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# Factors of Formation of Financial Behavior Types of Economic Entities

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## ABSTRACT

The research is focused on determining the factors influencing the formation of the types of financial behavior of economic entities. Determining the types of economic entities' financial behavior is necessary for implementing state economic policy measures. **The subject of the study** is the types of financial behavior reflecting the propensity of an economic entity to perform economic operations. Entities may exhibit active, adaptive, and reactive financial behaviors. **The purpose of the work** is to determine the key factors that influence the formation of types of financial behavior of economic entities. The study suggests that the formation of financial behavior types is caused by the influence of human, social and financial capital. The formation of financial behavior types is influenced by the basic characteristics associated with age, perception of the external environment, etc. The significance of certain factors is assessed using **statistical analysis**. The combination of these factors has a different impact on the formation of the type of financial behavior of an economic entity, but they can be significant under certain external conditions related to the economic situation. Because of the significance of individual factors, all economic entities form 'yadernye' (core) groups demonstrating a certain type of financial behavior, as well as groups of entities that change the type of financial behavior depending on the influence of the external environment. The change in financial behavior types is associated with a change in the strength of the impact of various factors that need to be considered in the dynamics. Entities with an active type of financial behavior, whose actions transform the external environment and stimulate other categories of entities to commit economic actions, are of significant interest for the analysis. The latter is especially actual for the financial market when entities with a reactive type of behavior under the influence of the information background commit rash actions leading them to financial losses. Based on the available sociological data, the study examines the main factors that lead to the formation of an active type of financial behavior. **As a result of** the construction of the econometric model, the authors **conclude** that the amount of available funds, the age of the respondent, the level of professional competence have a significant impact on the formation of an active type of financial behavior.

**Keywords:** financial behavior; economic policy; risk; government regulation; human capital; social capital; behavioral expertise; volatility; cash flows

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## INTRODUCTION

This study reveals a methodological approach to determining the factors influencing the formation of types of financial behavior of economic entities.<sup>1</sup> Economic entities in their activities can demonstrate active, adaptive and reactive types of financial behavior [1]. Demonstration by a group of entities of one type of financial behavior leads to the formation of a dominant type of financial behavior at the macro level, which has a significant impact on the sustainability of economic development (for example, in the distribution of cash flows). [2]. Changes in the types of financial behavior lead to an increase in the volatility of economic processes, which is expressed in the commission of spontaneous economic transactions by entities. The latter is particularly significant in the financial market, when business entities, under the influence of changes in the information background, take actions that lead to losses. Conducting non-optimal operations may be associated with chaotic actions of entities which do not have sufficient experience and knowledge to conduct operations in the financial market. Massive deposits of investors in the Finiko<sup>2</sup> financial institution is an example of such a situation.

To reduce possible losses, the Bank of Russia is currently developing the practice of conducting “behavioral expertise”, which involves the development and application of a methodology for classifying economic entities depending on their propensity to take hasty actions.<sup>3</sup> The Bank of Russia

conducts “behavioral expertise” to identify investors who do not fully understand how financial instruments work to protect them from future losses. In addition, the Bank of Russia may face other urgent tasks to identify entities prone to “speculative operations” that can lead to the realization of systemic risks in the financial market. Successful expansion of the practice of applying “behavioral expertise” requires the simultaneous development of the theory of behavior of economic entities.

Behavior is the propensity of the entity to perform certain actions.<sup>4</sup> The propensity to perform actions reflects the attitude of the entity to the possibility of performing a certain action, considering the state of the external environment. Entities with an active type of financial behavior analyze emerging opportunities and take active actions aimed at changing the external environment. An example of such a situation is the purchase by Reddit users of the shares of the unprofitable company GameStop. The actions of users, and further support from Elon Musk, led to a change in the dynamics of the share price.<sup>5</sup> Thus, it is the actions of entities with an active type of financial behavior that can enhance the ongoing changes in the external environment.

Entities with an adaptive type of financial behavior, observing changes in the external environment, perform adaptive actions aimed at preserving their capital and income. An example of the formation of an adaptive type of behavior is a positive decision on the participation of a number of Russian banks in a pilot project to test the digital ruble.<sup>6</sup> Banks assessed the prospects for introducing a digital ruble and decided to adapt to the proposed innovation at an early stage.

<sup>1</sup> Economic entities are understood as both individuals and legal entities. For legal entities, the formation of a financial type of behavior depends on the top management of the organization, whose policy determines the business operations performed. Each legal entity is headed by people with certain professional experience and accumulated knowledge. That is why the actions of legal entities are “behavioral”, which makes it possible to apply behavioral concepts to analyze their activities.

<sup>2</sup> URL: <https://quote.rbc.ru/news/article/6054a79a9a7947f9a3755aca> (accessed on 15.03.2022).

<sup>3</sup> The results of the behavioral due diligence, for example, were published in 2021 in a document of the Bank of Russia (“Report on the results of the behavioral expertise testing of unqualified investors”).

<sup>4</sup> This study highlights economic actions in the field of finance. At the same time, this approach can be applied to the analysis of other activities.

<sup>5</sup> Meme investors against Wall Street. LLC Journal Company. URL: <https://ko.ru/articles/mem-investory-protiv-uoll-strit/> (accessed on 10.03.2021).

<sup>6</sup> The first pilot group to test the digital ruble. URL: <https://www.cbr.ru/press/event/?id=11000> (accessed on 13.02.2022).

Entities with a reactive type of financial behavior in most cases do not take active actions or take them out of time. An example of a reactive institution is KfW Bankengruppe,<sup>7</sup> which made a payment to Lehman Brothers on the day of its bankruptcy, which made a payment to Lehman Brothers on the day it went bankrupt. The sequence of actions of entities with active, adaptive and reactive types of behavior plays a significant role in understanding the dynamics of economic development and can be expressed in the emergence of large-scale behavioral cycles that are an integral part of the economic cycle [1].

In turn, at present there is no answer to the question of the factors and causes leading to the emergence of a certain type of financial behavior of entities in economic systems [3]. Obviously, the type of financial behavior is the result of external and internal factors affecting the entity at a particular point in time. In this regard, it is necessary to classify factors to assess the current type of financial behavior of an economic entity. The identification of significant factors will make it possible to predict the further actions of the entities, which is important from the point of view of maintaining their level of financial stability.

The second question is the assessment of the possibility of one and the same entity to predominantly demonstrate a certain type of financial behavior. It is necessary to answer the question: is the type of financial behavior of the entity a constant value or is it constantly changing under the influence of external factors? The study shows that the type of financial behavior of business entities can change over a certain period of time. However, the periods of manifestation of a certain type of financial behavior can be quite long (calculated in years, and even decades). As a result, the study suggests the existence of 'yadernye' (core) groups that consistently exhibit a certain type of

financial behavior. In turn, some entities periodically change their type of financial behavior depending on the situation. In connection with the change in the type of financial behavior, there is a redistribution of the number between the main groups of entities, there is a change in the structure of the capital accumulated by them. The composition of the 'yadernye' (core) groups of economic entities determines the direction of economic development. The latter is connected, among other things, with the possibility of lobbying certain economic decisions and stimulating their adoption [4]. To determine the 'yadernye' (core) groups it is necessary to develop an original approach that makes it possible to statistically evaluate the factors influencing the formation of the types of financial behavior of economic entities.

The presented study includes several main sections. Initially, a classification of the main factors influencing the formation of types of financial behavior is proposed. In the future, an empirical analysis of the significance of certain factors is carried out on the basis of the available sociological databases. Ultimately, the main provisions on the mechanism for the redistribution of entities between different types of financial behavior, and approaches to the definition of 'yadernye' (core) groups of economic entities, are revealed.

## LITERATURE REVIEW

The type of behavior reflects the propensity of the entity to perform certain actions. The type of behavior differs from the concepts of "expectation" and "actual action". The implementation of a set of business transactions (actions) is the result of a formed type of financial behavior of the entity, which depends on the expectations regarding each individual transaction. Understanding the essence of behavior solves one of the questions of economic science about how the expectations of entities are transformed into actions. The key difference between behavior and expectations is that

<sup>7</sup> Uproar Over German Bank's Payout to Lehman. URL: <https://www.nytimes.com/2008/09/19/business/worldbusiness/19kfw.html> (accessed on 13.02.2022).

expectations are formed in relation to a specific event.

It is necessary to consider the type of financial behavior, representing a certain list of actions that an entity can perform in the financial sector. Jakob Fugger is an example of an entity who, throughout his life, took active actions aimed solely at making a profit. It is obvious that Jakob Fugger had expectations about each proposed operation. Expectations were constantly changing, but in general he always showed the dominant active type of behavior.

By itself, the type of financial behavior does not reflect the fact of action. The performance of an action can be limited by psychological barriers, the system of state regulation, a significant level of information asymmetry [5], etc. The difference in the direction of the action arises when analyzing possible alternatives. Some actors initiate actions, some support the actions being taken, and some remain on the sidelines. The propensity to choose actions of a certain direction allows us to classify the types of financial behavior of entities into active, adaptive and reactive.

*Entities with an active type of financial behavior* are prone to actions aimed at changing the external environment. An example of an entity demonstrating an active type of behavior is PJSC Sberbank, which is creating its own digital ecosystem.<sup>8</sup> Another example illustrating the existence of an entity with an active type of financial behavior is the story of George Soros, who “ruined the Bank of England”.<sup>9</sup> In practice, an entity with an active type of financial behavior cannot always, like George Soros, change the external environment, but he can anticipate changes and take active actions. Probably, such an entity is also adaptive to some extent, since in economic

interaction there is always a leader and a follower entity [4]. However, his actions would not be so destructive if they were not supported by other players who adapt to the situation.

*Entities with an adaptive type of financial behavior* observe changes in the external environment caused by the actions of entities with an active type of financial behavior. Changes can be expressed in increased volatility of cash flows, which leads to price fluctuations, changes in the information background. Entities with an adaptive type of financial behavior try to perform actions that correspond to the trend set by entities with an active type of financial behavior and are aimed at increasing (or maintaining) their own income. Such entities usually do not have sufficient funds to change the parameters of the external environment (or access to the most relevant information), but reinforce the trends laid down by the actions of entities with an active type of financial behavior. Thus, the entities with an adaptive type of financial behavior increased pressure on the pound sterling caused by the actions of D. Soros, in connection with which the Bank of England had to devalue the pound sterling. In the event that entities with an adaptive type of financial behavior would not have supported the actions of D. Soros, such significant consequences for the economic development of England might not have arisen. At the same time, the entities with a reactive type of financial behavior suffered the greatest losses, which did not take any action, and whose savings were transferred to entities with an active-adaptive type of financial behavior.

*Entities with a reactive type of financial behavior*, theoretically do not take actions related to a change in the external environment. In practice, some of them may randomly perform certain actions, striving to become adaptive, but this only leads them to large economic losses. For example, in a situation of currency fluctuations,

<sup>8</sup> Sber digital ecosystem. URL: <https://www.sberbank.com/ru/eco> (accessed on 13.02.2022).

<sup>9</sup> George, you are a cowboy. Why do they hate and fear the billionaire Soros? Lenta.ru. URL: <https://lenta.ru/articles/2017/09/04/everybodyhatesgeorge/> (accessed on 10.03.2021). Soros took active steps to devalue the pound.



entities with a reactive type of financial behavior realize the changes taking place too late and most often buy currency during periods of maximum exchange rate. As a result, they lose their savings, which are transferred to entities with an active-adaptive type of financial behavior. Entities with a reactive type of financial behavior are perhaps the largest group, and therefore it is their actions that are mainly identified through the analysis of macro indicators (for example, when changing the dynamics of cash flows). Entities with an active type of financial behavior constitute the smallest group.

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***The Bank of Russia is faced with the task of identifying entities with an active type of financial behavior to reduce the probabilities of possible illegal financial speculations.***

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A natural question arises: what determines the propensity of the entity to commit certain actions? It is advisable to apply various interdisciplinary approaches depending on the dominant factors that are significant at a certain point in time. In particular, the resource theory proceeds from the fact that the actions of entities depend on the amount of accumulated resources [6]. Based on the analysis of the literature, five main groups of factors can be distinguished that determine the formation of the type of financial behavior of economic entities: human capital, social capital [7], financial capital, main characteristics and parameters of external environment (*Table 1*).

For legal entities, human, social capital and key characteristics can be determined considering the accumulated management capital of the organization. In particular, the quality of social ties of a legal entity affects the possibility of “rescue” during a crisis. An example of such a situation is the story

of General Motors during the 2008 global financial crisis.<sup>10</sup>

Human and social capital are among the resources analyzed using the tools of sociology and psychology. For legal entities, it is also possible to analyze the social ties of top managers, which provide an opportunity for the exchange of information and resources. It is advisable to analyze the volume of financial capital using economic tools that allow analyzing, among other things, the balance sheets of organizations, the level of wages, etc. The main characteristics and parameters of the external environment include various characteristics, some of which change over time. Constant characteristics include time, place of birth, age. These parameters are less variable and depend on natural features. Other parameters (for example, the dollar exchange rate) are highly volatile. They largely determine the propensity of entities to commit actions.

Each of the three types of capital, as noted above, is a resource. The accumulation of capital increases the likelihood of falling into the category of entities with an active type of financial behavior (*Table 2*). Human capital includes characteristics related to the level of education, previous experience. In fact, it reflects the level of accumulated knowledge, skills and abilities. There are a number of basic psychological characteristics associated with effective financial behavior, among which are such characteristics as: personal qualities [8], the ability for long-term planning [9], the ability to make quick decisions in a situation of uncertainty, activity and readiness for reasonable risk, striving for success [10]. The main characteristics are associated with the characteristics of the entity, and the remaining parameters are formed under the influence of experience.

Social capital is considered from the standpoint of the amount of resources

<sup>10</sup> General Motors as a barometer for the US economy. URL: <https://m.lenta.ru/articles/2013/12/13/gmagain> (accessed on 13.02.2022).

Table 1

**Systematization of parameters influencing the formation of dominant types of financial behavior of economic entities**

| Group                                  | Characteristic  |
|--|---|
| Human capital                          | Human capital is determined by the achieved level of education, acquired professional experience. Accumulated knowledge determines the propensity of the entity to perform actions  |
| Social capital                         | Social capital is determined by the quantity and quality of contacts between business entities  |
| Financial capital                      | Financial capital determines the general level of wealth of an economic entity and the amount of free funds that it can quickly use   |
| Basic parameters                       | Basic parameters exist regardless of the entity's actions. These parameters include place of birth, age, etc.   |
| Parameters of the external environment | Parameters of the external environment generally do not depend on the individual actions of the economic entity. These include, for example, information about the global crisis, the dynamics of the COVID-19 pandemic, etc. |

Source: compiled by the authors.

that can be obtained through the existing system of relations [11]. The assessment of social capital is carried out by analyzing the number of social contacts, their quality, and the possibility of providing additional information. The size of social capital determines the possibilities of knowledge transfer [12].

Financial capital reflects the amount of free cash (the size of the budget constraint) that can be mobilized if necessary for business operations. Basic characteristics include an assessment of the main elements related to age, place of birth. Also, the basic characteristics involve considering psychological characteristics, including gambling and the level of optimism of the economic entity.

The indicators listed above reflect the main aspects that lead to the formation of a certain type of financial behavior. Each of these factors determines the propensity of

the entity to perform the action. To check the significance of the influence of these parameters on the entity's propensity to perform an action, it is advisable to conduct an empirical analysis. Particular attention should be paid to determining the factors influencing the formation of an active type of financial behavior. Interest in entities with an active type of financial behavior is associated with their significant role in terms of influencing the external environment. The actions of entities with an active type of financial behavior lead to fluctuations in the economy, and mainly in financial markets. Financial markets are their object of interest due to the possibility of quick profit. When making business transactions, they change the information background, stimulating entities with an adaptive and reactive type of financial behavior to make business transactions. As a result, they make a profit through the "aggressive" redistribution of

Table 2

**Systematization of factors and issues that allow determining the type of financial behavior of an economic entity**

| Group               | Characteristic                                      | Description   |
|---------------------|---|---|
| Human capital       | Level of education                                  | The lack of knowledge will not allow the entity to take active actions leading to additional income. Increasing the level of education will help to demonstrate an active type of financial behavior. Raising the level of financial literacy can have a significant impact [13]  |
|                     | Previous experience                                 | Previous experience determines the amount of accumulated skills, knowledge, etc.  |
|                     | Reasonable risk appetite                            | Assesses the entity's attitude to uncertainty, which is largely related to previous experience of being in a particular situation. Unlike gambling, it is determined by the specific situation, the circumstances of the case and the knowledge of the probability of an unfavorable outcome. Gambling is not related to the objective understanding of the situation. This is the main feature of the entity |
|                     | Long-term planning ability                          | If the entity cannot plan long-term, then it will not take active actions. It must understand long-term trends in the economy and be able to delay the satisfaction of needs. The planning horizon is important. It should be noted that entities with an adaptive type of financial behavior probably do not adapt, but reflect depending on the specific situation  |
| Social capital      | The number of social contacts                       | Social capital reflects the presence of a large number of contacts, ways of obtaining information, and the ability to build relationships [14]  |
|                     | The quality of social contacts                      | When analyzing social capital, one can consider the network of social capital. Entities with an active type of financial behavior have positive social capital. The presence of negative social capital contributes to the manifestation of a reactive type of financial behavior   |
|                     | Access to information                               | If there is no access to information, then the entity will not be able to receive objective data, and therefore, to perform optimal actions   |
| Financial capital   | Availability of funds/size of the budget constraint | If an entity does not have funds, then even if desired, it will not be able to carry out business operations. An entity with an active type of financial behavior has sufficient funds  |
|                     | The amount of free cash                             | In addition to a significant amount of material wealth, the entity must have a sufficient amount of free cash, which it can dispose of in the event of a change in the external environment [15]  |
| Main characteristic | Age   | With age, a person becomes less active, and therefore he can change his type of financial behavior from active to reactive. That is why it is necessary to take into account age characteristics when analyzing the financial behavior of the entities [16].  |
|                     | Gender  | The conducted studies demonstrate an increased propensity of males to take risks, which suggests the influence of this characteristic on a person's propensity to act   |
|                     | Gambling  | In addition to understanding the situation, an individual may have a desire to get more money, to beat other entities. The characteristic is associated with the search for thrills, is basic and depends on the psychological characteristics of the individual  |
|                     | Level of optimism                                   | Although actors operate during the boom and bust phases of the business cycle, those who engage in active financial behavior still hope to reap some benefit. The level of optimism and trust in a financial instrument determines the propensity of the entity to perform business transactions [17]   |

Source: compiled by the authors.

funds from entities with a reactive type of financial behavior, which can lead to systemic risks. In this regard, the Bank of Russia is faced with the task of identifying entities with an active type of financial behavior to reduce the probabilities of possible illegal financial speculations.

### EMPIRICAL ASSESSMENT OF DOMINANT TYPES OF FINANCIAL BEHAVIOR OF ECONOMIC ENTITIES

#### Data description

Currently, there is no database that makes it possible to unambiguously assess the formation of a certain type of financial behavior of an economic entity. To do this, it is advisable to conduct a separate sociological study. At the same time, it is possible to use the accumulated sociological databases and, in particular, the Russian Longitudinal Monitoring Survey of the Higher School of Economics (RLMS HSE).<sup>11</sup> This study presents the analysis carried out using data generated in the specified sociological database in 2018. The information available in this database does not allow assessing the factors that form the type of behavior of a legal entity. An assessment of the types of behavior of legal entities is possible on the basis of financial indicators and requires additional analysis in terms of compiling the necessary list of them.

#### Dependent variable

The content of the dependent variable was formulated based on ideas about the qualitative features (phenomenology) of an entity with an active type of financial behavior. In our understanding, this is a person with influence and capital, enterprising and content with life. When conducting an econometric assessment,

four categories of indicators were used to determine the dependent variable, allowing the entity to be classified as an entity with an active type of financial behavior:

**Question 1:** “Imagine a ladder of 9 steps, those who are completely deprived of rights are on the bottom step and those who have great power are on the top step. Which of the nine steps are you personally on today?” The values range from 1 to 9. This question considers the entity’s assessment of his ability to receive information and freedom of action. Entities who believe they have power are more likely to display an active type of financial behavior.

**Question 2:** “Imagine a ladder of 9 steps, the poor are on the bottom, first step, and the rich are on the highest, ninth step. Which of the nine steps are you personally on today?” The values range from 1 to 9. This question considers the degree to which the entities assess their financial capabilities. If the entity highly appreciates financial opportunities, then in this case he will be more inclined to demonstrate an active type of financial behavior.

**Question 3:** “Have you ever tried to organize your own enterprise, start your own business?”. The values for this indicator are presented as a binary variable (0 — did not try, 1 — tried). If the respondent tried to start his own business, he demonstrated the desire to influence the state of the external environment. Accordingly, in the past, he was inclined to demonstrate an active type of financial behavior.

**Question 4:** “How satisfied are you with your life in general at present?” The values of this indicator range from 1 to 5, where 5 is the maximum satisfaction. This question assesses the degree of satisfaction, which determines the desire of the entity to take actions aimed at changing his well-being.

Considering the fact that the indicators presented above have different dimensions, the obtained values were converted into percentages (using the calculation of proportions). Subsequently, each of the obtained values was weighed with a weight

<sup>11</sup> Russian Longitudinal Monitoring Survey of the Higher School of Economics and Demoscope LLC with the participation of the Population Center of the University of North Carolina at Chapel Hill and the Institute of Sociology of the Federal Research Sociological Center of the Russian Academy of Sciences. URL: <http://www.cpc.unc.edu/projects/rlms> and <http://www.hse.ru/rlms> (accessed on 25.02.2021).



Table 3

**Distribution of entities by type of financial behavior**

|  | Quantity | Distribution, % |
|--|----------|-----------------|
| Entities with a reactive type of financial behavior  | 10,659   | 87.65           |
| Entities with an adaptive type of financial behavior | 1,240    | 10.2            |
| Entities with an active type of financial behavior   | 262      | 2.15            |

Source: compiled by the authors.

equal to 0.25. As a result, a general index was obtained in the range from 0 to 100. The theoretical premises stated earlier are confirmed. The smallest number of respondents demonstrate an active type of financial behavior. The largest number of respondents demonstrate a reactive type of financial behavior. Accordingly, to classify economic entities in the sample, the values of standard deviations were calculated, and the average values:

1) if the value of the aggregate index was from 72.6 inclusive, then such a respondent was classified as an entity with an active type of financial behavior;

2) if the value of the aggregate index was from 53.3 inclusive to 72.6, then such an economic entity was classified as an entity with an adaptive type of financial behavior;

3) if the value of the aggregate index was up to 53.3, then such an economic entity was classified as an entity with a reactive type of financial behavior.

As a result of the calculations, the dominant group turned out to be entities with a reactive type of financial behavior (Table 3).

To the least extent, there are entities with an active type of financial behavior, which corresponds to the previously stated theoretical provisions. It should be noted that in practice, determining the type of financial behavior of an economic entity requires a separate sociological study, which

includes a set of target questions. Actors with influence and money have enough resources, and financial and social capital to act.

The proposed approach to the calculation of the aggregated index makes it possible to assess how the entity assesses its current capabilities, considering the influence of past factors, and guidelines for the future. The entities with an active type of financial behavior, whose actions change the external environment are of considerable interest for analysis. It seems appropriate, on the basis of the available sociological data, to determine the factors influencing the formation of an active type of financial behavior.

#### **Determination of factors influencing the formation of an active type of financial behavior**

When determining the factors influencing the formation of an active type of financial behavior, it is advisable to use the previously described theoretical approach. At the same time, it is necessary to consider the basic characteristics that affect the ability of the entity to perform certain actions (Table 4).

The above indicators reflect the main factors that determine the possibility of forming an active type of financial behavior. The indicator that takes into account the age of the respondent is of considerable interest. The following hypotheses can be put forward here:

Table 4

**Variables used in determining significant factors that influence the formation of active financial behavior by entities**

| Variable                                      | Characteristic   | Average value |
|---|--|---------------|
| <b>Human capital</b>                          |  |               |
| Level of education                            | This variable represents the level of education, where 1 is the lowest level (primary and junior high school) and 14 is the highest level (Ph.D.). When forming the variable, the specialist degree corresponds to the master's degree, the postgraduate diploma corresponds to a candidate of sciences degree   | 5.99          |
| Evaluation of personal professional qualities | Results of evaluating the answer to the question: "Imagine a ladder of professional excellence", consisting of 9 steps, where step 1 is the level of a beginner student, 9 is the level of "high professional class". Which of them would you classify yourself as? Thus, 9 is the maximum personal assessment of professional qualities, and 1 is the minimum                   | 5.48          |
| <b>Social capital</b>                         |  |               |
| Knowledge of a foreign language               | This variable uses an indicator of knowledge of a foreign language (knowledge of the national languages of the republics that were part of the USSR was not considered). 1 – know, 0 – do not know. If a person speaks a foreign language, then most likely he will have a large social capital  | 0.2           |
| Internet use                                  | This variable considers the ability to obtain information. The variable was obtained as a result of the analysis of the answer to the question: "Have you used the Internet during the last 12 months for work?", where 1 – yes, 0 – no  | 0.43          |
| <b>Financial capital</b>                      |  |               |
| Opportunity to improve living conditions      | This variable uses the answer to the question: "Do you or your family have the opportunity, if you wish, to improve your living conditions – buy a room, apartment, house?", 1 – yes, 0 – no. If yes, then most likely the respondent has a sufficient amount of free financial capital  | 0.092         |
| Bank card                                     | This variable uses the answer to the question: "Do you have a bank card?", where 1 – yes, 0 – no. The variable reflects the level of financial activity of the respondent  | 0.73          |
| <b>Main characteristics</b>                   |  |               |
| Age 18–29                                     | This binary variable takes the value 1 if the age is within the specified range, 0 – otherwise   | 0.11          |
| Age 30–49                                     | This binary variable takes the value 1 if the age is within the specified range, 0 – otherwise   | 0.28          |
| Age 50–69                                     | This binary variable takes the value 1 if the age is within the specified range, 0 – otherwise   | 0.28          |
| Age 70+                                       | This binary variable takes the value 1 if the age is within the specified range, 0 – otherwise   | 0.12          |
| Gender  | Male – 1, female – 0   | 0.43          |
| Level of optimism                             | This variable considers the level of optimism that the respondent demonstrates. The variable uses the answer to the question: "Do you think in 12 months you and your family will live better or worse than today?". If according to the respondent, his life will improve, then 1 point is given, if it worsens – 0. The answer "nothing will change" is considered as positive | 0.84          |

Источник / Source: составлено авторами / compiled by the authors.

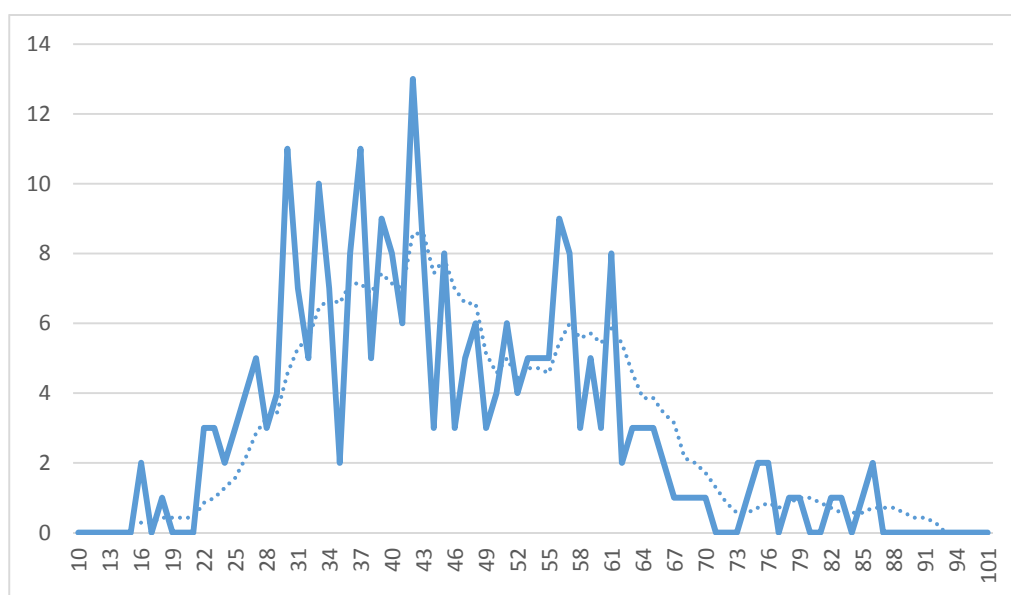


Fig. 1. Distribution of entities by types of financial behavior depending on age

Source: compiled by the authors.

**Hypothesis 1.** *With age, the entity will tend to demonstrate more adaptive and reactive types of financial behavior.*

### *The availability of financial capital leads to the formation of an active type of financial behavior.*

This hypothesis is due to the fact that the activity of the entity will tend to decrease due to objective biological indicators. In turn, an increase in age will lead to an increase in the level of influence and disposable income, allowing for active actions. Thus, although younger entities are prone to an active type of financial behavior, they do not have the ability to perform the desired actions.

If we look at the distribution of entities depending on age, it is obvious that a significant number of entities with an active type of financial behavior falls into the range from 30 to 43 years. A certain jump in activity growth is also observed among respondents aged 55 to 64, after which the level of activity begins to decline. At the same time, with age, the entities show a tendency to reduce the

likelihood of demonstrating an active type of financial behavior.

An analysis of the age composition of entities by types of financial behavior allows us to distinguish two main categories of entities with an active type of financial behavior: young entities who are prone to an active type of financial behavior but do not have sufficient resources to significantly influence the external environment, and mature entities who do not have a psychological propensity to commit active actions but possess the necessary amount of money. These two groups can be observed based on the analysis of the data presented in Fig. 1.

**Hypothesis 2.** *The size of available financial capital determines the inclination of entities to act actively.*

If the entity has financial capital, then it is likely to be more prone to active actions. Entities that do not have funds do not have the opportunity to take active actions. Most likely, they will demonstrate a reactive (or adaptive) type of financial behavior.

### **Econometric evaluation and analysis of the results**

To test these hypotheses, it is advisable to build a binary regression. First, a regression

Table 5

## Results of econometric analysis

| Variable                                      | Results for a model with all variables | Results for a model with significant variables | Average marginal effects |
|---|--|--|--------------------------|
| Level of education                            | 0.0028156                              |  |                          |
| Assessment of personal professional qualities | 0.0427418**                            | 0.0519207***                                   | 0.0034982***             |
| Knowledge of a foreign language               | 0.2824059***                           | 0.2874272***                                   | 0.0193659***             |
| Internet use                                  | 0.3865077***                           | 0.4059782***                                   | 0.0273534***             |
| Opportunity to improve living conditions      | 0.6731121***                           | 0.6714557***                                   | 0.0452404***             |
| Bank card                                     | 0.1421961                              |  |                          |
| Age 18–29                                     | 0.1442795                              |  |                          |
| Age 30–49                                     | 0.4402503*                             | 0.2905798***                                   | 0.0195783***             |
| Age 50–69                                     | 0.3981508                              | 0.2519933**                                    | 0.0169785**              |
| Age 70+                                       | 0.4456968                              |  |                          |
| Gender  | 0.3221758***                           | 0.3196907***                                   | 0.0215397***             |
| Level of optimism                             | 0.4825447***                           | 0.475602***                                    | 0.0320445***             |
| Remains                                       | –3.65131***                            | –3.414439***                                   |                          |
| Number of observations                        | 5,401                                  | 5,410  | 5,410                    |
| Regression significance (Prob > chi2)         | 0.0000                                 | 0.0000   |                          |

Source: constructed by the authors.

Note: the asterisks reflect the p-value: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

with all variables will be built, after which a regression with significant variables will be built (Table 5).

The resulting regressions were significant. The value under the ROC curve was 0.79. The indicator of the qualifying table also turned out to be quite high (96.52%). Correlation analysis showed no high correlation between explanatory variables. Thus, the results can be considered reliable.

The conducted regression analysis partially confirmed the hypotheses put

forward in the study. The availability of financial capital leads to the formation of an active type of financial behavior. This hypothesis was confirmed by analyzing the answer to the question about the opportunity of acquiring property.

A rather interesting result was obtained for age indicators. Respondents aged 30 to 70 tend to demonstrate an active type of financial behavior, which is combined with the assumption that in order to form an active type of financial behavior, it is

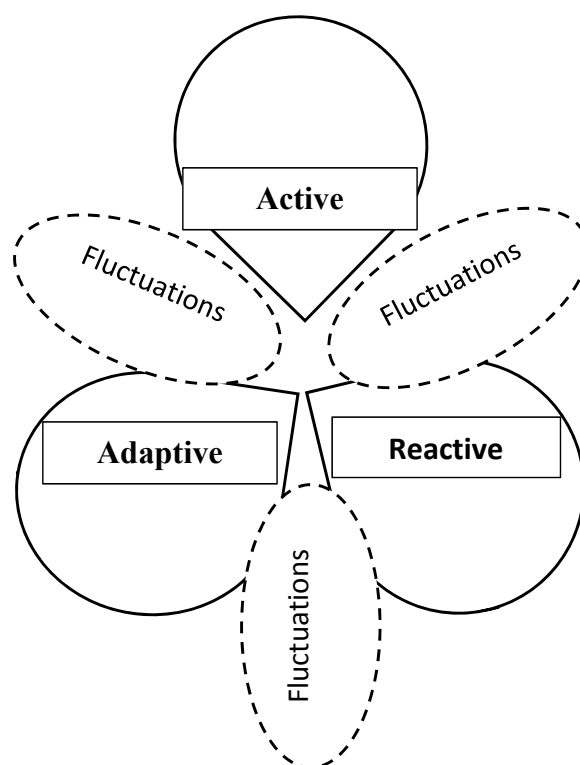
necessary to accumulate the necessary amount of capital. In turn, respondents aged 30 to 49 show great prospects for the formation of an active type of financial behavior than respondents aged 50 to 69. This fact confirms the assumption that the performance of active actions is also determined by the personal characteristics of the entities, and not solely by the accumulated volume of influence and money [18].

Information about the knowledge of a foreign language, and the use of the Internet, also turned out to be significant parameters. An entity prone to the formation of an active type of financial behavior will probably try to actively interact with other entities, including through the use of modern digital means of interaction [19]. Moreover, he will have the opportunity to acquire additional knowledge. Accordingly, he will demonstrate an active type of financial behavior.

Thus, the conducted econometric analysis demonstrates the significance of individual parameters for the formation of an active type of financial behavior of entities. In turn, the set of these parameters may vary depending on the time period. In this logic, the answer to the question of the possibility of forming a sustainable type of financial behavior of an economic entity is not given.

#### **Methodological approach to the definition of the type of financial behavior of an economic entity**

Econometric analysis has shown that certain factors lead to the formation of the type of financial behavior of an economic entity. The concept of types of financial behavior of economic entities is an intermediate link between the formed expectations of an economic entity and the actions performed by it. Econometric assessment makes it possible to determine the values that allow us to compare the degree of influence of each factor on the formation of the type of financial behavior. A natural question arises



*Fig. 2. 'Yadernye' (core) groups and entities with a variable type of financial behavior*

*Source: compiled by the authors.*

about the classification of economic entities within the types of financial behavior. It is possible to talk about the existence of certain 'yadernye' (core) groups, i.e. categories of entities that will constantly demonstrate the formed type of financial behavior. Naturally, among the indicated categories of entities, there are groups that can every now and then change their type of financial behavior (Fig. 2). The formation of 'yadernye' (core) groups is determined by the stability of factors related to human, social, and financial capital. If these factors are stable, then the entity is likely to exhibit a certain type of financial behavior over an extended period of time. Examples of such legal entities among banks in Russia are PJSC Sberbank, VTB Bank (PJSC), etc. Thus, the 'yadernye' (core) group is a constant, it differs not only in the type of financial behavior but also in the frequency and duration of demonstration of such behavior.

In particular, the strength of the potential impact of an entity with an active type of



financial behavior on foreign markets is determined by the amount of available free capital. If an entity with an active type of financial behavior has a significant amount of funds, then it can influence the markets (for example, D. Soros, Jakob Fugger). If the entity has a shortage of funds, then it will always demonstrate a reactive type of financial behavior. Such an entity will, first of all, think about meeting the basic needs of life. It will not be able to take active and adaptive actions. Fluctuating groups between 'yadernye' (core) groups arise from the predominance of variable factors in terms of the three types of capital. Entities change their type of financial behavior under the influence of the external environment. To assess the potential impact of types of financial behavior at the macro level, it is necessary to consider the factors of distribution of funds between groups of entities, and the distribution of entities by number.

In the process of life, entities can change their type of financial behavior under the influence of experience and life circumstances. In particular, even if the entity demonstrates an adaptive type of financial behavior, its income will decrease by the time of retirement. This fact was confirmed in the analysis of the influence of age characteristics on the formation of an active type of financial behavior. With age, the entity's ability to receive information decreases, and the level of available financial capital. In this case, the entity, most likely, will first demonstrate an adaptive type of financial behavior, and then move on to the formation of a 'yadernye' (core) reactive type.

Another important aspect is that within each type of financial behavior there are certain subgroups. In particular, entities with a reactive type of financial behavior may not take any action, regardless of changes in the external environment. In turn, some entities with a reactive type of financial behavior will take belated action, which will lead to significant

losses for them. As a result, the volume of investments of entities with a reactive type of financial behavior will create "fuel" for the enrichment of entities with an active type of financial behavior and some entities with an adaptive one. It should be noted that changes in the level of income of entities occur during periods of crisis [20]. During periods of economic growth, all categories of entities, regardless of the type of financial behavior, will receive additional income. Problems will be observed during periods of crises, which are critical both in terms of changing the structure of the economy and in terms of fluctuations in the propensity of entities to conduct business transactions.

## CONCLUSIONS

The research showed that the formation of the type of financial behavior of an economic entity is influenced by various factors related to psychological characteristics, the level of education, professional experience, etc. During their life, economic entities can demonstrate a very specific type of financial behavior, thereby creating 'yadernye' (core) groups, the share of which in the structure of entities remains approximately at the same level. Some economic entities will move between groups depending on specific points in time. The transition between groups occurs due to changes in the amount of accumulated human, social and financial capital.

The analysis carried out confirms the need for targeted sociological research aimed at determining the types of financial behavior of economic entities. It is necessary to conduct further research in this area to determine the methodology for calculating the coefficient that allows for assessing the propensity of the entity to form a certain type of financial behavior. Such a technique should allow analyzing the existing type of behavior of both individuals and legal entities. To do this, it is advisable to use the methodological approaches outlined in this research.

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### ***Authors' declared contribution:***

**V.V. Maslennikov** — developed the conceptual framework for research, formalized the types of behavior of economic entities and the mechanism for determining “yadernye (core)” groups and entities with a variable type of economic behavior.

**A.V. Larionov** — prepared the literature review, performed the econometric analysis, developed the concept of the influence of human, social and financial capital on the formation of behavior types of economic entities.

**M.A. Gagarina** — selected specific variables for econometric analysis, described the process of behavior formation from the perspective of psychology, disclosed the concept of social capital quality.

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