Cognitive Modeling of Sustainability of the Russian Financial Market

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Abstract

Object: The stability of the financial market is one of the most important components of the inflow of capital into the country and ensuring economic growth. Cognitive modeling of stability of the Russian financial market is carried out.

Purposes: Drawing up a cognitive map of the Russian financial market, impulse modeling of changes in its segments in order to find the main factors of stability of the national financial market.

Methodology: Cognitive research methods: cognitive analysis and cognitive modeling.

Result of research: The stability of the financial market is formed due to the cumulative effect of all its segments. However, the Russian financial market is most sensitive to changes in the money market, foreign exchange market, corporate and government borrowing market. Despite the sanction’s restrictions, the domestic market remains dependent on international financial markets.

Application: The results are applicable in the formation of financial and monetary policy of the country.

Summary: Achieving stability in the financial market requires constant attention from the regulator for liquidity in the market, stability and predictability of the national currency. The priority direction of development of the state financial policy in the near future should be the establishment of relations with leading players in the world financial markets and international financial institutions.

Keywords: financial market, financial stability, cognitive map, impulse modeling

JEL: E44, F21, G14, G17

1. Introduction

Ensuring the stability of financial markets is an urgent problem of our time, which is solved using various tools and techniques. One of such tools is cognitive research methods. Scenario analysis using cognitive modeling will justify the close relationship between the segments of the financial market of the Russian Federation and propose measures to ensure its stable functioning.

Development of the financial market of the Russian Federation is one of the priorities of the Bank of Russia activities 2018. The efficient functioning of the financial market contributes to national economic growth and higher living standards of the population. A developed financial market ensures the workability of monetary policy transmission mechanism and, consequently, determines the effectiveness of the Bank of Russia measures aimed at achieving inflation targets. Access to financial market instruments, primarily, debt and equity financing and insurance of risks for enterprises and organizations across all sectors of the economy is indispensable for economic growth. The closure of many external financing sources and the decline in commodity prices increasingly re-focus attention on the internal sources of funding. As a result, the task of stimulating domestic investment and creating favorable conditions for investment activity in the financial market comes to the fore. The Bank of Russia pays special attention to the predictability, clarity, and information transparency of its activities and, specifically, achieves this goal through the publication of the Guidelines for the Development of the Russian Financial Market in 2016-2018.
The release of the document once the Federal stipulates every three years law On the Central Bank of the Russian Federation (Bank of Russia).

The impact of sustainability benchmarks across a range of financial products and services is becoming increasingly apparent – from project and export finance to corporate loans, private equity, and institutional investments. Due to the 2008-2009 financial crisis and the resultant increases in public and government scrutiny of the financial sector worldwide, many financial institutions are in the process of redesigning and improving their risk management tools and approaches. By widening the scope of risk management to include environmental, social and governance issues, sustainability can be a major contributor to a more resilient and responsible global financial system.

As Russia becomes more integrated into the global economy and seeks membership of the OECD, the integration of environmental and social responsibility standards into the Russian financial sector appears to be a question of “when” rather than “if”. As of October 2009, however, no Russian financial institution has adopted any of the internationally recognized responsibility benchmarks, which raises the question regarding the cost of such inaction to the Russian financial sector and to the country’s economy as a whole.

2. Literature Review

In Russia, it is important to know such a feature – that the segmentation should be exactly of Russian actual market! That is why the market analysis should be a kind of “safety cushion” of the overall financial analysis. It is the analysis that should timely identify prospects for certain industries, for certain markets and for certain companies in their existence and to date RMI the prospects for a firm within a particular market segment. Let’s examine the domestic market during the period from 2000 to 2010. If we consider the main sectors of the economy as a whole, we can draw the following conclusions regarding the main trends of development. Peak Development came in the 2000 – 2008 years for virtually all sectors of the economy, while the largest economy growth was from July 2003 to August 2008.

For the formation of a cognitive map and scenario analysis, it is necessary to select the criteria for assessing the effectiveness of the Russian financial market, which should act as the tops of the created map. The solution of this problem will require the search for different approaches to the concept of the effectiveness of the financial market and indicators of its evaluation.

World science pays great attention to the problems of ensuring the effectiveness of the financial system. Research in this direction, as well as in the direction of regulation and deregulation of the financial market belong to the entire period of development of financial science. Among the fundamental works, it is worth noting the work of John. Keynes, J. Tobin, G. Hicks, F. Hirsch. Note that in the indicated and similar studies focused not on the efficiency of the financial system of the state, and the effective functioning of the financial market. The is-LM model, composed by J.M., should be emphasized here. Hicks, in which the main parameters are only, market instruments: liquidity and money (LM) on the one hand, and investments with savings (IS), on the other.

This is because the vast majority of the fundamental work examines the economic system of the Anglo-Saxon type, where historically there were free market institutions and financial markets. We believe that for the authors who studied the financial and economic processes that took place in the UK and the US in the first half of the XX century, the effectiveness of the financial system was determined by the efficiency of the financial market. Moreover, even now the mainstream of financial science is determined by the research of financial markets, not the financial system as a whole. Exploring the financial system, the authors de facto turn to the financial market.

For example, a contemporary, well-known American economist John Sinkey recommends evaluating the effectiveness of the financial system on three parameters, including:

- The effectiveness of the accommodation;
- Cost effectiveness;
- Cost efficiency.

As can be seen from the selected parameters of efficiency evaluation, the author pays a special role in the formation of an effective financial system to the financial market. Of course, the state and structure of the financial market are crucial for capital flows and economic growth. This explains our choice of modeling the financial market, not the financial system of the country as a whole.

However, this does not mean that there are no other channels for the movement of financial resources. Free financial resources available to primary lenders (owners of free financial resources) are transferred to borrowers in two ways: indirectly through financial intermediaries, such as banks, or directly through financial markets. According to this
principle, the authors give the following definition to the types of financial systems: financial systems in which banks play the main role of financial intermediaries are called banking financial systems, and financial systems with a more developed financial market are called market financial systems.

A large number of modern foreign authors assign a primary role in the formation of a free flow of capital and economic growth market-based financial systems, which, as noted by P. Arestis and coauthors, reducing the inefficient flow of capital related to the banking and financial systems. They also note that changes in the structure of the financial system in the direction of increasing the market character at different stages of economic development create conditions for more successful economic development of the country as a whole.

Investigating the effectiveness of the process of moving savings of economic entities and the population in the real sector of the economy, F. Allen and E. Carletty conclude that in continental Europe banks play a crucial role in this process.

In Russia, there is a dual role of banks in this respect. First, the development of the financial market (securities market) in the country has followed the European path and led to the fact that the leading players in it were the banks, and secondly - as rightly notes O.S. Gasanov, this path was predetermined by the following factors: the historical traditions of the country, its economic condition, the structure of civil law, the lack of other financial institutions in the country, except banks.

That is, economic development itself can be a factor in the development of the financial system and the adaptation of its structure. A number of authors who studied this issue came to the conclusion that this phenomenon can be explained by the fact that economic development, increasing the demand for financial services provided by participants of the securities market, creates favorable conditions for their development. However, the impact of economic development on the financial sector is not limited to the securities market. The economic development of the country and the structure of property relations in it are the most fundamental force that determines the optimal financial structure at a certain stage of economic development, according to J. Lin and co-authors.

That is, economic development can predetermine the very structure of the country's financial system, in which the importance of the financial market and financial intermediaries (banking institutions) is balanced. We conclude the review of foreign authors with the work of S. Breiv and R.A. Butters, which is to some extent close to our topic. The authors consider the so-called stress indices aimed at assessing the current situation of the financial system based on data on past crises. In such studies, two standard indicators are used: (1) the financial stress index – FSI (Financial Stress Index) and the financial system (market) index – FCI (Financial Conditions Index).

Based on the analysis of financial crises in the United States using the index of the Federal Reserve Bank of Chicago (NFCI), it is noted that this index is a reliable and accurate indicator of financial stress on the horizon up to one year. With projected horizons exceeding one year, the authors recommend a specific combination of measures to measure the sustainability of households and non-financial corporate organizations, depending on the results of financial stress indicators and their impact on economic activity.

Now we will conduct a brief review of the scientific works of domestic authors related to the study of the features and problems of the Russian financial system. First, it should be noted that until recently this topic was covered in fragments. The bulk of the work was in the nature of a review of the state of individual segments of the financial system. Most often, separately investigated the problems of the functioning of public Finance, banking system, securities market.

Intensive integration into the international scientific space, emerging in recent years, brought to the fore the problems of financial science, which are recognized as relevant by the leading research institutions of the world. Become relevant to such topics as analysis and assessment of efficiency of functioning of financial market development and adaptation of methods of assessment of financial risks, as well as indicators of the stability of the financial system.

Methods of construction of composite indices based on aggregation of indicators characterizing the components of the system under study are widespread.

We generalize some of the main points of such studies.

The analytical credit rating Agency (ACRA) has developed and regularly publishes the ACRA index, which belongs to the group of stress indices, but may include factors specific to the state indices. The main criterion for evaluation
of the ACRA index is the level of financial stress – the degree of implementation of systemic risk and financial instability, the proximity of the financial system to the financial crisis».

An example of using this index to assess the state of the financial system of Russia is presented in the work of experts of the Agency D.M. Kulikov and V.M. Baranova, who are among the developers of this index.

Methodologically, the index is based on five main external manifestations of financial stress, which are highlighted:

1. Uncertainty in the fundamental prices of financial assets or commodities.

2. Lack of information about the motives and current state of other market participants. Can lead to the wrong interpretation of the dynamics of prices and the episodes of a sharp correction of expectations?

3. Asymmetry of information about the quality of assets (the seller knows more) or the quality of the borrower (the borrower is more aware).

4. Flight to quality

5. Flight to liquidity.

Summing up the results of the assessment of the financial condition, the authors note: now, the accumulated information is not enough to obtain general conclusions about the leading properties of the index, although the available data do not refute their presence.

A summary indicator of financial instability, consisting of weighted indices of prices of financial assets or their derivatives, is proposed in a study led by A. Pestova. The indicator is based on the assessment of the main risks to the financial system:

- Liquidity risk;
- Currency risk;
- Credit risk;
- Interest rate risk;
- Risk of suspension of external financing.

The authors call the main advantage of the developed index the identification of instability of the financial system by types of financial risks, and not based on financial instability of individual segments of the financial market.

The concept of consolidated risk of financial instability based on the principal component’s method is proposed, but no clear algorithm for its identification is presented. The assumption is made about the implementation of the consolidated risk in the case of a significant increase in each of the five private indicators compared to its normal level.

In contrast to the previous work, the work of a group of specialists of the financial stability Department of the Bank of Russia describes the construction of the risk indicator of the Russian financial market not based on the assessment of individual risks, but generalizing the risks of the six main segments of the financial market. This method has been used since mid-2013 in the preparation of financial stability Reviews of the Bank of Russia.

Monitoring is carried out by the Central Bank of the Russian Federation on the following segments of the Russian financial market:

1. Ruble money market;
2. Currency money market;
3. Currency market;
4. Stock market;
5. The market of public borrowings;
6. The market for corporate borrowing.

Another feature of the indicator is the rejection of the principal components. The article substantiates the shortcomings of this technique, as which there is a strong dependence of the result on the quality of the selection of initial indicators, as well as the possibility of the presence of individual indicators of negative weight values, which makes it difficult to interpret the results of the construction of indicators. To summarize the review of research of the financial market article by Finnish authors I. Korhonen, and R. Nuutilainen on the application of the standard rules of monetary policy (the Taylor rule and the McCallum rule) in the implementation of monetary policy in Russia during
the period 2004-2017 years. It is concluded that the traditional Taylor rule well describes the monetary policy in Russia both in the form of fixed and variable coefficients. It is argued that the strongest flights inflation target corresponded to episodes of large-scale depreciation of the ruble, which indicates in favor of the important role of the exchange rate in the conduct of monetary policy in Russia.

The results also show that the Russian monetary policy has changed significantly over the past few years, and the observed successful movement towards inflation targeting confirms the more mature nature of the Russian financial market compared to the pre-crisis level.

Thus, having analyzed classical and modern approaches to the selection of evaluation criteria and regulatory tools, it is possible to choose those components, the use of which will allow to build an adequate cognitive map of the Russian financial market.

3. Research Methodology and Tools

Considering peculiarities of the Russian financial system, the most adequate to consider the approach of the team of specialists of the Bank of Russia, which is recommended as elements of the sustainability assessment to select segments of the financial market. Cognitive modeling is carried out on the selected six market segments with the addition of two segments of the international financial market: the international money market and the international capital market. As a remark, it should be noted that the inter-country movement of capital is also influenced by the tax policy of the state. However, given the relatively low rates of both corporate and individual taxes in Russia compared to develop and most developing countries, this segment can be neglected. Despite the fact that some of the indicators used in modeling are disclosed in the review above, we consider it necessary to provide a detailed description of their choice as the vertices of the created map. The description of the segments of the financial market that have the greatest impact on the stability of the financial system is presented in Table 1.

| Code | Vertices | Explanation of the choice of vertices | The purpose of the vertices |
|------|----------|--------------------------------------|-----------------------------|
| \( F_0 \) | Financial stability | The purpose of the study is to substantiate the influence of certain segments of the financial market on its stability and to develop a cognitive map of the financial market stability to facilitate the accumulation and transfer of capital | Target, global |
| \( F_1 \) | Ruble money market | Over-the-counter market where monetary resources are bought/sold on a short-term basis. The state of liquidity of the country's banking system depends on its reliable functioning. The level of trading limits opened by market participants to each other is determined by the size of the market. The main criterion of market stability is the stability of interest rates on loans. The stakes are very diverse. In recent years, the informal basic rate is recognized MosPrime Rate | Basic |
| \( F_2 \) | Currency money market | The currency money market is one of the most important elements of the Russian financial market. The main market participants – authorized banks use the market for exchange operations and operational management of currency position and liquidity. In addition to market participants is also actively used by public authorities (the Ministry of Finance and the Bank of Russia) for the implementation of monetary, monetary and budgetary policy. The indicator is the rate on currency swaps | Basic |
| \( F_3 \) | Currency market | The market in which the interests of investors, sellers and buyers of currency values are coordinated. Participants are national and foreign banks and brokerage firms. Plays a high role in the cross-border movement of capital. It forms the exchange rate of the national currency against foreign | Basic |
currencies. The effective functioning of not only the modern financial system, but also the open economy is unthinkable without a freely functioning foreign exchange market. Market indicator – exchange rate and its stability

| $F_4$ | Stock market (stock market) | In today’s world, the capital overflow often occurs through the stock market. Direct investment is preceded by the stage of penetration into the stock market, when the acquisition of shares of interest to direct investment issuers. Plays an important role in the movement of capital. The indicator is the national stock market index | Basic |
|-------|-----------------------------|-------------------------------------------------------------------------------------------------|------|

| $F_5$ | The market of public borrowings | The factor of implementation of the regulatory function of public Finance. The state of this market characterizes the attitude to the economic, fiscal and tax policy of the state. The size of the market, in terms of capital flows, is estimated in two ways: too high level of public debt carries a high credit risk; low level indicates underdevelopment of the domestic financial market and insufficient level of national savings. Indicator – the rate of bonds (short-term or 10-year) | Basic |
|-------|--------------------------------|-----------------------------------------------------------------------------------------------|------|

| $F_6$ | The market of corporate borrowing | One of the most important indicators reflecting the state of efficiency of corporate structures, their investment attractiveness, both for domestic and foreign investors. The quantitative characteristic is the level of total attracted debt, the indicator is the index of the national market | Basic |
|-------|---------------------------------|---------------------------------------------------------------------------------------------|------|

| $F_7$ | International money market | It covers the monetary currency markets of all countries of the world. It is closely connected with the communication system of the participating countries’ markets. Between them, there is an overflow of short-term funds, depending on the current information and forecasts of leading market participants regarding the possible position of individual currencies. Market indicator – LIBOR rate | Basic |
|-------|-------------------------------|------------------------------------------------------------------------------------------------|------|

| $F_8$ | International capital market | A set of national capital markets. Plays an important role in the formation of the domestic capital market. It serves as an instrument of capital overflow. Within the country, the volume of foreign investments and the volume of investments of residents abroad or their ratio can be taken as an indicator. On the global market – the rate on 10-year bonds of the US Treasury. | Basic |
|-------|--------------------------------|------------------------------------------------------------------------------------------------|------|

The characteristic of connections between tops is set based on knowledge of authors about functioning of the financial market and interrelations between its elements. At first glance, this brings a certain subjectivity to the map, but the presence of incorrect links is minimized at the preliminary stage of scenario analysis. The final cognitive map factors of stability of the financial market of the Russian Federation built on the selected segments of the financial market is shown in Figure 1.

The implementation of scenario analysis requires some additions and clarifications. In particular, investigating the problems of cognitive analysis, the authors note that the gap between the bars of the analysis should correspond to the dynamics of the process: with high dynamics of the process, it is recommended to have a minimum step between the bars of the analysis. The financial market is a very dynamic system, significant changes in which can occur in the shortest time intervals. These changes may depend on the most insignificant, at first glance, factors. Another limitation of cognitive analysis is the accumulation of errors in the transition to each next iteration. This limitation can be overcome by constantly updating the data used. It is also easily implemented in relation to the data on the dynamics of the financial market, which are available in real time. However, the software tools that we have (software package Cog Map), do not give such opportunities, so the main task of scenario analysis is to justify the
trajectory of the peaks of the cognitive map in the event of impulse disturbances in relation to one or more of them. At the same time, in all scenarios of the analysis, when it comes to changes in interest rates (peaks F1, F2, F5, F6, F7, F8) for one pulse we will take the change in the value of the indicator by 1 basis point (0.01). In the case of vertices with absolute values (F3, F4) of the size of one pulse, we take 1 unit (1).

The target peak in all scenarios is financial stability. Given the above limitation on error accumulation by the number of iterations, the analysis is limited to four periods.

For the case of stabilization of the ruble money market (F1), we have:

Disturbing impulse \( q_1 = -1 \);
Impact vector \( Q_1 = \{ q_1 = -1; q_2 = 0; \ldots; q_8 = 0 \} \).

The systematic development of the scenario within four periods for this case is shown in Figure 2. The graphs of all indicators are presented, with the exception of graphs (F7) and (F8), on which changes in the domestic money market have virtually no impact.

As the modeling process shows, at the initial stage, the reaction of financial stability to the reduction of ruble money market rates looks abrupt, but the last impulse is gradually stabilized. In general, the graphs show that the decline in money market rates is a positive factor in the stability of the financial system, is a factor in reducing the rates of the currency market and strengthening the national currency.

The reaction to the decline in ruble money market rates is projected to have a positive impact on the stock market index, and leads to a decrease in the cost of both government and corporate borrowing in the financial market. The presented graphs and their brief interpretation serve as a kind of test of the correctness of the compiled cognitive map. The presence of objective changes in the vertices associated with the introduction of a pulse perturbation in one of them indicates the objectivity of the compiled map and the possibility of its use to describe the impact of the selected factors on financial stability.

4. Pulse Scenario Modeling

Next, the analysis of different pulse simulation scenarios will be carried out. Since the possible variants of modeling the compiled cognitive map have a wide variety, we will focus only on those of them, the interpretation of the results of which in our opinion is the most relevant.

The following scenarios will be considered:

**Scenario No. 1.** Changes in the domestic money market in two versions:

a) growth in domestic money market rates:

Perturbing impulse \( q_2 = +1 \);
Impact vector \( Q_2 = \{ q_1 = 0; q_2 = +1; q_3 = 0; \ldots; q_8 = 0 \} \).

b) falling rates of the domestic money market:

Perturbing impulse \( q_2 = -1 \);
Impact vector \( Q_2 = \{ q_1 = 0; q_2 = -1; q_3 = 0; \ldots; q_8 = 0 \} \).

**Scenario No. 2.** Changes in the domestic currency market in two versions:

a) depreciation of the national currency:

Perturbing impulse \( q_3 = +1 \);
Impact vector \( Q_3 = \{ q_1 = 0; q_2 = 0; q_3 = +1; \ldots; q_8 = 0 \} \).

b) the growth of the national currency:

Perturbing impulse \( q_3 = -1 \);
Impact vector \( Q_3 = \{ q_1 = 0; q_2 = 0; q_3 = -1; \ldots; q_8 = 0 \} \).

**Scenario No. 3.** Changing demand in the corporate borrowing market in two ways:

a) the growth rate of corporate borrowing:

Perturbing impulse \( q_6 = +1 \);
Impact vector \( Q_6 = \{ q_1 = 0; q_2 = 0; \ldots; q_6 = +1; \ldots; q_8 = 0 \} \).
b) falling corporate borrowing rates:
Perturbing impulse $q_6 = -1$;
Impact vector $Q_6 = \{q_1 = 0; \ldots q_6 = -1; \ldots; q_8 = 0\}$.

**Scenario No. 4.** Changes in international markets in two versions:

a) growth of international money and capital market rates:
Perturbing impulse $q_7 = +1; q_8 = +1$
Impact vector $Q_{78} = \{q_1 = 0; \ldots q_7 = +1; q_8 = +1\}$.
b) reduction of international money and capital market rates:
Perturbing impulse $q_7 = -1; q_8 = -1$
Impact vector $Q_{78} = \{q_1 = 0; \ldots q_7 = -1; q_8 = -1\}$.

**Scenario No. 5.** Simultaneous destabilization of domestic money markets (ruble and currency), accompanied by a crisis in the international money and capital markets:
Perturbing impulse $q_2 = +1; q_3 = +1; q_7 = +1; q_8 = +1$
Impact vector $Q_8 = \{q_1 = 0; q_2 = +1; q_3 = +1; \ldots q_7 = +1; q_8 = +1\}$.

The results of pulse simulation according to the described scenarios are presented in Table. 2.

### Table 2. Results of pulsed modelling of the stability of the financial market

| Scenario | Simulation result | Summary (Conclusion) |
|----------|------------------|----------------------|
| 1. Events on the ruble money market | F0 Financial stability  
F3 Currency market  
F4 Stock market  
F5 Government Market  
F6 Corporate borrowing market | a) Financial volatility  
There is an increase in the cost of government and corporate borrowing, while the fall of the stock market and the ruble. |
| a) The emergence of instability in the money market (growth rates) | | |
| b) Stabilization in the money market (falling rates) | F0 Financial stability  
F3 Currency market  
F4 Stock market  
F5 Government Market  
F6 Corporate borrowing market | b) Financial stability  
There is an increase in the stock market and the strengthening of the ruble, while reducing the cost of government and corporate borrowing. |
2. Events at the currency market

a) The fall of the ruble

b) The growth rate of the ruble

3. Changes in demand in the corporate borrowing market

a) Growth in corporate borrowing rates

b) Falling corporate borrowing rates

| F0 Financial stability | F3 Currency market | F4 Stock market | F5 Government Market |
|-----------------------|-------------------|----------------|---------------------|

a) Financial volatility

There is a drop in the stock market, an increase in the cost of borrowing in the money markets, corporate and government borrowing markets.

b) Financial stability

Strengthening the overall stability of the financial system, the growth of the equity market while reducing the rates of money and capital markets.

a) Signs of moderate financial volatility

There is a moderate drop in the stock market, a slight decline in the ruble exchange rate, accompanied by an increase in the cost of government borrowing.

b) Signs of financial stability

The fall in corporate funding has a positive impact on the stock market index, the exchange rate of the national currency and government borrowing rates.
4. Developments in international markets

a) Growth in money and capital market rates

b) Money and capital market rates fall

2. Financial instability

a) A significant (close to crisis) decline in financial stability, accompanied by a sharp increase in the cost of borrowing in the domestic money and capital markets, the fall of the stock index and the ruble

b) A very positive impact on overall financial stability, accompanied by a decrease in rates in all segments of the domestic financial market, an increase in the share price and a strengthening of the national currency.

5. Simultaneous destabilization of the ruble and currency money markets, accompanied by a crisis in the international money and capital markets

2. Financial crisis

There is a sharp increase in the cost of government and corporate borrowing, the fall of the national currency. At the same time, there is a sharp drop in the stock market.

The greatest losses are observed in the stability of the financial system as a whole.

Summing up the results of impulse modeling of financial stability, it is necessary to justify the tools and propose measures to ensure the free flow of capital in the economy.

5. Conclusion

Hence, we can say briefly that the limits of this research lie that it is closer to the financial market in the Russian Federation. It is also desirable that the results of this research should be applied within the Russian Federation in particular because it is more suitable for the financial market of Russia. The result of this research was discussed based on the current financial and economic situation in the Russian Federation, in addition to the possibility of using the current research model and applying it.

This research reveals the effectiveness of the market of financial stability in Russia and the impact of the above factors on this stability in the country.
In addition, this research is a starting point for various other researchers under the name of this, the current analysis gives other researchers to apply this model in this area wider use and deeper and devise new solutions in this economic problem within the country and in some other countries are also in need of such scientific models to find another solutions to this problem or alleviate the harm caused to the state of the real economy.

Finally, we can summarize the results of this research and analysis into following points:

**First**, it should be noted that the stability of the financial market is formed due to the cumulative effect of all its segments, which are very closely interrelated. When instability occurs, they mutually reinforce the negative effects, which often leads to the impossibility of finding the root causes of the crisis and the difficulty of choosing the right tools to overcome it.

**Second**, it should be noted the special role of the money market for financial stability. As the modeling has shown, the slightest impulses of the price of short-term resources literally at the second step have a significant impact on all segments of the national financial market. The dynamics of international money market rates also have a significant impact on the Russian financial market.

This effect persists even in the face of the sanction’s regime. As we know, money market rates are direct indicators of financial market liquidity. Therefore, we consider it reasonable to conclude that there is a significant link between the availability of liquidity in the market and its stability.

**Third**, the impulse modeling of the exchange rate dynamics confirms our hypothesis in favor of the important role of the exchange rate in the conduct of monetary policy in Russia. Not just the stability of the national currency, but also rather the positive vector of this rate is a signal to the storage of free resources in ruble assets. Ruble assets are not only financial instruments (securities of the Government and corporate structures), but also investments in the production sphere. Long-term foreign investment requires the absence of currency risks, i.e. stability and predictability of the national currency.

**Fourth**, the modern global economy is based on the involvement of corporate structures of all types of resources, especially financial, beyond national borders. Consequently, the impact of the international capital market on the activities of large corporations is difficult to overestimate.

Despite the current geopolitical problems, the involvement in the processes of international capital overflow guarantees the stability of the financial system for Russia. In addition, public borrowing plays a critical role in capital flows, which have a significant impact on financial sustainability even if there is no imbalance in the country's fiscal system.

**Fifth**, the probability of a full-scale financial crisis, which has been demonstrated by simulating the situation with simultaneous destabilization of the ruble and currency money markets, accompanied by a crisis in international financial markets, requires a more flexible approach to solving international problems of financial stability and economic development. The establishment of relations with the leading players in the world financial markets and international financial institutions should become a priority for the development of the state's financial policy in the near future.

6. The Limitations of the Research and the Open up Avenues for Future Studies on the Topic

From this perspective we can sum up the foregoing from the current search results as a clear way to open the avenues of scientific research in this area as he is in search of benefit for these economic problems and specifically the problem of the research mentioned above and to clarify quality of evidence functions used to solve this problem, which allows modeling Cognitive to financial market stability in Russia and this is evidence of a standard semi-accurate statement of the effect of the factors affecting the financial market stability in Russia and the movement of financial capital within the country.

Through the recommendations mentioned in the present research, one of the most suitable tools to be used within the Russian Federation could provide benefits. Another to solve some of the problems of financial stability in other countries.
Figure 1. Cognitive map of factors of stability of the financial market of the Russian Federation
Figure 2. Graphs of impulse modeling of financial stability with respect to factor F1

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