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Economic and Social Consequences of the Covid-19 Pandemic - A Comparative Analysis of Changes in Poland

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Abstract:

Purpose: *The aim of the article is to provide a detailed analysis of the economic and social consequences of the Covid-19 pandemic using Poland as an example.*
Approach/Methodology/Design: *The research method used in the article is a review of national and global scientific literature and a quantitative analysis of economic measures that reflect changes caused by the pandemic.*
Findings: *The article identifies the sectors of the economy that have suffered the most as a result of the pandemic.*
Practical Implications: *Analyzing economic and social changes during the pandemic allows for effective management of this type of crises.*
Originality/Value: *The original value of the article is the identification of sectors that are most exposed to pandemic crises.*

Keywords: *Management, economic efficiency, comparative analysis, economic and social conditions, finance, business, welfare development, Covid-19.*

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1. Introduction

The market is a process of confrontation between supply and demand, i.e. buyers and sellers determine what they intend to buy and sell and under what conditions. The above definition presents the market as a mechanism that has the ability to self-regulate and achieve equilibrium independently between opposing market forces. The relations between demand and supply that arise on the market and the resulting price depend on the conditions and competition that economic entities operate in. A good state of the economy is understood as good results of economic measures compared to other countries with simultaneous further economic growth and development.

Economic growth means an increase in the annual production of goods and services in the country. If in the next year more goods and services are sold in the entire economy than in the previous year, we are dealing with economic growth. When we are able to earn more, the source of growth is our work, but if at the same time the prices of the goods we buy have increased by the same amount, we have only been dealing with nominal growth. We cannot buy more than before.

Therefore, actual economic growth occurs thanks to real growth, i.e. after taking into account inflation. Economic growth refers only to quantitative changes. Economic development, on the other hand, includes qualitative changes, e.g. through the use of increasingly better, modern methods of production and management, which affects work efficiency. The benefits of economic growth and economic development include an increase in the standard of living, increased production, a better social situation, and greater public safety.

The aim of the article is to provide a detailed analysis of the economic and social consequences of the Covid-19 pandemic using Poland as an example. In addition, the article identifies the sectors of the economy that have suffered the most as a result of the pandemic.

The research method used in the article is a review of national and global scientific literature and a quantitative analysis of economic measures that reflect the changes caused by the pandemic.

2. Literature Review

Comparative analysis of the state of the economy in Poland based on economic indicators. GDP growth usually means a good state of the economy, growth in industrial production, inflow of foreign investments and growth in exports.

Inflow of foreign investments and growth in exports cause an increase in demand for the national currency by foreign countries, which is expressed in an increase in the exchange rate. It can be assumed that there is a generally accepted relationship that says that GDP growth also causes an increase in the exchange rate of the national currency in relation to other currencies (Ashraf, 2020).

Sustained GDP growth may pass into the phase of so-called overheating, i.e. growth in inflationary tendencies, expectations of an increase in interest rates (one of the measures to combat inflation), which also leads to an increase in the value of the national currency (Espinosa-Méndez and Arias, 2021).

Therefore, it is very important to maintain exchange rate balance. It should be remembered that too large an increase in the exchange rate of the national currency (appreciation) may lead to an increase in export costs (unfavorable exchange rate), a decrease in import costs, which will consequently refer to a decrease in GDP or at least a slowdown in its growth (European Financial Congress, 2021).

Nominal GDP is calculated according to the current value of money, while real GDP is calculated according to the real value of money, i.e. taking into account inflation (Miciuła, 2018). The conversion consists of dividing nominal GDP by the price index. In statistical reports, real GDP is most often presented in constant prices from the selected base year (International Monetary Fund, 2024). The increase or decrease in real GDP is a measure of economic development.

For international comparisons, GDP is converted according to the current exchange rate, usually to US dollars or according to purchasing power parity. It should be remembered that GDP is just a convention for calculating the value of production in a given period. In simple terms, it is the sum of the values of all final goods and services produced in a given period (Wojtaszek and Miciuła, 2019). The value is the product of the quantity and price of individual goods.

Therefore, GDP growth is possible with unchanged production, but only with rising prices. In addition, it is also possible for GDP to fall with an increase in the volume of production and a simultaneous relatively stronger decrease in prices.

3. Research Results

The entire year of 2019 showed steady economic growth, both compared to the previous quarter and compared to the same quarter in 2018. Having an analysis of the GDP measure at constant prices, we gain insight into the quantitative economic growth (Table 1).

Table 1. *Seasonally adjusted GDP, constant prices - reference year 2015*

Year	**Quarter**	**Previous Quarter = 100**	**Same quarter of previous year = 100**
2019	I	101,9	105,5
	II	100,8	104,9
	III	101,1	104,6
	IV	100,2	104
2020	I	99,9	102
	II	**91**	**92,1**
	III	107,5	98
	IV	99,5	97,3
2021	I	100,9	98,3

Source: *Central Statistical Office (GUS), https://stat.gov.pl.*

We can see that after a historically deep decline in economic activity recorded in the second quarter of 2020 (the first wave of the pandemic and administrative restrictions), there is a rebound in the summer (Q3 2020).

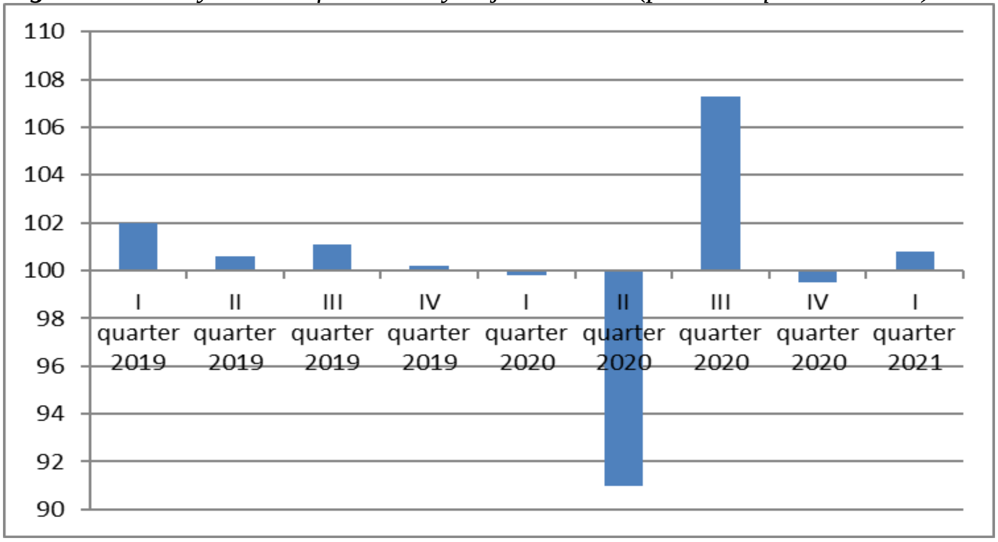
However, the Polish economy faced another slowdown at the end of 2020 (Q4), when the second wave of the pandemic caused the introduction of a new round of administrative restrictions aimed at stopping the spread of coronavirus infections.

Then, after a temporary calming down of the situation, the third wave of the pandemic hit Poland, one of the most dangerous looking in the world, which also had an impact on the economic situation.

However, it should be noted that the largest declines were recorded during the introduction of the first restrictions (the so-called lockdown, Q2 2020), because with subsequent economic closures (Q4 2020 and Q1 2021), society was prepared and part of the economy was realized in the form of remote shopping, which is clearly visible when analyzing the data in Figure 1.

There were huge increases in online orders and packaging production. Therefore, it should be clearly stated that while some industries suffered (those in which the provision of services is impossible or limited due to the need to maintain social distancing), there were also those that grew significantly due to the situation (such as transport services or the packaging industry).

Figure 1. *Real dynamics of seasonally adjusted GDP (previous quarter = 100)*



Source: *Own study based on data from: Central Statistical Office (GUS), https://stat.gov.pl.*

In 2021, we are dealing with the third wave of the coronavirus pandemic, so the situation was still not very optimistic. The public health situation was still not improving, which also translated into concerns about the economic situation of many households and businesses (World Health Organization, 2024).

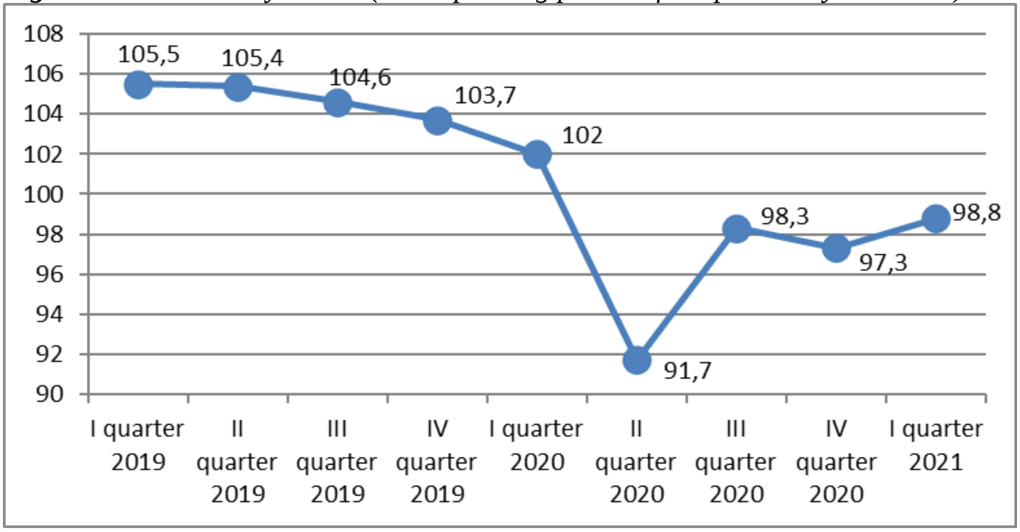
Despite the fact that macroeconomic indicators improved their values and oscillated within the limits of previous years, in many sectors of the economy the situation was still serious and caused huge losses and their shrinking in terms of income opportunities (Unesco, 2024).

On the other hand, some sectors of the economy increased their income values (transport services, the packaging industry, the pharmaceutical industry and the production of clothing and health care products) in response to the demands related to the global fight against the coronavirus pandemic (Fernandes, 2020), which is perfectly illustrated by the data in Figure 2.

Covid-19 remains a problem and a risk, because despite the relatively high percentage of the vaccinated population and the gradual lifting of restrictions, there is a risk of new infections as a result of new mutations of the coronavirus (current variant: delta).

Therefore, it cannot be assumed that administrative restrictions will not be introduced again to prevent the spread of the pandemic. Analyzing the macroeconomic data presented in Table 2, we can see that despite the general recession, the restrictions are most severe for a specific part of the economy.

Figure 2. *Real GDP dynamics (corresponding period of the previous year = 100)*



Source: *Own study based on data from: Central Statistical Office (GUS), https://stat.gov.pl.*

Table 2. *Annual macroeconomic indicators (previous year = 100)*

Indicator	**2017**	**2018**	**2019**	**2020**
GDP (constant prices)	104,8	105,4	104,7	97,3
Gross value added (constant prices)	104,7	105,3	104,6	97,2
Agriculture, forestry, hunting, fishing	100,9	90,9	99,2	97,1
Industry	102,3	105,4	103	99,8
Mining and quarrying	93,2	97,1	98,1	93,2
Manufacturing	102,1	106,6	103,9	100,1
Energy production and supply	108,4	103	98,7	98,9
Sewage and waste management	102,9	105,1	104,4	107,8
Construction	106,5	111,8	99,7	96,3
Transport and storage	113,1	107,8	104,3	95,1
Trade	105,7	105,2	104,7	96,1
Accommodation and catering	119,1	103,7	98,8	54,5
Less Information and communication	108,9	108	107,9	102,5
Financial and insurance activities	98,7	115,6	110,1	92,3
Real estate market services	99,1	103,3	116,4	101,3
Scientific and technical activities	112,7	104,7	104,9	101,8
Public administration	100,2	100,6	105,4	106,4
Education	102	103,7	103,2	101,3
Healthcare	104,8	101,1	102,7	102,4
Cultural, entertainment and recreation activities	97,6	106,7	104,1	38,2
Service activities	100,1	100,9	105,5	61,7
Domestic demand (constant prices)	104,9	105,6	103,6	96,3

Source: *Central Statistical Office, Macroeconomic Data Bank, https://stat.gov.pl/wskazniki-makroekonomiczne/.*

The sectors of the economy that suffered the most were: accommodation and catering (broadly tourism), service activities (e.g., hairdressers, beauticians and others) and all activities related to culture, entertainment and recreation. Other industries recorded slight declines compared to the previous year, and others recorded growth despite the pandemic and caused the overall GDP in 2020 to fall by only 2.7 percentage points.

Table 3 presents monthly macroeconomic indicators in selected sectors of the economy, which indisputably show the impact of the pandemic on the economic situation. Declines (minus) and quarters in which three subsequent waves of the pandemic occurred are marked in red. On the other hand, green (plus) indicates an increase in the indicator.

Table 3. *Monthly macroeconomic indicators of the general economic climate in selected sectors of the economy*

Economic sector	2020											2021					
	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	I	II	III	IV	V	VI
Transport and storage	0,1	6	48	39	20	13	13	9	13	17	11	8	3	3	1	3	6
Accommodation and catering	6	9	70	61	34	23	19	21	29	61	57	52	40	34	39	13	3
Financial and insurance activities	24	23	18	19	8	1	3	6	4	4	0,4	4	2	2	0,2	6	11

Source: *Central Statistical Office, Macroeconomic Data Bank, https://stat.gov.pl/wskazniki-makroekonomiczne/.*

Analyzing the entire economy, we can identify three areas in which specific types of economic activity have been found. The first area is the sectors that, as a result of pandemic restrictions, recorded the greatest losses due to the periodic complete or partial inability to conduct business (tourism, service activities, culture, entertainment and recreation). The second area is the sectors that, as a result of administrative restrictions, recorded slight declines.

In the third area, we distinguish industries that recorded significant increases, which was related to activities related to production and services supporting the fight against the pandemic or supporting the replacement of traditional trade channels (e.g. online orders or packaging production). The quarterly macroeconomic indicators presented in Table 4 concern the image of the entire economy and the state of public finances. The three waves of the pandemic are marked in red.

It can be seen that the greatest economic recession was caused by the first wave due to the lack of preparation and the ability to quickly use alternative channels for business activity. The subsequent waves of the pandemic were less severe for the economy as a whole due to the use of alternative methods of doing business (online orders and deliveries) and the growth of some sectors of the economy in response to the pandemic (including the emergence of production unnecessary under normal conditions).

Table 4. *Quarterly macroeconomic indicators*

Indicators	2019			2020				2021	
	II	III	IV	I	II	III	IV	I	II
GDP y/y (real)	5,4%	4,6%	3,7%	2,0%	- 8,3%	- 1,7%	-2,7%	8%	- 1,1%
Individual consumption y/y (real)	4,2%	4,2%	3,7%	1,2%	- 10,8%	0,4%	-3,2%	6,1%	- 1%
Gross fixed capital formation y/y (real)	7,5%	3,3%	5,2%	1,7%	- 9,8%	- 8,2%	- 15%	2%	- 6%
Public finances	w mln zł								
Total tax revenues	177	270	367	86	166	265	370	92	210
VAT	87	133	181	45	79	131	185	49	88
Excise tax	34	53	72	17	32	52	72	16	51
Corporate income tax	22	30	40	10	22	30	41	10	31
Total state budget expenditures	197	298	414	106	215	318	505	105	249
Total subsidies and grants	113	171	233	62	126	186	296	59	119
Domestic debt of the State Treasury	701	707	716	754	835	837	831	848	851
Total expenditures from the budgets of local government units (LGUs)	121	191	280	67	135	208	299	68	131

Source: *National Chamber of Commerce, Monthly macroeconomic review, (30/06/2024); Ministry of Finance, https://www.gov.pl/web/finanse.*

Analyzing the data on public finances in Poland, there are no significant changes. Despite the initial reduction in total tax revenues, during the subsequent waves of the pandemic, there is a rebound and higher revenues than in the same period of the previous year.

Therefore, the pandemic period did not negatively affect tax revenues, including the values of VAT and excise duty. On the other hand, significant increases can be seen in public expenditure (by PLN 91 million) in the fourth quarter of 2020 compared to the same quarter in 2019.

This was related to the increase in expenditure under grants and subsidies, which increased by PLN 63 million compared to the same period of the previous year. This is the result of the launch of aid programs for industries particularly affected by restrictions related to the Covid-19 pandemic.

This resulted in a significant increase in the debt of the State Treasury, which will affect the economic and social situation in future years. On the other hand, changes in expenditure from the budgets of local government units do not show significant changes.

4. Conclusion

Macroeconomic challenges and economic prospects and forecasts for Poland will depend on a number of factors. First of all, they will depend on the occurrence of subsequent waves of the pandemic, the external environment and the monetary and budget policy pursued. Currently, the lifting of restrictions and the improvement of the pandemic situation are causing economic recovery and improving the mood of economic entities. The speed of opening the economy and the way in which the savings are used are also important.

In the coming years, this will be compounded by the implementation of the National Recovery Plan (KPO) and the actions announced by the government as part of the Polish Deal. Therefore, after a recession of -2.7 percent in 2020, a strong economic rebound and GDP dynamics of 4.7 percent should be expected, and then its acceleration to 5.1 percent in 2022. Domestic demand is expected to grow faster than GDP, 4.8 percent in 2021 and 5.4 percent in 2022, respectively, which means that it will be the main growth factor. However, its structure will only be developmental from next year. The investment rate will be low until the end of 2021.

However, taking into account the inflow of EU funds under the Recovery and Resilience Facility, it can be assumed that the investment rate will reach around 8 percent. An additional economic effect of the current pandemic is the increase in average inflation, which is estimated to increase by 4 percent annually until 2023. At the same time, this fact will put pressure on wage growth.

Therefore, the situation on the labor market in Poland will be stable, despite the maintenance of the deficit and public debt path in the coming years. The financial situation of households has improved slightly despite the pandemic. Expenditures changed in response to the dynamics of the pandemic and the resulting restrictions. For example, spending on consumer goods and services decreased by over 6 percent, while spending on food and beverages and goods related to housing use increased by 5 percent. These changes were related to the restrictions resulting from the pandemic.

On the other hand, the upward trend in disposable income was maintained, despite the slowdown in its dynamics. The average monthly expenditure per person in households reached PLN 1,210 in 2020 and was 6.5 percent lower in real terms than in 2019. The reduced expenditure concerned the discussed sectors of the economy. For example, in February 2021, compared to February 2020 (before the first wave of the pandemic), the use of tourist accommodation facilities decreased by 74.4%.

Therefore, larger declines in economic measures were experienced by larger economies and those whose income structure was largely based on industries that were most dependent on the restrictions introduced (e.g. tourism).

At the same time, it is known that these changes were more noticeable in the centers (markets) of economic creation, such as large cities.

References:

Ashraf, B.N. 2020. Stock markets' reaction to COVID-19: Cases or fatalities? Research in International Business and Finance, 54. https://doi.org/10.1016/j.ribaf.2020.101249.

Central Statistical Office (GUS). https://stat.gov.pl.

Espinosa-Méndez, Ch., Arias, J. 2021. COVID-19 effect on herding behaviour in European capital markets. Finance Research Letters, 38, 101787. https://doi.org/10.1016/j.frl.2020.101787.

European Financial Congress. 2021. Macroeconomic challenges and forecasts for Poland, 7th edition. EU.

Fernandes, N. 2020, Economic effects of coronavirus outbreak (COVID-19) on the world economy. IESE Business School Working Paper WP-1240-E. http://dx.doi.org/10.2139/ssrn.3557504.

http://www.fundusz.szczecin.pl/.

International Monetary Fund, World Economic Outlook. 2020. A Crisis Like no Other: An Uncertain Recovery. https://www.imf.org/en/Publications/WEO.

Macroeconomic Data Bank. https://stat.gov.pl/wskazniki-makroekonomiczne/.

Ministry of Finance. https://www.gov.pl/web/finanse.

National Chamber of Commerce, Monthly macroeconomic review. Warsaw, Poland.

Miciuła, I. 2018. Methods of creating innovation indices versus determinants of their values. Eurasian Econ. Perspect. Eurasian Stud. Bus. Econ., 8, 357-366.

UNESCO, COVID-19 Educational Disruption and Response. https://en.unesco.org/covid19/educationresponse/globalcoalition.

Wojtaszek, H., Miciula, I. 2019. Analysis of Factors Giving the Opportunity for Implementation of Innovations on the Example of Manufacturing Enterprises in the Silesian Province. Sustainability, 11, 5850.

World Health Organization (WHO), Timeline: WHO's COVID-19 response. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline.