International Business Management 9 (5): 729-732, 2015
ISSN: 1993-5250

Banking Sector and Banking Capital in Russia During Crises: Experience of 2008 and 2014

Vladimir D. Bondarenko
Banking Industry Sub Department in Kazan (Volga region) Federal University, Russia

Abstract: Both economic and financial crises have negative impact on the banking sector and the banking capital. Herewith, the nature of crises may be both local and global. The objective of the study is to quantify losses of the market value of Russian banking capital during crises of 2014. Another purpose of the study is to statistically prove the hypothesis that there is the statistical relationship between the dynamics of banking capital value and the major macroeconomic factors in respect of commodity and foreign exchange markets. The study deals with interdependence of macroeconomic indicators and the banking capital in Russia. Comparative analysis of crises of 2008 and 2014 was performed. Simple correlation coefficients were calculated. The dynamics of foreign exchange rates, crude oil prices in 2008 and in 2014 were also analyzed. Additionally, qualitative indicators of the crises of 2008 and 2014 were described. Conclusion refers to the terms which are necessary to rich a pre-crisis level of the banking capital market value and describes the major macroeconomic indicators.

Key words: Banking capital, official exchange rates, consumer price index, inflation, correlation, gross domestic product

INTRODUCTION

The banking capital as a source of financial assets for real economy gains significant importance during the periods of financial markets instability and the time of economic crises.

Sufficient banking capital value can guarantee continued crediting of ongoing short and long-term projects as well as serve as a guarantee that the business growing demand for financial resources will be satisfied. Currently the domestic commercial banks are included into the TOP-100 of the world banks in respect of market capitalization (Bondarenko, 2014a, b), at that the domestic strategic banks have huge potential for strengthening their positions.

The stock market regularly underestimates the banking capital which is one of the most important sources of financial assets for real economy (Bondarenko, 2014a, b) mainly due to insufficiently efficient and transparent use of the banking capital market value assessment instruments (Bondarenko, 2013). As a result, the banking capital tends to be exposed to negative effect of external factors. In case when the banking capital is relatively independent of macroeconomic factors influence its functions will be exercised less efficiently than during a stable period nevertheless this will not have significant effect on the industrial capital (Vagizova, 2009). If to the contrary the banking capital has tight interrelations with the major macroeconomic indices performance at time of their decrease there will be a necessity in urgent actions aimed at the banking capital buildup up in order to achieve a pre-crisis level since the efficiency of interaction between the banking and industrial capitals during crisis periods is one of the main economic growth factors.

At this conjuncture, it is important to digitalize and measure the interrelation between the banking capital value, its market value dynamics and dynamics of the most significant macroeconomic factors. This will give an opportunity to evaluate and give a reasonable forecast for a vector of the further banking capital development to estimate the terms of reaching a pre-crisis level. This investigation was aimed at carrying out the above described analysis. A comparative analysis will be performed by means of statistical analysis methods, there will be carried out a comparative analysis of the investigated statistical data as well as an investigation of qualitative characteristics of the crises in 2008 and 2014 of qualitative similarities and distinctions and the corresponding conclusions will be made.

Theory: In order to examine the factors having the strongest influence on the banking capital value, we have conducted an investigation based on calculation of a simple correlation coefficient using a comparative analysis method.

The following hypothesis is a basis of all of the following calculations: the banking capital value is

permanently influenced by the same factors, thus if the hypothesis is successfully tested it will be possible to forecast the terms of reaching of a pre-crisis level of the banking capital. We suppose that the financial crises in 2008 and 2014-2015 may be compared in terms of the nature and intensity of influence of the same microeconomic factors on banking capital.

The hypothesis will be proved using an arithmetic formula for calculation of the simple correlation coefficient (Croxton *et al*., 1968):

$$r_{xy} \frac{\Sigma(X - Xaverage)(Y - Yaverage)}{\Sigma\left(\left[X - Xaverage\right]\right)^2 \times \Sigma(Y - Yaverage)^2}$$

Where:

r_{xy} = Simple correlation coefficient
X = Independent variable X
Xaverage = Average value of independent variable X
Y = Independent variable Y
Yaverage = Average value of independent variable Y

The investigated dependent variable is an overall capital of the commercial sector which was calculated according to Regulation of the Central Bank of the Russian Federation 395-II "Regulation on the methods of determining the value of proprietary funds (capital) of credit institutions" (Basel-3). Quarterly data. Independent variables used in the investigation:

- US dollar exchange rate with regard to ruble
- EURO exchange rate with regard to ruble
- Brent oil price
- Gross domestic product of Russia at 2008 values
- Customer price index

RESULTS AND DISCUSSION

The following interrelations were revealed as a result of the performed investigation (Table 1).

As we can see the highest correlation coefficient was revealed between dollar and EURO exchange rate and the banking sector capital.

Figure 1 shows changes in the exchange rates of US dollar and EURO in 2007-2011. During the second half of 2008 US dollar and EURO showed rapid increase for example dollar exchange rate has grown by 25% by January 2009. In 2008-2009 the Central Bank of the Russian Federation used about 57 billion rubles for the exchange market interventions (up to 12% of gold and currency reserves).

No sooner then in March 2010 the World Bank acknowledged and for the first time forecasted domestic

Table 1: Correlation coefficients between the independent variables and the overall capital of the banking sector in Russia during 2007-2011

Dollar exchange rate	EURO exchange rate	Brent oil price	Customer price index	Gross domestic product
0.74	0.80	0.31	-0.34	0.23

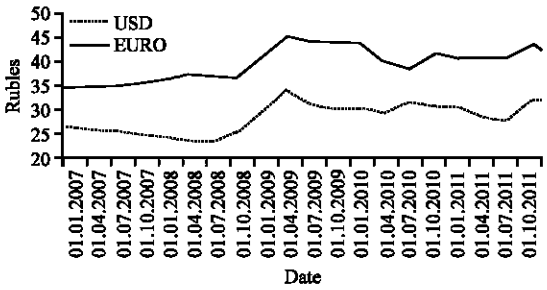

Fig. 1: Official exchange rates of US dollar and EURO within the period from 2007-2011

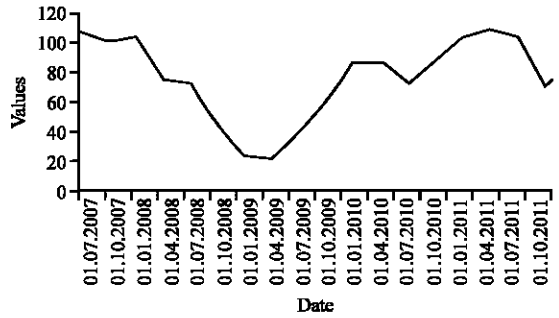

Fig. 2: Market quotations of the ordinary shares of OJSC "Sberbank of Russia" in 2007-2011, rub. (Central Bank of the Russian Federation, 2008)

economy growth due to increase of the market value of world market prices for oil and decline in inflation.

The growth of the key macroeconomic factors was accompanied by the fall of price quotations at the equity market which surely had its effect on the banking sector.

The diagram below shows dynamics of the price of ordinary shares of the Central Bank of the Russian Federation in 2007-2011.

Figure 2 shows that the minimum price of the shares of OJSC "Sberbank of Russia" during the period under investigation amounted to 23 rubles per a share. With the market price of the ordinary shares of OJSC "Sberbank of Russia" the bank market capitalization decreases by 1.5 trillion rubles.

The pre-crisis level of the market prices of the ordinary shares of Sberbank of Russia was reached only in 2011 mainly due to positive changes in the international commodity markets and positive macroeconomy trends:

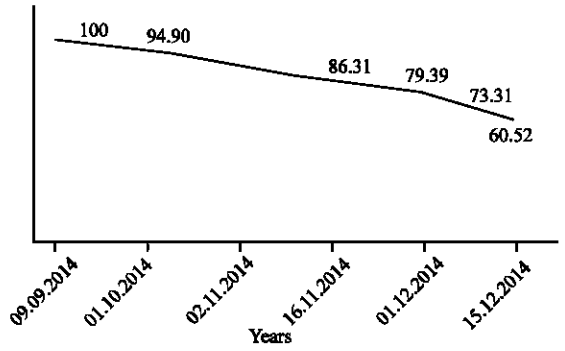

Fig. 3: Brent oil price behavior in September-December 2014, US dollars per a barrel (Croxton *et al*., 1968)

Table 2: Comparative analysis of simple coefficients of correlation between the overall banking sector capital and the independent variables for the periods of 2007-2011 and 2013-2014

Periods	Dollar exchange rate	EURO exchange rate	Oil price	Customer price index	Gross domestic product
2007-2011	0.74	0.8	0.31	-0.34	0.23
2013-2014	0.91	0.93	-0.38	-0.25	0.24
Correlation coefficient (%)	122.97	116.25	-122.58	73.53	104.35

- Growth of world market oil prices
- Decline in inflation
- Gross domestic product growth

In general the basic macroeconomic indices gained their pre-crisis level 2.5 years after the crisis beginning, i.e., in 2011.

In September 2014, Brent oil price dynamics resembled that of 2008 for example, the market oil barrel price was nearly equal to 94 US dollars at the beginning of 2011 and hardly experienced any changes through September 2014, having reached the level of 110 US dollars per a barrel. The following diagram represents decrease of Brent oil price during September-December 2014.

As it can be seen from Fig. 3, the world oil price decrease was in coincidence with the bank capital market price decline by 522 billion rubles in the 4th quarter of 2014.

We have calculated a simple correlation coefficient for the independent variables which were analyzed using the data of 2007-2001 and for the same dependent variable for the period of 2013-2014. The obtained results are given in Table 2.

Judging from the above table it can be stated that interrelation between the analyzed factors and the dependent variable has considerably grown in 2013-2014. At the same time, some indicators changed their modulus or remained the same.

Table 3: Comparative analysis of the crises of years 2008 and 2014

Indexes	2008-2010	2014
Crisis type	Global	Local
Crisis nature	Financial	Economical and political
Decrease of the major macroeconomic indices	Yes	Yes
Share of oil and gas revenues in the budget of Russia (%)	47	48
Exchange market interventions of the Central Bank of the Russian Federation	Yes	Yes
Necessity in additional capitalization of commercial banks	Yes	Yes
Supplementary refinancing of commercial banks	Yes	Yes
Subordinated loans the Central Bank of the Russian Federation	Yes	No

The macroeconomic indicators are specific for the speed of response of their values to the changes taking place in economy, due to this fact formulation of economic and mathematical models for the indicators under investigation with use of the econometric package Gretl was irrelevant and didn't result in qualitative and statistically significant models.

Findings: The comparative analysis of the factors and crises of 2008 and 2014 and of their influence on the banking capital is given in Table 3.

CONCLUSION

The carried out investigation resulted in testing of the hypothesis on existence of statistical interrelation between the banking capital market value and the Foreign Exchange rate dynamics. The collected array of statistical information allowed both proving the stated interrelation and tracking a tendency to its strengthening during the crisis which has started in 2014. There were calculated the banking capital loss at reaching the minimum exchange rate of the ordinary shares listed on the Moscow Exchange as exemplified by OJSC "Sberbank of Russia".

The analysis of qualitative characteristics of the crises allowed to make sure that the current crisis would not be more easily handled by the baking sector and the banking capital than the financial crisis which started in 2008. In this connection, more efficient use of the instruments for the banking capital market value assessment would be helpful in making maximal use of hidden potential of commercial banks and increasing their market capitalization.

ACKNOWLEDGEMENT

The research is performed according to the Russian Government Program of Competitive Growth of Kazan Federal University.

REFERENCES

Bondarenko, V.D., 2014a. Commercial banks of Russia and China in the international bank ratings. Kazan Economic Bulletin, No. 3 (11): 88-92.

Bondarenko, V., 2014b. Banking Capital in Russia: Sufficiency, Adequacy of Market Value Evaluation. Mediterranean Journal of Social Sciences, Vol. 5, No. 24, pp: 423-438.

Bondarenko, V.D., 2013. Problems and perspectives of use of a comparative approach for a commercial bank value assessment. Bulletin of TISBI University. No. 4, December 2013 to January 2014.

Croxton, F.E., D.J., Cowden and S. Klein, 1968. Applied general statistics. London, pp: 754.

Central Bank of the Russian Federation, 2008. Verbatim report of a formal communication of the president of the Central Bank of the Russian Federation Ignatiev S. of Nov. 19, 2008. [Electronic resource]. Access mode: http://www.vedomosti.ru/newsline/news/2008/11/19/686505.

Vagizova, V.I., 2009. Infrastructural support innovative collaboration between business, government and society in the modern economy. Problems of Modern Economics No. 3, pp: 17-22.