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LIQUIDITY REGULATION OF BANKS IN THE CONTEXT OF FINANCIAL CYCLES

Abstract. The urgency and importance of taking into account the cyclical characteristics of the functioning of the economic and banking system in the process of liquidity regulation of banks is proved. The concept of cyclicity is defined, which means a smooth transition from one phase of the cycle to another based on market conditions and instruments.

Three main types of cycles in the current conditions of development of the world market are revealed, such as economic, credit and financial cycles, their essence, main differences and interrelation are highlighted. It is mentioned that financial cycles are «youngest» compared with other types of them. Because financial cycles are often interpreted as indicators of financial imbalance, their relationship with the systemic risk of the banking sector has been followed. It is noted in the presence of systemic risk both in the phase of rise of the financial cycle (accumulation of risk), and at the stage of its decline (materialization of risk).

The basic rule for constructing a liquidity regulation strategy for banks depending on the phases of the financial cycle is formulated: accumulation of liquidity at the stage of rise and its optimal use in the phase of recession. In the issue of liquidity management strategy, the main focus should be relocated from pro-cyclical mechanisms to countercyclical instruments that would allow to withstand systemic crisis phenomena. Countercyclical regulation should ensure the preparation of the financial system for future shocks in order to maximize their effective overcoming.

The important role of regulatory authorities in the process of constructing the correct strategy of regulation and introduction of the correct levers and instruments of monetary policy is emphasized. In addition, systemically important banking institutions require more control, because its bankruptcy will cause irreparable damage to the normal functioning of the whole system. The analysis of indicators of the Ukrainian banking market was conducted depending on the phase of the financial cycle.

Keywords: cyclicity, liquidity regulation of banks, financial cycles, systemic risk, countercyclical regulation, systemically important institutions.

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РЕГУЛЮВАННЯ ЛІКВІДНОСТІ БАНКІВ У КОНТЕКСТІ ФІНАНСОВИХ ЦИКЛІВ

Анотація. Доведено актуальність і важливість урахування циклічних характеристик функціонування економічної та банківської системи у процесі регулювання ліквідності банків. Визначено поняття циклічності, що являє собою плавний перехід від однієї фази циклу до іншої на основі ринкових умов та інструментів.

Зазначено три основні види циклів у сучасних умовах розвитку світового ринку, таких як економічні, кредитні та фінансові цикли, розкрито їхню суть, основні відмінності та взаємозв'язок. При цьому підкреслено, що фінансові цикли є «наймолодшими» у порівнянні з іншими їхніми видами. Оскільки фінансові цикли часто трактують як показники фінансового дисбалансу, прослідковано їхній взаємозв'язок із системним ризиком банківського сектору. Зауважено на присутності системного ризику як у фазі піднесення фінансового циклу (накопичення ризику), так і на етапі його спаду (матеріалізація ризику).

Сформульовано основне правило побудови стратегії регулювання ліквідності банків залежно від фаз фінансового циклу: накопичення ліквідності на етапі піднесення та оптимальне її використання на фазі спаду. У питанні стратегії регулювання ліквідності основний акцент має бути перебазованим від проциклічних механізмів до контрциклічних інструментів, які б дозволили протистояти системним кризовим явищам. Контрциклічне регулювання повинно забезпечити підготовку фінансової системи до майбутніх потрясінь для їхнього максимально ефективного подолання.

Наголошено на важливій ролі регуляторних органів у процесі побудови фахової стратегії регулювання та запровадження коректних важелів та інструментів грошово-кредитної політики. Окрім цього, посиленого контролю потребують системно важливі банківські установи, банкрутство яких завдасть непоправної шкоди нормальному функціонуванню системи. Проведено аналіз показників банківського ринку України з позиції протікання фаз фінансового циклу.

Ключові слова: циклічність, регулювання ліквідності банків, фінансові цикли, системний ризик, контрциклічне регулювання, системно важливі установи.

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РЕГУЛИРОВАНИЯ ЛИКВИДНОСТИ БАНКОВ В КОНТЕКСТЕ ФИНАНСОВЫХ ЦИКЛОВ

Аннотация. Доказаны актуальность и важность учета циклических характеристик функционирования экономической и банковской системы в процессе регулирования ликвидности банков. Определено понятие цикличности, что представляет собой плавный переход от одной фазы цикла к другой на основе рыночных условий и инструментов. Отмечено три основных вида циклов в современных условиях развития мирового рынка, таких как экономические, кредитные и финансовые. Прослежена взаимосвязь финансовых циклов с системным риском банковского сектора. Акцентируется внимание на присутствии системного риска как в фазе подъема финансового цикла (накопление риска), так и на этапе его спада (материализация риска). Сформулировано основное правило построения стратегии регулирования ликвидности банков в зависимости от фаз финансового цикла: накопление ликвидности на этапе подъема и оптимальное ее использования на фазе спада. Отмечено важную роль регуляторных органов в процессе построения верной стратегии регулирования и внедрение корректных рычагов и инструментов денежно-кредитной политики.

Ключевые слова: цикличность, регулирование ликвидности банков, финансовые циклы, системный риск, контрциклическое регулирование, системно важные учреждения.

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Introduction. The economy of any country is a complex and dependent on many factors mechanism. Nowadays, it is no secret to anyone that the economic system in its development is characterized by certain cyclic features of functioning. Cyclicity as one of the most important features of the economy requires special attention and vigilance, as it depends on the construction of an optimal strategy for regulating not only the economic but also the banking system.

The banking system is the main channel of money-credit intermediary and redistribution of financial resources of the economy. To ensure its normal uninterrupted functioning, maintaining the balance in the financial market, and ensuring stable growth, the issue of reasonable regulation of the banking system deserve the greatest attention nowadays. One of the main qualitative characteristics is the liquidity of banking institutions, because it regulates financial stability, reliability and security of institutions during periods of macroeconomic shocks.

Liquidity regulation of banks should take into account many factors and be adapted to economic processes and cyclical changes. That's why, the issue of liquidity regulation of banks depending on financial cycles, becomes particularly relevance due to the close globalization of financial markets, fluctuations in market conditions and the development of systemic banking risks.

Analysis of research and problem statement. The study of the issue of financial cycles has not paid much attention to the domestic scientific arena. Instead, this topic is repeatedly discussed in the writings of foreign authors such as C. Borio, O. Grinderslev, P. Kramp, M. Terrones, M. Kose, A. Mueller, P. Paul, Y. Schüler, T. Ng, and it is also covered in the studies of the Basel Committee on Banking Supervision, the International Monetary Fund, and others. These works mainly determine the essence of financial cycles, their main features, and the impact on the financial market. However, insufficient attention is paid to the specifics of banking institutions' regulation in the context of the course of financial cycles, including the issue of liquidity regulation.

The main purpose of the research is to study the essence of financial cycles and to determine the optimal process of liquidity regulation of banks depending on financial cycles for harmonizing the economic system, maintaining the stability and reliability of banking institutions.

Research results. Liquidity regulation of banking institutions is one of the most important tasks of central banks of countries around the world. At the same time, liquidity regulation should take into account both general factors such as supply and demand in the money market, the level of the investment climate, public confidence to the banking sector, and systemic characteristics: the development of the country's economy, financial cycles, etc. Nowadays, the issue of the financial cycles' impact on the process of establishing a policy of banks' liquidity regulating has not become particularly public in scientific circles, while the laws of the financial markets' development point to the need of mandatory consideration of this component.

Cyclicity is considered a natural phenomenon of financial and economic society life in the conditions of the market, production and employment of labor. Cycle causes a smooth transition from one phase of a cycle to another based on market conditions and tools.

Different cycles are distinguished in economic and banking literature. The most common of these are economic, credit and financial cycles. By its essence, the economic cycle is a set of certain national economic conditions that are periodically repeated (it is also called the cycle of business activity or business cycle), that is: a constant change of the ups and downs of business activity, expansion and reduction of volumes of national production is carried out. The transition from one phase of a cycle to another is carried out automatically on the basis of market regulators [1].

Significant contribution to the research of credit cycles belongs to the American economist H. P. Minsky. His hypothesis of financial instability (financial fragility) is based on the model of the credit market cyclicity [2, p.46]. According to it, volumes and quality of the banks' loan portfolio also change cyclically, and in the recovery phase the growth rate of banks lending exceeds the growth rate of production.

Credit cycles can be defined as a periodical increase and decrease in terms of lending (supply, demand and prices) in the economy. It should also be noted that the evolution of the credit cycle is closely linked with the course of the economic cycle, since organized credit intermediation is necessary for sustainable economic growth [3].

The most «youngest» concept in the study of cycles is financial cycles. The financial cycles research has peaked during the sharpening of the latest global financial and economic crisis of 2008—2009. Despite of numerous research, this concept is still not fully solved from the standpoint of its comprehensive content.

According to the Head of the Monetary and Economic Department of the Bank for International Settlements, S. Borio [4, p. 2], the financial cycle defines independent interactions between representations of value and risk, attitudes to risk constraints and financing, which leads to a boom, and then to recession (crisis). Such interactions can aggravate economic fluctuations and even lead to serious financial disadvantages and economic dislocations. This analytical definition is closely linked to the increasingly popular concept of «procyclicality» of the financial system. This definition is widely used in various publications — we can say that exactly S. Borio owns a determinative role in understanding the concept of financial cycles.

The concept of financial cycles has come into close co-operation with definitions such as «financial imbalances», «financial crisis», «systemic risks of the financial sector.» The interconnection of these concepts follows from the essence of financial cycles — the transition from one state of functioning of the financial sector to another, from recovery to decline, characterized by both a change in market indicators and economic conditions that can lead to changes in system characteristics.

The Belarusian scientist and employee of the National Bank M. Vlasenko [5, p. 11—12] agrees with this: he defines the main source of the temporary aspect of systemic risk as financial cycles, and one of the most important goals of macroprudential policy should be to create incentives for financial institutions to behave yourself less cyclically. Conceptually, M. Vlasenko sees the evolution of the financial cycle over time due to periodic fluctuations in the financial leverage,

which in general is the ratio between the assets of an economic agent (banks and other lending institutions) and borrowed funds used to purchase these assets.

For the better understanding of different types of cycles, we characterize the main features of each of them with the help of Fig. 1.

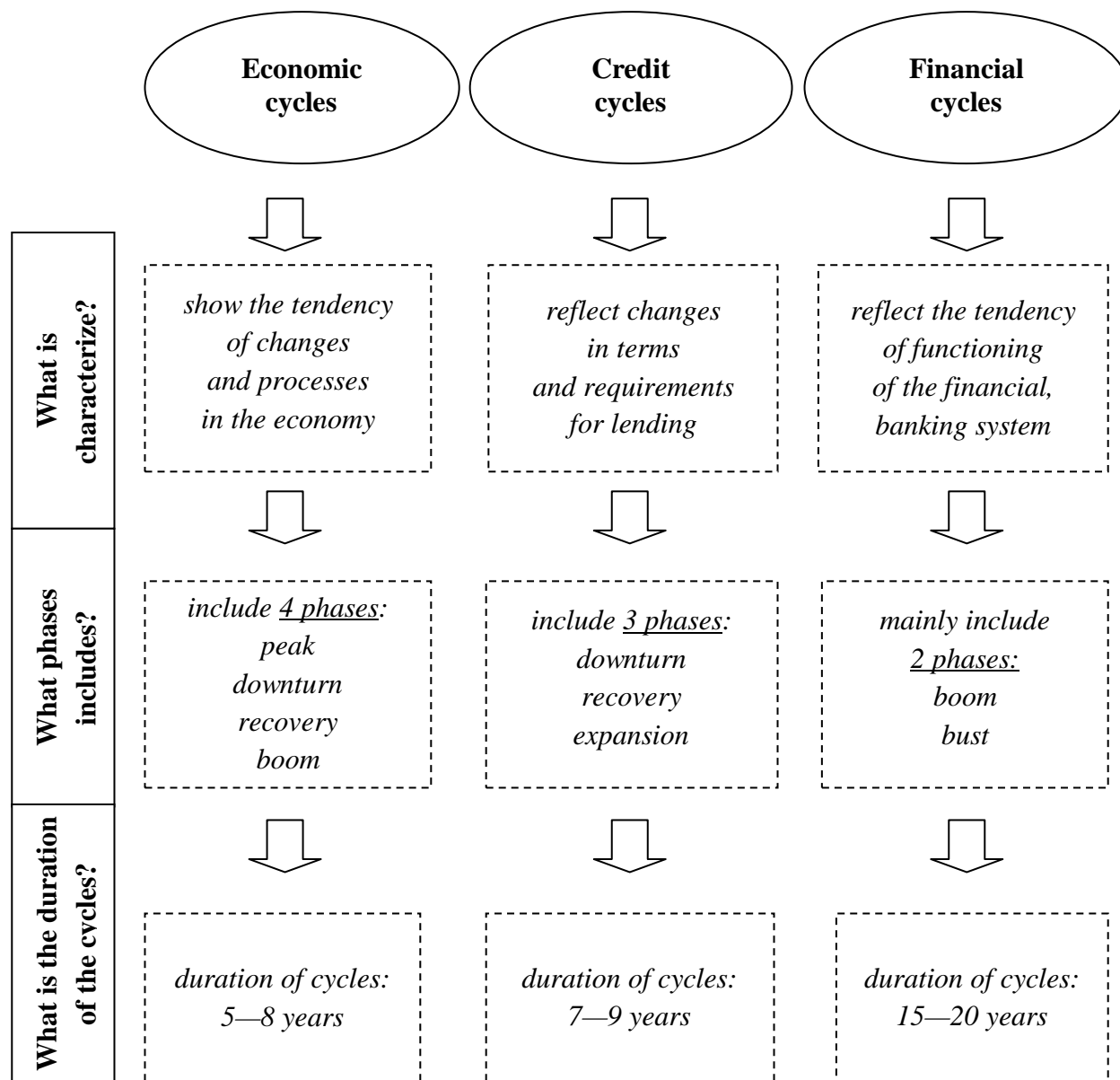


Fig. 1. The main features of economic, credit and financial cycles

Source: compiled by the author.

Despite of the fact that each of the cycles is different in nature, they are quite closely interconnected. In particular, in the financial cycles the main focus is on credit and real estate prices, which means that the credit is a central point in considering the financial stability [6, p. 6]. When banks lending grows faster than deposits, this indicates an increase in the risk of banks, which in turn can contribute to the expansion of the financial cycle. Accord to this, there is a clear tendency to reduce the financing gap for customers and the credit cycle. The economic cycle, in turn, reflects the level of market conditions that affect the supply and demand on the credit market.

Because economic cycles have a greater impact on the development of economic processes: inflation rate, employment, asset prices, production development, for financial market research, and banking regulation processes, financial cycles are more acceptable as they relate to the functioning of banking sector and reflect fluctuations in loans prices, the level of risk taken by banks in certain

circumstances. Therefore, in the matter of liquidity regulation of banking institutions, the key role belongs to the understanding of financial cycles, as opposed to other types.

Financial cycles are often treated as indicators of financial imbalance that can be used for manage macroprudential policies [6, p. 5], which should counteract systemic risk in all phases of its life cycle in order to prevent financial crises and macroeconomic shock conditions. According to V. Constâncio, the Vice President of the European Central Bank [7, p. 3], one of the reason of systemic risk is the endogenous increase in financial imbalances, which is mainly due to the rise phase in the financial cycle.

It should be noted that systemic risk exists in each of the phases of the financial cycle (*Fig. 2*). In the phase of rise («good» times), systemic risk is hidden: during the growth of lending activity, credit barriers are increasingly eliminate, which contributes to a significant accumulation of risk in the banking sector. At the peak (turning point), the level of hidden risks reaches the critical limit that generates its materialization during the period of decline in lending activity (the beginning of crisis). In this period, there is a time of revaluation of risk policy, restored hard credit barriers that gradually «unload» the over-saturated market and pushing the system to a new financial cycle. *Fig. 2* clearly demonstrates this pattern, and the periods of necessary activation and mitigation of macroprudential policies to alleviate negative trends and restore market conditions.

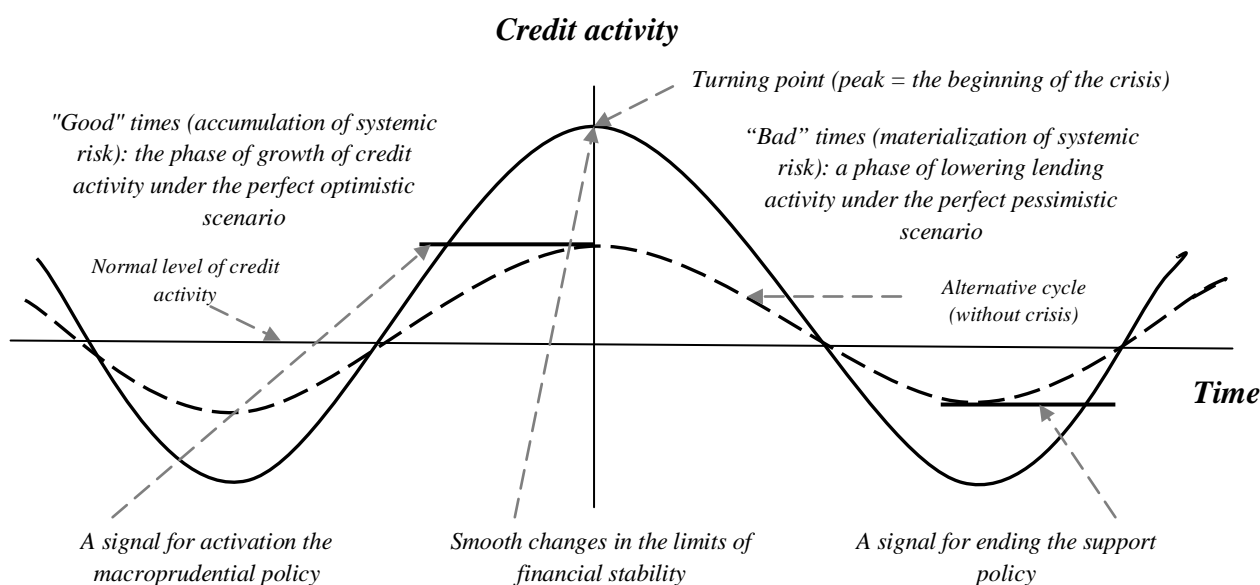


Fig. 2. System risk and macroprudential policy in the context of changing the phases of the financial cycle

Source: [5, p. 12; 8, p. 14].

Besides this, in the phase of rise, there is a much higher level of risk operations. This situation arises because of the significant demand for credit resources in the financial market during this stage, and the commercial desire of most institutions to generate excess profits. To this purpose, procedures are simplified and customer requirements are mitigated, in results of this a «hidden» risks are ensued. In contrast of this in the phase of recession after the implementation of «hidden» risks, it's level is reduced to a limit that allows for «healthy» further development of the financial system.

The peak point (limit) in *Fig. 2* characterizes the beginning of systemical crisis phenomena. So, according to H.P. Minsky [2, p. 46], financial crises are not a coincidence or result of imperfect management decisions, but fundamentally the contrary — they are related to the normal functioning of the economy and the financial system, without which further economic growth is impossible thing. And Ukrainian scientist I. Usik adds: «The crisis is a consequence of vulnerabilities that arise during the boom» [9, p. 102].

According to given information, and taking into account the studies of foreign scientists [4—6; 10], we can distinguish the following main features of financial cycles:

- Firstly, they are considerably longer than business cycles (or economic cycles). Duration of business cycles is usually 5—8 years, and financial cycles — from 15 to 20 years. This difference suggests that the financial cycle can cover several business cycles.
- Secondly, the peak in the financial cycle usually coincides with banking crises or periods of significant financial stress. In turn, the financial boom is due to long-lasting adaptive monetary and financial conditions, often combined with financial innovations.
- Thirdly, financial cycles are often synchronized between countries. Although they do not necessarily move the same way in countries around the world, but have an important global component. For example, liquidity conditions are usually closely interconnected in different markets. That is why it is so important to follow to international standards of liquidity management in the banking market (including implementation the international liquidity ratios: Liquidity coverage ratio and Net stable funding ratio).
- Fourthly, financial cycles changes depending on the macroeconomic environment and policy frameworks. It's, in turn, changes the conditions of the market functioning, which leads to a change in financial cycles.

In conditions of the course of financial cycles, there is a need for the formation of an optimal policy regarding the banking regulation process. The concept of the need to ensure «pro-cyclical regulation» is found very often in the economic literature, which makes it possible to adjust the management process to certain economic conditions, processes and needs. However, in today's financial market volatility, the priorities for building an effective macroprudential policy should shift from pro-cyclical regulation to counter-cyclical leverages and instruments, namely those that would allow timely reduction of the fluctuations amplitude in the credit cycle and counteract the systemic crisis phenomena [11—13]. Other words, counter-cyclical regulation should ensure the financial system preparations to the future shocks in order for it's maximally effective overcoming.

In the process of liquidity regulation of banks, depending on the phase of the financial cycle, the basic rule involves the accumulation liquidity and additional reserves during the phase of rise (boom) and during the phase of recession – their optimal best use for maximum eliminating the crisis and prevent the emergence of global systemic crises. Thus, during the rapid growth of credit activity, banks tend to collectively underestimate the liquidity risk, mistakenly believe that in case of stressful events (recession period) can uninterruptedly obtain the necessary funding from the regulator. This, in turn, pushes them to direct more and more of their assets to high-risk operations, keeping a smaller amount of liquid assets than is necessary to ensure uninterrupted satisfaction of the needs of customers and depositors. That is why, during the rise banks solve the dilemma «liquidity-profitability» in favor of the last, which is known to inevitably lead to a difficult financial situation during the transition period of the financial cycle to another phase.

For an effective liquidity regulation process of banks, during the phase of rise, regulatory authorities should ensure adopting of more restrictive and tough financial sector regulation policy. At the same time, during the phase of recession central banks as the lenders of last resort plays a crucial role for providing refinancing loans and maintaining liquidity.

Identify the main measures from the position of liquidity regulation of banks depending on the phase of the financial cycle (*Fig. 3*). Thus, during the rise phase for accumulation liquidity it is advisable to apply the following levers:

- an increase in the reserve requirements rate;
- the raising the requirements for the quality of loans;
- the reduction of active banking operations;
- the prohibition of early deposits withdrawal.

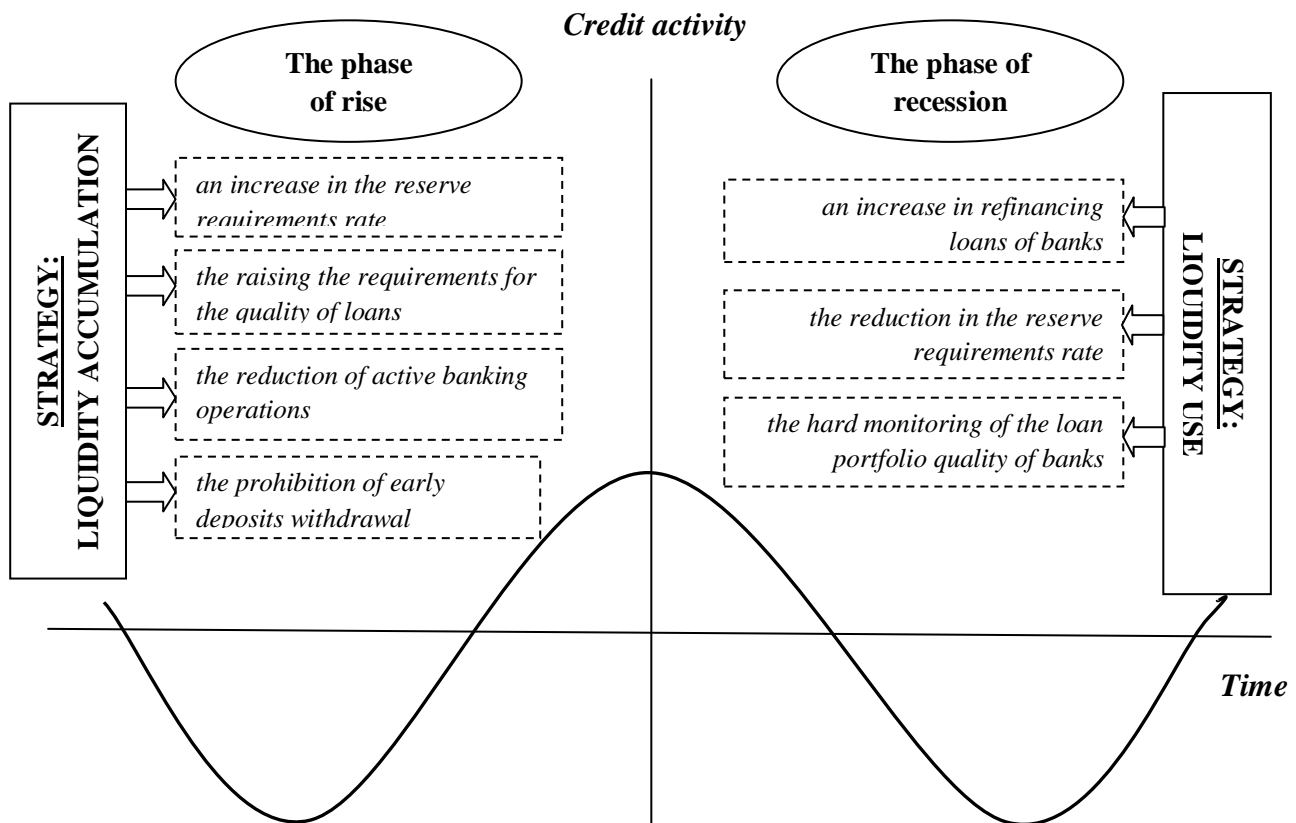


Fig. 3. Strategies and measures of liquidity regulation of banks depending on the phase of the financial cycle

Source: compiled on the basis of elaboration [14, p. 187].

For accumulation the liquidity reserves, firstly for banks is to create preconditions for a larger amount of deductions to correspondent or separate banks accounts in the NBU by an increase in the reserve requirements rate. Given that during the credit boom period banking institutions generally do not feel a lack of liquidity simultaneously with generating profits from their main business, increased deductions to reserves will not significantly affect on the livelihoods of banking institutions. This will allow to increase the liquid stock at the same time without detriment to the full functioning of banks in accordance with the chosen development strategy.

Given the steadily increasing of credit activity during this phase of the financial cycle, banks simplify the procedures and requirements for lending for both legal entities and individuals, thus assuming a higher level of risk. In such conditions it is advisable to increase the loans quality requirements, and to carry out additional actions to fulfill the following requirements: to send an informational letters to banks, to conduct departure and uninterrupted verifications to compliance the credit requirements. This will not only improve the quality of loan portfolios, but also significantly reduce lending by limiting lending channels. Indeed, in a situation where the growth rate of loan portfolios exceeds the growth rate of deposit resources, increase the banks risks, which can escalate into a crisis.

According to the national scientist O. Didenko [14, p. 187], one of the measures aimed on smoothing the boom in the system should be the prohibition on early withdrawal of deposits from the banking system. This tool is mainly used in the phase of recession, but such actions are not sufficiently effective. For an optimal liquidity management process, it is necessary to take care in advance about the impossibility of withdrawal term deposits, which may be needed in the future. Such actions directly conflict with the interests of both banks and clients, however, according to O. Didenko, protect the banking system from the destructive consequences of the recession, which according to the cycle arises immediately after the boom.

During the phase of the recession, the regulator should ensure an optimum use of the accumulated liquidity during the phase of rise, which should include the following components (Fig. 3):

- an increase in refinancing loans of banks;
- the reduction in the reserve requirements rate;
- the hard monitoring of the loan portfolio quality of banks.

It is no secret for everyone that during the period of financial difficulties, the role of the regulator as the lender of last resort comes to the fore. According to D. Elliott, one of the main reasons for existing the central banks is precisely the fulfillment of their function as the lender of last resort, providing liquidity in the extreme case when markets themselves can not function properly [15].

At the beginning of the crisis phenomena development, the issue of providing banking institutions with refinancing loans is particularly acute, because negative trends in the financial market are rapidly reflected in the activities of unsecured financial institutions. Their unpreparedness to such unfavorable scenarios leads to a sharp decrease in liquidity, as a result of which the banks face the urgent need to replenish it, which is provided by the central bank of the country through refinancing loans.

In such a situation, banks may be in difficulties in the process of deducting to reserves. Therefore, in order to reduce the pressure on institutions during the recession of the financial cycle, it is advisable to reduce the reserve requirements rate. Reserve requirements in the liquidity regulation process of banks is a hard tool of direct effect, since such requirements are obligatory for all banks, and allow optimally and differentiated approach to the question of liquidity reserves formation depending on the phase of the financial cycle.

The third important step during the downturn period should be the hard monitoring of the loan portfolio quality of banks. So, as during the boom period, there is a significant accumulation of credit assets, at the same time, with the accumulation of excess levels of risks, the issue of monitoring the portfolios of active banking operations is compulsory and necessary. The implementation of this mechanism aims to «clean» the loans portfolios of banks from toxic loans, and if necessary — to restructure them and take other measures to ensure this goal.

It should be noted that systemically important banking institutions deserve strengthened control by central regulatory authorities, namely such institutions that have a significant share of the financial services market and whose bankruptcy will cause irreparable damage for the normal functioning of financial markets or those financial institutions that carry out their activities within these markets [16, p. 252].

Since a significant share of assets is concentrated in these institutions, increasing liquidity risk in them will cause to significantly worse results than, for example, problems in a pocket bank that is not so closely interlinked with other participants in the financial system. Besides this, failure to meet current liabilities that may arise in a systemically important bank can provoke a banking panic and total «invasion» not only on this, but also on others banking institutions. Taking into account this factor provides a half of the success in the process of effective macroprudential regulation of banks' liquidity, including in the context of financial cycles.

An analysis of the Ukrainian banking market (Table) indicates that the peak point (the beginning of the crisis) is approximately for 2013. During 2008—2013, Ukrainian banks actively increased lending to both the economy and the population; credit barriers were reduced while the share of non-performing loans decreased, there was actually an accumulation of systemic risk in the banking sector.

Table

An analysis of the Ukrainian banking market during 2008—2017

Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
the share of toxic assets, %	2,27	9,36	11,2	9,61	8,89	7,70	13,50	22,1	53,99	54,50
volume of refinancing operations, billion UAH	169,5	64,4	5,2	28,8	97,6	71,5	222,3	75,4	51,3	41,3

Source: [17].

From 2014, the negative political events, which had a significant impact on the all banking sector, have shown that the existing approaches to the liquidity regulation of banks are inadequate. The market demonstrated its inability to cope with unfavorable events that were associated with currency fluctuations, the massive outflow of individuals' deposits from the banking system, and a massive lack of liquidity. For the time during 2014, the NBU issued to Ukrainian banks a huge amount of refinancing loans — UAH 222,3 billion, the largest indicator during 10 years. In addition for this, the share of toxic assets, which points to imperfect credit barriers, has substantially increased, in fact it was the materialization of the accumulated during the phase of rise the systemic risk. It would be expedient to introduce the hard monitoring of the loan portfolio quality of banks during this period.

Conclusions. Consequently, based on the research, it was determined that the financial cycle is an important element of the financial market activity, and is an independent interaction between the notions of value and risk, on the basis of which the system operates in a boom that is inevitably followed by a recession. The liquidity regulation of banks should take into account the phases of the financial cycle, in order to construct an optimal regulatory strategy depending on market conditions and leverages. The proposed measures for the accumulation and using the liquidity is the first step to review the existing rules of regulation and adjustment the central banks policies, depending on the phase of the cycle to ensure the normal functioning of the economic system, the financial sector and close cooperation in the international banking arena.

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