FINANCE MANAGEMENT OF THE JOINT-STOCK COMPANIES FROM AUTOMOTIVE INDUSTRY IN THE ERA OF MILITARY CONFLICT IN UKRAINE

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Purpose: The purpose of this article is to assess the impact of the ongoing military conflict in Ukraine on the financial management of automotive companies listed on both the Polish and European stock exchanges.

Design/methodology/approach: The article will analyze 99 joint-stock companies listed on global stock exchanges in 2020-2025. The main research method will be an econometric model, which will be used to determine in which years the automotive industry grew the most and in which years it did not, and whether companies have faced significant financial problems since the start of Russia's invasion of Ukraine.

Findings: As a result of the econometric model estimation process, it was observed that the analyzed companies from the automotive industry, whose shares are listed on global stock exchanges, grew the most in 2020. In result of research the reported net profit had the greatest impact on the value of these companies. The year 2022 brought the largest financial losses. At the beginning of the war in Ukraine, stock exchanges around the world reacted very negatively.

Research limitations/implications: The research limitations result that the estimated econometric model uses net profit recorded in 2020-2025 (six variables) as independent variables. The dependent variable is the average value of the company from the same research period. In the future, the author would like to expand the research, focusing on estimating more complex econometric models constructed in relation to the development of an AI-based business model.

Practical implications: An article is also aimed not only at scientists, but managers, investors, analysts, regulators and listed companies, too. The study may help in the process of designing more resilient financial strategies for future economic crises.

Social implications: From a social perspective, the content presented in the article may shape public awareness of the impact of armed conflicts not only on geopolitics, but above all on the entire economy, risk of reduced employment in the automotive industry and security, not only economic but also military.

Originality/value: The research conducted for this article provides a broad perspective on the automotive sector, where military and financial issues intersect.

Keywords: military conflict, joint-stock company, net income, enterprise value.

Category of the paper: research paper.

1. Introduction

The armed conflict in Ukraine, which has been going on for almost four years, has completely changed the geopolitical reality, negatively affecting the economies of countries around the world. In this case, one can speak not only of a military crisis, but also of an energy, financial and, above all, economic crisis. In addition, the strong weakening of the zloty to the lowest levels in more than 20 years also affected the decisions of stock market investors. At the time, the Moscow stock exchange suspended operations and markets around the world reacted very nervously. Nevertheless, the stock prices of joint-stock companies involved in the production and sale of raw materials skyrocketed. Over time, the situation normalized. Yet, as is the case in war, some investors lost heavily, while others made money on the discounted shares of non-military companies.

The automotive industry, which the author focuses on in the article, is very prone to crises. Therefore, the purpose of the article is to try to examine the impact of the war in Ukraine on the financial management process of automotive companies listed on global stock exchanges.

Companies operating in this industry depend on global supplies relying, among other things, on the supply of so-called "semiconductors," resulting in changes in raw material prices. This is a crucial situation especially for the European labor market and exports.

Currently, there is already not only a military war, but also a trade war being waged between the US and China. Many car companies are sounding the alarm about shortages of key raw materials, without which there is no chance of maintaining the production of new cars. The Alliance for Automotive Innovation, which brings together major companies from around the world (including General Motors, Hyundai, Toyota, Volkswagen), warns that the problem is growing year by year, predicting that "in just a few weeks, car factories in many regions of the world will stop working or severely reduce production" (T. Okurowski).

The research method used in the article presented here is an econometric model constructed using the classical least squares method incorporating linear regression, where the coefficient of determination R^2 also plays an important role. The article analyzes 99 joint-stock companies listed on global stock exchanges for the years 2020-2025. In the estimated econometric model, the author seeks to study the effect of net profit of each year (years 2020-2025 as independent variables sequentially from x1 to x6) on the averaged value of the company (dependent variable y).

The estimation results of the econometric model clearly indicate that Russia's invasion of Ukraine has hit the financial health of listed automotive joint-stock companies very hard. Taking net profit into account, in this respect the analyzed companies recorded the largest growth in 2020. In subsequent years, the media increasingly publicized what is now happening in Ukraine, especially since the armed conflict has been going on practically since 2014. Only until February 2022 was there no escalation on such a large scale as now.

However, despite numerous attempts to carry out analyses of the impact of the war in Ukraine on globalization in the broadest sense, there is still a lack of scientific studies that focus on the financial health of automotive joint-stock companies. Therefore, in the future, the author would like to expand the research, which would consist of the process of estimation of a complex econometric model considering the analysis of business models additionally supported by machine learning algorithms.

2. Literature review

The process of financial management in joint-stock companies and, by extension, the level of financial health involves strategic decisions made by their boards of directors, which specifically concern resource allocation, capital structure and financial risk management (Brigham, Houston, 2019). In contrast, what is happening now prompts entrepreneurs to improve their financial condition to ensure a better life and thus, higher profits, not only now, but also in the future. There are many ways to improve one's financial condition, but first and foremost, this most important way to heal it is through investment, which is generally seen as a sacrifice of present yet certain benefits in favor of those uncertain effects to come in the form of additional financial resources (Anastasia et al., 2023, p. 36).

Armed conflicts around the world bring a lot of evil. Innocent people die, some people lose, others gain, the leaders of the countries are also driven by interests, but not those of ordinary people but political ones. First, as the actress mentioned earlier, they shape the geopolitical and economic situation on a global scale. As in Sudan, Ukraine or other countries, armed conflict affects a country's economy, both macro-economically and micro-economically, through various channels, including imports, exports, production and industry, services (public and private), etc. (Siddig et al., 2023, pp. 1-29; Mahadi Ali Mohamed, Lucero-Prisno, 2025).

Since the article touches on the impact of net profit on the value of a company, it seems important to emphasize the role of the Value Based Management theory, according to which "financial management should focus on maximizing the market value of the company, not just on net profit" (Wielicki, Baum, 2009, p. 239). Thus, Value Based Management (VBM) theory is seen as an element in the overall process of managing a company's finances, which "allows to connect its strategy with its financial performance, including. among others, net profit (Waśniewski, 2011, p. 117). This type of financial management is defined as a set of activities that allow to increase the fixed assets and intangible assets of the company through greater efficiency in the consumption of resources and, most importantly, the competitive advantage of a specific joint stock company listed on the stock exchange (Wielgórka, 2012, pp. 37-38).

Accordingly, value management has become a new way of managing joint stock companies in many parts of the world. In this case, the key role of the value of a business entity in the whole process of business management is emphasized, which is based on improving the overall financial health of the company, "emphasizing the unity of external market value and internal economic value of the company, which is a modern extension and the latest development of business management theory". The effectiveness of the whole process of managing the value of a company, which by virtue of its stock market listing changes in a fairly short period of time, has been confirmed by the successful application of this method in many large international corporations. For example, the company Daimler Chrysler in Germany, whose value and the amount of net profit achieved in 2020-2025 is also analyzed in the article, "has made value management one of the main strategies for the development of enterprises in the 21st century" (Sun, 2023, p. 87; Verma, 2017, pp. 354-382).

Therefore, the value of a company reflects their long-term capacity for sustainable development. And given the analysis of the impact of net profit on the value of a listed company, this article contributes to further enriching the literature review with theories explaining the essence of the economic effects of capital multiplication and profit generation by the business entities under study. Thus, investment in shares by joint-stock companies in the automotive industry contributes to increasing their market value on the other hand, rational allocation of the asset structure of the business entities under study is important for increasing their value (Huang, 2023, p. 594; Jonueviien, 2022, pp. 28-36).

According to some scholars, listed companies are willing to invest more resources in cooperation with other business entities to increase their market value. Besides, companies can gain certain effects in the context of information sharing and knowledge flow (Fu et al., 2016, pp. 59-67). On the one hand, "the sharing of information between business units can contribute to the reallocation and utilization of resources or information in the network, weaken the inhibiting effect of information asymmetry on business efficiency, and promote effective cooperation between businesses and the generation of new knowledge, thereby improving business value" (Mcevily, Marcus, 2005, pp. 1033-1055). On the other hand, "the integration of enterprise resources based on shared resources is conducive to encouraging listed companies to jointly solve difficult problems, improving the efficiency of cooperation and enterprise value" (Vorhies et al., 1999, pp. 1171-1202; Zhang, 2021, p. 3).

In the case of joint-stock companies listed on the world's stock exchanges engaged in the business of car manufacturing, which, as is well known, are characterized by a multitude of products, technologies and processes of various kinds, the supply chain alone is so complex that without cooperation with other business entities, as the author mentioned earlier, it becomes almost impossible to continue operating. Planning for the purchase of materials necessary for the production process of autos and the aforementioned supply chain in such a company primarily involves car dealers and many suppliers, whose embedded process involves thousands of companies supplying products ranging from raw materials such as steel, plastics,

etc. to complex assemblies and components such as transmissions, brakes or finished engines (Sabadka, 2015, p. 15; Manjunatha et al., 2009, pp. 658-667; Yoga Irsyadillah, Dadang, 2020, pp. 12-22).

Therefore, the increased cooperation of the surveyed business entities can contribute to improving their financial condition at a time of continuing armed conflicts ongoing in Ukraine or Gaza. The use of mechanisms for innovative design of the car production process is important for the market success of joint-stock companies in the automotive industry. In addition, the demand for cars produced in accordance with so-called sustainable development is growing exponentially every year (Endler, Andrade Júnior, 2018, p. 31; Arcos-Novillo, Güemes-Castorena, 2017, pp. 1-15). Thus, the importance of the dual transformation of digital and climate and of taking care of environmental sustainability stems from the realities in which we live. At the European level, this type of transformation is carefully planned and monitored. This is since automotive companies, large-scale factories that mass-produce cars, belong to a category of industry that unfortunately contributes to economic growth and at the same time to raising living standards. Through this, it is also responsible for producing a large amount of toxic waste (Istrițeanu, Băjenaru, 2024, p. 101; Masoumi, 2019, pp. 1-30; Luthra et al., 2014, pp. 170-199; Singh, 2024; Darnhall et al., 2008, pp. 30-45).

Analyzing the material gathered in the literature review for the purpose of this article, it should be noted that there is a lack of empirical studies and academic articles in which armed conflict is combined with issues describing the process of managing the finances of companies and, in addition, the finances of joint stock companies in the automotive industry. Most of the available studies focus on the disruptions arising in supply chains or the production process, and not on the disruptions caused by the deteriorating financial condition of these companies because of the outbreak of war in Ukraine and now even in Gaza. Above all, there is a lack of quantitative data to show how companies adjust their capital structure, profits generated, or investments made during the ongoing war.

3. Methods

To illustrate the relationship between the values of the joint-stock companies studied and the net profit recorded by them in 2020-2025, the following section of the article presents an econometric model, the construction of which is based on available empirical data. These data are presented in the following table (Table 1).

Table 1.
Data presenting the financial condition of the 99 joint-stock companies studied in 2020-2025 (data in million)

Lp.	Name of the company	Average value of the company (y) 2020-2025	Net income					
			2020 (x1)	2021 (x2)	2022 (x3)	2023 (x4)	2024 (x5)	2025 (x6)
1.	TESLA	862716.5	721	5,519	12556	14997	7091	6110
2.	TOYOTA	46900329.33	0	2245261	2850110	2451318	4944933	4765086
3.	FERRARI	59720.33333	607.82	830.77	932.61	1252	1522	1582
4.	MERCEDES	161100.3333	3627	23006	14501	14261	10207	8911
5.	BAY	144396.6667	3775	12382	17941	11290	7290	6596
6.	VOLKSWAGEN	257507.6667	8867	15382	15457	16533	11351	9935
7.	HONDA	9875065.667	0	657425	707067	651416	1107174	835837
8.	GM	157397.8333	6427	10019	9934	10127	6008	5812
9.	MARUTI	2377482.5	0	43891	38795	82637	134882	145002
10.	MAHINDRA	2037039.667	0	18125	65773	102815	112686	129291
11.	FORD	169022	-1279	17937	-1981	4347	5879	5018
12.	STELLANTIS	27114.5	2173	14200	16799	18596	5473	0
13.	DAIMLER	37067.66667	-143	2347	2665	3775	2900	2870
14.	HYUNDAI	145223756.3	1424436	4942356	7364364	11961717	12526691	12453039
15.	TATA	2399982.333	0	-134514	-114415	24143	313990	278300
16.	SERES	97255.33333	-1729	-1824	-3832	-2450	5946	6474
17.	LI AUTO	149485.5	-151.66	-321.46	-2012	11704	8032	8090
18.	BAJAJ AUTO	1278536.833	0	48570	61659	60602	77082	73247
19.	SAIC MOTOR	213387.5	20431	24533	16118	14106	1666	1976
20.	SUZUKI	3199005.667	0	146421	160345	221107	267717	416050
21.	KIA	19656505.17	1487585	4760450	5409429	8776970	9772957	9358016
22.	GREAT WALL	224888	5362	6726	8266	7022	12692	11224
23.	GEELY	144314.1667	5534	4847	5260	5308	16632	20744
24.	XPENG	18216.83333	-2732	-4863	-9139	-10376	-5790	-5086
25.	TRATON	29389.16667	-101	457	1141	2451	2804	2518
26.	HYUN. INDIA	218384.1667	0	18812	29016	47093	60600	56402
27.	EICHER	765166.5	0	13469	16766	29139	40010	47344
28.	RIVIAN	24575.66667	-1018	-4688	-6752	-5432	-4747	-3846
29.	TVS MOTOR	687043	0	5943	7568	13287	16864	22356
30.	CHONG QING	61825.66667	3324	3552	7799	11327	7321	7516
31.	RENAULT	55514.66667	-8008	888	-354	2198	752	0
32.	SUBARU	930457.3333	0	76510	70007	200431	385084	338062
33.	SHIMANO	1673505.333	63472	115937	128178	61142	76329	62428
34.	KAWASAKI	1206319.167	0	-19332	21801	53029	25377	88001
35.	HERO	488473	0	29178	23169	28100	37448	43785
36.	ZHEJIANG	25941.5	-1100	-2846	-5109	-4216	-2821	0
37.	ISUZU	1366684	0	42708	126193	151743	176442	134363
38.	NISSAN	6782024.667	0	-448697	215533	221900	426649	-670898
39.	GUANGZHOU	85436.16667	5966	7335	8064	4429	823.58	-1128
40.	VINFAST	9348.833333	-18949885	-35234	-65075	-60168126	-77265364	-80215871
41.	JARDINE	27604.33333	540.3	660.6	739.8	1215	945.8	0
42.	YUTONG BUS	29478.5	515.99	613.79	759.14	1817	4116	4214
43.	YAMAHA	1484546.333	53072	155578	174439	164119	108069	82768
44.	FORD OTOSAN	241023.8333	4195	8801	27730	70826	38864	32959
45.	OSHKOSH	6309.166667	508.9	427.4	173.9	598	681.4	614.2
46.	LUCID	15686.5	-719.38	-2580	-1304	-2828	-2714	-2399
47.	ZEEKR	2467.333333	103.6	-4363	-7934	-8347	-6424	-5160
48.	NIO	28922.66667	-5611	-10572	-14559	-21147	-22658	-24291
49.	IVECO	3673	-408	52	147	218	349	370
50.	BLUEPARK	46789.66667	-6482	-5244	-5465	-5400	-6948	-6886
51.	CHONGQING	28187.83333	58.1	55.64	154.68	24.21	40.02	44.62
52.	VOLVO CAR	92423	5834	12546	15577	13053	15401	13263
53.	YADEA	30945	957.39	1369	2161	2640	1272	0
54.	FAW JIEFANG	12422.5	2672	3900	367.44	806.1	622.43	476.24
55.	ZHEJIANG	17783.16667	364.9	411.52	701.37	1008	1472	1609
56.	MITSUBISHI	461778.6667	0	-312317	74037	168730	154709	40987
57.	AIMA	15707.5	598.52	664	1873	1881	1988	2109
58.	DONGFENG	22007.5	10758	11393	10265	-3887	58	0
59.	MAZDA	561344.8333	0	-31651	81557	142814	207696	114079
60.	LONCIN	10001	479.92	384.8	527.28	583.42	1121	1371
61.	TRIGANO	2343.333333	139.46	222.7	278.4	308.1	374.4	299.7
62.	THULE	36152.33333	1166	1790	1275	1099	1122	1088
63.	MINTH	32722.83333	1396	1497	1501	1903	2319	0
64.	HARLEY	11611.16667	1.3	650.02	741.41	706.59	455.36	353.52

Cont. table 1.

65.	BEIQI FOTON	19301.16667	154.64	-5061	66.76	909.48	80.54	260.06
66.	SINOTRUK	10290	1880	1030	213.72	1080	1480	1516
67.	OLA	34724.16667	0	-1992	-7842	-14721	-15844	-22760
68.	POLESTAR	5067.5	-484.86	-969.3	-479.02	-1182	-2050	0
69.	TOFAS	71486.33333	1784	3281	9374	21777	5221	1206
70.	GT	236450	6546	10983	18360	29313	28783	30812
71.	REV	1349	-30.5	44.4	15.2	45.3	257.6	96.9
72.	CHINA RAIL.	16360.66667	938.11	977.22	709.05	571.09	459.09	475.36
73.	FORCE	77704.16667	0	-1236	-910.8	1336	3881	8007
74.	BAIC MOTOR	18663.66667	2029	3858	4197	3030	955.84	850.33
75.	DONGFENG	9619.833333	553.51	371.75	285.08	200.04	29.16	0
76.	JIANGLING	3477.833333	550.7	574.17	915.05	1476	1537	1361
77.	BRILLIANCE	11997	11.22	11961	7147	7735	3101	0
78.	SANYANG	54831	1938	1830	3116	6298	4770	4608
79.	BRETON	0	0	0	-178.1	-229.41	-274.55	0
80.	LOTUS	1005.666667	0	-110.53	-723.92	-742	-1105	-1030
81.	HANMA	8403.5	-490.59	-1336	-1494	-962.69	157.23	234.7
82.	HINO	514818.6667	0	-7489	-84732	-117664	17087	-217753
83.	ZHEJIANG TA.	3425.833333	211.22	242.72	206.1	280.48	431.26	466.6
84.	GIANT	91588.16667	4949	5930	5844	3401	1264	1112
85.	ATHER	0	0	-2333	-3441	-8645	-10597	-8123
86.	BLUE BIRD	898.8333333	12.19	-0.29	-45.76	23.81	105.55	108.14
87.	YULON	291949.8333	2739	4716	-4697	4691	3955	3524
88.	XIAMEN KING	5188.166667	31.9	-595.22	-386.89	75.1	157.74	186.85
89.	CHINA MOTOR	37684	3277	4182	-7758	5652	4007	3384
90.	DOMETIC	36531.33333	451	1726	1784	1332	-2303	-2395
91.	ASTON MART.	2383.833333	-419.3	-191.6	-528.6	-228.1	-323.5	-264.6
92.	OTOKAR	40419.5	618.27	1042	2018	2841	-3104	-2991
93.	AEROSUN	6554.833333	44.45	66.45	75.71	71.94	-379.03	-374.42
94.	ZHEJIANG QI.	4665.5	239.51	237.61	415.54	464.02	676.74	623.68
95.	OLECTRA	77795.5	0	80.75	353.51	655.95	768.33	1389
96.	MERIDA	60179.5	3993	4650	3389	1692	-699.1	-696.35
97.	JILIN	7190.166667	4929	-449.37	-406.18	-181.27	-718.1	-701.57
98.	NISSAN SH.	61937.33333	0	1917	-2217	3883	407	3033
99.	HONG LEONG	1717.833333	169.32	291.88	210.94	290.61	387.9	467.19

Source: own elaboration based on https://stockanalysis.com/stocks/industry/apparel-manufacturing/, 01.06.2025; https://www.tradingview.com/markets/world-stocks/worlds-largest-autom, 20.06.2025.

From the above data, the armed conflict in Ukraine has left a very strong mark on the automotive industry, both regionally and globally. The effects of this are evident in the estimation process of the presented econometric model.

In an econometric model constructed using the classical method of least squares, an important role is played by the coefficient of determination, which informs how much the survey conducts explains what the author wants to measure. The estimated model is described by the following equation:

$$Y_t = \alpha_0 + \alpha_1 x_{1t} + \alpha_2 x_{2t} + \alpha_3 x_{3t} + \alpha_4 x_{4t} + \alpha_5 x_{5t} + \alpha_6 x_{6t} + \varepsilon_t => \alpha_0 + \alpha_1 x_{1t} + \alpha_3 x_{3t} + \alpha_4 x_{4t} + \alpha_5 x_{5t} + \alpha_6 x_{6t} + \varepsilon_t \qquad (1)$$

where:

numbers: n - number of units under study,

j - number of explanatory variables,

x_t, α_0, α_1, ..., α_j - parameters of the model,

$\varepsilon_{(t)}$ - random component.

Based on the literature review and the research gaps analyzed, research hypotheses were formulated that can answer the question of how automobile companies, especially those whose shares are listed on the stock exchange, should deal with crises in an era of continuing armed conflict. The research hypotheses tested refer to value-based management theory, which is usually based on bringing something new to the company (Bolsinger, 2014, p. 357; Buhl et al., 2011, pp. 163-172; vom Brocke et al., 2010, pp. 333-356). This involves, for example, implementing a new process or changes to an existing venture, which significantly contributes to increasing the market value of the business entity. It is based on VBM that variable y was constructed, which is significantly influenced by net profit for the years 2020-2025 (variables x1-x6). They are as follows:

H0: The structure of the estimated econometric model is linear.

H1: The structure of the estimated econometric model is not linear.

H0: The specification of the econometric model is appropriate.

H2: The specification of the econometric model is not appropriate.

H0: Heteroskedasticity is not present.

H3: Heteroskedasticity is present.

H0: The statistical error assumed in the econometric model has a normal distribution.

H4: The statistical error assumed in the econometric model does not have a normal distribution.

H0: No structural break in the econometric model.

H5: There is structural breakdown in the econometric model.

As the author mentioned above, the estimated econometric model initially included six independent variables defined by the net profit recorded in 2020-2025 (x1-x6), which in turn affect the dependent variable y, the value of the company. The data is presented in Table 2.

Table 2.
Model 1: OLS, using observations 1-99. Dependent variable: y

Items	Coefficient	Std. Error	t-ratio	p-value
const	62116.3	227533	0.2730	0.7855
x1	-112.196	13.3977	-8.374	<0.0001***
x2	-24.7159	4.49668	-5.496	<0.0001***
x3	3.36036	7.29631	0.4606	0.6462
x4	27.8373	4.43584	6.276	<0.0001***
x5	-7.74379	2.84716	-2.720	0.0078***
x6	13.0912	2.82785	4.629	<0.0001***
Mean dependent var	2577060	S.D. dependent var		15386879
Sum squared resid	4.39e+14	S.E. of regression		2183732
R-squared	0.981091	Adjusted R-squared		0.979858
F(6, 92)	795.5850	P-value(F)		5.79e-77
Log-likelihood	-1581.903	Akaike criterion		3177.806
Schwarz criterion	3195.972	Hannan-Quinn		3185.156

Source: own elaboration based on table 1.

In the process of further estimation of the econometric model, because of modification of the adopted variables, the independent variable x2 had to be discarded, which was also written in the above equation describing the structure of the model. The data are presented in the following table (Table 3).

Table 3.
Model 2: OLS, using observations 1-99. Dependent variable: y

Items	Coefficient	Std. Error	t-ratio	p-value	
const	63867.6	226535	0.2819	0.7786	
x1	-118.200	3.07746	-38.41	<0.0001***	
x2	-22.7058	1.07702	-21.08	<0.0001***	
x4	29.8138	1.11778	26.67	<0.0001***	
x5	-6.76740	1.89241	-3.576	0.0006***	
x6	12.0885	1.79697	6.727	<0.0001***	
Mean dependent var		2577060	S.D. dependent var		15386879
Sum squared resid		4.40e+14	S.E. of regression		2174462
R-squared		0.981048	Adjusted R-squared		0.980029
F(5, 93)		962.8164	P-value(F)		1.97e-78
Log-likelihood		-1582.017	Akaike criterion		3176.034
Schwarz criterion		3191.605	Hannan-Quinn		3182.334

Source: own elaboration based on table 2.

The construction of the econometric model indicated that the variables adopted for construction were correctly selected. In addition, the coefficient of variation was also higher than 10% as was the coefficient of determination R^2, which is very high at 98%. The p-values for the independent variables x1-x6, except for the variable x2, which was excluded, are very low, indicating that the variables x1, x2, x4 and x6 had the greatest impact on the y variable.

4. Results

Based on the estimation process of the econometric model, the results of the statistical tests performed are presented. These tests were aimed at confirming the impact of the net profit recorded in 2020-2025 on the values of 99 automotive stock companies listed on global exchanges. These are the following results from tests:

1. Non-linearity test (squares)-H0: relationship is linear: test statistic: LM = 95.578 with p-value = P (Chi-square (5) > 95.578) = 4.51244e-19.
2. RESET test for specification-H0: specification is adequate: test statistic: F (2, 91) = 599.1with p-value = P (F (2, 91) > 599.1) = 4.13822e-53.
3. White's test for heteroskedasticity-H0: heteroskedasticity not present: test statistic: LM = 98.8826with p-value = P (Chi-square (20) > 98.8826) = 1.99518e-12.
4. White's test for heteroskedasticity (squares only)-H0: heteroskedasticity not present: test statistic: LM = 51.792 with p-value = P (Chi-square (10) > 51.792) = 1.24689e-07.

5. Breusch-Pagan test for heteroskedasticity-H0: heteroskedasticity not present: test statistic: LM = 25.2346 with p-value = P (Chi-square (5) > 25.2346) = 0.000125527.

6. Breusch-Pagan test for heteroskedasticity (robust variant)-H0: heteroskedasticity not present: test statistic: LM = 3.55336 with p-value = P (Chi-square (5) > 3.55336) = 0.61533.

7. Test for normality of residual-H0: error is normally distributed: test statistic: Chi-square (2) = 175.935 with p-value = 6.25473e-39.

8. Chow test for structural break at observation 50-H0: no structural break: test statistic: F (6, 87) = 12.503 with p-value = P (F (6, 87) > 12.503) = 4.09505e-10.

The results from the tests indicate that the estimated econometric model is not linear. Its specification is not appropriate. White's test confirms that heteroskedasticity in the model is present. However, Breusch-Pagan test confirms that heteroskedasticity is not present. Nevertheless, the statistical error does not have a normal distribution and at the same time there is a structural break.

5. Discussion

Estimation of the econometric model showed that it is not an ideal econometric model at least because the independent variables adopted are still the same net profit only recorded in each year, which may weaken the parameters and assumptions made. Despite the estimation carried out, it is important to highlight several important limitations because of its construction:

- the autocorrelation of the independent variables was since the use of net income from different years as independent variables may have led to it, which violates one of the basic assumptions of the classical linear regression model,
- the lack of structural variability only reinforced the belief that the model did not consider potential structural changes resulting from the impact of the armed conflict vs. the financial condition of the automotive companies under study, which may have distorted the interpretation of the parameters,
- limited number of observations covering 99 companies. Analysis based on annual data may be insufficient to capture dynamic changes in financial management under crisis conditions,
- the omission of contextual variables such as inflation, fluctuating exchange rates, inflation-changing commodity prices and even fiscal policy, which could have had a significant impact on companies' financial performance negatively affected the overall structure of the model.

All of this may have negatively affected the final shape of the model. Nevertheless, the satisfactory level of the coefficient of determination R^2 as much as possible speaks in favor of what the author tried to prove by constructing this econometric model.

6. Conclusions

The presented results of the study confirmed unequivocally that the year 2022, especially the moment when Russia's invasion of Ukraine began, was characterized by quite serious consequences that the automotive joint-stock companies suffered as a result, recording losses. Estimation of the econometric model showed that despite the noticeable downward trends in financial performance, the model does not fully capture the complexity of the analyzed phenomenon. Well, based on the research carried out, only one hypothesis was positively verified, according to which the Breusch-Pagan test confirms that heteroskedasticity does not occur (in other cases the opposite was true).

The presence of high correlations between certain variables, especially the correlation between variable y and variable x3 (net profit in 2022), may have affected the stability of the regression coefficient estimates, thus making it difficult to clearly interpret the impact of individual predictors on the values of individual joint-stock companies. The model did not consider all possible factors influencing the dependent variable, which increased the risk of variable omission error.

In the literature review, not all the theoretical concepts presented were directly reflected in the construction of the empirical model. The theory of 'Value-Based Management' served mainly as a contextual framework for formulating research hypotheses.

Nevertheless, it is difficult to describe with an econometric model what is happening now in the context of spreading armed conflicts. This is supported by the fact that the construction of the model is not perfect, as is the choice of variables. Although the coefficient of determination R^2 reached a very high value (98%).

Future research should consider the following steps:
- using panel data models (e.g., fixed effects, random effects) to account for differences between companies and variability over time,
- introducing macroeconomic and even geopolitical variables into the model as additional predictors,
- conducting diagnostic tests (e.g., the Durbin-Watson test) to assess the quality of the model and meet classical assumptions,
- striving for a stronger link between theory and empirical analysis, so that the conceptual framework not only explains the context of the problem, but also guides the choice of research tools and the interpretation of results.

Given the practical significance of the research conducted, it is worth noting that potential managers in charge of large automotive companies will be able to better understand how the armed conflict has affected the financial performance of companies, and what actions they should take (e.g., more prudent cash management, etc.). As for researchers, the article aims to fill the existing gap in literature, thus showing that it is worthwhile studying the finances of companies not only in stable, but also in very complex, even crisis conditions.

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