Infrastructure development potential financial market of Ukraine

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Abstract

The research of infrastructural potential of development of the financial market of Ukraine in globalization conditions is research. The importance of forming a rational infrastructure of the financial market and finding sources to increase its potential is substantiated. The conceptual basis for ensuring the realization of the infrastructural potential of the financial market is presented, which is based on defining the basic preconditions, principles and tasks of the conceptual basis and developing methodological approaches to assessing the quality of the conceptual basis for building and realizing the infrastructural potential of the financial market. It is proved that the number and structure of financial intermediaries is one of the key characteristics of the development of the financial market and its infrastructure, as well as its response to global challenges. The dynamics of the penetration of insurance and lending by banks to the real sector of the economy tends to decrease, which indicates their negative impact on the security of the financial market as a whole. The dollarization index is twice the critical value, which also has a negative impact on the level of financial market security.

In the context of ensuring the security of the technological component of the infrastructure potential of the financial market in Ukraine and its ability to withstand external threats, the authors propose to define the indicator of financial market flexibility as the ratio of foreign currency deposits to total deposits (dollarization). The lower this figure, the higher the level of financial market security.

Keywords: financial institutions, insurance companies, credit unions, private pension funds, banking institutions.

Introduction

In the modern geopolitical space, there are cardinal changes that qualitatively change the disposition of countries and regions of the world under the influence of scientific and technological, informational, organizational and socio-economic process. New tendencies and regularities in all spheres of market economy are formed. However, the most significant phenomenon was financial globalism, which clearly shows both positive and negative consequences of accelerating economic development and is accompanied by deepening intersectoral contradictions between countries, as well as structural disparities in financial market development. At the same time, the accumulation of profits in the financial market through intermediaries leads to the fact that the degree of its positive impact on the economy is insufficient and requires quality elements of the infrastructural potential of development.

At the same time, the issues of ensuring the efficiency of the financial market by building its
infrastructural potential remain insufficiently resolved. This in no way diminishes the importance of the issue of forming the financial market infrastructure itself, its elemental composition and the search for sources of building its potential. It is logical that all these aspects are organically interconnected, and therefore the issue of revealing the essential foundations of such relationships, their content and forms of implementation, which require an appropriate theoretical and methodological basis.

Scientists in particular have studied the basic principles of infrastructure in general and the financial market: Vasilieva V., Fomina O. (2013), Vergun V., Stupnytsky O. (2013), Hrytsenko A., Sobolev V. (2008), Zhelikhivska A.M. (2009), Ivanytska O.M. (2005), Kvasnytska R.S. (2015), Kovalenko M.A., Rogalska N.G. (2009). At the same time, the idea of the infrastructure of the financial market as an accompanying mechanism for servicing and ensuring a market economy has become quite common. At the same time, ignoring the functioning of infrastructure as an independent object of market relations, which unites the processes of development of all structural components of the financial market, leads to the accumulation of methodological difficulties in the processes of its cognition. Therefore, the basis of infrastructural support of the financial market is the unity of the interconnections of its elements, which combine the infrastructural potential through the qualitative and quantitative parameters of the state of the financial system of the state as a whole.

**Material and methods**

Comprehensive studies of the imperatives of financial markets, in the context of insufficient identification of factors influencing the global financial environment on the monetary and financial sphere of the country in multilevel integration, cause a turbulent state of institutional and spatial format of financial markets. The development of methodology and methods of quantitative calculation of systemic relationships between factor, commodity and financial markets, leads to the use of multifactor analysis of relationships between segments of stock markets, their dependence, in particular, on security factors. At the same time, the infrastructural potential of the financial market development allows to form the integrity of the multifaceted connection of its participants in the global financial environment. It synthesizes the systemic qualities of the financial market infrastructure and is closely related to the processes of financial globalization. Globalization processes affect the development trends of national financial markets, changing primarily their infrastructure to meet the requirements of the time. Globalization increases competition between financial market participants, helping to increase the efficiency of financial services and optimize the redistribution of financial flows. However, globalization can also have negative consequences, in particular the expansion of foreign financial institutions, which have more capital and experience, which will lead to the expulsion of national financial institutions from the market, and with failures in government regulation – even to market monopolization. Many domestic experts consider globalization in financial markets as a process of disappearing borders for the movement of capital (Glushchenko V.V., 2006). However, this approach does not take into account the peculiarities of the transformation of the financial market infrastructure. In our opinion, globalization can both contribute to the realization of the infrastructural potential of the financial market and be the cause of its destruction. It all depends on the extent to which the conceptual basis for building the infrastructural potential of the financial market corresponds to the realities of globalization.

Defining the conceptual basis for ensuring the implementation of the infrastructure potential of the financial market involves, firstly, defining the basic prerequisites, principles and objectives of the conceptual framework, and secondly, developing methodological...
approaches to assessing the quality of the conceptual basis for building and implementing the infrastructure potential of the financial market (Figure 1).

In the context of global shocks, the realization of the infrastructural potential of the financial market should increase the degree of resistance of national financial markets to the impact of external threats to the financial environment. To do this, it is necessary to ensure the dichotomous unity of internal and external stability of financial markets. Internal stability is ensured through the transparency and openness of financial markets, which is the foundation for building confidence in them by investors. External resilience is based on internal resilience, which acts as a kind of “airbag” in case of financial shocks. Undoubtedly, each of the components of the infrastructural potential of the financial market is of great importance for ensuring the internal stability of the financial market, but the dominant component should be information, the level of development and quality of which is one of the main indicators of transparency and openness of financial markets.

![Conceptual basis for increasing the infrastructural potential of the financial market](image)

**Fig. 1. Structuring the conceptual basis of building infrastructure potential of the financial market**

*Source: developed by the authors*

When studying the infrastructural potential of the financial market, it is important to take into account the peculiarities of its structuring. The most acceptable from this point of view is the matrix approach to the structuring of the financial market Oparin V.M. (2001) in the relationship of two features: the form of financial resources (money market and capital market), the organization of trade (securities market and credit market). Mertnes O. (1997) approached this problem almost identically, presenting a structural classification of the financial market on two grounds: by type of liabilities (credit market and securities market) and by terms of realization of property rights (money market and capital market).

The financial market is a financial barometer of the economy. It works effectively with low inflation in the country, successful economic development, a stable legal framework, a favorable political climate and a certain balance of interests in society. These conditions are not
always possible even in relatively economically developed countries, so financial markets are often shaken by crises, which leads to an even more radical and economically unjustified redistribution of financial resources both within the country and on an interstate scale (Shkolnyk I.O., 2008). The resilience of the financial system to crises depends on the degree of realization of the infrastructural potential of the financial market. Infrastructural potential plays an important role in economic transformations taking place in modern conditions (Chunytska I.I., 2017). As a regulator of money circulation, a center of accumulation and redistribution of financial resources, it ensures the functioning of an effective mechanism to stimulate the development of investment, production economy, system of socio-economic relations, as well as the possibility of accelerated modernization of the national economy.

Infrastructure potential should ensure the efficient and stable functioning of the financial market; facilitate the establishment of links between its subjects, effectively forming the core of the financial market. Realization of infrastructural potential will help to accelerate the circulation of capital.

Results and discussion

Accumulation, distribution and redistribution of financial resources in the financial market is carried out through financial intermediaries. Their activity is the basis for building the infrastructural potential of the financial market, because they offer new types of financial instruments and financial services. Their number and structure is one of the key characteristics of the development of the financial market and its infrastructure, as well as its response to global challenges. The speed and efficiency of financial intermediation development determines the pace of increasing the infrastructural potential of the financial market, as well as the possibilities of its implementation. It should be noted that the criteria for the success of the development of financial intermediation for each country are individual, as individual are the prerequisites for the development of both the economy as a whole and the financial market in particular. That is why there are no universal indicators for assessing trends in financial intermediation in terms of building and realizing the infrastructural potential of the financial market. In this case, it is necessary to develop individual approaches that take into account the peculiarities of the national economy and the role of the financial market in such development. The role of financial institutions can be judged after analyzing the dynamics of their assets (Figure 2).

![Fig. 2. Dynamics of assets of financial institutions in Ukraine for 2013-2019](image)

**Source:** calculated by the authors according to Report of the National Commission on Securities and Stock Market for 2017

From the data of fig. 2, it is possible to positively assess the dynamics of assets of insurance companies, which has a pronounced upward trend. However, the negative is that the dynamics of growth of assets of insurance companies is not accompanied by the equivalent dynamics of long-term financial resources in the economy. In the Report of the National Commission on state regulation in the field of financial services markets for 2019: the main share of gross insurance premiums in the insurance market – 99.5% – will be accumulated by 200 Non-Life Insurance
Companies (61.5% of all Non-Life Insurance Companies) and 98.7% – 20 Life Insurance Companies (35.1% of all Insurance Companies Life). In the life insurance market, the Herfindahl-Hirschman Index was 1042.55, in the risk insurance market it was 206.72. In general, the Herfindahl-Hirschman index for the insurance market was 181.49. The predominance of the share of insurance companies engaged in risk insurance indicates the predominance of short-term financial resources. In fact, the insurance sector can be considered one of the key factors in building and realizing the infrastructural potential of the Ukrainian financial market. It should be emphasized that measures aimed at building and realizing the infrastructural potential of the financial market in the insurance market should be comprehensive, covering not only financial, regulatory and legal aspects, but also cultural. Ordinary citizens should perceive insurance as a norm of civilized life, and not as another financial pyramid, or expenses that do not make sense to make. At the same time, the regulator must guarantee the receipt of insurance indemnity by insured persons in the event of an insured event.

The financial market can be both fully segmented and fully integrated. If the market is fully segmented, an investor from one country cannot invest in securities in another country. At the same time, securities of the same degree of risk in different markets have different rates of return, which is due to both market segmentation and differences in exchange rates and differences in tax systems. In a fully integrated market, an investor can invest anywhere. At the same time, securities of the same degree of risk provide the investor with the same level of income. Today, financial markets of different levels, as well as markets of different financial instruments are differently integrated (Patsenko O., 2012). A significant number of European Union initiatives are aimed at the integration of European financial markets. If we talk about the Ukrainian financial market, it belongs to the class of segmented.

The most active transfusion of financial resources is carried out in the world's financial centers (financial centers of the world). These include: New York and Chicago in America; London, Frankfurt, Paris, Zurich, Geneva, Luxembourg – in Europe; Tokyo, Singapore, Hong Kong, Bahrain – in Asia. In the future, the world's financial centers may be today's regional centers – Cape Town, Sao Paulo and Shanghai. Some offshore centers have become world financial centers, primarily in the Caribbean – Panama, Bermuda, Bahamas, Cayman Islands, Antilles and other islands. Thus, each of the global financial centers is characterized by its advantages and disadvantages, which are determined by the specialized and risks of financial centers. London and New York financial centers are characterized by a higher level of capitalization compared to financial centers located in Asia.

In our opinion, the growth of the level of capitalization of Asian financial markets is only a matter of time, due to the historical peculiarities of the development of these markets. However, it should be borne in mind that China's financial market may become another factor in a large-scale financial crisis, as evidenced by the views of many world experts. A characteristic feature of modern financial markets is their unpredictability and turbulence, which is exacerbated by the activation of investors in developing countries and countries with economies in transition. This is due to the fact that investors are trying to ensure a high return on investment at any cost. The increase in the number of risky transactions is one of the reasons for the turbulent development of the global financial market, which affects the development of the domestic financial market. In turn, this has a negative impact on the development of financial market infrastructure. In fact, the infrastructure of the financial market is formed and developed in accordance with the demand for financial services. And this, in turn, depends on the potential of the financial market to attract financial resources from various sources.

Investment centers are gradually shifting from developed countries to developing countries and countries with economies in transition. The shift in investment centers is evidenced by the change in the geographical location of the primary and additional issues of shares. Nevertheless, the
geographical structure of investment centers remains quite conservative. This trend shows both the main advantage and the main challenge of global financial markets. Given the potential to expand the spectrum of redistribution of financial flows, the practice of their redistribution remains unchanged over a long period of time. The main advantages of moving financial flows through financial markets are countries with developed market economies, rather than countries that are developing and have a higher investment capacity. That is, the faster the country's economic system develops, the greater the financial depth of penetration of local financial resources into the country's economy.

Thus, according to Fig. 3, Ukraine’s economy by monetary aggregates M2 and M3 is the same (only ten thousandths differ), but the general trend indicates a downward trend in financial depth, which lasted until the end of 2019.

![Fig. 3. Financial depth of penetration of local financial resources into the economy of some countries in 2015-2019](image)

Source: calculated by the authors according to European Central Bank (Historical monetary statistics), U.S. Federal Reserve Statistical Release (Historical M3 Tables, Table A: M3 and Non-M2 M3 – Monthly)

Thus, in 2017, the growth rate of Ukraine’s economy not only slowed down, but fell catastrophically. The dynamics of nominal GDP grew by 26.3%, while real GDP fell by 31.3%. That is, nominal GDP growth is purely inflationary. It should be noted that the decline in real GDP occurs two years in a row (in 2016 it was 28.1%) and continued in 2018. In 2019, the sharp decline stopped, but the necessary recovery did not occur. The decrease in the level of financial depth is a natural phenomenon, as the financial sector loses its financial base, part of the financial flows are reoriented to the shadow sector of the economy, respectively, the ability of the financial sector to effectively allocate decreases. The state economy enters a closed cycle, when financial resources are needed to stimulate economic development, but their accumulation is impossible without pronounced tendencies to increase or improve the real sector.

In the Eurozone countries, the difference between the financial depth indicators for M2 and M3 is smaller, as financial markets are mainly bank-centric. In Poland and the Czech Republic, the difference between the studied indicators is the smallest, as the securities markets in these countries are under development.

The technological component of the infrastructural potential of the financial market in Ukraine is the stable functioning of financial intermediaries (Figure 4).

![Fig. 4. Growth rates of the number of financial intermediaries that make up the technological component of the infrastructure potential of the financial market of Ukraine in 2015-2019](image)

Source: calculated by the authors according to Report of the National Commission on Securities and Stock Market for 2017, Report of the National Commission on state regulation in the field of financial services markets for 2019
However, in Ukraine, the number of banking institutions licensed by the NBU decreased significantly in 2015-2019. This is due to the active work of the NBU in the direction of withdrawal from the market of banking institutions that systematically violated the requirements of the regulator, as well as those institutions that did not disclose information about the ownership structure. The impact of such measures on the infrastructural potential of the financial market cannot be described as unambiguous.

On the one hand, the cleansing of the financial sector from unreliable banking institutions should have a positive impact on the development of the financial market. In fact, the start of the cleansing of the banking system was due to the requirements of Ukraine’s Western partners, who agreed to provide support subject to the cleansing of the financial system from non-transparent financial institutions.

The assets of financial intermediaries, which form the basis of the technological component of the financial market, also decreased during 2015-2019 (Figure 5).

![Growth rates of total assets of financial intermediaries that make up the technological component of the infrastructure potential of the financial market of Ukraine in 2015-2019](image)

**Fig. 5. Growth rates of total assets of financial intermediaries that make up the technological component of the infrastructure potential of the financial market of Ukraine in 2015-2019**

Source: calculated by the authors according to Report of the National Commission on Securities and Stock Market for 2017, Report of the National Commission on state regulation in the field of financial services markets for 2019

In the context of ensuring the security of the technological component of the infrastructure potential of the financial market in Ukraine and its ability to withstand external threats, the authors propose to define the indicator of financial market flexibility as the ratio of foreign currency deposits to total deposits (dollarization). The lower this figure, the higher the level of financial market security.

The low level of dollarization of the economy indicates a sufficient level of confidence of the population and the business sector in the national currency, it restrains the level of growth of unorganized savings, which in general has a positive effect on the resource base of the economy. The related indicator of financial market shows the level of distribution of services of institutional investors in the financial sector, except for banking institutions. The level of distribution of services of institutional investors, characterized by the ratio of assets of institutional investors to GDP (formula (1)):

$$L_{ga} = \frac{GA}{GDP} \times 100\%,$$

where: $GA$ – total assets of institutional investors, EUR million; $GDP$ – gross national product, EUR million.

After calculating the individual indicators of security and flexibility of the financial market, it is necessary to calculate the integrated indicators and compare them with the normalized index of infrastructure potential of the financial market. To calculate the integrated indicators, we apply a standardized approach. The indicators that form the matrix of observations are heterogeneous and have different units of measurement. To reduce them to a one-dimensional form, a mathematical rationing procedure is carried out (formula (2)):

$$z_{ij} = \frac{x_{ij} - M_j}{S_j},$$

where: $S_j$ – the standard deviation of the j-th individual indicator; $M_j$ – the arithmetic mean of the j-th individual indicator; $x_{ij}$ – the value of the j-th indicator for the i-th year; $z_{ij}$ – the actual value of the indicator of the i-th year.

The arithmetic mean is used for indicators that have the same level of influence on the integral coefficient (formula (3)):
\[ I_k = \frac{k_1 + k_2 + \ldots + k_n}{n}, \]  
where: \( I_k \) – integrated index of security of infrastructure potential of the financial market in the country's economy; \( k_1, k_2, \ldots, k_n \) – security market infrastructure potential sub-indices; \( n \) – number of sub-indices.

In the case of our object of study, all indicators have different effects on both security and flexibility of the financial market, so to calculate the integrated indicator should use the geometric mean qualitative feature. The geometric mean is calculated by formula (4)):

\[ I_k = \sqrt[n]{k_1 \times k_2 \times \ldots \times k_n} = \prod_{i=1}^{n} k_i, \]  

The results of calculations of the integrated indicator of financial market security are shown in Figure 6.

Thus, the dynamics of penetration of insurance and lending by banks to the real sector of the economy tends to decrease and does not meet the values recommended by the Ministry of Economic Development and Trade of Ukraine. This indicates their negative impact on the security of the financial market as a whole. The dollarization index is twice the critical value, which also has a negative impact on the level of financial market security. The share of cash is on average 4 times higher than the recommended value. This high rate indicates a low level of confidence in the financial market of potential investors who prefer cash savings over bank deposits or investments in the insurance market. Although the growing level of monetization of the economy can be considered a global trend, but in Ukraine this problem is complicated by the fact that much of the cash is outside the banks, and most of the cash serves the shadow sector of the economy.

**Conclusions**

Thus, the degree of realization of the infrastructural potential of the financial market at the present stage of development of Ukraine's economy is insufficient. Most of the identified problems are mainly related to the dysfunction of the technological component of the infrastructure potential of the financial market, which is manifested in the low level of confidence in it by the household sector, as well as low efficiency of regulation of certain segments of the financial market. Therefore, in the extremely dynamic processes taking place in the global financial system, the objective impact of globalization and internationalization of the world economy on the macro-regulators of the Ukrainian financial market has significant consequences.

In general, global and European trends in the concentration of supervisory and regulatory functions in the single infrastructural potential...
of the financial market require the definition of institutional rules of the game in order to ensure the security of financial intermediaries in sectors of the economy. This is especially true of the stock market of Ukraine, which is a catalyst for the development of components of the infrastructure potential of the financial market. In addition, there is a need to optimize the entire management system of the issuance of financial instruments. The transfer of regulatory powers to self-regulatory organizations and systemic market institutions, in particular to bidders, depositaries, credit unions, investment and pension funds, is extremely important. That is, the functioning of the infrastructural potential of the financial market should take place faster in the conditions of expanding the possibilities of self-regulation of its intermediaries.

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