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THE ISSUE OF PROCYCLICALITY IN BANKING SECTOR OF KAZAKHSTAN DURING FINANCIAL CRISIS

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ABSTRACT

The issue of procyclicality was tested in the sphere of banking in Kazakhstan. During the study, it was found out that deposits of Kazakhstani banks affect Capital to Assets ratio positively and loans vice versa affect Capital to Assets ratio negatively. The monthly data was taken for the period of time since 2006 till 2010 years. An increase in loans decreases capital to Assets ratio and an increase in deposits increases capital to assets ratio. Also, there is no strong correlation among macroeconomic variable and banks' performance. One percentage change in macroeconomic variable gives five percentage change in Assets to GDP variable. Macroeconomic variables tested include GDP, CPI and IPI. The limitation of the research is that the data includes only ten banks and the period of time is from August 2006 till September 2010 on monthly basis.

1. INTRODUCTION

Banking sector plays an essential role in the development of any country. As one of the most influential countries in Central Asia as well as in CIS, Kazakhstan deserves an attention.

Table 1. Macroeconomic trend in Kazakhstan (in %)

	2003	2005	2008	2009	2013
GDP growth	9.50	9.10	8.50	2.40	5.95
Industrial Production	10	10.6	7.2	2.4	2.1
Inflation	6	6.90	10.80	17	5.62
Unemployment	8.80	8	7.30	6.60	5.3

Kazakhstan is the largest economy in Central Asia. Country can be classifies as an industrial with mainly mining industry. Country is rich in oil, mineral and fusel fuel resources. Extraction of oil and natural gas is the main part of the economy. Bayramova (2010) As an author mentioned, after the collapse of Soviet Union, Kazakhstan as a young country experienced deep recession, this brought a decline in industrial production. Government reforms on fiscal and monetary policy as well as privatization programs helped to stabilize the macroeconomic conditions in the country. Starting from 2000, Kazakhstan has experienced stable economic growth as demonstrated in Table I. GDP growth was around 10% per year. However, the main disadvantage of the economy is its dependence on natural resources, 73% of exports and 39% of GDP consists from exporting

oil, gas and minerals. Decrease in GDP in 2009 can be explained by oil price breakdowns and bank industry destruction.

According to IMF Report, the world financial crisis of 2008 affected Kazakhstani economy, and as a result GDP growth slowed down. In 2014, Kazakhstani banking system has adapted to an external environment. Currency devaluation, which happened in February in 2014, affected overall health of banking system. Interest rates increased and there was a problem of uncertainty in terms of liquidity. Major part of banks' liabilities was dollarized. The paper is totally descriptive and contains only analytical information.

The issue of procyclicality of banks' capital was tested in the study. The research employs panel study data technique and was done based on data on Kazakhstani banks. Ten largest banks' data was obtained from individual banks' websites. The main research question is a fact of dependence of banks' capital on loans and deposits and the issue of dependence of banks' assets on macroeconomic variables and dependence of loans on macroeconomic variables. The limitation of the research is that the data includes only ten banks and the period of time is from August 2006 till September 2010 on monthly basis. During the above mentioned period of time, world financial crisis took place. The main regressions are as follows:

$CAR_{it} = \alpha + BDEP\ juridical_{lt} + \delta GDEP\ physical_{it-j} + u_{it,}$ (1),

$CAR_{it} = \alpha + BGLOAN_{lt} + \delta GDEP_{it-j} + u_{it,}$ (2),

$Assets/\ GDP = \alpha + BGDP_{lt} + \delta CPI_{it-j} + \delta IPI + u_{it,}$ (3),

$Loans/\ GDP = \alpha + BGDP_{lt} + \delta CPI_{it-j} + \delta IPI + u_{it,}$ (4), where α, β, δ and δ are parameters to be estimated

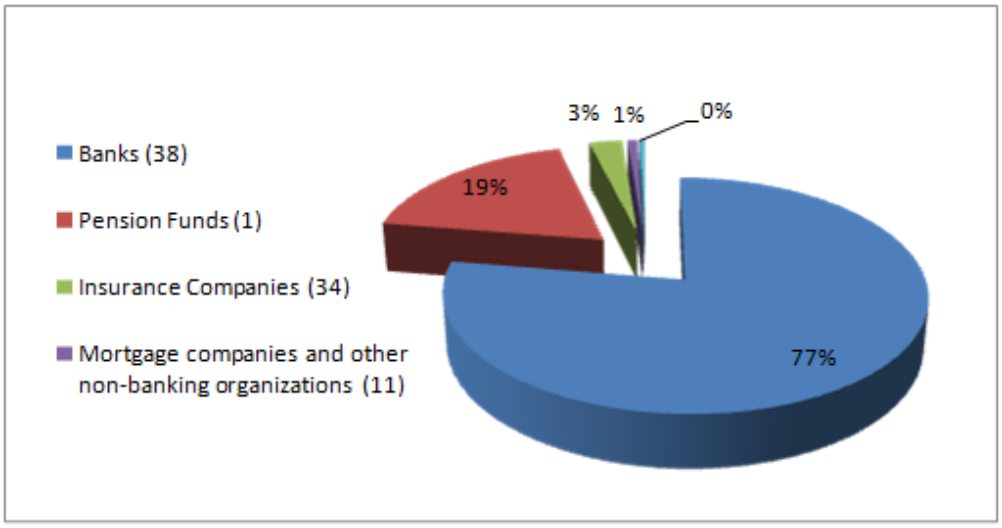

Figure 1. Kazakhstan: Structure of the Financial System

2. Literature Review

According to IMF Report, prior to the global financial crisis, Kazakhstan experienced high and unbalanced growth, and accumulated significant financial vulnerabilities. It was mentioned that the non-tradable sector, particularly construction recorded unsustainably high growth rates fueled by a credit boom financed through wholesale borrowing, mainly from Europe. Between 2005 and 2007, Kazakhstan's banks borrowed from abroad the equivalent of 44 percent of GDP and loaned a substantial part of those funds to non-tradable sectors. As financial conditions tightened with the onset of the global financial crisis, banks lost access to foreign financing and were forced to deleverage aggressively, triggering a decline in stock and real estate prices and a strong deceleration in non-oil economic activity, particularly in the construction sector. A 20 percent devaluation in 2009 further complicated matters, as widespread unhedged foreign currency borrowing led to further contractions in demand and problems with loan servicing.

It was discussed in the Report that the crisis prompted the intervention of several banks and the restructuring of their external liabilities, but bad assets were not addressed. The 2009 devaluation worsened the banks' external debt servicing problems, prompting the government acquisition of majority stakes in three large banks (Alliance, Temirbank, and BTA) and minority stakes in another two (KKB and Halyk Bank). Despite the restructuring of some of these banks' external liabilities in subsequent years, banks continued to face difficulties as the deceleration in growth, the collapse of real estate prices, and the devaluation led to a

significant build up of non-performing loans (NPLs). As it is demonstrated in figures below, external debt has increased significantly during the last 4-5 years. Real GDP growth slowed down and at the same time, private credit real growth declined substantially and recovered in 2012-2013. Banks' loans by sector show that mostly loans declined in 2008, and then, increased a little bit and declined again. Poor crediting result in poor industrialization and slow economic development in recent years. Kazakhstani economy is facing many difficulties recently.

According to the IMF report, banks dominate the financial system in Kazakhstan. The banking sector consists of 38 commercial banks, which account for 77 percent of total financial system assets and 44 percent of GDP. Public sector assets represent 60 percent of total banking assets at end-February 2014. Kazakh banks have a presence in neighboring countries and in Europe. Although the five largest banks accounted for more than half of banking assets in 2013, concentration has been declining as medium-sized banks have expanded their lending. Several large universal banks and some foreign subsidiaries compete for large corporate clients. The smaller banks typically operate in niche markets, and a few banks specialize in SME and retail lending. The consumer lending market is fairly concentrated with the top three banks accounting for one half of the market share and the top seven for 76 percent. Some foreign subsidiaries focus on servicing companies that also operate in the home country of the parent bank, while others have actively expanded their market share in Kazakhstan to benefit from lower funding costs. Two global banks have exited the country in the past year.

The government is the single shareholder of the UAPF and NBK has the fiduciary management mandate. The nationalization was justified on the need to improve returns on the assets and minimize the risk that the minimum return guaranteed by the government generates a drain on fiscal resources. The insurance sector and the rest of non-banking institutions are small. The assets of the insurance sector (34 companies) are 3 percent of total financial sector assets and those of mortgage companies and other non-banking organizations represent less than 1 percent each.

The securities exchange (KASE) is quite small, with very limited activity in equities and corporate debt. The largest markets are those for foreign currency transactions among banks and government repurchase transactions made in the automated repo market. As it is demonstrated below, financial system of Kazakhstan mainly depends upon banking system. Banks occupy major part of financial services industry in Kazakhstan. Major burden is on banks and their performance is an important part of overall economic performance in a country. From the figure we can see that 77% of the structure totally depends on banking industry.

3. Methodology

As it was mentioned in IMF report, the reduction in wholesale funding triggered by the crisis prompted banks to revise their lending strategies in order to avoid duration and currency mismatches. As a result, the system has been streamlined and rendered less vulnerable to external developments, including the February 2014 devaluation. However, deep-seated vulnerabilities remain, as high NPLs continue to saddle banks, and little progress has been made until now in resolving the nationalized banks. The system-wide NPL ratio is about 30 percent, and NPLs are concentrated in the five largest banks and reflect mainly loans to corporations and SMEs. Banks' return on assets (ROA) is low reflecting both low earnings and loan-loss charges. The system's aggregate capital asset ratio (CAR) has stabilized at around 17 percent and the Tier I capital ratio has remained at around 13 percent in recent years, following the external debt restructuring and state-funded recapitalization of the state owned bank BTA. However, the capital adequacy of a number of banks is under pressure and banks are exposed to foreign currency risk, as 38 percent of loans are in foreign currency, mostly to unhedged borrowers.

Credit continues to grow at relatively moderate rates (about 13 percent annually), as state-owned energy and mining companies borrow abroad and investment outside the commodities sectors is recovering slowly. However, growth in lending by consumer oriented small- and medium-sized banks reached nearly 50 percent in December 2013, raising concerns about loan quality. High interest margins and the short maturity of this type of loan in the face of shortening funding maturity have made consumer lending attractive to banks.

According to the article in "Delovoy Kazakhstan", as of May, 22, 2015, banking system of the country is going to be healthier than it was before. National Bank as a regulatory body is going to decrease the amount of bad loans, prudential norms are going to be introduced which will limit the amount of problematic loans. Several

banks already changed their portfolios and some banks merged in order to solve this issue such as BTA and Kazkommertsbank, as an example. Moreover, in order to solve the problem, banks created daughter companies which will buy bad loans and will deal with this problem themselves. Commercial banks will allow bad loans to be in their portfolio but the amount of such bad loans cannot exceed 10% of the portfolio. The government supported banks in the area of mortgage lending providing the amount of 130 billion tenge. The amount of consumer loans cannot exceed 30% in the loan portfolio of banks.

A sample includes 10 banks and monthly data from August 2006 till September 2010. The main hypothesis is the fact of dependence of capital to assets ratio to loans and deposits. Also, dependence of banks' performance on economic conditions was tested as well. The issue of procyclicality of capital was studied in this research. Panel study technique was employed and the results are interpreted in the next chapter.

4. Results of the study

Table 2. Capital to Assets ratio and Deposits

Dependent Variable: CAR
Method: Least Squares
Date: 10/07/14 Time: 13:37
Sample: 1 505
Included observations: 500

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEPOSITS_JURIDICAL_ENTIT	1.38E-10	7.94E-11	-1.739641	0.0025
DEPOSITS_PHYSICAL_ENTITI	8.45E-10	1.26E-10	6.706208	0.0000
LOANS	7.19E-11	4.43E-11	-1.621891	0.0055
C	0.059490	0.014879	3.998244	0.0001

R-squared	0.111570	Mean dependent var	0.056774
Adjusted R-squared	0.106239	S.D. dependent var	0.219446
S.E. of regression	0.207462	Akaike info criterion	-0.299830
Sum squared resid	21.52028	Schwarz criterion	-0.266318
Log likelihood	79.55727	Hannan-Quinn criter.	-0.286685
F-statistic	20.93018	Durbin-Watson stat	1.933126
Prob(F-statistic)	0.000000		

The diagram above demonstrates the results of a panel study on 10 largest commercial banks on monthly basis from August, 2006 till September, 2010. CAR is Capital to Assets Ratio, which is a dependent variable and Deposits of physical and juridical entities are independent variables.

The results show p-value of 0 and quite high F-statistics, while Durbin Watson statistics of around 2 confirms the fact of the reliability. Very low R-squared indicator shows that there are no strong relations between above mentioned variables. One percentage change in deposits gives 11 percentage change in capital to assets ratio.

Both deposits of juridical entities and deposits of physical entities positively affect capital to assets ratio of ten studied banks in Kazakhstan.

The diagram above demonstrates the fact that Capital to Assets ratio of ten Kazakhstani banks from August, 2006 till September, 2010 does not have any strong correlations with loans and deposits in Kazakhstan (R-squares is around 5%). The Durbin Watson indicator shows that there are no any problems with autocorrelation and the results are reliable. However, as it is presented, loans affect capital to assets ratio negatively and deposits affect capital to assets ratio positively. An increase in loans negatively affects capital to assets ratio and an increase in deposits affects capital to assets ratio positively. Due to the fact, that deposits are transformed into loans, which are major part of assets. When capital increases, it makes capital to assets ratio rise as well.

Table 3. Capital to Assets ratio, Loans and Deposits

Dependent Variable: CAR
Method: Least Squares
Date: 10/07/14 Time: 13:48
Sample: 1 505
Included observations: 500

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOANS	-1.89E-10	4.04E-11	-4.682366	0.0000
TOTAL_DEPOSITS	1.97E-10	5.47E-11	3.595714	0.0004
C	0.089810	0.014312	6.275369	0.0000

R-squared	0.054393	Mean dependent var	0.056774
Adjusted R-squared	0.050618	S.D. dependent var	0.219446
S.E. of regression	0.213820	Akaike info criterion	-0.241427
Sum squared resid	22.90528	Schwarz criterion	-0.216293
Log likelihood	63.83961	Hannan-Quinn criter.	-0.231568
F-statistic	14.40909	Durbin-Watson stat	1.989644
Prob(F-statistic)	0.000001		

All banks performance indicators in Kazakhstan do not depend on macroeconomic situation in a country because banks are strongly controlled by regulator in Kazakhstan.

Table 4. Assets to GDP and Macroeconomic variables

Dependent Variable: ASSTOGDP
Method: Panel Least Squares
Date: 10/20/14 Time: 17:59
Sample: 1 505
Included observations: 500

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	2730.155	1340.185	2.037148	0.0420
IPI	-1611.989	445.2984	-3.620018	0.0003
GDP	-4.388933	0.725419	-6.050204	0.0000
C	103.7852	134374.9	0.000772	0.9994

R-squared	0.091363	Mean dependent var	72525.26
Adjusted R-squared	0.087064	S.D. dependent var	129151.0
S.E. of regression	123400.8	Akaike info criterion	26.29051
Sum squared resid	9.65E+12	Schwarz criterion	26.31846
Log likelihood	-8382.674	Hannan-Quinn criter.	26.30136
F-statistic	21.24949	Durbin-Watson stat	1.947277
Prob(F-statistic)	0.000000		

The regression above has right functional form, with p-value of 0 and high F-statistics. The results are reliable due to the fact of proper Durbin Watson statistics, which is around 2. The R-squared is around 9%, and it means that variables are not strongly correlated with each other. Assets to GDP variable does not strongly depend on such macroeconomic variables as GDP, CPI and IPI. One percentage change in macroeconomic variables gives five percentage changes in assets to GDP variable.

Table 5. Loans to GDP and Macroeconomic variables

Dependent Variable: LOANSTOGDP
Method: Panel Least Squares
Date: 10/20/14 Time: 18:01
Sample: 1 505
Included observations: 500

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	-3.247918	0.597877	-5.432420	0.0000
CPI	1776.428	1104.809	1.607905	0.1084
IPI	-1265.830	366.6870	-3.452071	0.0006
C	36857.00	110749.6	0.332796	0.7394

R-squared	0.075927	Mean dependent var	55813.19
Adjusted R-squared	0.071561	S.D. dependent var	105576.5
S.E. of regression	101728.8	Akaike info criterion	25.90425
Sum squared resid	6.57E+12	Schwarz criterion	25.93217
Log likelihood	-8272.407	Hannan-Quinn criter.	25.91509
F-statistic	17.39169	Durbin-Watson stat	1.944412
Prob(F-statistic)	0.000000		

The regressions have right functional form with the p-value of 0 and high F-statistics parameter. The model does not suffer from low likelihood due to high numbers of Akaike info criterion, Hannan-Quinn criterion and Schwartz criterion. Moreover, the results are reliable because of proper Durbin Watson statistics, which is around 2. However, tested variables are not strongly correlated with each other because of low R-squared parameter.

Table 6. The role of banking sector in the economy of Kazakhstan

The variable	01.01.2015	01.04.2015
Loans to GDP	47.2	43.3
Loan portfolio to GDP	36.7	34.2
Deposits to GDP	29.4	26.5

According to the speech of Kairat Kelimbetov in Bejing, the role of banking sector in the economy of Kazakhstan has decreased, which is not good for the health of the economy.

5. Conclusion

The results of the study confirm the fact that banks' assets and loans during 2006-2010 years period of time did not depend on macroeconomic variables. Moreover, banks' capital to assets ratio is negatively affected by loans and is positively affected by deposits. Both deposits of physical and juridical entities positively affect capital to assets ratio. The limitation of the study is that a sample includes only ten banks and the period of time is from 2006 till 2010 on monthly basis.

At the moment, banking system of Kazakhstan is passing through the stage of restructuring. Total assets of commercial banks are decreasing; however, current situation is due to temporary problems. In future, when banking system becomes healthier, the amount of total assets will increase again.

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