

METHODS OF FUNDING INNOVATIONS AND SOURCES OF INVESTMENT CAPITAL IN UKRAINE

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Abstract. In contemporary times, innovations are the primary drivers for economic expansion and social advancement. However, substantial financial barriers frequently follow the journey from inventive ideas to tangible products and services. This article examines diverse strategies for funding innovation and provides insights into the numerous approaches, challenges, and viewpoints that should navigate entrepreneurs, companies, and policymakers.

In modern times, globalization affects all countries regardless of their level of development. Therefore, it is crucial to consider factors that increase a country's competitiveness in the global market. The most significant factor is the innovative activity of enterprises. Therefore, the current stage of the country's economic development is characterized by a high dependence on the scale of scientific research and development, the speed and efficiency of the introduction of new types of products and technologies. Given this, the government and legislative authorities of the leading countries create maximum conditions for promoting scientific research activities. Financial and credit resources are crucial for stabilizing Ukraine's economy, which is currently undergoing innovative transformations. The search for sources for financing and crediting innovations has become a pressing issue and requires thorough research.

The article examines several funding sources, including venture capital, angel investors, and government subsidies. It highlights their importance in promoting innovations, acknowledges their limitations, and outlines some strategies for securing financial support.

Furthermore, the paper analyzes the current condition of Ukraine's financial market, providing an overview of the factors that affect the stability of Ukraine's financial system.

Keywords: innovation, advancement, capital, Industry 4.0, financing, investment, credit, financial infrastructure.

INTRODUCTION

In the field of global development, innovation serves as a catalyst that propels societies towards advancement. Technology has revolutionized various industries, including research, leading to market restructuring and redefining our living environment. of markets and the redefinition of our living environment. The features of innovations are new product development, revolutionary services, and transformative process improvements. It plays a crucial role in driving progress and is considered an essential catalyst for advancement (Freeman & Soete, 2017).

However, the transformation of creative concepts into tangible actions frequently necessitates substantial financial capital injections. This article provides a detailed examination of different methods for financing innovation, including both traditional methods and newer options that have become more popular in recent years. In the ever-changing economic landscape of Ukraine, the drive for innovation is not only a crucial strategy but also a key factor in attaining long-term growth and gaining a competitive advantage in the global market.

Since Ukraine strives to become a frontrunner in technological advancement and economic diversity, it recognizes the crucial significance of a comprehensive analysis of the methods used to finance innovations and the wide range of sources that provide investment funds. This article aims to elucidate the complex web of financial processes that support Ukraine's creative ecosystem, providing insight into the strategies and funding sources that contribute to success in the field of innovation.

In today's economic environment, where innovation is not just important but essential for maintaining resilience, the ways to fund creative ventures significantly influence the direction of technological advancement. The financial structure supporting innovation in Ukraine is marked by numerous internal mechanisms, such as self-funding and equity, as well as external channels, including venture capital, bank loans, and international investments. The architectural diversity observed here is a direct manifestation of the dynamic and ever-changing nature of the financial support mechanisms for innovation (Barrichello, A., Santos, E. G. Dos, & Morano, 2020).

This article delves into the use of such governmental mechanisms as investment tax credits and alternative financing tools, including venture capital, business angels, and crowdsourcing, which go beyond traditional financial instruments. This article is designed to clarify the intricacies of funding innovations within Ukraine's transparent and accessible financial system. This is a crucial step for the country to establish its position firmly in the global innovation ecosystem.

As Ukraine becomes a highly attractive global investment location, it is essential to understand the methods and sources of investment funds. This knowledge is crucial for businesses and entrepreneurs seeking to support their creative efforts and evaluate the wider consequences on the country's economic resilience and flexibility. The aim of this research is a thorough examination of the financial fundamentals driving innovation in Ukraine. This will serve as a basis for making informed and strategic decisions on investment and technological advancement in the country.

Several renowned foreign and domestic researchers have extensively studied the topic of financial backing for the execution of innovative development policy. They are R. Lucas, J. Schumpeter, M. Krupka, E. Denison, B. Twiss, J.M. Keynes, H. Mensha, D. Clark, E. Domar, and others. Such researchers as L.J. Hitman, V. Seminozhenko, D. Stechenko, V. Geets, L. Fedulova, D. Garner, and A. Peresada analyzed the sources for financing innovative activities in their works. Their scientific advancements encompass significant progress in the areas of theory, methodology, and organization of financial support for innovation policy.

This article appears to be a synthesis of literature review, data collection, and analysis. The literature review is designed to examine the existing research on innovation financing and investment capital in Ukraine. This will be achieved by scrutinizing and evaluating major concepts and results. The data collection method would involve obtaining quantitative data on investment trends from reliable sources, such as the State Statistics Service and the National Bank of Ukraine. Conducting surveys and interviews with stakeholders allows for the acquisition of qualitative insights. Examining case studies of prosperous organizations or businesses can provide valuable insights. A market study analyzes the complexities of financial markets in Ukraine, while a regulatory framework analysis assesses the impact of laws and regulations. Comparative analysis involves assessing and comparing the effective models used in other countries. Adhering to ethical principles ensures accuracy and transparency in the research process.

ANALYSIS OF SOURCES FOR FUNDING INNOVATIVE ECONOMIC DEVELOPMENT

Equity can be derived from both external and internal sources. Internal sources of equity consist of net income generated, depreciation, and capital released as a result of quicker turnover of current assets. External sources of equity financing involve partner fees, venture capital funds, business matchings, and over-the-counter issuances.

Foreign capital encompasses several financial resources, such as bank loans, leasing, grants, bonds, franchising, factoring, and funds obtained from the European Union (Wójcik-Mazur, 2012). Hybrid financing can be further categorized according to other unmentioned methods of generating funds (Aftach, 2003).

Banks engage in innovative financing based on the principles of risky funds. This includes partial financing of development and incorporating promising scientific and technical advancements into research enterprises. The ultimate goal is to obtain profits from joint ownership of a patent for bank-financed development. Large companies use rather internal sources to finance investments than external sources (loans from banks and non-banking institutions, budget funds, foreign investments, etc.). Due to the following reasons, large companies are reluctant to involve third-party participants in the implementation of systemic investment projects: deterioration of the financial situation, inability to finance debt service in the future, negative expectations regarding the maintenance of solvent demand, reluctance to disclose commercial information, fear of additional control by regulatory authorities, etc. A special characteristic of countries with weak or “semi-closed” economies is the self-financing of investment and innovative development of companies. However, profit is a result of operational and economic activity, and depreciation deductions are formed in the process of production activity. According to the classification of famous American economists, self-financing is the simplest form of financing. Due to the imperfection of mechanisms of external financing of investment and innovation activities in most companies, internal sources of investment and the mechanism of self-financing are the leading links of the system of investment support for development at the micro level. Funding through unconventional (alternative) tools is also a reserve of innovative development: venture funds, business incubators, business angels, and crowdfunding. Venture capital is a special form of capital. Investors who participate in financing will be the customers of future innovations (co-owners of the newly formed company) if these innovations are successful (Wozniak, 2016).

Self-financing is a feasible approach to funding investments, regardless of their characteristics. Equity is a practical method for funding new projects and modernizing or expanding current businesses. Equity can also be increased by divesting surplus assets or providing assets to external organizations in exchange for income reimbursement. Equity encompasses the inclusion of depreciation charges. Depreciation is an intangible expenditure that does not involve tangible expenses nor does reduce available funds. Therefore, it can be used as a means to support new initiatives. Using surplus resources can be considered a feasible strategy for internally financing innovative initiatives. It is possible to release capital reserves by expediting the turnover of current assets, such as selling off warehouse supplies and applying efficient receivables management procedures. The objective of this technique is to minimize expenses related to transportation and storage. The organization acquires monetary gains that can be utilized to fund pioneering endeavors. These endeavors contribute to the enhancement of economic and financial self-sufficiency. The reliability and availability of the company's external financial resources have improved. Venture capital, a widely recognized method of funding new ventures, is crucial in providing financial assistance for the expansion and advancement of small and medium-sized businesses, particularly those facing difficulties in securing funding through other channels. Venture capital firms obtain funding from investors who seek substantial returns on their investments and are willing to take on a higher level of risk. The primary investors are financial institutions, including well-known corporations. Funds can operate independently or be managed by specialist firms that handle their administration. These organizations are responsible for selecting the industry or market where funds will be allocated and making judgments about potential and current investments. The implementation of new activities necessitates substantial financial inputs and entails a prolonged capital payback time. Hence, the funding obtained from

sources within the country is frequently insufficient, and corporations are motivated to seek other methods of funding innovation.

Bank loans are the most prevalent means of obtaining external funding. Consumers of the investment tax credit can be subjects of entrepreneurial activity, including enterprises of all forms of ownership, which lack their own investment resources to implement innovative programs. Ministers (departments) are entitled to decide on granting loans based on sectoral subordination of enterprises; these ministers, on behalf of the Cabinet of Ministers of Ukraine, act as managers of investment tax credits at the sectoral level.

To obtain an investment tax credit, a credit agreement should be established between the branch ministry (department) and the borrower company. It should be preceded by a comprehensive examination of the effectiveness of the innovation program (business plan) and the presence of conditions that would confirm the real capabilities of the enterprise for the successful implementation of this program. The Cabinet of Ministers of Ukraine when estimating the budget determines the total annual volume of investment tax credit resources. Depending on the state of the economy, it can reach up to 10% of the income tax budget. The tax discount is subsequently distributed among ministries (departments) based on the priority of their innovative activities.

To enhance the efficiency of investment resource utilization, enterprises can receive an investment tax credit for a specific innovative project for up to five years. Granting a longer term does not align with modern requirements for the duration of new technology development; it can lead to the dispersion of state resources, ultimately reducing the effectiveness of innovative investments (Sidenko, 2018).

Leasing is a rapidly developing method for updating a company's fixed assets. It allows the lessee to flexibly solve production tasks through temporary use rather than purchasing expensive equipment that may become obsolete. Leasing is a progressive method of material and technical production support. It provides access to advanced technology and resolves the contradiction between the need to use such technology and its rapid moral obsolescence. This creates conditions for obtaining and developing progressive technology, maintaining it at a high technical level, and ensuring sales for enterprises producing this equipment.

Since most enterprises experience a decrease in state appropriations and the inaccessibility of long-term loans, the company's funds, namely profits and depreciation, have become the primary source for financing innovative activities. These funds maintain about 65-70% of all innovative investments, with profits alone providing financing for 20% of such investments. It is also possible to accumulate significant means for funding innovation and investment projects by getting rid of unnecessary, morally and physically obsolete equipment.

Creative pursuits typically require a high level of education and effective management of creativity. Achieving sustainable economic development in the face of global issues is a time-consuming process, but their success is not consistent. Banks impose strict credit collateral requirements on organizations, which can make it difficult for small and medium-sized enterprises to access funding if they lack sufficient assets. Furthermore, the invention process requires substantial financial resources. This distribution is associated with high risks, prompting financial institutions to establish elevated interest rates for loans.

However, the elevated interest rate discourages firms from participating in new ventures. Financial institutions exhibit a certain level of reluctance in making a firm commitment to a prolonged suspension of capital despite the potential for ensuring future profits. The loan offered for creative projects resembles a conventional bank loan and can be provided by non-traditional commercial entities or non-bank financial institutions. It is not obligatory to contain interest payments. Leasing is an alternative method of obtaining cash that functions as a long-term kind of finance for different

businesses. The method entails acquiring diverse investment items across several categories through a long-term contractual agreement. This arrangement involves the provider delivering specific assets to the recipient in return for predefined payments. The most notable types of leasing agreements in actual use are revolving, operational, and financial leases. A revolving lease involves selling manufactured capital goods to a leasing company while entering into a lease arrangement for utilizing these products. An operational lease entails using a particular asset for a defined duration, typically shorter than the complete depreciation life of the asset. Financial leasing involves a longer contract that aligns with the duration needed for the complete depreciation of the leased asset's value. Financial leases pertain to capital facilities, which possess a greater intrinsic worth in comparison to operating leasing facilities. Foreign capital encompasses non-repayable financial resources, such as state budget subsidies and funding provided by the European Union. Franchising serves as an alternate means of funding innovations. It is an economic cooperation model that establishes a network of autonomous units; each unit retains ownership control but is closely monitored by the network owner through a coordination agreement. Factoring is an alternative form of financing that allows businesses to receive short-term funding for their operations without incurring additional liabilities. Therefore, this technique is effective for improving liquidity and accelerating cash flow by converting non-liquid assets, such as received services or products, into liquid funds. The outlined process involves transferring receivables to the factoring provider once the contractual agreement between the contractor and the factoring provider has been completed. The factoring agent is obliged to collect payments from the debtor, offer financial support to the creditor, and take on the associated risks. The agent is compensated for providing these services. The company's expenses may exceed its income during the invention and development phase. Under such circumstances, venture capital financing can be used to bridge the cash shortfall. It remains challenging to determine the optimal funding options available for innovative projects. Choosing the appropriate financing method is a subjective decision that depends on the specific circumstances of an organization. This article aims to thoroughly examine and evaluate the accessibility and effectiveness of specific financing channels (Kolodizev, 2009).

The choice of a particular option depends on various factors, including the features of the executed innovation project, the current financial situation, past experience, and the composition of the management team, etc. Diverse funding sources are used in innovative projects at different stages. Sources for funding for innovative projects are categorized according to the particular stage of project development. In order to optimize this procedure, it is crucial to address three stages of an innovation project, such as research and development, implementation, and marketing and sales. The costs and benefits of participating in creative activities can be demonstrated at every stage of the process. Specific sources of funding may be allocated to each individual step. NewConnect (NC) is a stock market platform designed to meet the requirements of dynamic and ambitious companies seeking to make their initial public offering (IPO) on the stock exchange. These companies, despite their desire to enter the primary stock exchange market, fail to meet the strict criteria established by the exchange.

Companies can raise capital by issuing new shares and selling them to external investors. The financing source are also associated with the organization's developmental stage. Loan funds are financial institutions that operate within a specific geographical area. The company offers tailored products and services that are designed to meet the specific needs of enterprises operating within a certain industry. Business angels are individuals who provide direct equity capital to innovative start-up companies with high development potential, in whom they have a purely financial stake. They are venture capitalists who use their own personal financial resources to achieve this objective. These investors represent both established enterprises and individuals who have already

succeeded and hold ample resources to invest in fledgling businesses.

Technological parks provide assistance and consulting services to businesses in the fields of development, technology transfer, and the conversion of scientific research outcomes and projects into technical innovations. The primary objective of technological parks is to offer support and resources to companies throughout all stages of technology advancement and deployment. Although the majority of these organizations do not have an official scientific designation in their names, they are actively engaged in advancing the objectives of technological parks. Their primary focus is to coordinate research activities and efficiently integrate their outcomes into commercial operations. Moreover, these organizations play a crucial role in promoting the establishment and expansion of spin-offs. Firm incubators are a valuable resource for entrepreneurs starting and managing their own businesses. They support the policy goals of promoting entrepreneurship at various levels, including national, regional, and local. Their presence has a significant impact on local communities. This facilitates the advancement and utilization of established business formation models. Within the framework of a well-designed business incubator program, it is feasible to distinguish fundamental services that reduce business operation expenses and additional services that give entrepreneurs a competitive edge (Lundval, 2016).

SOURCES FOR SUPPORTING THE UKRAINIAN FINANCIAL SYSTEM WITHIN THE CONTEXT OF INNOVATIONS

Ukraine's financial system is highly developed and transparent. The National Bank of Ukraine is an autonomous central bank. As of January 1, 2023, Ukraine has a total of 67 banks, 30 of which have foreign capital. Additionally, there were 2,084 non-bank financial organizations in the country. Furthermore, Ukraine is home to 10 stock exchanges. PFTS is the largest among them, accounting for 96% of the overall trading volume of securities transactions in the country. The banking industry holds a dominant position in Ukraine's financial market, although the stock and bond markets are comparatively less developed. The stock and bond market in Ukraine accounted for a mere 3.1% of the country's GDP in 2021. Ukraine's financial industry has a high degree of openness, which makes it possible to merge foreign financial institutions with Ukrainian counterparts or create branches within the country.

The primary investment sources in Ukraine are predominantly derived from the company's internal funds and the state budget (Fig. 1).

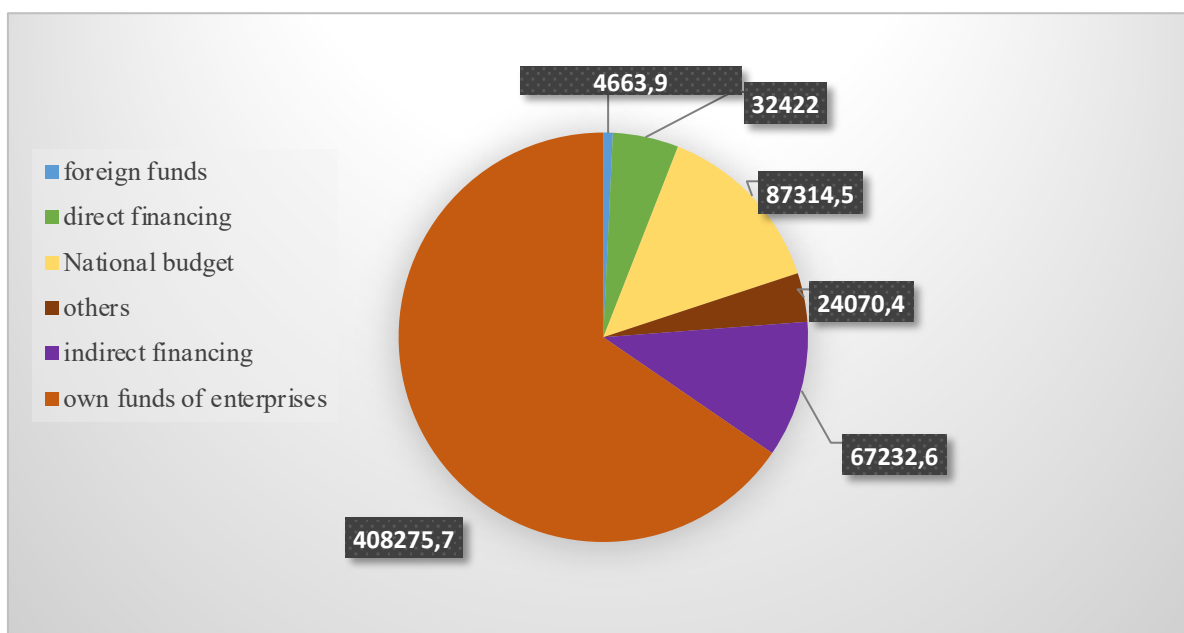


Figure 1. Sources of funding for investment funds

Sources: compiled by the author according to National Bank of Ukraine

Indirect financing is the primary source of funding in Ukraine, with direct financing playing a significant supporting role. Between 2010 and 2021, there was a significant increase in support for indirect investment financing following a temporary dip caused by the crisis in Ukraine. Conversely, the proportion of direct financing in total investment funds showed a tendency to decrease after a brief peak during the crisis.

State institutions play an active role in providing financial support for innovative economic development. For example, the Cabinet of Ministers of Ukraine creates specialized state non-banking innovative financial and credit institutions to support the innovative activities of business entities of various forms of ownership, upon the submission of a specially authorized central executive body in the field of innovative activities.

The innovative financial and credit institution is under the authority of a specially authorized central body of executive power in the field of innovative activity and operates on the basis of the Regulation (Statute) approved by the Cabinet of Ministers of Ukraine. Its funds are formed at the expense of the State Budget of Ukraine, as provided for by the Law on the State Budget of Ukraine for the relevant year, attracted in accordance with the current legislation of domestic and foreign investments of legal entities and individuals, voluntary contributions of legal entities and individuals, from their own or joint financial and economic activities and other sources not prohibited by the legislation of Ukraine.

The financing expenses for international investors in the local market are relatively high. The interest rate on loans from Ukrainian banks stood at 18.5 percent in hryvnias in 2022. Consequently, the majority of foreign enterprises refrain from sourcing funds domestically. Foreign-funded firms receive equal status to local enterprises in terms of financing conditions. Essential information needed for financing encompasses the company's operating license, credit history, tax payment records, project feasibility and risk assessment reports, evaluation of the company's financial position, and assessment of the financing requirements.

Ukraine implemented several reform initiatives following the banking crisis. Amidst the 2008 financial crisis, Ukraine faced the consequences of excessive credit expansion. The country had accumulated a significant volume of mortgage loans in foreign currency and corporate loans, but the legal framework for addressing problem loans remained incomplete. This situation posed challenges for banks in terms of lending and obtaining credit guarantees. Simultaneously, the actions of distressed banks had a lasting and distressing impact on the entire industry until 2014. Subsequently, Ukraine has undergone an arduous process of fiscal and financial reform characterized by the following:

- The National Bank of Ukraine diligently conducted the process of cleansing and rectifying banks as per the request of the International Monetary Fund;
- The National Bank of Ukraine enforced rigorous regulations for overseeing banking activities and removed financially unstable banks from the market;
- The National Bank of Ukraine performed stress tests on a yearly basis as scheduled.

As a result of the reform, the banking sector in Ukraine found an effective method for evaluating credit risks. Furthermore, the structure of the banking industry has been growing, with the capital adequacy ratio and profitability consistently increasing year after year. As depicted in Figure 2, Privat Bank held 35% of individual deposits in September 2022. In February 2020, the combined percentage of corporate deposits and small deposits reached an all-time high of 85.8%. Furthermore, the National Bank implemented a new prudential standard called the liquidity coverage ratio (LCR) to

enhance the accuracy of liquidity evaluation in 2018. In 2019, the ratio of high-quality current assets (HQLA) to liabilities of private banks tripled compared to 2014.

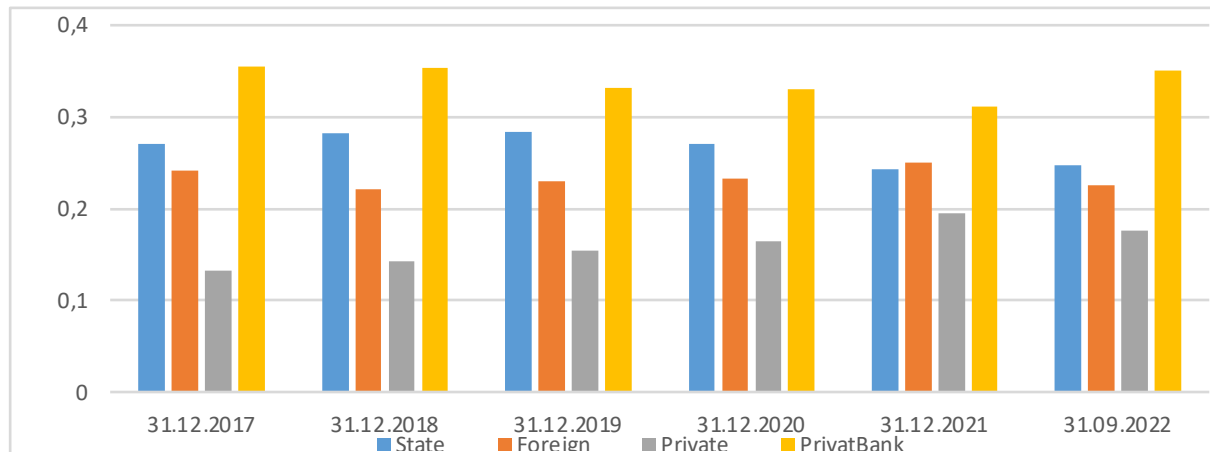


Figure 2. Allocation of net assets as a percentage of the Gross Domestic Product (GDP)

Source: compiled by the author according to the National Bank of Ukraine.

The COVID-19 outbreak has led to a short-term increase in asset quality, adequacy, and profitability risks in Ukraine's banking industry. However, currency risk has remained stable, while liquidity and regulatory risks have decreased.

The economic recession caused by the epidemic and subsequent quarantine measures has had a noticeable effect on the financial well-being of Ukrainian households and companies. The quality of banks' credit portfolios, in turn, is expected to significantly deteriorate, leading to an increase in the loan efficiency ratio within Ukraine's banking sector. As of January 1, 2023, the proportion of non-performing loans (NPL) in the banking sector increased to 38%. The volume of non-performing loans saw a significant rise of UAH 127 billion from March to December 2022, reaching a total of UAH 432 billion. The aggregate loan volume amounted to UAH 1.106 billion, while the amount of problematic loans was UAH 536 billion. Privat Bank had a bad loan coefficient of 81% (Table 3).

Furthermore, the outbreak affected the risk of profitability in the Ukrainian banking sector. Since the beginning of the Russian-Ukrainian war, financial institutions have already acknowledged substantial credit impairments. Loan reserve deductions have exceeded UAH 100 billion, which is over 12% of the banks' loan portfolio as of February 2022. War, economic turmoil, and energy challenges could lead to a 30% decrease in the loan portfolio. Banks maintain their resilience by prompt evaluation of credit risk and appropriate restructuring. Efforts to address non-performing loans (NPLs) are expected to continue after the profound stage of the ongoing crisis. Specifically, banks should re-evaluate their strategies for minimizing NPLs once martial law is concluded or terminated. This relates to the implementation of the Financial Stability Board's strategies to reduce NPLs of state-owned banks.

Table 3. NPL level ratios for the main Ukrainian banks in three quarters of 2023

Bank	Non-Performing Loan Level (NPL)
Privatbank	64,5 %
State banks	75 %
Ukreximbank	43,3 %
Private banks	25 %
Raiffeisen Bank	15,2 %

Source: compiled by the author according to the National Bank of Ukraine.

Although the virus has increased the risks faced by Ukraine's banking system, recent optimization and reform efforts have helped to mitigate the impact of the epidemic on liquidity risk. The liquidity coverage ratio of Ukraine's banking system significantly exceeds the minimum requirement.

The Ukrainian government prioritizes attracting foreign direct investment. In 2014, the President of Ukraine created the National Investment Council as a consultative entity operating under the President's authority. Furthermore, the Ukrainian government established the Investment Promotion Office of Ukraine (UkraineInvest) in 2016 to attract and assist foreign direct investment. The Business Ombudsman was formed in Ukraine in 2015. The goal of this initiative was to facilitate global firms in filing complaints against unfair treatment by state or local authorities, state-owned or controlled enterprises, or their representatives. Foreign investors are subject to Ukrainian legislation in compliance with the obligations of the World Trade Organization (WTO).

Investors argue Ukraine has transformed into a stable and vibrant emerging market, possessing exceptional undervalued assets and skilled human resources, making it an attractive investment avenue. In the 2020 Doing Business report by the World Bank, Ukraine advanced to the 64th position out of 190 countries, marking a further increase of seven places. Over the last decade, the World Bank has recognized Ukraine as the second nation in terms of the rapidity and magnitude of improvement of the business climate. Ukraine received approximately USD 16 billion in foreign direct investment between 2015 and 2019, leading to the establishment of over 100 enterprises and the creation of tens of thousands of high-value jobs. Notable instances include Bayer's seed processing facility in Germany valued at USD 200 million, Cargill's grain terminal in the United States worth USD 150 million, Jabil's second plant in the United States costing USD 16 million, and the relocation of international brands such as General Electric, Ryanair, HEAD, IKEA, H&M, Decathlon, and others to Ukraine (Ukraine-invest, 2022).

Today, it is recognized that small science-intensive businesses are the most effective in creating new products, technologies, inventions, and patents based on the unit of costs for innovative activity. Small innovative entrepreneurship is a risky field with a traditionally high level of bankruptcy and a lack of financial resources. Therefore, state aid is often the only source of survival for small innovative companies. Loans are crucial for financing scientific, technical, and innovative activities in developed countries. Investment credits and loans include bank loans and leasing. Long-term lending is provided by various financial institutions, including credit banking organizations, insurance companies, non-state pension funds, and investment funds, within the limits of their insurance reserves. Leasing is an effective way to finance innovative activities. It is a type of entrepreneurial activity that involves investing temporarily free funds or funds raised under a financial lease (leasing) contract.

The investment tax credit represents another way to increase financial resources for innovative activities. This credit defers income tax payments for a specified period, allowing businesses to allocate more funds towards implementing innovative programs. The deferred amounts are later compensated through additional tax revenues resulting from the increase in profits generated by the implementation of these programs. Venture financing is one effective mechanism for attracting resources for innovative activities. Venture capital differs from traditional lending as it is mainly invested in an idea, a project with a high level of risk. Funds for venture financing are formed from the contributions of individual investors, corporations, insurance companies, banks, and pension funds. Venture funds are managed by specialized financial and banking institutions (Netson, 2016). Over the last decade, venture businesses in Europe have invested 60 billion ECU in 2,000 private companies. Venture funds primarily focused on marketing, selecting innovative scientific and technical solutions, and financing science. Their end goal is to

produce innovative projects. Independent venture capital firms are actively invested in by pension funds and insurance companies. For example, insurance companies finance 13.6% of venture capital in Great Britain, while this figure reaches 32.5% in the Netherlands. Ukraine still lags far behind Western countries in the level of development of the venture capital market. The absence of sustainable growth in its scientific and technical sectors hinders the formation of venture capital relationships. Moreover, the modern economic system in Ukraine comprises contradictory and underdeveloped market institutions.

One of the most problematic issues in improving the mechanism of financing scientific research is the choice of the optimal ratio between basic and program-targeted funding. Program-targeted funding is used, as a rule, on a competitive basis for scientific and technical programs and individual projects aimed at implementing priority areas of science and technology. This funding ensures the implementation of the most important applied scientific and technical developments, carried out according to the state order, as well as projects carried out within the framework of international scientific and technical cooperation.

CONCLUSION

In the current economic environment, the notion of innovation holds significant importance as a basic catalyst for both social and economic advancement. In the age of Industry 4.0, organizations that effectively promote innovative initiatives, produce novel products and services, and adopt cutting-edge solutions and technologies will be more adept at competing and satisfying the requirements of a swiftly changing market. An increasing number of companies understand the necessity of launching new projects and the subsequent advantages. Innovation implementation within a business has several advantages, such as increased revenue, expanded market share, a competitive edge, and the exploration of untapped market opportunities. Meeting customer needs, customization, diverse range of offerings, procedures, services, or enhancing consumer allegiance are also highly significant. Entrepreneurs should adopt and implement innovative methods in order to guarantee the long-term sustainability and growth of their business. Available funding options encompass debt finance, interest-free foreign capital, and local capital, which can all be applied to start and develop innovative ventures. Financing possibilities are accessible at all stages of the organization's development. The funding is derived from a blend of governmental and private sources. Ukraine provides multiple avenues for obtaining financial support for creative endeavors. These encompass European Union funds used for both operational and framework initiatives. Furthermore, financial resources can be obtained through government initiatives, such as 5-7-9 program. Venture capital and business angel financing can be used, along with the potential for crowdsourcing. Multiple studies prove that equity financing is widely preferred when it comes to financing innovation. Ukrainian businesses possess substantial capacity to develop and market new global solutions, while also actively embracing and applying the concepts of the Industry 4.0 paradigm. There is a potential for the criteria to receive structural funds to be less strict. There exist multiple sources of funding for innovative projects at every stage of enterprise development. Tax credits designed to incentivize research and development have the potential to foster innovative pursuits.

REFERENCES

- Wójcik-Mazur, (2012). Zarządzanie ryzykiem płynności w bankach Risk liquidity management in banks. Wydawnictwo Politechniki Częstochowskiej.
- Aftach, A. (2003). Innovation Management. Oxford University Press.
- Hermann, M., Pentek, B., & Otto, T. (2015). Design principles for Industrie 4.0 scenarios. Technical University of Dortmund. DOI:10.13140/RG.2.2.29269.22248
- Alexa, L. M. M. (Year). Title of the synopsis. Include additional information as needed.

Proceedings of the IBIMA Conference(2019), Madrid, Spain.

Analysis of the banking industry. (2023). Retrieved from https://bank.gov.ua/admin_uploads/article/Banking_Sector_Review_2023-02.pdf

Interest rates for loans and deposits offered by deposit businesses. (2023). Retrieved from https://bank.gov.ua/files/4-Financial_markets.xlsx

Non-performing loan (NPL) level. (2023). Retrieved from <https://bank.gov.ua/ua/stability/npl>

Ukraine invest Retrieved from <https://ukraineinvest.gov.ua/slide/invest-in-ukraine-now/>

State Statistics Service of Ukraine. Retrieved from <http://www.ukrstat.gov.ua>

Law of Ukraine “On Innovative Activity”. Retrieved from <http://zakon4.rada.gov.ua/laws/show/40>

Ukrstat. (2020). Direct investments. Retrieved from http://www.ukrstat.gov.ua/operativ/operativ2018/zd/inv_zd/nadh_pi/arh_nadh_pi_u.html

Barrichello, A., Santos, E. G. dos, & Morano, R. S. (2020). Determinant and priority factors of innovation for the development of nations. *Innovation & Management Review*, 3(17), 307–320.

Germanjuk, N. (2018). Investments in the development of innovative management in the company. *Baltic Journal of Economic Studies*, 4(4), 87–92.

Kolodizev, O.M. (2009). *Methodological principles of financial support for the management of innovative economic development: monograph*. Kharkiv: VD INZHEK.

Wozniak, G. V. (2016). Ensuring innovative growth of the region’s economy through effective use of the financial potential of the real sector. *Bulletin of the University of Banking*, 1, 19–24.

Sidenko, V. R. (2018). Global structural transformations and trends of the economy of Ukraine. *Economics and forecasting*, 1, 1–30.

Lundval, B. A. (2016). *National Systems of Innovations – Towards a Theory of innovation and Interactive Learning*. London: Pinter Publishers.

Freeman, C. & Soete, L. (2017). *The Economics of Industrial Innovation*. London and Washington: Pinter Publishers.

Netson, R. (2016). *National Innovative Systems: Pre-conditions and Mechanisms of Functioning. Lessonform Japan*. London: Pinter Publishers.