Evaluation of Influence of Macroeconomic Shocks on the Banking Sector of Kazakhstan

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ABSTRACT

The study presents the indicators of the level of non-performing loans (NPL) and the measure of "financial depth" of banking systems in several countries, as well as demonstrates the link between them. Further, it examines the results of the analysis of the development of banking sector and the assessment of the influence of macroeconomic factors on the sustainability of the banking sector of Kazakhstan. A mathematical model of dependence of the level of NPL on macroeconomic shocks such as economic growth rates, dynamics of the national currency exchange rate, unemployment and inflation is developed.

Keywords: Level of Non-performing Loans, Financial Stability Monitoring System, Financial Depth, Sustainability of Banking Sector
JEL Classifications: E51, E42

1. INTRODUCTION

Despite a relatively large number of studies devoted to the development of indicators and methods for the assessment of banking system stability, a comprehensive methodology for the evaluation of the impact of various factors on the system performance is not fully developed at the present time. We believe that the development and improvement of a system for the assessment of stability of banking sector contribute to the continuous monitoring of its performance and have a positive impact on strengthening the sustainability of a particular commercial bank as well as the banking system as a whole.

It is virtually impossible to evaluate the stability of the banking system based on one particular indicator. The evaluation process is complicated due to the presence of a large number of different factors that may significantly affect the situation in the sector. As the crisis periods of the economic development have shown, the roots of the crisis in the banking industry may lie not inside the banking system itself but outside of it. Therefore, while assessing the stability of a country's banking system, one should take into

account some macroeconomic indicators that have an effect on the banking system resilience:
1. The stability of monetary aggregate - The situation evolving today in the country's economy confirms the particular role of this indicator.
2. The rate of inflation - important role and impact of this indicator is also determined by the situation that takes place in the country's economy nowadays.

   Achieving the stability of monetary aggregate and lowering the inflation rate are considered to be one of the measures for stabilizing the economy that contribute to the improvement of market relations, production stimulation and maintenance of banking sustainability. Instability of monetary aggregate and rising inflation adversely affect the performance of the banking system.
3. Gross domestic product (GDP) growth rate is one of the indicators characterizing the scope of a country's economic development. Over time, even slight changes in GDP growth rates may become critical and affect the macroeconomic performance of the banking sector.
4. Changes in monetary and credit policy - monetary and credit

policy exert influence on investment activity and other key macroeconomic processes (Lavrushin, 2014).

In general, the system of indicators of banking crisis should assess the current financial and economic situation, determine the state of banking crisis, and estimate the probability of crisis in the future on a timely basis.

The characteristic features of early warning systems: Represent statistically justified attempts to identify key dependencies in historical data; seek to formulate clear versions on the factors that cause critical situation; are aimed at forecasting as the final result; are based on a certain analytical judgement of critical situation.

Drawbacks of early warning systems include the following: A relatively short forecasting horizon does not always give regulator the opportunity to apply adequate measures of influence to stabilize the situation; forecasting model may contain the data that is not actually available at the moment when it is necessary to make a prediction; the choice of independent variables may be too tied to the data within the system, that is why "the prediction" is not clear and the necessity of re-adjustment using the data outside the sample arises; early warning systems tend to generate too many "false signals", that is to predict the crises that do not occur; they are criticized for the absence of guarantee that the established patterns in the past will have the same force in the future.

2. LITERATURE REVIEW

To date, an international practice has seen a significant number of analytical studies on monitoring of financial stability and development of early warning indicators of crises. The main disadvantages of the models developed after the 1997 crises up to the crisis of 2008 include the systems failure to predict the onset of the 2008 financial crisis, the models focus on tracking the risk of certain types of crises, testing the models on the crises of selected developing countries (mainly, countries of Asian region), the absence of a number of sectors and indicators that were leading indicators of the 2008 crisis (the real estate market, the market for structured products, and etc.) in the models.

As a rule, earlier versions of early warning systems are based on the probability model of crisis that link macroeconomic indicators (such as, current account deficit or ratio of reserves to short-term debt in the countries with transition economies) and crises. These models have been successfully used to encompass banking and financial crises as well.

Alessi and Detken (2011) create simple early warning indicators from a wide range of real financial indicators - including GDP and its components, inflation, interest rates and money supply indices - for 18 member-states of the Organisation for Economic Co-operation and Development between 1997 and 2007. Excessive values of these aggregates are indicative of the upcoming boom or recession over the next six-quarter (year and a half) horizon.

Borio and Drehmann (2009) offer a corresponding approach, but with the signals that are determined by synchronous limits for the

pair of property prices, securities prices and credit spreads that are obtained from the data on 18 developed countries for the period from 1970 to 2007.

Goodhart and Persaud (2008) argue that if market value of assets or loans was useful for predicting crashes, the financial crises would not occur. And it seems to be true - for instance, Abreu and Brunnermeier (2003) describe how bubbles in the assets market grow larger for a long period of time despite the presence of rational speculators. These findings suggest that the development of early warning indicators based solely on the market values has serious shortcomings.

Schwaab et al., propose a novel concept for the assessment of systemic financial risks. Applying a dynamic factor model based on state-space methods, they develop corresponding measures and forward-looking indicator to evaluate the likelihood of simultaneous failure of a large number of financial intermediaries (Schwaab et al., 2011). Suggested indicator of early warning of critical financial situation is based on the current deviation of credit risk conditions from their main macro-financial fundamentals. In Alessi and Detken's (2011) research, it is associated with the operation of existing early warning indicator using the ratio of loans to GDP.

3. METHODS

The main purpose of this study is to analyze the extent of the banking sector development and to assess the impact of macroeconomic factors on the sustainability of the banking sector in Kazakhstan.

The analysis of the dynamics of the banking system plays a significant role in the improvement of the model of its functioning. To investigate the influence of cyclical economic processes on the performance of banking system, it is possible to apply the complex of approaches in order to bring the banking system parameters to a single measure (Bondarenko, 2015).

The adjustment of the banking activity criteria using the method of "dollar conversion" is determined by the stability of the global currency in the period of functioning of a modern system of credit institutions. The calculations are made in two consecutive stages:

The value of absolute indicator in USD adjusted for the inflation in a country of issue and expressed in current prices for the accounting period is defined as follows:

$$A_{USD_t} = A_{USD} * \left(1 - \frac{I_{USD}}{100 + I_{USD}} \right)$$

(1)

Where A_{USD_t} - Is the value of the indicator in absolute terms on a certain date, USD,

I_{USD}

• Is the general rate of inflation in a country of issue for the accounting period, % estimated values in foreign currency are

expressed in the national currency at the exchange rate on the current date.

As a result, the volatility of the national currency exchange rate as well as the impact of its devaluation can be avoided. The official inflation rate in the USA reflects the real loss of the purchasing power of a dollar, which allows to analyze the parameters of banking activity in a long term with the maximum precision.

Further, the adjustment of absolute values for the inflation rate gives the opportunity to express the banking system dynamics in current prices. One of the features of the method is a long-term period of the analysis, therefore there is a high probability to obtain the parameters that do not correspond to the actual development of the system of credit organizations due to the instability of the national currency and financial sector parameters. The real value of the absolute indicator adjusted for the inflation is defined by the following formula:

$$A_{Inf} = A * \left(1 - \frac{I}{100 + I}\right) \tag{2}$$

Where A - Is the value of the indicator in absolute terms, KZT;

I - Is the inflation rate.

Converting the absolute values into current period prices is possible using the cost of a basket of goods and services purchased by consumers, which shows the real inflation in the economy. Adjusted indicator is calculated as follows:

$$A_{cpk} = \left(\frac{A}{CPK_t}\right) * CPK \tag{3}$$

Where CPK_t - Is the cost of consumer basket for a certain date, KZT;

CPK - Is the cost of consumer basket for the accounting date, KZT.

The parameters estimated using the ratio of absolute indicators to the money supply (M2 monetary aggregate) in the country and to the real GDP more precisely characterize the level of the development of banking system. The method allows to reflect the trends while not taking into account the macroeconomic indicators, such as inflation, fluctuations of the national currency exchange rate, changes in refinancing rate, and etc.:

$$A_{M2} = \left(\frac{A}{M2_t}\right) * M2 \tag{4}$$

Where $M2_t$ - is the money supply measure (M2 monetary aggregate) on a certain date, KZT; M2 - is the money supply measure (M2 monetary aggregate) on the accounting date, KZT.

$$A_{GDP} = \left(\frac{A}{GDP_t}\right) * GDP \tag{5}$$

Where GDP_t - Is the GDP on a certain date, KZT;

GDP - Is the GDP on the accounting date, KZT.

The estimated values characterize the dynamics of the banking sector indicators as well as the development of banking system relative to the abovementioned macroeconomic parameters.

Based on the results obtained using different approaches (dollar conversions, adjustment for the inflation, applying the cost of consumer basket, and the ratio to money supply and GDP), we estimate a mean value of the parameters:

$$\bar{A}n = (A\_USD + A\_Inf + A\_cpk + A\_M2 + A\_GDP)/5 \tag{6}$$

The practical stage of the study is referred to the creation of a model that allows to reveal the degree of the impact of macroeconomic shocks on the sustainability of the second-tier banks of the Republic of Kazakhstan. The model represents a time series estimated using the ordinary least squares method. It is possible to incorporate lagged variables in time series. Lagging of the explanatory variables accounts for the possible delay, to which macroeconomic shocks produce effects on the banks. In other words, the changes in the values of macroeconomic factors do not affect the banks performance immediately, but rather occur later with a lag over some time period. It is important to identify and take into consideration these lags in order to form a more accurate and complete picture of the impact of macroeconomic fluctuations on the banking sector.

4. RESULTS

The data provided in the Table 1 exhibits the growth in the assets of the second-tier banks of the Republic of Kazakhstan for the period between 2006 and 2015 from KZT 4,515 billion to KZT 18,239 billion, or 4 times, and the growth of the given indicator can be observed in each accounting period except for 2009. However, these findings do not take into account the impact of internal and external factors on the banking sector.

To assess the changes of the banking sector parameters relative to the global banking system, we recalculate the data applying the method of the adjustment for the exchange rates fluctuations, and as it is described earlier, we use the most stable currency, which is USD. Thus, according to the estimated values, the total assets of the second-tier banks of the Republic of Kazakhstan have increased from KZT 7,342 billion to KZT 18,530 billion, or 2.5 times. Further, one can observe the variability in the dynamics of the banking sector development compared to the unadjusted data. In 2014, the value of the adjusted total assets of the second-tier banks has dropped from KZT 18,716 billion to KZT 18,530 billion, this fact reflects the contraction of the banking sector of the Republic of Kazakhstan relative to the global banking system. Given situation is associated with the weakening of the national currency and its devaluation in February, 2014.

The assets adjusted for the inflation rate (in prices as on 01.01.2015) have grown from KZT 7,000 billion to KZT 19,496 billion or almost 3 times for the investigated period. In general, the dynamics of the baking sector development corresponds to the direction of the unadjusted values, except for 2008. During this period, one can observe the reduction of the adjusted values of

Table 1: The dynamics of assets of the second-tier banks of the Republic of Kazakhstan in 2006-2015

Macroeconomic parameters	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
KZT to USD yearly average exchange rate, KZT	132.9	126.1	122.6	120.3	147.5	147.4	146.6	149.11	152.1	179.2
Inflation rate in the USA, %	3.88	3.22	2.848	3.84	-0.356	1.64	3.157	2.069	1.465	1.622
Inflation rate in the USA (relative to 01.01.2015), %	25.91	21.21	17.43	14.18	9.95	10.35	8.57	5.24	3.11	1.62
Inflation rate in Kazakhstan, %	7.5	8.4	18.8	9.50	6.20	7.8	7.4	6.00	4.8	7.40
Inflation rate in Kazakhstan (relative to 01.01.2015), %	122.38	106.86	90.83	60.63	46.70	38.13	28.14	19.31	12.56	7.40
Subsistence minimum	9,200	9,752	10,515	13,470	14,952	15,999	17,439	18,660	19,966	21,364
GDP, KZT billion	7,591	10,214	12,763	16,053	17,008	21,816	27,572	30,347	35,275	39,041
Money supply, KZT billion	1,515.97	2,814.55	3,553.64	4,620.33	5,335.20	6,570.10	7,967.50	8,546.94	8,677.61	7,967.72
Assets, KZT billion (in prices for 01.10.2015)	4,515	8,872	11,683	11,890	11,557	12,032	12,818	13,880	15,462	18,239
Adjustment using USD	7,342	14,814	19,619	19,909	15,311	16,003	16,901	17,511	18,761	18,530
Adjustment using inflation	7,000	13,455	17,244	16,377	15,236	15,353	15,633	16,126	17,186	19,496
Adjustment using the subsistence minimum	10,485	19,436	23,738	18,857	16,514	16,066	15,703	15,891	16,544	18,239
Adjustment using M2 monetary aggregate	23,731	25,116	26,196	20,504	17,260	14,591	12,818	12,939	14,197	18,239
Adjustment using GDP	23,223	33,912	35,738	28,916	26,530	21,531	18,150	17,856	17,112	18,239
Averaged indicator	14,356	21,347	24,507	20,913	18,170	16,709	15,841	16,065	16,760	18,549

Is calculated based on the data provided by the sources (Inflation in USA 2015; Committee for the Control and Supervision, 2015; Committee for the Control and Supervision, 2013; The Agency of the Republic of Kazakhstan on Regulation and Supervision of Financial Market and Financial Organizations. Strategy and Analyses Department, 2011; The Agency of the Republic of Kazakhstan on Regulation and Supervision of Financial Market and Financial Organizations, 2009; The Agency of the Republic of Kazakhstan on Regulation and Supervision of Financial Market and Financial Organizations Strategy and Analyses Department, 2007; The Official Site of the Committee on Statistics of the Republic of Kazakhstan). GDP: Gross domestic product

the total assets compared to the previous period by 5%, while the unadjusted values of the banking sector demonstrate the growth by 1.8%.

The assets volume estimated using the change in the cost of consumer basket (the subsistence minimum) takes into consideration the dynamics of macroeconomic parameters. For the investigated period, the indicator has increased from KZT 10,485 billion to KZT 18,239 billion, which indicates that the real growth of the banking system is only 1.7 times. Due to the fact that the methodology of estimation and content of the consumer basket are subject to changes, there is a possibility to obtain invalid measure of the banking system development trends. Identifying its parameters brought to the single measure more precisely is possible using a continuous performance criterion.

The assets calculated using the ratio of the absolute values to the money supply measure (M2 monetary aggregate) and to GDP reflects the changes of the real level of the banking system development with respect to the fundamental economic parameters. Thus, the adjusted values of the assets of the second-tier banks using GDP and M2 exhibit the contraction of the banking sector by 21% relative to GDP and by 23% relative to M2 monetary aggregate (Figure 1).

The scope of the credit organizations activity with respect to the economy has declined from 59% in 2005 to 47% in 2014. Such situation reflects the adverse trends in the country's banking sector with its contraction being accompanied with the high level of non-performing loans (NPL) (Table 2).
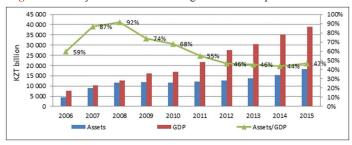
Despite the reduction of the problem loans share in recent years, more than half of the NPL portfolio is formed by the loans accumulated before 2012 that are concentrated mainly in large problem banks. According to the data provided by the National

Table 2: The structure of non-performing portfolio for 01.01.2015 by the periods of accumulating the NPL for different groups of banks

Name of the groups of banks	Before 2010	2010	2011	2012	2013	2014
Large banks with low quality portfolio	32.8	73.6	90.0	76.2	57.1	64.4
Medium-sized banks with low quality portfolio	29.5	14.9	4.0	10.2	10.1	7.6
Large banks with high quality portfolio	31.1	9.1	4.6	10.3	19.9	12.2
Medium-sized banks oriented at consumer lending	5.0	0.8	0.5	1.6	8.2	9.6
Other banks	1.6	1.5	0.8	1.7	4.6	6.3

Is compiled using the data provided in ("The Official Site of the National Bank of the Republic of Kazakhstan"). NPL: Non-performing loans

Figure 1: The dynamics of the assets/gross domestic product indicator

Bank of the Republic of Kazakhstan, the increment of "new" NPL in large and medium-sized banks with high credit activity has been observed in 2013-2014. The reduction has been achieved due to the following factors:

- +9.9% the revaluation of NPL in foreign currency under the influence of the national currency adjustment;
- −51.6% the result of collaboration of the National Bank of the Republic of Kazakhstan and second-tier banks to reduce NPL;
- +22.1% the emergence of "new" NPL, including 1.5% - due to the loans issued in 2014("The official site of the National Bank of the Republic of Kazakhstan").

On average, in the world this indicator amounts 4.2% with the lowest values being observed in the most developed countries, where the level of domestic credit to private sector by banks expressed as a percentage of GDP is sufficiently high: Denmark (179%), Iceland (99%), Thailand (115%), Japan (110%), Sweden (132%), Australia (130%), and Malaysia (121%). In Kazakhstan, the given indicator is 34%. Definitely, there is a close link between

Table 3: The level of NPL in the world

Country name	Ratio of bank NPL to total gross loans, %	Ratio of domestic credit to private sector by banks to GDP, %	Ratio of bank capital to assets,%
Cyprus	44.9		10.3
Greece	33.8		8.1
Albania	22.8	37	9
Tajikistan	21.2	20	14.9
Ireland	20.7		12.7
Ukraine	19	61	11.2
Italy	17.3		5.9
Hungary	15.6	43	9.1
Romania	13.9	31	7.4
Azerbaijan	12.7	31	17
Kazakhstan	12.4	34	13.7
Armenia	7	47	13.6
Russian Federation	6.7	59	8.5
Czech Republic	5.6	50	7.3
Belarus	4.4	23	13.3
Denmark	4.4	179	7.3
Iceland	4.3	99	24
Brazil	2.9	69	9
Thailand	2.3	115	9.2
Panama	2.2	82	10
Japan	1.9	110	5.5
United States	1.9		11.7
Malaysia	1.6	121	10
Sweden	1.2	132	5.1
Australia	1.1	130	5.9
World	4.2		10

Is compiled using the data provided by the source ("The World Bank. Indicator").
NPL: Non-performing loans

Table 4: The correlation coefficient between the level of NPL and "financial depth" indicator

Indicator	Domestic credit to private sector by banks	Ratio of bank NPL to total gross loans
Domestic credit to private sector by banks	1	
Ratio of bank NPL to total gross loans	−0.64436	1

Is estimated by the author based on the data provided in ("The World Bank. Indicator").
NPL: Non-performing loans

these indicators and the higher the level of financial depth, the lower the NPL indicator (Tables 3 and 4).

Demirguc-Kunt and Detragiache (1997) define the systemic banking crisis as a situation that complies with at least one of the following conditions:

1. The share of problem assets in the total assets of banking system has reached 10% and more.
2. Freeze of population accounts and deposits has been initiated, or considerable part of deposits has been withdrawn.
3. To prevent the consequences of the above mentioned conditions (1-2), the forced nationalization of a significant part of banks (more than 10%) has been conducted and large-scale (of over 2% of GDP) lump-sum banks recapitalization has been initiated by the government and/or companies (Demirguc-Kunt, Detragiache, 1997).

The overview of the factors determining the dynamics of credit risks that are used in various studies allows to distinguish four groups of indicators:

- Credit market risks: The dynamics of lending, the provision of loan portfolio with resource base, interest rates, money (credit) multiplier.
- Foreign exchange market risks: The dynamics of exchange rate, international reserves, net export and terms of trade.
- Macroeconomic conditions: GDP growth rate, inflation, unemployment rate, ratio of consumption and investment to GDP.
- The level of the development of financial sector approximated by GDP per capita.

When analyzing the time series data, the level of NPL often acts as a dependent variable in the regression equation. For instance, Kalirai and Scheicher (2002) consider the level of NPL as a response variable or use the reserves for overdue loans when there is no relevant data. As for the independent variable, we include various macroeconomic indicators, such as nominal interest rate, inflation rate, real GDP, real GDP growth rate, money supply growth rate, income, consumption, investment, exchange rate, export volumes, and oil prices.

The estimated regression equation looks as follows (statistical model):

$$NPL_t = \beta_0 + \beta_1 * x_{1t} + \beta_2 * x_{2t} + \beta_3 * x_{3t} + \cdots + \beta_n * x_{nt} + \varepsilon_t \qquad (7)$$

Where β_n - is the coefficient of the corresponding macroeconomic variable, t - represents the annual values of the indicators.

NPL_t - Is the share of loans upon which the repayment of principal and interest is 90 days past due in the total loan portfolio of the banks (excluding provisions formed thereon).

To conduct the analysis and build the regression equation, we employ the data for the period between 2006 and 2014. The information is collected from a number of sources: The Official site of the National Bank of the Republic of Kazakhstan; the Official Site of the Committee on Statistics of the Republic of Kazakhstan.

Table 5: Macroeconomic factors

Variable	Notation
Real GDP growth rate (%)	GDP growth, %
Ratio of the second-tier banks loans to GDP (%)	Loans/GDP
Consumer price index (%)	CPI
Weakening of the nominal exchange rate of KZT to USD (%)	KZT/USD, %
Unemployment rate (%)	Unemployment rate, %
The share of NPL in the previous period (%)	NPL (t−1), %

GDP: Gross domestic product, NPL: Non-performing loans

To construct the regression dependence of the share of NPL, the following indicators are selected (Table 5).

The results of the analysis are as follows.

$$NPL_t = 2.123 + 1.316 * GDP, \% - 2.143 * loans/GDP - 1.253 * CPI + 0.388 * KZT/USD + 35.3 * Unemployment\ rate + 1.111 * NPL (t-1), \%$$

In general, the regression is statistically significant at the 1% level, since Pb (F-st)=0.0071<0.01. The Durbin-Watson (DW) coefficient DW = 2.004 is within the range dL: 0.183 <DW: 2.004 <dU: 2.433 for m = 6 and n = 9, which indicates the absence of autocorrelation in the residuals. Furthermore, the value of $R^2 = 0.95$ that characterizes the goodness of fit of the regression is high enough and within the limits obtained in similar studies investigating the impact of macroeconomic factors on the banking sector stability. The analysis results in Table 6.

The forecast of the level of NPL is made considering the following preconditions: GDP growth rate, which amounts 1.5% in 2015 and 2.4% in 2016 according to the IMF forecast (The IMF Country Report no. 15/241 2015, August) devaluation of the national currency, which constitutes 40% in 2015 and 20% in 2016. The results of the model are reflected in the Figure 2.

After the inclusion of the above stated preconditions we obtain the following results. Our assumptions regarding the fact that the abovementioned factors have an adverse effect on the level of credit risk expressed as the dynamics of the share of NPL are reaffirmed.

5. DISCUSSIONS

In our model, the USD exchange rate against KZT is statistically significant in explaining the impact on the level of NPL. To be more specific, there is a positive relationship between the share of NPL and the USD exchange rate. The Figure 3 shows that the 20% devaluation of KZT corresponds to the highest growth of the share of NPL in the banks' total portfolio by 16%.

According to the study of the National Bank of the Republic of Kazakhstan on the influence of macroeconomic factors on the financial system conducted in the form of a survey of financial market participants, there are three factors that exert a negative

Table 6: The regression model of the share of NPL on macroeconomic factors

Regression statistics	Data	Coefficients	Data
Multiple R	0.977692	Intercept	2.123
R^2	0.955881	GDP growth, %	1.316321
Adjusted R^2	0.691169	Loans/GDP	−2.14317
F-statistics	0.0071	CPI	−1.25315
		KZT/USD, %	0.388178
DW	2.004102	Unemployment rate, %	35.30038
dL	0.183	NPL (t−1),%	1.111368
dU	2.433		

GDP: Gross domestic product, DW: Durbin-Watson, NPL: Non-performing loans

Figure 2: The dynamics of the share of non-performing loans
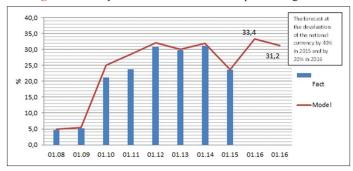

Figure 3: The dynamics of the share of non-performing loans in the banks' total portfolio
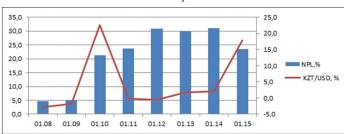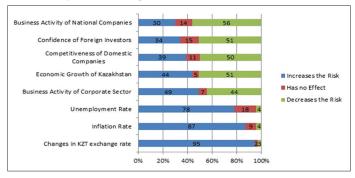

Figure 4: The impact of the external risk factors, %

impact on the financial system of Kazakhstan: Exchange rate adjustment of the national currency, rise in inflation and increase in unemployment. The survey results are presented in Figure 4.

The decline of world prices for the country's major export products as well as weakening of the Russian ruble and the Chinese yuan leads to a further depreciation of tenge against dollar.

The decline of oil prices, the USD appreciation and the deceleration in GDP growth may lead to a significant increase of NPL indicator under given scenario, which implies the necessity to replenish the banks reserves. This in turn may result in the increase of expenses and reduction of income by banks, hence may threaten their financial stability.

6. CONCLUSION

Within the practical research framework, we infer that it is possible to employ the level of NPL instead of banks' capital as an indicator reflecting the negative impact of macroeconomic shocks.

The results of the econometric model attest our assumptions.
- In the banking sector, the impact of the economic crisis manifests itself in the deterioration of the quality of loans portfolio, with the increase in NPL resulting in the necessity to expand the reserves to cover possible losses and to conduct a considerable recapitalization of banks.
- The country's banking system is vulnerable to the dynamics of foreign exchange rate, and at the given stage of the development this is one of the main macroeconomic shocks that destabilizes the country's banking system.

The awareness of this fact is important for the elaboration of a system of measures to prevent crisis trends in the banking sector and strengthen its stability.

The results of the study confirm that there is a negative relationship between the level of NPL and "financial depth". It implies that in the period of recession the National Bank of the Republic of Kazakhstan should address the issue of reducing the cost of loan capital, which in turn will increase the demand for loan resources by the real sector.

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