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INSIGHT INTO THE RESILIENCE OF THE ROMANIAN ECONOMY[*]

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Abstract. We are contemporary with various financial crises of global magnitude, starting with the Great Depression of 2008-2009, so-called the "subprime crisis", the economic crisis generated by the COVID 19 pandemic, but also the one that is ongoing nowadays, caused by the Russian-Ukrainian conflict. All these extreme situations generate reactions of the most diverse and challenging to delimit and predict so that the economic entities must show permanent resilience to recover quickly and emerge victorious from the fight with the disturbing phenomena. The present study attempted an x-ray of the Romanian economy after the first year of the COVID pandemic, the most difficult year when the restrictions were among the most severe, analyzing at the same time the years before the beginning of the pandemic for an accurate picture. At the same time, we tried to answer the questions of why a company is more resilient than others using a sample of the top 100 companies in Romania, analyzing the impact on revenue growth of 13 indicators grouped in 4 classes, namely Business efficiency, Sustainable Profitability, Financial Stability, Business dynamics & stability. The obtained results may have significan economic policy implications.

Keywords: resilience; financial health; crisis; econometric model; economic growth

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1. Introduction

The "resilience" theme is the most topical, being intensively studied by research to find the best definition to establish the factors that determine a higher resilience or why a company shows more resilience than other similar companies. All this research has as its final goal the establishment of successful strategies and the recovery of organizations facing disturbing factors. The statements are confirmed by analyzing the Web of Science database, where the query by the keyword "economic resilience" generated an impressive number of results, namely 14,791 since 1982. In recent years this topic has gained importance among researchers, especially starting with 2020-2021 along with the economic crisis generated by the COVID-19 pandemic when the number of publications exceeds 2000 / year, the maximum reached in 2021 (2,839 publications), the most studies being in environmental science (2,917 publications), environmental studies (2,625 publications) or economics (1,967 publications) recordings including articles, proceeding papers, books, book reviews.

The theme "resilience" is attributed to several disciplines, including the ecology and environmental science, engineering, and psychology, but also the economic field, each offering its specific definition. Still, all converge towards the same common sense, namely the ability to adapt, respond, and react to various disruptive factors.

Martin et al. (2015) remark that a new term, "buzzword," has taken its place in the academic world and in the speeches of politicians, which describes the ability of an entity or system to respond to shocks and disturbances. However, although the concept has quickly entered the lexicon of the literature, there are still steps to understand and find ways to measure its determinants in the long run. Arrow et al. (1995) have a different perspective; at that time, the concept of resilience needed to be sufficiently analyzed, with research in the field being at the beginning. He considers resilience as "a measure of the magnitude of disturbances that can be absorbed before a system centred on one locally stable equilibrium flips to another", and economic activities will continue only if the ecosystem to which they belong is resilient.

The objective of this study is to present the Romanian economy's performance after the Covid-19 pandemic severely shook it. At the same time, we try to find the determinants that affect the resilience of companies by analyzing the financial situation of the top 100 most influential companies in Romania and extrapolating to the level of the entire economy.

The study has its limitations because although the sample is significant, the turnover of companies representing almost a quarter of the total sales of Romanian companies; however, these companies are the ones that performed best, being supported both in terms of financial support but also great know-how by their membership in international groups, they have access to new, foreign markets much easier, they invest in technology and innovation, they have a higher recovery capacity than the other companies, especially the micro or small ones. At the same time, finding indicators that influence economic growth is a continuous challenge, so the following studies can go in this direction, to find the best combination of determinants for drawing the most accurate conclusions.

2. Literature review

Resilience is defined as a notion that indicates the capacity of a system to respond to shocks (Martin et al., 2015) that disturb the ordinary course of work. In an equilibrium-based approach, the concept is directly linked to adaption and adaptability (Pike et al., 2010).

The resilience of an organization, economy or country is drafted in the literature by different notions such as survival, recovery, resistance, endurance, recovery or sustainability (Briguglio et al., 2006; Briguglio, 2009; Ates

& Bititci, 2011; Aparicio et al., 2016; Markovic et al., 2017; Tognazzo et al, 2016; Di Caro, 2017; Korhonen et al., 2018; Sabatino, 2019; BSI, 2021; FM, 2022; Shipanga et al., 2022; BSI. 2021; FM. 2022).

Most of the studies dedicated to examining resilience gained momentum, starting in 2008 when the severe economic and financial crisis shook the entire global economy from its foundations. Analyzing the specific publication, 2008 was a turning point in analyzing resilience until nowadays, when the term became a standard when talking about the resistance of an entity to the impact of actions coming from the external environment.

Martin et al. (2015) expose in a detailed study why economic entities acting in the same sector or region evolve different upward or downward, the authors attributing these developments to specific factors such as supply chains, different usage of production capacity, different adoption of technology, wage costs, productivity, specific labour needs. Peng et al. (2021) stresses importance of resilient supplier selection in contemporary conditions.

Resilience is a multidimensional network of favourable attitudes and behaviours (Ayala & Manzano, 2014). Therefore, compose of resilience continue to be challenging to explain and define (Luthar et al., 2000); as difficult as it has been to develop a measure of resilience, even if there were designed some measuring scaled but not widely validated (Windle et al., 2011). It is closely related to implementation of effective solutions to the crisis tasks and its regional management (Grega & Nečas, 2022)

A general conclusion that can be drawn analysis the specific literature is if proving and the economy is resilient or not must be examined their economic performance over some time and the criteria can be defined and pre and post-shock growth rates and levels of economic performance can be measured (Hill et al., 2008).

The literature analyzed and revised by the author of the highly cited papers indexed in Web of Science includes research and studies trying to find the most relevant determinants of resilience, including here "territorial capital" meaning endowed with material and immaterial capital assets (Fratesi & Rodrìguez-Pose, 2016), capacity for innovation, economic diversity, export propensity, human and social capital, and financial constraints (Martin & Sunley, 2015), socio-economic characteristics, financial resources, infrastructures, community capacity, innovation and technology, natural environment (Modica & Reggiani, 2014), foreign direct investment, clean energy, trade openness, carbon emissions (Sbia et al., 2014) or human capital, labour, government expenditure, inflation, foreign aid, foreign direct investment, financial development, globalization and debt servicing (Sy, 2020).

A separate strand of international research is devoted to resilience of enterprises to challenges caused by pandemics (Kong et al., 2021; Marcazzan et al., 2022; Wang et al., 2023).

Regarding the detailed analysis of the resilience of the Romanian economy in the face of the crisis, only a few studies are most recent and relevant to our research originating from Iancu (2022). The study concludes that "limited access to liquidity, lack of strong state support, poorly prepared and motivated human resources, low digitalization" are the main obstacles for the Romanian economic entities to be more resilient when facing various crises of different magnitudes. The small research panel on the resilience of the Romanian economy opened the way to the present research, trying through this research paper to find answers to the questions: *Was the Romanian economy resilient in these troubled economic times? In addition, what factors determine a greater or lesser resilience of the Romanian economy?*

3. Overview of Romanian companies' performance

The primary purpose of the present research, but also any research on concepts and phenomena, is to deepen and discover known or unknown realities to a greater or lesser or even unknown extent. The research work continues

in the form of an applicative research on the assessment of the resilience of companies in Romania and the radiography of their health status because of the impact of the effects of the economic crisis generated by the COVID 19 pandemic.

The research started with the presenting the indicators extracted from the annual financial statements of all economic entities that submitted financial information to the tax administration, including here: (i) entities that apply accounting regulations following Directive IV, (ii) entities that apply regulations under International Financial Reporting Standards, (iii) entities that apply the simplified accounting system, both those whose financial year coincides with the calendar year. Therefore, insurance companies, brokers, credit institutions, IFNs, ONGs, SIFs are excluded. The analysis periods include the years 2016-2020, so a total of 5 full years, which captures the reference year 2020, the year of the onset of the pandemic globally and respectively in Romania, the year in which traffic restrictions began both personally and supply chains and sales, the first year in the modern era in which a state of emergency was established in Romania and later a state of alert and which had important repercussions on the economy in general but also on enterprises in particular. Since the end of the first quarter of 2020, the economy has been negatively impacted by:
- ✓ supply chain delays and bottlenecks,
- ✓ declines in external demand
- ✓ quarantines in countries outside the country with which Romania has business relations or through which it transits the transport of goods
- ✓ quarantine at a national level, with more severe restrictions until May.

Strong domestic demand has put a strain on this period and helped the economy function and boost the exit from this period with as few adverse effects as possible.

Table 1. Financial picture of Romanian Companies

Mio RON	2020		2019		2018		2017		2016
Annual turnover	1,574,130	-7.9%	1,709,783	9.1%	1,566,660	11.9%	1,399,780	9.7%	1,276,046
Profit	141,973	3.4%	137,277	11.5%	123,071	11.7%	110,152	6.1%	91,979
Profitabilty margin	9.02%		8.03%		7.86%		7.87%		7.21%

Source: author realization, based on public financial staments

In 2020, the year of the pandemic's beginning, the cumulative sales of the entities surprised in the sample mentioned in our research suffered a contraction of 7.93% after the peak recorded in 2019. The decrease counterbalances the increase recorded in 2019 of 9.14%, and thus, sales reach the level from 2018. The highest percentage of decline, respectively 23.38%, is registered among the entities that apply the accounting regulations following the International Financial Reporting Standards, but the share of turnover generated by these entities in the total national economy is low, only 4.34%; therefore, their impact is attenuated in the final result. The contraction of 7.71% of the sales obtained by the entities that apply the harmonized accounting regulations decisively influences the final result, as the share of the turnover received by these entities is significant, i.e. 80.88%. The decrease of about 8% translates into the loss of a month of sales in 2020, a fact considered normal, and the recovery was rapid and concerted, taking into account the severe restrictions from the beginning of the pandemic but also the psychological reactions of consumers and uncertainties among companies about their future.

At the same time, the encouraging aspect is that the dynamics of profitability remain positive, the increase is 3.42%, the cumulative profit of the companies that registered profit (without taking into account the net losses recorded) follows a downward slope, documenting a maximum of the last 5 years analyzed.

The graphs below show in a suggestive way the dynamics of sales and profits recorded in the last 5 years, as well as the average profit margins calculated at the level of the entire sample of economic entities. The graphs below (see Figure 1 and Figure 2) show in a suggestive way the dynamics of sales and profits recorded in the last 5 years, as well as the average profit margins calculated at the level of the entire sample of economic entities.
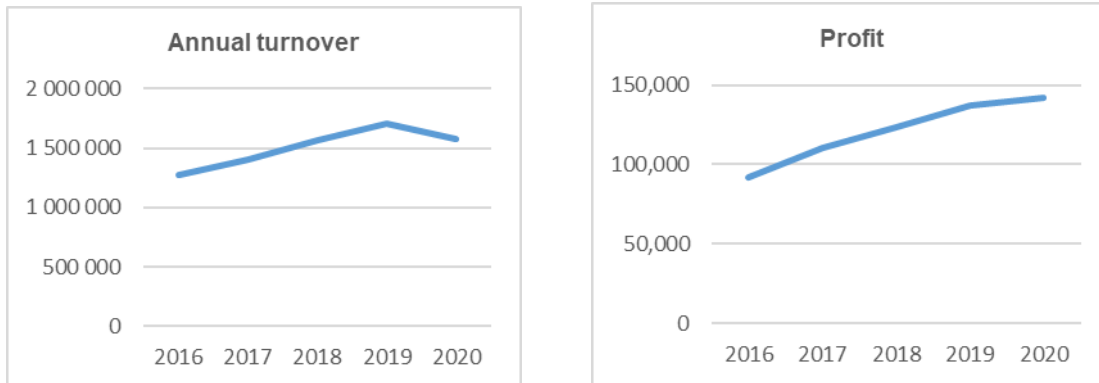

Figure 1. Total income and profit dynamics
Source: author realization, based on public financial staments

Figure 2. Evolution of net profit margins
Source: author realization, based on public financial staments

Considering the evolution of economic growth, the dynamics of turnover achieved by Romanian companies broadly follow the same trend, with a discrepancy in 2018. In addition, the slope of the decrease in cumulative turnover achieved by the mentioned companies is much steeper in 2020 compared to the macroeconomic decline (Figure 3).
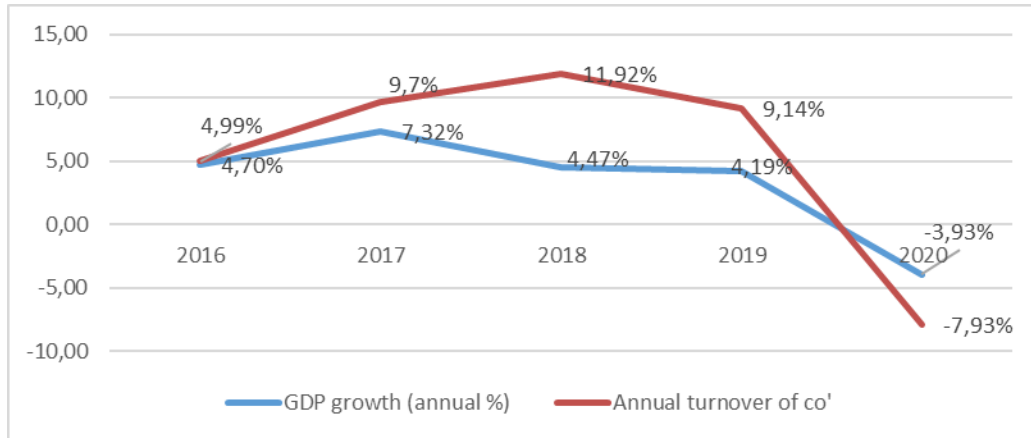
Figure 3. Trend dynamics: annual t/o vs. GDP growth
Source: author realization, based on public financial staments

If we correlate with the evolution of the GDP, the decrease of 3.93% registered in 2020 represents an unexpectedly good evolution; the estimates from the beginning of the pandemic considering the severity of the sanitary crisis predicted a decrease of 7-8% but the Romanian economy helped by the governmental measures showed high resilience. Thus, the second quarter of 2020 shows an economic decline of 10.3%, which has recovered since the third quarter, the situation even improved in 2021, when in the first 9 months of the year, the data presented by INS show an increase of 7.1%. (Figure 4).
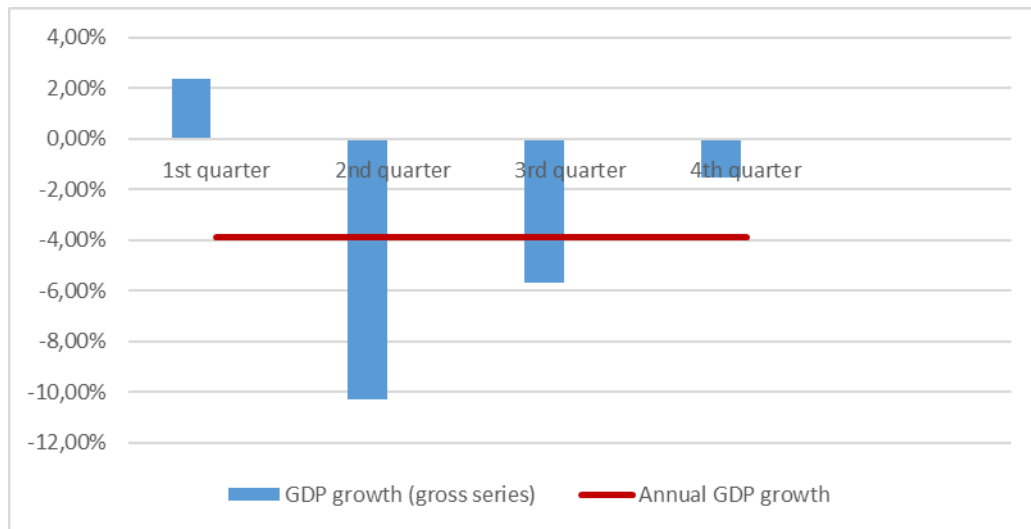

Figure 4. GDP quarterly evolution 2020
Source: author realization, based on public sources

The number of Romanian entities that submitted financial statements decreased in 2020; for the first time in the last 5 years, almost 26 thousand entities did not submit financial statements. However, the decrease is insignificant, only 3.31% and their total number in 2021 is over the one registered in 2018 (Figure 5).
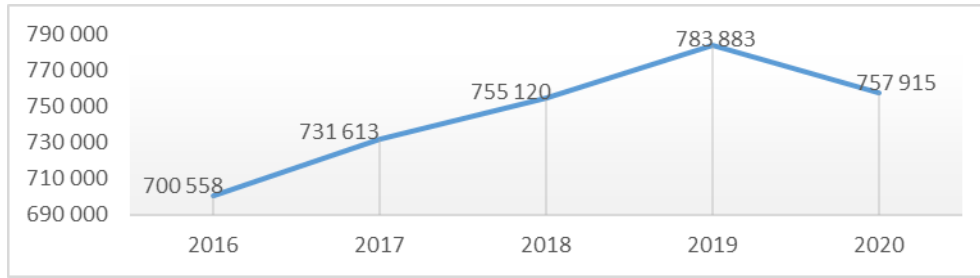
89

Figure 5. Number of companies
Source: author realization, based on public sources

At the same time, the number of employees employed in economic entities in Romania, decreases sharply in 2020, by 9% compared to the previous year. In recent years the dynamics were slightly ascending but relatively flat. The average number of employees in the organization decreased in 2020 to 5.10 employees/unit, the maximum recorded being almost 6 employees/unit in 2016 (figure 6).
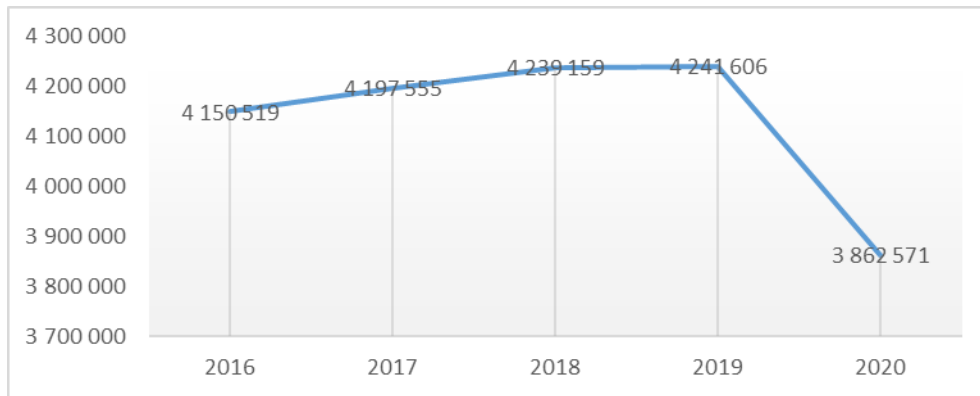

Figure 6. No. of employees
Source: author realization, based on public financial staments

Over the years, the dynamics is a descendant, some of the causes being the digitalization of processes within companies, implementation of advanced technologies which replace the work done by people but also the aging of the working age population and the migration of the labour force in more developed countries to ensure a higher standard of living.

4. Testing the resilience of Romanian companies

In the next chapter, we are taking steps to start a resilience test of Romanian companies by analyzing the evolution of some indicators that we consider relevant in our study using an econometric program namely Eviews
.
The final goal of this research study is to establish the level of resilience of Romanian companies as a result of the impact of the economic crisis generated by the COVID-19 pandemic by analyzing a sample considered significant in terms of volumes generated throughout the economy and which can the large scale replies. In this sense, we will examine the evolution of the companies included in the analyzed sample over 5 years, including 4 years before the onset of the crisis, such as 2020, the year in which the pandemic began in our country, the period in which the most severe measures were imposed since the 1990s, both in duration and intensity. In this way, we try to highlight the most important elements that influence the resilience of economic entities to face shocks of such intensity so that company management and decision-makers can react quickly by taking short-term rescue measures and long-term alignment strategies so that even in the event of other disturbing factors, the shock waves

may not be felt or only to a small extent and the lessons learned during this period may be useful for the difficult periods that will follow.

The sample consists of the first 100 companies in Romania classified in descending order according to the turnover registered in 2020 and which submitted financial statements to the Ministry of Public Finance. Excluded from the sample was a company that from our own analysis erroneously transmitted the financial information to the Minister of Finance, a judgment that was made based on the history of the company in recent years. At the same time, depending on the CAEN of each company, we grouped the industries into 14 main categories, which were assigned an indicator from 1 to 14, as follows: 1 = Automotive, 2 = Oil and gas, 3 = Retail Trade, 4 = Wholesale trade, 5 = Telecomunication & IT, 6 = energy, 7 = Pharma, 8 = Chemical Industry, 9 = Agri / food, 10 = Equipments manufacturing, 11 = Wood, 12 = Heavy industry (metallurgy), 13 = Transport, 14 = Textile industry.

The relevant financial analysis indicators that we have taken into account in our research approach are some of the most used financial indicators in practice and economic studies, which seek to express the actual financial situation of an economic entity. We considered 14 indicators that were grouped into several broad categories, taking into account the public financial information, as presented in Table 2 below.

Below are the indicators considered in our research, which we report on the dynamics of turnover obtained in 2020 compared to that obtained in 2019, which in our opinion, captures the fastest but also faithful resilience of companies to disruptive factors with significant impact as it was the one caused by the COVID-19 pandemic.

The Business efficiency group includes indicators that monitor the management of liquidity and cash flow of companies, which, in case of difficulties encountered, can take measures to reduce costs more efficiently through rigorous inventory management, collection of short-term receivables, and debt restructuring.

In the Sustainable Profitability category, the most crucial category of indicators, the capacity of the activity to generate profit and ensure the remuneration of the invested capital, is analyzed based on the resources it has at its disposal.

The indicators included in the Financial Stability class present the dependence of the enterprise on the financial resources coming from third parties; its importance generating from the fact that in case of aggravating situations, the companies will be able to honour or not their debts or to have access on more financing resources if indebtedness will permit.

The analysis of the business dynamics includes the Business dynamics & stability group, where the evolution in the last two years of the sales and the profitability of the business as well as the age of the companies in the activity, is highlighted.

Table 2. List of indicators used in our research

Class	Indicator	Formula	Abbreviation
	Resilience	*Total Income 2020/Total Income 2019*	*TOD*
Business efficiency	Inventory days (2020)	Inventories/Total Income*365 days	ID
	Receivables days (2020)	Receivables/Total Income*365 days	RD
	Total Debt days (2020)	Total Debt/Total Income *365 day	TDD
	Capital Intensity (2020)	Total Assets/Total Income	CI
Sustainable Profitability	Net profit margin (2020)	Net Profit/Total Income	NPM
	Annual labour productivity 2020/2019	(Total Income 2020/No. of employees 2020)/(Total Income 2019/No. of employees 2019)	ALP
	Return on assets (2020)	Net profit/Total Assets	ROA
	Return on equity (2020)	Net profit/Equity	ROE
Financial Stability	Equity ratio (2020)	Equity/Total Assets	EQR
	Leverage Ratio (2020)	Total Debt/Total Assets	LVR
	Debt to equity ration (2020)	Total Debt/Equity	DE
Business dynamics& stability	Net Profit Margin evolution 2020/2019	Net profit margin 2020/Net profit 2019	NPD
	Age	No of years from incorporation	AGE

Source: author realization

The theoretical economic model that we propose to develop is presented bellow:

$$TOD = \beta(1)*ID + \beta(2)*RD + \beta(3)*TDD + \beta(4)*CI + \beta(5)*NPM + \beta(6)*ALP + \beta(7)*ROA + \beta(8)*ROE + \beta(9)*EQR + \beta(10)*LVR + \beta(11)*DE + \beta(12)*NPD + \beta(13)*AGE + \alpha \quad (1)$$

The sample is significant because a small number of companies, the top 100 in the country, representing 0.01% of the total number of companies, generate over 20% of the turnover obtained by all companies in Romania. The concentration is even higher in 2020, reaching a maximum of 22% compared to 2016-2017 when the percentage was slightly lower, i.e. 20%. (Figure 7).
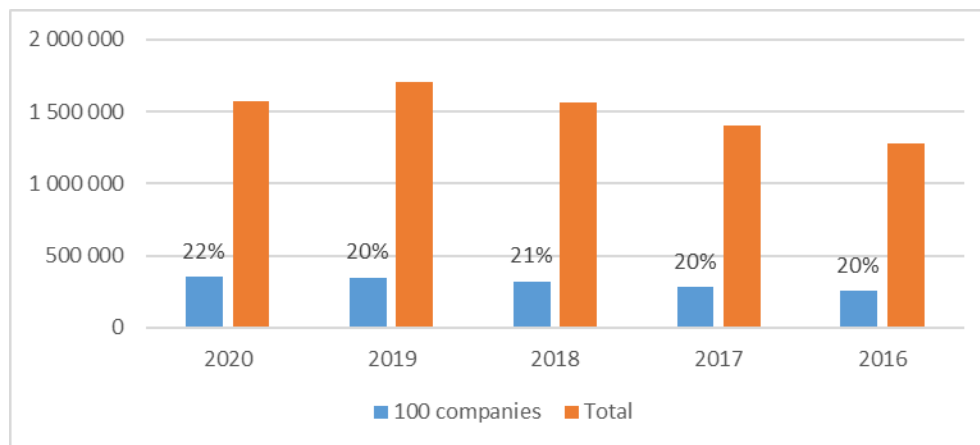

Figure 7. Annual sales share: top 100 companies vs total companies
Source: author realization, based on public financial staments

The highest sales are registered in order by the Retail sector (25.41%), by the automotive industry (20.34%), as well as by the en-gross or wholesale sales sector (11.18%) (Figure 8).
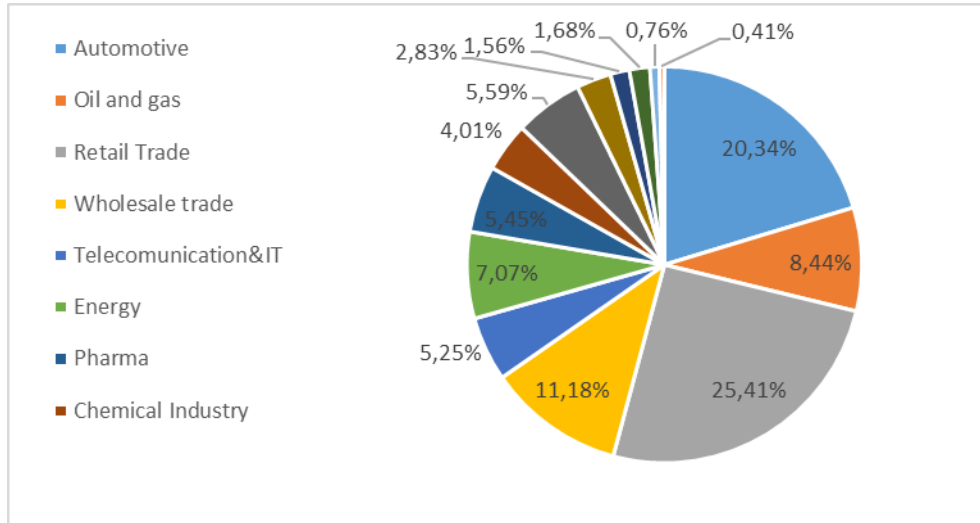

Figure 8. Break-down of sales per industry % (2020)
Source: author realization, based on public financial staments

The profits generated represent in percentages less than half compared to the turnover ratio obtained by the same companies. The trend increases in the last year analyzed, after the decrease from previous years, the maximum reached in 2016, as shown in the chart below (Figure 9).
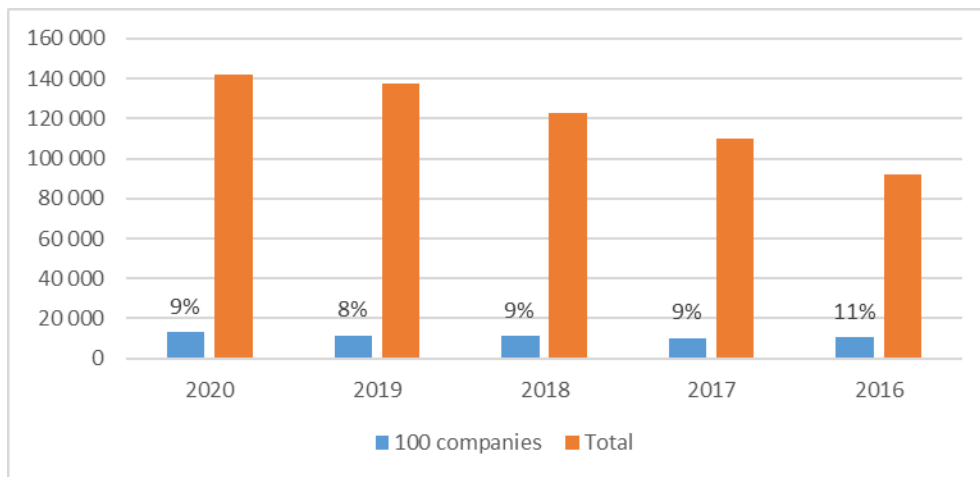

Figure 9. Net profit share: top 100 companies vs total companies
Source: author realization, based on public financial staments

The weight of the generated profits is registered in order by the companies from the Retail sector (32.40%), by the wholesale or wholesale sales sector (11.62%) and by the automotive industry (8.71%). The highest profit margins are obtained by a company in the wholesale sector, with a net profit margin of 40.39% and a heavy industry, with a margin of 33.44%. The average profit margin of the sample comprising the first 100 companies in Romania is 4.26% in 2020, increasing from an average margin of 3.53% in 2019 (Figure 10).
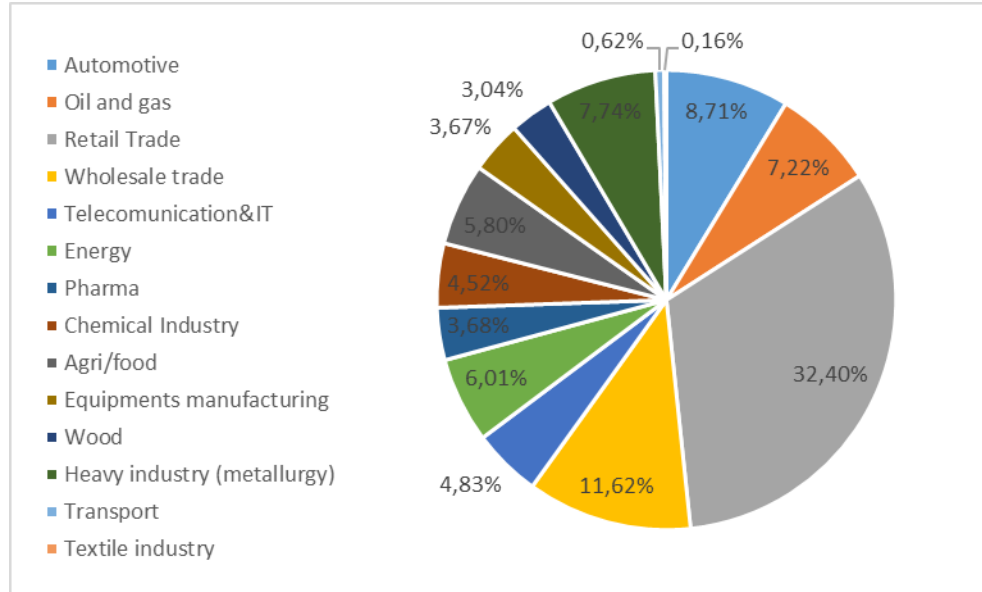
Figure 10. Break down of net profit per industry % (2020)
Source: author realization, based on public financial staments

These companies hire a significant number of employees in the national economy; on average, 7% of the total number of employees in Romanian companies are employed by these 100 companies.
In Table 3, we have surprised a descriptive analysis of the abovementioned indicators.

Table 3. Descriptive statistics

	Mean	Std Deviation	Skewness	Kurtosis	Prob	N
TOD	*0.114029*	*0.598985*	*7.323070*	*64.74045*	*0.000000*	*100*
ID	34.93900	22.82091	1.069457	4.807722	0.000000	100
RD	66.43077	57.23281	1.896054	8.459367	0.000000	100
TDD	102.0971	61.59973	1.441564	5.344982	0.000000	100
CI	0.565459	0.432493	3.897524	26.67695	0.000000	100
NPM	0.047892	0.064054	3.247982	16.24927	0.000000	89
ALP	0.093243	0.580093	7.956305	72.69895	0.000000	99
ROA	0.082161	0.088339	1.875387	8.467785	0.000000	100
ROE	0.224843	0.220311	1.214583	4.394435	0.000000	100
EQR	0.385574	0.247100	-0.104811	2.604900	0.659179	100
LVR	0.567140	0.244521	0.161891	2.379287	0.360205	100
DE	12.26169	90.17831	9.778928	97.08101	0.000000	100
NPD	2.49630	19.04550	8.795955	78.90245	0.000000	82
AGE	18.0300	7.405233	-0.080538	2.115974	0.185967	100

Source: author realization, based on Eviews

The average sales dynamics recorded in 2020 compared to 2019 is 11.40%, the maximum of 545.29% being recorded by an energy company with 2 years of experience since its establishment. On the other hand, the most significant decrease, of 48.67%, is attributed to an automotive company with 8 years of experience, which has also registered a loss for the first time in recent years.

It is noteworthy that these companies have shown incredible resilience over the years, going through various economic, political or social crises of local or even international magnitude, such as the Subprime Crisis from 2008-2009, including the health crisis caused by the pandemic Covid -19, so that on average, the life cycle of the analyzed companies is 18 years. Eight of the 100 companies surveyed have been established since 1990, so they have been in the market for 30 years, being from different fields of activity, and 41% have a history of 20 years or more. The companies established in the last 5 years are 5 in number, generating only 3.31% of the sales of the analyzed sample; the youngest company in the energy having 2 years old.

In terms of the cash conversion cycle, companies had applied stricter inventory management, with average storage days falling to 35 days from 36 and 41 days in the years before the pandemic began. At the same time, slightly longer deadlines were granted for collection in terms of receivables, the average being 66 days compared to 65, respectively 62 days in previous years. An exciting move occurred in the debt payment period, which at the end of 2020 is 102 days compared to 116 days in 2018 and 106 in 2019. The total debts used to calculate the payment period include, in addition to commercial debts and salary and social debts, debts to the state budget, bank debts and debts to shareholders in the form of dividends or loans received from shareholders. Even though debts increase in absolute size, the dynamics were significantly lower than the increase in income, which means that the average payment period expressed in days decreases. The cash available, including bank accounts, decreased by 2% in 2020, being used to settle the debts partially. Capital intensity is maintaining almost flat during the years, 56%, showing equilibrate usefulness and utilization of their existing assets, with higher values in industries that require large capital investments, known as capital-intensive businesses (chemical, telecommunication or heavy industry)

All indicators included in the Sustainable Profitability class are improving in 2020, considering the profit margin increased. The assets are used efficiently and productively by top companies in the country, generating a higher ROA, 8.22% versus 7.03% or 7.11% in the past. Labour productivity (ALP) follows an upward trend, 9.23% in 2020 compared to 8.11% precedent year, in the condition that; however, the number of employees has increased year by year, but the income grew faster as the economy becomes more competitive at the international level. A sustainable and increasing ROE over time, as it is posted at year-end 2020, respectively 22.48%, shows that the companies included in our sample used efficient equity financing for business growth and could reinvest their earnings wisely,

Regarding financial stability, the top companies have a good level of solvency; the average registered in 2020 is 38.56% as it is normal considering that the companies are for such a long time in business, many of them being at the maturity stage of life cycle, so they managed to accumulate profits over the years, part of it reinvesting in the activity part of it being distributed to shareholders. Although the critical aspect to mention is that the financing risk is significant, the financing policy is aggressive, and the debt is over 12 times the level of equity. A possible explanation could be that an essential part of the companies included in the sample are multinational companies with foreign shareholders, which have access to financing lines from mother companies that usually are cash-rich or that have easy access to bank loans or capital market financing and with costs that are by far more convenient than they would get in Romania, preferring financing in this form. At the same time, part of the profits obtained is transferred to remunerate shareholders as dividends so the level of equity could not reach the dynamics that the level of debts.

Table 4. Regression Statistics

Model	R Square	Adjusted R Square	Prob (F-statistic)
1	0.958998	0.950921	0.00000
a.	Predictors: Constant, ID, RD, TDD, CI, NPM, ALP, ROA, ROE, EQR, LVR, DE, NPD, AGE		
b.	Dependent Variable: TOD		

Source: author realization, based on Eviews

According to the data presented in Table 4, the determination ratio R Squared is 0.9589, the ratio which explains the influence of significant factors, which in our case define a strong relation between the dependent variable TOD and the independent variables ID, RD, TDD, CI, NPM, ALP, ROA, ROE, EQR, LVR, DE, NPD, AGE. The variation in one direction or another of the independent variables will implicitly lead to the variation of the independent variable TOD, meaning that 95.89% of the variation of TOD is explained through our chosen model.

Table 5. Regression Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ID	0.001682	0.000913	1.841540	0.0700
RD	-0.000195	0.000395	-0.493239	0.6235
TDD	0.000217	0.000738	0.293752	0.7699
CI	-0.055088	0.170715	-0.322691	0.7479
NPM	0.619251	0.710445	0.871639	0.3866
ALP	0.989919	0.039225	25.23678	0.0000
ROA	-0.630977	0.649950	-0.970808	0.3352
ROE	0.185910	0.164509	1.130095	0.2625
EQR	0.183239	0.264239	0.693461	0.4905
LVR	0.229176	0.251226	0.912231	0.3650
DE	-0.005352	0.006723	-0.795967	0.4289
NPD	0.000643	0.000895	0.718994	0.4747
AGE	-0.003931	0.002406	-1.633908	0.1070
C	-0.136060	0.234691	-0.579743	0.5641

Source: author realization, based on Eviews

Considering the coefficients above (Table 5), the estimated equation of the multiple linear regression model was constructed as below:

TOD = 0.0016*ID - 0.0002*RD + 0.0002*TDD - 0.0551*CI + 0.6193*NPM + 0.9899*ALP - 0.6310*ROA + 0.1859*ROE + 0.1832*EQR + 0.2292*LVR - 0.0054*DE + 0.0006*NPD - 0.0039*AGE - 0.1361

Having the model presented, if the income increases by 1%, ALP will increase with almost the same value, 0.99%. Net profit margin (NPM) growth will follow the same trend, but the dynamics are slightly diminished at 0.62%. The increase in income will cause a decrease in ROA, and the need for assets to support sales growth is significantly higher than the dynamics of profit growth. Positive influence occurs from ID, TDD, ROE, EQR, LVR, NPD, while RD, CI, DE and age negatively influence income increase.

Both pictures below (Figure 11) confirm that the series is usually distributed. The error histogram shows an asymmetric distribution on both sides of the Gaussian curve, strengthening our conclusions that the economic resilience of the top companies in Romania is present and powerful; the performance was acceptable but with small deviations that can be attributed to exceptional events, like COVID 19 pandemic that hit hard and unforeseen all economies around the world.
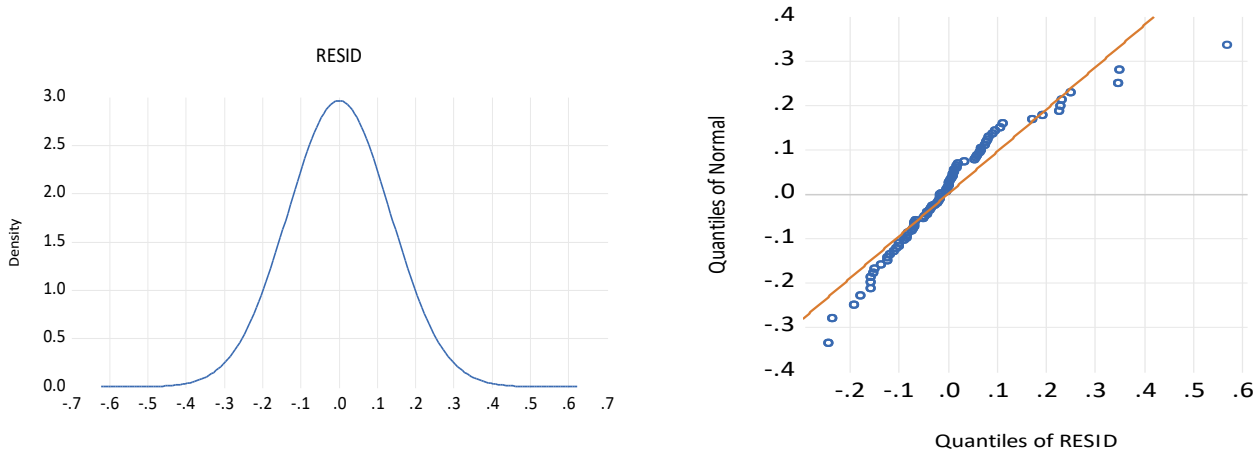
Figure 11. Histogram and Quantile of regression model errors in Eviews
Source: author realization, based on Eviews

Conclusions

The economy of Romania in general, but also the companies in particular, have performed well in recent years; the economic crisis caused by the Covid pandemic, although it hit unexpectedly aggressively at all levels, respectively economic, social, health, but also political, found an economy better prepared to face the shocks compared to Great Crisis of 2008-2009 when the liquidity crisis was decisive. Romania's performance over the years has been recognized internationally. The critical economic growth recorded places Romania among the top European performers, often called the Tiger of Europe, with the development recorded above the European average. At the same time, expectations are high regarding Romania's potential, considering the country's size and number of populations. Still, natural resources must be exploited and managed more efficiently.

Considering the current context full of uncertainties, the Russian-Ukrainian conflict that transmits shock waves around the world, the global energy crisis but also the galloping inflation that impacts the well-being and purchasing power of the population, it is necessary to diagnose which are the vulnerabilities of the companies to be able to adapt and impose strategies to help them survive or even more to become much stronger and stronger for the future.

Analyzing the situation of top 100 Romanian companies, some conclusions and recommendations can be mentioned as follows:

☐ the companies showed strong resilience, maintaining a positive sales trend, +11,4%, despite a general contraction of 7.93% of total turnover realized by Romanian companies. The largest companies have managed to maintain a good level of sales with scattered sales across various channels, including online, but also fueled by rising domestic consumption and maintaining a level of exports that would have ensured a good sales dispersion. Small companies have been much more affected by the traffic restrictions imposed, while switching to alternative sales has been much more difficult, which has led to a much larger contraction than big companies. However, we can affirm the level is still acceptable given the magnitude and brutality of the health crisis; these companies are achieving a rapid recovery, especially in the last two quarters of 2020.

☐ high concentration is noticeable as almost a quarter of the sales of Romanian companies are attributed to a tiny group of companies. Thus there is a structural risk that can lead to seismic hazards at the economic level in case of difficulty of such a company or the decision to leave the Romanian economy. This situation can create

major disequilibria while the negotiations at the point of exit can be complicated to manage, attracting another investor can be long-lasting and under unfavourable financial conditions for the Romanian economy.

☐   it is also confirmed through our analysis that the economy depends mainly on consumption; over 36% of the sales of leading companies in Romania are attributed to the retail sector or wholesale, while the generated profit is even higher, with over 44% coming from these two sectors.

☐   companies have been in the market for many years, some even being among the first to be established after the revolution of '89, and some new names appear in the list. Still, the barriers to entering elite Romanian companies are high; there are no significant fluctuations in time.

☐   Profitability margins maintain the dynamic trend; even if the COVID-generated crisis put pressure on margins, they managed to adapt to the new reality and translate the increases into the final price.

☐   The companies are well capitalized as they have been activating in business for a long time, generating a good level of profitability, part of it reinvested in the activity. Financial autonomy is a constraint; there is a risk to financial stability in terms of high indebtedness, as the debts are over 12 times the level of invested equity. Most of the analyzed companies belong to international groups of companies which ensure the financing of the activity and the investments needed for proper development, but the risks appear in case of blocking the financing or requesting the early repayments

☐   The resilience of the companies, which translates into their ability to recover from external shocks, is influenced positively by Inventory Days, Total Debt Days, Return on Equity, Equity Ration, Leverage Ration, and Net Profit Ratio Evolution while Receivables Days, Capital Intensity, Debt to Equity and age negatively influence the increase of income.

The importance of the study is given by the difficult economic situation we are in contemporary, starting with the economic crisis generated by the COVID-19 pandemic, followed by the crisis of raw materials, the energy crisis, the galloping inflation that has dominated the global economy and recently the Russian-Ukrainian conflict. Under these conditions, it is essential to establish whether an economy is resilient and to identify the vulnerable points to find recovery solutions and the vital points to boost and maintain resilience.

At the same time, the study also has its limitations since the top 100 companies. However, they represent a significant sample in terms of the level of turnover and added value generated for the economy, still have their specificity, benefit from certain competitive advantages and know-how, having more accessible access to financing and innovation. The research opens a way to analyze the small and medium-sized enterprises more vulnerable to various crises or unfavorable conjunctural situations as well as to find a unitary way to measure the resilience of an economic entity or an economy as a whole, so that it can be taken the most effective and timely measures to counteract the negative effects.

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