evolve. Key variables such as economic growth, inflation, interest rates, exchange rates, and employment levels significantly influence business performance, strategic planning, and investment decisions (Mankiw, 2020). While large corporations are generally better equipped to absorb economic shocks, SMEs tend to be more vulnerable to macroeconomic fluctuations due to structural constraints in financing, innovation capacity, and risk management (Beck et al., 2005; Antunes et al., 2021; Texeira-Quirós et al., 2022).

Economic performance is typically evaluated through the stability of macroeconomic indicators such as the exchange rate, inflation, interest and unemployment rates, the Consumer Price Index (CPI), Gross Domestic Product (GDP), and the stock market. These indicators are so influential that they can determine the overall direction of the economy in which businesses operate. Therefore, companies must analyse economic trends within their specific industry segments to anticipate changes in consumer behaviour. Additionally, at both national and international levels, managers must consider factors such as access to credit, household disposable income, and consumption patterns (Pearce & Robinson, 2011).

Fluctuations in macroeconomic variables can either stimulate or hinder business activity. High inflation, for example, can drive up production costs, diminish consumer purchasing power, and erode profit margins. Similarly, rising interest rates can elevate borrowing costs, restricting investment and expansion opportunities (Blanchard & Johnson, 2013). Exchange rate volatility also affects companies that depend on imported inputs or participate in global markets, creating uncertainty in pricing and revenue forecasting. Empirical evidence shows that favourable macroeconomic conditions are positively associated with firm growth, especially in emerging markets (Ayyagari et al., 2011).

Economic stability forms the foundation of efforts to promote private sector development, industrial progress, and sustainable economic growth. Studies involving large cross-country samples have demonstrated a positive correlation between macroeconomic stability, investment, productivity, and growth (Easterly & Kraay, 1999). Economic growth heavily depends on sound policy decisions; when macroeconomic policies are stable and consistent, they foster business activity and support long-term development (Yohane, 2004).

Alongside the broader macroeconomic context, government policy plays a critical role in shaping the business climate. Regulatory frameworks, fiscal and tax policies, access to public credit, and support for innovation are essential instruments for promoting or constraining business development (Porter, 1990). This is particularly true for SMEs, which often face barriers in accessing private capital markets. Government intervention can be vital for their survival and competitiveness. Conversely, policy uncertainty, excessive bureaucracy, and inconsistent regulation can deter investment and inhibit entrepreneurship (Rodrik, 2008). During times of crisis or economic transition, proactive policies—such as countercyclical fiscal measures or targeted SME stimulus programs—have proven effective in mitigating downturns (OECD, 2019).

Corporate profitability is a core indicator of financial performance, reflecting the extent to which a firm achieves its financial goals. It involves assessing the financial outcomes of strategic and operational decisions. Profitability metrics are used to evaluate an organization's financial health over a given period and allow for benchmarking against industry peers. Common indicators include Return on Assets (ROA), Return on Equity (ROE), Return on Sales (ROS), and Return on Investment (ROI) (Venkatraman & Ramanujam, 1986).

This study aimed to examine the impact of selected macroeconomic variables on the performance of Portuguese SMEs over an eleven-year period. The macroeconomic variables analysed were interest rate, inflation rate, GDP growth, and investment. Business performance was evaluated using the ROE as the primary financial indicator.

2. THEORETICAL FRAMEWORK

The relationship between macroeconomic variables and business performance has been extensively studied in economic literature, particularly in the context of SMEs. A stable macroeconomic environment is often considered crucial for fostering entrepreneurship, stimulating investment, and encouraging long-term growth (Mankiw, 2020). However, macroeconomic instability, such as inflation, interest rate fluctuations, and economic recessions, can create significant challenges for businesses, especially those with limited access to financial resources and markets.

Several studies have investigated the impact of macroeconomic indicators on firm performance. According to Blanchard and Johnson (2013), inflation can lead to increased production costs, which in turn erodes profit margins and reduces the purchasing power of consumers. Additionally, inflationary pressures often result in higher interest rates, making borrowing more expensive and limiting companies' ability to invest in expansion and innovation. For SMEs, which typically rely on debt financing for growth, this can be particularly detrimental.

The role of interest rates is another key area of focus in the literature. As interest rates rise, the cost of capital increases, which may deter investment and expansion (Rodrik, 2008). This is particularly relevant for SMEs, which have less access to capital markets and face more significant barriers in securing affordable financing compared to larger firms. Conversely, low interest rates tend to promote business investment and encourage borrowing, thereby supporting growth and economic activity (OECD, 2019).

The growth rate of GDP is another critical macroeconomic factor that influences the overall performance of firms. A growing economy typically leads to higher consumer demand, more favourable market conditions, and increased business opportunities (Ayyagari et al., 2011). Conversely, economic contraction or stagnation can result in lower demand for goods and services, adversely affecting profitability, particularly in industries sensitive to economic cycles.

Moreover, investment plays a crucial role in driving the long-term success of SMEs. Research indicates that economies with higher levels of investment experience greater economic growth, as capital investments lead to the development of infrastructure, technology, and human capital (Porter, 1990). For SMEs, access to capital and the ability to invest in innovation are crucial for maintaining competitiveness in an increasingly globalized market.

Macroeconomic stability is often viewed as a key enabler of firm growth. Studies have shown that countries with stable macroeconomic conditions tend to experience more consistent growth in both investment and productivity (Easterly & Kraay, 1999). Stability allows businesses to plan with greater confidence and make informed decisions regarding investment, pricing, and market expansion. For SMEs, particularly those in developing economies, stability is crucial for building resilience against external economic shocks. Additionally, government policies that promote macroeconomic stability, such as fiscal discipline and sound monetary policy, are essential for creating an environment conducive to business growth. Regulatory frameworks, access to credit, and tax incentives are often seen as tools that can either stimulate or hinder business activity (Porter, 1990). The impact of

these policies on SMEs is particularly significant, as these firms often rely more heavily on external support and are more vulnerable to changes in the macroeconomic environment.

SMEs are particularly sensitive to macroeconomic fluctuations, as they often face limitations in terms of capital, human resources, and market reach. As Beck et al., (2005) argue, smaller firms tend to be more vulnerable to changes in macroeconomic conditions due to their reliance on domestic markets and their limited access to diversified sources of financing. When macroeconomic conditions are volatile, SMEs may struggle to secure the capital needed to weather periods of economic instability, leading to reduced growth prospects and an increased risk of failure.

Furthermore, government policies designed to support SMEs, such as fiscal stimulus programs or targeted credit lines, have been shown to play a crucial role in mitigating the adverse effects of economic downturns. According to Rodrik (2008), these policies can help reduce the vulnerability of SMEs by providing access to affordable financing, lowering transaction costs, and improving market conditions

Macroeconomic Variables

Macroeconomic variables are the key indicators that shape the economic environment in which businesses operate. These variables significantly influence business performance, strategic decisions, and economic growth. The most common macroeconomic variables include inflation rates, interest rates, exchange rates, GDP growth, unemployment rates, and consumer price indices. Each of these factors impacts firms differently, depending on the industry, market conditions, and the company's internal structure and capabilities.

Interest rates are one of the most important macroeconomic indicators affecting businesses, particularly in terms of borrowing costs and investment decisions. Interest rates are set by a country's central bank, and they directly influence the cost of credit for businesses. High interest rates can increase the cost of borrowing, making it more expensive for firms to finance expansion, innovation, and day-to-day operations. This, in turn, can limit investment and potentially slow down business growth (Crowley, 2007). On the other hand, lower interest rates make borrowing cheaper and can stimulate investment, which can benefit both small and large enterprises (Blanchard & Johnson, 2013).

For SMEs, high interest rates can be particularly problematic, as they may lack access to cheaper sources of capital, making them more vulnerable to economic downturns. As a result, SMEs are more dependent on favourable interest rate policies to remain financially stable and competitive (Wadhwani, 1986; Davis, 1995; Robson, 1996).

Inflation refers to the general increase in the price level of goods and services over time. A moderate level of inflation is typically seen as a sign of a growing economy. However, high inflation can have negative effects on businesses, as it increases the cost of raw materials and labour, reduces the purchasing power of consumers, and creates uncertainty about future prices (Easterly & Kraay, 1999; Osoro & Ogeto, 2014).). This can lead to reduced consumer demand, increased production costs, and squeezed profit margins (Samuelson & Nordhaus, 2005). For businesses that operate internationally, exchange rate volatility also affects inflationary pressures, as the cost of imported goods and services rises when the local

currency depreciates. SMEs, which often have fewer resources to hedge against inflationary risks, are more susceptible to these adverse effects.

Exchange rates are another critical macroeconomic variable, particularly for businesses engaged in international trade. Fluctuations in exchange rates can have a profound impact on the costs of imported goods and services, as well as on the revenue generated from exports. For companies that rely on imported raw materials or have significant international operations, exchange rate volatility can create uncertainty and disrupt pricing strategies (Mankiw, 2020). In economies with high export dependence, a devalued local currency can make exports cheaper and more competitive in international markets, potentially boosting sales and profits. However, for businesses that import a significant portion of their raw materials, a devaluation of the local currency increases input costs and reduces profit margins.

Gross Domestic Product (GDP) growth is one of the most used indicators of a country's economic health. It measures the total value of goods and services produced within a country over a given period. Strong GDP growth is often associated with a robust economy, higher consumer spending, and increased investment, all of which create favourable conditions for businesses to thrive. On the other hand, slow or negative GDP growth can signal economic stagnation or contraction, which may lead to reduced demand for goods and services, lower business investments, and higher unemployment rates. During periods of economic slowdown, firms may face challenges in maintaining profitability and sustaining operations, especially if their products or services are highly sensitive to consumer demand (Beck et al., 2005).

The unemployment rate is another key macroeconomic variable that affects the overall economic environment. High unemployment rates typically reflect economic downturns, as businesses cut back on hiring and may even reduce production levels. A high unemployment rate can lead to reduced consumer confidence and spending, which can have a direct negative impact on businesses, particularly those in consumer-driven sectors. Conversely, low unemployment rates indicate a healthy labour market with higher disposable income and increased demand for goods and services. Businesses, particularly SMEs, can benefit from a growing workforce with greater purchasing power, enabling them to expand their customer base and increase profitability.

The Consumer Price Index (CPI) is a measure that examines the weighted average of prices of a basket of consumer goods and services. The CPI is used to calculate inflation and assess the cost of living within an economy. Businesses closely monitor the CPI as it helps them understand price trends and make informed decisions regarding pricing strategies. For businesses, especially SMEs, CPI trends are crucial for managing costs, setting prices, and predicting future demand. If inflationary pressures drive up the CPI, businesses may have to adjust their pricing strategies, which could affect their competitiveness, especially in price-sensitive markets.

Finally, the investment, which is a fundamental macroeconomic variable that plays a pivotal role in shaping the economic landscape, influencing business performance, and driving long-term economic growth. It involves the allocation of resources towards capital goods, including machinery, infrastructure, technology, and intellectual property, which are essential for production processes and business expansion (Mankiw, 2020). Private

investment refers to the capital spent by businesses on expanding production capacity, developing new products or services, and improving efficiency. This type of investment is critical for companies looking to enhance their market position and increase profitability. Private investments are typically driven by expected returns on investment (ROI), business confidence, and access to capital. A firm's decision to invest is influenced by factors such as interest rates, inflation, economic growth prospects, and the stability of the political and regulatory environment (Blanchard & Johnson, 2013). Firms invest in machinery, research and development, human capital, and infrastructure to stay competitive in their respective markets. For example, a business might invest in new production equipment to increase efficiency or launch new technological platforms to improve service delivery (Venkatraman & Ramanujam, 1986). Private investment is also critical in industries that are characterized by high levels of innovation, such as the technology and manufacturing sectors. Here, the allocation of resources toward research and development (R&D) is crucial for businesses aiming to develop new products, improve existing ones, and enter new markets. In fact, R&D investments are strongly correlated with long-term growth and profitability, as they contribute to improving productivity, developing intellectual property, and gaining a competitive edge in the market (Porter, 1990). On the other hand, public investment refers to the spending by governments on infrastructure, public services, education, healthcare, and social projects. Public investment plays an essential role in fostering economic stability and providing the necessary infrastructure for private businesses to thrive. Investments in transportation systems, communication networks, and energy infrastructure create the foundational framework upon which businesses operate and grow (Rodrik, 2008). Furthermore, public investments in education and healthcare are vital for developing a skilled and healthy workforce, which is necessary for businesses to remain competitive (Ayyagari et al., 2011). Governments can also foster private sector development through targeted policies, including tax incentives, subsidies, and access to financing for SMEs. These types of investments create a favourable environment for entrepreneurship and innovation, particularly in emerging economies where access to capital may be limited. In times of economic downturn, public investment can serve as a countercyclical tool, stimulating demand, supporting employment, and reducing the negative effects of recessions (Easterly & Kraay, 1999).

Profitability Indicators of Companies

Company performance is a highly significant topic in studies focused on organizations, given the interest in analysing the factors that influence variations in organizational performance (Hoopes et al., 2003, Antunes et al., 2025). Financial performance, which allows for the assessment of an organization's achievement of its economic goals, has been the central focus of numerous studies on business performance (Barney, 2002; Combs et al., 2005; Hult et al., 2008; Richard et al., 2009). Profit generation is the primary objective for shareholders and managers, and it serves as the driving force behind organizational activities. Profit can be seen as the outcome of all efforts and necessary incentives to sustain the organization's operations. Financial performance highlights the efficiency of companies in converting their sales into profit, which is then distributed to shareholders. It represents the distinguishing factor between successful businesses and those unable to survive in increasingly competitive and demanding markets.

The most used profitability indicators in various studies are ROA, ROE, and ROI (Hoskisson et al., 1999; Combs et al., 2005; Hult et al., 2008). In this research, ROE was considered as the independent variable to assess the profitability of the companies studied. ROE reflects the profitability of equity capital and is calculated by the ratio of net income to total equity. It is a financial ratio that measures the return on shareholders' equity (owner's equity) over a specific period, typically one year. This ratio indicates how efficiently a company generates profits from its own capital and reveals the potential of the company to apply investments aimed at increasing results.

Empirical Research

The objective of this study was to analyse the relationship between these macroeconomic variables and the performance of SMEs in Portugal, formulating four research hypotheses.

As already discussed, unexpected fluctuations in interest rates can harm the financial position of organizations and their cash flows, potentially leading to a significant impact on their performance and even jeopardizing the organization's survival (Wadhwani, 1986; Vlieghe, 2001). According to Wadhwani (1986), an increase in interest rates is the main explanatory factor in the insolvency processes of organizations, as companies financed with variable interest rates may be unable to meet their financial obligations or secure new credit, inevitably facing a liquidity risk situation. Continuing in the same line of research, Young (1995) also stated that an unexpected rise in interest rates could negatively affect the performance of organizations, as it might lead to a situation of great financial vulnerability. Higher borrowing costs, resulting from an increase in interest rates, can reduce profitability, putting companies under greater financial pressure and consequently increasing the likelihood of default (Liu, 2004). Based on the above, the following research hypothesis is proposed:

H₁: The interest rate has a significant impact on business performance, with this performance being measured by ROE.

The inflation rate was included in this study as it is considered a variable with predictive power for the development and continuity of businesses (Wadhwani, 1986). On the other hand, Young (1995) also stated that unexpected changes in inflation are negatively correlated with business profitability, as such unexpected changes can result in inefficient resource allocation. Therefore, the following research hypothesis is proposed:

H₂: The inflation rate has a significant impact on business performance, with this performance being measured by ROE.

GDP growth implies an increase in a country's economic activity, leading to higher profitability in the business sector. A stable economic growth translates into constant demand, allowing organizations to make predictions with greater confidence (Vladimir, 2010). On the other hand, GDP represents the economic performance of a country, with all economies having experienced periods of growth and recession. According to Athanasoglou et al. (2005), during periods of economic growth, as reflected by the GDP indicator, there is a higher demand for credit, and consequently, greater profitability for organizations. Therefore, it is

expected that economic growth positively impacts the profitability of companies. Based on these considerations, the following research hypothesis is proposed:

H₃: GDP growth has a significant impact on business performance, with this performance being measured by ROE.

Sustained economic growth requires a level of business qualification based on knowledge, technology, and innovation, as only these factors can ensure competitiveness in the global market. Investment in both fixed and human capital is linked to innovation and increased productivity. More and more, the success of companies depends on their ability to incorporate knowledge and technology and to be innovative. Therefore, innovation and investment policies play a decisive role in competitiveness, economic growth, and employment (IAPMEI, 2015). Based on these arguments, the following research hypothesis is proposed:

H₄: Investment has a significant impact on business performance, with this performance being measured by ROE.

3. Research Description

This quantitative research aims to evaluate the impact of several macroeconomic variables, defined in this study as independent variables, on the performance of Portuguese companies, with this performance being represented by a profitability indicator, over a period of eleven years. The macroeconomic variables considered were the interest rate, inflation rate, GDP growth rate, and investment. Information regarding the macroeconomic variables was obtained from the Pordata website, which is a database designed to collect, organize, and disseminate information on various economic and social areas, among others, with statistics sourced from official and certified sources.

Regarding the information on business performance, the ROE indicator was used. Data concerning the companies were obtained from the SABI database, and the sample was restricted according to certain criteria to ensure a manageable number of companies for the research. Companies with available financial information, including all known and accessible values, were selected, with a focus on small and medium-sized enterprises. Thus, the final sample consisted of 4,428 companies, and data processing was carried out using the SPSS statistical software.

In the present research, the following multiple linear regression model was used, where the profitability indicator ROE was correlated with the interest rate, inflation rate, GDP growth, and investment. The equation for the multiple linear regression model used in this research is as follows:

$$ROE_{i,t} = \beta_0 + \beta_1 \text{Interest Rate} + \beta_2 \text{Inflation} + \beta_3 \text{GDP Growth Rate} + \beta_4 \text{Investment} + \varepsilon_{i,t}$$

Where:

$ROE_{i,t}$ represents the Return on Equity for company i at time t ,
 β_0 is the intercept,
 $\beta_1, \beta_2, \beta_3, \beta_4$ are the coefficients of the respective variables,
 $\varepsilon_{i,t}$ represents the error term.

The possible relationships in the combination of the four variables in the study with the ROE indicator are presented in Table 1, based on the Pearson correlation coefficient, covariance, and the coefficient of determination.

Table 1 - Correlational Analysis between the 4 Variables and the ROE Indicator

Dimensões	<i>Rxy</i>	<i>Cov.</i>	<i>Cf. D.</i>
ROE – Interest Rate	0,394	10,707	0,155
ROE – Inflation Rate	0,633**	32,108	0,400
ROE – Growth Rate	-0,291	-24,061	0,085
ROE - Investment	-0,357	-42,788	0,127
Taxa Juro – Inflation Rate	0,393	0,375	0,154
Taxa Juro – Growth Rate	-0,242	-0,377	0,059
Taxa Juro – Investment	-0,303	-0,685	0,091
Taxa Inflação – Growth Rate	0,236	0,686	0,056
Taxa Inflação – Investment	0,267	1,125	0,071
Taxa Crescimento – Investment	0,640**	4,395	0,410

** Correlation is significant at the 0.05 level (2-tailed).

ROE - Return on Equity; Interest Rate; Inflation Rate; Growth Rate; Investment.

Rxy = Pearson Correlation Coefficient

Cov. = Covariance

Cf. D = Coefficient of Determination

Table 1 shows that there are both positive and negative correlations, with only two being statistically significant at a 0.05 significance level. The strongest linear relationship (0.640) is between the variables Growth Rate and Investment. It is also observed that this correlation and the covariance share the same sign (positive), meaning that in the sample, a higher score on one scale corresponds to a higher score on the other. The second strongest correlation (0.633) is between the ROE indicator and the Inflation Rate variable, where the covariance value is the highest (32.108), indicating a strong linear interrelationship.

Regarding the coefficient of determination (0.410) between these dimensions, it was found that the explained variance represents 41% of the total variance.

On the other hand, the lowest correlation (0.236) is established between the Inflation Rate and Growth Rate dimensions, indicating that approximately 94.4% of the variability in one cannot be explained by the variability in the other, and vice versa. Therefore, it is evident that there are other factors that may be important. Regarding the existence of negative covariances, it can be stated that the variables tend to vary in opposite directions. That is, if one increases, the other will decrease, or if one decreases, the other will tend to increase. This relationship leads to the conclusion that the negative covariance categorically indicates opposition in the movements of the variables.

Regarding the estimation and prediction of the ROE indicator model, the Multiple Linear Regression Model is a statistical technique that allows, based on the collected data, to describe, infer, and analyse the relationship between a dependent variable and a set of independent variables. The procedure used in the model estimation was Stepwise, which involves analysing the significance of the independent variable being added, with variables that do not have significant explanatory power being eliminated.

A model was defined that included the variables Interest Rate, Inflation Rate, Growth Rate, and Investment, to understand how these variables influenced the determination of the ROE indicator. The collected data was organized and operationalized to be tested in the form of a regression. Considering ROE as the dependent variable, the multiple linear regression model was deduced as follows:

$$ROE = B_0 + B_1 \text{ Interest Rate} + B_2 \text{ Inflation Rate} + B_3 \text{ Growth Rate} + B_4 \text{ Investment} + \varepsilon$$

The method of variable inclusion followed, as previously mentioned, was Stepwise, where the first independent variable to enter was the Inflation Rate, as it presented the highest correlation coefficient (0.633) (Table 1). It is also observed that 40.1% of the variation in the ROE indicator is explained by the Inflation Rate (Table 2).

Table 2 presents a summary of the adjusted model with its quality measures. The model demonstrates good quality, as approximately 84% of the variation in the ROE indicator ($R^2 = 0.836$; Standard Error = 23.296) is explained by the Inflation Rate and Investment. On the other hand, the prediction or estimation error has an average value of 23.296. It was observed that, among the variables included in the proposed model, the Interest Rate and Growth Rate were excluded due to their lack of statistical relevance, which corresponds to the non-consideration of these variables in the model definition.

Table 2 - Summary of the ROE Indicator Model

Model Summary^c										
Model	R	Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					Square Change	Change	f1	f2	Sig. F Change	
	,633 ^a	401	,334	30,98133	401	,022			,037	
	,836 ^b	699	,624	23,29554	298	,918			,023	,998
a. Predictors: (Constant), Inflation Rate										
b. Predictors: (Constant), Inflation Rate, Investment.										
c. Dependent Variable: Return on Equity										

To test the significance of the model, the ANOVA F-test was used (Table 3). With a significance level for the F-test lower than 0.05 ($F(2,8) = 9.285$; $p = 0.008$), we conclude that the model fits the data for the two variables (Table 3).

Table 3 - ANOVA

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5780,183	1	5780,183	6,022	,037 ^b
	Residual	8638,584	9	959,843		
	Total	14418,768	10			
2	Regression	10077,309	2	5038,655	9,285	,008 ^c
	Residual	4341,458	8	542,682		
	Total	14418,768	10			
a. Dependent Variable: Return on Equity						
b. Predictors: (Constant), Inflation Rate.						
c. Predictors: (Constant), Inflation Rate, Investment.						

In Table 4, it is possible to observe that a higher Inflation Rate and lower Investment, on average, lead to a higher value in the ROE indicator. This leads to the conclusion that the effect of both predictors is significant: the effect of Investment shows a negative value ($B2 = -6.816$; $t = -2.814$; $p = 0.023$), while the effect of the Inflation Rate ($B1 = 22.303$; $t = 3.896$; $p = 0.005$) is positive.

Table 4 - Multiple Linear Regression of Inflation Rate and Investment as Predictors of ROE

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	31,501	18,131		-1,737	,116
	Inflation Rate	18,002	7,336	,633	2,454	,037
2	(Constant)	100,903	48,988		2,060	,073
	Inflation Rate	22,303	5,724	,784	3,896	,005
	Investment	-6,816	2,422	-,566	-2,814	,023

Thus, the analysis resulted in the following model:

$$ROE = 100,903 + 22,303 \text{ Inflation Rate} - 6,816 \text{ Investment} + \varepsilon$$

The Inflation Rate and Investment were considered relevant variables, highlighting their contributions, one positive and the other negative, in characterizing the ROE indicator. Based on the obtained coefficients, it can be stated that an increase of one unit in the Inflation Rate results in an average increase of 22.303 in the value of the ROE indicator, while an increase of one unit in Investment implies a decrease of 6.816, establishing both a positive and a negative relationship between the two variables and the ROE indicator.

4. Conclusions

The macroeconomic context and government policies are intricately connected and together shape the environment in which businesses operate. A stable and predictable economic environment, supported by coherent and growth-oriented public policies, enhances the ability of businesses, particularly SMEs, to innovate, expand, and contribute to economic development. Policymakers, therefore, must consider the specific needs and vulnerabilities of businesses when designing macroeconomic and regulatory frameworks, ensuring that both the economic structure and institutional support mechanisms align with long-term development goals. Macroeconomic variables are closely linked to business performance and growth. Understanding these variables allows companies to anticipate potential risks and opportunities arising from changes in the economic environment. For SMEs, which often operate with limited resources, adapting to fluctuations in interest rates, inflation, exchange rates, GDP growth, and other macroeconomic factors is crucial for ensuring financial stability and long-term success. Policymakers thus play a vital role in shaping the macroeconomic environment to provide stability and support business growth.

The present study aimed to analyse the effects of certain macroeconomic variables on the performance of Portuguese companies. A multiple linear regression model was used for statistical analysis, where the ROE indicator was correlated with four macroeconomic

variables: interest rate, inflation rate, GDP growth, and investment. The results showed that inflation rate and investment were considered relevant variables in explaining the model and characterizing the ROE. Based on the coefficients obtained, it was concluded that an increase of one unit in the inflation rate results in an average increase of 22.303 in the ROE value, while an increase of one unit in investment leads to a depreciation of 6.816, establishing a positive relationship for inflation and a negative relationship for investment with the ROE indicator. The model showed good quality, with approximately 84% of the variation in the ROE indicator ($R^2 = 0.836$; Standard Error = 23.296) explained by inflation rate and investment. Regarding the interest rate and GDP growth, these variables were excluded because, although they had some representativeness in the model, they did not show statistical significance. Thus, these results lead us to accept hypotheses H2 and H4, as both inflation rate and investment affect the ROE outcome, leading to the rejection of hypotheses H1 and H3. These results align with existing literature (Hudson, 1986; Machin & Van Reenen, 1993; Robson, 1996; Geroski et al., 1997), as it was found that macroeconomic conditions, defined by stable and sustained policies, influence the profitability of organizations (Yohane, 2004; Zeitun et al., 2007), with their relationships being highly complex (Oxelheim & Wihlborg, 2008). However, not all the variables studied were predictive of this relationship, as is the case with the interest rate and GDP growth, as no statistically significant results were found.

Regarding hypothesis H2, it was found that the inflation rate had a predictive impact on determining the profitability of businesses, contrary to studies by Wadhwani (1986), Young (1995), and Osoro & Ogeto (2014), which indicated a negative relationship between these variables. In the economic and financial field, a positive correlation between inflation and ROE can be understood considering macroeconomic theories that suggest a positive relationship between low, controlled inflation rates and economic growth (Samuelson & Nordhaus, 2005). Mild inflation may even serve as an economic stimulus, enhancing the efficiency of price mechanisms and reducing uncertainty (OECD, 2005), which could encourage businesses to produce more and generate higher profits, as the sale prices of their products and services rise more than proportionally to the costs of wages and raw materials. This positive correlation could also be explained by productivity gains that enable businesses to increase profit margins, boosting the growth of ROE.

On the other hand, regarding research hypothesis H4, it was found that investment did impact organizational performance, though in an inverse relationship to what was expected. A possible explanation for the negative correlation between investment and firm profitability, as measured by ROE, lies in the short-term financial burden associated with capital expenditures. When firms, especially SMEs, make substantial investments in fixed assets such as infrastructure, technology, or human capital, the costs are incurred immediately, while the financial returns typically materialize only over the medium to long term. This time lag between investment and return can lead to a temporary decline in net income, thereby lowering ROE in the short run. Moreover, increased depreciation, financing expenses, or operational inefficiencies during the investment phase can further reduce profitability. This effect is often more pronounced in SMEs, which tend to have limited financial buffers to absorb the initial costs of investment (Fazzari et al., 1988; De Jong et al., 2011). Additionally, if the investments are poorly allocated or made in an unfavourable macroeconomic environment, they may fail to generate the expected returns, thereby negatively impacting profitability.

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