

Analysis of global trends in the european venture capital market

Khomenko Hanna¹, Vyhivska Iryna²

¹PhD, Associate Professor of the Department of Management Information System and Accounting

²PhD, Associate Professor of the Department of Management Information System and Accounting
Zhytomyr Polytechnic State University

JEL Classification: D 81, E22, G32

Abstract

The article examines the relationship between the innovative development of the country's economy, the amount of venture funding for innovation projects, investment freedom and the tax system in the country using an empirical study of their causality and the impact of these factors on each other. The correlation is set at 0,59. An assessment of each of the factors on the level of innovative development of the country was made. Indicators for 16 European countries were taken for analysis. The most stable relationship is found between the country's innovative development and investment freedom. The correlation between innovative development and the volume of venture financing of innovative enterprises, as well as between innovations and features of tax policy in the country is somewhat smaller, but still significant. It is established that the availability of venture capital and the development of venture capital in a country will have a tax policy (special taxation, reduction of capital gains tax). It is established that the development of venture business in the country is important because it provides commitment to the innovation sector of long-term financial resources of institutional and individual investors.

Keywords: venture financing, venture capital, venture philanthropy, information support, analytical assessment.

1. Introduction

Today, venture capital is one of the most popular ways to invest in new ideas, concepts and projects. It is most often used to finance innovation and technology projects that have a high level of risk, but at the same time can bring investors high returns in the future. The ultimate goal of investors in this capital is to make a profit by increasing the value of the company, not the production or service activities.

Venture capital is also called smart money, i.e. a form of investment, which, in addition to capital, also includes the care of the investor and his advice in the business process. An investor who invests a certain amount in a project becomes a

Corresponding author:

¹ E-mail: jakovets.anna@gmail.com

ORCID: <https://orcid.org/0000-0002-6337-3635>

² E-mail: virina1407@gmail.com

ORCID: <https://orcid.org/0000-0002-4974-5834>

© 2022 H.Khomenko, I.Vyhivska

doi: [https://doi.org/10.26642/ppa-2022-1\(5\)-32-38](https://doi.org/10.26642/ppa-2022-1(5)-32-38)

shareholder of the company, supports it not only with his knowledge and experience, but also helps and promotes its development, which is sometimes much more effective for business expansion than just financing.

In 2021, the European VC market activity has recovered from its COVID-19 crisis slump. According to the EIF VC Survey, a survey of VC General Partners investing in European ventures, VC fund managers have become very optimistic again. The current market situation is perceived even better than before the crisis. In general, VCs are confident in the long-term growth prospects of the VC industry in Europe and in their own market.

In general, the volume of venture capital in 2021 has increased significantly compared to the previous year and this trend is observed in the economies of countries around the world. Thus, in 2021, more than 612 billion dollars were invested in venture capital worldwide, which is 108% more than in the previous year.

The start-up companies become the recipients of venture capital investments. So, in 2021, the choice of venture capitalists is decacorns, startups with a valuation of over \$10 billion—these include FTX Trading, a cryptocurrency exchange valued at \$25 billion, and Genesys, a customer experience management software firm valued at \$21 billion. Turkey welcomed its first decacorn in 2021 after Trendyol, an e-commerce marketplace, raised \$1.5 billion at a \$16.5 billion valuation.

However, it should be noted that in today's economic development, launching new projects is a very risky process. This requires a balanced approach, the necessary training, the development of certain rules to ensure its effective implementation, confidence in your idea, team and necessarily financial support from the outside. The startup is a new financial project, which aims to recoup the investment as soon as possible, improve the lives of society, help develop the country's economy and, ultimately, make a profit.

Startups are often associated with technology, inventions and technical innovations. In fact, such a project can be organized in absolutely any field of activity. The very name "startup" comes from the English "start up", which means "to start" and means the beginning of the process. The project does not have to be related to any innovations. The main feature of startup companies is a focus on new business models and rapid growth.

Therefore, for the investor in the process of making investment decisions, it is important to analyze startup projects in order to assess the risks and future returns after leaving the project. In particular, the initial analysis of a startup project includes a number of issues where mistakes are most often made when developing a business model. These include experience in the company's management, key market partners, the degree of competition in the industry, the market position of the product or service, the niche occupied by the project in the market, funding, market regulation impact, future investment opportunities and more.

All these issues, as well as the analysis of the main indicators of the startup company will have a significant impact on the investor in the decision-making process for venture capital. Therefore, they should be investigated in more depth, as well as to find out the causal links between certain performance indicators of the startup company.

2. Literature review

A venture capitalist who heads a fund or company does not invest in the company he is buying. A venture capitalist is an intermediary between syndicated (collective) investors and the entrepreneur. This is one of the most fundamental features of this type of investment. On the one hand, the venture capitalist independently decides on the choice of an object for investment, participates in the work of the board of directors and contributes to the growth and expansion of the company's business, on the other - the final decision on investment is made by the investment committee. represents the interests of investors. Ultimately, the profits that a venture investor receives belong only to the investors, not to him personally. He has the right to count only on part of this profit. These principles were laid down at the initial stage of venture capital formation by the founders of this business - T. Perkinson, J. Kleiner, F. Cofield, B. Byers and others. In 1950-60, they developed new basic concepts for the organization of financing: the creation of partnerships in the form of venture funds, raising money from partners with limited liability and establishing rules to protect their interests, the use of general partner status.

Venture capital is a part of private capital, which aims to invest in private enterprises, investment is carried out in stages from the beginning of the project (seed capital), start-up capital (start-up capital) or in the initial phase of expanding the company or individual project (early expansion capital) (Park, Steensman, 2012).

However, due to the early period of venture capital investment and the fact that it is mostly innovative enterprises or projects, the venture capitalist carries high risks compared to other direct investments, which focus on mature and proven companies. However, the venture financing strategy provides greater opportunities to obtain above-average rates of return on invested venture capital (Cumming, 2010).

A distinctive feature of venture capital, which distinguishes it from other types of investment, is the constant support and advice of the company's management by its investor, the use of its connections and business experience for its development and development. Sahlman (1989), Lerner (1995). It is these non-monetary services from venture investors that allow them to choose companies with high growth potential for their investments and to succeed in their return on investment (Sørensen (2007)).

A venture capitalist is usually a temporary investor because the venture financing process ends with the investor withdrawing from the project through the sale of shares in the stock market, the acquisition of the firm by another firm or when the project is unprofitable and the company goes bankrupt. Thus, an innovative enterprise or startup company is a product of future sales for the investor (Kenney and von Burg 1999).

However, it should be noted that the availability of venture capital and the development of venture business in a country will also be influenced by government policy. For example, US government policies, such as stable fiscal policies (relatively

low inflation and a stable currency) and fiscal policies (special taxation, lower capital gains tax), have helped increase venture capital and venture capital efficiency in the country (Gompers 1994).

Although much research has been conducted in the context of venture finance, its features, mechanism, the role of venture capitalists in the activities of innovative companies, but still relevant issues of the company's performance on the strategy of venture capitalists. This can significantly improve the understanding of venture capital as a profitable source of finance and attract free funds to the activities of innovative enterprises or startups in the future, as well as contribute to the innovative development of the country as a whole.

The issue of studying the factors of development of innovative enterprises also remains relevant. The emergence of new forms of business, new markets, new forms of attracting venture capital only deepen the problems of research.

3. The identification of previously unresolved issues and the formulation of research hypotheses

The dynamic development of new technologies, including IT, has caused a significant increase in the number of new startups. Companies built from scratch give the investor the opportunity to get a high rate of return and a dominant position in the market in their industry for several years. Due to the importance of startups and the profits they bring to investors, venture financing has today become one of the most popular methods of raising capital for startups, the effectiveness of which is confirmed by world practice. The development of the venture capital industry in Ukraine today should become one of the priorities of the state innovation policy and a necessary condition for improving innovation.

Venture capital is a source of long-term investment, both for newly created promising technology companies and for companies that have performed well in the process of expansion and renewal. This type of financing allows to attract additional start-up capital in the early stages of the company's development, i.e. when it has not yet formed a market position, insufficient financial resources and liquid assets, when traditional credit and exchange forms of capital raising are almost impossible. As a rule, venture capital is provided for the introduction or patenting of new ideas, business ideas, innovative projects, startups. It is also used in the next few stages of financing, which continues until the mass commercial production of a new product is established.

The venture capital system today has a significant impact on the economy of each country. Due to the correct organization and effective functioning, it contributes to the development of many areas of activity.

Sources of venture financing can be funds of the founders of an innovative enterprise and its business partners or funds of specialized (venture) investors and creditors.

The main feature of venture capital is that the funds are made available on a non-refundable, interest-free basis and in no case can be withdrawn during the entire term of the contract.

The features of venture financing include the following:

- 1) the investor may provide funds for a creative and promising idea, business idea, interesting project, which are not provided with available property, savings or other possible assets of the entrepreneur;
- 2) venture capital is long-term and quite risky, for a period of 3 to 7 years, depending on the specifics of the company;
- 3) venture funds can be invested in companies that are at different stages of development.

Types of venture capital can be classified according to the purpose and time of their use. There are 3 main types of venture capital:

- 1) early stage of financing;
- 2) financial expansion;
- 3) purchase / redemption of financing.

Funding in the early stages is one of the most risky forms of investment, but at the same time the most profitable, if the project in which the funds were invested is successful and attracted the attention of users. Finance is provided to young, start-up companies that are just taking their first steps in business. Venture financing is provided when the funds are needed to complete the product, obtain the first working sample and prepare a business plan. In the early stages of development, all innovative companies are characterized by high risks. After all, it is unknown what future awaits the newly created company, whether its project will be successful and efficient, whether it will continue to develop and expand in the market.

Companies that are in the expansion / development stage are starting to release a product and receive a steady positive cash flow. The number of risks is decreasing, they are easier to predict. At this stage, large venture capital funds are beginning to show interest in such companies, because the payback period is much shorter. Investment involves the allocation of funds to enterprises that have great potential, existing production, opportunities to expand production capacity.

The article aims to study the following hypothesis:

Hypothesis 1. The choice of a venture capitalist of an innovative recipient enterprise or project in the context of venture capital investment affects not only the investor's profits at the time of exit, but also the level of innovation in the economy. It is expected that in terms of the amount of venture funding for innovation projects at different stages of development, there is a statistically significant relationship between the volume of venture capital investment and innovation.

Hypothesis 2. Changing the investment attractiveness of an innovative project in the early stages of investment depending on the possible ways out of investment for the investor. The indicator of investment attractiveness of the project, as well as profitable ways out of investment for the investor are important both for the amount of profit and for the decision of the venture investor to invest in a startup company.

Hypothesis 3. Venture capital is a unique tool that is important for business renewal in the context of the development of innovative enterprises in the early stages of business creation and commercialization of new technologies. Therefore, removing

obstacles to experiments and the risks of venture financing will contribute to the innovative development of the country's economy as a whole.

4. Research methodology and methods

The methodological basis of the study was regression analysis - an analytical technique for assessing the relationship between the dependent variable (innovation development) and one or more variables. Regression analysis allows you to simulate the relationship between selected variables, as well as predict values based on a specific model.

Regression analysis uses the chosen estimation method, the dependent variable, and one or more description variables to create an equation to estimate the value of the dependent variable. The level of innovative development of the country was chosen as the final indicator. Two indicators were selected as factors that characterize the level of venture business development and the amount of venture capital involved in the activities of start-up companies and corporate recipient enterprises. The study provided data that reflect the degree of influence of each factor on the final indicator - the level of innovative development of the country.

The study focuses on the relationship between innovation, the amount of venture funding for innovation projects in the country, investment freedom and the tax system in the country using an empirical study of their causality and the impact of these factors on each other. Innovation, development of venture business and its investment freedom in the country are considered to be the driving tools of innovative development of the country's economy. Data used for the study were obtained from the Global Innovation Index, the 2021 Venture Capital Review: Market sentiment, the Investment Freedom Index and the International Tax Competitiveness Rating.

5. Result

In the Table 1 presents the results of correlation analysis, which indicate a fairly high level of correlation between the level of innovation and the amount of venture financing of innovation projects in the country, investment freedom, the index of tax competitiveness. This confirms the assumption that these factors are important for the further innovative development of the country as a whole.

Table 1
Correlation matrix

	<i>Global Innovation Index</i>	<i>Value of Venture Capital Investments</i>	<i>Investment Freedom</i>	<i>International Tax Competitiveness Index</i>
Global Innovation Index	1	0,420215111	0,575144054	0,348207999
Value of Venture Capital Investments	0,420215111	1	-0,128074787	-0,084146714
Investment Freedom	0,575144054	-0,128074787	1	0,732653488
International Tax Competitiveness Index	0,348207999	-0,084146714	0,732653488	1

Table 2 presents the data of regression analysis.

Table 2
Regression analysis

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Global Innovation Index	-7,722804518	17,96356741	-0,429914857	0,674876582
Value of Venture Capital Investments	0,362142502	0,13367871	2,709051435	0,018988693
Investment Freedom	0,863908399	0,308216967	2,802922913	0,01595751
International Tax Competitiveness Index	-0,082434204	0,132566179	-0,621834348	0,545683941
<i>Regression Statistics</i>				
Multiple R	0,769364666			
R Square	0,591921989			
Adjusted R Square	0,489902486			
Standard Error	4,605701915			

Next, the impact of each of the factors on the dependent variable, i.e. innovation in the country's economy, is assessed. In Figure 1 confirms the close relationship between the volume of venture financing of innovative enterprises and the development of innovation in the economy (Figure 1). This relationship is explained by the important role of venture capital in the innovative development of the country.

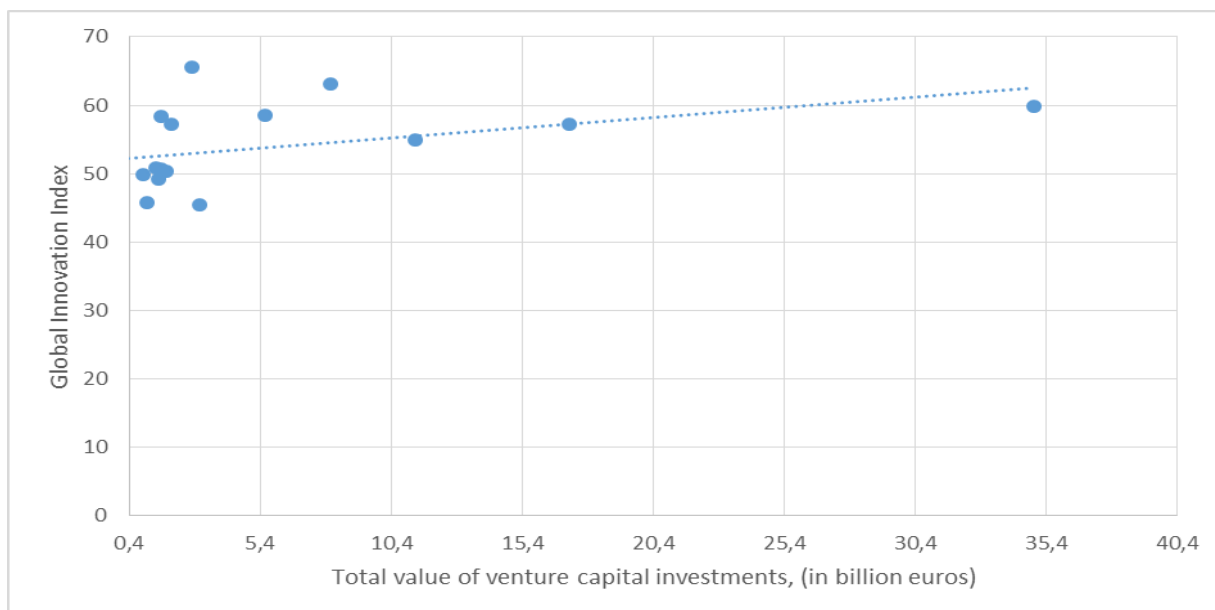


Fig. 1. The correlations between innovation and value of venture capital investments

As the practice of the most innovation-developed countries in the world shows, it is small business that encourages the improvement of the innovation process. Therefore, it is clear that in the current conditions of economic development the most important issue is the creation of various projects and attracting venture capital to their financing. To successfully implement such projects and business ideas, it is necessary to follow the rules and principles of doing business, analyze and strictly follow economic laws, have a team that will work for the idea, and an investor who will be financially supportive.

Venture financing, the effectiveness and importance of which is confirmed by world experience, is one of the promising ways to implement high-risk science-intensive innovation projects (startups). The development of the venture capital industry in Ukraine today should become one of the priorities of the state innovation policy and a necessary condition for improving innovation. This type of financing allows you to attract additional start-up capital in the early stages of the company's development, i.e. when it has not yet formed a market position, insufficient financial resources and liquid assets.

A positive example of the development of innovative industry can be Western countries, where the return on venture capital reaches 50–70% per year or more. In particular, the existence of such global giants of the IT industry - Microsoft, Dell Computers, Hewlett-Packard, Intel, Apple became possible due to the attraction of venture capital in the early stages of development of these companies. In the future, the growth of the company's value and, consequently, the profit of investors reached 1000%.

In Figure 2 presents the relationship between the level of investment freedom in the country and the level of its innovative development.

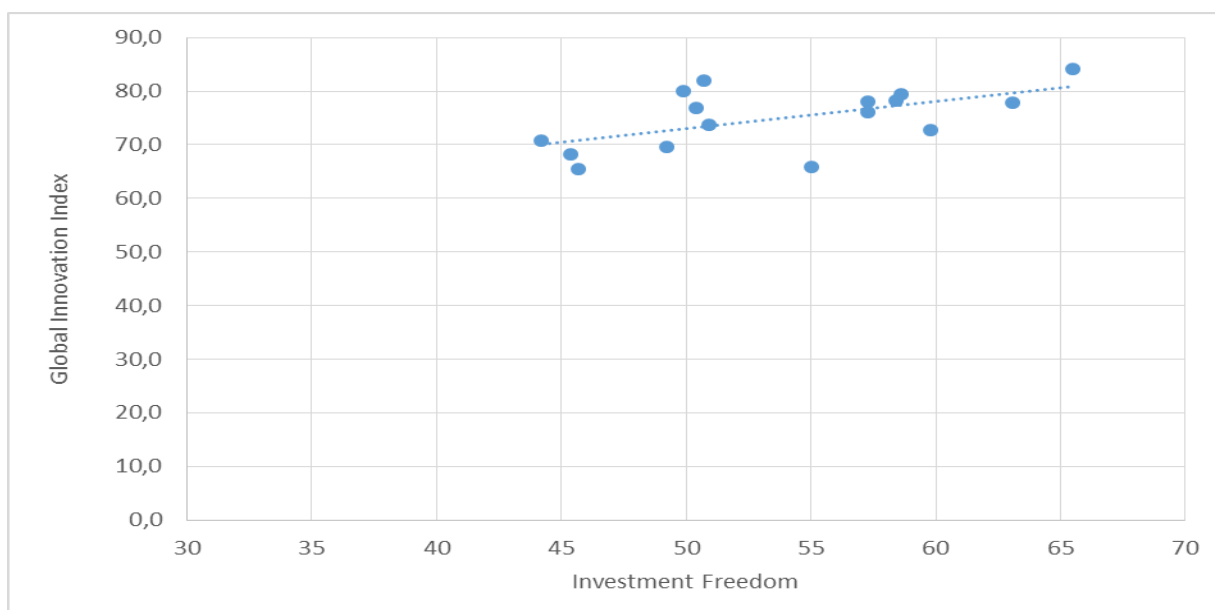


Fig. 2. The correlations between innovation and investment freedom

Investment freedom in the age of increasing competition is a necessary condition for business development in the country, in particular the development of innovation in the economy. The low level of investment costs is one of the main problems and obstacles to the country's economic growth and innovation development, as it is investment that significantly affects the development and market position of a country. It is possible to keep up with the competition in terms of development only through innovative actions that lead to the formation of a favorable investment climate in the country to attract as much investment as possible, including venture capital.

The current stage of intensification of innovation processes requires finding ways to obtain innovative funding for projects to diversify and eliminate risks. Therefore, the development of venture business in the country is important because it ensures the commitment to the innovation sector of long-term financial resources of institutional and individual investors.

The experience of developed countries, which have used venture capital to create a competitive economy, convincingly demonstrates significant growth in production, rapid use of new technologies in all sectors of the economy, employment growth and more. In addition, the successful attraction of venture capital has a positive impact on innovation-oriented economic development, stimulates the introduction and use of new technologies and promotes the active development of the capital market.

In Figure 3 graphically presents the dependence of innovation development on the tax policy of the state.

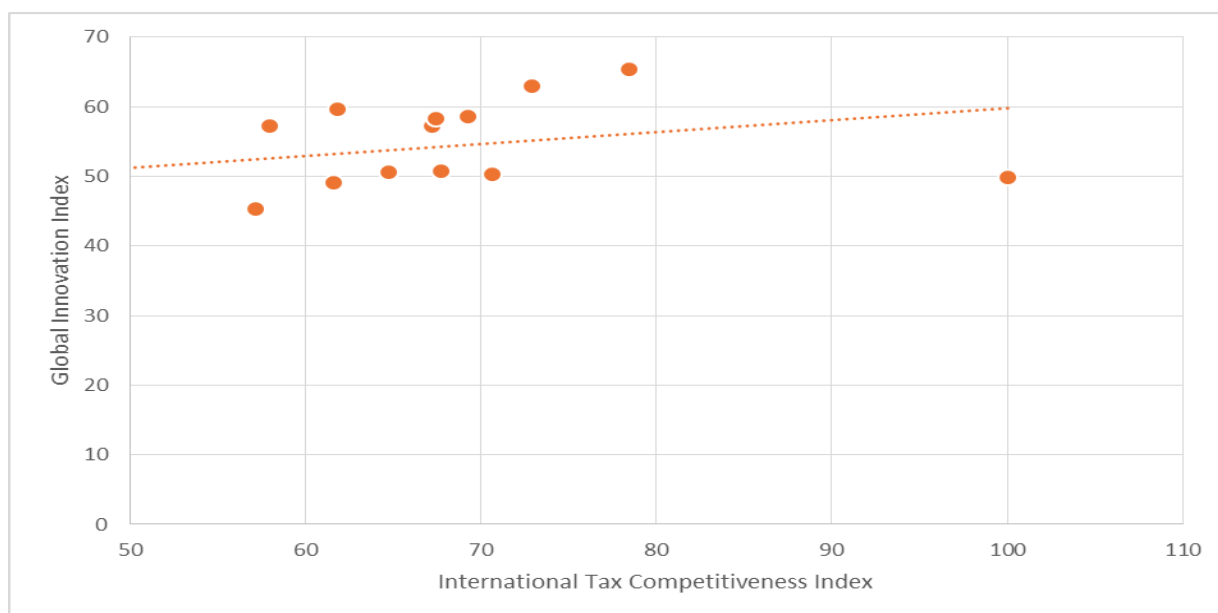


Fig. 3. The correlations between innovation and tax competitiveness index

Government support for innovation is directly related to tax policy, which may encourage venture capital through tax instruments. The use of taxes to influence the decisions of investors, their encouragement to take concrete action should meet the goals of the state in exchange for tax benefits for enterprises. The use of tax benefits in business with the latest technologies stimulates a significant increase in innovation in the economy.

6. Discussion

One of the most current and dominant trends in the European venture capital market today is the very high rating of startups, which indicates the availability of capital in the market and the belief of venture investors that these investments will bring the expected benefits compared to other financial instruments, especially latest technology industry.

KMPG's 2021 Global Analysis of Venture Financing also reflects the high ratings of the venture business. 2021 was a significant year for the global venture capital market, with record high total investment, value and number of venture agreements, global CVC investment and number of CVC agreements, number of exits and total exit value, and global value of venture capital funds. Investment in Europe remains strong, with more than \$ 28 billion invested in 2041 deals. Megadeals continued to dominate the venture capital market, with nine companies raising more than \$ 1 billion in the fourth quarter of 2021, led by Indonesia's J&T Express (\$ 2.5 billion); US Commonwealth Fusion Systems (\$ 1.8 billion), Gopuff (\$ 1.5 billion) and Sierra Space (\$ 1.4 billion); and the Chinese company Regor Therapeutics (\$ 1.5 billion). Raising \$ 900 million from Germany's N26 was the largest deal in Europe this quarter. Many industries have attracted considerable interest from venture capitalists, including financial technology, B2B services, healthcare technology, cybersecurity, and advanced manufacturing (Venture Pulse Q4 2021: Global Analysis of Venture Funding, 2021).

In Ukraine, there is also investor interest and growth in investment in innovative projects and industries. That is, the development of startups is quite rapid and efficient. This means that Ukraine is taking great steps towards great success in economic development.

In addition, the development of new business models and galloping technological progress have left their mark on the activities of venture funds around the world, including in Ukraine. This trend will undoubtedly be noticeable in the coming years. The latest technologies, artificial intelligence and robotics are those industries that will continue to gain momentum in attracting venture capital around the world. In addition, new startups with global reach should be expected.

7. Conclusion

Venture capital is a specific form of financing the development of enterprises. Studies on its nature, forms, mechanism and development trends on the world stage indicate its originality in comparison with other traditional sources of attracting investors. Overcoming a number of problematic issues related to the state's investment climate, its tax policy on the way to increasing the participation of venture investors in the activities of domestic innovative enterprises will make the economic development of the state more innovative and efficient. Particular attention should be paid to the problem of evaluating startups at the stage of attracting venture capitalists, as it predicts the participation or non-participation of venture capitalists in the development of certain innovations and new technologies necessary not only for individual development but also for innovation and economic growth. in general. Possession of various methods of evaluating venture projects and presenting the results to the investor is a unique competitive advantage of an innovative enterprise in the venture capital market, which increases the involvement of venture capital in the business and the economy as a whole.

The most stable relationship (0,575144054) is observed between the country's innovative development and investment freedom. This suggests that the favorable investment climate in the country contributes to its further innovative development. The correlation between innovative development and the volume of venture financing of innovative enterprises (0,420215111), as well as between innovations and features of tax policy in the country (0,348207999) is somewhat smaller, but still significant. Equally important is the state's participation in stimulating venture capital through tax instruments and establishing favorable investment policies. Therefore, all these factors should be taken into account for the further innovative development of the country's economy as a whole.

References:

1. PitchBook (2021), «Annual Fintech Report», [Online], available at: <https://pitchbook.com/news/reports/2021-annual-fintech-report>
2. Bottazzi, L. and Da Rin, M. (2002), «Venture Capital in Europe and the Financing of European Innovative Firms», *Economic Policy*, No. 17 (1), pp. 229–269.
3. Bottazzi, L., Da Rin, M. and Hellmann, T. (2008), «Who Are the Active Investors? Evidence from Venture Capital», *Journal of Financial Economics*, No. 89 (3), pp. 488–512.
4. Bottazzi, L., Da Rin, M. and Hellmann, T. (2009), «What Role of Legal Systems in Financial Intermediation? Theory and evidence», *Journal of Financial Intermediation*, No. 18 (3), pp. 559–598.
5. Cumming, D. (2010), *Venture Capital: Investment Strategies, Structures and Policies*, John Wiley & Sons, New Jersey.
6. WIPO (2021), *Global Innovation Index*, [Online], available at: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2021.pdf
7. Gorman, M. and Sahlman, W. (1989), «What do Venture Capitalists Do?», *Journal of Business Venturing*, No. 4 (2), pp. 231–248.
8. Gompers, P. (1994), «The Rise and Fall of Venture Capital», *Business and Economic History*, No. 23 (2), pp. 1–26.
9. Gompers, P. and Lerner, J. (1999), *The Venture Capital Cycle*, Cambridge, MIT Press.
10. International tax competitiveness Index (2021), [Online], available at: <https://files.taxfoundation.org/20211014170634/International-Tax-Competitiveness-Index-2021.pdf>
11. Investment freedom index (2021), Heritage Foundation, [Online], available at: <https://www.heritage.org/index/ranking>
12. Kenney, M. Forthcoming. Agents of Innovation (unpublished manuscript).
13. Kenney, M. and Urs von Burg. (2000), «Institutions and Economies: Creating Silicon Valley», In M. Kenney (Ed.). *Understanding Silicon Valley: Anatomy of an Entrepreneurial Region* (Stanford: Stanford University Press): pp. 219–240.
14. Kenney, M. and Urs von Burg (1999), «Technology and Path Dependence: The Divergence between Silicon Valley and Route 128», *Industrial and Corporate Change*, No. 8 (1), pp. 67–103.
15. Lerner, J. (1995), «Venture Capitalists and the Oversight of Private Firms», *Journal of Finance*, No. 50 (1), pp. 301–318.
16. Lerner, J., Strömberg, P. and Sørensen, M. (2009), *Private Equity and Long-Run Investment: The Case of Innovation*, Harvard Business School, Working Paper 09-075.
17. Park, H.D. and Steensma, H.K. (2012), «When Does Corporate Capital Add Value for New Ventures», *Strategic Management Journal*, Vol. 33, Issue 1.
18. Sørensen, M. (2007), «How Smart is Smart Money: An Empirical Two-Sided Matching Model of Venture Capital», *Journal of Finance*, No. 62 (6), pp. 2725–2762.
19. *The VC Survey 2021: Market Sentiment* (2021), [Online], available at: <https://www.investeurope.eu/research/activity-data/>
20. Venture Pulse Q4 2021: Global analysis of venture funding (2021), [Online], available at: <https://assets.kpmg/content/dam/kpmg/xx/pdf/2022/01/venture-pulse-q4-2021.pdf>