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INTERNATIONAL LIQUIDITY AS A BENCHMARK FOR MANAGING THE FINANCIAL SECURITY OF THE STATE

Abstract. *The study aims to substantiate the significance of a state's international liquidity as a critical benchmark for managing financial security, with a focus on its role during crises. It is contributed to the literature by analyzing the interplay between international liquidity and financial security, using Ukraine's experience under full-scale military invasion, and evaluating the effectiveness of foreign exchange reserves in mitigating external shocks. The scientific novelty lies in highlighting the conceptual tension between stock and flow approaches to liquidity measurement and empirically identifying currency leakage into informal savings as a factor undermining reserve efficacy. The "stock–flow" dichotomy solves by the majority of scholars in a flow-based understanding, emphasizing by its dynamism and inherent to both money and financial assets. It is justified two key risks in the deployment of foreign exchange reserves as an aspect of state financial security management: outflows of foreign currency assets into non-institutional savings (as it is in Ukraine) and structural inadequacy in terms of reserves main use. Practically, the findings emphasize the need for optimizing reserve structures and enhancing liquidity management to bolster financial security in existential shock terms. It is demonstrated the incretion in foreign cash outside the banking system of Ukraine by three times for every additional dollar in net foreign exchange interventions of the central bank. While at the moment the international reserves' capacity to cover imports and short-term debt is improving, it still raises reasonable concerns. The findings underscore the urgency of refining reserve structures, optimizing resource use, and strengthening foreign exchange oversight, offering actionable insights for policymakers. The study concludes that international liquidity is pivotal for state financial resilience, yet its effectiveness in Ukraine is hampered by inefficiencies, such as outflows to non-institutional savings, despite improved reserve coverage of imports and debt, necessitating further research into these trends.*

Keywords: *international liquidity, financial security, foreign exchange reserves, external debt, existential shock.*

Problem statement and its relevance. The capacity of a state to fulfill its obligations in a timely and comprehensive manner is considered one of the primary indicators of its economic capability. In times of crises – whether of economic or non-economic origin – disruptions in the flows of goods and payments within international trade, coupled with shifts in the priorities of public expenditure, impose additional pressure on the balance of payments. Consequently, measures aimed at balancing incoming and outgoing foreign currency flows in accordance with the urgent needs of state governance assume heightened significance. An inadequate level of liquid international assets may engender a series of adverse structural consequences, including the outflow of foreign exchange resources, depreciation of the national currency, and loss of access to international financial markets. The latter has a particularly critical impact on the state's financial security during periods of existential upheaval, such as armed conflicts. The urgent need to finance defense and humanitarian expenditures demands swift governmental response, as neglecting these imperatives only exacerbates the accumulation of destructive effects.

In the context of unprovoked military aggression against Ukraine, the effectiveness of managing its financial security is directly contingent upon the ability to maintain an adequate level of international liquidity. Relevant measures encompass not only the attraction and rational allocation of international financial assistance but also the optimization of existing resource utilization, restructuring of external debt, and effective foreign exchange oversight. Thus, international liquidity, typically a routine objective of financial policy during periods of economic growth, elevates to a priority of state financial security in times of crisis. This underscores the theoretical importance and practical value of studying international liquidity as a pivotal benchmark for managing financial security.

Analysis of recent research and publications. In contemporary scientific discourse, international liquidity is examined through the lens of resilience to shocks in global capital movements and the efficiency of managing foreign exchange reserves. The detrimental impact of the coronavirus pandemic has drawn significant scholarly attention to the challenges of ensuring a country's international liquidity

when access to the global capital market remains constrained. L. Goldberg & F. Ravazzolo emphasize that, while countries with access to the U.S. Federal Reserve's interstate lending instruments were able to normalize their international liquidity levels more rapidly, some preferred to rely on their own reserve assets due to uncertainties surrounding the stability of Federal Reserve financing conditions [5]. These findings align with the results of M. Gislén et al., which highlight the positive effect of dollar-based transfers on the resilience of the global financial system, though the role of foreign exchange reserves remains indispensable at regional or local levels, particularly in weakly managed economies during times of crisis [4]. J. Saadaoui demonstrates that foreign exchange reserves are pivotal in mitigating the adverse effects of external shocks on the international liquidity of countries with underdeveloped financial systems. However, this benefit comes with substantial costs associated with accumulating foreign exchange assets, underscoring the critical need for simultaneous deepening of national financial systems [10]. J. Aizenman et al. further substantiate the protective role of foreign exchange reserves against trade-related shocks, a factor of particular importance for countries with insufficiently developed financial institutions. Empirical evidence from their study underscores the necessity of maintaining a critical reserve threshold (exceeding 17% of GDP for European and Central Asian countries) [1].

Nevertheless, the literature has devoted insufficient attention to exploring the impact of international liquidity and its associated indicators – such as foreign exchange reserves, external debt, international investment positions, and foreign exchange turnover – on the financial security of states, particularly under conditions of existential disruptions. This gap highlights an area warranting further investigation.

The purpose of the article. The paper aimed at substantiation of the significance of a state's international liquidity level as a critical benchmark and indicator of the effectiveness of managing state financial security.

Presentation of the main research material. One of the most critical tasks imposed on the central bank and government by the necessity of ensuring national financial security is maintaining a high level of international liquidity. In a narrow sense, international liquidity is often equated with foreign exchange liquidity, referring to the foreign currency resources available to public authorities that can be rapidly allocated to meet the demand for foreign exchange. However, the International Monetary Fund offers a broader concept, defining international liquidity as actual and potential inflows and outflows of foreign currency arising from short-term obligations and off-balance-sheet operations of public authorities [7, p. 3–4]. This perspective highlights the dichotomy within the concept, distinguishing between "liquidity as a stock" and "liquidity as a flow".

The analysis of international liquidity's conceptual foundations, conducted by L. Batiuk & V. Onehina, revealed that most scholars view this category as an attribute of a country's financial system, quantifiable through a specific set of variables, characterized by dynamism, and inherent to both money and financial assets [2, p. 52]. Such perspectives predominantly reflect a "flow-based" understanding, further reinforcing the semantic origins of the term (i.e. "liquid").

As global practice demonstrates, foreign exchange reserves, while not identical to international liquidity, constitute a crucial component. Therefore, the adequacy (or sufficiency) of them serves as one of the most widely used indicators of a country's relative liquidity level, quantitatively measuring its capacity to respond promptly to foreign exchange demand both in the domestic market and in international capital movements. Several well-known adequacy criteria exist, including imports coverage, the Greenspan–Guidotti rule, the Reddy criterion, and broad money coverage [6, p. 28–34]. Each of these metrics is a single-factor measure, considering only one potential source of a currency crisis. An attempt to address these limitations is reflected in the ARA EM (composite criterion), employed by the IMF to assess reserves' adequacy in emerging markets [6, p. 36-38].

When analyzing the nature of the indicators used in various reserve adequacy metrics, it can be observed a certain conceptual conflict between the "stock" and "flow" approaches. E.g., foreign exchange reserves themselves are a stock variable, yet they are often compared with different flow variables. This creates a methodological inconsistency – dividing a stock by a flow distorts the economic meaning of the resulting indicator. In this regard, older metrics, such as the Greenspan-Guidotti rule, are more methodologically sound.

This consideration is crucial when conducting empirical studies on the adequacy of international reserves and their impact on liquidity conditions. Specifically, the critical ratio of foreign exchange reserves to GDP, as established by J. Aizenman et al. [1], necessitates adjustments to preserve the economic coherence of its components. Given that GDP represents the aggregate outcome of economic agents' productive activities, measured as the total value of goods and services produced for final use [8, p. 192], while reserves constitute a stock variable fixed at a specific point in time, it would be prudent to calculate at least a weighted average of foreign exchange reserves in the numerator (Fig. 1).

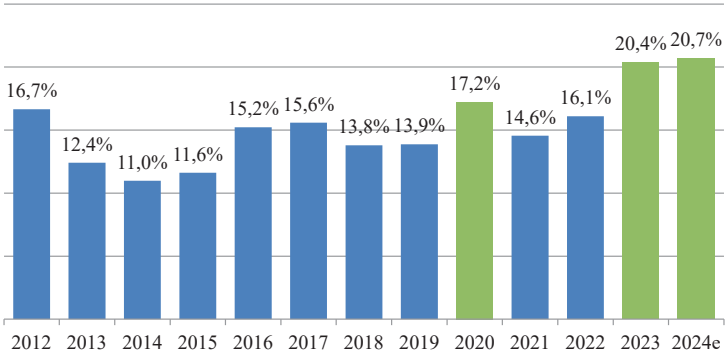


Figure 1 – FX Reserves-to-GDP Ratio dynamics in Ukraine, 2012–2024

Source: calculated based on data and estimation of [9]

In Fig. 1, years in which the reserve level met the minimum threshold identified by [1] are highlighted in color. It is readily apparent that these periods coincided with significant non-economic crises in the country, such as the coronavirus pandemic and a full-scale invasion. This correlation could, of course, be attributed to a drastic reduction in the calculation base (GDP) due to economic decline. However, a pertinent question arises regarding the utilization of foreign exchange reserves during such times: does their continued accumulation effectively support international liquidity, or do these trends stem from inefficiencies in managing reserves and the international aid that sustains them?

When examining the deployment of foreign exchange reserves in the context of aligning state financial security management with wartime challenges, two key aspects warrant attention. First, are actual reserves being inadvertently used to facilitate further outflows of foreign currency assets into non-institutional savings? Second, does the structure of reserves remain adequate in terms of their intended applications? The answer to the first question lies in identifying a clear relationship between the dynamics of foreign exchange interventions and the flow of foreign currency from the domestic market into informal savings (Fig. 2).

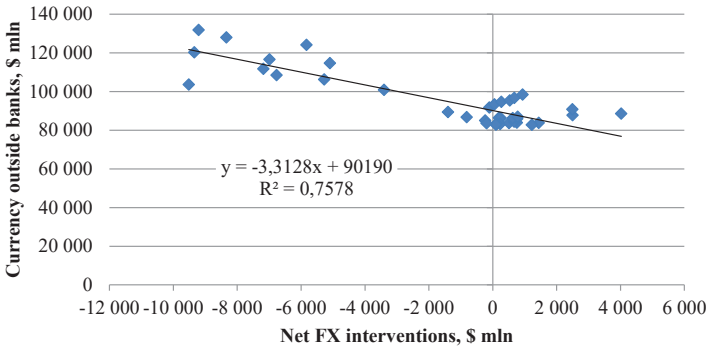


Figure 2 – Dependence of foreign cash outside the banking system on net FX interventions in Ukraine, 2015–2024Q3

Source: calculated based on [9]

An ordinal graphical analysis of the trend depicted in Fig. 2 demonstrates a relatively robust linear relationship (with a 75% level of determination) between informal cash currency savings and the net foreign exchange interventions of the National Bank of Ukraine (NBU). At a neutral level of approximately USD 90 bln, such savings increase by USD 3 mln for every additional USD 1 mln in net currency sales by the central bank over purchases within a given quarter. This corroborates President Zelensky's statement from February 2025, which highlighted that Ukrainian citizens transferred USD 35 bln abroad during the first year of the invasion. It also points to a "leakage" of currency from foreign exchange reserves, thereby undermining their effectiveness in supporting international liquidity [4].

The second question posed is addressed by comparing the volumes of individual components of reserve assets with the magnitudes of imports and short-term external debt (Fig. 3).

Based on the indicators presented in Fig. 3, Ukraine's capacity to cover quarterly imports using the most liquid portion of its reserve assets, which saw significant improvement in 2022–2023, has begun to decline.

Currently, the foreign currency held in accounts would suffice for only 1.5 months of imports – although prior to the invasion, it would not have lasted even 23 days. Securities within the reserves could offset more than half of the short-term debt obligations, marking the strongest performance in this regard over the past decade. However, this does not necessarily indicate an adequate level of international liquidity. These observations align with O. Bereslavska, regarding the ongoing relevance of maintaining an optimal structure of foreign exchange reserves to enhance the efficiency of their management [3, p. 48].

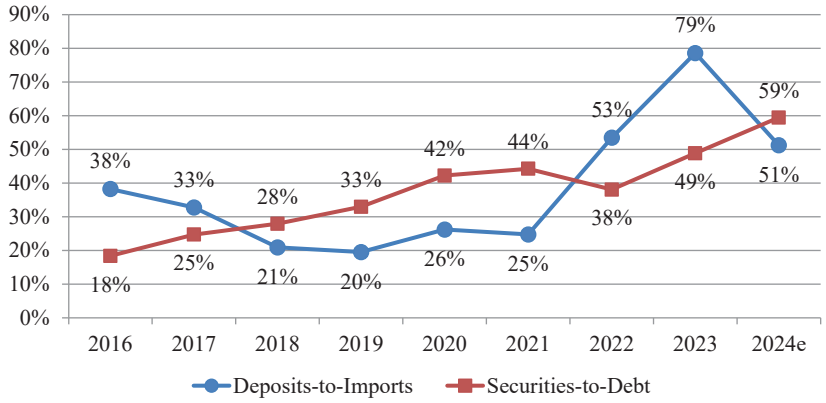


Figure 3 – FX Reserve Deposits-to-Imports and Securities-to-Short term external debt ratios in Ukraine, 2016–2024

Source: calculated based on data and estimation of [9]

Conclusions. The findings affirm the importance of international liquidity as a financial security critical benchmark. Empirical analysis reveals that while foreign exchange reserves bolster resilience against shocks, their soundness is undermined by inefficiencies, such as leakage into informal savings. Though recently, Ukraine's reserves improved in covering imports and debt, show declining sufficiency, underscoring the need for the optimization of its structure. Further research should be focused on confirming the statistical significance of the heuristically identified trends regarding Ukraine's international liquidity.

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МІЖНАРОДНА ЛІКВІДНІСТЬ ЯК ОРІЄНТИР В УПРАВЛІННІ ФІНАНСОВОЮ БЕЗПЕКОЮ ДЕРЖАВИ

Анотація. *Дослідження присвячене обґрунтуванню ролі міжнародної ліквідності держави як критичного орієнтиру в управлінні її фінансовою безпекою, з акцентом на її роль під час криз. Теоретичний внесок полягає в аналізі взаємозв'язку між міжнародною ліквідністю та фінансовою безпекою, зокрема з огляду на досвід України під час повномасштабного військового вторгнення, а також в оцінці ефективності використання золотовалютних резервів для пом'якшення зовнішніх шоків. Наукова новизна полягає в обґрунтуванні концептуального протиріччя між підходами до вимірювання ліквідності, емпіричному визначенні витоку іноземної валюти в неофіційні заощадження як чинника, що підриває ефективність резервів. Серед наукової спільноти в погляді на дихотомію «запас–потік» переважає позиція «потоку», що підкреслюється динамізмом міжнародної ліквідності та приналежністю як до грошей, так і до фінансових активів. Обґрунтовано два ключові ризики використання золотовалютних резервів у контексті управління фінансовою безпекою держави: відтік валютних активів у позаінституційні заощадження (як це відбувається в Україні) та структурна неадекватність відносно використання резервів. Прикладні результати підкреслюють необхідність оптимізації структури резервів і покращення управління міжнародною ліквідністю для зміцнення фінансової безпеки в умовах екзистенційних шоків. Продемонстровано зростання готівкової іноземної валюти поза банківською системою України втричі на кожен додатковий долар чистих валютних інтервенцій центрального банку. Хоча на даний момент здатність міжнародних резервів покривати імпорт і короткостроковий борг покращується, вона все ще викликає обґрунтовані занепокоєння. Отримані результати підкреслюють невідкладність вдосконалення структури резервів, оптимізації їхнього використання та посилення нагляду за валютним обігом, пропонуючи полісімейкерам прикладні висновки. Дослідження підсумовує, що міжнародна ліквідність є ключовою для фінансової стійкості держави, але ефективність її забезпечення в Україні порушується, зокрема, відтоком до позаінституційних заощаджень, незважаючи на покращення в ступені покриття імпорту та зовнішнього боргу, що вимагає подальших досліджень.*

Ключові слова: *міжнародна ліквідність, фінансова безпека, золотовалютні резерви, зовнішній борг, екзистенційне потрясіння.*