

МЕТОДИКА ОЦЕНКИ ПОРОГОВЫХ ИНДИКАТОРОВ ФИНАНСОВОЙ БЕЗОПАСНОСТИ РЕСПУБЛИКИ БЕЛАРУСЬ

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Разработаны подходы к формированию стратегии финансовой безопасности Республики Беларусь. Определены индикаторы финансовой безопасности республики, внутренние и внешние угрозы финансовой безопасности государства, ценовые индикаторы, отражающие процессы и состояние финансовых рынков.

Ключевые слова: финансовая безопасность; макрофинансовые индикаторы; критерии; параметры; стратегия финансовой безопасности; внутренние и внешние угрозы; ценовые индикаторы.

METHODOLOGY FOR ASSESSING THRESHOLD INDICATORS OF FINANCIAL SECURITY OF THE REPUBLIC OF BELARUS

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The scientific article has developed approaches to the formation of the financial security strategy of the Republic of Belarus. Indicators of financial security of the republic, internal and external threats to the financial security of the state, price indicators reflecting the processes and condition of financial markets are determined.

Key words: financial security; macro-financial indicators; criteria; parameters; financial security strategy; internal and external threats; price indicators.

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The financial system of the Republic of Belarus should ensure the accumulation of temporarily free financial resources in the economy and their transformation into investments. In the event of a failure in the mechanism of transformation of savings into investments, there is a threat of losing sources for financing investments and, accordingly, a threat of insufficient development of the economy.

Distribution of financial resources of the Republic of Belarus should be carried out in accordance with the selected priority areas of social and economic development.

It should be noted that the task of building an effective system of distribution of financial resources in the economy in accordance with the priorities of the social and economic development of the Republic is closely linked to the need for effective use of financial resources in the economy by all sectors of the economy.

In general, the distribution and use of financial resources in the Republic should be carried out in a safe manner, in terms of maintaining price stability, stability of financial institutions, protecting savings from depreciation, maximizing returns on invested resources, protecting other national interests of the Republic of Belarus.

The financial stability is the absence of systemic crises in the financial sector (banks, non-bank financial intermediaries, financial markets and infrastructure). However, the absence of crisis phenomena affecting numerous participants in the financial market is a necessary but not sufficient condition for financial stability. A stable financial sector should also in the normal course of its functioning absorb economic power and neutralize the impact of global financial crises and deliberate actions of world actors (states, transnational corporations and others) and shadow structures on the national economy. At the same time, the key functions of the financial system are effective promoting of distribution of financial resources in the economy, identifying and adequately assessing financial risks for the current moment and for the future, ensuring an acceptable level of financial risk management.

The organization of management in ensuring financial security, in addition to identifying, tracking, characterizing its external and internal threats, involves identifying criteria and parameters of the state of the economy that meet the requirements of financial security and protect the vital interests of the country [1].

Macrofinancial indicators. The criterion of financial security is an assessment of the state of the economy in terms of the most important processes that reflect the essence of financial security.

For these purposes, a system of macrofinancial indicators is used, which quantitatively characterize social and economic phenomena and processes, the measurement and comparison of which allows to reveal the dynamics of financial security.

We propose to divide financial indicators into the following criteria:

- a) macrofinancial;
- b) price;
- c) reflecting the processes and state of financial markets;
- d) related to banking activities;
- e) reflecting the level of savings and investments in the economy;
- f) relating to the foreign exchange market and the national currency [2].

In Belarus, the success of problem solving in other areas of economic security depends on the financial condition of the real sector of the economy and the banking system.

The financial indicators of violation of the principle of production efficiency are: overestimation of interest rates for a loan in comparison with the rate of profit, reduction of the share of long-term loans in credit investments in the economy, decrease in the level of product profitability. The financial indicators of violation of the principle of equity distribution of goods are: the rate of inflation and the growth of wage arrears, social transfers; distortions in the levels of profitability and the level of producer prices by industries.

The financial parameters, as a result of the de-optimization of which the economy acquires the potential for imbalance, include:

- GDP distribution indicators;
- the level of saturation of the economy with money;
- the ratio between exchange rate and purchasing power parity of the national monetary unit;
- the ratio between the cost of servicing foreign debt and the volume of exports;
- balance of foreign trade exchanges;
- budget deficit (in % to GDP);
- indicators characterizing the revenue and expenditure parts of the budget;
- overdue debt amounts;
- indicators reflecting the state of the price system (including the ratio of the price of labour and prices for goods and services, actual and optimal prices in the securities market);
- the growth rate of prices caused by the action of non-monetary inflation;
- indicators of the effectiveness of the redistribution of savings and the work of the credit system [3].

We have identified the indicators of financial security of the Republic of Belarus (table 1).

Financial Security Indicators

Indicator	Threshold	Year			
		2000	2005	2010	2016
Ratio of public debt to GDP, %	60	12,6	17,0	51,6	78,5
Ratio of the external debt to export, %	25	11	29	96,9	125
Depreciation ration of the active part of fixed assets in industry, %	40	79,6	78,8	45,5	40
Share of investments in GDP, %	20	19,8	21,8	32	19,8
Relative share of the leading partner country in the geographical structure of foreign trade turnover, %	30	51	56,0	46,6	51,3
Share of population with income below the subsistence minimum (poverty line), %	8–9	41,9	17,8	5,2	5,7
Level (rate) of unemployment to the economically active part of the population, %	8–9	2,1	1,9	0,7	0,8
Health expenditures paid out of the state budget to GDP, %	5	5	4,5	3,8	4,2
Share of food import in the total turnover of food products, %	25–30		50,8	37	30,5
Average grain production per capita, tons	0,9	0,48	0,71	0,73	0,78
Consumer price index (inflation), %	3	107,5	8	9,9	10,6

Note. Development of authors based on [4].

The analysis of table 1 shows that over the last 16 years (2000–2016) the fixed assets in industry have been significantly updated, the population's full employment has almost been achieved, the incomes of the population have increased, which ensured that the majority of the population has overcome the poverty line.

To control the macroeconomic system, it is proposed to support the following parameters:

- the level of the state budget deficit should not exceed 3 % of GDP;
- the government debt should not exceed 60 % of GDP;
- the money growth should be sufficient to cover the import cost for at least three months;
- the ratio of current payments for servicing foreign debt should not exceed 20 % of annual export earnings;
- the level of savings in GDP should be not less than 10 %;
- the share of foreign goods in certain segments of the national market should not exceed 10–20 %.

The maintenance of these parameters allows to maintain a balance in the domestic market at a certain level and ensure the sustainability of the economic development of the country. Some of the parameters listed above were formally fixed for the first time in the Maastricht Agreements, which formed the basis of the European Economic and Monetary Union (EMU), and are the main criteria for convergence.

The mandatory economic conditions in the European Union are as follows:

- the annual price increases should not exceed 1,5 percentage points above the average in the three countries with the lowest price increases;
- the interest rates on long-term loans should not exceed the corresponding figure for the three countries with the smallest price increase by more than 2 percentage points;
- the state budget deficit should not exceed 3 % of GDP;
- the government debt should not exceed 60 % of GDP;
- the exchange rate of the national currency within two years should not exceed the limits of fluctuations established in the EMU.

It is recommended to approach the formation of a country's financial security strategy with these requirements in mind.

For the formation of the strategy of financial security of the country, the following should be developed:

- criteria and parameters of financial security;
- mechanisms and measures for identifying threats to financial security and their carriers;
- characteristics of their manifestation areas (threat localization areas);
- methodology for predicting, identifying and preventing the occurrence of factors determining the emergence of threats to the financial security;
- an adequate system of state financial control bodies (SFC), which can ensure tight control over the financial security of the country.

In this case, it will be necessary to work out legal and financial methods to combat the unfair behavior of counterparties under foreign trade agreements for protection from artificially induced financial crises.

For this purpose, it is recommended:

- to establish the limits of foreign participation in the capital of domestic organizations;
- introduce sectoral restrictions (restricting the access of foreign investments to industries recognized as particularly important for the social and economic development of the country);
- develop a system of control over the attraction and use of the foreign borrowings.

The financial security system should include a set of measures and activities of the security entities for their implementation.

The activities of the security entities should include:

- identification of threats and subjects of threats to the financial security;
- determination of protected objects;
- mechanisms for identifying the vital economic interests of the Republic or business entities, the areas and features of their implementation;
- identification of subjects whose activities are detrimental to the vital economic interests of the individual, society and the state (subjects of threats-actions), or threats-processes and threats-factors;
- identification of signs indicating the commission of actions detrimental to the vital economic interests of the Republic or business entities;
- determination of the main factors and conditions developing in the sphere of ensuring the financial security of the state or manufacturer;
- analysis of the features and mechanisms of damage to the vital economic interests of the Republic or business entities;
- determination of the competence and relationships of the bodies which carry out activities to ensure the financial security;
- formation of measures for the realization of vital economic interests;
- counteracting threats and localizing their consequences.

The financial security system should provide an opportunity to repel internal and external threats and reduce risks.

The internal threats to the financial security of the state include:

- weak competitiveness of the national economy, high material consumption, energy intensity and resource intensity, low product quality and high production costs;
- low investment activity and the prevalence of capital investment in intermediary and financial activities to the detriment of the production sector.

The main causes of external threats to financial security are: insufficient level of openness of the economy; loss of traditional markets for products; economic dependence on Russia (including oil and gas supplies); low level of foreign investment; isolation in the international financial market (discriminatory measures of foreign countries or their communities in foreign economic relations with the Republic of Belarus); the seizure by foreign companies of the domestic market of Belarus in many types of consumer goods and, as a result, the Republic's dependence on the import of many products; uncontrolled penetration of foreign private capital into the country's economy, leading to its predominance and loss of control over the economic situation in the country.

Price indicators and indicators reflecting the processes and state of financial markets. The legal and regulatory framework of the Republic of Belarus, which regulates the pricing processes, is constantly being improved.

In accordance with the laws, the state pricing policy is determined by the President of the Republic of Belarus and implemented by the Council of Ministers of the Republic of Belarus.

The most common in statistics and macroeconomic studies of the Republic of Belarus are the following price indices: the consumer price index (CPI), the industrial producer price index (IPPI), the GDP deflator. The CPI describes the change over time of the cost of a fixed set of goods and services (more than 400 items), usually consumed by the population. The aggregate CPI is calculated according to a variant of the Laspeyres formula, which uses a relative price indicator compared to the previous period. Similarly, the IPPI is determined by the same formula, which is calculated on the basis of the registered prices for representative goods (about 10 000 items) in enterprises belonging to industry and most reflecting its structure. The GDP deflator is a weighted average index or price level for goods and services that form GDP. It allows to determine the value of the current volume of production, while maintaining the price of the previous period. The GDP deflator is calculated as the ratio of GDP, calculated in current prices, to GDP in comparable prices of the previous year. In addition, based on the principle of grouping the industries that form GDP, other price indices can be distinguished, for example, the price index in construction, agriculture and others.

In terms of reflecting the general price level in the country, mainly CPI and the GDP deflator are used. However, these indicators contain different information and differ in the following:

- when calculating the GDP deflator, prices of all goods produced and services provided in the country for a certain period are taken into account, while calculating the CPI, only prices of goods and services purchased by households are taken into account;
- when calculating the GDP deflator, imported goods purchased by households within the country are not taken into account;
- when calculating the GDP deflator, the volume of output of the current period is taken into account, while the calculation of the CPI uses the volumes of consumer goods of the reference period. Therefore, the GDP deflator, unlike the CPI, takes into account changes in the composition of goods produced and services provided [5].

The CPI can be broadly divided into two components: the core inflation and the shock component, i. e. that part of inflation that the national bank has little influence on. Generally, this part includes administratively regulated prices and prices for seasonal products.

In the Republic of Belarus, the core inflation (core consumer price index) has been calculated by the National Statistical Committee since 2003. According to the methodology for calculating the core consumer price index (core CPI), core inflation is a CPI reflecting the long-term price trend that is not affected by administrative and seasonal factors. In general, to calculate the core CPI, the list of goods and services generated for the state statistical price observation and the calculation of the aggregate price index (which is more than 400 goods and services) excludes goods and services, the prices (tariffs) of which are regulated by the Council of Ministers of the Republic of Belarus, government bodies (organizations), as well as goods, the price changes of which are seasonal. The composition of goods and services, the prices of which are regulated by government agencies, includes about 60 goods and services, including bakery products, meat, dairy products, tobacco products, vodka, medicinal products and services, housing and communal services (housing and public utilities), carriage of passengers, etc. The goods, the price change of which is seasonal (about 20), mainly include vegetables and fruits (apples, potatoes, cucumbers, tomatoes, bananas, etc.).

As weights for calculating the core consumer price index (core inflation), the structure of the actual consumer expenditures for the Republic of Belarus is used, which is determined on the basis of statistical data (information) on household spending on the purchase of goods and payment for services received as a result of a sample household survey. The weights are formed on the basis of the share of expenditures on the purchase of certain types of goods and services in the total consumer expenditures of households for the previous year. The determination of weights for the calculation of the core CPI occurs by excluding from the structure used in the calculation of the CPI, the weights of those goods and services that should not be included in the calculation of the core CPI. At the same time, the sum of the weights should be one (or 100 %), which is achieved by recalculation (proportional increase) of the weights used in calculating the core CPI. As a result, each product (service) representative, the changes in prices (tariffs) of which are used in the calculations of the core CPI, is given an additional weight. The calculation of the core CPI itself is made according to a variant of the Laspeyres formula, which uses a relative indicator of the change in the average price (tariff) compared to the previous period [2; 3].

The CPI can also be broadly divided into components. It is well known that its main structural components are price indices for integrated commodity groups of the consumer basket – food products, non-food products and services. The food products include all food, alcohol and tobacco. The main services are housing and communal services, domestic services, carriage of passengers, medical services, education, communications and pre-school institutions. Non-food products include clothing and footwear, household appliances, gasoline, construction materials, medicinal products and other goods.

The main components are the core CPI and administratively regulated prices, including the prices of fruits and vegetables. Its main components, as a rule, are food and non-food products, as well as services.

Indicator of the dangerous state of the financial market. 1. *A critical change in the stock index.* The threshold value is considered to be a decrease/increase of the index for one trading session by more than 5 %.

2. *The market volume of derivatives in relation to the market volume of primary financial instruments.* The threshold value is determined in accordance with the Pareto 80/20 principle

$$\frac{V_s}{V_p} = \frac{80}{20},$$

where V_s – volume (capitalization) of the market of secondary financial instruments; V_p – market volume of primary financial instruments.

3. *Share of foreign portfolio investment in securities (portfolio investments in securities) in relation to foreign investment in general).*

Threshold level

$$\frac{I_{ps}}{I} \geq 25-30\%,$$

where I_{ps} – portfolio investment in securities; I – investment.

4. *Growth rate of capitalization (CAP) of the stock market % in relation to the GDP growth rate.*

$$\frac{(CAP_1 / CAP_0) - 1}{(Y_1 / Y_0)} \geq 10\%,$$

where CAP_1 – the stock market capitalization in the current period; CAP_0 – the stock market capitalization in the reference period; Y_1 – GDP in the current period; Y_0 – GDP in the reference period.

If this indicator takes values from 10 to 15 %, then a careful analysis of the reasons that led to the deviation of the stock market capitalization growth rates from the GDP growth rates is necessary. In addition, this value should be correlated with the results of economic activities of enterprises.

5. *The dynamics of the P/E indicator is «a multiple of profit» (in the payback period).*

P/E is calculated in two ways:

1) $R/E = \text{Market rate of ordinary shares} / \text{Earnings per share}$;

2) $R/E = \text{Capitalization} / (\text{Net income} - \text{Dividends on preferred shares}) = \text{Capitalization} / \text{EBITDA}$. EBITDA – Earnings Before Interest, Tax, Depreciation and Amortisation is an indicator of the organization's profit before paying interest on loans, income tax and depreciation. In accounting practice, it is cash income from operating activities). The P/E shows how the market evaluates a particular security. Ideally, this indicator should be at the level of 5–6 years' payback.

6. *The yield on government securities (GS) in relation to the GDP growth rate.*

Threshold level

$$\frac{GS}{(1 - (Y_1 - Y_0) / Y_0) \cdot 100} \leq 1.$$

The yield of government securities in the non-extreme phase of the market cannot exceed the growth rates of nominal GDP, otherwise it can lead to an increase in the debt burden of the republican and local budgets of the country, which, in turn, can lead to the creation of financial pyramids with all consequences similar to those in August 1998 in Russia.

There is also an analogue of this criterion: $\frac{R_{Nb}}{GDP_n}$, where R_{Nb} – the refinancing rate of the National Bank of

the Republic of Belarus; GDP_n – GDP growth rates in nominal terms.

If the refinancing rate of the National Bank of the Republic of Belarus is higher than the nominal GDP growth rate, the development of operations in the markets of internal and external public debt leads to an increase in the debt burden of the republican and local budgets, an increase in interest rates and the development of inflation processes in the economy.

7. *The ratio of the growth rate of the dollar USA in Belarusian rubles (BYN) $ik_{BYN/USA}$ and the growth rate of the PTC I_{RTSI} index.*

The optimal criterion level is

$$\frac{I_{RTSI}}{ik_{BYN/USA}} > 1,$$

where I_{RTSI} – index growth rate should exceed; $ik_{BYN/USA}$ – growth rate of the dollar USA in Russian rubles, i. e. in the medium term, the $RTSI$ index growth rate should exceed the rate of exchange rate growth. If the growth rate of the stock index is lower than the growth rate of the dollar, this indicates a negative assessment by investors of the economic situation in the country as a whole and, in particular, in its individual sectors. In fact, this criterion shows that with a favorable economic situation, the value of Belarusian organizations, expressed in freely convertible currencies, increases.

Библиографические ссылки

1. Полоник СС. *Экономическая безопасность Республики Беларусь в условиях финансового кризиса: внешнеэкономические и финансовые аспекты*. Минск: Научно-исследовательский экономический институт Министерства экономики; 2009. 371 с.
2. Полоник СС. Влияние макроэкономических условий на рост валового внутреннего продукта. *Экономический бюллетень*. 2008;6:4–10.
3. Мясникович МВ, Полоник СС, Пузиков ВВ. *Управление системой обеспечения экономической безопасности*. Минск: Право и экономика; 2006. 380 с.
4. Статистический ежегодник Республики Беларусь, 2017. Минск: Национальный статистический комитет Республики Беларусь; 2017. 506 с.
5. Полоник СС. *Моделирование системы управления макроэкономическим равновесием при асимметричности информации*. Минск: Институт аграрной экономики Национальной академии наук Беларуси; 2003. 526 с.

References

1. Polonik SS. *Ekonomicheskaya bezopasnost' Respubliki Belarus' v usloviyakh finansovogo krizisa: vneshneekonomicheskie i finansovye aspekty* [The economic security of the Republic of Belarus in the financial crisis: foreign economic and financial aspects]. Minsk: Scientific Research Economic Institute of the Ministry of Economics of the Republic of Belarus; 2009. 371 p. Russian.
2. Polonik SS. [The influence of macroeconomic conditions on the growth of gross domestic product]. *Ekonomicheskii byulleten'* [Economic Bulletin]. 2008;6:4–10. Russian.
3. Myasnikovich MV, Polonik SS, Puzikov VV. *Upravlenie sistemoi obespecheniya ekonomicheskoi bezopasnosti* [Management of the economic security system]. Minsk: Pravo i ekonomika; 2006. 380 p. Russian.
4. Statistical Yearbook of the Republic of Belarus, 2017. Minsk: Statistical Committee of the Republic of Belarus; 2017. 506 p. Russian.
5. Polonik SS. *Modelirovanie sistemy upravleniya makroekonomicheskim ravnovesiem pri asimmetrichnosti informatsii* [Modeling of macroeconomic equilibrium management system with information asymmetry]. Minsk: Institute of Agrarian Economics of the National Academy of Sciences of Belarus; 2003. 526 p. Russian.

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