



BOOK OF ABSTRACTS

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1) ANALYSIS OF THE DEPOSIT RESOURCES' REGIONAL ALLOCATION IN UKRAINE

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Abstract

The intermediary function of financial corporations is embodied in the redistribution of temporarily free funds raised from certain institutional units to those units that have a need for them. A significant part of such borrowings takes the form of deposits placed with commercial banks. Amounts accumulated in the form of deposits are an important component of the resource base of banking institutions. This allows them to conduct assets banking operations to lend the population and enterprises of the economy's real sector and contribute to economic growth in the country.

The purpose of the study is to perform a statistical analysis of the regional allocation of deposits held with Ukrainian commercial banks over the period 2010-2018.

The conceptual basis of the study is formed by the approaches of the System of National Accounts and Monetary Statistics. The study is based on the National Bank of Ukraine (NBU) information. The results obtained indicate a high degree of heterogeneity of the regions of Ukraine in terms of deposits attracted by commercial banks. Regional variation in deposits amounts is too big. Three regions can be classified as outliers. These are the capital region – Kyiv region and the most industrially developed Dnepropetrovsk and Donetsk region. This conclusion is confirmed by the analysis of variation and the form of regions' distribution. The most significant changes in the distribution of regions occurred in 2014 due to the dramatic events of modern Ukrainian history.

We also conclude the growing level of deposits' concentration based on the concentration index-3, concentration index-5, Herfindahl-Hirschman Index and Gini coefficient.

Since geographical diversification is a necessary prerequisite for reducing the riskiness of deposit operations, appropriate managerial decisions must be taken.

Introduction

The importance of deposits as a significant part of the commercial banks' resource base results in an active study of various aspects of this issue by scientists worldwide. One of the important areas of research is the geographical diversification of deposits attracted by the banking system. Goetz et al. (2014) have found that geographical diversification provides a lower level of risk for banking institutions. Meslier et al. (2016) have investigated the impact of geographic diversification on bank risk and return and reported that this contributes to a significant reduction in risk. At the same time, the impact on risk-adjusted return is non-linear and depends on bank size.

Deposit resources of Ukrainian banks are actively studied by domestic scientists since the banking system has a dominant role in the financial market of Ukraine. The regional aspect of deposit resources attracting also is studied in the scientific works of Ukrainian authors (Hirna, 2012; Herasymchuk & Gomanyuk, 2016; Khromushyna, 2018).

However, an investigation of the deposits' allocation across regions requires deepening taking into account the variability of the situation and the need for research over a longer time period. Our work aimed to perform the statistical analysis of the regional allocation of deposits attracted by Ukrainian commercial banks in 2010-2018.

Material and Methods

The population under study is Ukrainian commercial banks. They belong to the financial sector of the economy and form the subsector “Deposit-taking corporations except the central bank”. To analyze the peculiarities of regional allocation of deposits held with deposit-taking corporations the system of indicators was used. The descriptive statistics were involved to describe the important features of the data distribution. The concentration measures were applied to estimate the level of banks’ deposits concentration. To present the results of the study tabular and graphical methods were used.

Results and Discussion

Monetary statistics contains data on the total volume of deposits held with deposit-taking corporations (excluding NBU) as well as a breakdown by regions.

There are 25 observations in the population: 24 regions and the Autonomous Republic of Crimea (ARC) and the city of Sevastopol. It should be noticed, that Kyiv and Sevastopol data are given as part of data on the Kyiv region and the ARC respectively despite these cities have a special status according to the Constitution of Ukraine. These two regions are quite atypical. We can observe a collapse in the values of the investigated indicator for the ARC since 2014. At the beginning of the study period the share of deposits of this administrative-territorial unit was 3.4% of the total amount of deposits held in Ukraine, whereas in 2015-2018 – only 0.001%. In contrast, the specificity of the capital region is the largest amount of deposits is concentrated here. The share of Kyiv region increased from 41.1% in 2010 to 50.1% as of the end of 2018.

Kyiv, Dnipropetrovsk, Donetsk, Odesa, and Kharkiv regions were TOP-5 regions by the amount of deposits in 2010-2013. Then Donetsk region was changed by Lviv region in 2014-2018. An analysis of the patterns of deposits’ distribution by regions displayed an explicit and intensifying heterogeneity of the studied population (Table 1). The coefficient of variation exceeds by several times its critical limit. Therefore, we should prefer the median to the mean as a robust characteristic for the center of distribution. Distribution is very pointy and has a significant positive skew.

Table 1. Descriptive statistics of residents’ deposits (excluding deposit-taking corporations) held with deposit-taking corporations (excluding NBU) in 2010-2018

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mean	16666	19670	22894	26799	27004	28669	31739	35954	37319
1st quartile	3973	4404	5391	6404	6273	6734	7366	8924	9580
2nd quartile (Median)	5395	5945	7844	9384	8360	8620	9878	11036	11626
3rd quartile	15527	17298	20 318	23905	24901	25013	28416	28613	28401
Interquartile range	11553	12894	14927	17501	18628	18279	21050	19689	18821
Range	168300	203104	233568	273946	340689	356912	395879	458825	467780
Standard deviation	33726	40880	46738	54732	66631	69845	77385	89644	91326
Coefficient of variation, %	202,4	207,8	204,1	204,2	246,7	243,6	243,8	249,3	244,7
Skewness	4,356	4,305	4,370	4,395	4,709	4,683	4,700	4,736	4,724
Kurtosis	20,274	19,845	20,358	20,562	22,896	22,709	22,840	23,099	23,014

Source: build-up by the author based on Monetary statistic of the National Bank of Ukraine

Some regions are ordinary or extreme outliers (Figure 1).

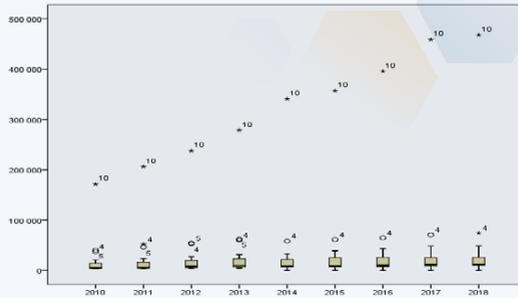


Figure 1. Boxplot diagram of Ukrainian regions allocation on the amount of residents' deposits (excluding deposit-taking corporations) held with deposit-taking corporations (excluding NBU) in 2010-2018
Source: build-up by the author based on Monetary statistic of the National Bank of Ukraine

Kyiv region (number 10 in Figure 1) is an extreme outlier during the whole period under study. Dnipropetrovsk region (number 4) should be identified as an extreme outlier in 2011 and 2018. This region for the rest years and Donetsk region (number 5) in 2010-2013 are ordinary outliers. We can conclude based on the values of the concentration index-3 that there is a moderate but increasing level of deposits' concentration; while the top 3 regions of Ukraine covered 59.7% deposits in 2010, then in 2018 it raised to 63.3% (Table 2). At the same time, concentration indices-5 and Herfindahl-Hirschman evaluate the level of concentration of attracted deposits as high. In addition, Herfindahl-Hirschman Index was growing most intensively and had increased by 37.1% during 2010-2018. Concentration indexes and Gini coefficient were raising too but at smaller rates.

Table 2. Concentration measures of residents' deposits (excluding deposit-taking corporations) held with deposit-taking corporations (excluding NBU) in 2010-2018

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018
Concentration index-3	0,597	0,619	0,602	0,599	0,640	0,638	0,636	0,642	0,633
Concentration index-5	0,692	0,710	0,694	0,692	0,728	0,736	0,731	0,736	0,731
Herfindahl-Hirschman Index	0,197	0,206	0,200	0,200	0,274	0,268	0,268	0,279	0,270
Gini coefficient	0,628	0,646	0,629	0,626	0,674	0,674	0,672	0,674	0,666

Source: build-up by the author based on Monetary statistic of the National Bank of Ukraine

We use the Lorenz curve (Figure 2) as a graphical representation of the Gini coefficient. It is exhibited by the Lorenz curve that both plots are located quite far from the line of equality and 2010 plot is a little closer to the equality line than 2018 plot. This confirms our conclusions about the high concentration of deposit resources in Ukrainian regions mainly the metropolitan and industrialized.

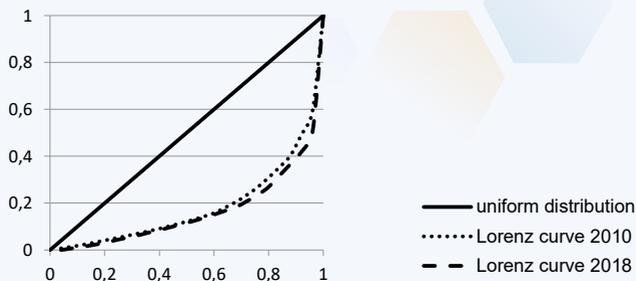


Figure 2. Lorenz curve of regional concentration of residents' deposits (excluding deposit-taking corporations) held with deposit-taking corporations (excluding NBU) in 2010 and 2018

Source: build-up by the author based on Monetary statistic of the National Bank of Ukraine

Conclusions and Outlook

Ukrainian regions are quite heterogeneous on the amount of residents' deposits held with domestic deposit-taking corporations. The regional structure of deposits was constant enough in 2010-2013 and 2015-2018. Significant structural changes took place in 2014 when the metropolitan area's share increased sharply (by 8.9 percentage points). In contrast, the shares of the ARC, Donetsk, and Lugansk regions have decreased by 3.4, 5.0 and 1.2 percentage points respectively. Such a situation is undesirable both from the point of view of banks' risk concentration and due to the threat of disproportionality of the country's economic development at the regional level. Joining efforts of authorities and bank community is needed for elaborating measures for resolving this problem.

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