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NET STABLE FINANCING RATIO OF NSFR AND POSSIBLE CONSEQUENCES OF ITS IMPLEMENTATION FOR THE UKRAINIAN BANKING SECTOR

КОЕФІЦІЄНТ ЧИСТОГО СТАБІЛЬНОГО ФІНАНСУВАННЯ NSFR ТА МОЖЛИВІ НАСЛІДКИ ЙОГО ВПРОВАДЖЕННЯ ДЛЯ УКРАЇНСЬКОГО БАНКІВСЬКОГО СЕКТОРУ

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The article is devoted to the problems of the new standard of net stable financing (NSFR) implementation in the practice of the Ukrainian banking sphere. In a whole, the article examines the motives and preconditions for the long-term liquidity ratio introduction and the main advantages that its application by domestic banks should bring. Additionally, more attention is paid to the warnings of economists about the possible negative consequences of further tightening the requirements for the bank liquidity level. Among the main risks of the NSFR ratio introduction are the reduction of credit programs by banks, which will negatively affect the economy, reduction of the Ukrainian banking institutions profitability, as well as the problem of ensuring a sufficient level of liquid investment in underdeveloped financial markets in Ukraine. Moreover, our research has shown that there is no clear pattern between the NSFR ratio implementation and changes in the volume of lending and investment by Ukrainian banking institutions. So, to say, this does not give grounds to claim that in the future compliance with the new liquidity requirements will have a negative impact on lending or profitability of the domestic banking sector. Furthermore, compliance with both NSFR and LCR liquidity ratios since their introduction into Ukrainian banking practice was also analyzed. It is shown that the Ukrainian banking market suffers from superliquidity, which, although provides high financial stability, significantly limits banks potential profitability. Also, the findings of American researchers that large banks tend to adhere to lower values of the NSFR ratio than smaller banking institutions are further researched. So, these conclusions are not true for the Ukrainian banking sector. To sum up, the assessment of future final transformations of regulatory requirements on liquidity and capital adequacy of Ukrainian banks was carried out.
Keywords: liquidity management, long-term liquidity ratio, net stable financing ratio NSFR, prudential regulation.

Стаття присвячена питанню імплементації нового нормативу чистого стабільного фінансування NSFR у практику української банківської сфери. Стаття досліджує мотиви та передумови впровадження нормативу довгострокової ліквідності та основні переваги, які його застосування вітчизняними банками має принести. Більшою мірою приділена увага пересторогам, які економісти висловлюють щодо можливих негативних наслідків подальшого посилення вимог щодо рівня банківської ліквідності. Серед основних ризиків запровадження коефіцієнта NSFR називають скорочення банками кредитних програм, що негативно вплине на стан економіки, зниження прибутковості українських банківських установ, а також проблематичність забезпечення достатнього рівня ліквідних інвестицій при нерозвиненому фінансовому ринку в Україні. Наші дослідження показали, що не прослідковується чіткої закономірності між імплементацією нормативу NSFR та змінами у обсягах кредитування та інвестування українськими банківськими установами. І це не дає підстав стверджувати, що і в майбутньому дотримання нових вимог ліквідності буде негативно відображатися на обсягах кредитування та прибутковості вітчизняного банківського сектору. Також проаналізовано дотримання обох нормативів ліквідності NSFR та LCR з моменту їх впровадження в українську банківську практику. Показано, що український банківський ринок страждає від надліквідності, що хоч і забезпечує його високу фінансову стійкість, але значно обмежує потенційну дохідність. Додатково здійснена спроба підтвердити висновки американських науковців, що великі банки мають схильність дотримуватися більш низьких значень нормативу NSFR, ніж невеликі банківські установи. Ці висновки не є справедливими для українського банківського сектору. Як підсумок здійснено оцінювання майбутніх завершальних трансформацій регуляторних вимог щодо ліквідності та достатності капіталу українських банків.
Ключові слова: управління ліквідністю, норматив довгострокової ліквідності, коефіцієнт чистого стабільного фінансування NSFR, пруденційне регулювання.

Problem definition and its relationship with important scientific and practical tasks. From the beginning of 2021, a new long-term liquidity ratio NSFR or, as it is better known in foreign practice, the net stable financing ratio has been implemented in the regulation of the Ukrainian banking sector. First, the LCR standard, previously introduced in 2019, aims to adjust banks' short-term liquidity within 1 month, while the NSFR is designed for a longer period of up to 1 year. Thus, the liquidity of domestic banks can be regulated in both the short and long term period, which protects the banking sector from possible liquidity shocks and ensures its stability.

In fact, the NSFR standard has already been implemented in some foreign countries, and it is the world's practitioners and scientists who have begun to question the effectiveness of this indicator, emphasizing the significant structural shortcomings of its construction. That is why these probable downsides in the realities of Ukrainian banking are profoundly relevant and necessary for deeper analysis.

Analysis of recent research and publications. Apparently, the interest in the new NSFR liquidity ratio due to its recent implementation is quite understandable and justified. First of all, the scientific achievements of Ukrainian economists focus on the method of calculating this indicator and the benefits that the banking sector will receive from its use. These are scientific works of Volkova V.V., Rudenko O.O. [1], Grudzevych Yu., Shmatkovska T., Borysiuka O. [2], Erkesa O.E., Gordienko T.M. [3], Makarenko M., Smolova Ya. [5], Pavlyuka O.O. [6]. It is also important to study the paper of Khoma I.B. [7], who tries to trace the impact of the NSFR standard on long-term deposit programs of Ukrainian banks. However, we are more interested in the foreign economists' works, who, unlike domestic researchers, focus more on the possible shortcomings of the new indicator, such as Arvanitis P., Drakos K. [8], Hang L.M., Wilson V., Managi C. [9], Forrester J.P., Hitselberger C.A., Taft J.P. [10], Nelson B. [11], Turner S., Mamhikoff A. [12].

Setting objectives. The article is aimed at a comprehensive analysis of the possible consequences of a new liquidity ratio NSFR introduction to regulate the domestic banking sector.

The main material researches. Ideally, the main goal of the net stable financing ratio NSFR is to balance the terms of banks' assets and liabilities in a long-term run, forcing banks to rely more on long-term financing. This will ensure high liquidity for up to 1 year, as well as minimize one of systemic risk arising from mostly short-term funds raised by banking institutions. As with the LCR short-term liquidity ratio, the NSFR ratio does not reflect a stable level of liquidity, but its fluidity, which is a more flexible and objective ratio under changing environmental conditions.

However, many economists, especially foreign ones, are deeply concerned about the significant possible shortcomings of the NSFR ratio. The main pitfalls of the new liquidity regulation can be put in a list:

1. Liabilities transformation in the direction of increasing their long-term share will require banks to change deposit programs, as well as to find longer-term borrowed funds. This may be problematic in light of the rather underdeveloped domestic financial market. It is possible that demand will stimulate supply and the need for long-term sources of funding significantly enhances market development. Although this is only one of the possible and quite optimistic options. And even in this situation, banks with a high NSFR ratio will have a greater impact on assets prices formation on the market, which puts banks in an unequal position. In any case, significant changes can be expected for the Ukrainian financial market.

2. Structural changes will also require bank assets. The main caveat of the researchers, in fact, was that ensuring an appropriate level of NSFR ratio would require banks to withdraw funds from their lending programs and transfer them to more profitable assets, especially high-yield investments. The economy may react negatively to the reduction in bank lending, and this, in turn, can lead to a number of devastating consequences. In addition, lending rates can be expected to rise as banks want to offset their rising financing costs.

3. Another remark was that increasing liquidity requirements would lower banks profitability. Apparently, liquidity and profitability seem to be inversely interdependent. This way, increasing liquid assets to maintain liquidity requirements draws assets from more profitable areas for banks, so the banking sector will not keep a certain amount of profit. Gradually, the increase in long-term deposit programs will also carry an additional financial burden on banks, which leads to a significant increase in interest expenses.

4. The fact that mortgages require less stable sources of financing is a greater advantage than corporate loans for banks (which require more stable sources of funding), this can create a disparity in mortgage and corporate lending and lead to business underfunding.

To start, first it would be needed to compare the total volume of lending and investment of the

Ukrainian banking sector over the last 6 years (Figure 1 and 2).

So, let's see if compliance with the long-term liquidity ratio really requires banks to reduce their credit programs. We can observe that in general during the studied 2016–2021, the pace of lending changed quite differently. The active increase in lending until 2019, when the banking sector was characterized by high profitability and efficiency, was replaced by a sharp decline in 2019–2020. However, this decline is difficult to attribute to the preparation of the new liquidity ratio introduction, more likely that the credit market was affected by the economic crisis caused by the COVID-19 pandemic.

Eventually, the growth of banks' lending activity in 2021, when the NSFR standard has already been fully implemented in banking practice, does not confirm the hypothesis that the need for more profitable sources to cover the new NSFR requirements will affect the reduction of the banking sector lending volumes.

On the other hand, when studying the volume of bank investment for the same period, it can be clearly seen that investments in securities till 2020 are constantly growing. Therefore, it is difficult to argue that exactly the introduction of the net stable financing ratio has influenced the banking sector to increase investments in this direction. In addition, it can be noted that in 2021, when banks should have increased deposits in highly liquid securities, as the NSFR standard has already entered into force, the banking sector of Ukraine, on the contrary, reduced them.

Thus, the statistics of the domestic banking market in 2021 do not confirm the hypothesis that the application of the long-term liquidity ratio NSFR will have negative consequences for the economy of Ukraine. At present, there is no decrease in lending or an increase in deposits in highly liquid securities, caused by the new requirements to ensure the Ukrainian banking sector liquidity.

It can be recalled that before the short-term liquidity ratio LCR introduction, some banking experts expressed similar warnings, fearing that compliance with this indicator would significantly worsen banking sector profitability. New requirements would make banks increase highly liquid assets, which limited their potential profitability. Anyway, these forecasts did not come true and in 2019 Ukrainian banks were able to obtain high profits and fully met all the requirements for ensuring the LCR standard.

Furthermore, let's look at the compliance of Ukrainian banks with the short-term liquidity ratio LCR and the long-term liquidity ratio NSFR (Figure 3 and 4).

Since the NSFR coefficient was introduced only at the beginning of 2021, the official data on it can be traced monthly only for a short period. On the other hand, on the LCR ratio, we can see data from the beginning of 2019, when it was officially introduced into Ukrainian banking practice.

Fig. 3 and 4 show that the banking sector of Ukraine is coping very well with the new requirements for both short-term and long-term liquidity. However, in their study [4] Ilchuk P.G. and Kots O.O. noted that too high values of LCR (and now we see the same trend for NSFR) indicate the overliquidity of the Ukrainian banking sector.

As of January 1, 2022, the situation is as follows: almost 7% of banks have LCR at the level of > 1000%, 10% of banks keep the indicator at the level of > 500%, 17% – at the level between 300% and 500% and almost 66 % – between

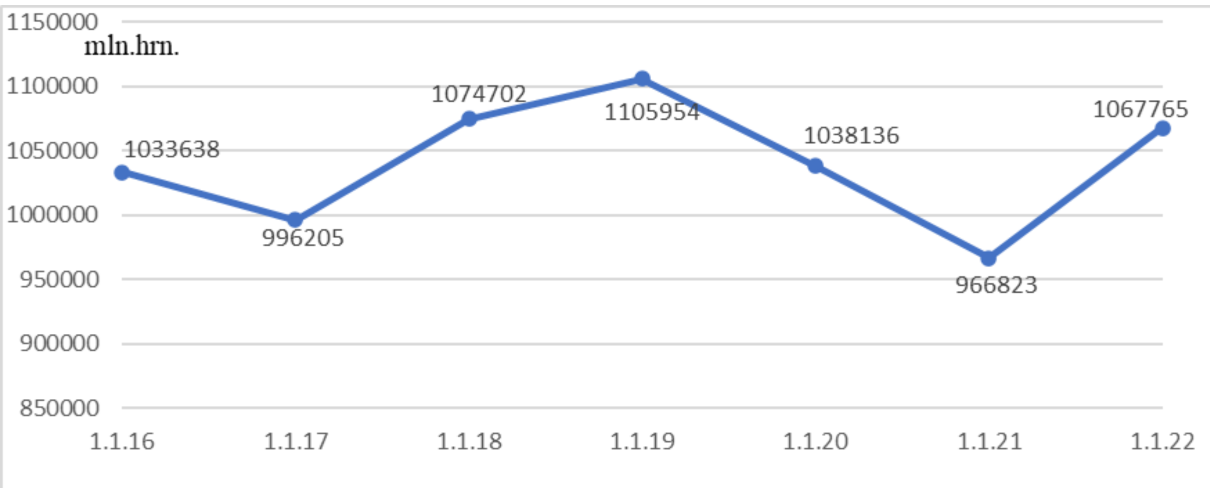

Figure 1. Dynamics of Ukrainian banking sector lending during 2016–2021

Source: generated by the authors according to the data [14]

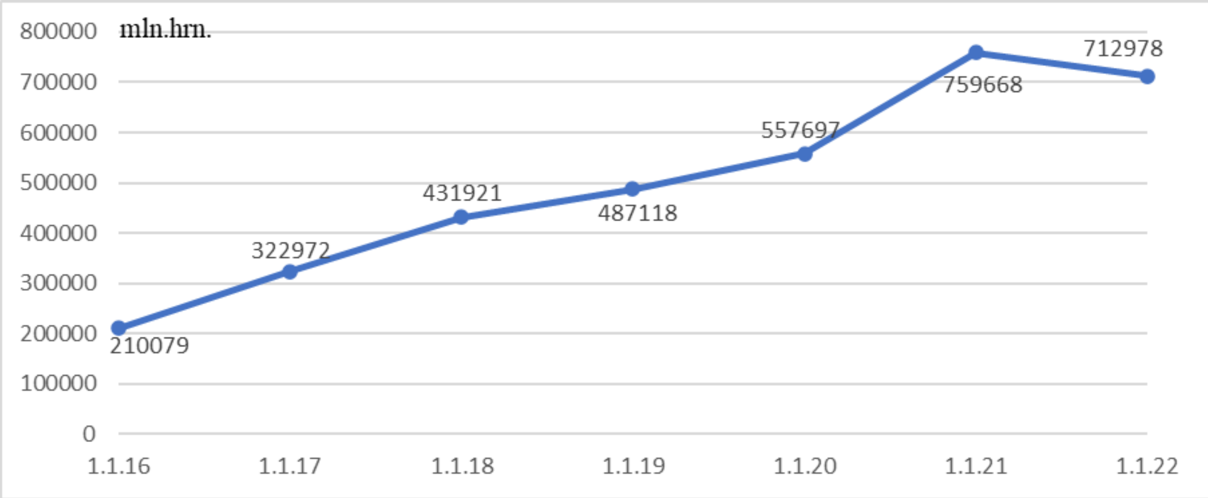

Figure 2. Dynamics of Ukrainian banking sector investment during 2016–2021

Source: generated by the authors according to the data [14]

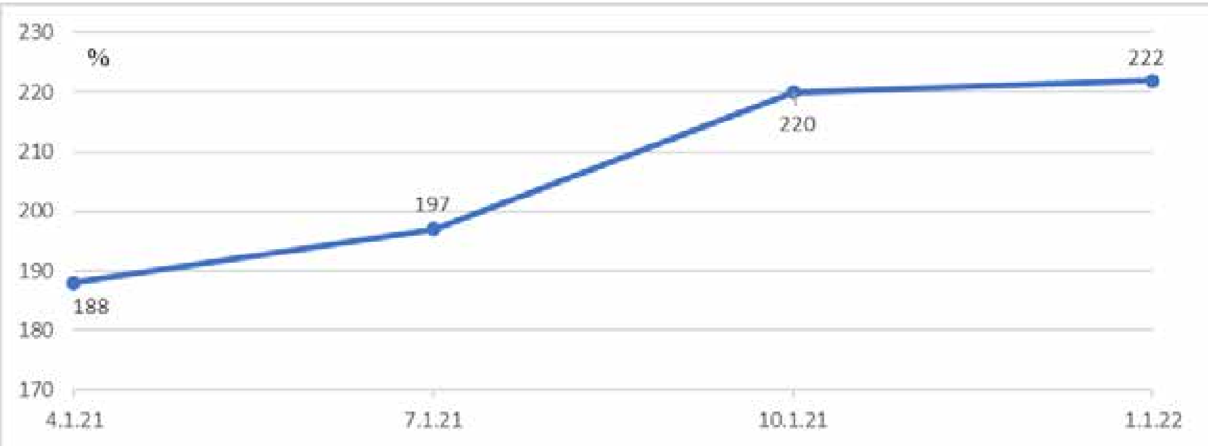

Figure 3. Dynamics of the net stable funding ratio NSFR during 2021

Source: generated by the authors according to the data [14]

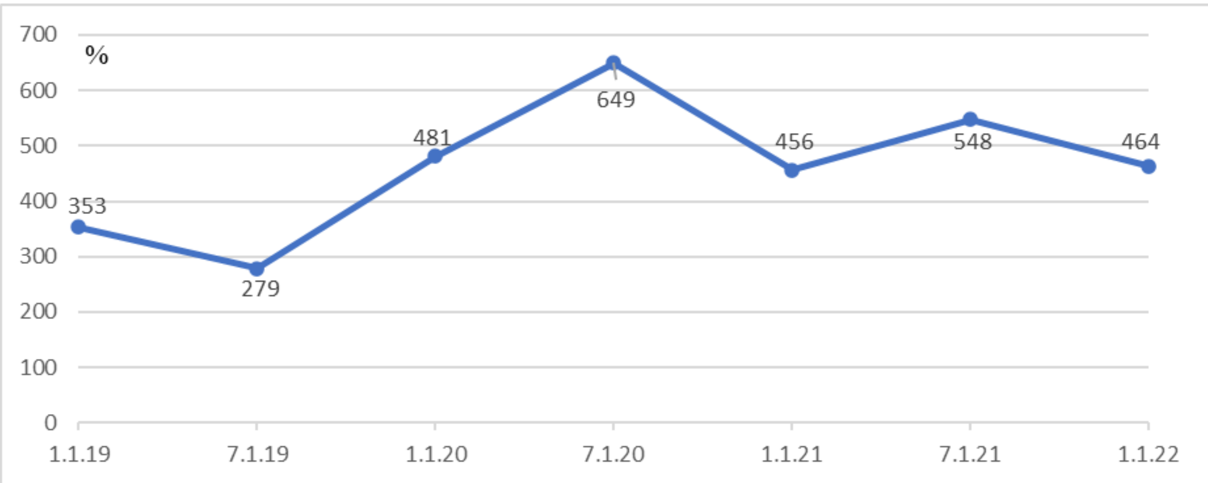

Figure 4. Dynamics of the short-term liquid ratio LCR during 2019–2021

Source: generated by the authors according to the data [14]

100% and 300%. That is, one third of Ukrainian banking institutions have a very high liquidity level. It should be noted that in the first quarter of 2021, almost half of domestic banks had excess liquidity, so now the banking system is gradually coming into balance.

In fact, excess liquidity is as undesirable for banks as it is insufficient and limits banking institutions' profitability. It is especially important to maintain a sufficient level of bank profitability during the period of instability caused by the COVID-19 crisis. Therefore, it is crucial to find a certain optimal level between a sufficient level of liquidity and profitability, which can ensure the stability of the banking system on the one hand and the efficiency of its activity, on the other.

However, the optimistic news is that American scientists' studies [9] indicate that there is neither a linear nor a non-linear relationship between the NSFR ratio level and declining profitability of banking institutions. Statistics show that the normal level of the NSFR ratio does not lead to a decline in bank profitability, which has become the main antithesis of this liquidity ratio introduction.

Table 1

Comparison of NSFR ratio value and Ukrainian banks' size as of 01.01.2022

№	Name of the bank	NSFR, %
	The largest banks by assets	
1.	Privat Bank	156,57
2.	Oschad Bank	180,20
3.	Ukreximbank	122,01
4.	Ukrgasbank	129,74
5.	Raiffeisen Bank Aval	122,32
6.	Alfa Bank	121,89
7.	PUMB	126,86
8.	Ukrsibbank	171,63
9.	OTP Bank	131,91
10.	Credit Agricole Bank	131,64
	The smallest banks by assets	
1.	Alpari Bank	705,79
2.	Family Bank	452,43
3.	Portal Bank	113,28
4.	Trans-Capital Bank	300,35
5.	BTA Bank	302,21
6.	Ukrainian Bank for Reconstruction and Development	125,71
7.	Okci Bank	198,65
8.	Polycombank	153,24
9.	Credit Europe Bank	377,34
10.	Altbank	229,19

Source: generated by the authors according to the data [14]

In addition, an interesting observation was made that large banks have lower NSFR levels compared to smaller ones [13]. In trying to explain this phenomenon, economists have made several explanations: first, large banks tend to have a greater margin of financial stability and are more likely to conduct risky transactions because they experience some protection in their size. While smaller banking institutions are more likely to avoid risks, therefore they form a higher reserve of liquidity.

Let's see if this thesis is true for Ukraine as well (table 1). For more objective results the average value of NSFR ratio for the period of its application will be taken.

As it can be seen, obviously small banks tend to concentrate excess liquidity, which may indicate the interdependence between the size of the bank and the value of its NSFR. However, it may be too early to draw any conclusions, as the new standard has only just been introduced and banks have only begun to adjust the structure of their assets and liabilities to regulatory requirements, so a longer period of observation is needed to draw definitive conclusions.

The results of this study and further research in this area. The final transformation of the regulatory requirements of the Ukrainian banking sector is not yet complete. The introduction of capital buffers (implementation of which has been postponed and not yet resumed due to the economic instability caused by the COVID-19 pandemic and now because of the war), as well as new requirements for the banks' capital structure are still ahead. In conclusion, whatever the possible negative consequences of the changed approaches to bank liquidity management can be, it is obvious that the already implemented changes (first of all the short-term liquidity ratio LCR) have already proved their effectiveness during 2019–2020, when the domestic banking system first since independence had no significant negative consequences during the recent economic crisis.

On the other hand, all implemented solutions are part of the Basel recommendations and can help the Ukrainian banking sector to harmonize with the leading world standards of banking macroprudential regulation.

To sum up, final conclusions can be drawn only after the implementation of all further changes and their full testing in practice under different economic conditions. After all, no regulatory approach should be sustainable, but should be tailored to the specific conditions in which they are applied, be flexible and constantly rethought about the effectiveness of their future use.

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