


## Article

# Tax Payment and the Performance of SMEs: A Longitudinal Analysis on EU Countries

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**Abstract:** Small and medium enterprises (SMEs) are considered the engine of any economy and actively contribute to the economic growth of countries. For this reason, there are concerns regarding the identification of the factors that influence the activity of SMEs and, in particular, how they manage to adapt and obtain better performance in a constantly changing economic environment. The tax burden is high and discouraging for many enterprises, so we aimed to analyse the relationship between the taxes imposed on SMEs and their performance. Thus, the main purpose of our study was to analyse the relationship between the taxes paid by SMEs and their performance. The period of analysis consisted of the 14 years between 2008 and 2021. The analysed sample comprised the 27 member countries of the European Union. To test the relationship, we used panel data methods, and we considered two indicators that measure the performance of SMEs as dependent variables and indicators that measure the taxes paid by businesses as independent variables. For a more in-depth analysis, we used clusters of countries. The main results show that the taxes that SMEs have to pay are seen as obstacles in the way of improving performance. Moreover, the relationship between taxes and the performance of SMEs depends on the specifics of the economy of the country.

**Keywords:** taxes; small and medium enterprises; performance; EU countries



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## 1. Introduction

In the European Union countries, small and medium enterprises represent approximately 99% of all firms and occupy a central place, contributing to employment and the creation of added value. Thus, the development and the improvement in the performance of this sector strongly impact economic growth. Table 1 shows the situation of SMEs from the European Union in the period 2008–2021 and emphasizes that SMEs represent 99.8% of the total number of companies. The added value generated by SMEs is over 50% of the total, a fact that demonstrates the vital impact of this sector on the overall economy of a country. The COVID-19 pandemic was felt significantly by the SME sector, as it led to a decrease of 3% in the added value recorded in the 2020–2021 period.

**Table 1.** The evolution of indicators emphasizing the role of SMEs in the EU in the period 2008–2021.

	Number of SMEs		Value Added		Employment	
	All SMEs	Large Enter.	All SMEs	Large Enter.	All SMEs	Large Enter.
2008	99.9	0.1%	58%	42%	67%	33%
2009	99.8%	0.2%	58%	42%	67.4%	32.6%
2010	99.8%	0.2%	58.4%	41.6%	66.9%	33.1%
2011	99.8%	0.2%	58.1%	41.9%	67.4%	32.6%
2012	99.8%	0.2%	57.6%	42.4%	66.5%	33.5%
2013	99.8%	0.2%	58.1%	41.9%	66.9%	33.1%
2014	99.8%	0.2%	57.8%	42.2%	66.9%	33.1%
2015	99.8%	0.2%	57%	43%	67%	33%
2016	99.8%	0.2%	56.8%	43.2%	66.6%	33.4%
2017	99.8%	0.2%	56.8%	43.2%	66.4%	33.6%
2018	99.8%	0.2%	56.4%	43.6%	66.6%	33.4%
2019	99.8%	0.2%	56.8%	43.2%	67.1%	32.9%
2020	99.8%	0.2%	53%	47.0%	65.0%	35%
2021	99.8%	0.2%	53%	47.0%	64%	34%

Source: authors' data processing from Annual Report on European SMEs [1].

There are numerous factors that determine the activity of SMEs and, in particular, their performance. Taxation appears to be one of these factors, as the tax burden in many countries is seen as being too high and discourages small and medium enterprises. Moreover, tax is linked to the economic development of countries because it provides them with revenue. The revenues from taxes are necessary for governments to ensure the good functioning of a country. However, the events from recent years have led to a serious decline in the performance of SMEs, generating significant reductions in tax receipts at the national level. All these facts point to the need to analyse the performance of SMEs in relation to the tax system [2].

The relationship between SMEs' taxation and their performance has received limited attention in the literature. There are a small number of studies that analyse this relationship, and they focus in particular on single countries, mostly African or Asian countries. The results obtained by these studies relate to the specifics of the economies of these countries, and most of the time they cannot be generalized or considered as a model for European countries. However, the need to identify the effect of taxation on the performance of SMEs is becoming more and more urgent in the current economic conditions, in which good management of costs is necessary so that companies can obtain profit. Thus, the main purpose of our analysis was to discover the relationship between the taxes that SMEs have to pay and their performance, focusing on the European Union countries.

The novelty of our study comes from the analysis of an extended sample of 27 countries from the European Union, as well as a long period of time of 14 years. Moreover, the analysis was undertaken for different clusters of countries and highlights that the particularities of the economies that allow inclusion in a certain cluster represent a significant mediator of the relationship between taxes and SME performance. The studies carried out on this issue up to now have usually focused on a single country, so expanding the sample and undertaking comparative analyses between groups of countries according to their level of development is an important element of the novelty of our study.

As an analysis method, we used the panel data method, and we developed two different models that were run in turn for each cluster of countries.

The study is organized as follows. Section 2 focuses on describing the findings of previous studies that have focused on identifying the relation between taxation and SMEs' activity. In Section 3, we describe the data used and the methodology applied. Section 4 presents the main findings of the econometric analysis and discusses them. The study ends with several concluding remarks and recommendations.

## 2. Literature Review

Some studies in the literature [3,4] highlight and empirically demonstrate the need for decision makers to sustain and stimulate performance in the small and medium enterprise sector. In recent years, economic and social transformations have caused major changes in SMEs' activity. At the international level, they are considered as the heart of the economy in every state in the world [5].

Considering the overwhelming importance of small and medium enterprises, both from social and economic points of view, adopting the most appropriate means to increase performance in this sector is a vital priority for every country. Nurlaily et al. [3] analysed the effects of several macro- and microeconomic variables on structured capital and on the financial performance of companies for the period 2004–2010. The paper describes a case study with a sample of companies from the food and beverages industry in Indonesia. The authors used econometric methods and emphasized that both the macro- and microeconomic variables analysed showed a negative influence on the financial performance of the firms analysed. However, they also showed that capital structure positively influences the financial performance of companies, a result that highlights the fact that profitable companies increasingly rely on debt as a source of financing for their activity.

Improving the performance of SMEs should be a major concern for decision makers because they create added value, jobs, innovation and economic growth. Thus, a series of authors [4] have analysed the performance of SMEs, considering employment in SMEs as the measurement variable, in a group of seven Central and Eastern European countries. Their results highlighted that several macroeconomic indicators influence employment in SMEs. Other papers [6,7] analysed the effects of financial constraints on samples of SMEs from countries in Southeastern Europe and pointed out that good access to finance is among the main factors that help SMEs grow. Access to finance also plays an important role in tax avoidance among enterprises. Thus, enterprises that face greater obstacles in obtaining the necessary financial resources are more likely to avoid paying taxes. Moreover, the companies with a higher probability of making investments are those that avoid taxes [8].

Another study [9] analysed the factors affecting the performance of SMEs, considering a sample of 50 SMEs that are active in the manufacturing sector in Egypt. The findings of their study demonstrated that inadequate managerial skills and imperfect management have negative influences on the performance of SMEs.

Studies from the literature focusing on the effects of different macro- and microeconomic factors on the performance of SMEs have obtained mixed results. Thus, one paper [10] analysed whether the macroeconomic environment influences the improvement in a company's performance. Ipinnaiye et al. [10] analysed a sample of manufacturing SMEs from Ireland and demonstrated that, to ensure SME performance and growth, it is necessary to integrate the macroeconomic conditions and the characteristics of companies, as well as elements related to companies' strategy.

Bekeris [11] analysed the impact of the macroeconomic environment on SME profitability, demonstrating a correlation between economic factors and corporate profitability. The paper analysed an extended set of variables: population, number of companies in a country, exports, imports, FDI, inflation, GDP, unemployment, taxes paid, average salary, etc. The results showed that most of the macroeconomic variables were not statistically significant and did not have a strong correlation with the profitability of firms. Among the variables that were shown to have the greatest impact on corporate profitability were the change in the interbank rate and the unemployment rate.

Cicea et al. [12] analysed whether certain economic and social factors influence the performance of SMEs. In order to determine the short-term and long-term influence, the study focused on three types of tests: stationarity testing, cointegration testing and causality testing between the influencing variables and the variable used to measure the performance of SMEs. Among the macroeconomic variables analysed were the corruption perception index, fund absorption rate, gross domestic product, general public expenditures, inflation rate, life expectancy at birth, social exclusion, population education level and unemploy-

ment (as the annual average). The determinants of performance were classified into four types of environments: economic, social, political and demographic. Furthermore, the authors grouped countries according to various characteristics. The results of their study showed that macroeconomic factors significantly affect SMEs' performance, as they found that nine of the variables considered had a great influence on the value added by SMEs.

Identifying the main determinants for the growth and performance of SMEs can be seen as an important element in adopting appropriate measures to create and support this sector. Thus, other authors [13] analysed the impact of various macroeconomic variables on the dynamics of entrepreneurial activity in 18 of the member countries of the European Union for the period 2002–2015 using the fixed effects model. The results of the study demonstrated that the inflation rate, foreign direct investments, access to financing and the total tax rate are the main macroeconomic factors affecting entrepreneurship.

Taxes are one of the most important constituents in revenue management at the national level [14]. Taxation is a key government policy measure and, therefore, has a direct impact on the operations of SMEs and their activities [15–17]. Moreover, as studies have shown [18], the tax burden is higher for SMEs compared to large and multinational enterprises. Furthermore, the tax incentives that exist in most countries are inadequate to compensate for this difference.

Despite the importance of small- and medium-sized enterprises in the economy, they face a series of barriers related to taxes, a fact that leads to the impairment of entrepreneurial activity. Ravšelj et al. [19] analysed the relationship between the burdens imposed by fiscal policy and entrepreneurial activity, as well as the perception of SMEs on the reduction of bureaucracy. The study used two different sets of data: one set for the European Union countries and another focusing only on Slovenia. The variables analysed were the fiscal burden, tax administrative burden, new business density and total early-stage entrepreneurial activity. The results of the study demonstrated that, in the European Union, entrepreneurial activity is affected more by how firms face the tax administrative burden compared to the tax burden. Regarding the situation in Slovenia, the results showed the need to implement a stable fiscal system with more stability in the collection of the taxes and also focused on the inclusion of ICT procedures. This need can also be related to the case of Mexico, where SMEs have to comply with the authorities' requirements regarding tax provisions and where the inclusion of ICT in their activity, through electronic invoicing and accounting, has generated an improvement in SMEs' performance [20].

Several studies have focused their analyses on tax compliance among SMEs [21–27] and shown that tax compliance costs depend on the age of the firm, location and business activity. Furthermore, tax compliance behaviour is positively related to tax fairness, peer influence and political instability [28,29]. Timothy and Abbas (2021) [24], considering a sample of Indonesian SMEs, found that SMEs' tax compliance is positively related to their trust in public authorities but also the level of tax morality and their perception of justice. Considering SMEs from Nigeria, Vincent (2021) [25] revealed that several economic and behavioural factors determine tax compliance behaviour and also that tax information can be seen as one of the main drivers of tax compliance. Further, Wadesango et al. (2020) [26] analysed the relationship between tax amnesty and tax compliance among SMEs in Zimbabwe and obtained an inverse relation. Several studies have turned their attention to assessing the effects of taxation on the performance and growth of SMEs [30–33] and mainly showed that these effects are negative. Thus, the study by Awotwe [31] analyses the effects of taxation on the financing decisions of SMEs. The results of the study showed that corporate taxation causes a statistically significant positive variation in SME growth and that there is a very strong positive correlation between corporate tax and SME growth. Robertson et al. [30] analysed the factors that affect the development of SMEs. They concluded that one of these factors is taxation. Thus, if tax rates are high, they will lead to a reduction in the profit-making incentive. Another problem faced by SMEs is the complexity of the tax system, as SMEs do not have the capacity to administer tax declarations, which leads them to consult experts, despite the cost, in order to comply with the legislation in

force. Heimonen [34] considered a sample of continuously growing SMEs from Finland and analysed the factors that influence the innovativeness of growth among these firms. The author defined a success index for the firms made up of the following variables: pre-tax profit, return on investment, equity ratio, debt ratio and business growth. He pointed out that paying taxes is one of the factors that influence the success of the firms.

Jusufović and Sadiku [33] analysed the impact of fiscal policies on increases in the capacity of SMEs in the Western Balkans. The variables included in the study were: population number, nominal GDP at current prices, GDP per capita, unemployment rate, value-added services (% of GDP) and employment. The results of the study demonstrated that fiscal policies have an important impact on SMEs.

Since taxation plays a particularly important role in the development of an economy, one study [35] analysed the importance of aligning a country's specific fiscal system with the needs of SME growth. The study was focused on a survey of 102 SME managers, analysing their perception of the tax system. Descriptive analysis, correlation analysis and regression were used to obtain the results. The results showed that the majority of respondents perceived a negative impact from fiscal policies on the growth of SMEs, suggesting the need for reform of fiscal policies in the country.

Another study [36] focusing on a sample of SMEs from Malaysia showed that access to resources coming from non-banking credits (such as incubators and crowdfunding), as well as imposing tax incentives, can sustain SMEs' performance, mainly by lowering the opportunity costs related to riskier projects.

Fu et al. [37] analysed the link between insolvency regulatory effectiveness and entrepreneurship using modelling for a sample of 27 countries. The results of the study demonstrated that innovation-oriented entrepreneurs are more affected by regulations than necessity-motivated entrepreneurs.

The high incidence of tax non-compliance among SMEs is blocking the progress they should be making. Thus, the results of a fairly recent study [38] demonstrated that tax compliance enhanced the effectiveness of taxation in impacting economic development. The moderating role of tax compliance in the relationship between taxation and economic development was low but positive.

The economic changes in the last few years have generated significant negative effects on economies and enterprises. The global economic crisis of recent years has significantly affected SMEs around the world, as they are considered the most sensitive sector [39]. Among the measures proposed to save the SME sector are exemptions for reinvested profit. This fact shows that fiscal measures are significant for ensuring the functioning and performance of SMEs. More recently, in the context of the COVID-19 pandemic, enterprises faced a drop in performance. One group of authors [40] showed that the pandemic significantly influenced the decline in SMEs' performance and also pointed out the role played by management innovation and organizational resilience in reducing this decline, simultaneously seeing them as a solution for the future when SMEs may be confronted suddenly with significant crises.

### 3. Data and Methodology

In order to carry out the empirical investigation, we used data for a sample consisting of the 27 member countries of the European Union. The data analysis period was 2008–2021. We chose this period in accordance with the availability of data for the indicators used but also to observe the effects of the main events of the century, such as the global economic crisis and the COVID-19 pandemic, on the performance of SMEs and the relation with taxation. We also wanted to take into account the fact that, in this period of economic problems, decision makers intervened to support SMEs through different means depending on the country: subsidies, other aids, tax reductions, exemptions from paying certain taxes, etc. These intervention measures could affect the results for the correlations tested in the empirical analysis.



At the country level, the performance of SMEs was measured by using three indicators: the number of SMEs active on the market, the number of employees in SMEs and the added value. To achieve the purpose of our paper, we proposed to measure the performance using two indicators: the number of SMEs and the added value.

The empirical investigation was realised by applying panel data models. As we considered two indicators as proxies for measuring SMEs' performance, we formulated two models for testing the hypothesis: model 1, which considered as a dependent variable the number of SMEs; and model 2, with the dependent variable being the added value of SMEs. The independent variables considered in this paper were: profit tax, time to prepare and pay taxes and tax payments. In order to analyse the impact of taxes on the performance of SMEs, we also included a series of control variables: real GDP growth rate, total investments, inflation rate and unemployment rate. The data used in this paper were country-level data collected from Eurostat and the World Bank.

In Table 2, we have described all the variables used in this empirical research, indicating the symbol, the unit of measure and the data source.

**Table 2.** Description of the variables used in the empirical analysis.

Symbol	Name	Measurement Unit	Source
Dependent variables			
VA	Added value generated by SMEs	Million EUR	Eurostat
NoE	Number of SMEs	Number	Eurostat
Independent variables			
Pr_t	Profit tax	% of commercial profits	World Bank
Time	Time to prepare and pay taxes	Hours	World Bank
Tax	Tax payments	Number	World Bank
Control variables			
R_GDP	GDP growth rate	Annual %	World Bank
Infl	Inflation rate, consumer prices	Annual %	World Bank
Unempl	Total unemployment rate	% of total labour force	World Bank

Source: authors' processing.

In order to process the data, we used the EViews 10 econometric software.

The definitions for the independent variables are presented in the following. The *profit tax* was defined as the totality of the profit taxes paid by the company. The *time for the preparation and payment of taxes* was defined as the time expressed in hours per year used for the preparation, filing and payment of three types of taxes: profit tax, value added tax and sales or labour tax. Furthermore, this category included the salary tax and related contributions. The *tax payment* by the company represents the total taxes paid by the company, including electronic payments. This is calculated once a year, even if payments are made more frequently.

The performance of SMEs can be influenced by a large number of internal and external economic factors. However, our main purpose was to test the effects of taxation on performance. Therefore, we included a set of control variables that expressed the main macroeconomic factors with effects on performance. The control variables are defined next. The *annual percentage growth rate of GDP* at market prices represents the sum of gross added value attributable to resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. *Unemployment* represents the share of the labour force without a job who are available and looking for a job. *Inflation* was measured from the consumer price index and reflects the annual percentage change in the cost of purchasing a basket of products. Bekeris [11] analysed whether increases in the unemployment rate and the inflation rate influence performance of the SME sector, concluding that the two indicators have a negative impact on the performance of this vital sector for the economy.

To empirically analyse the effects of paying taxes on the performance of SMEs, we used the panel data method. For this, we formulated two models alternating the two proposed dependent variables. The equations for the two models are described below:

$$\text{NoE} = \beta_0 + \beta_1 \times \text{Prt} + \beta_2 \times \text{Time} + \beta_3 \times \text{Tax} + \beta_4 \times \text{R\_GDP} + \beta_5 \times \text{Inflation} + \beta_6 \times \text{Unemployment} + \varepsilon \quad (1)$$

$$\text{VA} = \beta_0 + \beta_1 \times \text{Prt} + \beta_2 \times \text{Time} + \beta_3 \times \text{Tax} + \beta_4 \times \text{R\_GDP} + \beta_5 \times \text{Inflation} + \beta_6 \times \text{Unemployment} + \varepsilon \quad (2)$$

where  $\beta_0$  is the constant;  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  are the parameters for the independent variables;  $\beta_4$ ,  $\beta_5$  and  $\beta_6$  are the parameters for the control variables; and  $\varepsilon$  is the error term of the equation.

Before applying the panel data models, we analysed the descriptive statistics and the correlation matrix and also tested whether the variables had a unit root. Then, we ran the panel data models, applying an ordinary least squares (OLS) model adapted to panel data, as well as the fixed effects and random effects models. The results of the Hausman test and the redundant fixed effects test showed contradictory results; therefore, we decided to continue with the OLS model adapted to panel data. Testing these effects showed that the most suitable for our data was the OLS model adapted to panel data. OLS usually estimates the coefficients of linear regression equations used to analyse the relation between a set of variables.

#### 4. Results and Discussions

For the analysis of the data, we first used descriptive statistics followed by correlation and regression analysis. All the calculations below were undertaken with the help of EViews 10 econometric software. As the data for the number of enterprises and the value added were in absolute values, we transformed these variables by using the natural logarithm.

In Table 3, we present the results for the descriptive statistics. The largest value for the standard deviation was recorded for the variable tax payments (13.24%). This proves that taxes significantly influence the performance of the SME sector. Several minimum values were negative, such as for the profit tax, real GDP growth rate and inflation rate. These results show the negative impact of the global economic crisis and the COVID-19 pandemic on these indicators. The maximum value was recorded for the variables tax payments and profit tax.

**Table 3.** Descriptive statistics.

	Min.	Max.	Mean	Std. dev.	Skewness	Kurtosis	Obs.
<b>ln NoE</b>	10.128	15.180	12.821	1.333	−0.169	2.253	378
<b>ln VA</b>	7.603	13.757	10.714	1.437	0.184	2.253	378
<b>Pr_T</b>	0.200	32.400	12.162	6.939	0.530	3.064	320
<b>Time</b>	3.912	6.632	5.136	0.496	−0.171	3.208	321
<b>Tax</b>	6.000	113.000	13.703	13.247	5.519	40.150	320
<b>R_GDP</b>	−14.838	25.176	1.406	4.121	−0.323	7.241	378
<b>Infl</b>	−4.478	15.402	1.779	1.973	1.864	12.072	378
<b>Unempl</b>	2.011	27.470	8.641	4.496	1.622	5.993	378

Source: authors' calculation.

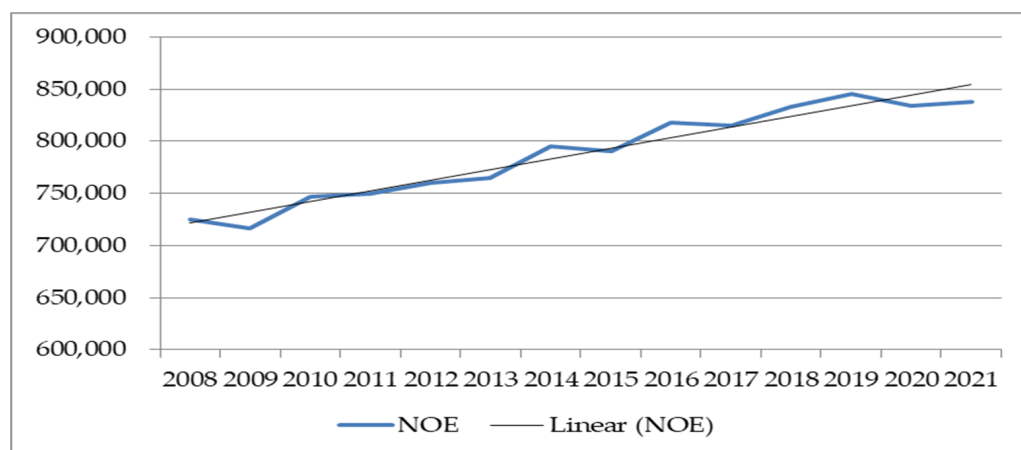
The numbers of observations were different for the variables expressing taxation because, in the database provided by World Bank, data are available for these variables only up to and including 2019.

The results obtained for the skewness showed that the distribution of the variables was asymmetric. The most asymmetric distribution was for the number of tax payments, which varied from 6 payments to 113 payments. Over time, some countries worked on reducing the number of taxes paid (such as the Slovak Republic, which had 32 taxes to pay in 2008 and reached only 8 taxes to pay in 2019).

For the inflation and unemployment rate variables, the data were also skewed to a significant degree. The distributions of the other variables were fairly symmetrical.

The values obtained for the kurtosis showed that the distributions were leptokurtic and produced more outliers than normal distributions. These results in fact show the diversity of our sample and were obtained because of the individual economic characteristics and taxations policies of each country. In our sample, we included both more developed and developing countries with specific characteristics. Furthermore, we included countries with very high taxation rates (such as Malta between 2016 and 2019) and countries with low taxation rates (such as France between 2015 and 2019).

In Figure 1, we present the evolution in the number of SMEs in the EU member countries between 2008 and 2021. The number of SMEs showed an increasing trend over the period considered, with fluctuations determined by the events of the last century. The first interruption in the upward trend was in 2009 in the context of the financial crisis. Then, there were significant reductions in 2020–2021 because of the restrictions imposed in the context of the COVID-19 pandemic. These results show the vulnerability of the SME sector to the changes taking place in the economy and the need for decision makers to elaborate intervention policies to limit the negative effects and ensure the quick recovery of this sector.

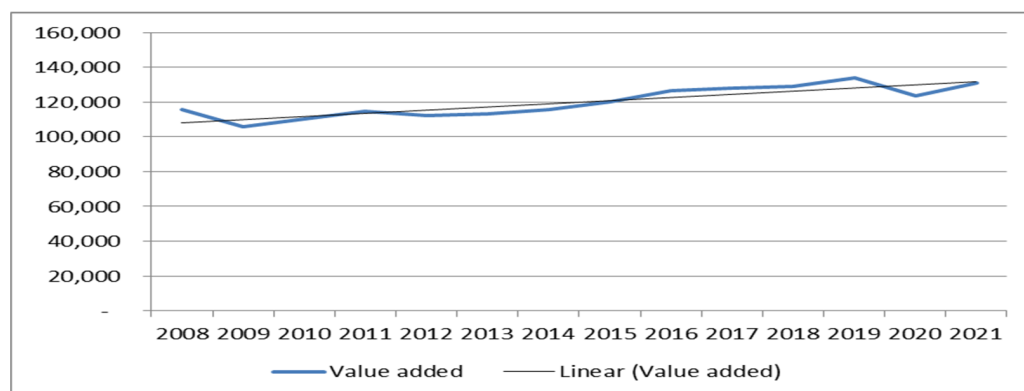


**Figure 1.** The evolution in the average number of SMEs in the EU countries, 2008–2021. Source: authors' calculation.

Figure 2 shows the evolution in the added value generated by the SME sector in the member countries of the European Union in the period 2008–2021 and highlights how the performance of SMEs was significantly affected by economic instability. The year 2009 was marked by a reduction in the added value generated by SMEs in the context of the financial crisis. The recovery was slow, and only in 2014 did the added value slightly exceed the value recorded in 2008. After this, there followed an increase from year to year until 2020, when, in the context of the COVID-19 pandemic, a significant decrease was recorded.

The correlation analysis (see Table 4) showed that profit tax and time to prepare and pay taxes were related positively with SMEs' performance and had significant effects, as demonstrated by the value of  $p$  ( $p$  was less than 0.01). The number of taxes paid by businesses was negatively and statistically significantly related to the performance of SMEs. Taking into account that the correlation coefficients were lower than 0.50, we could run the regression analysis without the problem of multicollinearity.





**Figure 2.** The evolution in the added value created by SMEs in EU countries, 2008–2021. Source: authors' calculation.

**Table 4.** Correlation matrix.

	ln NoE	ln VA	Pr_t	ln Time	Tax	R_GDP	Infl	Unempl
ln NoE	1.000							
ln VA	0.875 **	1.000						
Pr_t	0.187 **	0.304 **	1.000					
ln Time	0.416 **	0.079	0.0271	1.000				
Tax	−0.116 *	−0.171 **	−0.153 **	0.095	1.000			
R_GDP	−0.141 *	−0.116	0.039	−0.102 *	−0.051	1.000		
Infl	−0.086	−0.134 *	−0.112	0.136 *	0.291 **	−0.029	1.000	
Unempl	0.140 *	−0.035	−0.104 *	0.093 *	−0.058	−0.264 **	−0.237 **	1.000

\*, \*\* Correlation was significant at the 0.05 (respectively, 0.01) level. Source: authors' calculation.

To avoid the problem of spurious results in the regression analysis we tested the stationarity by applying ADF unit root tests (see the results presented in Table 5).

**Table 5.** Results for the unit root test.

ADF Test	Level	
	Statistics	Prob.
ln NoE	−5.10935	0.0000
ln VA	−2.96651	0.0015
Pr_T	−2.06785	0.0193
Time	−6.69118	0.0000
Tax	−3.55562	0.0103
R_GDP	−8.70301	0.0000
Inflation	−3.62631	0.0001
Unemployment	−2.16515	0.0152

Source: authors' processing.

The variables analysed were stationary with a probability of 5%. Once the variables were found to be stationary, we could run the panel data regression model to express the impact of taxes on the performance of SME for the period 2008–2021.

Tables 6 and 7 show the results for the regression equations (Equations (1) and (2)) using the ordinary least squares method adapted to panel data. Table 6 summarizes the results obtained for the first model, which considered as a dependent variable the number of SMEs. The panel data regression analysis was applied first for all the 27 EU countries. After that, we also ran it for clusters of countries: eurozone, non-eurozone and Western and Eastern European countries. The results from Table 6 show that profit tax was correlated positively with the number of SMEs for the cluster of 27 EU countries. A similar result was obtained for non-eurozone countries and Eastern European countries.

For Western European countries, profit tax was negatively related with the number of SMEs. These facts show that only for Western European countries did the profit tax paid by SMEs negatively influence the number of SMEs on the market. For non-eurozone and Eastern European countries, even if the profit tax was high, the number of SMEs kept increasing; here, we have to take into account the specifics of the economies of these countries. Non-eurozone countries have a lower degree of development compared to those in the eurozone area, especially considering that countries from Eastern Europe are former socialist countries. In these countries, entrepreneurs motivated by necessity predominate, who, in the absence of another option for obtaining income for living, choose to open a business even if the profit tax they have to pay is high. These findings are in line with the results of other studies [41,42], which showed that the effects of taxation depend on the type of entrepreneurship. Therefore, high taxes on firms are negatively correlated with quality entrepreneurship and positively with necessity entrepreneurship. Decision makers should adopt policies that ensure favourable tax treatment for SMEs, especially for those that are innovative and have high growth potential.

Time was related positively to the number of SMEs for all the clusters of countries, highlighting that, even if the time required for preparing and paying taxes increased, the number of SMEs on the market continued with an upward trend. This might also have been related to the fact that, following the modernization of ITC infrastructure and after the introduction of a unified tax management system, the increase in efficiency was also related to the reduction in physical interactions between tax officials and taxpayers. Thus, as a result of improvements to taxpayer services, the number of active firms doubled and the numbers of individual taxpayers filing taxes and the revenue collections rose strongly [43].

**Table 6.** The relation between taxes paid and the number of SMEs.

Dependent Variable Number of SMEs	27 EU Countries	Eurozone	Non-Eurozone	Western Europe	Eastern Europe
Pr_t	0.033 *** (0.009)	0.003 (0.011)	0.042 *** (0.004)	−0.072 *** (0.011)	0.044 *** (0.003)
ln Time	1.137 *** (0.025)	1.336 *** (0.065)	0.739 *** (0.059)	2.296 *** (0.165)	1.050 *** (0.058)
Tax	−0.011 ** (0.005)	−0.073 *** (0.005)	0.001 (0.002)	−0.070 *** (0.006)	0.006 *** (0.001)
R_GDP	−0.013 (0.028)	−0.024 (0.038)	0.029 ** (0.011)	−0.006 (0.019)	0.031 *** (0.009)
Inflation	−0.050 (0.031)	−0.096 *** (0.029)	−0.043 (0.035)	−0.040 (0.053)	−0.062 ** (0.028)
Unemployment	0.018 *** (0.006)	0.016 ** (0.008)	0.073 *** (0.008)	0.017 (0.014)	0.080 *** (0.007)
C	6.677 *** (0.228)	6.885 *** (0.372)	9.201 *** (0.396)	3.515 *** (0.553)	7.199 *** (0.000)
Obs.	320	225	95	177	131
R-squared	0.246	0.340	0.371	0.557	0.527
R-squared adjusted	0.231	0.322	0.328	0.542	0.504
F-statistic	17.031 ***	18.757 ***	8.667 ***	35.730 ***	23.965 ***

Source: authors' processing. Note: \*\* and \*\*\* represent significant values at 5%, respectively 1%. Standard error in parenthesis.

The variable measuring the number of tax payments was negatively related with the number of SMEs for all 27 EU countries, as well as for the clusters comprising the eurozone and Western European countries. For Eastern European countries, the number of tax payments was positively related with the number of SMEs. This result shows that SMEs are negatively influenced and discouraged by the number of taxes they have to pay, especially in more developed countries. This could be related to the fact that entrepreneurs motivated by opportunity predominate in these countries, and they are interested in capitalizing on market opportunities and obtaining higher profits. Therefore, a higher number of taxes

affects the profits and discourages them. In contrast, in the countries of Eastern Europe, entrepreneurs motivated by necessity continue to open their businesses in the absence of another source of income, even if the number of taxes to be paid increases. High tax rates, but also an inefficient tax structure, might discourage innovative entrepreneurship. As shown by Hedlund (2022) [44], tax policies that reduce the gains of innovative firms might negatively influence economic growth.

The results obtained for the control variables showed that GDP growth rate positively and statistically significantly influenced the number of SMEs in less developed countries (non-eurozone and Eastern European clusters). This is in agreement with studies from the literature [45–48] that show that increased economic growth rates generate increased demand for goods and services, which lead to an increase in opportunities for starting new businesses. Inflation was found to negatively influence the number of SMEs for all the models, but the coefficients were significant only for the eurozone countries and for Eastern European countries. Inflation was found to lead to a rise in the operating costs of SMEs and the need to cut expenses and tighten profit margins, affecting the activity and profitability of SMEs, results that are in line with other studies [47,49,50].

The unemployment rate was positively and statistically significant related with the number of SMEs for all the models, with the exception of Western European countries. The results are in agreement with the findings of other studies [51–54], which highlight that, when high unemployment rates are recorded, many people decide to open an enterprise, entrepreneurship being seen as a way to get rid of unemployment.

The values obtained for the R-squared adjusted were between 23% and 54% (depending on the cluster of countries analysed), showing that between 23% and 54% of the variation in the number of SMEs could be explained by the variation in the independent variables. The probability for the F-statistic was lower than 0.05; thus, the models were valid. The relatively low values obtained for the R-squared adjusted highlight that, although taxation influences the number of SMEs on the market, there are also other significant determining factors.

Starting from the findings of the first model, we can affirm that taxation is among the factors that influence the number of small and medium enterprises on the market. Moreover, innovative enterprises motivated by opportunity are affected in a higher proportion. To sustain and encourage the creation of new innovative and high-performance enterprises, decision makers should adopt measures aimed at reducing the number of taxes and granting tax reductions.

Table 7 presents the results obtained for the second model, which used the value added generated by SMEs as a dependent variable. Similarly to the previous model, we applied panel data regression models for clusters of countries. The results obtained highlighted that profit tax was positively correlated with the value added generated by SMEs for the cluster of 27 EU countries and the eurozone, non-eurozone and Eastern European countries. For Western European countries, profit tax was negatively related with the value added generated by SMEs. In the case of Western European countries, the profit tax paid by SMEs negatively influenced the value added that they generated on the market. For the other clusters of countries, even when the profit tax increased, the value added of SMEs was not affected and continued to increase.

Maintaining tax rates at reasonable levels might stimulate the development of the private sector and the formalization of businesses. Modest tax rates are especially important to SMEs because of their contribution to economic growth and employment, but SMEs do not add significantly to tax revenues. Imposing high tax costs on businesses of this size might not add much to government tax revenue, but it might cause businesses to move to the informal sector or, even worse, cease operations [43].

Time was positively related with the number of SMEs for all the clusters of countries, excepting the non-eurozone cluster. This shows that, even if the time required for preparing and paying taxes increases, the value generated by SMEs on the market will have an upward trend. The exception was the cluster of non-eurozone countries, for which requirements

for longer times for the preparation and payment of taxes generate a reduction in the added value of SMEs. For this cluster of countries, we can talk about a predominance of opportunity entrepreneurs, who are entrepreneurs focused on innovation and growth. As SMEs are enterprises with reduced numbers of employees, investing time in paying taxes will affect their productivity and profitability. A study from the literature found no relations between the time needed to pay taxes and the profitability of SMEs [35], while another study [55] showed that a reduction of 10% in the number of taxes and the time required to pay taxes generated an increase of 3% in business entry rates. The variable measuring the number of tax payments was negatively related to the value added generated by SMEs for all the models analysed. These findings highlight that the value added obtained by SMEs is negatively influenced by the number of taxes they have to pay. If SMEs have to pay more taxes, this will diminish their value added. These results are in line with the results of other studies [55].

**Table 7.** The relation between the taxes paid and the value added generated by SMEs.

Dependent Variable Value Added of SMEs	27 EU Countries	Eurozone	Non-Eurozone	Western Europe	Eastern Europe
Pr_t	0.058 *** (0.011)	0.024 * (0.013)	0.077 *** (0.002)	−0.070 *** (0.015)	0.050 *** (0.001)
ln Time	0.217 *** (0.050)	0.606 *** (0.097)	−0.302 *** (0.094)	1.680 *** (0.196)	0.625 *** (0.032)
Tax	−0.012 *** (0.004)	−0.058 *** (0.002)	−0.005 *** (0.001)	−0.040 *** (0.006)	−0.005 *** (0.001)
R_GDP	−0.036 (0.037)	−0.044 (0.046)	0.015 (0.009)	−0.013 (0.023)	0.031 *** (0.006)
Inflation	−0.075 *** (0.028)	−0.125 *** (0.033)	−0.030 (0.021)	−0.058 (0.059)	−0.053 *** (0.018)
Unemployment	−0.030 *** (0.007)	−0.042 *** (0.009)	−0.072 *** (0.005)	−0.049 *** (0.014)	−0.086 *** (0.007)
C	9.526 *** (0.372)	8.772 *** (0.046)	12.137 *** (0.510)	5.209 *** (0.0624)	6.786 *** (0.190)
Obs.	320	225	95	177	131
R-squared	0.145	0.153	0.721	0.271	0.545
R-squared adjusted	0.129	0.130	0.702	0.245	0.523
F-statistic	8.886 ***	6.598 ***	37.965 ***	10.555 ***	24.821 ***

Source: authors' processing. Note: \* and \*\*\* represent significant values at 10%, respectively 1%. Standard error in parenthesis.

The results obtained for the control variables showed that GDP growth rate significantly and positively influenced the value added generated by SMEs only for the cluster of Eastern European countries. Increased economic growth rates generate increased demand for goods and services, which leads to an increase in opportunities for running a business. New opportunities on the market will help SMEs obtained higher added value. At the same time, the inflation rate negatively influenced the value added generated by SMEs for all the models, but the coefficients were statistically significant only for the cluster of 27 EU countries, the eurozone countries and Eastern European countries. Inflation leads to an increase in the operating costs of SMEs and the need to cut expenses and tighten profit margins, reducing the valued added generated by SMEs.

The unemployment rate was negatively and statistically significantly related with the value added generated by SMEs for all the models. High unemployment rates lead to increased numbers of people becoming involved in entrepreneurship and providing additional labour, which supports and stimulates the growth of small businesses, generating an increase in the added value obtained by them.

The R-squared adjusted value was between 12% and 70% (depending on the cluster of countries analysed) and showed that a significant part of the variation in the value added generated by SMEs could be explained by the variation in the independent variables. The

probability for the F-statistic was lower than 0.05; therefore, the models were valid. The relatively low values obtained for the R-squared adjusted highlight that, although taxation influences the value added of SMEs, there are also other significant determining factors.

Decision makers must adopt appropriate fiscal policies specific to countries' economies, but they should be focused on supporting the small- and medium-sized business sector. In particular, they must take into account the provision of a favourable environment for increasing the performance of these companies, which account for an overwhelming number of the total number of companies in the countries of the European Union. Thus, stimulation of their performance would generate positive effects on the entire economy.

Moreover, it must be taken into account that the period considered for the analysis included two balancing moments in the economies of the EU countries: the financial crisis and the COVID-19 pandemic. In these difficult situations, easing of the fiscal pressure imposed on SMEs was a factor of support and helped ensure the survival of companies on the market. Various countries around the world have adopted measures to reduce tax rates for SMEs to help them overcome the difficulties generated by the COVID-19 pandemic. We believe that these measures should be extended to all countries, with, of course, adaptations to the specifics of their economies.

## 5. Conclusions

In this study, we focused on testing the relationship between a set of indicators expressing the taxes paid by SMEs and SMEs' performance. The sample chosen consisted of the 27 EU member countries. To obtain accurate results, we grouped the countries included in the sample into clusters: eurozone, non-eurozone, Western European and Eastern European countries.

Our findings highlighted that the taxes paid by SMEs significantly influence their performance, but these influences differ significantly depending on the specifics of the countries considered and the specifics of the entrepreneurial activity in particular countries. Thus, profit tax paid by enterprises negatively influenced the performance of SMEs only for Western European countries. Time to prepare and pay taxes negatively influenced the performance of SMEs in non-eurozone countries. Finally, the number of taxes paid negatively influenced the performance of SMEs in all the groups of countries. Thus, the performance of SMEs is affected more by the number of taxes they have to pay than by the profit tax or the time required to calculate and pay the taxes.

Paying taxes can be a factor that leads to reductions in the performance of SMEs, and it is necessary to determine the optimal combination of taxes to impose on small and medium enterprises so that their activity generates increased added value in the economy.

The limitations of our study come from including only the EU countries in the analysis, but this was specifically due to the availability of data at the SME level. This was the first study of ours on this problem and, starting from the results obtained, we intend to expand the analyses. Thus, the work could be further developed by extending the sample and by including other variables in the analysis. Depending on the availability of the data, we would like to expand the analysis sample by taking into account more countries around the world, as well as introduce other variables measuring the perception of SMEs regarding taxation policies into the models.

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