THE PROPENSITY OF POLISH HOUSEHOLDS TO CONSUME AND SAVE WITHIN THE CONTEXT OF THE COVID-19 PANDEMIC

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Abstract

The aim of this paper is to analyse changes in the propensity to consume and to save in Polish households by means of qualitative indicators of consumer sentiment. The available data made it possible to observe the evolution in attitudes over the course of more than 20 years in Poland including the period of COVID-19 pandemic. The presented results also include an analysis of the changes in the level of household uncertainty, which can be observed in the assessments and forecasts of both their own financial situation and the country's economic condition.

Taking into account the fact that consumer demand is the most important element of GDP, the obtained results do not indicate a quick return of the Polish economy to a path of dynamic growth. Among households, not only has the willingness to buy durable goods decreased, but at the same time, the uncertainty related to their own financial situation has grown.

Keywords: propensity to save, consumption, COVID-19, uncertainty.

JEL codes: D12, D14, E21.

Introduction

Household confidence indicators are a type of statistical information that is often used to describe and forecast consumer sentiment. This is primarily to help assess the future development of consumer demand, which, alongside investment, is one of the key factors determining the economic situation in a country. In short, interest in data on consumer sentiment stems from the belief that consumer attitudes and expectations, which depend on their perception of the current situation, later translate into decisions regarding consumption, its volume and structure (Bovi, 2004; Souleles, 2001). According to Howrey (2001, p. 198), personal consumption in a state of equilibrium depends on the will to consume, which can be measured by the confidence index. It also depends on consumer capabilities, which are

determined by their disposable income. Thus, there is a kind of correlation here. The level of disposable income, beyond the existing taxation system, is shaped by the state of the economy and directly by the situation in the labour market. If new jobs are created and real wages are not reduced by inflation, the finances of many households improve and this affects their sentiment. In such conditions, it is easier to make decisions about buying new household appliances, cars, etc.

Consumer confidence indicators are also used to construct more sophisticated indices describing the state of the economy, and often they are part of complex indices anticipating changes in economic conditions. Examples of the latter include the Leading Indicator Composite Index, which is developed and published by the US Department of Commerce (Kwan & Cotsomitis, 2004, p. 138) and the Economic Sentiment Indicator used by the European Commission (Silgoner, 2007, p. 202).

Returning to the factors that play a key role in shaping consumer sentiment, in addition to the fairly obvious condition of consumer finances, other elements are also indicated; including data relating to the state of the economy. However, research conducted in this context shows that a significant proportion of household members simply do not follow the changes in the main macroeconomic aggregates. A telling example is the research conducted in the USA in 2007 and 2009, which showed a relatively poor knowledge by American household representatives about the state of their country's economy (Curtin, 2010, p. 7). It should be noted that the research took into account such basic aggregates as GDP dynamics, the inflation rate and the unemployment rate. What is more, the data for the analyses was obtained during the time of the so-called Great Recession. Thus, it turns out that even the occurrence of a very significant negative economic shock did not significantly increase the demand for such information. One of the reasons for such an attitude towards macroeconomic data may be the effort (cost) that it takes to observe and interpret basic macroeconomic figures (Jankiewicz, 2013, p. 702). Some consumers may simply fail to see a link between their financial situation and fluctuations in such measures as gross domestic product.

The analysis presented in this paper uses consumer confidence indicators to examine changes in the propensity to consume and save in Polish households in the face of an abnormal and dramatic situation which brought multifarious uncertainty into people's lives: the global COVID-19 pandemic.

Subsequently, the article presents the statistical material which was used for the calculations. Next, the state of the Polish economy is described using information on GDP dynamics and the development of the composite IPSOS Consumer Confidence Index. In the subsequent part, regression equations are estimated using simple indicators of household sentiment, which describe the financial situation of these units and their propensity to consume and save. Measures of income elasticity regarding consumption and saving are also constructed. Lastly, the indicator for

the elasticity of substitution between consumption and saving is used to summarise the results in the final section.

1. Household confidence indicators

In Poland, there are at least several institutions that conduct regular household confidence surveys. Needless to say, the individual research programmes differ in terms of methodology, sample size, and the structure of the questions. One of the most important among these research centres is GfK Polonia, whose data are supplied to Eurostat and presented in the online database of this institution.[1] Confidence surveys are also conducted by the Central Statistical Office and published on its website. Next, there is the Research Institute of Economic Development (RIED) at Warsaw School of Economics (WSE), which has a long history of research and analysis related to the description of consumer sentiment. Another source of valuable data is the research institute IPSOS. Firstly, this company offers a very long time series of confidence indicators, dating back to December 1991; and secondly, an equally important advantage of their data is that IPSOS has not changed either the set of questions used for the surveys, or their order, since that time. In view of these advantages, the calculations presented later in this study are based on information obtained from IPSOS research centre.

As in most consumer sentiment surveys, the areas dealt with by IPSOS representatives include both macro- and microeconomic issues. The first group includes questions about the economic situation in the country; some of which ask for the respondents' diagnosis and some for their predictions about the future (Appendix A1). The second group includes questions about the financial situation of the household, as well as the respondents' attitudes; or more precisely their intentions regarding consumption and saving. This group of questions also consists of both the respondents' diagnoses and forecasts (Appendix A2). The surveyed group consists of representatives of households aged 15 and over.

A drawback that is worth mentioning in the context of the analysis performed is the fact that the presented calculations made use of indices calculated on the basis of the responses of the entire surveyed population. Dividing the respondents (and consequently the responses) according to income groups would undoubtedly have increased the precision of the results presented. Unfortunately, access to such detailed information was not possible. Therefore, the presented results should be read with some caution.

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[1] GfK Polonia conducts its surveys according to the recommendations of the harmonised EU programme and they have been available in this version since May 2001.

The basic time series that were used to construct the elasticity indicators were balance statistics as described by Anderson (1952, pp. 1–17). These are the differences between the percentages of positive and negative responses, with a value of '100' added in the case of IPSOS data:

$$dB_t = (dP_t - dN_t) + 100 \tag{1}$$

where:

dB_t – balance,
d – stands for 'diagnosis',
dP_t – positive answer option measured as percentage points of total answers over the period from t–12 to t,
dN_t – negative answer option measured as percentage points of total answers over the period from t–12 to t.

In order to achieve the originally formulated aim of the analysis, from among the available simple indicators calculated according to formula (1), information from responses to the following questions was subsequently used:

- Q5: How would you rate the financial situation in your household in comparison to the situation 12 months ago?
- Q8: Is now a good time to buy durable goods?
- Q11: In your opinion, is it worth saving money in the current situation?

The balance sheets calculated on the basis of the responses to question 5 are treated later in the paper as information that, at least indirectly, describes changes in household income.

2. The economic situation and the Consumer Confidence Index

For many years after the beginning of the social and economic changes in 1989, Poland did not experience what is known as a technical recession: a contraction of real GDP for two consecutive quarters. It was close to such a situation in the first months of 2013; however, even taking into account the later revisions of the estimates announced by the Central Statistical Office in 2016, it is difficult to unequivocally treat this period as a recession in the Polish economy. In the period covered by the analyses, i.e. between January 2000 and March 2021, one clear recession consistent with the aforementioned definition can be identified. It was triggered by the global COVID-19 pandemic, and more specifically by attempts to combat this threat. These included periodic lockdowns, which meant, among other things, that many service outlets and companies were unable to operate.

Due to its global character, this phenomenon contributed to a disruption, and in some cases breakdown, of existing supply chains, resulting in further curtailment of economic activity, also in manufacturing companies.

Figure 1 shows changes in gross domestic product at constant prices, expressed as value increases from the corresponding period of the previous year equal to 100. Two key periods from the point of view of the analysis presented have been shaded: firstly, the time of the great economic crisis, marked in the years 2008–2009; secondly, the period from the declaration of a pandemic in Poland (March 2020) until the end of the presented series of values, i.e. March 2021.
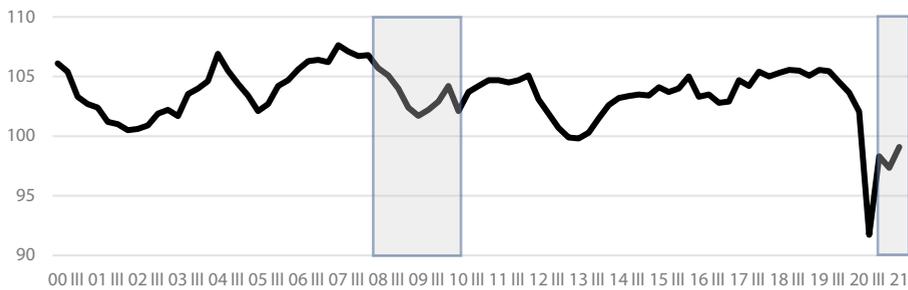

Figure 1. Polish GDP at constant prices, growth rates; equivalent period from previous year = 100.
Source: (www.stat.gov.pl)

For comparison with the results of consumer confidence surveys, Figure 2 presents the values of the composite Consumer Confidence Index (WOK—Wskaźnik Optymizmu Konsumentów) published by IPSOS. WOK is an arithmetic mean of the values of five simple indicators (calculated on the basis of answers to questions 2, 3, 5, 6, 8).
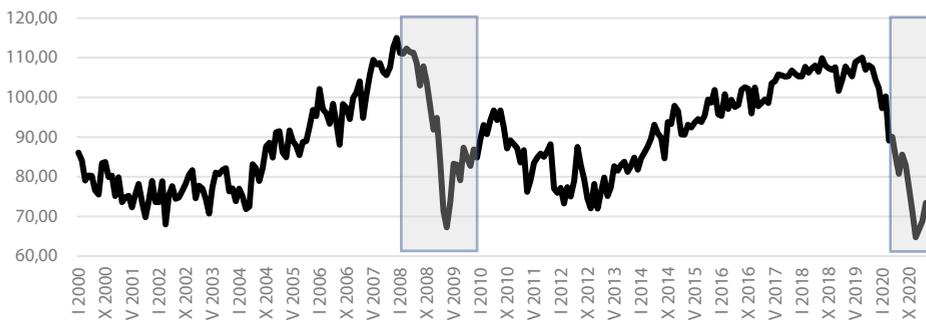

Figure 2. Consumer Confidence Index by IPSOS
Source: IPSOS.

Even just a simple comparison of the GDP and WOK series shows that consumer sentiment significantly declined both in the years 2008–2009 and during the COVID-19 pandemic. It is worth remembering that during the former of these periods Poland was dubbed a "green island" because it was one of the few economies that experienced a significant reduction in GDP growth but no absolute GDP decline during the global crisis. However, this crisis is clearly visible in consumer sentiment. One can speculate that, apart from the actual financial impact on households, a psychological effect may also have been at work in this case. The media were outdoing each other at that time in terms of negative information and ominous forecasts, with the words "crisis" and "recession" being all over the front pages.

3. Propensity for saving and consumption

The simple indicators mentioned in the second section, presented in the form of balance statistics, were then used to estimate the values of the parameters in regression equations. This was done to confirm that the expected relationships existed between them (Bürkl, 1996, p. 39; Jankiewicz, 2014, p. 125). The general form of the multiple regression equations whose parameters were estimated can be written as follows:

$$dC = \alpha_0 + \alpha_1 dY + \alpha_2 dS + \varepsilon \tag{2}$$
$$dS = \beta_0 + \beta_1 dY + \beta_2 dC + \delta \tag{3}$$

where:
   dC – current propensity for consumption,
   dS – current propensity for saving,
   dY – current household income.

The results of the estimations are presented in Tables 1 and 2.

The presented estimations seem to confirm the usefulness of the selected types of confidence indicators for further calculations. In the case of both regression equations, the dY variable plays the most significant role in describing the dependent quantity (dC or dS). On this basis, it can be assumed that the financial

Table 1. Parameters of the regression function with the dependent variable dC

Coefficient	Parameter	t-Statistic	p	Partial correlation
Intercept	82.91	48.82	0.00	–
dY	0.51	16.84	0.00	**0.67**
dS	−0.18	−9.17	0.00	−0.44
$F(2, 348) = 158.69$ $R^2 = 0.47$				

Source: Own calculations based on IPSOS data.

Table 2. Parameters of the regression function with the dependent variable *dS*

| Coefficient	Parameter	*t*-Statistic	*p*	Partial correlation
Intercept	110.40	11.33	0.00	–
dY	1.50	25.41	0.00	**0.81**
dC	−1.10	−9.17	0.00	−0.44
$F(2, 348) = 349.18$ $R^2 = 0.67$				

Source: Own calculations based on IPSOS data.

situation and its assessment in households is an important factor that influences the propensity of respondents to consume and save. In order to examine the role of this factor more closely, in the next step of the analysis the elasticity coefficients were calculated and traced. Income elasticity of consumption and saving was calculated according to the following formulas:

$$E_C = \frac{dC}{dY} \tag{4}$$

$$E_S = \frac{dS}{dY} \tag{5}$$

However, using them in this way, i.e. according to the definition of the elasticity coefficient, is only possible on the assumption that *dY*, *dC* and *dS* describe percentage changes (Bürkl, 1996, p. 41). Changes in the values of the coefficients constructed in this way are presented in Figure 3.
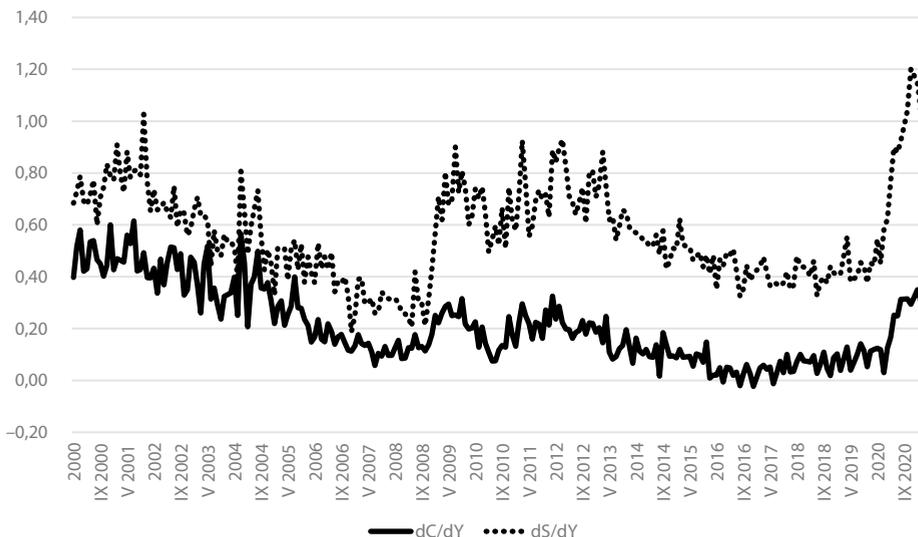
Figure 3. Income elasticity of consumption and saving
Source: Own calculations based on IPSOS data.

What is immediately visible is the fact that throughout the analysed period the propensity to save exceeds the propensity to consume. The opposite situation occurred only in the first half of the 1990s (Jankiewicz, 2014, p. 126). Moreover, this difference between saving and consumption increased after the great crisis of 2008–2009.

In the years 2002–2007 the propensity to consume decreased. Then, in the period between 2008 and 2013, it oscillated around a relatively constant level, only to decline again in the next three years. The propensity to save, in turn, increased until 2001–2002, after which it began to decline markedly until 2007, when this tendency ceased. Figure 3 clearly shows how much of a shock to households was the 2008–2009 global crisis. The propensity to save, based on the belief that one should accumulate funds as a precautionary measure, increased exponentially at that time. Moreover, it apparently left a "mark" in the minds of respondents until 2013. Another shock was connected with the outbreak of the COVID-19 pandemic, which is illustrated by an even larger increase in the dS/dY relationship than that which occurred nearly a decade earlier. In this case, one can assume that uncertainty was even greater than during an admittedly severe but nevertheless periodically occurring economic crisis.

Starting from the first quarter of 2020, a marked increase in the propensity to consume can also be observed. Interest rates were generally very low at this time, and banks virtually stopped offering term deposits. In addition, this was accompanied by the phenomenon of accelerated price growth—inflation—which exceeded the inflation target laid down in the National Bank of Poland Act. At least some Poles began to notice a decline in the real purchasing power of money. This, in turn, accelerated some consumers' decisions about purchasing durable goods; and on the property market it even triggered a situation that soon came to be called a "speculative bubble".

The observed changes in the relationship between the propensity to consume and the propensity to save sparked an interest in examining one more relationship. In the last step of the analysis, the elasticity of substitution between consumption and saving was assessed:

$$\frac{dC}{dS} \tag{6}$$

If the value of this coefficient exceeds 100, it means that the propensity to consume is greater than the propensity to save. If, on the other hand, there is a $\frac{dC}{dS} < 100$ relationship, then the propensity to save prevails over the propensity to purchase durable goods in households. The values of coefficient (6) are shown in Figure 4.

Throughout the analysed period the elasticity coefficient (6) remains below 100, which could be expected after analysing the series in Figure 3. However, using
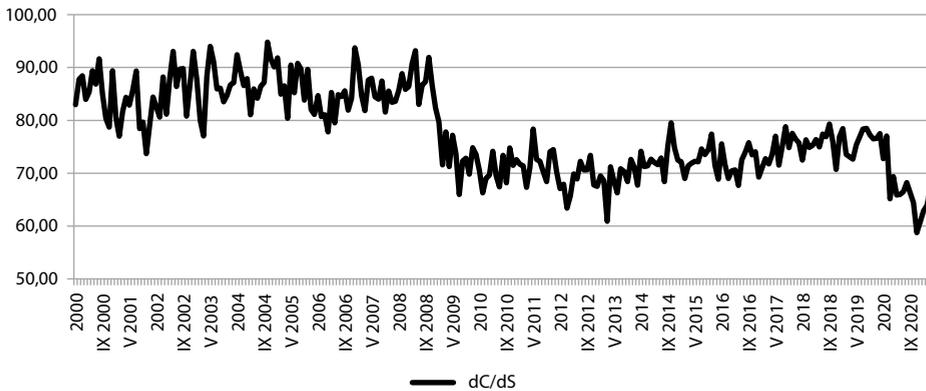
Figure 4. Elasticity of substitution between saving and consumption of Polish households

Source: Own calculations based on IPSOS data.

the presented measure helps to clearly see another interesting phenomenon. In the years 2000–2008, this coefficient, which earlier most frequently oscillated between the values of 80–90, began to take significantly lower values due to the great economic crisis. Moreover, one can easily notice that the impact of the global crisis of 2008–2009 left its mark on Poles' propensity to consume and save in the long term. Even though a slight upward trend in the value of the elasticity coefficient can be observed between 2013 and 2020, Figure 4 presents a definite long-term change that was prompted by the global economic crisis.

The impact of the COVID-19 pandemic was similar in this respect. It contributed to a dynamic reduction in the value of the coefficient. Thus, the question arises whether this time the change will also be long-term. However, because the causes and course of the negative events in the pandemic were different from those during a "normal" economic crisis, it is possible that the *dC/dS* relationship will return to its previous levels much faster this time.

Conclusions

The deterioration of the socio-economic situation during the COVID-19 pandemic was by definition the result of different causes and affected by different mechanisms compared to classic market turbulence. However, the calculations presented and the comparisons of selected indicators show that changes in consumer sentiment, particularly in the propensity to consume and save, were largely very similar in the pandemic to those that occurred in response to the Great Recession. Uncertainty related to a deteriorating situation, regardless of the causes of this deterioration,

contributed to a marked increase in the propensity to save. And it can be assumed that during the pandemic the degree of uncertainty, and thus the level of anxiety about the future, was probably even greater than usual. After all, the situation that developed was unprecedented in the world. At the same time, however, the changes brought about by the efforts to control the spread of the virus were accompanied by inflation. The policy of commercial banks that virtually stopped offering deposits at an adequate interest rate, significantly reduced the ability of households to protect the purchasing power of their finances. This, in turn, partially cancelled out the impact of the growing propensity to save on the *dC/dS* ratio.

Appendix

A1

Q1: Do you think things in our country are going in the right direction or are they taking a turn for the worse?

Q2: How would you assess the change in the economic situation in Poland over the last 12 months?

Q3: How do you think the economic situation in Poland will change in the coming months?

Q4: In your opinion, will unemployment in Poland increase or decrease over the next 12 months?

Q9: Looking at what is happening now, do you think that over the next 12 months prices will change (6 possible answer options, ranging from 'will rise even faster than now', through 'difficult to say', to 'will be lower').

A2

Q5: How would you rate the financial situation in your household in comparison to the situation 12 months ago?

Q6: What do you think the financial situation in your household will be in 12 months' time?

Q7: What is the current financial situation in your household?

Q8: Is now a good time to buy durable goods?

Q10: Do you think you will be able to save any money within the next 12 months?

Q11: In your opinion, is it worth saving money in the current situation?

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