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**Assessing Ukrainian Banking Performance  
Before and After the Crisis**

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# ASSESSING UKRAINIAN BANKING PERFORMANCE BEFORE AND AFTER THE CRISIS

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## **Abstract**

*The main goal of this paper is to analyze the impact of the 2008 global financial crisis on the Ukrainian financial system, and on Ukrainian bank performance. Our analysis is based on key bank performance indicators from 2003-2011. Bank assets, liabilities and capital are analyzed, and changes in bank management are taken into consideration. Special attention is paid to changes in bank stock prices of two of the largest banks, following the crisis.*

***Key words:** performance, problem loans, debt provision, banking system, financial crisis, bank stock prices.*

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## **Introduction**

The strength and sustainability of a country's banking system is the basis for its economic development, especially in countries with bank-based financial systems. The performance of the banking system is always an area of interest and concern to government regulators and academic researchers. After the global financial crises in the 1990s and early 2000s, bank performance has received even more attention. The Ukrainian banking system had been characterized by rapid growth in terms of the number of banks, the number of loans extended to companies and households, and the performance of the banks until 2009. This sector was one of the most attractive for foreign investors and as a result, bank capitalization grew rapidly. New approaches to bank management were introduced in the strongest banks and the quality of banking services improved. Such large inflows of foreign capital brought some additional risks to the system, however.

The main goal of this paper is to analyze the changes in Ukrainian bank performance before, during and after the financial crisis of 2008, with special attention paid to changes in bank stock prices, rates of return, and risk. Ukrainian bank capital, assets, liabilities, and financial results will be analyzed in the overview of the Ukrainian banking system. A SWOT-analysis of foreign investment in Ukrainian banks will also be conducted. The final section of this paper will present our assessment of the impact of the 2008 global financial crisis on Ukrainian bank stock prices.

## **Overview of the Ukrainian banking system**

The Ukrainian financial system is similar to banking systems in the Euro-zone and Japan in that it is bank-based, as opposed to capital markets-based. Financial sector development, and therefore a financial system type in a country is often based on historical and economic development and on the financial sector development in neighboring countries. The main criteria for determining a country's type of financial system is the source of capital for the enterprises and other entities. In bank-based systems, bank loans are the primary

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source, while in capital markets-based systems, capital from bond issues and/or equity investments are the main source.

Economic research on the Ukrainian banking system does not classify it consistently. Moreover, the process of globalization has caused the convergence of financial systems [Hölzl, 2003, Masciandaro, 2009, Reinhard, 2001]. In the Ukrainian financial system, the banking sector developed before capital markets, the volume of banking sector assets exceeds non-banking assets by nearly ten times (see Table 1). Loans issued by banks are 80 times more than corporate bonds issued (in the year 2010).

**Table 1. Ukrainian financial system assets, 2003-2010\***

<b>Banks</b>	2003	2004	2005	2006	2007	2008	2009	2010
Bank assets share of GDP, %	30.01%	39.48%	41.00%	50.52%	65.67%	92.14%	109.66%	99.59%
<b>Non-banking financial institutions</b>								
Mutual fund assets share of GDP, %	No data	0.56%	1.56%	3.15%	5.66%	6.67%	9.04%	9.88%
Non-government pension fund assets share of GDP, %	No data	No data	0.01%	0.03%	0.04%	6.67%	0.09%	0.10%
Insurance company Assets share in GDP, %	3.38%	5.08%	2.80%	3.21%	No data	4.42%	4.60%	4.13%

Source: Own calculation based on the reports of State Commission of Financial Services Market Regulation, Ukrainian Investment Business Association, and State Statistics Comity of Ukraine

This situation is similar to the Japan where “prior the financial liberalization alternatives to bank finance were very limited. As equity and bond finance were restricted, most firms had to rely heavily on bank loans” (D. Weinstein, Y. Yafeh, 1998, p.635).

The development of the Ukrainian banking system commenced in March, 1991, after the adoption of the Law on the National Bank of Ukraine and the Law on Banks and Banking by the Ukrainian Parliament. Ukraine introduced a two-tiered banking system at that time, consisting of the National Bank of Ukraine and commercial banks of various types and forms of ownership including the state-owned Export-Import Bank and a specialized savings bank.

The National Bank of Ukraine serves as the country's central bank and is responsible for monetary policy and for ensuring the stability of the national currency, the Hryvnia. Commercial banks are formed primarily as joint-stock companies. Foreign ownership of Ukrainian banks is permitted. Some commercial banks are privately held, while others are publicly traded. The range of commercial banking activity includes deposit taking, lending, investing in securities, providing service products, foreign exchange operations and other services to natural persons and legal bodies.

Banks operate in accordance with the Constitution of Ukraine, the Laws of Ukraine "On the National Bank of Ukraine", "On Banks and Banking", Ukrainian legislation on joint-stock companies and other economic entities, as well as with the normative regulations of the National Bank of Ukraine and their Statutes.

As of January 2011, 176 banks have banking licenses. The number of banks with foreign participation is presented in Table 2 [Main...,2011].

**Table 2. Number of banks and banks with foreign participation, 2003-2011**

	01.01. 2003	01.01. 2004	01.01. 2005	01.01. 2006	01.01. 2007	01.01. 2008	01.01. 2009	01.01. 2010	01.01. 2011	01.09. 2011
<b>Number of banks</b>	157	158	160	165	170	175	184	182	176	176
Banks with foreign capital	20	19	19	23	35	47	53	51	55	56
Banks with 100% of foreign capital	7	7	7	9	13	17	17	18	20	21
Share of foreign capital in statutory fund, %	13.70	11.03	9.60	19.50	27.60	35.00	36.7	35.8	40.6	37.8

Source: <http://bank.gov.ua>

In spite of the economic contraction in Ukraine since September 2008, the main indicators of banking activity had been improving in 2003-2008. For example, bank equity grew by 71.4%, liabilities by 52.3%, and assets by 57.2%, Profits increased by 7.3 billion UAH. However, in the 1<sup>st</sup> quarter of 2009, the banking sector began to decline. Profitability shrank for the first time in more than a decade.

### **Analyses of Ukrainian bank assets**

The period of analysis is characterized by an increase in net assets by 16 times (see table 3).

Increasing credit volumes in 2003-2008 confirm that the economy has become more market oriented. Banking credits to enterprises create the financial basis for the GDP growth this period. Individual credit, or credit to private households, exploded from 2003 to 2008, growing from 7% of total credit at the beginning of 2003 to almost 34% by the end of 2008. During the same period, the share of credit to enterprises declined from 81.7% to 59.6%. The quality of banks' credit portfolios improved markedly in the period 2003-2008, as the share of long-term loans expanded 47.5 times in the last six years. The share of long-term loans in bank portfolios was 64.1% at the beginning of 2009, compared to 22.9% at the beginning of 2003. The structure of long-term loans by borrower provides more evidence of liberal lending policies towards individuals – in 2003 only 10% of long-term loans were issued to individuals, while at the beginning of 2009, 47.6% were issued to private individuals. It should be noted that this trend is due primarily to the introduction of mortgage lending, which grew rapidly once people were allowed to own private property.

There were also positive changes in the quality of bank management in terms of credit policy, as evidenced by the sharp decline of problem credits, or bad loans, from 4.5% in 2003, to just 1.3% at the end of 2008. It should be noted, however, that the financial crisis of 2008 led to a 6% decrease in credit volume in 2009.

Bank credit policy appears to have changed after the crisis. The share of credit to enterprises as a percentage of the total loan portfolio expanded to 2007 levels. The most characteristic feature of crisis is that non-performing loans as a percentage of total loan portfolios exploded from 1.31% at the beginning of 2008 to 11.24% by the end of 2010. As a result, reserves for active bank operations grew 2.4-2.5 times in 2009-2010 before slowing down. The fact that reserves grew more quickly than credit issued confirms that there were problems with credit quality. Further evidence that credit policy changed after the crisis is

that bank lending to enterprises outpaced loans to individuals. Long-term loans were only available to enterprises after the crisis. The interesting fact is that the volume of long-term loans peaked in 2008 before dropping off dramatically.

**Table 3. Assets of Ukrainian commercial banks, 2003-2011**

№	Indicators	01.01. 2003	01.01. 2004	01.01. 2005	01.01. 2006	01.01. 2007	01.01. 2008	01.01. 2009	01.01. 2010	01.01. 2011	01.09. 2011
1.	<b>Assets, m UAH</b>	67774	105539	141497	223024	353086	619004	973332	1001626	1090248	1189832
	Net assets, m UAH	63896	100234	134348	213878	340179	599396	926086	880302	942088	1026073
2.	<b>Credit issued</b>	46736	73442	97197	156385	269688	485507	792384	747348	755030	807830
2.1.	including credit issued to enterprises, m UAH.	38189	57957	72875	109020	167661	276184	472584	474991	508288	564720
	share in total volume, %	81.71	78.92	74.98	69.71	62.17	56.89	59.64	63.56	67.32	69.91
2.2.	<b>Credit issued to individuals, m UAH</b>	3255	8879	14599	33156	77755	153633	268857	222538	186540	182595
	share in total volume, %	6.96	12.09	15.02	21.20	28.83	31.64	33.93	29.78	24.71	22.60
3.	<b>Long-term credits, m UAH</b>	10690	28136	45531	86227	157224	291963	507715	441778	420061	439896
	share in total volume, %	22.87	38.31	46.84	55.14	58.30	60.14	64.07	59.11	55.64	54.45
3.1.	including: long-term credits to enterprises, m UAH	9698	23239	34693	58528	90576	156355	266204	244412	262199	298027
	share in total volume of long-term assets, %	90.72	82.60	76.20	67.88	57.61	53.55	52.43	55.32	62.42	67.75
4.	<b>Problem credits (overdue and doubtful), m UAH</b>	2113	2500	3145	3379	4456	6357	18015	69935	84851	83147
	share in total volume, %	4.52	3.40	3.24	2.16	1.65	1.31	2.27	9.36	11.24	10.29
5.	<b>Investments in securities, m UAH</b>	4402	6534	8157	14338	14466	28693	40610	39335	83559	92011
6.	<b>Reserves (Provision) for active bank operations, m UAH</b>	3905	5355	7250	9370	13289	20188	48409	122433	148839	164424
	including: debt provision, m UAH	3575	4631	6367	8328	12246	18477	44502	99238	112965	122916

Source: Own calculation based on [www.bank.gov.ua](http://www.bank.gov.ua) (15.10.2011)

### Analyses of commercial bank liabilities

From the 2003 until 2009, the stability of the banking system improved. This is reflected in the growth of bank capitalization and the increase in individual and enterprise deposits in banks. The sources of bank capital are included in Table 4.

**Table 4. Liabilities & equity of the Ukrainian commercial banks, 2003-2008, million UAH**

№	Indicators	01.01. 2003	01.01. 2004	01.01. 2005	01.01. 2006	01.01. 2007	01.01. 2008	01.01. 2009	01.01. 2010	01.01. 2011	01.09. 2011
1.	Liabilities & equity	63896	100234	134348	213878	340179	599396	926086	880302	942088	1026073
2.	Equity	9983	12882	18421	25451	42566	69578	119263	115175	137725	149136
	Including: paid-in statutory fund	6003	8116	11648	16144	26266	42873	82454	119189	145857	163838
	share of capital in liabilities & equity, %	15.60	12.90	13.70	11.90	12.50	11.60	12.9	13.1%	14.6%	14.5%
3.	Bank liabilities	53 913	87352	115927	188427	297613	529818	806823	765127	804363	876937
3.1.	including: capital of enterprises	19 703	27987	40128	61214	76898	111995	143928	115204	144038	169144
	share in total volume of liabilities & equity, %	36.55	32.04	34.61	32.49	25.84	21.14	17.8	13.1%	15.3%	16.5%
	including: fixed-term deposits of enterprises	6161	10391	15377	26807	37675	54189	73352	50511	55276	62816
	part in total capital of enterprises, %	31.27	37.13	38.32	43.79	48.99	48.39	50.7	43.8%	38.4%	37.1%
3.2.	capital of individuals	19092	32113	41207	72542	106078	163482	213219	210006	270733	303045
	share in total volume of liabilities & equity, %	35.41	36.76	35.55	38.50	35.64	30.86	26.43	23.9%	28.7%	29.5%
	Including: fixed-term deposits of individuals	14128	24861	33204	55257	81850	125625	175142	155201	206630	227067
	part in total capital of individuals, %	74.00	77.42	80.58	76.17	77.16	76.84	82.14	73.9%	76.3%	74.9%

Source: Own calculation based on [www.bank.gov.ua](http://www.bank.gov.ua) (15.10.2011)

During the period 2003-2008, bank equity had a growth rate of 1194.7%, liabilities increased roughly 15 times, and the growth rate of individual deposits exceeded the growth rate of enterprise deposits (1116% compared with 730%) over the six year period. The analyses of bank liabilities suggests a high level of public trust in the banking system at the beginning of 2009 – 82.14% of all individual capital was fixed term.

In the 1<sup>st</sup> quarter of 2009, bank capitalization grew by 7%, but market participation and capital invested by individuals fell by 13.5% and 9.1% respectively, in spite of strong regulatory measures introduced by the National Bank of Ukraine. During the following period (2009- 3d quarter 2011) the banking system was recapitalized in order to resist the financial crisis: the growth rate of the paid-in statutory fund was as high as 144% in 2009 before dropping off [Shulik, V. Ukrainian...,2009]. It should be noted that subordinated debt became a key tool used by some foreign banks to increase capitalization. It was also used as a source of long-term capital. The amount of subordinated debt reached 30.92 billion UAH (4% of all

banking system liabilities) in 2010. Such large amounts allow banks to hedge country and currency risk. Liabilities fell in 2009 by 6% and then almost reached the level of 2008 in 2010. In the 3<sup>rd</sup> quarter of 2011 liabilities were the highest of the analyzed period.

According to the structure of the deposit portfolio, the share of capital of individuals exceeds share of enterprise capital in total volume of liabilities and equity from 2004 to the present time. However fixed term deposits, which are more desired by banks because they are a more stable source of funding, decreased from 2009, and only the data from the 3<sup>rd</sup> quartet of 2011 suggests that long-term loans funded by fixed term deposits are beginning to grow again.

### Financial results of the banking system

One of the most important measures of bank health is profitability and improved effectiveness of money lent [Caruntu, 2008, p.2]. Table 5 provides key financial results of commercial banks from 2003-2011.

**Table 5. Financial results of commercial banks, 2003-2011**

№	Indicator	01.01. 2003	01.01. 2004	01.01. 2005	01.01. 2006	01.01. 2007	01.01. 2008	01.01. 2009	01.01. 2010	01.01. 2011	01.09. 2011
1.	Incomes, million UAH.	10470	13949	20072	27537	41645	68185	122580	142995	136848	91842
2.	Expenditures, million UAH	9785	13122	18809	25367	37501	61565	115276	181445	149875	96395
3.	<b>Financial results, million UAH</b>	685	827	1263	2170	4144	6620	7304	-38450	-13027	-4553
4.	Return on average assets (ROA), %	1.27	1.04	1.07	1.31	1.61	1.50	1.03	-4.38	-1.45	-0.69
5.	Return on average equity (ROE), %	7.97	7.61	8.43	10.39	13.52	12.67	8.51	-32.52	-10.19	-4.79
6.	Net interest margin, %	6.00	5.78	4.90	4.90	5.30	5.03	5.30	6.21	5.79	5.36
7.	Net spread, %	7.20	6.97	5.72	5.78	5.76	5.31	5.18	5.29	4.84	4.57
8.	Leverage multiplier, MC (ROE/ROA)	6.28	7.32	7.88	7.93	8.40	8.45	8.26	7.42	7.03	6.94
9.	The profit rate, %	6.54	5.93	6.29	7.88	9.95	9.71	5.96	-26.89	-9.52	-4.96
10.	The margin of assets utilization, %	15.45	13.22	14.19	12.35	11.79	11.02	12.59	14.28	12.55	7.72

Source: Own calculation based on [www.bank.gov.ua](http://www.bank.gov.ua) (15.10.2011)

These results clearly indicate strong growth in profitability with some volatility in 2003-2008. It should be noted, however, that from the beginning of 2009 started a decline in profitability and in the case of some banks, even losses. Maximum total losses of the banking system were 38.45 billion UAH in 2009. According to bank top management and overviews of credit agency “Credit Rating”, this was due to additional debt provisions, which are recorded as bank expenses. So this is “losses on paper”, but not yet in fact. Because net operational income exceeds total administrative expenditures in 2.2 times [Shulik, V. Ukrainian..., 2010].



The government regulation of the problems which banks had was conducted through the implementation of temporary administration, purchase of the commercial banks' stocks by government (on the sum of nearly 25.8 billion UAH) and refinancing credits to the banks (more than 120 billion UAH). However, the effectiveness of the last two measures is not satisfactory. To the beginning of 2010 commercial banks debt to the National Bank was 86.3 bill UAH with the opportunity of extension and refinancing to support liquidity. Some Commercial banks (Ukrzazbank, Rodovid Bank, Bank "Kyiv") purchased by the government now should be sold, but the way of their selling is a debatable issue because of their unattractiveness for the investors' due to great amount of losses (904.7 billion UAH as a result of 6 months of 2011) [The alternatives...,2011].

Bank performance and the perceived health of the banking system have great influence on the investment activity of enterprises. The greater availability of credit provided more investment opportunities for market participants, which resulted in the enlargement of the loan portfolios of banks - long-term credits increased to 64% of the total portfolios, on average. It should also be noted that the stability of the banking system improved for the 2003-2008 period (see Table 6). And the opposite effect also takes place: since 2009 in conditions of the restriction monetary policy and interrupting or reducing of issued credits market participants suffer from the deficit of investment resources.

Thus, the first impact of the financial crisis on the banking system began from the 3<sup>rd</sup> quarter of 2008. Due to the deficit of liquidity and the National Bank disciplining requirements, a lot of banks were limited in increasing their credit portfolios, as a result reducing profitability and changing in the development plans of some banks.

### **Foreign capital in the Ukrainian banking system**

During the period analyzed, growing Ukrainian bank resources were provided by both internal (individuals, enterprises) and external (foreign capital) sources. One distinctive feature of the Ukrainian banking system is undoubtedly the high level of foreign investment in the sector – the share of foreign capital in the statutory funds of banks was 40.6% on 01.01.2011, compared to only 13.7% on 01.01.2003 (see Table 2). Currently, foreign investment in Ukrainian banks comes from 26 countries. The largest portion comes from Russia (24.5%), Cyprus and France (11.1% each), Sweden (10.4%), Austria (10.0%), Germany (8.0%), and the Netherlands (5.9%).

This tendency to invest in the banking systems of Central and Eastern Europe has been visible since the end of the 1980s. Foreign investors have different reasons for investing in developing markets. The main motivations for them to invest in the Ukrainian financial system were the following: 1) the low level of banking products available on the market, and the low level of bank capital concentration; and, 2) the limited amount of foreign capital invested in Ukraine compared with the other CEE countries. Certainly, this investment has influenced the Ukrainian financial sector. The results of a SWOT analysis on the reasons behind, and the impact of foreign capital flowing into the Ukrainian banking system are presented in Figure 1.



**Figure 1. SWOT-analyzes of foreign investments in banking system of Ukraine**

<b>S – perspectives of Ukrainian banking sector (advantages for foreign investors)</b>	<b>W – weak sides of financial system in Ukraine</b>
Limited availability of banking products	Lack of financial recourses with growing needs
Low concentration of banking capital	Low amount of foreign investments per capita
Small share of foreign capital	A lot of small captive banks, high level of corruption, necessity of income legalization
<b>O – opportunities for development with the help of foreign capital</b>	<b>T – threats / risks for the Ukrainian economy</b>
Enhancement of service (Improvement of service quality)	Loss of sovereignty in the sphere of monetary-credit policy
Improvement of using technology	Unexpected volatility of banks liquidity
Growth of financial resources	Speculative changes in demand and supply on monetary-credit market
Development of security market (due to participation of banks in the Ukrainian and foreign security markets)	Possible runoff of financial resources
Increasing of international financial rating	Strengthening of competition between banks

Source: Own elaboration

Government regulation of these processes is important in order to take full advantage of foreign investment in the banking system, and to protect against potential risks. It should be noted that after the crisis expert's evaluation of the impact of foreign investment on the Ukrainian banking system became more negative. The main threats named are the following:

- Insecure concentration of speculative capital as short- and medium-term loans on real estate, land, automobile and consumer markets (growing basic assets prices on these markets and distortion of the country's trade balance as a result);
- Dollarization of lending (and following problems with debt service because of the devaluation of the UAH).
- Rapid growth of bank external debt (39 bill USD on 01.01.2009) [Analytica...,2010]

### **Ukrainian banks stock market: crises impact**

The financial crisis 2008 is a difficult test for the Ukrainian financial system as a whole, and for the Ukrainian banks in particular. There were existing problems with inadequate capitalization, liquidity, and quality of credit portfolios, which became more pronounced and more evident during the year 2009 and now are on a different level in appropriate phase. Actions from the regulator – The National Bank of Ukraine (NBU) confirm this: at the beginning of April 2009, bank debt to the NBU was 79.3 billion UAH (20% of all NBU assets), 86.3 billion. UAH at the beginning of 2010; temporary management was implemented in 20 banks (in 5 banks now) [Data...,2011].

The banking system is clearly more vulnerable due to the global financial crisis and this fact influences the value of bank stock prices and here we are attempting to estimate the strength of this impact.

First, it should be noted that of the 176 banks, stocks of only 5 are in the listing of PFTS Stock Exchange. The level of concentration of bank assets and capital is significant enough in only a few of the biggest traded banks, which are the ones that we have chosen to analyze. 80% of all assets belong to 24 banks, long-term trading conducts with only 2 banks stocks (see Table 6 )

**Table 6 Concentration of banking assets and capital in Ukraine (01.07.2011)**

Name of bank	Assets, million UAH.	Share, %	Capital, million UAH.	Liabilities, million UAH.
<b>Total</b>	<b>880836.88</b>	<b>100</b>	<b>131934.15</b>	<b>748902.73</b>
Privatbank	135740.84	15.41%	12683.56	123057.28
Ukreximbank	80011.47	9.08%	17622.09	62389.37
Oschadbank	72451.51	8.23%	17396.17	55055.34
Raiffeisen Bank Aval	55089.81	6.25%	6444	48645
Ukrsotsbank	39976.04	4.54%	6579.06	33396.98
VTB Bank	35869.92	4.07%	3872.22	31997.7
Prominvestbank	34590.48	3.93%	4593.18	29997.3
Alfa-Bank	28786.23	3.27%	3172.91	25613.32
Finance and credit	24410.13	2.77%	1860.3	22549.83
Otp-Bank	23225.47	2.64%	3273.75	19951.72
Nadra Bank	22485.26	2.55%	3979.84	18505.42
First Ukrainian International Bank	19505.61	2.21%	2968.3	16537.31
Brokbusinessbank	17842.05	2.03%	2390.94	15451.11
Ukrgazbank	17213.22	1.95%	1970.31	15242.91
Creditprombank	14993.12	1.70%	1855.59	13137.53
Forum Bank	13208.45	1.50%	1708.19	11500.27
Sberbank Rossii	11838.89	1.34%	1178.11	10660.78
Swedbank	11602.11	1.32%	1515.85	10086.25
Erste Bank	11200.58	1.27%	1379.83	9820.75
Joint-stock bank Pivdenny	10883.44	1.24%	1523.47	9359.96
Rodovid Bank	9563.2	1.09%	4189.77	5373.43
Ing Bank Ukraine	9393.34	1.07%	1698.21	7695.13
Unicredit Bank	8082.27	0.92%	886.26	7196.01

Source: Own calculations according the data from:

[http://www.kinto.com/rus/research/marketupdate/transactions/equity/company/10/t\\_transactions/13/7/2008/13/7/2009.html](http://www.kinto.com/rus/research/marketupdate/transactions/equity/company/10/t_transactions/13/7/2008/13/7/2009.html)

We have therefore chosen to further analyze the 2 biggest banks, based on asset volume with full data about market value of stocks in the period 2005-2011.

The assessment of rates of return is presented in Table 7 below.

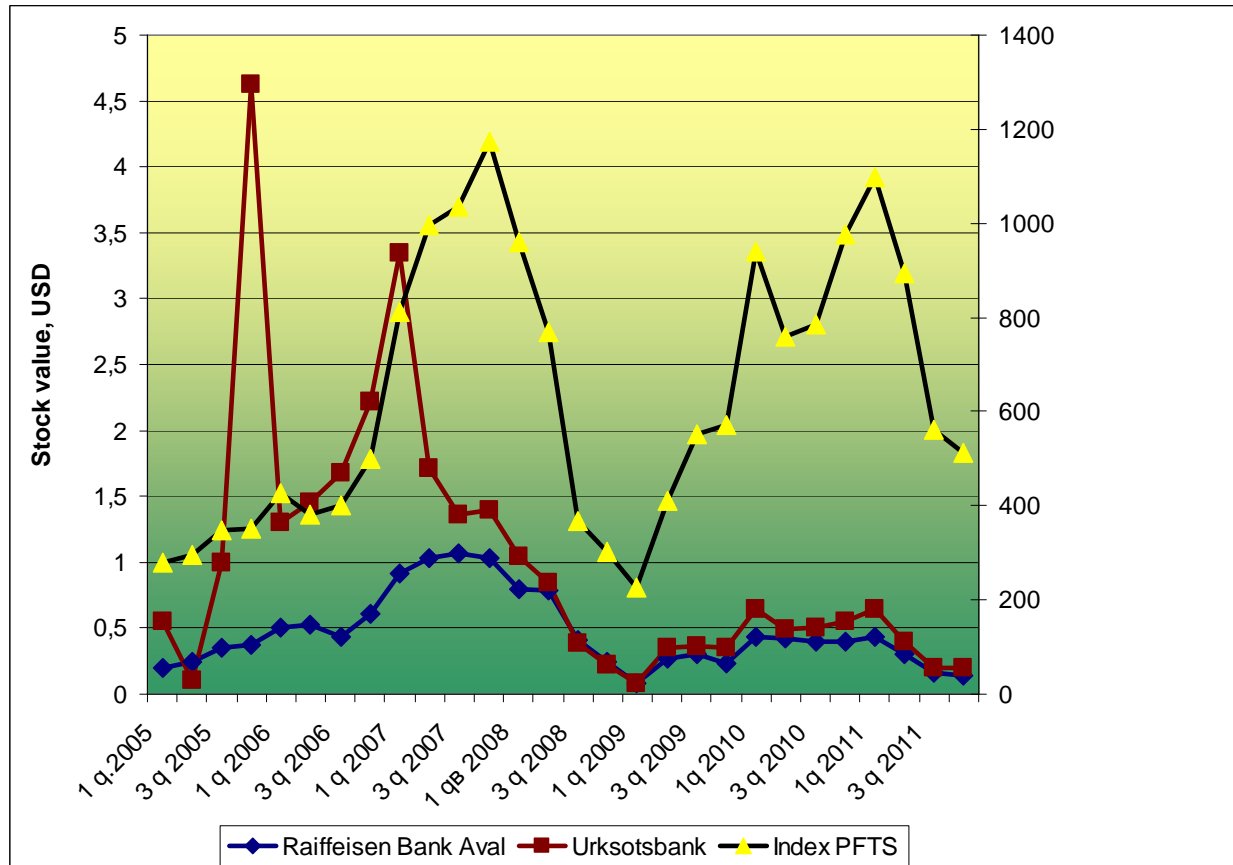
**Table 7. Value of banks stocks**

	RaifeisenBank Aval		Ukrsotsbank		Market index	
	Value of stock, UAH	Rate of return, %	Value of stock, UAH	Rate of return, %	PFTS-index	Rate of return on PFTS-index
1 q.2005	0.2	-	0.55	-	278.48	
2 q 2005	0.25	25.00%	0.1	-81.82%	297.09	6.68
3 q 2005	0.35	40.00%	1	900.00%	348.77	17.40
4 q 2005	0.37	5.71%	4.62	362.00%	352.97	1.20
1 q 2006	0.5	35.14%	1.3	-71.86%	428.29	21.34
2 q2006	0.53	6.00%	1.45	11.54%	380.24	-11.22
3 q 2006	0.44	-16.98%	1.68	15.86%	401.81	5.67
4 q 2006	0.61	38.64%	2.22	32.14%	498.86	24.15
1 q 2007	0.91	49.18%	3.35	50.90%	810.97	62.56
2 q 2007	1.03	13.19%	1.71	-48.96%	996.43	22.87
3 q 2007	1.07	3.88%	1.36	-20.47%	1034.38	3.81
4 q 2007	1.03	-3.74%	1.4	2.94%	1174.02	13.50
1 qB 2008	0.8	-22.33%	1.04	-25.71%	959.31	-18.29
2 q 2008	0.79	-1.25%	0.85	-18.27%	767.57	-19.99
3 q 2008	0.41	-48.10%	0.39	-54.12%	369.47	-51.86
4 q 2008	0.25	-39.02%	0.22	-43.59%	301.42	-18.42
1 q 2009	0.085	-66.00%	0.08	-63.64%	227.34	-24.58
2 q 2009	0.27	217.65%	0.35	337.50%	411.2	80.87
3 q 2009	0.3	11.11%	0.36	2.86%	553.29	34.55
4 q 2009	0.23	-23.33%	0.35	-2.78%	572.91	3.55
1 q 2010	0.43	86.96%	0.64	82.86%	940.22	64.11
2 q 2010	0.42	-2.33%	0.49	-23.44%	758.74	-19.30
3 q 2010	0.4	-4.76%	0.5	2.04%	784.04	3.33
4 q 2010	0.4	0.00%	0.55	10.00%	975.08	24.37
1 q 2011	0.43	7.50%	0.64	16.36%	1099.18	12.73
2 q 2011	0.31	-27.91%	0.4	-37.50%	895.01	-18.57
3 q 2011	0.17	-45.16%	0.2	-50.00%	562.32	-37.17
21/10/2011	0.14	-17.65%	0.2	0.00%	512.26	-8.90

Source: calculations according the data from

[http://www.kinto.com/rus/research/marketupdate/transactions/equity/company/10/t\\_transactions/13/7/2008/13/7/2009.html](http://www.kinto.com/rus/research/marketupdate/transactions/equity/company/10/t_transactions/13/7/2008/13/7/2009.html)

Figure 3. Dynamic of stock value of the analyzed banks and market index- PFTS



Source: Own elaboration

The dynamic of stock rate of return in comparison with the dynamic of stock exchange index (here PFTS – index) allows us to evaluate the level of exposure (dependence) of stock value on the market movements and also gives the opportunity of risk valuation.

A valuation of risk (market beta) for these two publicly traded banks with foreign capital, which trade on a constant basis, was conducted, as was an estimation of the impact of the market on the bank stock prices. The results are presented in the Table 8.

Table 8. Risk valuation of bank stocks

Security name	Beta	Alpha	R-Sqr	Resid Std	Std. Err		Number of Observations
					Dev-n	Beta	
RaiffeisenBank Aval (BAVL)	0.015	-0.012	0.71	0.29	0.002	0.056	28
Ukrsotsbank (USCB)	0.021	0.329	0.10	1.89	0.012	0.365	28

Source: Own calculations

Thus, we can draw some conclusions about these stocks: there is positive correlation between the Raiffeisen Bank Aval stocks rate of return and the rate of return of the market

with more than average range (correlation ratio equals 0.84 ). Volatility of rate of return of BAVL stocks depends on volatility of rate of return of the market index by 71%.

Regarding Ukrasotsbank, we should note that there is a positive correlation between the stock's rate of return and the rate of return of the market with less than average range (correlation ratio equals 0,32 )

In contrast to the BAVL stocks, the volatility of the rate of return of USCB only depends on the rate of return of the market index by 10%.

Risk levels of both stocks are low and "beta" indicator confirms this statement.

Besides we can come to conclusion that during the analyzed period the BAVL stocks had less rate of return than market and USCB stocks had quite the opposite more rate of return. These statements are based on "alpha" indicators of the appropriate stocks.

Using the results of the above calculations we can build the market model for these two banks

For RaifeisenBank Aval it is:

$$r_{BAVL} = -0,01158 + 0,01455 * r_i$$

For Ukrasotsbank it is:

$$r_{USCB} = 0,3290 + 0,0208 * r_i$$

In conducting a quality analysis of the impact of the crisis on stocks prices, we should note the following: analyzed banks are bank subsidiaries of European parent banks (Raifeisen Bank Aval of Reifeisen Bank Austria, and Ukrasotsbank of UniCredit Group) and changes in the stock prices depend on the situation of the parent banks. Prior to the crisis, foreign ownership strengthened the competitiveness of these banks, but the current debt crisis in Western Europe could hurt these banks. The parent banks could even leave the Ukrainian market if things get worse [Shulik, V. Analysis..., 2010].

Besides the investors' expectations about the banks future and sustainability of financial system in Europe and Ukraine, legislative limits had significant impact on the stock price: prohibition for mutual fund to own banks stock. This restriction was adopted at the February 2011 and applied from the June, 16. As a result, mutual funds-owners of banks capital had to sell their shares.

Stock prices are very sensitive both to internal factors and international events.

The following groups of factors appear to have an impact on stock prices of Ukrainian commercial banks at present:

- investors expectations concerning the banks performance;
- politic uncertainty;
- capitalization of the banking system;
- stability of the financial system;
- news about world financial markets;
- sale of big bank shares.
- macroeconomic risk of devaluation
- financial soundness of parent banks and their further strategy.

## Conclusion

Evaluations and forecasts of Ukrainian bank performance by international rating agencies and multilateral institutions, Standard & Poor's and the World Bank in particular, are

more negative. S&P experts rate the Ukrainian banking system in the weakest group (group 10) because of the high level of country risk and because the recovery of most Ukrainian banks took 2-3 years. A number of factors delayed recovery, including a deficiency of currency derivatives, a lack of long-term resources, and volatile client deposits [Shulik, V. Survey...2011]. According the *Global Competitiveness Index 2010-2011*, the soundness of Ukrainian banks (as one element of the “financial market development” assessment) ranked poorly --138<sup>th</sup> among the 139 evaluated countries [The Global...,2010, p.335].

The post crisis period was extremely difficult for the Ukrainian banking system. Many internal and external factors influenced bank performance. Additional debt provisions (the sharp increase in required reserves) are the main reason for the longer than expected poor financial results of banks. The quality of banking assets is worsening because of unstable borrowers' activity.

The volume of non-performing loans is falling at present, and there appears to be a chance for asset recovery. As a result, it is possible that bank performance will be significantly stronger in 2011. However, macroeconomic performance influences bank performance, and the macroeconomic situation is still vulnerable to the European and global economic.

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#### **Abstrakt**

*Głównym celem artykułu jest analiza wpływu kryzysu finansowego w 2008 roku na system finansowy Ukrainy oraz efektywność ukraińskich banków. Podstawą (fundamentem) wykonanej analizy są kluczowe wskaźniki działalności banków w latach 2003-2011. Przedstawiona (zaprezentowana) analiza dotyczy: aktywów, zobowiązań i kapitału oraz zmian w zarządzaniu bankami. Szczególną uwagę zwrócono na zmianę wartości akcji dwóch największych banków przed i po kryzysie*