Is Savings Behaviour Predictable by Consumer Sentiment?

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Abstract—**This study examines consumer sentiment as a determinant of saving behaviour. The literature review brings ambiguous outputs. Some research show the positive correlation between optimism and saving, others get/note the same correlation as negative. So to show the relations in a wider background, the current analysis checks the relations between optimism and: risk aversion, saving motives and choice of assets in the subject's portfolio. In addition to the main analysis, the time series containing the optimism, household's savings estimation and saving intentions have been investigated.**

The results of analyses show that optimism is negatively correlated with risk aversion, but positively correlated with all transaction and investment drives. An analysis of the time series shows that optimists' households are more likely to be savers. They possess savings more often, and much more often plan their saving. The relationship between saving behaviours and the business cycle has not been confirmed, as no statistically significant correlation has been observed between the data on the saving behaviours of optimist and pessimist households and the variables describing the state of the business cycle.

The analyses have been performed on the base of secondary data describing the Polish economy and our own research. Two different sources of research were used for the investigations: our own research on the sample of 702 households, and the data sets from the Department of Marketing Research of Poznan University of Economics conducted in the years 2001-2011 on samples of 780 to 1551 households.

Index Terms—**Saving behaviour, optimism, savings, business cycles.**

I. OPTIMISM AND ITS INFLUENCE ON FINANCIAL BEHAVIOUR

Optimism is a psychological concept. It denotes a positive attitude to life, perceiving the world as a positive place, with positive expectations about the future [1] after [2]. Optimism is a relatively persistent attitude over time, which sets it apart from temporary and fast-changing moods [3]. In economics, optimism is often equated with consumer sentiment, which is a great leading indicator of the condition of the overall economy. Therefore continuous research on consumer sentiment was started as early as the 1940s in the US, and is conducted in almost all countries across the world today. Optimism is thus a variable determining consumer choices. The increased interest of economists in the influence of optimism on behaviours dates back to the publishing of Psychological Economics by G. Katona [4].

Considering financial behaviours, it must be noted that optimism is equated with overconfidence leading to irrational decisions [2] and [5]-[7]. It is worth noting that in the

behavioural approach overconfidence is identified as a separate category and belongs to cognitive biases [8].

Research also indicates that optimists are both more willing to take risks, and more likely to underestimate them [9], [10]. There are studies, however, which indicate such a correlation to be very weak [11].

The influence of optimism on saving is also ambiguous. As shown by G. Katona, optimism decreases the likelihood of saving. If people feel optimistic about the future, they feel new needs must be satisfied, which leads to a lower savings rate. On the other hand, a pessimistic bias makes the need for the possession of new goods lower, and the rate of savings higher [4].

It must be noted, however, that the latest research has led to quite contrary findings, showing quite a reverse relationship. Optimistic households (economic optimism was examined) are more eager to save than pessimistic households [12], [13]. The same is true about non-economic optimistic bias – persons who think they will live longer than the statistical average are more likely to save [2].

Research on the correlation between optimism and saving was also conducted for Poland [14]. Optimism proved to be a substantial determiner in attitudes towards saving, thus becoming an element of the saving attitudes model. In this case, in keeping with Gianotten and van Raaij, optimism was an aggregate of opinions and outlooks on households' financial condition and readiness to buy major durable goods ("now is a good time to buy durable goods"). The research also found a positive correlation between optimism and risk aversion. The influence of optimism was itself manifested in the study on saving motives–optimism proved to be statistically correlated with transaction and speculative motives, but not correlated with the need for security.

Differences in optimistic sentiment also affect the choice of personal saving instruments. This shows for both the experience so far and future intentions. Optimists have a relatively bigger tendency to opt for real estate, valuables, shares and investment funds. Pessimists, in turn, opt for savings accounts, deposits, and bonds. Moreover, optimists are more active; they have used or are going to use a wider portfolio of assets [14].

There is also a discussion on the effects of optimism on financial behaviour associated with saving for old age. In this case, optimism is expressed as a belief in longer life expectancy. Research by M. De Nardi, E. French and JB Jones [15] suggest that the uncertainty in terms of life expectancy, in particular pessimism, has a negative impact on saving for old age. At the same time, this uncertainty means that people already receiving pensions (already being retired), continue to save-optimistically expecting a longer life [16], [17].

For example, analyzing the effect of optimism on saving for old age in Poland, it was observed that the more optimism the consumers have as to their life expectancies, the more

often they save for old age. The research shows that optimists with regard to life expectancy are three times more likely to save for old age than pessimists. This relationship has been proved to be statistically significant (chi-square = 14.295, df = 4, for alpha = 0.006).

II. MEASURING OPTIMISM

The most popular method of measuring optimism is to combine the economic climate index (the evaluation and expectations about the country's economic condition) with readiness to buy (the evaluation and expectations about the household's own financial condition and the opinion whether now is a good time to buy durable household goods). Theoretically, both these indexes could be independent; however, several international studies have confirmed that they are highly correlated. J. Gorniak explains this relationship in searching for the sources of one's own failures (changes in the household) outside (changes in the country's overall situation), and the fact that improvements in one's own household result in a more positive evaluation of the state of the economy [18].

It is known that both the level of optimism, and the saving ability and intentions can change and are affected by external events. In order to obtain robust finds, the analysis was carried out on a number of results from different research performed in the period 2001-2008 (the outputs included a sentiment index).

The research were conducted in the years 2001-2011 within the framework of the statutory research of the Department of Marketing Research (now Department of Market Research and Services), Poznan University of Economics, on representative samples (*N*= 780 to 1551) of households in Poland and the Greater Poland region.

The sentiment index in the research was computed based on the evaluation of four areas: the country's economic condition, the condition of the individual's own household, the condition of the banking market, and the condition of the insurance market. Within each area, the evaluation (changes in the past year) and expectations (for the next 12 months) were examined, which resulted in eight variables for the index. The evaluation of the financial markets was included in the index because the series of studies concerns the banking and insurance sectors; nevertheless, these variables had little weight in calculating the index.

III. THE PURPOSE, METHOD, AND SCOPE OF THE RESEARCH

In the light of the ambiguity about the effect of optimism, which has been described above, research was conducted into the impact of optimism on households' personal savings. In the first part, the "optimism" variable was confronted with four variables:
1) The percentage of people with savings in a bank;
2) The percentage of people who expect to save any amount within the next 12 months (in a bank);
3) The amount of savings so far (concerns savings stored in a bank)
4) The amount of savings expected within the next 12 months (concerns savings stored in a bank).

In order to determine the influence of the business cycle on households' personal savings for optimists and pessimists, in the second part of the article the above variables have been confronted with variables describing the business cycle. One of these variables is the GDP, together with its two components most closely related to consumption and personal savings (domestic demand and individual consumption). As the research concerned also financial behaviours, the other two business cycle variables are financial market trends indices: PIKBANK – the Poznan Index of the Banking Condition and PIKU – the Poznan Index of the Insurance Condition.

IV. THE INFLUENCE OF OPTIMISM ON PERSONAL SAVINGS

A comparison of the percentage of households who expect to save in the next year (divided into pessimists and optimists) shows that the optimists are more likely to expect to save. The difference between the values is 20-33 percentage points and is statistically significant.
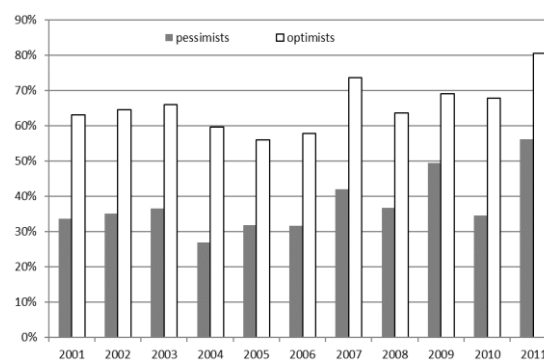

Fig. 1. Percentage of households expecting to save in the next year (own calculations based on the data of Department of Marketing Research of PUE).

What is more, in the households of optimists who expect to save, the expected amount of the savings is about 500PLN more than in the households of pessimists who expect to save.
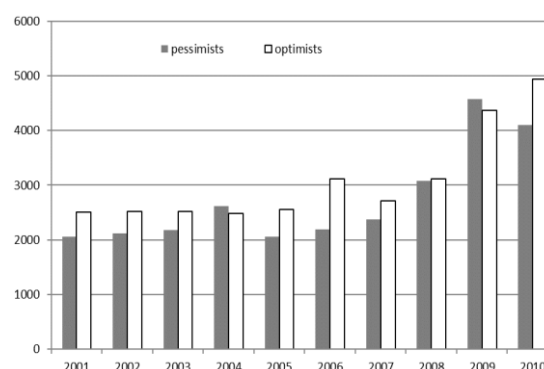

Fig. 2. Estimated amount of savings in the households of optimists and pessimists in the period 2001 – 2011 (concerns households with savings, recalculated to EUR) (own calculations based on the data of Department of Marketing Research of PUE).

The difference between optimists and pessimists is markedly smaller when it comes to actual savings. In all the years, the percentage of those who had savings was 5-17 percentage points higher for the optimists than for the pessimists. The differences between their amounts of savings also prove to be smaller. Admittedly, the average value of

savings the optimists declared to have was higher, yet it was the pessimists who twice during the period of the research declared to have more savings.
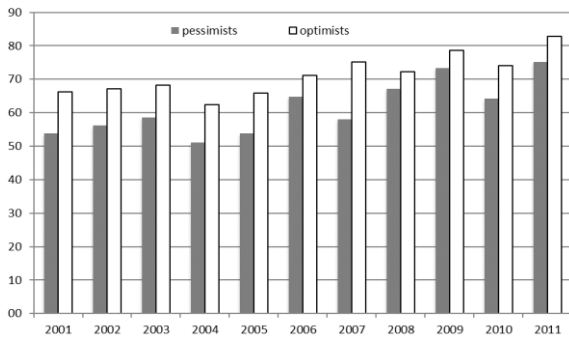

Fig. 3. Percentage of households with savings in households of optimists and pessimists in the period 2001 – 2011 (own calculations based on the data of Department of Marketing Research of PUE).

The obtained results confirm the observations made by J. Rha, C. Montalto and S. Hanna [12] as well as Y. Yuh and S. Hanna [13]. Optimists relatively more often have plans to save, and save more often than pessimists. What is more, the amount of savings they have put aside tends to be higher in optimists' households, although the difference is relatively small, and two times over the period of the research it was the pessimists who declared to have saved bigger amounts.

V. Saving Behaviours of Optimists and Pessimists and the Changes in the Business Cycle

The research in business cycles confirm the correlation of financial markets and the business cycle in general [19]. A correlation between the variables describing the business cycle and those describing financial behaviours may also be expected. The data collected on savings were correlated with the data concerning the business cycle that might affect saving. Table I contains symbols of the variables that were chosen for analysis, with a description.

TABLE I: List of Variables for Analyzing Correlations of Optimists and Pessimists' Households with Changes in the Business Cycle

Short name	Full name
GDP	Changes in real GDP (year to year)
POK	Domestic demand
SIN	Individual consumption
PIKU	Poznan Index of Insurance Condition
PIKB	Poznan Index of Banking Condition
ZOPT	Percentage of optimists with savings
ZPES	Percentage of pessimists with savings
POPT	Percentage of optimists that expect to save in the next year
PPES	Percentage of pessimists that expect to save in the next year
KZOPT	Amount of accumulated savings, measured for optimists' households with savings
KZPES	Amount of accumulated savings, measured for pessimists' households with savings
KPOPT	Expected amount of savings, measured for optimists' households who expect to save
KPPES	Expected amount of savings, measured for pessimists' households who expect to save

Source: author's own research

The results obtained in the first part of the article, which indicate a positive effect of optimism on saving behaviours, suggest that when times are good it is the optimists who should save more, whereas when times are bad, more activity on the part of the pessimists can be expected. Due to the limited number of observations for the analysis, the Spearman's rank rho correlation was used.

TABLE II: Relations between Optimists' and Pessimists Saving Behaviours and the Changes in the Business Cycle-Spearman's Rho Correlation

	PIKB	PIKU	GDP	SIN	POK
ZOPT	0,042	-0,136	0,191	0,010	-0,103
ZPES	0,127	-0,118	0,245	-0,034	0,018
POPT	-0,115	-0,127	-0,036	-0,283	-0,261
PPES	-0,188	-0,227	0,073	-0,240	-0,067
KZOPT	0,017	-0,442	0,370	0,341	0,067
KZPES	0,183	-0,261	0,236	0,177	-0,033
KPOPT	-0,533	-,770**	-0,285	-0,126	-0,417
KPPES	0,150	-0,297	0,273	0,177	0,017

** Correlation is significant at the level 0.01 (two-tailed).

* Correlation is significant at the level 0.05 (two-tailed).

Source: own calculations; the data on the condition of financial markets comes from statutory research by the Department of Market Research and Services of PUE, the macroeconomic data comes from the Central Statistical Office

The conducted analysis did not confirm the expected outcomes. Only one correlation proved to be statistically significant: the planned amount of savings in optimistic households has a negative correlation with the Poznan Index of Insurance Condition. The other correlation values are low; they are not statistically significant. Notably, in the case of the condition of the banking sector, the pessimists had stronger correlations. Although correlations are not statistically significant, pessimists who save may be suspected to more susceptible to the situation in the banking sector. The only stronger correlation for the optimists was the amount of savings they expected to make (inverse correlation). In the other cases there are no significant dependencies.

VI. Conclusion

The conducted research allows to conclude that optimism is strongly connected with the readiness to save and may be treated as a determinant, or even as much as just a part of the attitude towards saving. In the analyzed series, the optimists are more likely to declare to have savings, or to expect to make savings in the next year. The level of optimism also bears on the savings rate, though to a much lesser degree than it results from declarations. This may be caused by the boundary conditions of saving (incomes and the cost of living).

The relationship between saving behaviours and the business cycle has not been confirmed, as no statistically significant correlation has been observed between the data on the saving behaviours of optimist and pessimist households and the variables describing the state of the business cycle. To declare that no relations exist would be too strict. It is

worth pointing out the possible reasons for such outcomes.

One of them might be the short-term time series of the observations; external data for the corresponding periods was matched with the survey data. In the next years, with the time series getting longer-term, the outcomes will be more reliable, and it will be possible to apply more sophisticated methods for the analysis. The permanent volatility around the pension scheme has an undeniable influence on many sorts of behaviours. Because household saving behaviours are an important issue for the state, and service providers on the market (such as banks or insurance companies), it is essential to continue analyses and examine the longer-term time series, which involves further research.

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