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JUSTIFICATION OF THE SCIENTIFIC AND METHODOLOGICAL APPROACHES FOR OPTIMAL DESIGN PORTFOLIO OF BANKS' ASSETS AND LIABILITIES

Litvinyuk, . (2016), *Justification of the scientific and methodological approaches for optimal design portfolio of banks' assets and liabilities*. Ed.: M. Zveryakov (ed.-in-ch.) and others [Obhruntuvannia naukovo-metodychnykh pidkhodiv do modeliuвання optimalnoi struktury portfeliv aktyviv ta pasyviv bankiv; za red. M. I. Zveriyakova (gol.red.) ta in.], *Socio-economic research bulletin; Visnik social'no-ekonomi nih doslidžen'* (ISSN 2313-4569), Odessa National Economic University, Odessa, No. 2 (61), . 203–212.

Abstract. *The article substantiates the scientific and methodological approaches to modeling the optimal portfolio structure of assets and liabilities based management strategies. The proposed in the article scientific and methodological approaches to the modeling, as opposed to the existing ones, include an indicator of dynamics of interest rate, and restrictions system is built according to the strategy management of assets and liabilities of the bank. It is proved that the inclusion of selected indicators during the optimization modeling allows to increase the accuracy of the forecast of financial targets, and ensures the achievement the optimal structure of portfolios of assets and liabilities of the bank based on the set strategic goals and tasks. The practical usage of the developed scientific and methodological approaches to modeling the optimal structure of the portfolios of assets and liabilities of banks will contribute to achieving the planned level of net interest margin as the target indicator of tactical level asset and liability management of banks.*

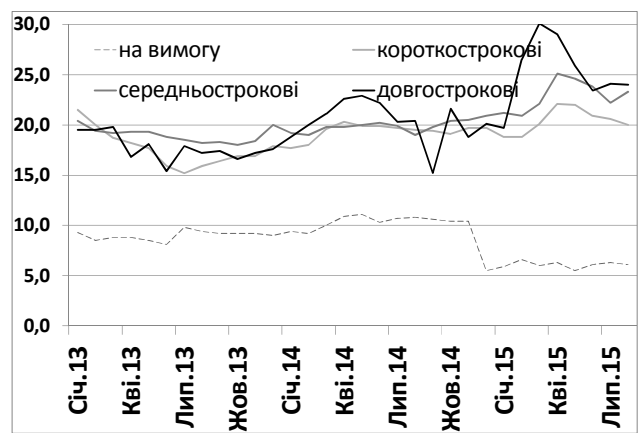
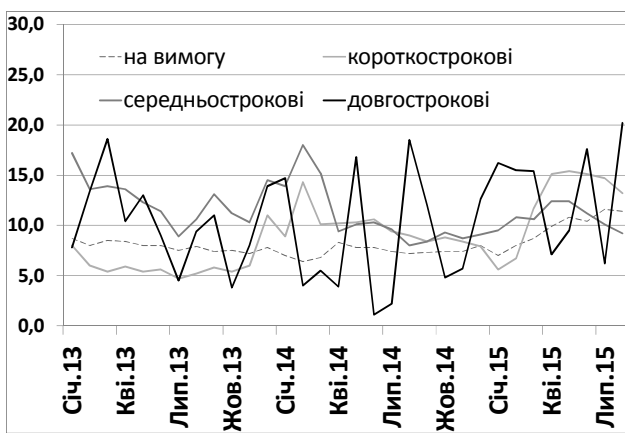
Keywords: *strategy; control; model; optimization; operations; dynamics; efficiency; profit; risk.*

JEL classification: *G130; C310*

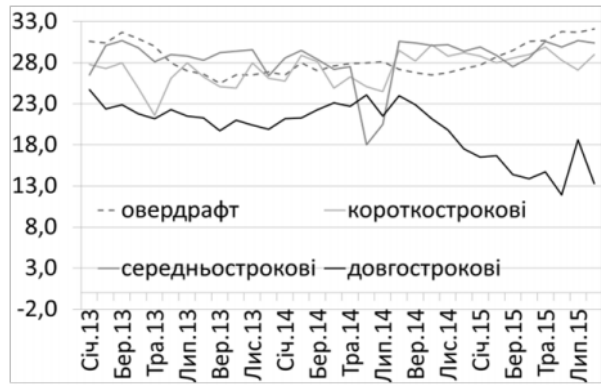
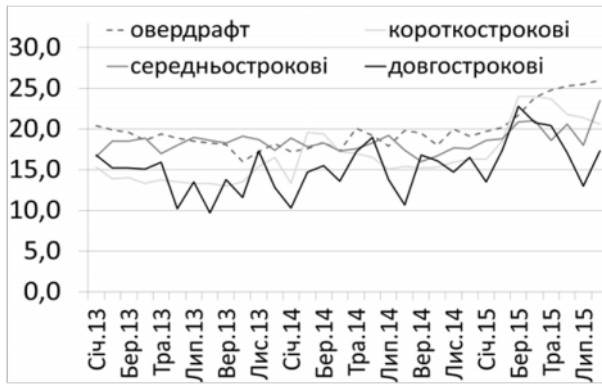
- [1, c.40–42], [2, c.156–158], [3, c.127–129],
[4, c.156–158], [5, c.254–258], [6, c.132–136],
[7, c.1–3], [8, c.473–478], [9, c.378–383],
[10, c.137–138]

[2, с.156–158].

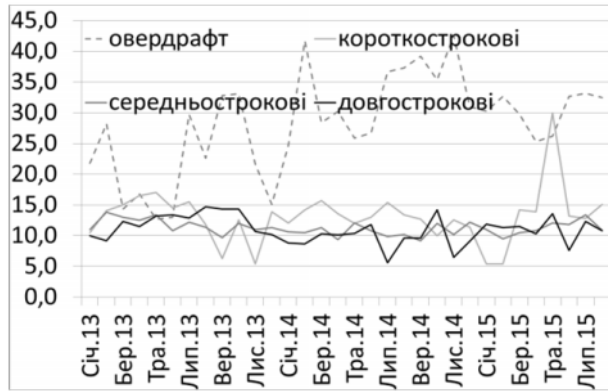
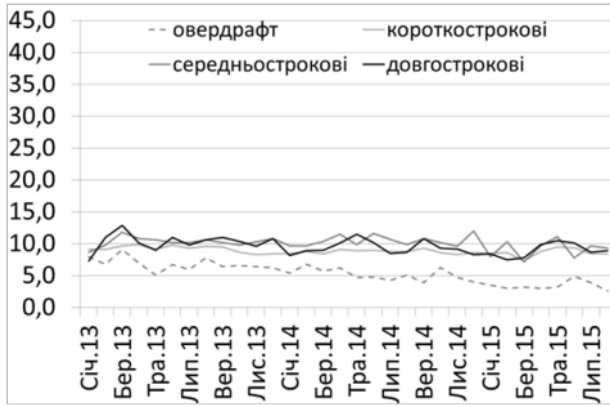
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1.1.



2.1.



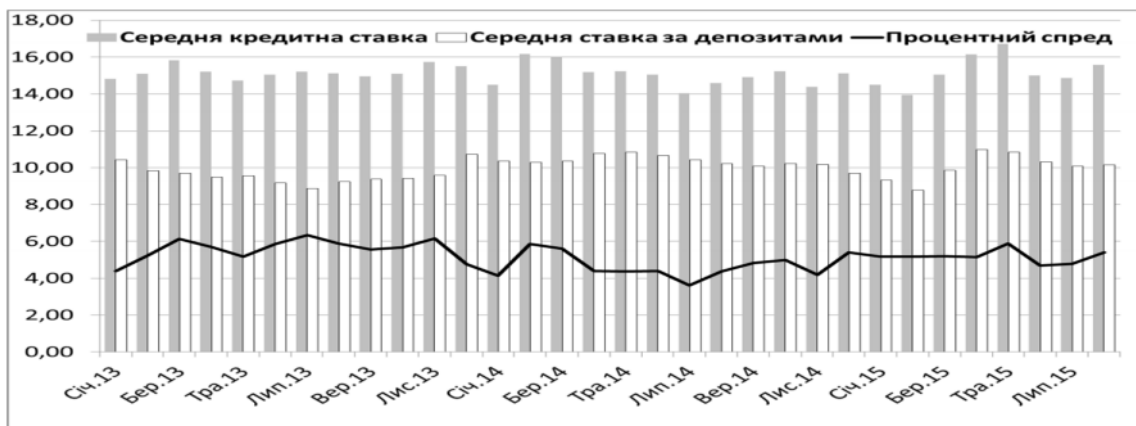
2.2.

.2.

01.01.2013 01.08.2015 .(

[10]

.3.



.3.

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)

[1-6]

$$\sum a_{ij}x_{ij} - \sum b_{ij}y_{ij} \rightarrow \max \tag{1}$$

() .

$$\sigma_{ij} \leq \sigma$$

$$x_{\min}; y_{\min} \leq x_{ij}; y_{ij} \leq x_{\max}; y_{\max} \tag{2}$$

$$\sum x_{ij}; y_{ij} = 1$$

$$[x_{ij}; y_{ij}] < 1$$

$a_{ij}; b_{ij} -$
;
 $x_{ij}; y_{ij} -$
 $j-$

$i-$ $j-$

$i-$

$i-$

$x_{\min}; y_{\min} -$
;
 $x_{\max}; y_{\max} -$

$i-$ $j-$

1:

$$\sum x_{ij}; y_{ij} = 1 \tag{3}$$

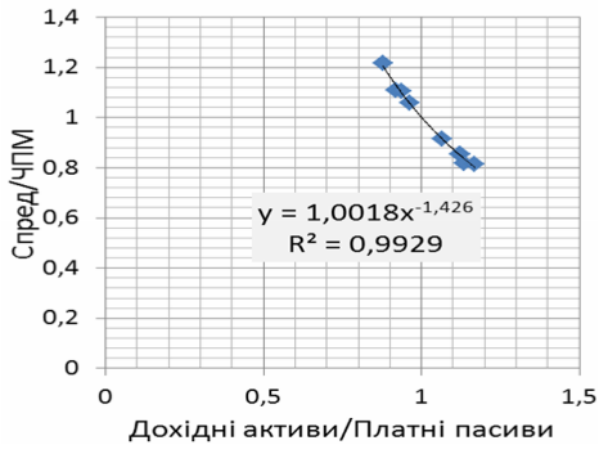
100%.

$$[x_{ij}; y_{ij}] < 1 \tag{4}$$

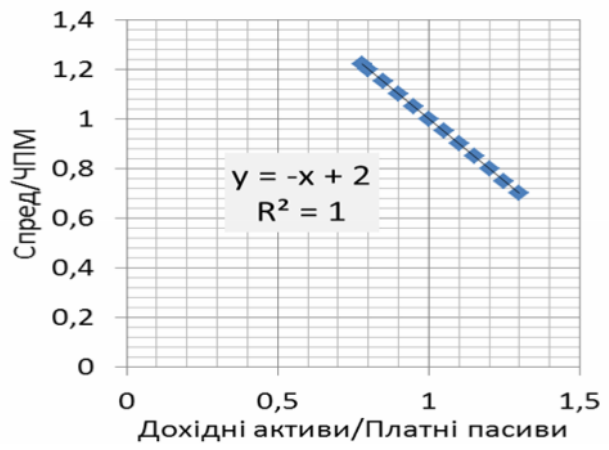
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[12].

(. 4).



4.1.



4.2.

.4.

([13])

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01.01.2008 01.01.2015 .

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$$\frac{INi}{At} = \sum_{i=1}^n x_{0i} [d_{i0} + \alpha_i (2T+1)/2] + \sum_{i=1}^n w_i \left\{ d_{i0} (2T+1)/2 + \alpha_i \left[(T+1)^3 - T^3 \right] / 3 \right\} - \quad (5)$$

$$T \sum_{i=1}^n w_i [d_{i0} + \alpha_i (2T+1)/2] > \frac{INi}{At} \Rightarrow \max$$

:

$$\sum_{i=1}^m (x_{0i} + w_i T) = X_A; \sum_{i=m+1}^n (x_{0i} + w_i T) = X_P; \quad (6)$$

D - d_{i0} - ; x_{0i} - ; INi - ; At - ; X_A - ; X_P - ; w_i - ; w_j -

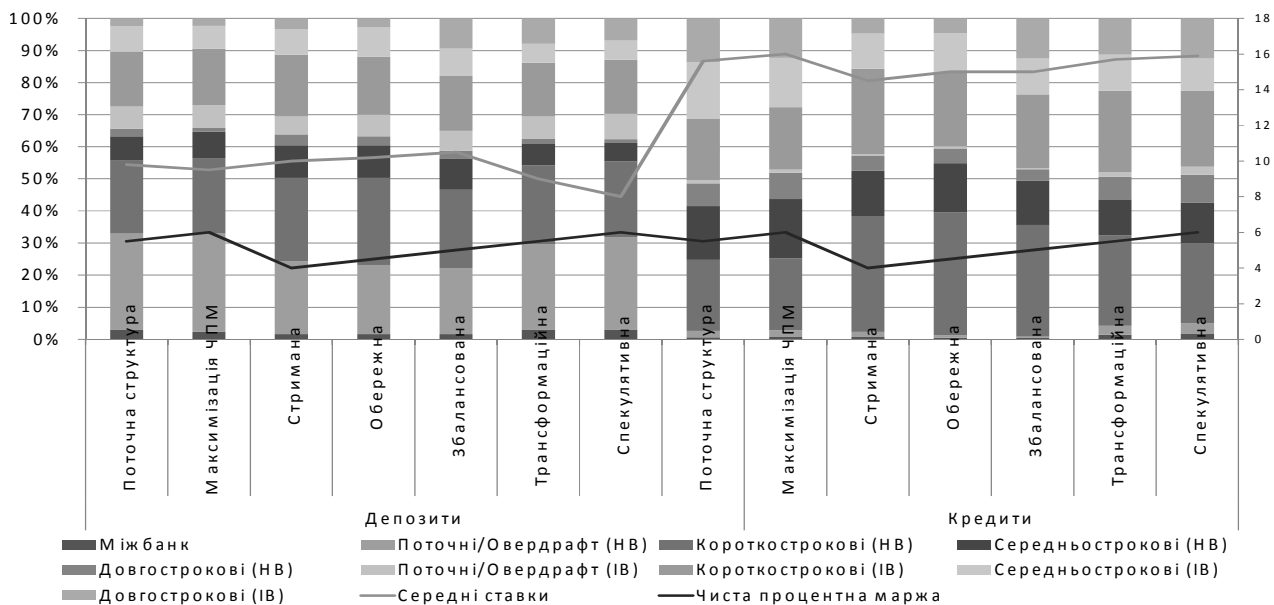
(. 1).

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([13])

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		()	()	' -	
	3	[0,8-1]	2	1,2	1,2
	2	[0,8-1]	1,2	1	1
	2	[0,8-1]	1,4	1	1
	2	[0,8-1]	2	[0,9-1,1]	1
	3,5	1,2	3	[0,5-1,5]	1,3
	4	1,4	4	[0,4-1,6]	1,5

. 5.



. 5.

([13])

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