

The impact of modern macroeconomic factors on the development of the economic strategies of companies

VLADYSLAV CHERNII, VIKTORIIA YANOVSKA, OLHA KRAVCHENKO,
VIKTORIIA TVORONOVYCH

Abstract

The coronavirus pandemic has had an unprecedented impact on the global economy, and has significantly increased the uncertainty inherent in the external environment. The factor of possible lockdown is added to the parameters of uncertainty of macroeconomic indicators of domestic and foreign markets. If companies could predict inflation dynamics or consumer sentiment in some way, it is nonetheless difficult to predict another outbreak of the pandemic. The negative effects of the pandemic have had a highly significant impact on the economic situation of businesses, which makes this factor especially important for the development of economic strategies. The aim of the study is to determine the impact of changes in macroeconomic variables due to crises on the development of a company's economic strategy. The study was conducted through linear regression models, which were tested by means of the least squares method. The COVID-19 pandemic effect was introduced into the models through the use of a dummy variable. The results of the study showed that companies expect a decrease in sales, a reduction in the wages of employees and indeed the number of employees themselves. The expectations of businesses regarding the volume of foreign investment and their own investment costs have worsened. Businesses are changing their economic strategies from development strategies to survival strategies accompanied by cost reductions. At the same time, macroeconomic indicators, including the inflation index and the exchange rate, are expected to deteriorate. The results obtained can be used to assess the impact of COVID-19 on business strategies and the economic expectations of businesses. The study opens new areas for further research, in particular the sectoral impact of the pandemic on the development of companies' economic strategies. The methodological limitation is that the industry specifics of companies were not taken into account. In addition, the pandemic impact data available for

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Vladyslav Chernii

e-mail: vladyslavchernii2@gmail.com

Viktoriia Yanovska

e-mail: vyanovska@ukr.net

Olha Kravchenko

e-mail: olgafast43@gmail.com

Viktoriia Tvoronovych

e-mail: tvoronovic@ukr.net

State University of Infrastructure and
Technologies, Kyiv, Ukraine

¹Corresponding author

analysis are currently limited to the four quarters of 2020. The limitation pertaining to implementation is that the impact of the pandemic on the company's strategy may differ depending on the field of the company's activity.

Key words

COVID-19, economic strategy, economic uncertainty, economic expectations, consequences of coronavirus.

Introduction

A company's economic strategy determines the strategic goals of operation and the ways by which to achieve them. However, the variability of the external environment and the uncertainty of operating conditions inevitably affect not only the company's current state, but also its strategy. Management adapts the business development strategy in order to take the new conditions of market development into account and adapt to the conditions of uncertainty. The impact of COVID-19 is one of the most influential factors of uncertainty for all companies, without exception. All aspects of human activity suffer from its effects. The economic consequences of the pandemic are unprecedented, and businesses have faced economic conditions that have never previously been the case. All the old tools to respond to the challenges of uncertainty have proved ineffective under new circumstances as, unlike all known factors of economic downturns, the effects of the pandemic are long-lasting and affect all aspects of the economy: from market stagnation to restrictions on companies themselves to the remote work of employees. Under the new conditions, management and owners of businesses have begun to re-evaluate the macroeconomic environment and parameters of the economy. Economic expectations are now adjusted for the likely deterioration in the COVID-19 situation and potential lockdowns.

The scientific literature (e.g. Mirza and Ahsan, 2019; Aburumman, 2020; Harrell, 2020) has not covered the aspect of macro-

economic factors influencing the economic strategies of companies. The main focus is factors affecting the internal environment of companies and their goals (Oliver and Parrett, 2018; Schoenwaelder et al., 2020). At the same time, environmental factors have a direct impact on the implementation of economic strategies and the achievement of the company's goals, so they must be taken into account (e.g., Florek-Paszowska et al., 2021). However, current research does not cover the impact of modern macroeconomic factors as elements of uncertainty on the development of the economic strategies of companies. Given these facts the aim of the study is to determine the impact of changes in macroeconomic variables caused by crises on the economic strategies of companies. This aim involves fulfilling objectives such as determining the expectations of companies pertaining to changes in the macroeconomic parameters in the period before and after the crisis, as well as assessing the impact of the pandemic on such expectations that determine the economic strategies of companies.

1. Literature review

This section of the study identifies unresolved issues regarding the impact of modern macroeconomic factors on the development of companies' economic strategies. Mirza and Ahsan (2019), who examined the impact of economic policy uncertainty on corporate strategies in China, concluded "that strategic positioning and economic policy uncer-

tainty have a significant positive impact on corporate risk. The results of their study also explain that the uncertainty of economic policy increases the market risk of businesses regardless of their corporate strategy. However, this reduces the business risk of defence companies" (p. 381).

Examining uncertainty, Magnani and Zucchella (2018) drew several important conclusions. First, uncertainty must be separated from risk. Risk and uncertainty can either coexist or can evolve from uncertainty to risk over a period of time. However, risk and uncertainty remain separate decision-making contexts. Second, in order to manage the relationship between external and internal uncertainty, it must be borne in mind that external uncertainty sometimes generates internal uncertainty. In this conclusion, we can draw a parallel with the impact of COVID-19, when uncertainty about macroeconomic indicators and the state of the economy has created uncertainty about the organisation of the internal functioning of businesses.

In a study of the impact of uncertainty on company performance (Silva and Ferreira, 2017), the authors argued that managers demonstrate a moderate ability to predict the state of the environment and its impact on the activities of their companies. However, there are fewer difficulties when developing alternative solutions in response to uncertainty. On the basis of these results, it can be concluded that a moderate level of uncertainty allows managers to ascertain a higher level of predictability of the external environment. In this context, company managers must adjust their company's strategy when assessing the impact of uncertainty on the external macroeconomic environment (Gancarczyk and Ujwary-Gil, 2021).

PwC experts (PricewaterhouseCoopers Limited, 2020) also noted that companies' strategies need to be adjusted during the COVID-19 pandemic. Given the current situation, it is a time to review long-term strate-

gy, consider how your competitors may react and what the long-term market conditions may look like. It is necessary to determine the desired end state of your business after the crisis and determine where to invest to promote accelerated growth.

In a study of the management of uncertainty in the context of the coronavirus pandemic (Sharma et al., 2020), the authors noted that "despite the continuing need to understand and manage uncertainty in international business, there is no comprehensive framework for different types of uncertainty, their consequences" (p. 190), as well as various coping strategies. This makes it difficult to develop appropriate strategies to effectively combat uncertainty, especially during periods such as the COVID-19 pandemic.

Oliver and Parrett (2018), who explored the role of planning in managing uncertainty, noted that "the business environment for many companies is changing rapidly and becoming increasingly uncertain due to changes caused by new digital technologies, deregulation, new business models and the threat of new competitors." The authors mentioned the special role played by scenario planning in minimising the negative effects of uncertainty on companies' activities. Donthu and Gustafsson (2020) examined the impact of coronavirus on different sectors of the economy and different forms of business. The negative impact of the pandemic must be taken into account in business strategies during the pandemic itself, as well as in the new post-pandemic world. However, the authors of the study did not consider what strategic changes have been caused by the pandemic. Experts from Ernst & Young, Basnayake et al., (2020) noted that most companies are undergoing significant changes in the course of their usual business, and that they will face low levels of efficiency throughout the COVID-19 crisis. At the beginning of the crisis, supply chain problems were significant for China-based companies. Yet seeing as the crisis has spread to Europe and the United

States, many other companies are experiencing disruptions and significant shifts in consumer demands and behaviour affecting sectors from consumers and retailers to manufacturing, life sciences and the automotive industry.

A report on the impact of the pandemic on the economy and social life in Latin America and the Caribbean (Economic Commission for Latin America and the Caribbean, 2020a), as well as a study on the impact of the pandemic (Economic Commission for Latin America and the Caribbean, 2020b), indicate the significant negative effects of the pandemic and the need to develop policies to neutralise them. At the same time, specific parameterised effects on the strategies of companies from different regions are not studied.

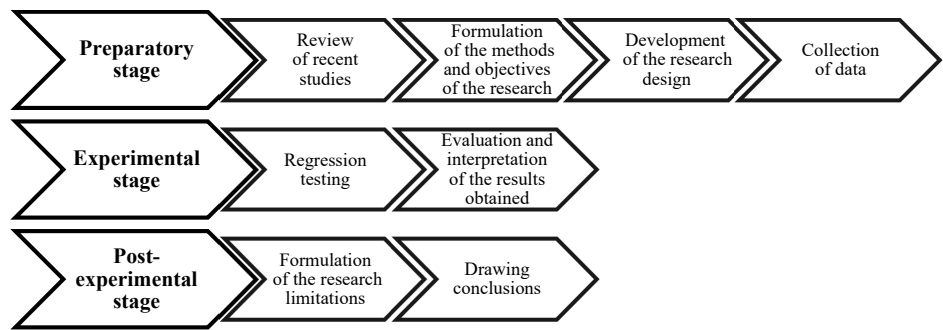
The literature review allows us to state that uncertainty occupies a very important place among the factors influencing a com-

pany’s economic strategy. However, detailed and careful research is required to study the impact of the coronavirus pandemic on the evaluation of macroeconomic indicators by leaders and managers of companies, because this is exactly the case when external uncertainty generates internal uncertainty.

2. Methods

The study will be conducted in several stages. At the first stage, a review of current literature will be conducted to identify an unresolved problem. The research design will be developed and primary data will be collected. The second stage provides for testing of the constructed regressions and the analysis of the results obtained. Conclusions will be drawn from the results obtained, and the limitations of the study will be identified at the third stage. The main stages of the study are shown schematically in Figure 1.

Figure 1. Visualised research design



Source: own elaboration

At the first — preparatory — stage, we conducted a study of recent scientific articles that deal with the impact of uncertainty on the economic strategy of companies. Based on a critical assessment of the results of previous research, we formulated the aim and objectives of our study. The next component of the preparatory stage is the development of research design and collection of source data for further processing and use.

The second stage of the study involves building and testing regression in accordance with the constructed model, as well as the evaluation and interpretation of the results. The final stage of the study involves specifying the methodological and implementation constraints of the study and drawing conclusions from the study.

To achieve this goal, the study will be conducted in several stages. The first stage

involves the study of the expectations of companies pertaining to changes in macroeconomic parameters in the pre-crisis period of 2018-2019. In the design of our study, company expectations are considered to be a factor in the perception of macroeconomic parameters. Companies develop their economic strategies based on the expectation of changes in macroeconomic indicators, providing the corresponding effects of changes in macroeconomic parameters as factors of uncertainty in those strategies. In this case, the expectations of companies in the pre-crisis period are the basis for a comparison of economic strategies due to the impact of crisis phenomena.

The second stage involves a study of companies' expectations pertaining to changes in macroeconomic parameters due to the impact of the crisis during 2020 and January-February 2021. Determining the change in the expectations of companies regarding the parameters of the macroeconomic environment during the crisis will determine the degree of influence of uncertainties. The third

stage of our study involves determining the impact of the crisis on the expectations of companies regarding the uncertainty of the values of macroeconomic indicators.

The main research method is linear regression calculated by the least squares method. A dummy variable will be introduced to indicate the effect of the COVID-19 pandemic. For the initial data, the Business Activity Expectations Index is measured in points, business expectations to the inflation rate are determined as a percentage, and business expectations as to the exchange rate of the hryvnia against the US dollar are measured. Since the values of all variables and the resulting indicator in the next period depend on their value in the previous period, all data for testing the model are considered time series data.

To determine the impact of macroeconomic factors on companies' economic strategies, we proceed from the assumption that macroeconomic strategies depend on the business expectations of companies regarding macroeconomic parameters:

$$IBE = f(IRE, CEE, COVID19) \quad (1)$$

or in the form of linear regression

$$IBE = \beta_0 const + \beta_1 IRE + \beta_2 CEE + \beta_3 COVID19 + \varepsilon_t \quad (2)$$

where:

IBE – Business Activity Expectations Index;

IRE – Inflation Rate Expectations;

CEE – Currency Exchange Expectations;

COVID19 – impact of the coronavirus pandemic (starting from Q1 of 2020).

In our opinion, the main macroeconomic parameters that affect companies of all sizes, legal forms of organisation and types of activity, without exception, are the inflation index, the exchange rate and the impact of COVID-19 on the economy. It is these variables that we include in the regressors of impact on the index of the economic expectations of companies. The table with the initial data for the study was

prepared in Microsoft Excel. Gretl software was used for regression calculations.

In our study, we consider the impact of macroeconomic variables on company economic strategy through a change in expectations relating to the parameters of its activities. The economic strategy is based on the projected parameters of a company, and the forecast of such parameters can be traced

through expectations pertaining to company performance. To determine the impact of the coronavirus pandemic, we will build and test models of the impact of COVID-19 on these

indicators, which reflect the company's development strategy. The models are functions of the dependence of the resulting indicator on the coronavirus pandemic factor:

$$(TS, IS, FI, L, CP, W) = f(COVID19) \quad (3)$$

where:

TS – estimation of sales volumes;

IS – estimation of investment expenditures;

FI – estimation of foreign investment;

L – estimation of growth in the number of employees;

CP – estimation of growth of per unit production costs;

W – estimation of growth of labour costs per employee.

The variables presented in Model 3 reflect the main economic parameters of the company, which are reflected in the economic strategy. Thus, following the impact of COVID-19 on changing expectations about the company's parameters, we are able to draw conclusions about the impact on economic strategy as a whole.

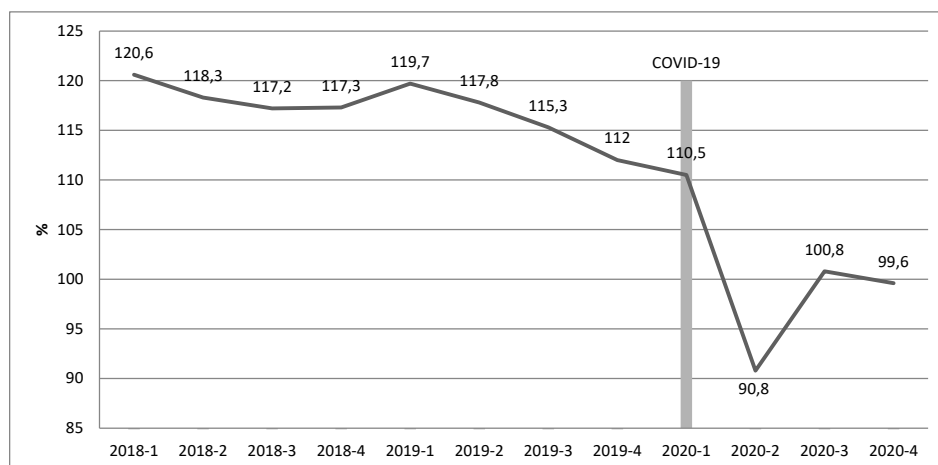
Sample

The study used data from the National Bank of Ukraine on the expectations of economic agents, which were determined on the basis of the Monthly Business Outlook Survey (National Bank of Ukraine, 2021a) and Business Expectations of Ukrainian Companies (National Bank of Ukraine, 2021b) conducted by the National Bank of Ukraine for 2018-2021. According to the NBU, the sample includes 693 companies from 22 regions of Ukraine. According to the National Bank of Ukraine (NBU), the sample of 693 companies is representative. The resulting indicator is the Business Activity Expectations Index (BAEI) of Ukrainian companies. The regressors of this indicator are business expectations regarding the inflation index and the exchange rate as the most important macroeconomic factors influencing the Business Activity Expectations Index. This model will be supplemented by a dummy variable to indicate the effect of COVID-19 in 2020-2021. In 2018-2019 – that is, in the period preceding the impact of the

COVID-19 pandemic on the global economy as a whole and the economy of Ukraine in particular – the dummy variable will have a value of 0, or no impact, and for 2020-2021 it will have a value of 1, representing an impact. Thus, we will be able to establish the effect of the pandemic on the Business Activity Expectations Index of Ukrainian companies.

3. Results

The Business Activity Expectations Index describes the sentiments of the business and its vision of the future parameters of the economic system. Figure 2 shows the dynamics of the index of business expectations of Ukrainian companies for 2018-2020. The chart clearly shows that, in the first quarter of 2020, companies' expectations deteriorated compared to the previous quarter (Q4 of 2019). As the survey was conducted during the first quarter of 2020, there is no direct effect of COVID-19 yet visible, as the pandemic was not widespread in Ukraine at the time of the survey. The negative dynamics of the index are explained by the companies' assessment of the external environment and an analysis of the situation on international markets. According to the results of the survey in Q2 of 2020, there is a significant decline in the value of the index, namely to 90.8%, which indicates an expected downward trend in business activity. Compared to the previous quarter, the index fell by -19.7%.

Figure 2. Dynamics of the Business Activity Expectations Index, %

Source: own elaboration

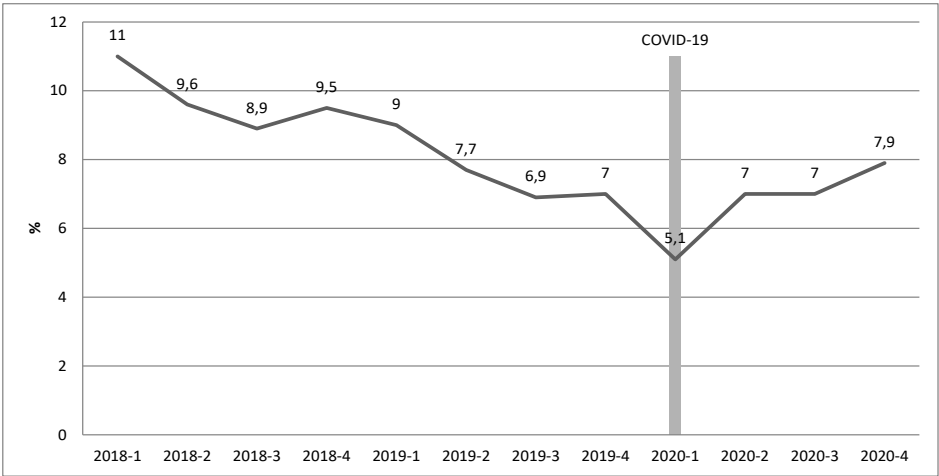
It should be noted that the Q2 surveys were conducted during a period of strict lockdown in Ukraine, which also influenced the negative forecasts pertaining to business activity. These indicators improved slightly, reaching 100.8% in Q3 and 99.6% in Q4 of 2020. We can conclude that after the easing of quarantine restrictions in the summer of 2020, business sentiment improved slightly and the assessment of the likely economic downturn changed to a projection of the situation being maintained without a significant deterioration.

In this context, it should be noted that along with the reduction in the incidence of COVID-19 in the summer, the recovery of consumer demand (or rather the realisation of deferred demand), the balanced policy of the National Bank of Ukraine and a favourable situation on global markets for Ukrainian exports also contributed to the

positive dynamics of the Business Activity Expectations Index. A stable exchange rate and controlled inflation (due to the lack of pressure from the part of consumer demand) have stabilised the macroeconomic situation in Ukraine.

Analysing data from Figure 3, we see that, according to the results of the business survey in Q1 of 2020, there is a tendency towards the expected decrease in the inflation index. According to the survey in Q2 and Q3 of 2020, respondents' expectations shifted towards the increasing value of this indicator to 7% and 7.9% in Q4. It should be noted that the expected inflation rate is not significantly higher than the long-term goal of the National Bank of Ukraine, which targets inflation in the range of 5% +/- 1%. This generally indicates confidence in the central bank and, as a result, confidence in its monetary policy.

Figure 3. Dynamics of business activity expectations against changes in the inflation index

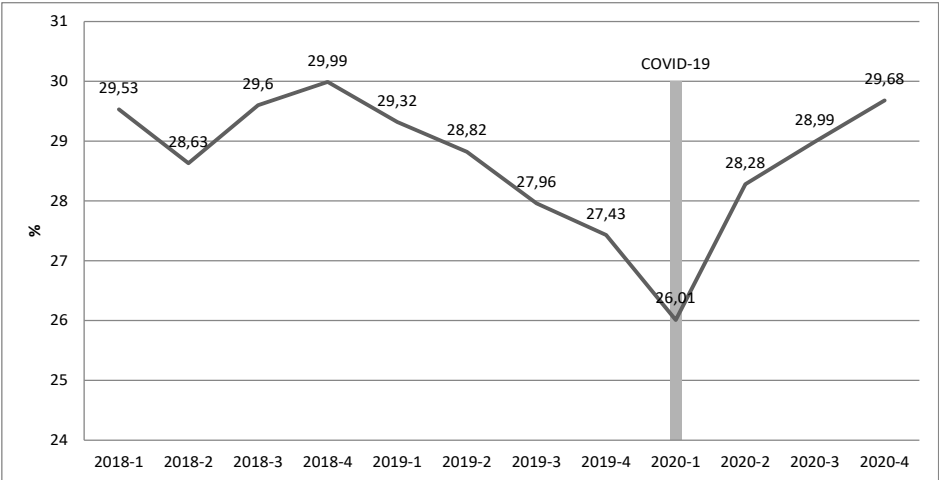


Source: own elaboration

In addition, limited consumer demand was also a factor which restrained expectations of rising inflation. Significant material losses incurred by small and medium-sized businesses due to quarantine restrictions have significantly reduced purchasing power in the Ukrainian economy, and thus reduced consumer pressure on inflation.

Data from Figure 4 show expectations for the revaluation of the hryvnia according to the results of surveys beginning from Q4 of 2018 until Q1 of 2020 inclusive. According to the results of the survey of Q2, Q3 and Q4 of 2020, the companies expected an increase in the exchange rate of the hryvnia, that is, a weakening of the domestic currency.

Figure 4. Dynamics of business activity expectations against changes in the exchange rates



Source: own elaboration

An analysis of the dynamics of the Business Activity Expectations Index, as well as business activity expectations against the inflation rate and the exchange rate for the analysed period, shows that by 2020 the companies surveyed had expectations of reduced inflation and a strengthened hryvnia, which are positive signals in assessing the state of the Ukrainian economy. At the same time, there is a tendency towards a decline in business activity, which indicates the influence of other factors, including non-economic ones.

In all three figures, the impact of the coronavirus epidemic is marked by a green line in Q1 of 2020. It is from this time that we consider the impact of the pandemic to be sig-

nificant, not least upon the expectations of economic agents about the future values of macroeconomic indicators. In order to determine whether the pandemic has indeed impacted the expectations of Ukrainian companies regarding business activity, we present the Business Activity Expectations Index as a function of macroeconomic parameters such as the inflation index (and, accordingly, the expectations of companies about the future rate of inflation) and the exchange rate against the US dollar (and, accordingly, the expectations of companies regarding the future value of the exchange rate):

The results of the regression are shown in Table 1.

Table 1. The results of linear regression of the dependence of the Business Activity Expectations Index

Model 1: OLS, using observations 2018:1-2020:4 (T = 12)

Dependent variable: IBE

	Coefficient	Std. Error	t-ratio	p-value	
Const	175.125	55.1614	3.175	0.0131	**
IRE	1.77229	1.98087	0.8947	0.3971	
CEE	-2.53437	2.34322	-1.082	0.3110	
COVID-19	-15.0921	4.21976	-3.577	0.0072	***
Mean dependent var	111.6583	S.D. dependent var		9.544580	
Sum squared resid	213.6161	S.E. of regression		5.167399	
R-squared	0.786829	Adjusted R-squared		0.706890	
F(3, 8)	9.842866	P-value(F)		0.004627	
Log-likelihood	-34.30291	Akaike criterion		76.60581	
Schwarz criterion	78.54544	Hannan-Quinn		75.88769	
Rho	-0.565682	Durbin-Watson		3.122047	

Source: own elaboration

The data obtained allowed a conclusion to be drawn about the statistical significance of the variable COVID-19 (p-value 0.0072). In general, the model is 70% reliable. This means that the coronavirus pandemic factor in the formation of the expected value of

the Business Activity Expectations Index reduced the value of this indicator by 15%.

The impact of changes in the values of macroeconomic indicators as a factor of uncertainty on company strategy can be traced through the assessment of expect-

tations regarding the future performance of companies. In particular, the strategic issues are the sales volume, the volume of investment expenditures, the volume of foreign investment, the number of employees, per unit production costs and the wage

rate. All these parameters are elements of company strategy, and expectations of the future values of these indicators reflect the company’s development strategy in the near future. The results of regressions are shown in Tables 2-7.

Table 2. The results of linear regression of the dependence of the estimation of sales volumes on the coronavirus pandemic factor

Model 2: OLS, using observations 2018:1-2020:4 (T = 12)
Dependent variable: TS

	Coefficient	Std. Error	t-ratio	p-value	
Const	29.2000	2.10051	13.90	<0.0001	***
COVID-19	-19.2500	3.63818	-5.291	0.0004	***
Mean dependent var	22.78333	S.D. dependent var		11.04181	
Sum squared resid	352.9700	S.E. of regression		5.941128	
R-squared	0.736813	Adjusted R-squared		0.710494	
F(1, 10)	27.99577	P-value(F)		0.000352	
Log-likelihood	-37.31612	Akaike criterion		78.63224	
Schwarz criterion	79.60206	Hannan-Quinn		78.27318	
Rho	-0.561328	Durbin-Watson		3.051598	

Source: own elaboration

Data from Model 2 show that the variable COVID-19 is a statistically significant regressor of sales and has a negative impact. Thus, the COVID-19 crisis has led to a decrease in sales expectations by 19.25%. The high value of the adjusted indicator R², which is 71%, is also positive. To avoid the negative impact of COVID-19

on sales, companies may pay more attention to the transition to remote customer service. This can refer to the delivery of goods – both on their own and with the help of third parties. Besides, more attention should be paid to selling products online. To do so, one needs to set up a company website for the convenience of remote users.

Table 3. The results of linear regression of the dependence of the estimation of investment expenditures on the coronavirus pandemic factor

Model 3: OLS, using observations 2018:1-2020:4 (T = 12)
Dependent variable: IS

	Coefficient	Std. Error	t-ratio	p-value	
Const	21.9875	2.29864	9.565	<0.0001	***
COVID-19	-18.8375	3.98136	-4.731	0.0008	***
Mean dependent var	15.70833	S.D. dependent var		11.15579	
Sum squared resid	422.6988	S.E. of regression		6.501529	
R-squared	0.691228	Adjusted R-squared		0.660351	
F(1, 10)	22.38640	P-value(F)		0.000802	
Log-likelihood	-38.39778	Akaike criterion		80.79556	
Schwarz criterion	81.76538	Hannan-Quinn		80.43650	
Rho	-0.518220	Durbin-Watson		2.967637	

Source: own elaboration

Data from Model 3 show that the variable COVID-19 is a statistically significant regressor of the volume of investment expenditures and has a negative impact. The COVID-19 crisis has led to a decrease in expectations regarding the volume of investments by 18.83%. The fairly high value of the adjusted indicator R² of 66% is also positive. The negative impact of COVID-19 on

investment is expected, as economic activity as a whole is declining. To avoid negative consequences, it is necessary for companies to review their investment strategies. It is worth increasing investment in projects that are least vulnerable to the effects of a pandemic. The objects of such investment may be business process digitalisation projects or the IT industry.

Table 4. The results of linear regression of the dependence of foreign investment attraction on the coronavirus pandemic factor

Model 4: OLS, using observations 2018:1-2020:4 (T = 12)
Dependent variable: FI

	Coefficient	Std. Error	t-ratio	p-value	
Const	16.5500	1.42162	11.64	<0.0001	***
COVID-19	-9.75000	2.46232	-3.960	0.0027	***
Mean dependent var	13.30000	S.D. dependent var		6.143585	
Sum squared resid	161.6800	S.E. of regression		4.020945	
R-squared	0.610579	Adjusted R-squared		0.571636	
F(1, 10)	15.67912	P-value(F)		0.002688	
Log-likelihood	-32.63154	Akaike criterion		69.26307	
Schwarz criterion	70.23289	Hannan-Quinn		68.90401	
Rho	0.080874	Durbin-Watson		1.814526	

Source: own elaboration

Data from Model 4 show that the variable COVID-19 is a statistically significant regressor of the volume of foreign investment attracted and has a negative impact. Thus, the COVID-19 crisis reduces expectations for attracting foreign investment by 9.75%. If companies start to develop the segment

of delivery of goods and sales more actively via the Internet, it will help attract investment. Under the quarantine restrictions, the development of these segments is the most promising from the point of view of investors, as it contributes to the generation of profits.

Table 5. The results of linear regression of the dependence of the estimation of growth in the number of employees on the coronavirus pandemic factor

Model 5: OLS, using observations 2018:1-2020:4 (T = 12)
Dependent variable: L

	Coefficient	Std. Error	t-ratio	p-value	
Const	4.86250	1.51578	3.208	0.0094	***
COVID-19	-15.3375	2.62540	-5.842	0.0002	***
Mean dependent var	-0.250000	S.D. dependent var		8.587041	
Sum squared resid	183.8063	S.E. of regression		4.287263	
R-squared	0.773389	Adjusted R-squared		0.750728	
F(1, 10)	34.12853	P-value(F)		0.000163	
Log-likelihood	-33.40112	Akaike criterion		70.80223	
Schwarz criterion	71.77204	Hannan-Quinn		70.44317	
Rho	-0.317013	Durbin-Watson		2.481847	

Source: own elaboration

Data from Model 5 show that the variable COVID-19 is a statistically significant regression of the number of employees and has a negative impact. Thus, the COVID-19 crisis has led to a decrease in expectations of an increase in the number of employees by 15.34%. The high value of the adjusted indi-

cator R2, which is 75%, is also positive. In this case, the decrease in the number of employees is associated with a decrease in activity. If companies restructure their development strategy in line with the new operating conditions, it will ensure the resumption of employment.

Table 6. The results of linear regression of the dependence of the estimation of growth of per unit production costs on the coronavirus pandemic factor

Model 6: OLS, using observations 2018:1-2020:4 (T = 12)
Dependent variable: CP

	Coefficient	Std. Error	t-ratio	p-value	
Const	59.5625	2.38492	24.97	<0.0001	***
COVID-19	-12.0125	4.13081	-2.908	0.0156	**
Mean dependent var	55.55833	S.D. dependent var		8.737740	
Sum squared resid	455.0288	S.E. of regression		6.745582	
R-squared	0.458189	Adjusted R-squared		0.404008	
F(1, 10)	8.456618	P-value(F)		0.015617	
Log-likelihood	-38.83999	Akaike criterion		81.67997	
Schwarz criterion	82.64979	Hannan-Quinn		81.32091	
Rho	0.470854	Durbin-Watson		1.017101	

Source: own elaboration

Data from Model 6 show that the variable COVID-19 is a statistically significant regression of the growth of unit costs, and has a negative impact. The COVID-19 crisis leads to a decrease in expectations of an increase in unit costs by 12%. The reduction

in unit costs is due to the reduction in the number of employees. However, with the transfer of business to the Internet, the tendency to reduce the cost per unit of output may continue. In general, this is a positive trend.

Table 7. The results of linear regression of the dependence of the estimation of growth of labour costs per employee on the coronavirus pandemic factor

Model 7: OLS, using observations 2018:1-2020:4 (T = 12)
Dependent variable: W

	Coefficient	Std. Error	t-ratio	p-value	
Const	68.5750	3.39423	20.20	<0.0001	***
COVID-19	-18.9500	5.87897	-3.223	0.0091	***
Mean dependent var	62.25833	S.D. dependent var		13.07068	
Sum squared resid	921.6625	S.E. of regression		9.600326	
R-squared	0.509563	Adjusted R-squared		0.460520	
F(1, 10)	10.38999	P-value(F)		0.009123	
Log-likelihood	-43.07490	Akaike criterion		90.14979	
Schwarz criterion	91.11961	Hannan-Quinn		89.79073	
Rho	-0.331303	Durbin-Watson		2.478925	

Source: own elaboration

Data from Model 7 show that the variable COVID-19 is a statistically significant regressor of the amount of costs per employee and has a negative impact. The COVID-19 crisis has reduced labour cost expectations by 19%. This result is comparable to the expectation of a reduction in the number of employees and indicates the optimisation of labour costs. Costs per employee can be further reduced by working remotely. In this case, the costs incurred by companies for renting of office space will decrease, as will part of fixed costs. This will provide additional benefits for companies.

The results obtained show that, for all tested models, the factor of the influence of the COVID-19 pandemic on the resulting indicators is statistically significant. The results obtained indicate that the pandemic factor leads to:

- a deterioration in expectations for estimates of growth in sales volumes by 19.25% (p-value = 0.0004; Adjusted R-squared = 0.71);
- a deterioration in expectations of estimates of growth in investment expenditures for machinery, equipment, and inventory by 18.84% (p-value = 0.0008; Adjusted R-squared = 0.66);
- a deterioration in expectations of estimates of foreign investment attraction by 9.75% (p-value = 0.0027; Adjusted R-squared = 0.57);
- a deterioration in expectations of estimates of growth in the number of employees by 15.33% (p-value = 0.0002; Adjusted R-squared = 0.75);
- a deterioration in expectations of estimates of growth in per unit production costs by 12.01% (p-value = 0.0156; Adjusted R-squared = 0.40);
- a deterioration in expectations for estimates of growth in labour costs per employee by 18.95% (p-value = 0.0091; Adjusted R-squared = 0.46).

The data obtained allow the conclusion to be drawn that the coronavirus pandemic

has had a negative impact on the expectations of companies, which are reflected in their development strategies. In particular, companies plan to reduce the number of employees, labour costs, investment expenditures and foreign investment. As a result, this leads to a decrease in sales. Along with the deterioration of expectations regarding various aspects of the company, we can say that this is inevitably reflected in a company's economic strategy. If management expects to reduce sales, investment and investment expenditures, the company's economic development strategy will take into account such expectations for the future. Besides, negative expectations regarding the company's parameters form expectations about the reduction in the number of employees. This is because the deterioration of business forecasts urges the need to optimise costs, and labour costs are one of the main items of optimisation in the Ukrainian business environment. Therefore, the economic strategy will also be affected by the need to optimise the company's costs. As such, the research has proved that the deterioration of the macroeconomic parameters of the external environment has led to a change in companies' economic strategies, which is the trend towards optimising costs and maintaining a presence on the market.

4. Discussion

The data obtained indicate the statistical significance of the impact of the coronavirus pandemic on company strategy. The results obtained are unique because they are supported by tested econometric models and prove the significance of the tested correlation. At the same time, existing research does not so much determine the impact of the pandemic on companies' economic strategies as describe the recommendations for company leaders and management regarding the development and transformation of company development strategies. The Institute of

Chartered Accountants in England and Wales (The Institute of Chartered Accountants in England and Wales, 2021) focuses on issues that managers need to address during a pandemic and take into account in forming their companies' development strategies.

Experts from Deloitte, the world's largest consulting company (Schoenwaelder et al., 2020), also focus on developing recommendations for the leaders and management of companies during a pandemic, but do not specify how and what areas or elements of strategy may be affected by the pandemic. Wade and Bjerkan (2020) suggest that the effects of a pandemic are great opportunities for business transformation that can yield positive results in the future.

A study by the European Alliance (2020) found that the pandemic will have a significant impact on companies' development strategies. As a result of the crisis, many companies have switched to teleworking. Because of the physical absence of employees in the workplace, it is necessary to transform business processes and adapt them to the conditions of teleworking. This requires a sufficient level of digital skills. Digitisation does not simply mean going online or using e-commerce, but is a process of transformation that changes the entire business model of companies, and which must be supported by the ecosystem and digital skills.

Wright (2020) identifies three aspects that need to be considered when formulating a strategy to counter the effects of a pandemic: business size, product location, and marketing. However, the author does not consider the determination of the impact of the pandemic on company strategy.

In a study of the impact of coronavirus on marketing strategy (Sharma, 2020), the author notes that "the virus has affected different companies, organisations, firms, international and regional markets through its impact on marketing operations" (p. 1475). The coronavirus pandemic has affected almost all business areas. At the same time, this study

is narrowed to marketing strategy, in contrast to our study which examines the economic strategy as a whole based on a number of indicators.

Another study (Aburumman, 2020) examines the impact of the pandemic on the strategy of travel companies that have suffered most from the negative effects of coronavirus on the economy. The study examines the impact of COVID-19 on the global market and on the markets of Central Asia and the UAE, and analyses the competitive survival strategy of travel companies based on the example of companies operating in the UAE. As a result, the 5P's marketing strategy and outsourcing method was defined as the best decision companies can take to increase their chances of survival.

A further study related to the changing development strategy of entire sectors of the economy (Office of the Minister for Economic Development, 2020). However, the results of the study relate to marketing strategy, in contrast to the results of our study. The analysed studies do not address the issues revealed in our study, so the results that we obtained are unique and have a certain scientific novelty. We have empirically proven that the deterioration of macroeconomic factors leads to a deterioration in expectations pertaining to companies' activities. This, in turn, leads to a change in economic strategy, whereby the main vector is not the expansion of activities, but cost optimisation. This primarily concerns the reduction of labour costs, which are one of the largest contributors to a company's costs.

Conclusions

The impact of the COVID-19 pandemic is unprecedented in economic terms, as noted in a number of studies and reports (Harrell, 2020; Humphries et al., 2020; Jenny, 2020; Paysafe, 2020; World Bank Group, 2020). This necessitates the study of the impact of the crisis caused by the pandemic on the de-

velopment of the economic strategies of businesses. The study showed that the pandemic affects the transformation of economic strategies of companies. It is established that businesses expect a decrease in sales, as well as a reduction in labour costs and the number of employees. The expectations of companies regarding attracting foreign investment have worsened, as have those relating to their own investment costs. This suggests that the prevailing strategy will be a reduction of costs and the number of employees in the face of adverse economic conditions. At the same time, macroeconomic indicators, including the inflation index and the exchange rate, are expected to deteriorate. The results obtained can be used to assess the impact of COVID-19 on the strategies and economic expectations of businesses. A methodological limitation is that the industry specifics of companies were not taken into account. In addition, the pandemic impact data available for analysis are currently limited to the four quarters of 2020. The limitation which pertains to implementation is that, depending on the field of the company's activity, the impact of the pandemic on company strategy may differ. However, it is currently impossible to take these specifics into account, as there is no publicly available data on the activities and business expectations of those companies. This study opens up new areas for further research, in particular the sectoral impact of the pandemic on the development of the economic strategies of businesses.

This study has methodological and implementation limitations. The methodological limitation is that the industry specifics of companies were not taken into account. In addition, the pandemic impact data available for analysis are currently limited to the four quarters of 2020. In the future, when there will be more observations to study, the recognised effects of the pandemic may change. The limitation pertaining to implementation is that, depending on the field of the company's activities, the impact of the pandemic

on company strategy may differ. It is known that companies which have been able to work with their customers remotely have reduced the negative effects of the pandemic. At the same time, companies delivering goods have increased their sales volume, and the results obtained in the study are not relevant to these companies. However, it is currently impossible to take these specifics into account, as there is no publicly available data on the activities and business expectations of those companies.

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Vladyslav Chernii, Postgraduate student of State University of Infrastructure and Technologies, his main areas of research are the economics, strategic marketing, sustainable urban mobility and public transport development, public relations on transport companies. <https://orcid.org/0000-0002-0162-4507>.

Viktoriia Yanovska, Doctor of Economic Sciences, Professor, head of the Department of Economics, Marketing and Business Administration of State University of Infrastructure and Technologies, main areas of research are the development economics, business economics, transport management, sustainable mobility, value creation, innovative transformations. <https://orcid.org/0000-0002-0648-3643>

Olha Kravchenko, Doctor of Economic Sciences, Professor of the department of Finance and Credit of State University of Infrastructure and Technologies, her main areas of research are the strategic management of enterprises, development of enterprises in conditions of uncertainty of the external environment and ensuring their financial and economic security. <https://orcid.org/0000-0002-2258-2828>.

Viktoriia Tvoronovich, PhD in Economics Associate professor of the Department of Economics, Marketing and Business Administration of State University of Infrastructure and Technologies, main areas of research are the development economics, business economics, transport management, economic forecasting, innovative transformations. <https://orcid.org/0000-0002-8173-8343>