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FINANCIAL STABILITY OF BANKING SYSTEM: KAZAKHSTAN CASE STUDY

This paper identifies the methodological approaches to the definition of financial stability and determines the factors affecting it. The stress-testing scenarios based on Bloomberg's consensus forecast were used for the research. The case study covered 18 second tier banks of Kazakhstan. The problems of banking system were determined, and the solutions were suggested.
Keywords: *financial stability; banking system; stress test; Kazakhstan.*

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ФІНАНСОВА СТАБІЛЬНІСТЬ БАНКІВСЬКИХ СИСТЕМ: НА ПРИКЛАДІ КАЗАХСТАНУ

У статті розкрито методологічні підходи до визначення фінансової стабільності банківської системи та визначено фактори, що впливають на стабільність. Використано стрес-тест сценарію до консенсус-прогнозу "Bloomberg". Дослідження проведено за даними 18 банків другого рівня. Виявлено проблеми банківської системи Казахстану та розроблено відповідні рекомендації.
Ключові слова: *фінансова стабільність; банківська система; стрес-тест; Казахстан.*
Табл. 2. Літ. 11.

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ФИНАНСОВАЯ СТАБИЛЬНОСТЬ БАНКОВСКИХ СИСТЕМ: НА ПРИМЕРЕ КАЗАХСТАНА

В статье раскрыты методологические подходы к определению финансовой стабильности банковской системы и определены факторы, влияющие на стабильность. Использован стресс-тест сценария по консенсус-прогнозу "Bloomberg". Исследование проведен по данным 18 банков второго уровня. Выявлены проблемы банковской системы Казахстана и разработаны соответствующие рекомендации.
Ключевые слова: *финансовая стабильность; банковская система; стресс-тест; Казахстан.*

Introduction. Sustainable banking sector effectively and fully performs the functions of financial intermediation, as well as contributes to the development of the economy as a whole. According to the Law of the Republic of Kazakhstan "On Banks and Bank Activities in the Republic of Kazakhstan", bank is a legal entity and a commercial organization that by the Law shall be entitled to carry out banking activities (31.08.1995, #2444).

The most important element in ensuring financial stability of the banking sector is the financial stability of commercial banks, in which the ability to pay is constant in time, and the ratio of equity and debt capital provides this ability to pay and the state of financial stability in long-term perspective. It is related to balance structure of a bank, depending on its creditors and investors and the terms on which they maintain bank's resources.

However, it should be stated that the issues regarding financial stability of commercial banks, both from theoretical and practical perspectives have not been suffi-

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ciently developed yet. In particular, the existing methods of assessing financial stability of a commercial bank are mainly designed for banks and are not understandable or fully accessible to other market participants, interested in assessing the financial stability of each bank and the banking system, basing on the published financial statements with reasonable certainty, to make the necessary assessment.

Literature review. Financial stability of banks has been a subject of scientific discussion of international experts for a long time. The recent financial and banking crisis shows, intense and increasing risks related, on the other hand – scientific community and the practitioners are actively discussing the causes of this crisis and the methods of preventing it at early stages (Akhigbe et al., 2012; Gande et al., 2008; Allen and Wood, 2006; Eisenbeis and Kaufman, 2008).

It is difficult to determine the term "financial stability", since there is no common and widely accepted definition. Moreover, some authors define financial stability in relation to what financial stability is not: Crockett (1997) states that financial stability is the absence of instability. He explains it as the situation in which economic performance is not undermined by price fluctuations of financial assets or by the situation when financial institutions are unable to meet contractual obligations. Chant (2003) asserts that financial instability refers to the situations in which financial markets affect or threaten to affect economic performance. In contrast to these authors, we believe that financial stability covers monetary stability and efficient work of financial institutions and financial markets.

We would agree with Schinasi (2006) that "financial stability is that situation in which the financial system is capable to:

- allocate resources efficiently between its activities and over time,
- assess and manage financial risk,
- absorb shocks. A stable financial system is the one that improves economic performance and wealth accumulation, while it is also possible to prevent effects caused by the impact of disruptive disorders". Table 1 presents the examples of definitions of financial stability.

Processes occurring in the global economy, especially the phenomenon of markets' globalization, led to an increased risk of crises spread, which further expanded to the desire to minimize the risks of contagion and to increase the strength of the international financial system. Thus, we can formulate the following key features of financial stability of commercial banks:

- financial stability is the range of conditions, and not a specific optimal point of the current condition;
- this range provides balanced performance and shaped margin of safety, as well as the potential;
- financial stability of banks can only be achieved with the coordinated work of supervisors and bank management, capable of providing internal balancing business model;
- financial stability of the banking system is not a direct consequence and is not equal to the total financial stability of individual banks.

The research objectives are to analyze the financial stability of the banking sector of Kazakhstan and determine its key problem, as well as to develop reasonable solutions.

Table 1. **Examples of definitions of financial stability in financial stability reports, composed by authors,** *based on* Cihak (2006)

Country	Definition	Part of the report
Republic of Kazakhstan	Financial stability is defined as the absence of disproportions in the economy, which may cause the consequent negative correction of financial markets, emergence of systemic crisis and inability of financial institutions to maintain smooth financial system operations and business activity of the real sector. Financial stability is maintained by the adequate state regulation of the current and potential risks, by the effectiveness of risk management and risk redistribution mechanisms, and by the confidence of financial services consumers to the financial system	Foreword
Euro Area	A condition when financial system is capable of performing well at all of its normal tasks and where it is expected to do so for the foreseeable future	Preface
Norway	Financial stability means that financial system is robust to disturbances in the economy and is able to mediate financing, carry out payments and redistribute risk in a satisfactory manner. Experience shows that the foundation for financial instability is laid during the periods of strong growth in debt and asset prices. Banks play a central part in extending credit and mediating payments and are therefore important to financial stability	Box on the inside cover
Sweden	The analysis of financial stability concerns the ability to withstand unforeseen shocks to financial companies as well as to financial infrastructure, that is, the systems that are required for making payments and for trading and delivering financial products. The analysis of financial companies concentrates on the 4 major Swedish banking groups because they are of crucial importance for the payment system's stability	Foreword
Canada	Explicit definition not provided, but a box on the inside cover lists components of the financial system and notes that serious disruptions to one or more of these components "can create substantial problems for the entire financial system and, ultimately, for the economy as a whole". It also notes that "inefficiencies in the financial system may lead to significant economic costs over time and contribute to a system that is less able to successfully cope with periods of financial stress"	Box on the inside cover

Research findings and discussion. A large and growing number of central banks regularly publish their analysis of risks to financial stability, generally making use of a range of financial sector indicators. The National Bank of the Republic of Kazakhstan (NBRK) is a central authority responsible for ensuring financial stability and implementing macroprudential regulations. It prepares and publishes the Financial Stability Report (FSR) of Kazakhstan on the annual basis, since 2006.

The Financial Stability Report of Kazakhstan considers the following issues:

1) how efficiently and timely financial resources are reallocated among those who save and invest money;

2) whether risks are adequately assessed and effectively managed;

3) whether financial shocks can be absorbed by the financial system without significant consequences (FSR of Kazakhstan, 2012).

In order to assess the sustainability of the banking system against negative changes in the macroeconomic environment, the stress-testing was conducted for 18 banks. The share of assets of these banks accounted for 82.7% of the total assets of the banking system. Moreover, they provided credits to the sectors exposed to shocks, such as the industry, construction and trade. Stress-testing was based on the data as of the 3rd quarter of 2014 with the one-year forecast period.

Two scenarios in the development of macroeconomic situation were reviewed:

- baseline scenario where the current trend of change in the oil price is reflected;
- stress-scenario with an extreme, but probabilistic scenario of change in the oil price is assumed, supposing the recession of the global economy and a significant drop in the demand for raw materials.

When conducting the stress-testing, the model uses the assumptions that assets, capital, loan portfolio, risk-weighted assets, sectoral mix of loan portfolio and the probability of bank defaults remain unchanged throughout the entire forecasting period.

A multifactor portfolio model has been designed with the participation of the Deutsche Bundesbank. IFO Working Papers No.85 were used for stress-testing. The model evaluates the influence of macroeconomic parameters on the credit risk of banks and recognition of systemic and specific risks through the changes in loan portfolio by economic sectors, based on interrelation within sectors. The capital adequacy of banks was considered to see how credit risk would change under the scenario of negative oil price shock. The results are presented in Table 2.

Table 2. **Stress-testing scenarios**

Macroeconomic indicators	Baseline scenarios	Stress scenario
Price of Brent oil (USD, average for the period)	Minor increase to 111 USD in the 3rd quarter of 2015[1)]	Gradual decrease to 40 USD in the 3rd quarter of 2015
Nominal exchange rate (KZT/USD)[2)]	Depreciation by 3.9%	Depreciation by 12.7%
Kazakhstan's real GDP (bln KZT, for the period)	Growth by 5.1%	Minor growth by 1.2%
Output in the mining industry	Decrease by 1.4%	Decrease by 2.5%
Output in manufacturing	Growth by 2.1%	Decrease by 1.4 %
Output in the construction sector	Growth by 9.7%	Minor growth by 2.3%
Output in trade	Growth by 1.4%	Growth by 9.8%

[1)] Baseline scenario is based on the Bloomberg's consensus forecasts.

[2)] Values of the indicators are shown as changes in the 3rd quarter of 2014 to the respective period of the next year.

Estimated losses in the case of stress-scenario implementation account for about 22% of the regulatory capital in annual terms, which results in the drop of capital adequacy ratios and violation of the established ratios by certain banks. Out of the sample of 18 banks, 4 banks violate k1-2 capital adequacy requirement, 3 banks violate k2 requirement and for one bank the value of k2 is approaching the required minimum ratio. Generally, if the stress-scenario is realized, capital adequacy ratios in the 3rd quarter of 2015 would go down to 0.122 for k2 (with the minimum ratio of 0.10), and to 0.078 for k1-2 (with the minimum requirement of 0.05).

According to the estimation output, should this scenario be realized, with the decrease in capital buffer by 1% the growth in lending decreases by 3.6%. Given the elasticity coefficient along with the fixed effect for each bank, the reduced lending growth as a result of the stress-scenario amounts to 3.2% for these 3 banks violating k2 ratio. Given the share of 3 banks in the banking system, a decrease in lending growth of the whole system is estimated at 1.4 pp. Additional imposing of this effect in the stress-scenario shows that estimated under the stress-scenario GDP growth of 1.2% goes down to 0.7%. Thus, banks' slowdown in lending due to losses risen from the stress-scenario realization ultimately result in dropping in GDP growth by 0.5 pp.

There is a positive dynamics in assessing sustainability of the banking system over time. This has been affected by the increase of Tier 1 capital and the decrease of certain stress-affected industries' share in the loan portfolio. Also, contrary to previous stress-tests, realization of loss from the violation of capital adequacy ratios is observed only in the last quarter of the estimated period. In the updated stress-testing model, the industry was broken down by mining and manufacturing, since their share in Kazakh GDP increased significantly; thus, the estimates are of better quality. These factors contributed to the improved shock-absorbing capacity of banks.

Conclusion. Based on the main research findings presented in the section above, we came to the following conclusions:

a) the stability can be determined only in a probabilistic form, since the evaluation is carried out in a static (at a particular point of time, based on the trial balance) or comparative statics (based on historical data) and does not take into account the possible impact of external and internal factors on the state of the bank in the future. The external factors reveal the degree of banking instability or vulnerability;

b) stability is determined by the dynamics of a certain period of, based on current performance and describes the range of conditions;

c) in a globalized world and after the financial crisis, special attention should be paid to financial stability of commercial banks.

The level and degree of financial stability of commercial banks is influenced by many different factors of macro- and microeconomic, international, national, regional and local levels, the general state of the economy and financial and credit sectors, objective and subjective, as well as internal and external factors. As a result, multidirectional action of the factors influencing commercial banks are not the same, formed by a variety of banking policy priorities for managing financial stability.

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