ASSESSMENT OF THE FINANCIAL SOUNDNESS OF THE MOLDAVIAN BANKING SYSTEM

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In paper was performed an assessment of the Moldavian banking system soundness. The study was based on Kromonov approach, used by to investigate the reliability of the banking sector in CIS countries. The results were confirmed by the analysis of the main financial stability indicator, published by the National Bank of Moldova. Results denoted that in 2014 and 2015, was a slight improvement of the Moldavian banking system soundness, but despite this improvement, was showed a large gap between the determined level for the Republic of Moldova financial system and the "ideal" level.

Key words: *financial stability, Kromonov index, banking sector, financial regulation*

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Introduction

The proper functioning and reliability of the banking sector is one of the main factors which determines the macroeconomic stability of the national economy and proper development of its individual segments.

The global financial crisis highlighted the need for proper frameworks for regulation and monitoring of the financial system risks.

Unlike price stability, financial stability is a more comprehensive concept, not easy to define and measure, given the complex interaction with macroeconomic processes. Strictly speaking, a financial system can be characterized as stable in the absence of excessive volatility, stress or crises. (Gadanecz, Jayaram, 2009).

During the last decade were developed many methods for assessment and monitoring of the financial system risks, but most of them were based on monitoring individual indicators of the financial sector.

The most used indicators of the financial stability were reflected in the financial stability reports published by the central banks. The first attempt to develop a methodology which would made these indicators comparable at the international level, was the International Monetary Fund Compilation Guide of the Financial Soundness Indicators (FSI), published in 2006, which comprises a set of 39 indicators for financial stability assessment.

Recently, were made some attempts to develop a single aggregate measure to monitor the degree of the financial fragility. The advantages of the aggregate index is more sustainable monitoring of the financial system distress and prompter anticipation of the potential sources of financial instability.

Goodhart et al (2006) state that financial crisis monitoring can effectively be done with an indicator of banking sector profitability as well as the probability of default. Illing and Liu (2003) and Van den End (2006) provide a good descriptions of how one might attempt to build a composite indicator of financial stability.

The IMF has started publishing a global financial stability map which presents an assessment of the risks and the underlying conditions for the global financial system. The global financial stability map presents an overall assessment of how changes in underlying conditions and risk factors bear on global financial stability in the period ahead.

Van den End (2006) advanced a financial stability condition index for the Netherlands. This index incorporated interest rates, effective exchange rate, real estate and stock prices, solvency of the financial institutions, as well as volatility of the stock index of financial institutions.

The scope of this paper is assessment of the financial soundness of the Moldavian banking system. Unlike other studies, performed in this field, we aimed to develop a more complex approach for assessment. Namely, we used the Kromorov index, applied for investigation of the level of reliability of the banking system in some CIS countries. (Savderova, Kolitsova, 2013). In order support obtained results, we also analyzed the dynamic of the main indicators of the financial stability, published by the National Bank of Moldova.

The paper was structures as follows: in second section was described the methodology behind the Kromonov approach, in third section were presented the results of the study and was investigated the evolution of other macroprudential policy indicators. The final section concludes.

2. Methodology of assessment of the rating of financial stability of the banking sector

The Kromonov index (N) is a complex approach for assessment of the financial soundness of the banking system. Can be used both, at aggregate level and at individual level, too. At individual level, was applied to calculate the individual raiting of a specific bank.

As the criteria of the reliability of the banking sector, Kromonov used 6 coefficients, calculated on the basis of the balance sheets account of the banking system at the aggregate level. To calculate the aggregate index (N) coefficients are normalized by dividing each coefficient to the optimum performance, from author's point of view, and then are summed.

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The Kromonov index allows to investigate the dynamics of the financial system soundness and also, to compare with the evolution from other countries. Below are presented the coefficients used to determine the aggregate index:

1. General safety index (k1) – shows at which level the risky investments are secured by the bank's own capital. If it is less than 1, then the lending bank uses not only its own funds, but also the client's money.

$k1 = K/AP$ (1)

where: K – amount of the bank's own capital, determined as: sum of the total value of the bank's funds + retained earnings + future incomes – others debts;

AP – size of the working assets: total loan debts, including overdue loans + investments in securities + other capital participations-leasing + factoring operations

Shows how the bank's risky investments in operating assets are protected by the own capital, which will cover possible losses in case of default or depreciation of the working assets.

2. Instant liquidity ratio (k2): denotes the ability of the bank to respond to any immediate claims "at the demand"

$k2 = LA/OD$ (2)

where: LA – liquid assets, in national and foreign currency, hold in the correspondent account of the bank + cash + reserves at the central bank + holdings in public securities.

OD – "at the demand" liabilities, including the settlements related to the clients' current accounts + obligations to issuers of securities, which distributes the bank – other immediate claims

It indicates whether the bank uses client moneys as own credit resources, and namely:

- the extent to which customers are eligible to receive interest on their placements;

- the extent to which their payment orders are assured by the bank's possibility to make payments quickly;

3. Cross-factor (k3): shows the share of the total bank's liability to loans. The smaller is the amount of bank's loans financed by borrowed resources, the more reliable it is.

$k3 = AL/AP$ (3)

where: AL – borrowed resources: short-term liabilities + clients' deposits + received inter-bank credits

Indicates the degree of risk at which the bank accepted to expose itself by using borrowed funds.

4. General liquidity ratio (k4) – shows the bank's ability to cover its liabilities with liquid money hold in cashier and correspondent accounts and other capital such as real estates and other values.

$k4 = (LA + 3K)/AL$ (4)

where: 3K – protected capital: main bank's assets + other capital investments + reserves in precious metals

Characterizes the bank ability, in condition of the non-repayment of loans from debtors, to satisfy the claims of creditors in the reasonable period of time, required for banks property and valuables sales.

5. Capital protection coefficient (k5) – shows how the bank's capital is protected against the different kinds of risks and inflation by investing money in real estates and other values.

$k5 = 3K/K$ (5)

Shows how the bank take account for inflation and what share of its assets are placed in real estates, valuables and equipment.

6. Coefficient of capitalization ratio of profit (k6) – shows the ratio of own resources of the bank to shareholders capital. As the bank's overall performance indicator, characterizes the bank's independence from individual shareholders.

$k6 = K/CS$ (6)

where: CS: share capital + additional evaluations from the foreign currency deposits of the founders.

Characterizes the bank's ability to increase its own capital with earned income, and not additional issues of shares.

7. Overall soundness - to draw up the general formula for overall bank's soundness, is introduced the notion of "ideal bank". It is supposed that a sufficiently reliable bank is approaching the coefficients of the ideal bank. The coefficients of the ideal bank are the following: k1=1; k2=1; k3=3; k4=1; k5=1; k6=3. To bring all coefficients to comparable values, k3 and k6 coefficients are divided by 3 and the remaining to 1. Also, is important to mention that all factors affect the bank's reliability with different force. Therefore, each coefficient will be provided with corresponding weight: k1 – 45%, k2 – 20%, k3 – 10%, k4 – 10%, k5 – 5%, k6 – 10%.

Therefore, the general formula becomes:

N = (к1/1)x45+(к2/1)x20+(к3/3)x10+(к4/1)x10+(к5/1)x5+(к6/3)x10 (7)

3. Results of the empirical analysis

To calculate the described earlier coefficient, we used data with annual frequency, published by the National Bank of Moldova.

Table 1 Dynamics of the coefficients for banking sector reliability assessment, in the period of 2012-2016

Indicators	***2013***	***2014***	***2015***	***Equilibrium levels***
General safety index (k1)	0.27	0.23	0.30	1
Instant liquidity ratio (k2)	0.34	0.22	0.42	1
Cross-factor (k3)	1.57	1.55	1.57	3
General liquidity ratio (k4)	0.71	1.54	0.70	1
Capital protection coefficient (k5)	0.20	0.21	0.20	1
Coefficient of capitalization ratio of profit (k6)	2.50	2.48	2.58	3
Overall soundness (N)	**40.49**	**44.59**	**43.77**	**140**

Source: authors' calculations

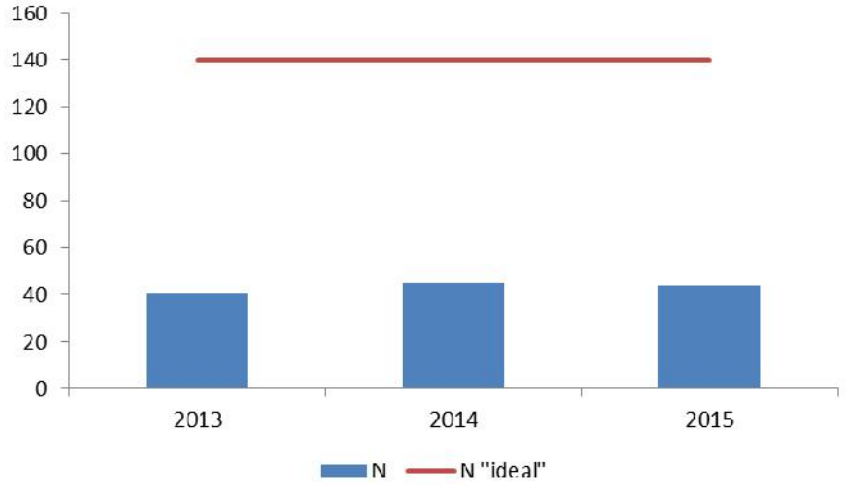

Fig. 1. Dynamics of the Moldavian banking system soundness

Source: authors calculations

As we can see from the figure above, in 2014 and 2015, the Kromonov index indicates a slight improvement of the Moldavian banking system soundness, but despite this improvement, we can see a large gap between the determined level for the Republic of Moldova financial system and the "ideal" level. A large contribution to the stabilization of N can be attributed to the slight increase of the coefficients k1 (General safety index) and k2 (Instant liquidity ratio).

Near the equilibrium level were the coefficients k2 (Instant liquidity ratio) and k6 (Coefficient of capitalization ratio of profit). This fact denotes that during the analyzed period the liquidity level was at sustainable level, Moldavian banking system, being protected in the short-time. But the coefficients General safety index (k1) and Capital protection coefficient (k5), showed that in the long-run the sustainability of the banking system is seriously affected.

To confirm our results, we investigated also the evolution of the main indicators of the banking sector financial stability, published by the National Bank of Moldova.

Table 2. Main financial indicators of the financial stability of the Moldavian banking sector

		2013	**2014**	**2015**
CAPITAL				
Risk weighted capital adequacy ratio (≥ 16%)	%	23.02	13.92	26.21
Tier I capital / Risk weighted assets	%	22.34	13.41	25.29
ASSETS				
Balance of non-performing assets / TRC	%	24.55	19.13	18.51
Total assets / Total capital		6.66	7.60	6.00
Total assets of the financial system / GDP	%	76.28	84.03	56.71
INCOME AND PROFITABILITY				
Return on assets (ROA)	%	1.56	0.85	1.66

Return on equity (ROE)	%	9.42	5.86	9.06
LIQUIDITY				
Principle I – Long-term liquidity ratio (≤ 1)		0.71	1.54	0.70
Principle II – Current liquidity ratio (≥ 20%)	%	33.76	22.48	41.72

Source: National Bank of Moldova Statistics database (http://bnm.md/bdi/pages/reports/drsb/ DRSB1.xhtml)

From the table above, we can see that mainly all indicators, decreased in 2014, returning back in 2015. But, besides the worsening situation in 2014, for all analyzed period, all indicators were at their sustainable levels. Risk weighted capital adequacy ratio was above the level of 16%, share of the non-performing loans in total credit portfolio was relatively low, long-term liquidity ratio was unsustainable only in 2014, while the current liquidity ratio was at its equilibrium level during all investigated period.

Comparing both approaches for assessment of the risk of financial instability, we can see that besides the traditional soundness indicator display a relative stable situation of the Moldavian banking sector, the Kromonov index shows that, comparing with an ideal situation, the investigated banking system is fragile enough. In our opinion this can be explained by the fact that the traditional indicators, are appropriate for testing the current financial system soundness, while the aggregate indexes of the financial stability, take into account the long-term sustainability of the financial sector.

4. Conclusions

The recent global financial crisis highlighted the importance of the banking system in ensuring the macroeconomic stability of the national economy. The results of the performed study showed that in the last three years the liquidity level was at sustainable level, Moldavian banking system, being protected in the short-time. But the coefficients General safety index (k1) and Capital protection coefficient (k5), showed that in the long-run the sustainability of the banking system is seriously affected. Besides, the aggregate Kromonov index denoted a large gap between the determined level for the Republic of Moldova financial system and the "ideal" level. The traditional indicators of the financial sector soundness displayed a relative stable banking sector. From this we can conclude that for proper assessment of the risk of financial instability are appropriate a more complex approaches, which would comprise a range of different methodologies for assessment.

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