Economic resourcefulness as a determinant of saving and borrowing in Poland

Marek Kośny

Department of Econometrics and Operational Research, Wroclaw University of Economics, Wroclaw, POLAND, e-mail: marek.kosny@ue.wroc.pl, ORCID: 0000-0003-3629-2183

Abstract

Economic resourcefulness indirectly affects many aspects related to the functioning of individuals on the market. One of the crucial areas is making financial decisions related to the allocation of financial surpluses and taking loans. The analysis carried out based on a dedicated study aims 1) to identify various aspects of the processes of collecting savings and borrowing in Poland and 2) to assess whether these processes are related to economic resourcefulness. The obtained results indicate the significance of economic resourcefulness for the majority of identified aspects of saving and borrowing, but at the same time, they show the specificity of these aspects. Resourcefulness, oriented at gaining a satisfactory financial situation and economic stability does not necessarily lead to strengthening individual retirement saving. It could be interpreted as a kind of trade-off between strategies build upon focusing on achieving well-being in the short (medium) and a long time horizon.

Keywords: saving behaviour, saving motives, borrowing behaviour, economic resourcefulness

Subject classification codes: D14, D91, J28

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1. Introduction

One of the crucial aspects of the functioning of people and households in the area of economics is their ability to manage financial resources appropriately. The area thus outlined includes many detailed aspects. Probably the most critical issue concerns the rationality of decisions made in this area. The most restrictive approaches assumed the stability of preferences – both interpersonally, and in time – which entailed the possibility of explicitly specifying cash management methods. A better reflection of the actual behaviour of people and households, however, caused a significant departure from these idealised assumptions. It resulted in attempts to describe market behaviour by utilising the actual observation of individuals on the market.

The management of financial resources – apart from the issues of the rationality of decisions taken – includes, however, many specific areas. These include, in particular, the forms and means of obtaining funds, and sources of financing the expenditures, the adopted perspective (short- and long-term) and stability of income and expenditure over time. In the context of the analysis, which will be presented later in the article, two issues are of particular importance. The first of them is saving behaviour – both in the short and long term, while the second is the behaviour in the area of borrowing. A similar characterisation of these areas suggests the possibility of the occurrence of common determinants. Therefore, identifying features that influence behaviour in both areas will mean not only their formal similarity but also common behavioural determinants.

The literature review shows that both the concepts of saving and borrowing cover, however, a wide range of behaviours (see, for example, investment and consumption debt). These differences result not only from the motivation of decision-makers (the subjective factor) but also from the economic meaning (objective factor). This internal diversity raises several fundamental questions. Firstly, is the formal differentiation reflected in the attitudes and behaviour of individuals – i.e. is the propensity to save (debt) depending on the motive, purpose,
and manner of saving (borrowing)? Are people who save regularly (collecting funds for the planned purchase of assets – the improvement and down-payment motive, or for unforeseen expenses – the precautionary motive), will also be those who save for retirement purposes (the life-cycle motive or the bequest motive)? Secondly, what determines specific behaviour in terms of saving (borrowing) and are these the same factors, independent of the way (motive) of saving (borrowing)?

Concerning these questions, the purpose of the article is 1) to identify various aspects of saving and borrowing and 2) to assess whether these processes are related to economic resourcefulness. The essential aspects characterising the behaviour of households in the area of saving and borrowing were identified based on the results of the factor analysis for a dedicated study conducted on a group of Polish households. It allows for assigning households' behaviours to broader areas, which allows searching for common determinants for specific types of behaviour. In the second stage of the analysis, an attempt was made to assess whether the identified areas are related to economic resourcefulness – an essential factor in guaranteeing the economic security of households.

The article contributes to the literature by identification of various aspects of saving and borrowing in Poland and by application of the recently introduced category of economic resourcefulness to the description of these phenomena. Obtained results show new aspects of short- and long term saving in Poland and suggest the existence of a kind of trade-off between concentration on the short (medium) and the long-term situation in the context of maintaining the desired standard of living.

The remaining part of this article is organised as follows. Section 2 characterises determinants of saving and borrowing money, already identified in the literature. Section 3 concentrates on the description of the economic resourcefulness. In Section 4, we describe methods and data
used in the empirical analysis. Sections 5 and 6 are devoted to the analysis of saving and borrowing behaviour, respectively. Section 7 concludes.

2. Determinants of saving and borrowing

The specification of factors determining the processes of saving and borrowing depends to a large extent on the adopted perspective from which the analysis is carried out. The basis for systematic reflection on the economics of saving is related to the work of Keynes (1936), who defined the concept of propensity to save and who defined savings as the difference between income and consumption expenditure. According to Keynes, consumption depends on two groups of determinants. The first of them has an objective character. It includes economic determinants that determine the level of income. The second of them, subjective in nature, includes needs, customs and predispositions, and, generally, rules and habits regarding income distribution. Referring to this division, we can divide the savings theories proposed in the literature into two broad groups: economic (objective) and psychological-sociological (subjective). At the intersection of these groups sometimes stands out the third one – behavioural theories (Beverly and Sherraden 1999).

It should be emphasised, however, that according to Keynes, subjective factors do not have to be analysed because they are compensated on a population scale. Hence, fundamental neoclassical theories of saving omit this aspect. In this way, saving is modelled by Keynes as a function of an absolute level of income. Assuming that other components are constant, the fraction of saved income increases along with income (J. Tobin and A. Smithies later developed this concept as Drift Hypothesis). Analogous premises are also a point of reference for the two most influential neoclassical theories - the life cycle hypothesis (Modigliani and Brumberg 1954, Modigliani and Ando 1957, Ando and Modigliani 1963), and the permanent income hypothesis (Friedman 1957). They base on the hedonistic rule of homo oeconomicus, where
saving reflects rational decisions in the area of financial management. It involves a strong assumption regarding the stability of preferences and the structure of the inter-temporal choices – between current and future consumption. Both theories assume the orientation of individuals for a long period and stabilisation of consumption. In the life cycle hypothesis, the central point is retirement savings, and the saving for retirement can be considered the primary motive for saving. That is why in the life cycle hypothesis, savings and consumption depend on age, which is a proxy for the stage in the life cycle. This theory assumes that people usually save during their working lives. They do it in order to be able to compensate for the expected fall in income during retirement and to maintain a similar standard of living in both periods.

In Friedman's theory, permanent income is a crucial element. Current consumption is conditioned not by the current level of income, which is subject to changes. It reflects some constant – in the perspective of the whole life – value, taking into account also the income expected in the future. It is a subjectively defined income level, which results from the perception of its own ability to generate income in the future. Since permanent income is an individual's estimate, it will have – by definition – subjective character (although the impact of the subjective factors was intended to be maximally limited).

The paucity of saving motives in both theories shows that they only partly relate to the Keynes theory. Keynes considered motives of saving much broader, distinguishing between the precautionary motive, the life-cycle motive, the inter-temporal substitution motive, the improvement motive, the independence motive, the enterprise motive, the bequest motive, and the avarice motive.\(^1\) This list is sometimes extended – for example, Browning and Lusardi (1996) add the down-payment motive, meaning saving for the acquisition of durable goods. It will be valuable in the context of distinguishing aspects of saving later in this article.

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Therefore, another critical stage in the development of theory in the area of saving – the "new" theory of saving – was a natural stage of development, it assumed the "buffer-stock" models of saving (Carroll 1997, Carroll and Samwick 1997, Deaton 1991). In this model, financial reserves constitute a precautionary motive against unforeseen contingencies. The precautionary motive – in comparison to previous theories – is particularly important for younger (who do not have adequate resources). It is also crucial for people whose incomes are characterised by higher volatility. This theory, of course, also assumes an increase in retirement savings, but from about 50 years of age (see Carroll and Samwick 1997). It means that the distribution of savings in the life cycle will be different compared to those resulting from, among others, the life cycle hypothesis.

Criticism of key assumptions of neoclassical economics (in particular maximisation of utility as the primary criterion of human behaviour), as too idealistic, led to the attempt to explain the processes of saving based on psychological and sociological theories. They indicate the critical importance of motivation, aspirations, and expectations for saving behaviour (Katona 1975, Van Raaij 1989), whose individual variation – contrary to Keynes' assumptions – is not subject to compensation on a population scale.

Katona (1975) criticised the neoclassical assumptions – the maximisation of utility is not (in his opinion) the primary criterion of human behaviour. In particular, he managed to introduce people's beliefs about the economy as a mediator of their saving, and he considered the ability to save and willingness to save as the critical determinants of saving. As a result of the influence of psychological theories, factors such as personality traits, self-control, fear of economic uncertainty and pessimism about the economy started to be widely accepted in the field of economics. Empirical analyses also indicate that consumption and saving patterns depend significantly on socio-economic conditions (Luhr 2018, Ribeiro and Soares 2016). This context
determines not only the level and structure of savings but also how they are perceived and evaluated (Ribeiro Fonseca and Soares 2018). In particular, this context also determines diversity in the area of long-term planning, self-responsibility, and financial discipline – in favour of more privileged classes (Otto 2013, Ribeiro and Soares 2016). Differing factors are also formal education (Johnson and Sherraden 2007), family conditions (Cohen 1994), peers (Duesenberry 1949), and experience in saving (Furnham 1985).

As a result of a greater emphasis on the compliance of the theory of saving and individuals' behaviour in this area, the third group of theories – behavioural theories – appeared at the interface between economic and psychological theories. These theories take into account, in particular, risk aversion and time preferences and psychological interpretations of individual behaviour (Kahneman and Tversky 1979, McCarthy 2011). Permanent income hypothesis and the life cycle hypothesis – despite their great importance – do not describe reality well. Therefore, attempts have been made to verify their results from the perspective of behavioural economics, assuming greater psychological realism of economic theories. Instead of idealised assumptions (as in the case of the permanent income hypothesis and the life cycle hypothesis), they are more oriented to an observation of behaviours and identification of dependencies. They reject, in particular, the constancy of preferences and aspirations as well as full rationality and perfect knowledge. The effect is much more individual rules, more characteristic for people than for the population (although some features are social or cultural). An example of this type of theory is the behavioural development of the life cycle hypothesis – the behavioural life-cycle hypothesis (Shefrin and Thaler 1988), based on the "economic theory of self-control" (Thaler and Shefrin 1981) and mental accounts.

Results of research conducted in various areas for the described theories indicate that among the drivers of total household saving, affecting both the savings rate and the volume of savings, many factors can be distinguished. These are both macroeconomic factors (growth rate, fiscal
policy, real interest rate, terms of trade, macroeconomic uncertainty, and financial liberalisation) and microeconomic factors. The latter group, which is much more critical in the context of this analysis, includes in particular: income level, as a most prominent determinant (Loayza et al. 2000, Dynan et al. 2004, Devaney et al. 2007, Traut-Mattausch and Jonas 2011), wealth (Salotti 2010), age (Carroll and Samwick 1997, Gourinchas and Parker 2002), education level (Avery and Kennickell 1991, Morisset and Revoredo 1995, Gourinchas and Parker 2002, Devaney et al. 2007), family type and having children (Bosworth et al. 1991, Glazer 2008, Kostakis 2015), cultural factors (Carroll et al. 1994, 1999), level of urbanisation of a region (Grigoli et al. 2014), individuals’ locus of control and their savings behaviour (Cobb-Clark et al. 2016) and self-control, conditioning the ability to control a household's finances and manage it in a conscious way (Shefrin and Thaler 1992). Genetic factors are also important – according to Cronqvist and Siegel (2015), they explain 33 per cent of the variation in savings propensities across individuals.

Many analyses on saving determinants were also carried out for Poland. They concerned material security (Rószkiewicz 2006), individual perception of income and material conditions (Rószkiewicz 2014), precautionary saving in periods of slower and faster economic growth (Kośny 2013), consumer confidence (Klopocka 2017), income, family type and place of residence (Szopiński 2017). Macroeconomic determinants were analysed, for example, by Kolas and Liberda (2015).

In contrast to saving, the processes of individual borrowing are given less attention in the literature. It results from the fact that the fundamental theories of neoclassical economics treat debt as a by-product of saving. When current income falls below average expected lifetime income, a saving decreases or households may start to borrow. In the context of the permanent income hypothesis and the life cycle hypothesis, borrowing plays a similar role as saving. It
allows equalising the level of consumption and enables intertemporal transfer of financial resources.² Although debt is analysed as part of the permanent income hypothesis and the life cycle hypothesis as (periodically) necessary to maintain the standard of living, these theories do not directly refer to the problem that some individuals are credit constrained. Meanwhile, this is a significant problem in practice (see, for example, Japelli 1990, Del-Rio and Young 2005, Chen and Chivakul 2008).

Gerhard et al. (2018) suggest that despite similarities, saving and borrowing behaviours should be analysed separately (they may differ from one another in terms of selected aspects).

Going beyond the basic models, it is easy to see that the borrowing motivations are very diverse, as in the case of saving. Most of the motives identified by Keynes as saving motives may well be considered as motivations for borrowing (except for the bequest motive and the avarice motive). Taking into account conditions of indebtedness, however, it is worth combining these motives with the type of debt. Borrowing related to current consumption (usually unsecured debt, often through credit cards) corresponds primarily to the life-cycle motive and the intertemporal substitution motive. A particular type of consumer debt is emergency borrowing related to a difficult life situation (regardless of whether this challenging situation is culpable or not). It is associated with a precautionary motive. The indebtedness related to the acquisition of durable goods, on which the debt incurred is secured, has an entirely different character. In particular, this applies to mortgage or investment debt, often associated with the business. This kind of debt, corresponding to the improvement motive, the independence motive and the enterprise motive (and partly the inter-temporal substitution motive) is, in essence, the closest to a saving. Borrowing, aimed at purchasing of durable goods (especially real estates) can be considered as a form of saving.

² Although debt is analysed as part of the permanent income hypothesis and the life cycle hypothesis as (periodically) necessary to maintain the standard of living, these theories do not directly refer to the problem that some individuals are credit constrained. Meanwhile, this is a very important problem in practice (see, for example, Japelli 1990, Del-Rio and Young 2005, Chen and Chivakul 2008).
The similarity between saving and borrowing behaviour manifests in very similar determinants. These include, first and foremost, the amount of income. Generally, people with higher incomes spend and borrow more and have a higher probability of taking on new financial liabilities (van Raaij and Gianotten 1990, Le Blanc et al. 2015), although some research suggests a U-shaped relationship (see Del-Rio and Young 2005 for an unsecured debt level in the UK). Another factor crucial for debt is the level of education (positive correlation – see Cox and Jappelli 1993, Strebkov 2005) and having debt on credit cards (Davies and Lea 1995). If, however, debt to income ratio is considered, the relationship is U-shaped (Canner and Luckett 1991, Lea et al. 1993). Age is generally negatively correlated with being in debt (Del-Rio and Young 2005). The family situation is also an essential factor for the debt – married people have a greater tendency to being in debt (Bird et al. 1997). Psychological aspects such as locus of control, self-esteem, and self-efficacy are also considered in the literature (Stone and Maury 2006, Livingstone and Lunt 1992).

3. Economic resourcefulness

In the process of searching for factors conditioning the processes of saving and borrowing, the attention of researchers is usually focused on separate characteristics. It is justified by the comparability of the results obtained (both in time and between populations). In such a situation, however, often a broader context is missing, which is difficult to show for selected aspects. Intuitively, we can indicate the existence of certain hard-to-measure features that condition behaviour from specific areas. It is easy to notice that some people do very well in the economic sphere, and some do not, and it does not necessarily depend on their age or education. Therefore, in the process of searching for determinants of saving and borrowing, we decided to refer to a more complex construction, reflecting the effectiveness of people's functioning in the area of
economics. As a factor significant for both saving and borrowing, the category of economic resourcefulness will be proposed (Kośny and Piotrowska 2018).

The concept of economic resourcefulness refers to the capability to guarantee security and economic stability to own household. Therefore resourcefulness is identified with the ability to cope in life, resulting in, for instance, high material status and having a good job. It was proposed as an attempt to identify and describe a category that will be able to explain the determinants of different types of economic decisions. In the context of this analysis, the category is attractive because it allows combining many aspects that are usually considered separately. One can expect that saving and borrowing behaviours are conditioned similarly to other economic behaviours.

The description of the resourcefulness category presented by Kośny and Piotrowska (2018) covers two aspects: the identification of factors that affect it, and its consequences. According to the definition presented there, economically resourceful people can guarantee the economic security of their household. They have a good, satisfying job, a stable source of income, a sufficiently high material status, and savings. SEM (MIMIC model) was used in the cited work to model this phenomenon. Therefore, income stability, material situation (wealth), job suitability and savings were adopted as effect indicators. Among the potential factors determining economic resourcefulness, several non-cognitive factors were considered. In particular, the impact of personality traits was analysed (Big Five – see Costa and McCrae 1992, Gosling et al. 2003), declared values (Bengtson et al. 2002), self-esteem (Rosenberg 1965) and family situation (presence of parents in the child's life).

Four the most important cause indicators were identified, i.e. the factors that determine the level of economic resourcefulness. Among personality traits, emotional stability (neuroticism) turned out to be of crucial importance. The extraversion and openness to experience were less important, while agreeableness and conscientiousness proved to be completely unimportant.
The most significant of what people value in their lives was their professional career (achieving success in their professional work). Ethical life and attractive appearance were also important, while friendship, family life, and possession of property turned out to be irrelevant. In the field of subjective self-esteem perception, the (declared) ability of “doing things as well as other people do” turned out to be crucial. However, the influence of this factor on economic resourcefulness was indirect. As far as the family situation is concerned, the presence of the mother in the life of the child was the most important (also the presence of a father but the impact was smaller than for mother). Table A1 in the Appendix presents estimates of parameters for the final model.3

The concept of economic resourcefulness defined in this way refers to the determinants characterised in Section 2. Among the listed cause indicators, by far the most research concerns the impact of personality traits on behaviour in the area of financial management (including saving and borrowing). Obtained results in this area are not, however, unambiguous. While Nyhus and Webley (2001) point to emotional stability as the most salient aspect of savings, in the study by Gerhard et al. (2018), this component is entirely irrelevant. On the other hand, Schäfer (2016) finds the crucial role of extraversion and agreeableness (negative effect) for the probability of having retirement savings. It may suggest differentiation of determinants for short- and long-term savings. 

Other aspects were analysed only indirectly in the context of saving and borrowing behaviour. Chatterjee et al. (2008) show, for example, the positive effect of self-esteem on individual wealth and negative association with problematic behaviour (which indirectly assumes making appropriate decisions regarding saving and borrowing). Lown et al. (2015) indicate the positive effect of self-efficacy (a category related to self-esteem) on the probability of saving.

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3 The full description of the model (one-generational model) and its individual components (including the specification of questions asked to the respondents) was presented by Kośny and Piotrowska (2018).
4. Data and methods

The empirical analysis was carried out based on the data from a dedicated questionnaire survey which was intended to analyse various aspects of the functioning of individuals and households on the market. Within the survey, respondents answered several questions regarding their market situation, saving, indebtedness, the situation on the labour market as well as many personal characteristics (non-cognitive factors).

The study was conducted in Poland at the end of 2016 by a renowned research agency, using CAPI method. Sampling was based on the TERYT system, used for representative surveys by the Central Statistical Office in Poland.

The interviews were carried out with dyads comprised of a parent and an adult child. The group of adult children covered three cohorts aged 25-31, 32-38, 39-45. The age range of the cohort was established to take into account the political transformation that took place in Poland in the early 1990s of the previous century. The people from the youngest cohort were in the pre-school during the transformation period, and the period of their education and entry into the labour market was already taking place in the market economy. People from the middle group were in school-age during the transformation period, and the oldest group started their professional career then. In order to obtain a homogeneous sample with relatively consistent experiences, all respondents aged 25-45 (a group of adult children) were required to have higher education.

Parallel to the persons from these three cohorts, one of the parents (father or mother) was surveyed for each of them (parents were not required to have higher education). In this way, we obtained six groups of participants of the study, each of them consisting of about 300 persons.

In total, 1804 respondents participated in the study. Due to the specific purpose of the study – the assessment of the ability to function well on the market, the parameter controlled during the study was the living of an adult child in the same household with his/her parents. According to
the statistics published by the Central Statistical Office, this percentage amounts approximately 17% in Poland (according to the results of the 2011 Census – see Central Statistical Office 2014, Table 11).

The requirement of homogeneity of the sample of respondents (from the group of adult children) according to one of the characteristics – the level of education, results from the importance of having higher education for the studied area. Earlier studies suggest that the level of education is essential for both saving (Spenceri and Fan 2002, Johnson and Sherraden 2007) and borrowing (Crook and Hochguertel 2007, Chen and Chivakul 2008, Spenceri and Fan 2002). In almost all analysed groups, this was a significant factor, although the direction of the impact varied between studies, especially in the context of borrowing. However, with the increase in the level of education, people are usually more likely to be in the group of savers, while in the case of debt, the identified dependence was U-shaped. That is why – to maintain the homogeneity of the studied group for this characteristic – only people aged 25-45, with higher education (902 respondents) were taken into account in the analysis.

The analysis of such a defined data set was carried out in two stages. In the first step, data related to various aspects of saving and borrowing (separately for each area) were subjected to exploratory factor analysis (EFA), with principal component analysis and varimax rotation. The extracted factors were supposed to have eigenvalues higher than one. Additionally, the resulting set of factors had to explain a minimum of 75% of the variance of the original set of variables (factors explaining less than 10% of the total variance were not taken into account). The primary purpose of factor analysis was to identify latent constructs and assessment of dimensionality in the set of analysed questions. In both analysed areas – saving and borrowing – the number of concealed dimensions obtained was 3. The dimensions identified in this way meet the conditions set by Briggs and Cheek (1986) – they are both conceptually meaningful and empirically useful. In the second step, the emergent constructs were utilised in the regression
analysis as independent variables what allowed to indicate critical determinants of the aspects of saving and borrowing identified in this way.

The basic variable, whose impact on saving and borrowing was verified is the respondent's economic resourcefulness. Referring to the concept presented in Section 3, the structural equation model (MIMIC) proposed in Kośny and Piotrowska 2018 (one-generational model) was used. The theoretical values of the hidden variable – economic resourcefulness – were imputed based on the estimates given in Table A1 in the Appendix. Then the imputed (theoretical) values obtained in this way were used as an explanatory variable in the regression models estimated for particular aspects of saving and borrowing.

All analyses and calculations presented in this article were carried out in IBM SPSS Statistics 24.

5. Saving behaviour in Poland

As indicated earlier, the determinants of saving and borrowing processes are extremely complex. Additionally, for Poland (but also other post-communist countries), specific factors related to the history of the region appear.

The first of such factors is the level of wealth of the inhabitants. The negative attitude of the communist system to the ownership, the limitations in inheritance and intergenerational building of assets, and the hyperinflation of the early 1990s caused that virtually the only property owned by households in that period was their main place of residence. The second factor was the level of income obtained, at the beginning of the transformation period significantly different from that for developed countries. Despite the reduction of these differences, they are a significant limitation for saving: for many households, the priority is still

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4 Moreover, during this period it was very often so called a limited right of ownership (for example, cooperative property ownership), but these rights were gradually transformed into full ownership.
to guarantee current maintenance, and saving is treated as a luxury. The third and very
significant factor determining Poles' savings is the state's actions, or rather the perception of
these activities in society. The wide range of guarantees granted by the state is particularly
important. It applies in particular to the health care system (which guarantees to all citizens a
relatively broad range of benefits), the pension system (whose central component is the PAYG
public system) and social care activities. These factors reinforce the belief in the role of the
state in protecting citizens from adverse events and thus significantly reduce the precautionary
motive of savings. It can be directly observed on the example of agricultural insurance (Kurdyś-
Kujawska 2017) or the popularity of individual savings for retirement (Jedynak 2016).

Table 1. Descriptive statistics for questions related to saving

<table>
<thead>
<tr>
<th>Questions</th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please specify how often in the last 6 months you have saved for significant expenses like a car, home or educational expenses? (from 1 to 5: 1 – never; 5 – always)</td>
<td>902</td>
<td>3.38</td>
<td>1.11</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Please specify how often in the last 6 months you managed to fit in your budget (expenditure plan)? (from 1 to 5: 1 – never; 5 – always)</td>
<td>902</td>
<td>3.78</td>
<td>0.96</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Do you save for a pension in any form, in addition to compulsory contributions? (0 – no; 1 – yes)</td>
<td>902</td>
<td>0.19</td>
<td>0.40</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Do you have a plan on how to save for a pension? (from 1 to 5: 1 - definitely not; 5 – definitely yes)</td>
<td>892*</td>
<td>2.60</td>
<td>1.08</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Have you ever tried to estimate how much you would have to save in the period when you work to make you satisfied with your standard of living in retirement? (from 1 to 5: 1 - definitely not; 5 – definitely yes)</td>
<td>892*</td>
<td>2.58</td>
<td>1.05</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Does your household have savings? (0 – no; 1 – yes)</td>
<td>902</td>
<td>0.49</td>
<td>0.50</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>What is the approximate value of your household savings? (from 0 to 7: 0 – no; 1 – up to 1 monthly income; 2 – up to 2 monthly incomes; 3 – up to 3 monthly incomes; 4 – up to 5 monthly incomes; 5 – up to 10 monthly incomes; 6 – up to 20 monthly incomes; 7 – above 20 monthly incomes)</td>
<td>902</td>
<td>1.95</td>
<td>2.28</td>
<td>0</td>
<td>7</td>
</tr>
</tbody>
</table>

* Number of responses is smaller because pensioners were not asked these questions.
In order to restrain the influence of the indicated factors, the analysis was limited to persons who started their adult life and career after the economic transition (cohorts of adult children). According to data collected during the study (see Table 1), less than half of households (49%) have any savings. Although this percentage has increased in recent years (Panek et al. 2015), it remains unsatisfactory. The unfavourable picture also deepens the value of household savings. As many as 61% of them have savings, the value of which does not exceed five times the monthly income, and further 23% have savings worth five times to ten times the monthly income. At the same time, less than 20% save for pension in any form (besides compulsory contributions).

The observed differences between the percentage of households with any savings and the percentage of those saving for retirement suggest that the identification of savings determinants should be preceded by an attempt to identify types of savings (saving models, motives – see Nyhus, Webley 2001). Therefore, the starting point for the analysis will be the exploratory factor analysis (EFA), the results of which are presented in Table 2.

For the principal component analysis, we used answers to 7 questions, which in the study concerned the issue of saving (the wording of questions and basic descriptive statistics are presented in Table 1). The minimum level of requirements that must be met by identified factors is that each of them explains at least 10% of the total variance and has eigenvalues exceeding 1. Besides, all factors must explain a minimum of 75% of the total variance: in the presented model, the value was at this minimum level. These conditions allowed to distinguish three factors. It is worth noting that we obtained very similar results when the analysis was carried out for the subgroup of parents. In this case, we identified the same factors and the correlation levels were similar. Taking into account the content of the questions based on which the analysis was carried out, these factors can be described in the following way.
Table 2. Savings – factor’s loading for the first three factors

<table>
<thead>
<tr>
<th>Questions</th>
<th>Factor’s loadings</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1</td>
<td>Factor 2</td>
</tr>
<tr>
<td>Please specify how often in the last 6 months you have saved for significant expenses like a car, home or educational expenses?</td>
<td>0.076</td>
<td>0.154</td>
</tr>
<tr>
<td>Please specify how often in the last 6 months you managed to fit in your budget (expenditure plan)?</td>
<td>0.161</td>
<td>-0.077</td>
</tr>
<tr>
<td>Do you save for a pension in any form, in addition to compulsory contributions?</td>
<td><strong>0.445</strong></td>
<td>0.562</td>
</tr>
<tr>
<td>Do you have a plan on how to save for a pension?</td>
<td>0.034</td>
<td><strong>0.877</strong></td>
</tr>
<tr>
<td>Have you ever tried to estimate how much you would have to save in the period when you work to make you satisfied with your standard of living in retirement?</td>
<td>-0.073</td>
<td><strong>0.852</strong></td>
</tr>
<tr>
<td>Does your household have savings?</td>
<td><strong>0.944</strong></td>
<td>0.037</td>
</tr>
<tr>
<td>What is the approximate value of your household savings?</td>
<td><strong>0.941</strong></td>
<td>0.010</td>
</tr>
<tr>
<td><strong>Eigenvalue</strong></td>
<td>2.419</td>
<td>1.749</td>
</tr>
</tbody>
</table>

Factor 1 can be characterised as the Ability to accumulate savings. It represents the specific effects of the saving process, which is the savings accumulated – covering both pension savings, as well as those which, in the respondent's opinion, are not intended for this purpose. This distinction is significant because the question left the respondent free to define the nature of savings, which, in a broader context, is a reference to the concept of mental accounts (see Shefrin and Thaler 1988).

Factor 2 can be described as Pension saving. It includes, of course, pension savings – which is a component shared with Factor 1. Besides, it refers to planning for saving for a pension. An interesting aspect of this factor is that it is not related to having savings, which – according to the respondent – are not directly related to pensions. It indicates the specific character of pension savings and another mechanism of their formation.

Factor 3 covers aspects related to the current saving for a specific purpose and the ability to keep the desired level of expenses, which is why we described it as Saving discipline. It is interesting, however, that the behaviours from this area form a separate factor, distinct from the
two previously mentioned. An attempt to interpret it may be based on a reference to the saving motives described in Section 2. While these motives are directly referred to by Factor 2 (the life-cycle motive), Factor 3 seems to reflect the down-payment and improvement motives. Nevertheless, references to other motives can also be found. However, of the most general character is Factor 1, which corresponds not only to the precautionary motive, the inter-temporal substitution motive but also to others, including the already mentioned life-cycle motive.

Characteristic of identified aspects is an incentive for attempts to look for potential determinants. Such analysis was carried out using a regression model in which as independent variables, we utilised the constructs that emerged from EFA. As the potential explanatory variable, the age (in years) was adopted – according to a previously presented literature review. As the key variable, whose impact on particular aspects of saving was examined, we chose economic resourcefulness.

As the modelling of economic resourcefulness includes savings, potential doubts can arise issues of endogeneity. In this context, it is worth stressing, however, that savings are included in modelling of economic resourcefulness as one of the reflective indicators. Among characteristics conditioning economic resourcefulness (formative indicators) only non-cognitive factors, characterising the individual, were used. And formative indicators are those which actually (indirectly) determine the relationships between economic resourcefulness and various aspects of saving and borrowing. In this context, the analysis presented in the article can be interpreted as an assessment of the indirect impact of these non-cognitive factors on saving and borrowing behaviour – not only at the level of the SEM (MIMIC) model but also at the level of the regression model.

Weighted OLS estimates are presented in Table 3.
Table 3. Determinants of factors identified for saving behaviour

<table>
<thead>
<tr>
<th>Economic resourcefulness (variable imputed on the basis of SEM)</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.597***</td>
<td>-0.046</td>
<td>0.302***</td>
<td></td>
</tr>
<tr>
<td>Age (in years)</td>
<td>0.011**</td>
<td>0.030***</td>
<td>0.004</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.204***</td>
<td>-0.832***</td>
<td>-1.568***</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.316</td>
<td>0.030</td>
<td>0.078</td>
</tr>
</tbody>
</table>

Note: *** p < 0.01, ** p < 0.05, * p < 0.10.

Estimates show a positive relationship between the age variable and the analysed factors, the relationship being statistically significant for Factors 1 and 3. Taking into account the way of modelling the economic resourcefulness, and the definition of Factor 1, the significance of the regression coefficient should have been expected. However, the potential relationship between economic resourcefulness and other factors cannot be seen as evident – the mechanisms governing those aspects are not the same. The same applies to the analysis of borrowing behaviour that will be presented in the next section.

These results mean that resourcefulness is an important factor for the Ability to accumulate savings – both in the context of its effects (Factor 1) and internal discipline (Factor 3). At the same time, the Ability to accumulate savings increases with age, which is a direct reference to the Permanent Income Hypothesis and the Life Cycle Hypothesis (taking into account the age range of respondents). On the other hand, the discipline in current saving is a factor independent of age but conditioned by features characterising the resourceful individuals.

The positive relationship between Factor 2 and respondent age is completely natural and fully compatible with the Permanent Income Hypothesis and the Life Cycle Hypothesis. The result obtained for the variable economic resourcefulness is interesting, however. The lack of statistical significance for this explanatory variable means that pension saving is managed in a different way compared to other saving areas – to the extent to which it involves conscious planning of such savings. It is an essential indication that in order to increase private savings in this area, we need specific incentives. They should be oriented at this type of savings, related...
in particular to the promotion of long-term savings planning, which is not directly related to the level of economic resourcefulness. This lack of relationship may – at least partially – result from the specific situation of Poland, discussed at the beginning of this section. Relatively low income and the need to build wealth without the significant support of the generation of parents are aspects that we have to take into account in this context. They make people concentrated on the current situation. They also create the belief that there is no real opportunity to collect savings of significant value that would increase income during retirement. This result contradicts the predictions of the Life Cycle Hypothesis, in which saving for retirement is the primary motive for saving. However, it complies – especially taking into account the age of respondents – with Carroll's buffer-stock model of savings.

6. Borrowing behaviour in Poland

The second of the characterised areas of behaviour relates to borrowing. Due to the close relationship between saving and borrowing, the analysis of this area will be carried out according to the same scheme that we applied to the saving processes.

We used seven questions regarding various aspects of borrowing for the analysis. The basic descriptive statistics characterising the answers to these questions are presented in Table 4.

According to the data presented, almost 35% of respondents have loans or credits. Out of this group, over 48% are borrowers repaying a mortgage (in the entire sample, they constitute almost 17%). At the same time, over 37% of the entire sample is people who have credit cards.

The results of exploratory factor analysis (carried out using the principal component method), which enable the identification of related behaviours, are presented in Table 5.
Table 4. Descriptive statistics for questions related to borrowing

<table>
<thead>
<tr>
<th>Questions</th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you currently have loans or credits to pay off? (0 – no; 1 – yes)</td>
<td>902</td>
<td>0.35</td>
<td>0.48</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Do you currently have the mortgage to pay off? (0 – no; 1 – yes)</td>
<td>902</td>
<td>0.17</td>
<td>0.37</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>How did you manage to cover expenses – did you get loans or credits? (0 – no; 1 – yes)</td>
<td>902</td>
<td>0.02</td>
<td>0.15</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>How did you manage to cover expenses – did you not pay part of bills, loan instalments? (0 – no; 1 – yes)</td>
<td>902</td>
<td>0.03</td>
<td>0.16</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Please, assess to what extent the repayment of debts is burdensome for your household. (from 1 to 5: 1 – very low burden; 5 – very high burden)</td>
<td>902</td>
<td>1.08</td>
<td>1.59</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Do you have credit cards? (0 – no; 1 – yes)</td>
<td>902</td>
<td>0.37</td>
<td>0.48</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>How often in the last 6 months you have used the entire credit limit on at least one credit card? (from 1 to 5: 1 – never; 5 – always)</td>
<td>902</td>
<td>1.61</td>
<td>1.14</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 5. Borrowing – factor’s loading for the first three factors

<table>
<thead>
<tr>
<th>Questions</th>
<th>Factor’s loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1</td>
</tr>
<tr>
<td>Do you currently have loans or credits to pay off?</td>
<td>0.930</td>
</tr>
<tr>
<td>Do you currently have the mortgage to pay off?</td>
<td>0.826</td>
</tr>
<tr>
<td>How did you manage to cover expenses – did you get loans or credits?</td>
<td>0.067</td>
</tr>
<tr>
<td>How did you manage to cover expenses – did you not pay part of bills, loan instalments?</td>
<td>-0.011</td>
</tr>
<tr>
<td>Please, assess to what extent the repayment of debts is burdensome for your household.</td>
<td>0.944</td>
</tr>
<tr>
<td>Do you have credit cards?</td>
<td>0.118</td>
</tr>
<tr>
<td>How often in the last 6 months you have used the entire credit limit on at least one credit card?</td>
<td>0.101</td>
</tr>
<tr>
<td><strong>Eigenvalue</strong></td>
<td>2.729</td>
</tr>
</tbody>
</table>

Identified factors meet the minimum conditions specified previously. They explain 80% of the total variance (factors explaining less than 10% of the total variance were rejected), and their eigenvalues exceed 1. As in the case of saving, also in terms of borrowing, three factors were separated, related to three types of borrowing.

Factor 1 characterises a “conventional” borrowing – in the form of loans or credits, including mortgage loans. A very interesting aspect is that only this component is related to the nuisance
of repayment of liabilities, although this nuisance would be expected primarily in relation to Factor 3, or Factor 2. It suggests that credit cards are perceived mostly as a way of delaying payments (and transferring expenses between periods – Factor 2). Therefore they are not directly related to inconveniences being a consequence of indebtedness.

Factor 2 concerns borrowing with credit cards. Credit cards are, on the one hand, a payment instrument, but they also serve as a source of credit (for a broad analysis of the determinants of the use of credit cards – both in the area of propensity to use them and the amounts borrowed – see Castellani and DeVaney 2001 and Kim and DeVaney 2001). Due to the conservative credit policy of Polish banks, credit cards have not become in Poland as popular as in many other countries, such as the United States. Holders of these cards are a group of people with a relatively more stable financial situation (which is necessarily accompanied by a higher income level). Therefore these cards are typically not a tool for emergency borrowing (see the relationship between Factor 2 and Factor 3) – even when respondents use the entire limit in the card.

Emergency borrowing is described by Factor 3. It concerns a situation when debt is a consequence of difficulties in covering current costs. Although this type of indebtedness is the most dangerous form of debt, it is not – as already mentioned – associated with a sense of nuisance. At the same time, credit cards are not a tool for incurring this type of debt.

The presented results raise the question about the nature of the excessive borrowing phenomenon in the context of Polish households. Excessive borrowing and insufficient savings can be seen as a product of bounded rationality. Among the psychological mechanisms that can lead to this type of behaviour is distinguished myopia, procrastination, optimism bias, “miswanting”, and so-called cumulative cost neglect (see Sunstein 2006). The obtained results indicate that such behaviours are not necessarily related in Poland to forms of indebtedness
perceived as riskier (emergency debt, credit card debt). The main burdens – including burdens that are perceived by the respondents as onerous - are associated with “conventional” debt. Comparing the identified aspects of saving and borrowing, it is worth paying attention to the time horizon. While pension savings were separated as a distinct component, long-term loans (mortgages) came under one factor with other loans and credits.

Having identified aspects of indebtedness, in the second stage of the analysis, we can attempt to assess the significance of selected factors. To the set of analysed, potential determinants – as in the case of saving – economic resourcefulness, age and income level were included. OLS regression results are presented in Table 6.

Table 6. Determinants of factors identified for borrowing behaviour

<table>
<thead>
<tr>
<th>Economic resourcefulness (variable imputed on the basis of SEM)</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic resourcefulness</td>
<td>0.162***</td>
<td>0.182***</td>
<td>-0.174***</td>
</tr>
<tr>
<td>Age (in years)</td>
<td>0.016***</td>
<td>0.004</td>
<td>0.006</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.333***</td>
<td>-0.990***</td>
<td>0.613**</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.033</td>
<td>0.028</td>
<td>0.024</td>
</tr>
</tbody>
</table>

Note: *** p < 0.01, ** p < 0.05, * p < 0.10.

Regression results indicate no significant impact of age on Factor 2 and Factor 3. It means that in the analysed group (adults with higher education aged up to 45), both the level of credit cards usage and emergency borrowing do not depend on age. However, it is statistically significant for Factor 1: the tendency to indebtedness grows with age.

Taking into account previous considerations, the statistical significance of economic resourcefulness is of crucial importance. Obtained results indicate the significance of economic resourcefulness for all identified aspects of borrowing. However, it is worth paying attention to the sign of estimates. Resourcefulness is positively related to Factor 1 and Factor 2, and negatively to Factor 3. It means – considering the definition of the economic resourcefulness – that not only saving but also reasonable borrowing and the use of instruments such as credit
cards can be a factor that has a positive impact on the financial standing. This is in line with the economic perception of borrowing (especially concerning the Permanent Income Hypothesis). Borrowing is a natural activity stabilising the level of consumption and allowing for interim financial transfers (acceleration of consumption). An undoubted problem, however, is excessive consumption, which is not justified in the level of income achieved (both temporary and permanent). In this situation, the indebtedness is not planned and built into the concept of the life cycle. On the contrary, it is an ad hoc attempt to secure consumption needs and results from the current financial problems. The outcome of factor analysis indicates the separation of these two aspects. This type of behaviour negatively affects the long-term building of wealth and the economic stability of the household, which is reflected in the negative impact of economic resourcefulness.

7. Conclusions

The definition of the concept of economic resourcefulness indicates the possibility of identifying a certain set of features that are key to the “efficiency” of functioning on the market. Among them are not only aspects directly related to the economic dimension. No less important are personality traits, values in life and factors affecting self-confidence, feeling of “not being inferior”. This category of economic resourcefulness proved to help explain behaviour in the area of saving and borrowing. It is a step towards the identification of sets of significant features. Instead of assessing the impact of respondents' characteristics separately, we try to assess the impact of the compound category, which comprehensively describes the ability to cope with problems and challenges in the economic space.

The obtained results show a coherent picture of the behaviours of resourceful people. The resourceful people have a higher propensity to save, including short-term saving, oriented on the purchase of specific goods or services, which directly relates to financial discipline. These
people do not avoid borrowing – even in situations when it involves a significant burden on the household budget (which is very often the case in the case of mortgage loans). However, they are characterised by a lower tendency to indebtedness caused by financial problems which would indicate a limited ability to manage household finances effectively. An interesting exception – the area on which economic resourcefulness (defined in the manner adopted in this article) has no significant impact, is the conscious planning of retirement savings. On the one hand, it shows the specificity of such saving, which is crucial for building incentive systems aimed at promoting this type of saving. On the other hand, it shows that building pension security does not necessarily have to be positively related to the pursuit of good financial standing and economic stability in the short and medium term. It suggests the existence of a separate mechanism for collecting this type of savings. This distinction is particularly visible in the effects of factor analysis. The existence of retirement savings is not a differentiating factor – they appear both in total savings (which indicate the ability to accumulate savings) and in retirement savings. This is due to the difficulty of defining which savings constitute retirement savings – they can comprise all the savings, even if they were not collected for this purpose. The differences relate to having the plan for saving for retirement. It suggests that the features determining good functioning in the short and medium term do not necessarily assume solicitude for the more distant future, which is particularly visible among younger people (up to 45 years of age), who were included in this study. In a sense, it reflects a kind of trade-off between-strategy build upon the focus on achieving well-being in the short (medium) and long-term and refers to Carroll's buffer-stock model of savings.

As suggested by the results obtained, the sample specification adopted in the analysis helped to show the characteristics of the analysed group and eliminate the impact of many other potentially significant factors. However, it also constitutes a limitation and determines the
direction of further research – to what extent the obtained results can be generalised to the whole population of Poland and other countries.

Last but not least, it is worth stressing that econometric modelling – in its various forms – can reveal the co-existence of certain phenomena, and not fully identify causal relationships. Even methods that are directly aimed at the identification of causal relationships (such as Granger causality analysis) can hardly be considered fully satisfying and convincing. Therefore, the assessment of observed dependencies and mutual influences of analysed variables should be understood in the context of the co-occurrence of phenomena. Nevertheless, the relationships between economic resourcefulness and saving and borrowing behaviour turned out to be basically in line with the expectations – resulting from the literature review – with respect to their direction and significance. It may be a premise that the observed interdependencies are, indeed, of a causal nature, but it certainly does not fully confirm this. And the mentioned lack of influence of economic resourcefulness on retirement savings is a challenge and encouragement for further research rather than a simple statement that there is no relationship.

References


Appendix

Table A1. Economic resourcefulness, one-generational model – estimation results

<table>
<thead>
<tr>
<th>Regression Weights</th>
<th>Estimate</th>
<th>Standard error</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural equations for the latent variable economic resourcefulness (cause indicators)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic resourcefulness ← Emotional stability</td>
<td>0.178</td>
<td>0.038</td>
<td>0.000</td>
</tr>
<tr>
<td>Economic resourcefulness ← I appreciate: professional career</td>
<td>0.454</td>
<td>0.058</td>
<td>0.000</td>
</tr>
<tr>
<td>Economic resourcefulness ← Raised without a mother</td>
<td>-1.372</td>
<td>0.218</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Measurement model for the latent variable economic resourcefulness (effect indicators)

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>Standard error</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings ← Economic resourcefulness</td>
<td>0.958</td>
<td>0.087</td>
<td>0.000</td>
</tr>
<tr>
<td>Wealth ← Economic resourcefulness</td>
<td>0.356</td>
<td>0.03</td>
<td>0.000</td>
</tr>
<tr>
<td>Stable income ← Economic resourcefulness</td>
<td>0.282</td>
<td>0.021</td>
<td>0.000</td>
</tr>
<tr>
<td>Suitable job ← Economic resourcefulness</td>
<td>0.618</td>
<td>0.048</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Covariances

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>Standard error</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>I appreciate: professional career ↔ I can work as well as others</td>
<td>0.178</td>
<td>0.025</td>
<td>0.000</td>
</tr>
<tr>
<td>Emotional stability ↔ Raised without a mother</td>
<td>-0.021</td>
<td>0.009</td>
<td>0.019</td>
</tr>
<tr>
<td>Emotional stability ↔ I appreciate: professional career</td>
<td>0.183</td>
<td>0.036</td>
<td>0.000</td>
</tr>
<tr>
<td>Emotional stability ↔ I can work as well as others</td>
<td>0.229</td>
<td>0.036</td>
<td>0.000</td>
</tr>
</tbody>
</table>