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# SYSTEMIC FEATURES OF INNOVATION DEVELOPMENT IN THE USA

## ABSTRACT

Due to the importance of innovations as a factor for economic growth and competitiveness, ensuring their sustainable development is a universal task for the country. The most intense race for innovation is observed among countries striving for global dominance. This article is dedicated to the study of the specific features of innovation development in the United States, where innovative potential has become one of the cornerstones of their economic strategy and a key driver of their success. The United States has significant distinctions from other countries in terms of culture, institutions, economic organizations, economic regulation, etc., which together create the basic conditions for innovation and require consideration. The focus on innovation development in the United States is driven by intensified competition with other global players, particularly from China.

The main goal of the research is to summarize and characterize the systemic features of innovation development in the United States, as well as to identify the key factors intensifying innovation productivity in the country.

The study of the systemic features of innovation development in the United States covered the analysis of 1) civilizational factors; 2) institutional system; 3) economic system; 4) innovation system; 5) state innovation policy. The main factors intensifying innovation productivity in the United States were identified as the combination of entrepreneurial and large-scale capitalism, venture capital investment, and territorial agglomerations of innovative structures. The need to consider the peculiarities of innovation generation in the military sector, universities, and non-profit organizations has been justified. The strength of the United States innovation system has been statistically demonstrated, however, the increasing competition in science and innovation from China has been confirmed. This has led to the intensification and change in the type of state innovation policy in the United States, with a focus on targeted support for innovation in industry in the context of the green transition.

**Keywords:** United States, innovations, civilizational factors, institutions, economic system, capitalism, national innovation system, state innovation policy

**JEL Classification:** O38, O51, P10

## INTRODUCTION

Innovation as a process of transforming ideas into new products and technologies is the most crucial factor for the growth and competitiveness of national economies. Therefore, ensuring sustainable innovation development has become a universal task for all countries, especially considering the rapid technological changes observed today. At the same time, there exist deep civilizational, institutional, and economic differences among countries in the development of innovations, the building of national innovation systems (in singular and plural forms - NIS), and the implementation of state innovation policy, which give rise to specific approaches to innovation productivity. The United States is a vivid example to demonstrate such systemic features of innovation development, as their high innovation capability is one of the foundations of their global leadership, enabling them to maintain power, sustainable growth, and high positions in the world economy. The United States is the world's largest investor in R&D and technology, has a robust high-tech manufacturing sector, and sets global innovation trends in most sectors of the economy. Therefore, the study of the fundamental national features of the

United States, which have become the basis for their global innovation leadership and serve as a benchmark for all market economy countries, is a relevant scientific and practical task. Attention to this is growing not only due to the desire to use the experience or collaborate with the United States but also due to the intensification of global players' competition in the field of innovation. In recent years, this has become more relevant to the competition between the United States and China, which is increasingly focused on technological innovation and is taking on the character of a race. These countries have deep political and economic differences and are developing their own approaches to innovation productivity, which should be the subject of international comparisons.

## LITERATURE REVIEW

In addition to fundamental works on innovation theory, the paper of J. Kornai, who compared capitalist and socialist systems and demonstrated that a focus on innovation is a natural property of capitalism, became fundamental for studying the systemic features of innovation development in the United States [19]. In the history of the United States, the significance of innovation as a factor of economic growth [13; 24] and development [14] is well traced. A special significance for growth has been gained by technological progress, which today is focused on the development of a green, low-carbon economy and alternative energy. In the modern economy, a corresponding new trajectory of growth and development emerges, the successful implementation of which directly depends on innovations, becoming a factor determining economic prospects" [15; 33]. This requires a targeted state policy to support innovations, which in the United States was formed in the 1980s and is now being revitalized and undergoing new qualitative changes [11].

The progress of technology, focusing on the development of a green, low-carbon economy and alternative energy, has acquired special structural significance for growth. In the modern economy, a corresponding new trajectory of growth and development is emerging, the successful realization of which depends directly on innovations, which have become a determining factor for economic prospects [10]. Therefore, in the United States, attention has increased towards the modernization and improvement of the competitiveness level of high-tech industries, the transition to the new generation of production models in the context of the modern industrial revolution (Industry 4.0) [16], and the development of high-tech clusters, which are the main regional innovation centers [39]. The transformation of the economy, associated with the green transition and competition from China, has necessitated a reassessment of the innovation strategy in the United States and a greater focus on the development of innovations.

In general, the United States possesses one of the largest and most productive NIS, which is formed based on fundamental economic, political, and social institutions, culture, specific institutional and business environment, closely linked with the financial system, labor market, stock market, and economic regulatory system [18]. However, despite its strengths and high performance, the innovation system of the United States has certain weaknesses related to individual components, it is not devoid of problems and drawbacks, which reduce its ability to generate innovations and address a wide range of issues, including the stimulation of R&D, investments, improvement of education, protection of patents and copyrights, regulation of skilled migration, etc. These issues have arisen primarily due to changes in the world and require the government to be involved in strengthening the basic conditions for innovation development. The state innovation policy in the United States is becoming more diversified, focusing on the support of key technological areas: decarbonization of production, the development of alternative energy, and nanotechnology [9; 12; 28]. Considering the global competitive challenges facing the United States, the discussion about the improvement of individual elements of the NIS has intensified in recent years, in particular, the business environment, the regulatory framework, and the innovation policy, which require a systematic approach to innovation development [3].

The rivalry between China and the United States is intensifying, evidenced by trade and technological "wars" [30; 32]. Competition from China in advanced technology sectors is compelling the United States to ramp up innovation incentives to maintain global leadership [7]. To meet the demands of this new global competition, the United States is primarily focusing on advanced green, energy, and digital technology sectors [6; 13; 23]. The current strategies of the United States and China indicate that the innovation race between these countries will intensify, be long-term in nature, and have unpredictable consequences for the global economy. This is accompanied by an increase in specific protectionism and industrial policies, techno-nationalism, and races to support industry. In other words, there is competition not just between enterprises, but between entire political and economic systems, which also requires taking into account the specificity of national approaches to innovation development.

The review of recent research, despite its limitations, demonstrates the importance of studying the systemic features of innovation development in the United States in terms of refining innovation theory, accumulating experience in building

innovative systems and implementing state innovation policies. Furthermore, such research is necessary for comparing the basic conditions for innovation generation existing in the U.S., the EU, China, and other leading countries worldwide.

## AIMS AND OBJECTIVES

The primary aim of the research is to summarize and characterize the systemic features of innovation development in the United States and to identify the key factors intensifying innovative productivity in this country. In this case, the systemic approach at the level of the national economy encompasses the consideration of the specificities of:

- civilizational factors influencing the propensity of the population and businesses toward innovation;
- assessment of the institutional system that creates the appropriate regulatory conditions;
- economic system, which, being capitalist, has a natural inclination toward innovation;
- innovation system, which has a nationally specific configuration and specific factors of innovative productivity;
- state innovation policy, which has undergone significant qualitative changes in recent years.

These points define the research objectives.

## METHODS

In addition to general scientific research methods (induction, deduction, analysis, synthesis, analogy, generalization, etc.), the methodological framework of the research includes the theory of capitalism, innovation theory, entrepreneurship theory, innovative enterprise theory, the concept of NIS, the theory of international economic relations, and world politics. Achieving the aim of the research necessitated the application of a historical approach, civilizational and institutional analysis, as well as the consideration of the nature of technological changes giving rise to economic transformations. The development of innovation in this article is not limited to models of their generation at the level of markets or the organization of innovation processes within companies but is considered at the national level. Therefore, the study of the conditions for innovation development in the United States requires an analysis of the national strategy of economic development, consideration of the external course for maintaining global leadership, statistical analysis of NIS parameters, and the specifics of state innovation policy. The materials used in the research cover strategies and other doctrinal documents of the United States; official information from the government authorities of this country; data from official statistics; analytical publications from international organizations; recent scientific research from leading scholars worldwide; international rankings.

## RESULTS

The transformation of the United States into a leading global power in the 20th century was largely based on innovation generation [19]. In the early 21st century, the United States remains a global superpower and strives to maintain global dominance through its advanced positions in technology and functioning innovative economy. The innovation industry in the United States began to actively develop after the World War II. In the 1950s and 1960s, the Departments of Defense and Intelligence aided the development of science in the university sector by funding R&D, contributing to the establishment of Silicon Valley (the first microwave devices and semiconductor components were used for military purposes). In the 1970s, with government support, the system of venture investment in innovation in the entrepreneurial sector began to actively develop. In the 1970s and 1980s, Japan emerged as a strong competitor to the United States in high-tech industries, necessitating the formulation of an innovation policy. This was marked by the adoption of acts such as Small Business Innovation Research, Small Business Technology Transfer, Small Business Innovation Development Act, The Bayh-Dole Act, Economic Tax Recovery Act, National Cooperative Research Act, Technology Transfer Act, Technology Innovation Act, the Omnibus Trade and Competitiveness Act, etc. To implement these acts, special federal agencies, programs, and institutes were created, and new rules for the protection of intellectual property were introduced, stimulating innovative activities in businesses, especially small businesses and universities. The innovation policy included direct (funding for R&D, technology, education; provision of business and technical services; venture financing; subsidies, etc.) and indirect (various preferential loans and credit guarantees for businesses conducting R&D; protection of intellectual property, etc.) methods, which significantly stimulated business activity and investment.

It should be noted that since the 1970s-1980s, the financial sector in the United States has been liberalized, and credit-monetary factors have been widely used to stimulate demand and investment, accompanying the rise of the emerging

computer and telecommunications industry. This provided a powerful impetus for innovation in many sectors of the economy. In the 1990s, the so-called "New Economy" emerged, representing economic activity based on the use of computer and communication technologies, which was greatly influenced by government investments and the role of government research institutions and large corporations. The deployment of the "New Economy" was accompanied by intensive innovations related to the improvement and expansion of the range of computer and telecommunications-related products, as well as the development of markets for corresponding services. The scale of outsourcing increased, allowing companies to optimize costs and focus on the development and promotion of innovations. Improving access to capital through venture funding and lowering market entry barriers provided a new impetus for the development of small innovative businesses, which began actively generating innovations. Simultaneously, deindustrialization occurred, linked to significant foreign investments, technology transfer, and the relocation of final stages of production primarily to Asian countries, providing access to cheaper resources and new markets, contributing to global expansion.

Today, the global dominance of the United States in high-tech sectors persists, with a focus on the most profitable areas with a high level of technological transformation. In the sphere of high technology and knowledge-intensive services, the United States has primarily concentrated on R&D, product and equipment development (e.g., fabless manufacturing/companies), and marketing, which yield the highest profit margins, and control of global production chains and distribution, encompassing digital platforms. The advent of the post-industrial era provided advantages in the global markets as the balance shifted from manufacturing towards the "knowledge economy" and innovation, allowing for strengthened global expansion. It is important to note that the United States has undergone a historical path from a production-based economy, subsequently transitioning to an economy of abundance (excess supply), and then moving to a stage of consumption, actively developing the service sector, which generated corresponding impulses for innovation development. This particularly pertains to the expansion of market capacity alongside the increase in the quality of requests. Stimulating demand primarily through credit-monetary methods (in the context of producing the "senior" world currency) transformed the United States into a vast market for the finest goods from around the world. On the other hand, with the collapse of the socialist system, the United States, as a hegemon, established its global order, promoting democracy and liberal ideology, and transforming into a leader of global progress. This facilitated the popularization and exportation of American culture and lifestyle, embedding their localization in various countries, setting trends, and largely creating external demand for American innovations (produced not only in the United States). The transformation into a significant importer and exporter of goods and services, an investor, and an innovative leader enabled the United States to advance its technological standards and influence international regulatory systems, setting its own "rules of the game". This fostered conditions for even greater advancement of innovations, particularly in the realm of technology transfer. The United States is largely oriented not only toward the global diffusion of innovations but also toward leveraging external resources for their creation, amalgamating top companies, researchers, and experts into a global innovation network, primarily generating ideas and knowledge. Consequently, innovations have become a cornerstone of economic prosperity and global expansion, complementing the blend of credit-monetary instruments and globalization.

Today, the United States remains the largest importer of goods and services, one of the largest exporters, a leading investor, and the world's financial hub, encompassing a significant portion of economic activity. The United States possesses the world's most robust stock market and financial system, having established a global superpower of assets with numerous major multinational corporations and financial structures. However, this article does not aim to cover all the components of the global expansion of the United States, which certainly deserves attention. Nor does it assess the threats of losing the country's global economic and technological leadership under the pressure of China, which requires specific research. Let us focus specifically on the systemic factors that have become sources and foundations for success in the field of innovation.

**1. Civilizational factors.** It is widely recognized that the economic success of the United States is largely based on its affiliation with Western civilization. The foundation of Western civilization includes freedom of will, rational self-interest, individualism, uniqueness of the individual, recognition of human rights and freedoms, particularly property rights, adherence to the rule of law, and values of development. Western civilization is characterized by an orientation towards existence, pragmatism, a consumerist attitude towards nature, practicality, concreteness, a tendency to change traditions, and an emphasis on improving living conditions and increasing the level of human prosperity, among others. Creativity (the act of creating something new) is attributed to individuals oriented towards innovation, changing the world, activity, initiative, and self-realization. In Western countries, the individual (citizen) rather than the state takes precedence, and the power and functions of the state are limited, with rights granted to individuals at birth, the most fundamental of which are formally guaranteed. Emphasis is placed on the protection of human rights and legal discipline in culture and law, which form the basis of social organization.

In Western civilization, liberalism dominated, giving rise to capitalism and market ideology, forming the corresponding economic worldview, motivation, and the phenomenon of entrepreneurship, the lifestyle of the population, based on the pursuit of prosperity and flourishing, as well as a distinct attitude towards labor (at the intersection of Protestant ethics and economic culture). Within the framework of formal norms and moral constraints, commercial socio-cultural orientations developed, fostering a readiness to compete and take risks for profit, thereby establishing a distinct business environment as the basis of economic relations. Based on these factors, entrepreneurship with an innovative focus emerged. Additionally, the influence of Western values on the improvement of demand (requests) quality cannot be overlooked, particularly against the backdrop of increasing levels of prosperity, which became more oriented towards novelty and the originality of products.

Due to the aforementioned factors, Western civilization has conquered the entire world and, at least for now, continues to dominate in ideological, political, technological, and economic spheres. The West has become the leading force in the current stage of globalization, spreading its values, culture, and way of life, and exerting significant influence on other civilizations (Westernization) and overall global progress. However, the United States has certain distinctions from other countries in Western civilization in terms of ideology, institutions, and mass culture. The United States is a country where different national cultures have mixed and united around the ideas of prosperity and well-being for all, and a focus on maximum achievement in life, which gives rise to the "American Dream" as an ideal of freedom and fulfilment of opportunities. There has also emerged a unique mass culture, which, among other things, is oriented towards creating an "American style" in everything, striving to surpass the best models and achievements in the world. A strong aspect of American society is providing people with the opportunity to independently form their views, conceptions, set goals, and motivate themselves. Key to this is the freedom in aspirations and an orientation toward utilizing all available opportunities. Unique national principles such as "making it on your own", "do what you can", and "do your best" have become distinctive. This is complemented by the positive and constructive thinking inherent in Americans. All of this has had a positive impact on the formation of pro-innovation business orientations and has contributed to widespread innovation, creating external conditions for their acceptance by the population.

**2. Institutional system.** The USA is a democratic country with a liberal political ideology and well-developed institutions of a distributed type, possessing an efficient system of economic regulation. In its design, democracy unites a broad circle of citizens who are interested in effective governance, creates demand for advances, and stimulates personal responsibility and productivity. Generally, democracy is more receptive to change, fosters innovation, and has a positive influence on economic development [36].

The key features of the institutional system in the United States formed on the basis of Western culture, are the protection of property rights, including intellectual property, guaranteeing entrepreneurial rights, and promoting competition. The economic mechanism, as a set of specific institutions in the United States, is designed to ensure clear, transparent, and stable "rules of the game" in the economy, providing businesses with a long-term planning horizon and minimizing non-commercial risks. An important part of the institutional conditions for innovation is the rather unique patent system in the United States, which is utilized as a tool to protect rights and expand opportunities for inventors, and considering its sophistication, as a tool for global expansion in the context of achievements in science and technology. Based on the high quality of institutions and legal discipline, transparency, and the constancy of the rules of the game, a special business environment has been formed in the United States with a high level of trust, leading to the development of sophisticated contractual relationships and market interactions.

Largely due to the quality of its institutions, the United States has become the world's leading economy, having developed a powerful stock market and financial system that are crucial for an innovative economy (as will be demonstrated further). Thanks to the quality and political underpinnings, the institutional system of the United States supports the country's leading global positions described above. In particular, the federal authorities of the United States, along with government and independent agencies, have acquired a role as regulators at the international level, enabling the protection of national economic interests and security problem-solving. Institutional resources and technological leadership enable the establishment of global technological standards, influencing international trade, investments, and the competitive market environment.

In recent years, the United States has experienced a number of acute socio-political challenges that have diminished the quality of the institutional system, including political and ideological division of society, disunity of the political class, political conflicts, bureaucratization, corruption, excessive influence of large capital interests at the expense of public interests, short-term management within political and corporate cycles, and a prevailing orientation of individuals solely towards their own well-being. There is an intensifying debate that the United States is deviating from its origins in providing opportunities for human self-realization.

**3. Economic system.** The major technological innovations of the 20th century, not to mention mass consumer ones, primarily emerged in the United States. This confirms that capitalism as an economic system possesses a number of properties and features that stimulate innovation (Figure 1). The foundation of capitalism and business lies in the pursuit and activity at the edge of efficiency, which is pivotal for the improvement of management, organizational models, the search for better performers, and so forth.

Properties and features of capitalism that boost innovation	
	Private property as the basis of production; a focus on maximizing profit (capital), which is the primary and unchanging interest of the capitalist, defining their motivation, zeal, relentlessness, and productivity, while also generating predictability.
	Decentralized, free entrepreneurship, carrying initiative, has the right to choose directions of activity, bears responsibility, possesses the ability to track market signals and consumer demands, holds knowledge, generates ideas, and implements them.
	Market forces of supply and demand; market coordination, including the interaction between the entrepreneur and consumers to coordinate positions and reach a mutually beneficial, mutually acceptable agreement between the parties (win-win strategy); price mechanism for price optimization.
	The competition that stimulates the search for new ideas, areas with higher capital returns and lower levels of rivalry, the discovery of more efficient ways of resource utilization, including knowledge, and the creation of new business competencies. Against the backdrop of the population's increased prosperity, the significance of non-price competition factors related to the perception of innovation has grown.
	Ensuring that inventors and innovators (including development rights) have the opportunity to receive substantial rewards, which stimulates aspiration and offsets risks.
	The presence of available capital, which seeks applications and can be attracted by businesses for the development and dissemination of innovations, complementing the enterprises' own resources.
	Free experimentation is closely linked to entrepreneurial initiative, risk-taking, an innovative culture, and a specific business climate. It is specifically manifested in small and medium-sized businesses, large companies (which may have small quasi-autonomous divisions), and university entrepreneurship. In the economic culture, a normal attitude towards errors and failures in innovation, as in business as a whole, has been formed.
	Businesses have the opportunity to freely engage in market specialization and collaboration with other entities to combine resources and advantages, independently selecting partners, forms, and models of interaction.
	Free communication and relatively rapid dissemination of market information and ideas, the ability for competitors to freely acquire novelties, which is a prerequisite for the natural diffusion of innovations.

**Figure 1. Properties and characteristics of capitalism that stimulate innovation.** (Sources: compiled by the authors based on [4; 5; 19-22].)

Ensuring the normal manifestation of the aforementioned properties contributes to entrepreneurs' choosing:

- an innovative path of maximizing profit instead of rent-seeking (underpricing resources, overpricing final products, avoiding social costs);
- an innovative entrepreneurial orientation instead of replicative, conservative, or speculative.

The very nature of capitalism in real life is distorted (differences between countries are also evident in this), so for the normal functioning of the economy and the development of innovations, they must be purposefully supported, for example, in terms of the stability of the rules of the game, conditions of competition, minimization of bureaucracy, combating corruption, etc.

Alongside the mentioned properties, several important points should be noted. Firstly, the combination of liberal, market ideology and a number of social settings that have emerged in the history of the United States has led people to orient themselves toward improving their lives, which was also fostered by the Protestant work ethic. Simultaneously, consumer ideals were formed, along with views on the well-being of the population and the prosperity of the nation. By the late 19th and early 20th centuries, based on the internal characteristics of American culture itself, a certain "philosophy of innovation" emerged in the economic culture, which laid the foundation for success in entrepreneurship. This philosophy is characterized by an orientation toward breakthroughs, new opportunities, practicality, creating advantages, uniqueness, originality, progressiveness, and so on, which also shaped a corresponding culture of innovation. There was an emerging interest in inventors and a positive attitude toward entrepreneurial innovators, as well as support for talents. The new was deliberately created for profit and could be seen as a factor of economic efficiency. Moreover, within entrepreneurship itself, innovation gradually came to be understood as a factor for gaining competitive advantages and even as an opportunity for temporarily establishing a monopoly to significantly increase profit levels, as reflected in the well-known works

of Western economists of that era. In the second half of the 20th century, innovative entrepreneurship fully emerged in the United States as a distinct type and productive variety of business [5; 20; 21]. At the national economic level, a dispersed network of entrepreneurs, especially small ones, operates, performing a special innovative function, as reflected in the theory of the innovative firm (enterprise) [5; 20]. In this regard, the dependencies of innovative entrepreneurship on the national features of capitalism, the institutions regulating the use of resources, social conditions, etc., are justified [22].

In addition to the mentioned properties, an important feature of American capitalism is the increase in the standard of living. Unlike the "deficit economy" that existed, for example, in the USSR, the United States developed an "economy of abundance" with an excess supply of goods in terms of volume and variety, along with a developed service sector. Abundance is a direct product and the foundation of capitalism, as it is associated with wealth accumulation (capital growth) and requires an increase in the well-being of the population, which serves as a stimulus for active labor and entrepreneurship, as well as a factor in increasing the demand for innovations. Abundance also fosters competition and raises the level of demand quality, which becomes more demanding, focused on novelty and originality. All of this gives impetus to the development of mass grassroots innovations. The promotion of the "economy of abundance" in the United States also contributed to the export of culture and lifestyle, expanding the markets for innovations abroad. At the same time, this process honed marketing skills and expanded distribution channels. Throughout the 20th century, the United States solidified its status as a country that experiments, generates, and pioneers new ideas (a "laboratory of innovation"), serving as a source of modernization for the world.

One of the prerequisites for the realization of many of the listed properties of capitalism in the United States and their influence on innovation is a well-established stock market and shareholder economy, which in particular create conditions for venture investment. In this context, it is necessary to mention the key characteristics of the shareholder culture in the United States that are directly related to innovation, namely:

- legislative separation of shareholder ownership and managerial activity, strengthening the autonomy of the latter in making business decisions;
- consolidation of officials exercising strategic control with structures of administrators and technical specialists involved in R&D management and production;
- inter- and intra-company organizational training, upskilling of managers;
- granting a share in the share capital to professional managers as a financial incentive.

The financial sector creates important prerequisites for innovation development by enabling the conversion of savings into investments, contributing to the reduction of non-commercial risks, and ensuring the efficient allocation of limited resources, particularly in favor of more profitable innovative sectors. It is crucial that entrepreneurs' access to capital is democratic, based on a differentiated financing system, allowing the use of various sources and the freedom to choose specific ones. Venture capital, which emerged as a phenomenon precisely in the United States, holds significant importance as a type of direct investment in terms of innovation.

As previously mentioned, the development of the innovation economy was accompanied by the emergence of a distinct culture of innovation. This was evident among large companies and in the capital market, and it reached small entrepreneurs and consumers, cultivating a more receptive demand for novelties. The active interaction of innovative enterprises with consumers became an integral part of this culture, for instance within the framework of the "open" innovation model, which today serves as a driving force for innovation development in many markets.

In accordance with the capitalist system, the U.S. economy is "geared" towards innovation, with the leading role of private business and a continuous process of "creative destruction" that fosters improvement, generates new capital, industries, and ultimately ensures economic growth.

In addition to the properties of capitalism and other factors conducive to innovation, it is necessary to mention the current problems in the U.S. economy, some of which are certainly offset by the high level of development, achievements, scale, and government support. Despite its advantages, the market capitalist system does not operate so swiftly and smoothly, harboring internal contradictions and fluctuations. In the context of democracy, alongside all its undeniable advantages, governance becomes more complex, with issues of uncertainty, instability, contradictions, such as changes in ownership structure, and so on. In this context, it is quite natural, considering the key factors of economic growth in recent decades, that a number of important problems and shortcomings have emerged, namely: high levels of indebtedness; excessive growth of the financial sector, its multiple dominance over the real sector; excessive accumulation of financial capital, the presence of financial "bubbles", fictitious assets; large-scale speculation; reduction in the scale of domestic production, and so on. The existing growth model was well suited for the relatively prosperous second half of the 20th century - an era of continuous market expansion. Currently, the economic situation is worse, largely supported artificially, and requires

a profound correction of the financial sector. Moreover, American society is characterized by a low level of motivation for significant changes and strategic competition, especially from China. The excessive use of monetary factors has led to a decline in the effectiveness of the stock market as a mechanism for investment planning and has worsened the managerial thinking of policymakers in terms of stimulating growth, which has become more artificial. The surplus of financial capital has certainly expanded access to capital on the one hand, but on the other hand, it has reduced the competition for it, which has affected the quality of mass-level innovation projects. The over-indebtedness of the economy has naturally led to a decrease in long-term consumer demand and the marginal efficiency of debt utilization by businesses. All of this has a negative impact on the state of the economy and innovation productivity, necessitating profound corrections and new "model" solutions, the emergence of which could lead to an economic reboot and a new wave of innovations.

**4. National innovation system.** The propensity of capitalism towards innovation, along with favorable socio-economic conditions, has contributed to sustainable, dynamic, and large-scale innovation development. In the United States, a powerful NIS has been formed, the main elements of which include: 1) large private technology companies from various sectors, including the military sector; 2) small and medium-sized innovative enterprises; 3) the venture capital market; 4) universities combining research and educational training; 5) a diverse infrastructure supporting innovative enterprises, particularly startups, including business incubators and accelerators, providing various professional services such as consulting, legal, computer, engineering, architectural, and others; 6) a system of budgetary funding for R&D in both the civilian and military sectors. On the government side, there are also independent federal agencies and offices for R&D, both independent (National Science Foundation; National Aeronautics and Space Administration; Environmental Protection Agency Office of Research and Development, etc.) and belonging to various Departments (agriculture, energy, health and human services, etc.).

In overall R&D expenditure, the private sector unequivocally dominates, accounting for 77.34% by performers and 74.22% by financial resources (Table 1).

**Table 1. The U.S. R&D expenditures, by performing sector and source of funds: 2017-2021, USD million. (Source: [25])**

	2017	2018	2019	2020	2021
<b>All performers</b>	553.768	604.372	666.153	716.955	791.873
Business	405.792	445.563	498.175	543.220	612.444
Federal government	52.553	58.356	62.802	64.237	65.207
Nonfederal government	.632	.643	.675	.683	.674
Higher educations	71.114	74.878	78.146	80.842	84.035
Nonprofit organizations	23.678	24.932	26.355	27.973	29.514
<b>All funding sources</b>	553.768	604.372	666.153	716.955	791.873
Business	386.539	426.488	482.227	520.363	587.717
Federal government	122.531	131.220	135.993	147.657	153.323
Nonfederal government	5.076	5.252	5.470	5.670	5.856
Higher educations	19.984	21.227	22.294	23.191	24.055
Nonprofit organizations	19.638	20.184	20.170	20.074	20.922

In the structure of the total federal R&D obligations by performers in 2021 (in millions of constant (financial year 2022) USD) intramural performers (agencies of the Federal Government) account for 35.78%; industry – 28.99%; universities – 21.03%; federally funded research and development centers, government-owned, contractor-operated laboratories – 7.57%, all other – 6.63% [1].

Although the main bulk of innovations in the United States is concentrated in the entrepreneurial sector, the role of the military sector cannot be overlooked. This sector is represented by large private corporations that initiate, finance and develop innovations. Private companies operate in this sector, maintaining special relationships with the government, which sets tasks and priorities, aiming to achieve global technological advantages as established by the Department of Defense.

Accordingly, resources are concentrated in specific directions, and a selection system of performers (prototypes) is in place, performing a specific innovative function and generating competition for securing government contracts. As history



shows, many innovations that originate in the military sector subsequently find profitable use in the civilian sphere. A significant portion (45%) of federal obligations for funding R&D across various Departments and Agencies pertains to defense-related issues (Table 2).

**Table 2. Total R&D funding by Agency (budget authority in millions of constant USD (financial year 2022)).** Note: <sup>1</sup>Request. (Source: [1])

Fiscal Year:	2017	2018	2019	2020	2021	2022	2023 <sup>1</sup>
Total R&D	145,070	160,724	163,799	176,543	163,726	176,962	193,483
Defense	64,757	76,724	78,640	75,400	81,874	78,379	87,245
Percentage, %	44.64	47.74	48.01	42.71	50.01	44.29	45.09
Nondefense	80,313	83,999	85,159	101,143	81,851	98,583	106,237
Percentage, %	55.36	52.26	51.99	57.29	49.99	55.71	54.91

Universities in the United States are powerful and quite specific participants in the innovation system, compared to other countries. They conduct large-scale research and development, patent their innovations, and collaborate with private companies, government agencies, and laboratories, utilizing various technology transfer mechanisms. The country has established sophisticated mechanisms for collaboration between universities and businesses. University research is commercialized through academic entrepreneurship, the creation of spin-offs and spin-outs, cooperation with existing companies, obtaining venture investments, and the establishment of new enterprises. The advantage of the United States is undoubtedly the leading position that national universities hold in global rankings (Table 3).

**Table 3. QS World University Rankings – the United States.** (Source: [29])

University	Rank 2017	Rank 2018	Rank 2019	Rank 2020	Rank 2021	Rank 2022	Rank 2023
Massachusetts Institute of Technology	1	1	1	1	1	1	1
Stanford University	2	2	2	2	2	3	3
Harvard University	3	3	3	3	3	5	5
California Institute of Technology	5	4	4	5	4	6	6
University of Chicago	10	9	9	10	9	10	10

National research laboratories and independent research institutes also make a significant contribution by conducting research and development in various fields. The outcomes of their work can be the subject of technology transfer and commercialization through innovations, including the creation of spin-off companies. Unlike other countries, the United States sees significant involvement in innovation generation from non-profit (non-governmental) organizations that possess significant socio-political influence and financial capabilities. These organizations initiate, fund, and promote innovations primarily aimed at addressing social issues, particularly in the fields of healthcare and environmental protection. It is important to highlight the key factors intensifying innovation productivity in the American economy. Firstly, this involves a combination of entrepreneurial and large-scale corporate capitalism. This implies a combination of the roles of small and large enterprises in innovation development. Their contributions are somewhat different but significant. The specificity of small businesses creates a number of natural advantages in the field of innovation (speed of reorientation, low costs, risk-taking, lack of bureaucracy, high owner motivation, and much more), yet their limited potential does not allow for scaling up the results. On the other hand, large companies possess corresponding attributes that often complicate innovation, but they have significant volumes of resources, production, and marketing capabilities. Therefore, these two types of businesses complement each other in innovation development, taking on different forms. In the United States, there has been a long evolution of coexistence between small and large businesses, and mechanisms for their interaction (mergers, acquisition of developments, venture investments, etc.) have been developed.

Secondly, venture capital investment, primarily focused on new small innovative enterprises (startups), plays one of the leading roles in innovation development, distinguishing the United States from other countries. This is the result of the unique evolution of the capital market in the context of the formation of an innovation economy. Venture capital is complemented by other forms of support for startups (for example, business incubators), which have formed an entire industry with its own characteristics (environment, competition, culture, channels for attracting capital, etc.).

Venture investment amounts have been growing in recent years, except for 2022, which was a natural market correction after the COVID-19 pandemic and other economic changes. Importantly, about half of the venture investments are directed toward companies in the early stages of development, especially the Seed and Start-up stages (Table 4).

**Table 4. The amounts of venture investments in the United States by types of companies at different stages of development.** (Source: [27])

	2017	2018	2019	2020	2021	2022
Total, USD million	70,164.79	116,994.50	114,341.62	126,216.79	254,405.09	190,502.29
Seed	8,010.33	10,929.81	11,449.94	11,861.55	19,511.02	22,794.05
Percentage, %	11.42	9.34	10.01	9.40	7.67	11.97
Start-up and other early stage	30,155.05	41,387.61	44,665.58	44,017.98	87,283.41	71,150.05
Percentage, %	42.98	35.38	39.06	34.87	34.31	37.35
Later stage venture	31,999.41	64,677.08	58,226.09	70,337.27	147,610.66	96,558.19
Percentage, %	45.61	55.28	50.92	55.73	58.02	50.69

Startups have become a widespread form of performing innovative projects and commercializing innovations, and the practice of accelerated initial public offering has become widely adopted. As of 2023, the United States leads in the number of startups (approximately 72.560 registered), involving 15.4% of the total population. The substantial number of projects and new enterprises contributes to the enhancement of quality. The U.S. economy harbors the world's largest technological market, which was valued at USD 1.8 trillion in 2022, and is also home to the highest number of "unicorns", signifying startups valued at USD 1 billion or more. Despite the emergence of large Chinese "unicorns", the number of such companies in the United States has continued to grow: in 2018 - 266; 2019 - 394; 2020 - 495; 2021 - 963; 2022 - 1.170; 2023 - 1.205 [8]. This has resulted from the creation of arguably the most favorable climate for startups in the world, offering early idea validation, diverse support, rapid market access, and funding. According to Startup Genome's assessment, 50% of all locations with the most high-quality startup ecosystems are in the United States (27% in Asia and 17% in Europe) [31]. At the same time, significant technological innovations often cannot be generated or realized in the form of startups. Therefore, the activities of large technology companies remain essential, as well as government support.

Thirdly, in the United States, there are quite specific territorial agglomerations of innovative companies, university centers, and laboratories, where a concentration of knowledge, talent, capital, and activity emerges, creating corresponding synergistic effects supplemented by the provision of professional services. Silicon Valley is the most vivid example of such agglomerations. High-tech clusters also play a significant role, the majority of which combine several dominant technological sectors. The configuration of clusters across regions in the United States varies, but their localization is largely determined by the presence and effectiveness of professional services, the quality of which becomes the subject of innovation support [39].

When considering the specifics of the U.S. innovation system, it is essential to take into account several external factors for the country. With a vast domestic market and a powerful capital market, the United States attracts the best ideas, developments, talents, entrepreneurs, and scientists, as well as free capital from around the world. American companies are heavily oriented toward the use of external resources, even within the country, implemented through the creation of global innovation networks that involve the collaboration of top specialists or performing companies from all over the world. Companies in the U.S., especially transnational ones, actively participate in mergers and acquisitions abroad, develop franchising networks, and sell technologies through various channels. All of this is well aligned under the influence of a strategy of global dominance, which the state continues to implement, creating favorable conditions for business expansion. Therefore, the NIS is institutionally geared towards aggressive and preemptive actions, especially in new industries and politically supported cutting-edge technologies.

At the same time, competition from China is constantly growing, particularly in the field of science. In the past seven years, China has surpassed the United States in terms of the number of scientific and technical journal articles per USD billion PPP GDP (Table 5).

**Table 5. Number of scientific and technical journal articles per USD billion PPP GDP (the USA and China, 2017-2023).** (Source: [37, 38])

	2017	2018	2019	2020	2021	2022	2023
United States	19.8	11.5	10.5	10.7	18.9	19.3	14.1
China	14.1	11.7	11.9	13.8	21.3	23.1	21.9

For a long time, China has significantly outpaced the United States in the overall number of patent grants (direct and PCT national phase entries). The number of Chinese patents in the U.S. is consistently growing, while the dynamics of American patents by origin are ambiguous. In 2021-2022, China started to surpass the USA in patents in force (Table 6).

**Table 6. Main indicators of patenting developments in the USA and China from 2017 to 2021.** (Source: [37])

	2017	2018	2019	2020	2021	2022
<i>Total patent grants (direct and PCT national phase entries), Total count by filing office</i>						
Total (USA)	318,829	307,759	354,430	351,993	327,307	323,410
Total (China)	420,144	432,147	452,804	530,127	695,946	798,347
<i>Total patent grants (direct and PCT national phase entries), Counted by filing office and applicant's origin</i>						
Office – USA / Origin – USA	150,949	144,413	167,115	164,562	149,538	141,938
Office – USA / Origin – China	13,243	14,488	19,209	21,476	23,705	27,100
Office – China / Origin – China	326,970	345,959	360,919	440,691	584,891	695,591
Office – China / Origin – USA	23,673	22,915	23,114	21,084	27,843	25,497
<i>Patents in force, Total count by filing office</i>						
USA	2,984,825	3,063,494	3,131,427	3,348,531	3,327,540	3,343,159
China	2,085,367	2,366,314	2,670,784	3,057,844	3,596,901	4,212,188

The strong points and relatively weak areas of the USA innovation system are reflected in the components of the Global Innovation Index. The United States' unquestionably strong points continue to be "Market sophistication" and "Business sophistication". The country has also seen significant improvements in "Knowledge and technology outputs", but some decline in "Infrastructure" and "Creative outputs" (Table 7). Conversely, China has substantially improved its positions across most components of the GII from 2017 to 2023, demonstrating progress in building its NIS and realizing innovative opportunities. This prompts the United States to intensify its state innovation policy.

**Table 7. Global Innovation Index rankings overall and by innovation pillar: USA and China.** (Source: [38])

	2017	2018	2019	2020	2021	2022	2023
<b>USA</b>							
Institutions	17	13	11	9	12	13	16
Human capital and research	13	21	12	12	11	9	12
Infrastructure	21	24	23	24	23	19	25
Market sophistication	1	1	1	2	2	1	1
Business sophistication	8	8	7	5	2	3	2
Knowledge and technology outputs	7	6	4	3	3	3	2
Creative outputs	10	14	15	11	12	12	12
<b>Overall GII</b>	<b>4</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>3</b>
<b>China</b>							
Institutions	78	70	60	62	61	42	43
Human capital and research	25	23	25	21	21	20	22
Infrastructure	27	29	26	36	24	25	27
Market sophistication	28	25	21	19	16	12	13
Business sophistication	9	9	14	15	13	12	20
Knowledge and technology outputs	4	5	5	7	4	6	6
Creative outputs	26	21	12	12	14	11	14
<b>Overall GII</b>	<b>22</b>	<b>17</b>	<b>14</b>	<b>14</b>	<b>12</b>	<b>11</b>	<b>12</b>

**5. State innovation policy.** Today, experts highlight significant shortcomings in the U.S. government's innovation policy, such as its fragmentation, poor coordination among departments, reduced funding for universities and laboratories, misalignment with current tasks and priorities, and more [3]. Attention to the effectiveness of innovation support is intensifying primarily due to economic challenges, new environmental issues, and competition from China, as evidenced by a series of documents (Meeting the China Challenge: A New American Strategy for Technology Competition, 2020; Taking the Helm: A National Technology Strategy to Meet the China Challenge, 2021) [34; 35]. Therefore, the agenda being formed is comprehensive and related to the transition to sustainable development, the preservation of technological leadership, and the enhancement of competitiveness, which requires historical efforts. This is confirmed by the adoption of a number of laws and strategies in the United States, including [26; 34; 35]: Innovation and National Security (2019), Competing in the Next Economy (2020), Science and Technology Action Plan (2020), Energy Act (2020), Infrastructure Investment and Jobs Act (2021), National Long-Term Climate Strategy (2021), The United States Innovation and Competition Act (2021); Executive Action to Spur Domestic Clean Energy Manufacturing (2022), CHIPS and Science Act (2022), U.S. Innovation to Meet 2050 Climate Goals: Assessing R&D Initial Opportunities (2022), Inflation Reduction Act (2022), U.S. Transportation Decarbonization Blueprint (2023), America COMPETES Act (2022), American Innovation Act (2023), National innovation pathway of the US (2023), etc. This indicates a reassessment of the state's role in innovation development, accompanied by intensification and the emergence of a new type of innovation policy, aimed at purposefully transforming the economic model, production system, structural and social changes through innovation support. These manifestations are summarized in Figure 2.

<b>Manifestations of the new type of state innovation policy in the United States</b>	
	<ul style="list-style-type: none"> <li>• expansion of areas of influence, new tasks for the development of advanced technologies, especially in the field of decarbonization, the green economy, alternative energy; the imperative connection of innovations with the chosen trajectory of transition to sustainable development;</li> </ul>
	<ul style="list-style-type: none"> <li>• focus on the large-scale transformation of the country's technological landscape and the restoration of its industrial base in accordance with technological advancements and competitive challenges;</li> </ul>
	<ul style="list-style-type: none"> <li>• considering the unique nature of innovations, the specificity of the national and global environments in which they arise and advance; using an ecosystem approach to create conditions for innovation development, establishing research, information, and financial infrastructure;</li> </ul>
	<ul style="list-style-type: none"> <li>• strengthening proactiveness and the "entrepreneurial" role of the state, complementing the "missionary" role in supporting fundamental science;</li> </ul>
	<ul style="list-style-type: none"> <li>• the activation of government partnerships with the scientific community, businesses, nonprofit organizations, non-federal governments focused on innovation development;</li> </ul>
	<ul style="list-style-type: none"> <li>• focus on inclusive innovations, combining scientific and technological achievements with the resolution of economic and social problems, the development of society and human potential;</li> </ul>
	<ul style="list-style-type: none"> <li>• combination of the "top-down" principle (selection and support of companies) and the "bottom-up" approach (creating incentives for companies); combining sectoral and horizontal approaches, employing direct support methods in industry;</li> </ul>
	<ul style="list-style-type: none"> <li>• consideration of intersectoral linkages; strengthening interdepartmental coordination and stimulating network integration between businesses, universities, and laboratories based on the development of innovation clusters.</li> </ul>

**Figure 2. Changes in the U.S. government's innovation policy.** (Sources: compiled by the authors based on the materials [26; 34; 35])

Due to the intensified technological competition from China, the United States has effectively returned to industrial policy in a new capacity – industrial-innovation policy, encompassing a wide range of non-defense sectors and fields, notably alternative energy and healthcare, promoting the development of specific technologies. The essence of this policy lies in targeted state intervention in various stages of innovation activity following R&D, aiming to accelerate the implementation and dissemination of innovative technologies in the economy. State intervention is motivated by considerations of national security, addressing climate and social issues, including unemployment. Given the spectrum of issues addressed, sectoral directions, and participants, this industrial-innovation policy is significantly diversified and represents a specific "menu" of measures determined in each particular case [7]. This is a new format for implementing state innovation policy in a market economy that should not distort its fundamentals. Against this backdrop, the protection of intellectual property and public-private partnerships are being strengthened.

The main industrial and technological trends of modern innovation policy in the United States can be outlined as follows:

- advanced manufacturing, the new ecosystem of Industry 4.0 (automation, cognitive computing, smart factories, supply chain mapping, etc.);
- semiconductors, processors;
- advanced digital technologies (Internet of Things, Blockchain, Cloud Computing, Smart Spaces/Cities, Digital Assets, 5G Automated Vehicles, Artificial Intelligence, etc.);
- health science and biotechnology, genetic engineering, telemedicine;
- climate and environment, combating climate change;
- clean energy technologies;
- advanced military technologies, and so forth.

A broader range of directions requires corresponding measures and tools, which can be systematized, for example, through major national initiatives and programs, particularly targeting specific technologies (such as the National Artificial Intelligence Initiative, National Quantum Initiative, Networking and Information Technology Research and Development Program, etc.) or general horizontal directions, such as the development of regional innovation clusters (Regional Technology and Innovation Hubs program, Regional Innovation Engines, Regional Innovation Clusters) or the enhancement of STEM education (for example, the initiative "The Raise the Bar: STEM Excellence for All Students").

An analysis of official materials from U.S. government authorities and programs in the field of science and technology support suggests that the most significant qualitative changes in innovation support measures and tools include:

- increasing the volume of federal funding for R&D, particularly long-term funding that encompasses university research and educational initiatives;
- financing research projects conducted by universities and laboratories, the results of which will be commercialized through partnerships with businesses;
- funding projects aimed at job creation and infrastructure development, primarily for clean energy generation;
- providing tax incentives to businesses (including with regard to the income of American multinational corporations earned abroad) for investing in R&D, including academic research, and the related infrastructure;
- creating financial incentives for businesses through government procurement with flexible contracting mechanisms;
- subsidizing small and medium-sized start-up enterprises in the field of innovation;
- tax benefits for consumers and businesses in specific areas, such as green technologies [7; 13; 34; 35].

The use of direct support measures is complemented by actions to restrict competition from China, such as controlling the export of critical technologies (sanctions, prohibiting the transfer of intellectual property and technology, supply of chips, software, and technologies for their development and production), and investment restrictions for Chinese companies with "sensitive" technologies [30; 32; 34; 35], thereby changing the quality of trade and investment regulation policy.

## DISCUSSION

In the coming years, the global innovation leadership of the United States will be maintained, as in the existing economic paradigm, the country has the most suitable systemic features for innovation development, which are sustainable and create an effective mechanism in the form of a NIS. The conducted research provides a more substantiated examination of the systemic features of innovation development in the United States, complementing the work of J. Kornai [19] and laying the groundwork for comparison with China. This research, delving deeper into American capitalism through innovation, also allows for the subsequent assessment of corresponding variations in the capitalism of other countries, such as those in the European Union, the Republic of Korea, or Japan [22]. Considering the significance of innovation, studying the systemic conditions for innovation generation enables a greater understanding of how contemporary capitalism facilitates progress [15] and economic growth [24] within a chosen trajectory [33].

The greatest contribution of this research lies in the concept of the NIS, the formation of which occurs within the framework of nationally specific civilizational, institutional, and economic conditions that are of fundamental importance [3]. This will enable the creation of a broader context for comparing the innovation systems of different countries, complementing the narrow-focused analysis [18]. Based on the nature of innovations, a broader analysis of historical circumstances, the combination of civilizational, institutional, political, social, and economic conditions that determine innovation performance

in a particular country seems to be necessary. For example, this pertains to the specifics of the capitalist model in a particular country, which may not foster an orientation of the economy towards innovation. Similarly, an analysis of the basic conditions for the formation and implementation of state innovation policy, which is the manifestation of more systemic factors, is necessary [7; 11; 13].

## CONCLUSIONS

The development of innovation in different countries exhibits a predictable national specificity that determines the origins of innovation performance. The systemic characteristics of the innovation development process in the United States include:

- civilizational factors that influence the population and businesses' inclination towards innovation;
- an institutional system that implements a liberal market ideology and provides clear "rules of the game", ensuring long-term planning horizons and reducing risks;
- an economic system in which the inherent properties of capitalism that stimulate innovation are manifested, fostering a unique innovation culture, a developed financial system, a stock market, and more;
- an innovation system that brings together major technological companies, small and medium businesses, leading universities worldwide, the venture capital market, and startup support infrastructure.

The main factors intensifying innovation performance in the United States include the combination of entrepreneurial and large-firm capitalism, venture investment, territorial agglomerations of innovative structures, and high-tech clusters. Key sources of innovation in the United States are the military sector, universities, and non-profit organizations, all of which contribute significantly to the national specificity of innovation activities. The U.S. innovation system remains immensely powerful in scale, although at times its parameters may deteriorate. Meanwhile, China continues to expand its indicators of scientific activity and innovative capabilities. Considering the new challenges associated with solving economic and environmental problems and competitive pressure from China, the United States is intensifying its state innovation policy, which is taking on a transformative character, focusing on green transition, breakthrough innovations, and increasingly employing direct methods to support innovation activities in the industry. The identification of the systemic features of innovation development in the United States complements the theory of innovation and the concept of the NIS, enabling a more comprehensive comparison of the political and economic systems between the United States and other global leaders in the field of innovation. Future research will be directed towards this objective.

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## ADDITIONAL INFORMATION

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## СИСТЕМНІ ОСОБЛИВОСТІ РОЗВИТКУ ІННОВАЦІЙ У США

Через важливість інновацій як фактора зростання й конкурентоспроможності економіки забезпечення їх сталого розвитку є універсальним завданням для країн. Найбільш інтенсивні перегони щодо інновацій спостерігаються між країнами, які прагнуть світового домінування. Стаття присвячена дослідженню особливостей розвитку інновацій у США, для яких інноваційна спроможність стала однією з основ успішності й центральною опорою їхньої економічної стратегії. США мають істотні відмінності від інших країн у культурі, інститутах, економічній організації, регулюванні економіки тощо, що в сукупності створює базові умови для інновацій і потребує врахування. Увага до розвитку інновацій у США зумовлена посиленням конкуренції з іншими глобальними гравцями, особливо з Китаєм.

Головна мета дослідження: узагальнити й охарактеризувати системні особливості розвитку інновацій у США, виокремити головні фактори інтенсифікації інноваційної продуктивності в цій країні.

Дослідження системних особливостей розвитку інновацій у США охопило аналіз: 1) цивілізаційних факторів; 2) інституціональної системи; 3) економічної системи; 4) інноваційної системи; 5) державної інноваційної політики. Визначено головні фактори інтенсифікації інноваційної продуктивності в США, а саме: поєднання підприємницького з великофірмовим капіталізмом, венчурне інвестування та територіальні агломерації інноваційних структур. Обґрунтовано необхідність врахування особливостей генерування інновацій у військовому секторі, університетах та неприбуткових організаціях. Статистично продемонстровано потужність інноваційної системи США, однак також підтверджено наростання конкуренції в науці та інноваціях із боку Китаю. Це викликало активізацію та зміну типу державної інноваційної політики в США, її фокусування на цілеспрямованій підтримці інновацій у промисловості в контексті «зеленого переходу».

**Ключові слова:** США, інновації, цивілізаційні фактори, інститути, економічна система, капіталізм, національна інноваційна система, державна інноваційна політика

**JEL Класифікація:** O38, O51, P10