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Financial Stability and Innovation: Interconnection and Development Prospects

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Abstract: The development of the modern sphere of technologies ensures the active implementation of various types of innovations in the activities of contemporary companies. If innovations are rationally planned, they can positively impact the financial stability of businesses and the economy as a whole. At the same time, Ukrainian innovation activity has a vast unrealised potential, which can be realised under more favourable external conditions and high-quality planning of the specifics of innovation implementation. The purpose of the study is to summarise approaches to determining the relationship between innovation and the financial stability of modern business. This systematic review follows PRISMA guidelines to analyse the relationship between financial stability and innovation. The search for publications was done using databases including Web of Science, Scopus, and others. Articles published between 2008 and 2023 were selected based on relevance and quality criteria. The final analysis included 34 peer-reviewed articles that met the established criteria. The study found that the global innovation market is actively developing. Meanwhile, due to unfavourable environmental conditions, Ukrainian enterprises do not realise their full innovation potential. The study also identifies the tasks that can be solved by innovative tools, provided they are implemented in business activities. It is determined that applying digital marketing tools and using social networks to promote products allow for the expansion of the audience, which can positively impact the development of the financial stability system. Working with data, planning, and processing data using the latest technologies can also positively impact financial stability. A separate link is the optimisation of business processes (financial, production, procurement, etc.) using the latest information management tools (artificial intelligence, big data, cloud technologies), which can improve the information component of financial stability.

Keywords: financial technologies, investment in innovation, economic growth, risk management, digitalisation of finance, startups.

Introduction

An important aspect of any economy is financial stability, which is the ability of the financial system to withstand external shocks and maintain its core functions. The global financial crisis of 2008 and the pandemic of 2020 highlighted the importance of financial stability (Tsolakidis et al., 2020; Yurynets & Yurynets, 2022a), and since then, policymakers in developed countries have focused on promoting financial stability through financial sector regulation. However, in recent years, scholars have paid increasing attention to the introduction of various financial innovations to ensure financial stability at the state and corporate levels.

It is worth emphasising that financial stability is vital for economic growth and development. When the financial system is stable, it facilitates investment, encourages savings and reduces the risk of financial crises. The lack of consistency in the introduction of financial sector innovations is one of the causes of economic instability, financial crises, and social unrest (Aditi et al., 2023; Fan et al., 2022). Financial stability is affected by several key factors, including macroeconomic conditions, financial innovation and regulatory policies, and new financial products and services can also affect financial stability (Abbasi et al., 2022; Cui et al., 2020; De et al., 2020). While financial innovation has the potential to benefit consumers and businesses, it can also create new risks that can affect the stability of the financial system. Financial sector innovation policy plays a crucial role in promoting financial stability by setting standards for monitoring compliance and enforcing rules for financial innovation.

Regulation of financial innovation is an important tool in promoting financial stability. Regulatory policies help reduce risks, prevent financial crises, and protect consumers and businesses (Denysenko & Yurynets, 2022). Capital requirements ensure that financial institutions have sufficient capital to absorb losses in the event of a crisis (Kanake et al., 2020; Martynenko et al., 2023). Liquidity standards require that financial institutions have sufficient liquid assets to meet short-term liabilities.

Therefore, financial stability is vital for economic growth and development, and regulatory policy plays a crucial role in ensuring it. By setting standards for innovation in the financial sector, monitoring compliance and enforcing rules, it is possible to reduce risks, prevent financial crises and protect consumers and businesses, thus ensuring financial stability in the long run.

Research Problem

In the world of finance, innovation plays a key role in shaping the future of business and public finance and making traditional processes more efficient and accessible. The rapid development of research and technology is driving new approaches to ensure financial stability. A study of the concept of financial stability allows us to identify such features as solvency in meeting financial obligations, adherence to the optimal capital structure, positive profit generation, stable cash inflow, and a low level of economic and financial risks in business activities. Accordingly, if innovations relate to a particular area they also have a positive impact on financial stability. However, even taking into account the relevance of the issue of introducing innovations into business financial activities, there are still gaps in the scientific understanding of certain aspects of introducing innovations into the system of ensuring financial stability. In particular, there is no consensus in scientific sources on how to define business innovation. Also, scholars do not agree on the specifics of the process of introducing innovations in the business environment in general and in the financial sector in particular. Accordingly, in order to solve the scientific problem of introducing innovations in the field of financial sustainability, it is necessary to determine the nature and scope of innovation activity of modern business; to specify the key tasks that allow to allocate innovative instruments when they are introduced into business activities, as well as to identify the main directions of ensuring financial stability through the introduction of innovations for modern business.

Research Focus

One of the main areas of increasing the financial sustainability of the company in modern conditions can be considered the possibility of effective development and implementation of innovations at different levels of activity. The development of innovation planning in the digital economy certainly has a certain impact on both the process of ensuring financial sustainability and the choice of methods and management tools in general. It should be noted that in the context of digitalisation, a prerequisite for the effective functioning of a business is the availability of a well-developed and well-founded strategic plan aimed at ensuring the development of the organisation in the future with the introduction of innovations aimed at improving business performance.

Accordingly, the study focuses on determining the prospects for applying innovations in the field of ensuring the financial stability of modern business.

Research Aim and Research Questions

Given the significant relevance of the chosen research topic, its purpose can be defined as a generalisation of approaches to determining the relationship between innovation and financial stability of modern business.

To achieve this goal, a number of urgent tasks need to be addressed, including:

to determine the scale of innovation activity of modern business in the world and in Ukraine;

outline key tasks that allow you to identify innovative tools for their implementation in business activities;

to specify the areas of ensuring financial stability through the introduction of innovations.

The solution of the entire set of tasks will allow us to reveal the topics and get a result that meets the goal.

Literature Review

The modern financial sector is developing rapidly and is actively focusing on the introduction of innovative technologies. However, how exactly innovations should be implemented, what they should be aimed at, what tasks they will allow to solve can be determined solely on the basis of the analysis of modern literature, which will allow to assess the experience of leading scientists from around the world. Accordingly, to begin the study, it is necessary to conduct a literature review that will allow us to determine the essence of business innovation and the opportunities that they offer in the context of financial development.

A few decades ago, the concept of digitalisation of economic processes was somewhat vague, and its use in business management was uncertain and unclear in terms of efficiency and necessity. This applied to both the individual stages of building a development strategy and the complexity of ensuring financial stability. The use of innovative digital devices and software systems has become indispensable in planning activities in large companies, forecasting activities and choosing a strategic direction for the stable development of the enterprise (Ilmudeen et al., 2021; Salah & Alzghoul, 2024).

Given the complex nature of the concept of innovation, it is worth noting that there is no sufficiently clear and unambiguous definition of this term in a scientific literature. In conducting a comparative analysis of existing approaches to the definition of business innovation, we note that some researchers consider it appropriate to apply two approaches to this concept.

1. An updated approach based on specifying the specifics of the goods and services produced - innovations are primarily aimed at the introduction of digital technologies and are characterised by major transformations in business is based on the introduction of the latest digital management and production tools (Bellavitis et al., 2020; Davydiuk, 2023; Denysenko et al., 2023a).

2. The classical approach considers innovations as any new technologies in the field of production or management that can improve the production process and bring about positive transformations (Boiarynova et al., 2021; Demianenko et al., 2021; Pantielieieva et al., 2018).

The Organisation for Economic Co-operation and Development defines innovation as the introduction of a new or significantly improved product (good or service), process, new marketing method or new organisational method in business practice, organisation, or workplace. In this regard, the OECD classification identifies several types of innovation: product, process, marketing, and organisational (Wulandari et al., 2023). An innovation is considered to have taken place if it appears on the market or is used in the production process (Hoogendoorn et al., 2020; Santos-Arteaga et al., 2020).

The literature also uses a definition of innovation that is close to the OECD's interpretation of innovation as the result of innovation activity embodied in a new or improved product, process or method. In addition, technological and environmental innovations are distinguished (Sydorenko, 2024). Researchers define innovation as the end result of introducing an innovation to change the object of management and obtain economic, social, environmental, scientific, technical or other effect (Zhavoronkova et al., 2021; Zhu et al., 2020).

The process of creating and implementing an innovation is wave-like, due to the technological mode in society: the change in technological modes determines the change in innovation waves (Chien et al., 2021; Del Bosco et al., 2021).

Areas of innovative development that are relevant in the early 21st century include digitalisation, artificial intelligence, quantum computing, and robotics. According to PitchBook (n.d.), in 2023, the development and implementation of innovations in the field of information technology, healthcare, and energy was rapidly progressing, driven by innovation waves caused by the development of digital technologies.

Innovations that are significantly changing the global economy and society include virtual reality technologies, intelligent systems, blockchain, self-driving cars, and advances in genetic engineering (Saqib & Zarine, 2021). Innovations affect key areas of the economy and society and are being implemented in industry, agriculture, trade, communications and telecommunications, healthcare, transport and logistics, energy, and the financial sector. Economic and social impact of innovations are significant. Innovations help reduce production costs, improve product quality and production volumes, increase life expectancy, improve the quality and standard of living, and solve global problems of society (Fung et al., 2021; Usman & Hammar, 2021; Vives, 2017).

In economic theory, innovation is seen as a driving force of an economic growth. In models of economic growth, innovation and innovation activity are linked to technological progress, a factor that explains economic growth (Choi et al., 2021; Daud et al., 2022; Kihombo et al., 2021). Innovations are a key element of increasing labour and capital productivity, improving process efficiency, and play a key role in the knowledge economy (innovation economy) as they are the result of the creative activity of highly educated workers (da Silva et al., 2021; Denysenko et al., 2023b; Jia et al., 2021). Innovation economy, in which the main role is played by scientific and technological progress and human capital accumulation, is the next stage – an economic formation that changes the industrial economy. The key to implementing innovations is their compliance with the current socio-economic and cultural needs of society.

Thus, as the comparative analysis of existing approaches to the definition of innovation has shown, there is still no consensus on the definition and content of this term, which leads to problems in identifying the elements that make up the term. Therefore, we can agree with the definition that innovation is the process of introducing new ideas, methods, products or services that can improve existing business or create new opportunities for growth and sustainable development. In the financial sector, innovations are aimed, among other things, at ensuring financial stability. And here, first of all, we should mention fintech products and digital business development tools to ensure financial sustainability (Nguyen, 2022; Vučinić, 2020). Financial technology, or fintech, is a field of innovation aimed at improving and optimising financial services, processes, and operations using modern technology (Kim et al., 2024; Priyadarshini & Veeramanju, 2022). Fintech companies aim to change the traditional methods of delivering financial services by making them more convenient, accessible, efficient and innovative. Financial technology plays a key role in the modern economy, enabling innovation and improvement in financial services. However, as with any investment, it is important to carefully analyse the risks and benefits before making a decision to invest in a fintech company.

Accordingly, based on the literature review, it is possible to state that it is important for the modern scientific space to form an understanding of what innovations are. In addition, the literature review made it possible to summarise the views of on the process of innovation and identify the tasks that can be implemented on the basis of decisions to introduce various types of innovations in the financial sector.

Materials and Methods

This study is a systematic review following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines.

Data Collection

The search for relevant literature was conducted across several reputable databases, including Web of Science, Scopus, and JSTOR. The following keywords and their combinations were used to find publications: "Financial Stability," "Innovation," "Financial Innovation," "Technological Innovation," "Financial System Stability," "Economic Growth and Innovation," and "Interconnection of Finance and Innovation." Queries included individual keywords and combinations using the Boolean operators AND,

OR, and NOT. The search used article titles and abstracts to ensure comprehensive coverage of relevant publications.

The review included original research articles, review papers, and empirical studies addressing the interconnection between financial stability and innovation within the global economy. The search focused on scholarly works in English and Ukrainian published between 2008 and 2023.

We excluded publications that did not contain empirical data, brief reviews lacking in-depth analysis, conference abstracts, and articles unrelated to the topic of financial stability and innovation.

Data Analysis

The publication selection process was conducted in several stages:

1. *Initial Search*: After searching using the keywords, all identified publications were uploaded into the EndNote reference management software, where an initial screening based on titles and abstracts was conducted.

2. *Filtering*: Duplicates were removed, and the remaining articles underwent a second screening. Their relevance was assessed based on the full text. Inclusion and exclusion criteria were applied at this stage.

3. *Quality Assessment*: The selected articles were evaluated for methodological quality, relevance to the topic, and significance within the current academic context. Only peer-reviewed articles were considered.

4. *Data Analysis and Synthesis*: The final set of selected articles was analysed to identify key trends and conclusions regarding the relationship between financial stability and innovation.

The search resulted in 273 publications. After removing duplicates and applying the inclusion and exclusion criteria, 34 articles were included in the final analysis.

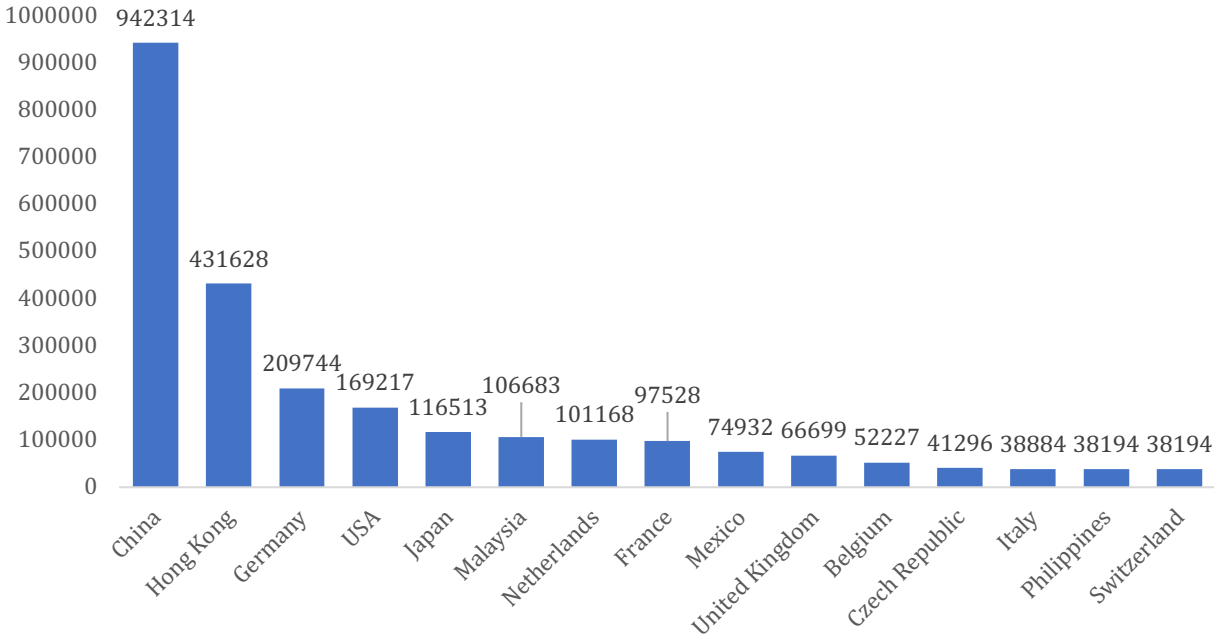
Results

Today, the global scientific and business communities are watching with interest the rapid growth of the innovation market in various fields. According to the Global Innovation Index 2023, the world's most innovative economies in 2023 were Switzerland, Sweden, the United States, the United Kingdom and Singapore, while the group of middle-income countries has deteriorated in the ranking over the past decade.

Attention is also paid to countries exporting innovative technologies – Figure 1.

Figure 1

Countries Exporting Innovative Technologies in 2023 (Billion USD)



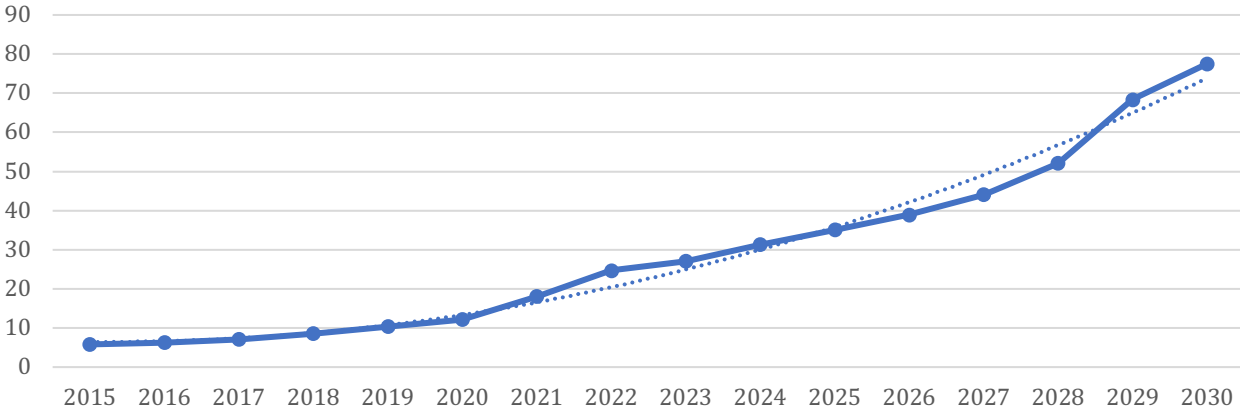
Source: PitchBook (n.d.).

The data presented in Figure 1 indicate that Asian countries, as well as Germany and the United States, are becoming the leading countries in the global economy in terms of innovative development and export of innovative technologies. Accordingly, the experience of these countries can be useful for business representatives in different countries.

In addition to the regional structure, it is also important to analyse trends in the global innovation market. Today, the most widespread area where innovation projects are implemented is in the field of digital technologies, and it is therefore appropriate to provide statistics on the dynamics of innovation volumes for this area (Figure 2).

Figure 2

Dynamics of the Global Market for Innovative Digital Technologies (With a Forecast until 2030), trillion USD



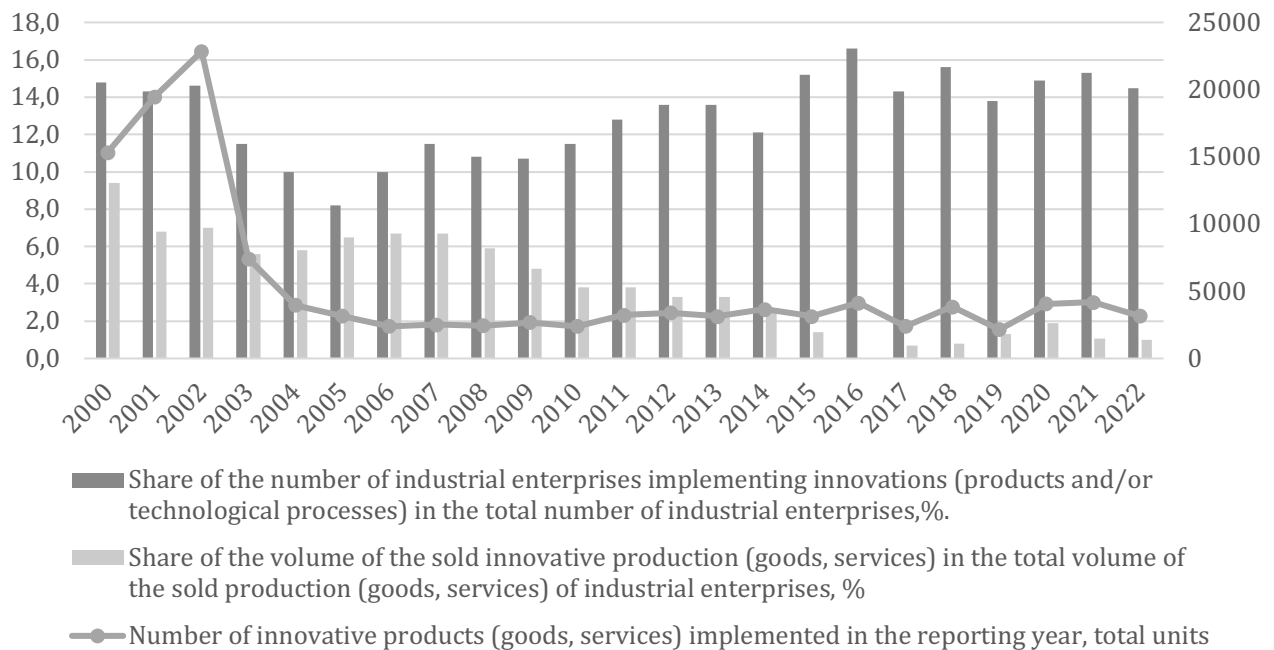
Source: PitchBook (n.d.).

As shown in Fig. 2, the global market for digital innovations is growing steadily, and according to PitchBook (n.d.) experts, it will continue to grow in the near future.

At the same time, global trends are not typical of Ukrainian realities Figure 3.

Figure 3

Number of Enterprises Engaged in Innovation Activities



Source: State Statistics Service of Ukraine (n.d.)

Undoubtedly, the reason for the decline in the innovation activity of Ukrainian enterprises is the unfavourable external environment, military actions, and the lack of a rational system of stimulating innovative business development at the state level. Accordingly, there is an objective need to formulate approaches to creating preconditions for innovative business development with a focus on ensuring financial stability.

The tasks that can be solved by innovative tools, provided they are implemented in business activities, are systematised logically in the form of a table (Table 1).

Table 1

The Tasks that Innovative Tools can Solve if they are Implemented in Business Activities

An innovative tool	A task that can be solved in the context of ensuring financial stability
Application of digital marketing tools	<ol style="list-style-type: none"> Increasing the presence of business in various information spaces ensures brand recognition and the development of the sales system itself, which can be the basis for ensuring the growth of financial stability; Development of social networks for customer acquisition, sales, marketing and other business purposes, which will increase the company's revenue, especially when entering international markets, which is important for Ukrainian companies today; E-commerce will allow to receive large orders at the B2B level, which usually provides an opportunity to scale the business and, if large contracts are available, strengthen financial stability

Working with data, planning, processing data using the latest technologies	<ol style="list-style-type: none"> 1. Data analytics to gain insights into customers or to inform business decisions; 2. Use of financial technologies to support management decision-making.
Using social media to promote products	It will provide opportunities for the development of markets for products and business scaling, which is the key to financial stability
Optimisation of business processes (financial, production, procurement, etc.) using the latest information management tools (artificial intelligence, big data, cloud technologies)	<ol style="list-style-type: none"> 1. Internal productivity tools that improve business processes, such as cloud-based software and corporate social networks, will allow us to use less raw materials and energy and save energy; 2. Providing customers with a choice of different contactless payment options - credit cards and mobile wallets make transactions much easier and faster; 3. Use of artificial intelligence in business planning and workflows, chatbots, automated mailings, and financial process analytics, which opens up new opportunities for the development of the financial stability system

Source: Authors' compilation based on Ferrucci et al. (2021), Jo and Jang (2022), Yurynets and Yurynets (2022b).

As the analysis and systematisation shows, the introduction of innovations is becoming a tool that opens up great opportunities for business. At the same time, the use of not only financial technologies can affect the financial sector, since the financial efficiency of a business depends on a high-quality sales system or data processing (Aladayleh, 2020; Jauhar et al., 2023). Accordingly, it is important to specify the areas of ensuring financial stability through the introduction of innovations, which can be presented in the form of Table 2.

Table 2

Areas of Financial Stability Through Innovation

Scope of innovation	Impact on financial stability
Digital payments and banking services	The use of innovative new payment instruments can simplify financial transactions and improve access to financial services. This can help reduce risks and increase stability at both the business and financial system levels
Financial technologies	The use of financial technologies can significantly facilitate financial work and ensure the protection of financial data for both businesses and their customers
Regulation and supervision	Rational use of regulatory and supervisory tools allows for more efficient risk management, automated compliance and transparency, which significantly increases the effectiveness of financial stability measures
Blockchain and cryptocurrencies	The use of blockchain and cryptocurrencies allows for more efficient investment and, subject to rational diversification of investment resources, will ensure a sufficient level of financial stability
Artificial intelligence and machine learning	The use of artificial intelligence and machine learning can help detect signs of crisis or risks in a company at an early stage, which will allow taking measures to ensure a sufficient level of financial stability
Cybersecurity	Innovations in cybersecurity help protect financial systems from cyber threats, which is one of the key factors in ensuring the financial stability of a business that pays sufficient attention to data protection issues

Source: Compiled by the author based on (Friedman & Ormiston, 2022; Zarrouk et al., 2021; Khaddam et al., 2023).

It is worth emphasising that financial technologies not only automate routine tasks, but also provide companies with access to previously unavailable data to make more informed decisions, which undoubtedly contributes to the growth of financial sustainability of the business.

Innovative technologies automate processes, provide access to up-to-date data for decision-making and improve the efficiency of financial management, which is a fundamental element of achieving and maintaining financial sustainability.

Discussion

The globalisation of innovation market products is driven by an unstable external environment and intense competition, where companies need to be one step ahead of the competition to ensure a sufficient level of financial stability. The standardisation and flexibility of capital flows is driving profound changes in the world of finance. In this regard, it is relevant to talk about the emergence of new technologies that take the form of global strategies for innovative corporate development, global electronic financial networks, global information systems, etc.

The reason for the emergence of modern innovative products is the availability of modern information technologies. Various innovations in financial markets are accompanied by advances in computer technology. Daud et al. (2022) point out that modern financial systems cannot be imagined without a computer. It is this device that helps in trading, it can be used to efficiently keep accounting records, make timely settlements and regulate transactions, collect data in real time, process it even in the largest size, and make decisions based on market conditions and market management. Today, computers are used to model the behaviour of competitors and to support management decision-making. However, it is also worth emphasising that it is not computers themselves that are the main value today, but rather the technologies that can be applied using computer technology. Accordingly, we can only partially agree with the opinion expressed and add that computer technology is now becoming only a tool for implementing certain innovative technologies.

The literature also suggests that financial innovation helps people create new and improved ways to use money because it serves a purpose:

1. Improves access and inclusion (Friedman & Ormiston, 2022). As things change with the advent of new technologies or as customers' needs evolve, innovation ensures that the financial system can continue to serve them well. It provides access to more users through innovations such as online platforms and mobile payment apps. This allows people in more regions to start businesses, buy homes or save for education that would otherwise be impossible. This is a benefit that should be accepted and added to the fact that the openness of technology makes the audience more interested in the providers of such services.

2. Improves the quality of customer service (Jo & Jang, 2022; Kurolov, 2023). Innovations also make financial management easier than it was 20-30 years ago. New apps and services now provide convenient banking transactions that allow you to quickly pay bills, deposit cheques, and transfer funds from anywhere. They help users invest their savings and control their spending with just a few taps. However, not all researchers mention the need for data protection and the need to spend money on cybersecurity compliance.

3. Fuels competition and economic growth (Denysenko et al., 2023a). Of course, financial innovation generates healthy competition. Through banks, insurers, investment platforms, and a host of new start-ups, innovation is driving companies to continually improve the value and quality of services they provide to consumers. Realising that they need to do better or risk losing customers, corporations are passing on the benefits of lower costs and better customer service to the public. This view can certainly be agreed with, as it is competition in attracting innovations that causes their rational use and scaling.

4. Ensures financial sustainability in the long run (Vives, 2017). A well-developed innovation system contributes to broader economic growth. New sources of finance support entrepreneurs and growing small businesses to innovate. Innovation also helps to strengthen the protection of users' confidential information, personal data and assets by testing new technologies and risk management strategies. This is a view that can be fully accepted by scholars, and it is also important for Ukrainian enterprises to balance the costs of innovation, given the high cost of capital and limited resources.

Conclusions and Implications

In the era of rapidly developing scientific and technological progress, the topic of introducing innovations and determining their impact on financial stability is becoming extremely relevant. This is primarily due to the emergence of various new financial instruments in the economic markets. Despite the emergence of theoretically sound financial technologies, their practical application is accompanied by a significant number of problems, in particular, innovations may often be economically unjustified. Accordingly, before introducing innovations, it is necessary to analyse all possible risks and problems arising in the process of their implementation. A detailed study of this topic is required in order to improve various financial characteristics and maintain high rates of development of the national economy. That is why this topic requires such close attention of scientists. In the course of the study, the author analysed statistical material, which indicates that the innovation market is already quite developed, but has prospects for further growth and development.

In the process of analysing the innovations used by businesses today that can have a positive impact on financial stability, the following key areas were identified: the use of digital marketing tools; data management, planning, and data processing using the latest technologies; the use of social media to promote products; and the optimisation of business processes (financial, production, procurement, etc.) using the latest information management tools (artificial intelligence, big data, cloud technologies). If the specifics of innovations in each of these areas are planned rationally, the company has the opportunity to ensure increased financial stability and improve its financial performance.

Suggestions for Future Research

As innovations today are mostly related to the use of digital technologies and data processing, special attention should be paid to data protection and cybersecurity. A proactive stance by businesses to ensure the protection of personal data and compliance with cybersecurity standards will help create a positive company image and increase financial stability in the long term.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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