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Influence of some Characteristics of Listed Companies on Fiscal Pressure

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Abstract

Numerous studies in the national and international literature highlight the link between fiscal pressure and various characteristics of companies, such as: company size, level of indebtedness, field of activity in which the company operates, level of investments in fixed or current assets, corporate governance and corporate social responsibility index.

In what concerns the link between fiscal pressure and company size, there are two different points of view: one that claims that large companies are subject to greater public scrutiny and therefore bear a "political cost" in the form of higher effective tax rates, and the other which considers that large companies pay less taxes because they allot more resources to tax planning.

This study aims to analyse the extent to which the level of fiscal pressure is influenced by the size of companies in our country, particularly those listed on the BVB (Bucharest Stock Exchange), a characteristic defined by three indicators: turnover, average number of employees and total assets held by companies. Regarding the level of fiscal pressure, the variables used in the analysis include the effective tax rate, calculated using calculation formulas that include both current corporate income tax expense and deferred tax expense. Since corporate income tax is only a part of the total taxes and duties that the company has to bear, the research was extended to an indicator that includes in addition to corporate income tax, other expenses incurred by companies as well, respectively those related to contributions for their employees, but also expenses with other taxes and duties due to the state budget.

Key Words: *effective tax rate; fiscal pressure; company size; turnover;*

JEL Classification: *H40, M40*

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Introduction

For the company, the tax represents a cost with a significant impact on its value, the issue and the importance of corporate income taxation being debated in many economic researches. The interest in determining an effective tax rate results from the fact that corporate income taxation influences a company's profitability by the fact that the corporate income tax decreases the gross profit, but also the cash flows because the corporate income tax is a monetary expense that affects a company's treasury through a cash outflow (Bauman, 2011).

The effective tax rate is considered one of the first measures to avoid corporate income tax (Callihan, 1994). According to this author, the effective tax rate (ETR) has two forms: the average tax rate (average ETR) and the marginal tax rate (marginal ETR). The marginal tax rate is the tax rate paid for an additional unit of profit from a given investment project. This rate (marginal ETR) should be used to investigate the effect of taxation on investment decisions. The average tax rate (average ETR) is more appropriate for expressing the general tax burden of the company because it expresses the tax rate paid on the company's profit.

The effective tax rate quantifies the actual level of tax burden borne by a company, the most widely used calculation formula in many studies (Chen, 2010; Armstrong, 2012; Kraft, 2014) being determined as the ratio between total expenses with taxes and duties and total expenses before payment of taxes and duties.

Nicodeme (2001) calculates the effective corporate income tax rate as the ratio between corporate income tax and turnover, while Gupta & Newberry (1997) calculates this indicator as the ratio between corporate income tax and profit before interests and taxes, respectively as ratio between corporate income tax and operating cash flow.

Chek Derashid & Hao Zhang (2003) calculate the effective tax rate using five calculation formulas, eliminating from the sample the companies with negative effective tax rates.

In his paper on tax evasion, measures and perspectives, Aronmwan (2019) proposes five categories of effective tax rates (ETR) that differ in the calculation method, namely: accounting ETR, current ETR, cash ETR, cash flow ETR and differential ETR.

1. Review of specialty literature

The link between the effective tax rate and the company size has been studied by several authors (Stickney & McGee, 1982; Zimmerman, 1983; Porcano, 1986; Kern & Morris, 1992; Gupta & Newberry, 1997; Kim & Limpaphayom, 1998; Richardson & Lanis, 2007 etc.). In his study, Zimmerman (1993) concluded that large and successful companies are more visible in the market, which is why they are the victims of greater regulatory action. According to this theory, larger companies face higher effective tax rates. However, this theory is contrary to Siegfried's theory (1972), according to which companies with higher resources influence fiscal policies in their favour, engage in tax planning, and organize their activities to achieve savings through tax optimization. Based on this theory, there is a decrease in the effective tax rate in the case of large companies, as a result of political influence. The statement is based on a study on 250 corporations included in the Fortune 500 ranking (the largest US public companies by turnover). The results of the study showed that more than half of the companies, respectively 130 entities did not pay any sum as federal corporate income tax or have received definitive tax relief for at least one of the five years from 1981 to 1985.

In their study on the relationship between the effective tax rate and the company size, Gupta & Newberry (1997) used the following indicators: dependent variable – the effective tax rate calculated as the ratio between the corporate income tax (excluding deferred taxes) and gross profit, and as independent variables: company size (SIZE indicator – established by taking into account total assets at book value) and financial leverage (LEV – measured by reporting long-run debt to total assets). To these variables were added those related to the investment decisions of companies, using the following indicators: the rate of investment in fixed assets (CAPINT – calculated as the ratio between net tangible assets and total assets) and the rate of investment in stocks (INVINT – calculated as the ratio between stocks and total assets). Another category of variables used in the analysis was related to the company's involvement in the research and development activity (RDINT – calculated as the ratio between

research-development expenses and net sales) and the return on assets indicator (ROA – calculated as the ratio between profit before tax and total assets). The results of the study showed that when the analysis is performed over a longer period of time, the indicator of the effective tax rate is no longer correlated with the company size, but with the size of assets and capital.

To Md. Noor (2010), the effective corporate income tax rate is an indicator for calculating the company's fiscal pressure because it summarizes all the tax facilities granted by the authorities, facilities that lead to lower effective tax rates than legal quotas. The research conducted by this author shows that larger enterprises bear higher effective tax rates, and at the level of fields of activity in the trade, services and construction sectors we encounter higher effective tax rates compared to the manufacturing industry and tourism, where the effective tax rate is lower.

However, there are also opposing views, such as that of Derashid & Zhang (2003), who argue that there is a negative correlation between the effective tax rate and the enterprise size while the results of the study by Gupta & Newberry (1997) show that the effective tax rate is not correlated with the enterprise size but with the structure of capital and assets.

Based on the study conducted on a group of 487 German companies over the time horizon 2005-2011, Anastasia Kraf (2014) observes a positive relationship between return on assets, company size and the effective tax rate, highlighting the fact that large enterprises register higher effective tax rates.

2.Research methodology

2.1. Delimitation of the sample and research objectives

The selection of the companies included in the study was made exclusively from the main segment, and from a total of 86 companies listed on Bucharest Stock Exchange (BVB). We eliminated the financial-banking institutions, the financial investment companies as well as the delisted or suspended companies. Following the selection made, we obtained a database consisting of 62 companies that formed the statistical units. The methods used are exploratory methods of analysis of numerical variables, which allow the synthesis of information contained in a set of data, descriptive and correlation analyses of dependent and independent variables included in the study. Data were collected from the Financial Statements of the sampled companies for a time horizon of 10 years
(2011-2020).

In order to fulfil the purpose of the research, the following objectives have been established:

1. Descriptive analysis of the effective tax rate using calculation formulas identified in the national and international literature
2. Descriptive analysis of fiscal pressure
3. Analysis of the characteristics that define the size of the companies listed on the Bucharest Stock Exchange with the help of indicators: average number of employees, total size of assets and level of turnover
4. Establishing correlations between the effective tax rate, respectively the fiscal pressure, and the size of the companies.

2.2. Description of the variables used

In order to analyse the level of taxation of a company, the dependent variables used are: the effective tax rate and the fiscal pressure. The classification of enterprises according to size was made on the basis of Law no. 346 of July 14th, 2004 on stimulating the establishment and development of small and medium enterprises, published in the Official Gazette no. 681 of July 29th, 2004. According to this law, three criteria are taken into account: the average number of employees, the annual turnover and the value of the total assets.

2.2.1. Effective tax rate

For a more accurate and realistic analysis, the effective tax rate was calculated using four calculation formulas identified in the international literature and detailed in **Table no. 1**.

Table no. 1. Formulas for calculating the effective tax rate

Variable effective tax rate	Calculation formula applied
ETR1	$=\frac{\text{Total Tax Expenses (accounts 691+695+698)}}{\textit{Earnings Before Taxes}}$ Where: • 691= current corporate income tax expenses • 695= activity-specific tax expenses • 698= other taxes not presented in the above elements, respectively micro-enterprise corporate income tax
ETR2	$=\frac{\text{Current corporate income tax expenses} + \textit{deferred taxes} + \textit{taxes related to uncertainty}}{\textit{Gross profit}}$ $=\frac{\textit{accounts: } 691+692+693+695+698}{\textit{Gross profit}}$ Where: • 692= Deferred tax expenses • 693 = Corporate income tax expenses, determined by the uncertainties surrounding tax treatment
ETR3	$=\frac{\textit{Current corporate tax expenses (accounts } 691+695+698)}{\textit{Turnover}}$
ETR4 (long run)	$=\frac{\sum_{t=1}^{n} \textit{Current corporate tax expenses}}{\sum_{t=1}^{n} \textit{Gross profit}}$

Source: Own processing starting from the calculation formulas identified in the specialized literature

Even if the effective tax rate calculated by any calculation formula is negative due to the fact that the companies record accounting losses (negative gross profit), the statistical units still remained included in the sample with an effective tax rate set at 0%.

Also, the situation of the companies that record both accounting losses (negative denominator) and tax refunds (negative numerator) was analysed, by reporting the two variables (corporate income tax and gross profit) obtaining a positive value. In this case, the amount of the effective tax rate was set at 0% too, because the company did not pay any corporate income tax to the state budget. The companies with tax losses and corporate income tax refunds whose effective tax rate have been set at 0% are: Retrasib S.A. for 2016 and 2020, Bittnet Systems S.A. for 2019, Alro S.A. for 2014 and Impact Developer & Contractor S.A. for the years 2012 and 2013.

There is also the situation in which the financial statements for the entire reference period (years 2011-2020) are not published on the official website of the Bucharest Stock Exchange, which is why the effective long-run tax rate was related to the number of years for which financial data was collected.

2.2.2 Fiscal pressure

As the contribution of the corporate income tax to the budget revenue is reduced, the calculations that take into account only this indicator for the analysis of the fiscal pressure are not relevant. Specialized literature completes both the numerator and the denominator with variables meant to measure as well as possible the level of fiscal pressure registered by the enterprises.

In order to determine the tax costs, using the data provided in the profit and loss account published by the companies listed on the Bucharest Stock Exchange, main sector, the following were taken into account: corporate income tax expense, corporate or special tax paid by companies in the HORECA sector, other expenses with taxes and duties and expenses related to insurance and social protection to which the reconstituted value of the social and fiscal contributions of the employees was added.

The formula used to calculate the fiscal pressure is as follows (Istrate, 2021):

$$\text{Fiscal pressure} = \frac{Corporate\ tax\ expenses\ (special\ income) + Other\ taxes\ and\ fees\ expenses + (Employer's\ contribution + Employee's\ contribution)}{Turnover}$$

Expense on corporate, earnings or special tax is the one that appears explicitly in the profit and loss account prepared by the companies included in the sample and published according to the format imposed by the Ministry of Public Finance. With the exception of HORECA companies, which also record specific tax in addition to corporate income tax, most companies register corporate income tax.

Expenses on taxes, fees and similar expenses include local taxes, contributions to special funds, expenses with other taxes and duties recorded by companies as well as the share of non-deductible VAT spent on expenses. This expense account 635 is included in the profit and loss account in the corresponding line.

Employer's contributions are explicitly included in the profit and loss account, in the corresponding line, accounts 645 and 646 Expenses on insurance and social protection, and include the contributions borne by the employer, calculated according to the rules in force based on the paid salaries.

Employee's contributions include individual social and tax contributions, recalculated on the basis of gross salaries found in the profit and loss account (account 641 Salaries and allowances). In order to calculate this contribution, we used an indicator, namely the annual percentage share published by INSSE in the table FOM120A Structural indicators in earnings and labour cost statistics, available at http://statistici.insse.ro/shop/index.jsp? page = tempo3 & lang = ro & ind = FOM120A. For 2019 and 2020, the labour cost is not yet known, but as there have been no changes in the level of salary contributions, we considered this indicator to have the same value as in 2018. The annual percentage share of labour costs published by INSSE for the analysed period (2011-2020) is detailed in **Table no. 2**.

Table no. 2. Labour cost according to FOM120A

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
43.3%	43.5%	43.4%	43.7%	41.8%	41.4%	41.8%	41.9%	41.9%	41.9%

Source: Own processing, according to http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=FOM120A

2.2.3 Characteristics of the company size

The **SIZE variable** is determined by summing the total assets from the financial statements of the companies according to the formed by the Ministry of Public Finance published on the official website of the Bucharest Stock Exchange by each company at the end of the financial year.

SIZE= Total Fixed Assets + Total Current Assets + Upfront expenditures

The **average number of employees** is taken from the financial statements formed by the Ministry of public Finance, for the reference period 2011-2020. The descriptive analysis revealed that most companies fall into the category of large companies with a number of employees between 250 and 999.

Turnover: The analysis of the company size according to turnover was also carried out on the basis of Law no. 346/2004 with subsequent amendments and additions. In order to set the ceilings in terms of turnover, we used the EURO rate published by the national Bank of Romania on the last day of each analysed year, the thresholds being set in annual average values.

3. Results obtained

3.1. Descriptive analysis of the effective tax rate

The descriptive analysis of the effective tax rate taking into account the expense with the current corporate income tax on the numerator and the gross profit on the denominator (ETR1) for the reference period 2011-2020 is detailed in **Table no. 3**.

Table no. 3. Descriptive analysis of the ETR1 effective tax rate			
ETR1	**Minimum values %**	**Maximum values %**	**Average %**
ETR1_2020	0	41.56	10.39
ETR1_2019	0	153.06	14.01
ETR1_2018	0	85.24	12.14
ETR1_2017	0	50.68	9.41
ETR1_2016	0	53.95	12.9
ETR1_2015	0	86.15	13.35
ETR1_2014	0	74.92	14.17
ETR1_2013	0	150.57	16.13
ETR1_2012	0	66.24	13.80
ETR1_2011	0	71.14	14.50

Source: Own processing in Excel and SPSS

We can observe that on average, the effective tax rate ETR1 is close to the standard tax rate which is 16%, the highest average effective tax rate being in 2013 (16.1347%), the lowest average effective tax rate being in 2017 (9.4056%).

Analysing the effective tax rate according to the second calculation formula (ETR2), respectively taking into account both the current corporate income tax expense and the deferred corporate income tax expense to the numerator and the gross profit to the denominator, we obtained the data presented in **Table no. 4**.

Table no. 4. Descriptive analysis of the ETR2 effective tax rate			
ETR2	**Minimum values %**	**Maximum values %**	**Average %**
ETR2_2020	0	41.56	12.60
ETR2_2019	0	170.17	16.66
ETR2_2018	0	85.24	14.08
ETR2_2017	0	54.43	11.00
ETR2_2016	0	53.95	14.42
ETR2_2015	0	86.15	14.87
ETR2_2014	0	15.12	15.12
ETR2_2013	0	170.7	18.76
ETR2_2012	0	66.24	14.31
ETR2_2011	0	71.14	15.14

Source: Own processing in Excel and SPSS

Taking into account both current and deferred tax expense, we can see that the variable ETR2 effective tax rate has increased on average for each reference year by 2 percentage points, very close to the legal tax rate of 16%, consequence of the application of the Financial Reporting Standards. Deferred tax is a consequence of recognizing a company's financial position, holding assets and liabilities as a source of profit or loss, as appropriate.

Therefore, any increase or decrease in the value of a company must be taxed or, on the contrary, taxation must be reduced.

The application of the third calculation formula, respectively, by reporting the current corporate income tax expense to the turnover, highlights a reduced taxation of the companies included in the sample, the results obtained being presented in **Table no. 5**.

Table no. 5. Descriptive analysis of the ETR3 effective tax rate			
ETR3	**Minimum values %**	**Maximum values %**	**Average %**
ETR3_2020	0	8.80	1.42
ETR3_2019	0	6.31	1.33
ETR3_2018	0	11.76	1.50
ETR3_2017	0	8.03	1.19
ETR3_2016	0	12.14	1.48
ETR3_2015	0	8.47	1.32
ETR3_2014	0	8.76	1.36
ETR3_2013	0	10.69	1.27
ETR3_2012	0	8.54	1.27
ETR3_2011	0	8.54	1.27

Source: Own processing in Excel and SPSS

Analysing **Table no. 5**, we can see that the share of corporate income tax in the turnover is very small for all reference years (between 1.19% and 1.50%), which makes Romania an extremely attractive country for investments with foreign capital.

The analysis of the effective long-run tax rate (ETR_long_run) reveals an average tax rate of 13.4184% with a minimum of 0% (companies that record accounting losses) and a maximum of 53.98%.

Analysing the 62 companies included in the sample, we can see that a very high number of companies record either accounting losses or do not have to pay corporate income tax. The analysis of the companies that registered effective tax rates equal to 0 for the analysed reference interval 2011-2020 is presented in **Table no. 6**.

Table no. 6. Descriptive analysis of the ETR4 effective tax rate										
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
ETR1=0	22	23	24	18	22	18	24	17	21	22
ETR2=0	20	22	22	18	20	16	21	16	17	20
ETR3=0	22	22	23	18	20	17	18	16	19	18
ETR_long _run	7									

Source: Own processing in Excel and SPSS

From **Table no. 6** we can see that a number of 7 companies did not register positive effective tax rates in any of the years that formed the reference interval taken into account (ETR_long_run in the period 2011-2020).

3.2. Descriptive analysis of the fiscal pressure

As the contribution of corporate income tax to budget revenues is low, calculations that take only this indicator into account for the analysis of fiscal pressure are not relevant, so it is necessary to include both numerator and denominator variables to better measure the level of fiscal pressure registered by companies.

An analysis of the share of expenses taken into account in determining the fiscal pressure highlights the fact that the share of corporate income tax is reduced compared to the share of expenditure related to salary contributions in turnover.

The descriptive analysis of the fiscal pressure is detailed in **Table no. 7**.

Table no. 7. Descriptive analysis of the fiscal pressure indicator

Fiscal pressure	Minimum values %	Maximum values %	Average %
Pr_fiscala_2020	1.47	368.83	30.61
Pr_fiscala_2019	0.83	206.56	18.03
Pr_fiscala_2018	4.04	109.68	18.77
Pr_fiscala_2017	0.41	99.37	15.34
Pr_fiscala_2016	0.66	61.34	12.81
Pr_fiscala_2015	0.58	32.72	11.01
Pr_fiscala_2014	0.47	31.39	11.21
Pr_fiscala_2013	0.29	27.88	11.16
Pr_fiscala_2012	0.34	27.91	10.70
Pr_fiscala_2011	0.42	51.68	11.16

Source: Own processing in Excel and SPSS

From the descriptive analysis obtained by processing data using the SPSS program we can notice a very high average level of fiscal pressure for 2020, where the level of average fiscal pressure was 30.61%, and a minimum level recorded in 2012 of 10.70%.

Regarding the evolution of the fiscal pressure in Romania in the period 2011-2020 we can observe that for a significance threshold level of 95%: the period 2011-2015 is characterized by a stability of the fiscal pressure level, followed by a progressive increase of this indicator from year to year, 2020 marking an exponential increase in fiscal pressure in most companies listed on the Bucharest Stock Exchange.

The continuous increase in the level of fiscal pressure is positively correlated with the increase in the share of salary contributions in turnover and the increase in expenses with taxes and fees in turnover. Regarding the share of the profit tax in the turnover we can observe that this tax does not significantly influence the level of the fiscal pressure, consequence of its reduced weight in the turnover.

3.3. Descriptive analysis of the indicators that characterize the company size

The classification of enterprises according to size is based on Law no. 346 of July 14th, 2004 on stimulating the establishment and development of small and medium enterprises, published in the Official Gazette no. 681 of July 29, 2004. According to this law, the classification of an enterprise is done taking into account three criteria:

- Average number of employees
- Annual turnover
- Total assets

According to this law, the category of micro-enterprises and small and medium-sized enterprises includes enterprises that have less than 250 employees and have an annual turnover that does not exceed 50 million euros, or that own total assets that do not exceed 43 million euro.

Small enterprises are defined as enterprises that have up to 49 employees and have a net annual turnover or total assets of up to 10 million euros.

Micro-enterprises are defined as enterprises that have up to 9 employees and have an annual turnover or total assets of up to 2 million euros.

Compliance with the thresholds regarding the number of employees is mandatory while a company can choose between respecting either the threshold regarding the turnover in a year or the one regarding the total assets. If the thresholds for the classification of a medium-sized enterprise as defined by Law no. 346 of 2004 with subsequent amendments and completions are exceeded for two consecutive financial years, then the enterprise is considered large.

3.3.1. Descriptive analysis of the turnover

The descriptive analysis of the turnover indicator and its evolution in the period 2011-2020 for the companies included in the analysis was performed using the SPSS program and is detailed in **Table no. 8**.

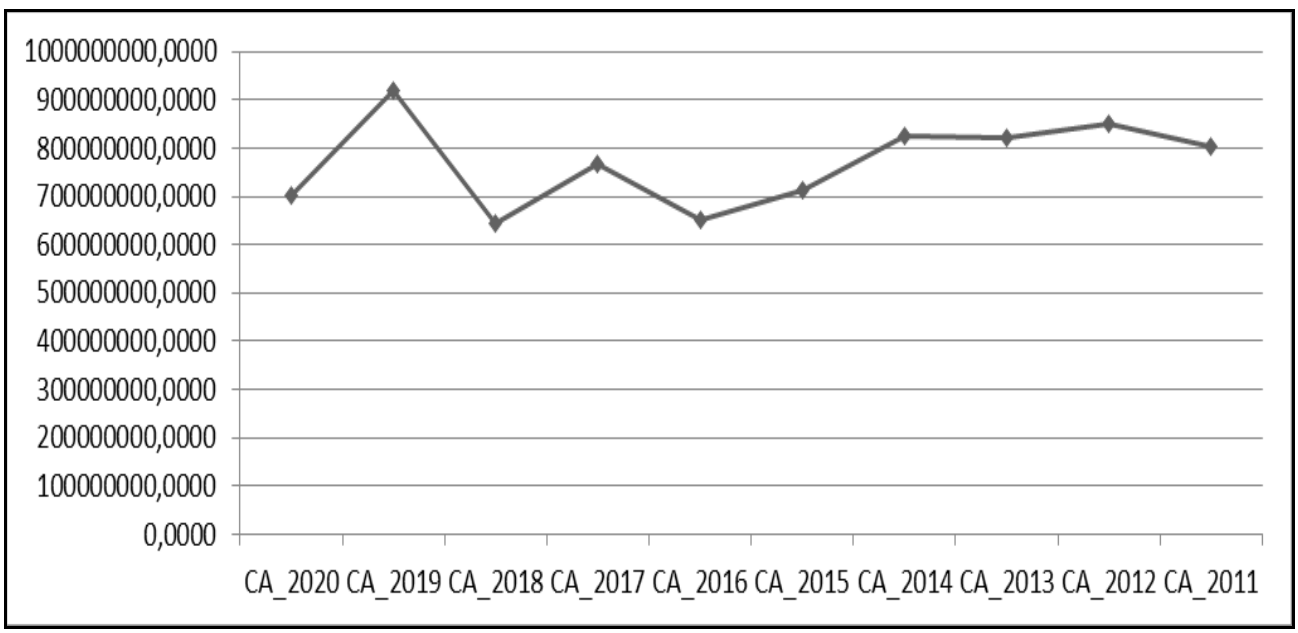
Table no. 8. Descriptive analysis of the turnover indicator

Turnover	Minimum values	Maximum values	Average
CA_2020	330,125	14,795,525,494	701,410,272
CA _2019	235,872	19,793,585,306	920,720,778
CA _2018	630,019	17,817,366,024	645,516,706
CA _2017	1,448,524	14,764,836,448	766,990,014
CA _2016	1,464,691	12,523,026,161	649,835,786
CA _2015	3,839,458	13,687,616,179	713,921,549
CA _2014	4,626,486	16,511,641,496	826,534,877
CA _2013	4,929,292	18,071,913,810	820,429,393
CA _2012	3,811,893	19,510,054,765	849,570,927
CA _2011	4,576,125	16,565,465,973	802,725,341

Source: Own processing in Excel and SPSS

The evolution of the turnover in annual average values for the analysed period (2011-2020) achieved by the companies listed on the Bucharest Stock Exchange is highlighted in ***Figure no. 1***.

Figure no. 1. Evolution of turnover in annual average values for companies listed on the Bucharest Stock Exchange during 2011-2020



Source: Own processing in Excel and SPSS

3.3.2. Descriptive analysis of the average number of employees

Regarding the average number of employees registered by the companies in the sample, the descriptive analysis performed with the help of the SPSS program is detailed in **Table no. 9**.

Table no. 9. Descriptive analysis of the average number of employees indicator

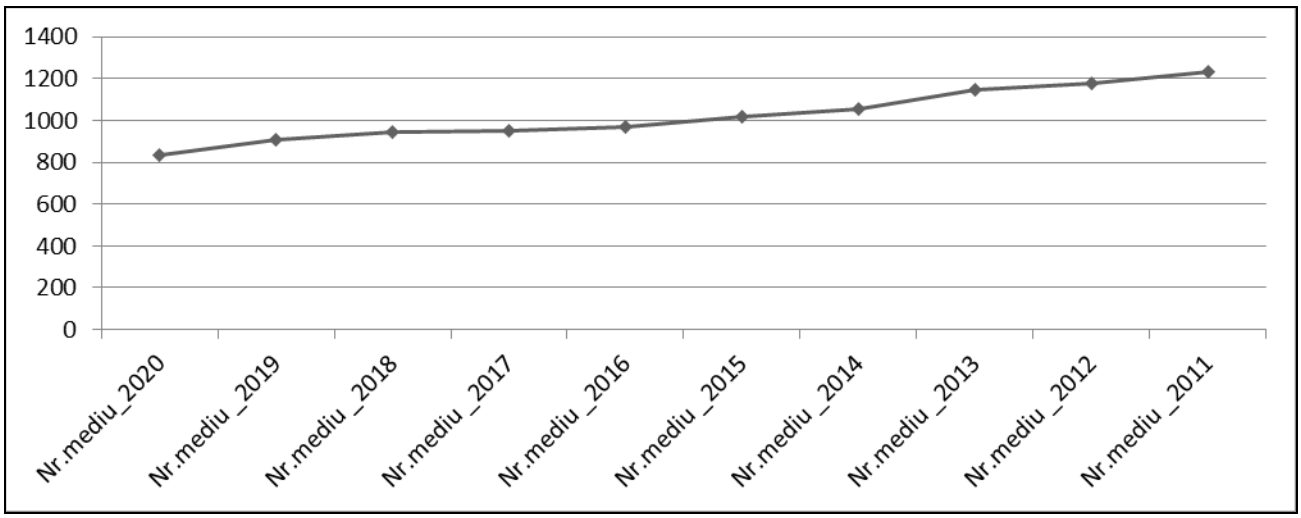
Average number of employees	Minimum values %	Maximum values %	Average %
Nr.mediu_2020	1	10,949	836
Nr.mediu _2019	1	11,814	907
Nr.mediu _2018	4	12,498	944
Nr.mediu _2017	15	13,322	952
Nr.mediu _2016	13	14,380	971
Nr.mediu _2015	9	15581	1,020
Nr.mediu _2014	9	17,866	1,054
Nr.mediu _2013	21	19,016	1,149
Nr.mediu _2012	13	20,508	1,176
Nr.mediu _2011	17	22,052	1,230

Source: Own processing in Excel and SPSS

The average annual number of employees obtained with the help of the SPSS program for a significance threshold of 95% is between 1,230 people in 2011 and 836 people for 2020.

The evolution of the average number of employees in annual average values for the analysed period (2011-2020) for the companies listed on the Bucharest Stock Exchange is highlighted in ***Figure no. 2***.

Figure no. 2. Evolution of the average number of employees in average annual values for companies listed on the Bucharest Stock Exchange during 2011-2020



Source: Own processing in Excel and SPSS

From the evolution of the average annual number of employees for the period 2011-2020 we can observe a continuous decline, the average annual number of employees decreasing on average by 10 percent compared to the previous year.

3.3.3. Descriptive analysis of total assets

The size of the companies was also analysed using the SIZE indicator, which represents the total assets of the companies included in the sample. The descriptive analysis of this indicator is performed using the SPSS program and is detailed in **Table no. 10**.

Table no. 10. Descriptive analysis of the Total Assets indicator (SIZE)

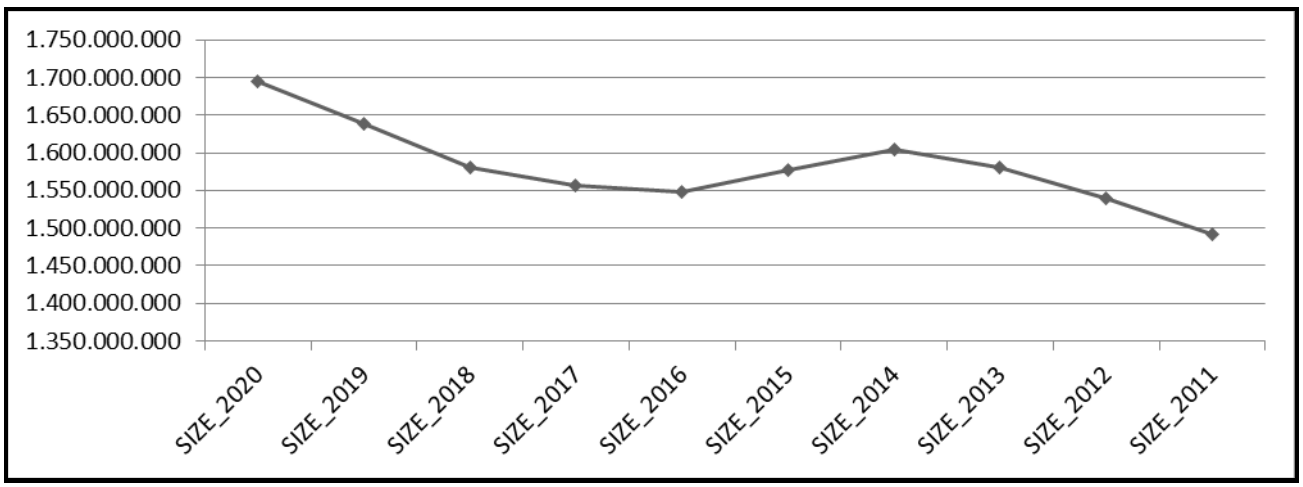
Total Assets	Minimum values	Maximum values	Annual average values	Annual average values of Turnover	Share Total Assets in Turnover%
SIZE_2020	10,931,407	46,858,131,207	1,694,145,477	701,410,272	241.53
SIZE_2019	5,805,657	46,260,223,016	1,638,847,675	920,720,778	178.00
SIZE_2018	6,005,336	43,068,031,308	1,580,068,493	645,516,706	244.78
SIZE_2017	8,446,856	41,137,768,266	1,555,969,405	766,990,014	202.87
SIZE_2016	11,132,453	41,238,507,345	1,547,348,796	649,835,786	238.11
SIZE_2015	8,347,999	40,894,532,838	1,576,961,378	713,921,549	220.89
SIZE_2014	5,496,869	43,174,440,529	1,604,272,555	826,534,877	194.10
SIZE_2013	11,988,296	38,894,755,946	1,581,265,295	820,429,393	192.74
SIZE_2012	13,093,573	37,410,862,772	1,539,544,860	849,570,927	181.21
SIZE_2011	12,602,124	35,768,669,507	1,492,403,833	802,725,341	185.92

Source: Own processing in Excel and SPSS

Analysing the data from **Table no. 10** we can observe an increase in the share of total assets in the Turnover. The exception is the year 2019 when the share of total assets in the turnover was only 178%, as a result of the level of turnover registered this year of 920,720,778 lei in annual average values, the highest in the entire analysed period.

The evolution of the SIZE indicator for the companies listed on the Bucharest Stock Exchange for the analysed period (2011-2020) is presented in ***Figure no. 3***.

Figure no. 3. Evolution of Total Assets in annual average values for companies listed on the Bucharest Stock Exchange in the period 2011-2020



Source: Own processing in Excel and SPSS

Analysing the chart in ***Figure no. 3*** we can see a significant increase in total assets held by companies listed on the Bucharest Stock Exchange since 2016 due to investments made by companies in fixed assets.

3.4. Analysis of the correlations between the effective tax rate and company size

In order to analyse to what extent effective tax rate is influenced by the size of the companies, we used the SPSS program to transform the qualitative variables into

numerical variables as follows: 1 medium companies, 2 large companies, 3 very large companies, using the criteria provided in Law no. 346/2004.

The results of the correlations between the effective tax rate and the company size – established by taking into account the turnover – are presented in **Table no. 11**, the results of the correlations between the actual tax rate and the average number of employees are presented in **Table no. 12**, and the results of the correlations between the effective tax rate and the value of total assets are presented in **Table no. 13**.

3.4.1. Analysis of the correlation between the effective tax rate and the turnover

The first indicator taken into account to study the extent to which the company size can influence the level of taxation is turnover. The grouping of companies according to the level of turnover (3 groups: small, medium and large enterprises) allows us to identify the correlations between this indicator and the effective tax rate calculated according to the 4 formulas detailed above.

Table no. 11. Analysis of the correlations between the effective tax rate and the Turnover

Year	Pearson/Turnover correlation coefficient value				Conclusions
	ETR1	ETR2	ETR3	ETR_LUNG LUNG	
2020	0.397*	0.405*	0.114	0.245	Low intensity, positive correlation
2019	0.010	0.034	0.157	0.177	No correlation
2018	0.218	0.207	0.328*	0.182	No correlation
2017	0.292*	0.338*	0.344*	0.077	Low intensity, positive correlation
2016	-0.78	-0.84	0.092	0.073	No correlation
2015	-0.125	-0.180	0.286*	0.051	Low intensity, positive correlation
2014	0.125	0.123	0.242	0.069	No correlation
2013	0.006	-0.017	0.373*	0.127	Low intensity, positive correlation
2012	0.261	0.242	0.291*	0.128	Low intensity, positive correlation
2011	0.250	0.218	0.302*	0.136	Low intensity, positive correlation

Source:Own processing in Excel and SPSS

According to the analysis carried out in SPSS regarding the connection between company size and the effective tax rate (**Table no. 11**) we can conclude the following: the effective tax rate is influenced to a small extent by the company size, which confirms the hypothesis that large companies pay higher corporate taxes.

3.4.2. Analysis of the correlation between the effective tax rate and the average number of employees

From the analysis of correlations, the size of the company measured using the indicator Average number of employees and the effective tax rate (ETR) we can see that between the two variables there is a low intensity, positive correlation, which confirms the hypothesis that large companies pay higher corporate taxes.

According to **Table no. 12**, the company size, measured with the help of the Average number of employees indicator, influences the effective tax rate to a greater extent in 2011, 2012, 2017, as confirmed by the correlations established for 3 calculation formulas, which indicates that in times of economic and financial crisis larger companies pay a higher corporate tax than smaller companies that find faster solutions to reorganize, to restructure the business. The correlation has a medium intensity and is positive, which explains the hypothesis that the larger the enterprises, the higher the level of taxation, but this aspect is valid only in times of economic and financial crisis. In the long run, except for the years 2013 and 2020, there are no correlations between the company size and the effective tax rate, therefore the hypothesis that large companies pay higher corporate tax is not confirmed.

Table no. 12. Analysis of the correlations between the effective tax rate and the average number of employees

Year	Pearson coefficient correlation value				Conclusions
	ETR1	ETR2	ETR3	ETR_LUNG LUNG	
2020	0.374*	0.305*	0.123	0.328*	Low intensity, positive correlation
2019	0.056	0.060	0.135	0.241	No correlation
2018	0.149	0.151	0.202	0.198	No correlation
2017	0.266*	0.308*	0.277*	0.183	Low intensity, positive correlation
2016	0.020	0.038	0.162	0.159	No correlation
2015	0.093	0.060	0.375*	0.193	Low intensity, positive correlation
2014	0.241	0.233	0.328*	0.208	Low intensity, positive correlation
2013	0.124	0.117	0.386*	0.293*	Low intensity, positive correlation
2012	0.449*	0.441*	0.367*	0.231	Low intensity, positive correlation
2011	0.438*	0.414*	0.351*	0.182	Low intensity, positive correlation

Source: Own processing in Excel and SPSS

3.4.3. Analysis of the correlation between the effective tax rate and total assets

The third indicator taken into account to analyse the extent to which the effective tax rate is influenced by the size of the companies is the SIZE or Total Assets indicator coded in SPSS with values between 1 and 3, corresponding to the 3 categories of companies: small, medium and large. The results of the correlations between the coded SIZE indicator for each analysed year and the effective tax rate (ETR1, ETR2, ETR3 and long-run ETR) are detailed in **Table no. 13**.

Table no. 13. Analysis of the correlations between the effective tax rate and Total Assets

Year	Pearson/SIZE coefficient correlation value				Conclusions
	ETR1	ETR2	ETR3	ETR_LUNG LUNG	
2020	0.479*	0.559*	0.244	0.201	Low and medium intensity, positive correlation
2019	0.104	0.122	0.212	0.201	No correlation
2018	0.172	0.188	0.285*	0.210	Low intensity, positive correlation
2017	0.170	0.248	0.245	0.217	No correlation
2016	-0.028	-0.017	0.168	0.217	No correlation
2015	0.064	0.053	0.345*	0.217	Low intensity, positive correlation
2014	0.141	0.149	0.284*	0.141	Low intensity, positive correlation
2013	0.128	0.185	0.295*	0.249	Low intensity, positive correlation
2012	0.324*	0.295*	0.280*	0.216	Low intensity, positive correlation
2011	0.219	0.209	0.253*	0.169	Low intensity, positive correlation

Source: Own processing in Excel and SPSS

The analysis of the correlations between the effective tax rate and the size of the companies measured using the SIZE indicator confirms the hypothesis that the effective tax rate is influenced by the size of the companies, but to a small extent. Therefore, even in this case, large companies have higher effective tax rates.

3.5. Analysis of the correlations between the fiscal pressure and the size of the companies

For a more in-depth analysis of the impact of the company size on the level of taxation, the research was extended to a more complex variable, namely the level of fiscal pressure, which takes into account not only current and deferred corporate income tax expenses but also expenses incurred by companies for their employees. and other expenses with taxes and duties due to the state budget: expenses with dividend tax, local taxes and fees, deductible/non-deductible VAT expenses, etc. The results of the correlations between the fiscal pressure and indicators of the size of the companies for each analysed year are presented in **Table no. 14**.

Table no. 14. Analysis of the correlations between the fiscal pressure and the company size

Year	Pearson coefficient value Fiscal pressure-Size of company			Conclusions
	Average no. of employees	Turnover	Total Assets	
2020	-0.291*	-0.365*	-0.15	Low intensity negative correlation in relation to the average number of employees and turnover
2019	-0.342*	-0.400*	0.072	Low intensity negative correlation in relation to the average number of employees and turnover
2018	-0.214	-0.352*	-0.104	Low intensity negative correlation in relation to the turnover
2017	-0.275*	-0.291*	-0.187	Low intensity negative correlation in relation to the average number of employees and turnover
2016	-0.192	-0.348*	-0.183	Low intensity negative correlation in relation to the turnover
2015	0.187	-0.127	-0.082	No correlation
2014	0.195	-0.084	-0.10	No correlation
2013	0.289*	-0.065	0.004	Low intensity positive correlation in relation to the average number of employees
2012	0.262*	-0.085	0.008	Low intensity positive correlation in relation to the average number of employees
2011	0.133	-0.054	0.021	No correlation

Source: Own processing in Excel and SPSS

According to **Table no. 14**, which summarizes the correlations between the fiscal pressure in annual average values and indicators of the size of companies, we can conclude: between the level of Total Assets and the level of fiscal pressure there is no link for any of the analysed years. In other words, the fiscal pressure is not influenced by the total assets held by the companies listed on the Bucharest Stock Exchange.

For the years 2012 and 2013, we identified a low-intensity, positive correlation between the average number of employees and the level of fiscal pressure, respectively within large companies, with a high number of employees, the level of fiscal pressure is higher.

The situation changes starting with 2016, when between the fiscal pressure and the turnover, respectively between the fiscal pressure and the average number of employees we identify a low intensity, negative correlation, respectively, the higher the number of employees and the higher the level of turnover, the lower the level of fiscal pressure.

Conclusions

Through this study we tried to verify the existence of a link between the fiscal pressure and the size of the companies listed on the Bucharest Stock Exchange on the main segment.

Studying the literature has allowed us to identify factors that may contribute to influencing the effective corporate tax rate and fiscal pressure, factors that have been included in this research as predictive variables.

In order to analyse the level of taxation of companies, we used two variables, namely the effective tax rate calculated by taking into account four formulas identified in the national and international literature and fiscal

pressure. The size of the companies included in the analysis was performed taking into account three indicators: turnover, average number of employees and total value of assets, the data being taken from the financial statements formed by the Ministry of Public Finance for a time horizon of 10 years (2011-2020).

The descriptive analysis of the effective tax rate revealed a low level of taxation of the companies included in the sample with an average tax rate lower than the legal rate in Romania (16%) and a low share of corporate income tax expense in turnover of less than 1.5 percent for all reference years analysed.

Regarding the level of fiscal pressure, we can see that in 2011-2015 its level remained relatively constant, averaging 11 percent, but since 2016 the level of fiscal pressure has increased significantly from year to year, the year 2020 marking the higher level of fiscal pressure, with an average annual value of 30.61%.

In terms of turnover, we can also see a steady evolution in 2011-2014, followed by a decrease in this indicator in 2015-2018, a significant increase in turnover in 2019 followed by a decrease in turnover in 2020 as a consequence of the restrictive measures taken by the Government regarding the activity of many companies.

Within the companies listed on the Bucharest Stock Exchange in the analysed period 2011-2020, we can observe a constant decrease in the average number of employees. Thus, in 2011, the average number of employees in annual average values was 1230 people, while at the end of 2020 this indicator decreased significantly to 836 people.

Regarding the evolution of the SIZE indicator determined as the sum of fixed assets, current assets and prepaid expenses we can see a steady increase, averaging 10 percent from year to year, which is due to investments made by companies in property, plant and equipment.

The analysis of the correlations between the effective tax rate and company size reveals a low intensity, positive correlation, which corresponds to the hypothesis that large companies pay a higher corporate income tax.

The analysis of the correlations between the fiscal pressure and company size reveals a low intensity, negative correlation, which corresponds to the hypothesis that the higher the companies, the lower the level of fiscal pressure.

In what concerns the limits of our study, we can include the descriptive character of the research, the small sample size of the 62 companies listed on the Bucharest Stock Exchange, the main sector, as well as the low level of representativeness regarding all active Romanian companies. All these limitations constitute future research directions along with the inclusion in the analysis of other factors influencing the fiscal pressure such as: field of activity, corporate governance indicators, audit opinion, etc.

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