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Financial security system of agricultural enterprises in Ukraine: Role of banking and insurance services in minimising financial risks

Abstract. The study aimed to assess the impact of banking and insurance services on the financial security of agricultural enterprises in Ukraine. During the research, the methods of comparative analysis and SWOT analysis were used. The mechanisms of financing the agricultural sector, including credit programmes and insurance services, were analysed. The study determined that PrivatBank's loan programme "Agraseason" allowed farmers to receive from 200 thousand to 5 million UAH at 5% per annum, while Oschadbank provided loans to small and medium-sized enterprises in the amount of up to 12.5 million UAH secured by a guarantee from the Partial Loan Guarantee Fund. The government programme "Affordable Loans 5-7-9%" helped finance the agricultural sector by more than 50 billion UAH, which significantly reduced the financial risks of enterprises. The survey results showed that bank loans are a key source of financing for agricultural enterprises, but the high cost of credit and difficulty in accessing it for small farms remained major problems. Insurance services provided additional protection against risks, including weather-related disasters, but the low level of agricultural insurance development and limited government support reduced the effectiveness of this mechanism. The study determined that insurance subsidies contributed to the financial security of enterprises, but the coverage of the programme remained insufficient. The study analysed the international experience of the financial security of farmers, in particular that of Canada, and developed recommendations for Ukraine to improve insurance, income compensation, financing and cybersecurity programmes to enhance the stability of the agricultural sector. The findings confirmed the need to expand access to financial resources for the agricultural sector by improving lending mechanisms, stimulating

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the development of agricultural insurance, and increasing government support. Optimisation of these instruments will help to reduce the financial risks of enterprises and ensure their resilience in the face of economic instability

Keywords: agriculture; credit programmes; management; solvency; economic crises

INTRODUCTION

The research relevance is determined by the importance of the agricultural sector for the economic stability of the country. In the context of economic and political instability, as well as constant changes in the market, agricultural enterprises face numerous financial risks that may threaten their sustainability and development. The low level of financial security of these enterprises negatively affects their ability to adapt to changing environmental conditions, which increases the importance of developing effective protection mechanisms. Banking and insurance services are among the main tools for minimising financial risks, providing farmers with access to finance to invest in development, as well as mechanisms to protect them from unforeseen financial losses.

The complexity of risk management in the agricultural sector is determined by increased vulnerability to numerous uncertainties. L. Kostyrko *et al.* (2024) investigated financial strategies and risk analysis methodologies to overcome these uncertainties. The authors determined that the financial strategy of agricultural enterprises should include risk assessment tools to ensure long-term stability in the face of unpredictable market changes. Their study highlights the importance of a comprehensive approach to risk analysis that considers both internal and external factors that affect the sustainable development of agricultural enterprises. However, their study does not fully address the impact of external factors, such as natural disasters or global market changes, on financial strategies in an uncertain environment.

The crisis in the financial and economic stability of agricultural enterprises is caused by economic instability and reduced state support. Y. Kucherenko (2018) studied financial security, emphasising the importance of financial stability for sustainable development and the role of financial transactions and insurance as risk protection instruments. However, there are gaps in the study of the integration of new financial instruments with management systems to minimise risks, particularly those associated with climate change and agricultural price fluctuations.

Strengthening the economic security of agricultural enterprises has been an important task due to the global economic crisis and increased risks. S. Vasylishyn *et al.* (2021) analysed analytical support for economic security management, emphasising the importance of an integrated approach to assessment, accounting for financial, social, resource and environmental aspects. The study showed the need to improve assessment methods through integrated approaches for effective management decisions. However, gaps remained in terms of adapting methods for small and medium-sized enterprises and determining the impact of social and environmental factors on economic security in an uncertain environment.

The financial and economic security of agricultural enterprises is critical for their development in the face of economic change. N. Sirenko *et al.* (2021) investigated the level of financial and economic security of the agricultural sector, identifying key elements such as financial resources, stability, and profitability. The authors emphasise the importance of assessment through key indicators. However, there are gaps in the study of the impact of external economic factors, such as the exchange rate and external debt, which need to be further explored to increase the resilience of enterprises.

In the context of constant changes in the market, the financial security of agricultural enterprises requires special attention. O. Kovalenko & L. Yashchenko (2021) studied the diagnostics of financial security of agricultural enterprises proposing a methodological approach to assessing the state of financial security by analysing the dynamics, structure and financial ratios. The authors identified the main factors affecting financial security, such as solvency and financial

stability, and proposed a system of indicators for assessing financial security. However, there are gaps in the study due to insufficient study of the impact of state support on the financial security of SMEs. These aspects require further research to develop more effective mechanisms to support domestic agricultural enterprises.

In the study of the financial security of agricultural enterprises, the question of how changes in environmental conditions can affect their financial stability is important. J. Berežnicka (2020) studied the financial security of medium-sized agricultural enterprises, focusing on the importance of subsidies and their impact on financial sustainability. The author noted that farmers in the Czech Republic and Poland will be most affected by additional environmental requirements, as subsidies are an important source of income for them. However, the gaps in the study relate to the insufficient study of the impact of changes in EU policy on environmental requirements on financial security in agricultural countries with different levels of agricultural development.

Increasing the economic stability of personal finances through agricultural initiatives is becoming an important aspect of the current economic environment. S.P.B.B. Hasib (2024) explored the potential of agricultural initiatives to improve financial security, including through growing domestic food, organic farming, and other agricultural practices. The author determined that such practices can significantly reduce food costs, generate additional income, and improve overall financial stability. However, gaps in the research include insufficient attention to the different social and economic contexts in which these practices can be implemented, as well as the investment attractiveness of such initiatives for the general population.

The study of the financial and security model of management accounting of agricultural enterprises focuses on the use of digital technologies to ensure financial stability. A. Livinskyi *et al.* (2024) showed the importance of integrating innovative solutions into management processes for transparency and risk minimisation, in the context of digital transformation. The study confirmed the need for enterprises to adapt through automated management systems. However, the gaps relate to the insufficient study of the impact of specific technologies on the management accounting of small and medium-sized agricultural enterprises.

The study aimed to examine the role of banking institutions and insurance companies in supporting agricultural enterprises to ensure their financial security. The study objectives were to assess the effectiveness of financial services provided by banking institutions and insurance companies to agricultural enterprises in the context of minimising financial risks; to analyse the possibilities of integrating insurance and credit products into the financial security strategy of agricultural enterprises to reduce their vulnerability to external economic changes.

MATERIALS AND METHODS

The presented study is applied research, as it addresses the practical application of financial instruments to reduce the financial risks of agricultural enterprises in Ukraine. The research was based on data from banking institutions such as PrivatBank and Oschadbank, which offer specialised financial products for farmers (PrivatBank offers farmers..., 2018; Guarantee of the Partial..., n.d.). In addition, the Report on the implementation of the development plan of the Ministry of Agrarian Policy and Food of Ukraine for 2024 (2025), the 2023 annual report (National Bank of Ukraine, 2024), as well as scientific literature on the development of financial security of the agricultural sector, were analysed (Shah *et al.,* 2021; Sun *et al.,* 2021; Draft Law No. 12372, 2024).

The research methodology included a systematic analysis to identify the key elements of the financial security of agricultural enterprises and their interaction. A comparative analysis was used to assess the effectiveness of various financial programmes, such as bank loans, insurance policies, government subsidies and other instruments. Particular attention is paid to the mechanisms of state incentives, in particular, the "Affordable Loans 5-7-9%" programme, the "Agraseason" loan (n.d.), the Guarantee of the Partial Guarantee Fund for agricultural and industrial complex loans (n.d.), state agricultural insurance programmes and the

system of subsidies for agricultural insurance following the Law of Ukraine No. 4391-VI "On Specifics of State-Supported Insurance of Agricultural Products" (2012) (Privatbank, n.d.; Smakota, 2023). The level of accessibility of these financial instruments for different categories of agricultural enterprises, especially for small and medium-sized farms with limited financial resources, was evaluated.

Support programmes for war-affected farmers were reviewed to assess their impact on the resumption of agricultural activities and the financial sustainability of agricultural enterprises. These include the Compensation Programme for cultivated land, the Land Demining Programme, and the Compensation Programme for the cost of agricultural machinery (Nemtseva, 2024; Involving partners in..., 2024; Receive compensation for..., n.d.).

The activities of the First Ukrainian Agrarian Fund and farm real estate funds (Real Estate Investment Trust (REIT)), which allow investors to invest in agricultural real estate, including land leased to farmers, were analysed separately (Increase your wealth..., n.d.; Buyanov, 2021). The study examined how these financial mechanisms can contribute to improving the financial security of the agricultural sector by providing long-term investments. The study assessed the prospects for the development of such funds in Ukraine, their attractiveness to domestic and foreign investors, and the level of regulatory support from the state.

For a more in-depth analysis of the conditions for implementing these programmes and their accessibility to farmers, a strengths, weaknesses, opportunities, and threats (SWOT) analysis was applied to identify the strengths and weaknesses of existing financial mechanisms, as well as opportunities for their further development. An important part of the study was to examine the impact of financial instruments on the sustainability of agricultural enterprises in the face of economic instability and their ability to adapt to changes in climate conditions, variations in agricultural prices and political factors.

The study examined the financial security system of farmers in Canada, which includes various tools for managing financial risks, including the AgriStability (2024), AgriInsurance Program (2024), AgriInvest..., (2024), Advance Payments Programme (2024), Canadian Agricultural Loans Act Program (2022) and specialised cybersecurity measures. In addition, recommendations were developed for the implementation of similar measures in Ukrainian financial security.

The research methods used in the study provided a comprehensive analysis of financial support programmes for the agricultural sector, which formulated recommendations for their improvement and increase of efficiency in the context of minimising financial risks of agricultural enterprises.

RESULTS AND DISCUSSION

Role of banking institutions in creating a system of financial security for agricultural enterprises

Agricultural enterprises, similar to any other business, face numerous financial risks, including the risk of insolvency due to the seasonality of agricultural production, when enterprises have limited revenues throughout the year but high expenses at the beginning of the season, the risk of changes in raw material and product prices due to market volatility, and risks related to climatic conditions, such as droughts or floods, which may reduce harvests, credit risk due to high dependence on borrowings to finance agricultural cycles, risk of ineffective management due to poor management skills or improper resource planning, and political and economic risks, including changes in government policies, currency fluctuations and changes in tax legislation, which may adversely affect the financial stability of the business and its ability to sustainably develop. Given that agriculture is related to natural, economic and social factors, the identification and management of financial risks is important for agricultural enterprises, as even minor changes can significantly affect their financial position. Agricultural risks have many aspects that require consideration from managers of enterprises banking institutions and insurance companies.

Dependence on natural and climatic conditions is one of the main risks for agricultural enterprises. Natural disasters, such as climate change, droughts, excessive rainfall, frosts,

floods and others, can significantly reduce yields and cause significant financial losses. In addition, changes in the weather can lead to unforeseen costs for irrigation, additional plant shelter or the purchase of protective materials. Agriculture is dependent on natural factors and requires constant assessment and management of these risks to reduce the probability of significant financial losses (Shah *et al.*, 2021).

Changes in supply and demand, changes in global markets and dependence on external economic and political circumstances often lead to significant fluctuations in agricultural commodity prices. Economic crises, political instability, changes in trade with other countries and changes in foreign exchange rates may affect agricultural commodity prices. If the harvest is sold at a significantly lower price than expected, such fluctuations can significantly reduce a company's revenues. On the other hand, agricultural businesses also face the risk of excessive price increases for inputs required for production, such as seeds, fertilisers, fuel and crop protection products. Dependence on suppliers of these goods and services can lead to significant financial problems, especially in times of market volatility (Sun *et al.*, 2021).

Agricultural enterprises often need credit resources to finance seasonal expenses, purchase machinery, lease land, purchase materials for production, etc. However, lending is one of the main risks for a company, especially if interest rates are high and maturities are short. Late repayment of debts due to rising costs or lower revenue from sales can lead to financial instability and even bankruptcy. Small and medium-sized agricultural enterprises face the greatest risk, as they may not have sufficient financial reserves to repay loans in the event of adverse market conditions. Consequently, the company may go bankrupt due to a lack of financial stability (Dadashev & Cheremisina, 2012).

Operational risks arise from mismanagement of internal processes, inefficient use of resources or poor production organisation. In agriculture, low labour productivity, high fuel and energy costs and a lack of proper quality control are some of these risks. In addition, production efficiency may decline due to a lack of funding to support new technologies or equipment. Management is exposed to risks associated with low skills, lack of adequate business development plans and poor strategic management, which may result in misallocation of resources or poor decisions regarding the development of the company.

Political risks in the agricultural sector are significant due to the impact of government decisions, such as changes in tax policy, subsidies, export quotas, and environmental regulations. Increased production costs or even restrictions on export opportunities may result from changes in legislation. Inflation, exchange rate fluctuations, and changes in foreign trade are other factors that can cause economic risks that particularly affect companies that export agricultural products (Komarek *et al.*, 2020).

PrivatBank's "Agraseason" loan (n.d.) allows farmers to pay for expenses related to the agricultural cycle. The guarantee partially reduces the need to provide additional assets as collateral for the loan. PrivatBank requires a 50% guarantee and 50% hard asset coverage with a coverage ratio of 1.5 for loans up to 18 months. The collateral can be even higher for loans up to 36 months, as hard collateral with a coverage ratio of 1.5 is required, as well as a suretyship from the owner. This programme is particularly useful for farmers, as it allows them to obtain financing to cover the costs of purchasing seeds, fertilisers, fuel and lubricants, labour and other expenses. This type of loan is granted for a term of up to one year, with the possibility of extension.

Oschadbank, for its part, offers loans secured by a guarantee from the Partial Guarantee Fund for Agricultural Loans. These loans can be granted with maturities of up to 10 years and in amounts ranging from 100 thousand to 12.5 million UAH. The Fund's guarantees help reduce the risks for banks when granting loans and facilitate access to finance for small and medium-sized agricultural enterprises with limited creditworthiness (Guarantee of the Partial..., n.d.).

Loans to farmers can vary in terms of conditions, depending on the term, interest rate and the need to provide collateral. An important factor is also the availability of government support programmes for farmers, such as the "Affordable Loans 5-7-9%" programme, which provides for a subsidy of a portion of the interest on loans. This

allows farmers to reduce their financial burden and secure financing on favourable terms (PrivatBank, n.d.). Table 1 compares the lending conditions of Privatbank and Oschadbank.

Table 1. Comparison of lending conditions for farmers in PrivatBank and Oschadbank

Bank	Lending programme	Amount (UAH)	Term (years)	Interest rate (%)	Provision
Privatbank	"Agraseason"	from 200 thousand	Up to 18 months	50% guarantee + 50% security deposit (coefficient. 1.5)	50% guarantee + 50% hard deposit
Oschadbank	Loan guaranteed by the Fund	100 thousand – 12.5 million	Up to 10 years	50% of the principal amount of loan commitments	Guarantee of the Partial Loan Guarantee Fund

Source: compiled by the authors based on "Agraseason" loan (n.d.), Guarantee of the Partial Guarantee Fund for agricultural and industrial complex loans (n.d.)

Loans for farmers from PrivatBank and Oschadbank have different terms and conditions, depending on the needs of the borrowers. PrivatBank is suitable for short-term financing but has high collateral requirements. Oschadbank, on the other hand, offers more flexible terms, including long-term loans backed by a government guarantee, making them more affordable for small and medium-sized enterprises. For farmers seeking stable financing over a longer period with lower collateral requirements, Oschadbank is a more favourable option.

Agricultural enterprises can obtain the equipment they need without significant upfront investment through leasing, another important financing tool. This is especially relevant when prices for new agricultural technologies and other fixed asset investments are high. Through leasing, farmers can rent machinery for a fixed period with the option to buy it at the end of the lease or extend the lease. Since the initial cost of the equipment is spread over several years, these conditions allow the company to reduce its financial burden.

For instance, PrivatBank provides farmers with the opportunity to lease agricultural machinery such as tractors and combines, as well as tillage equipment. Leasing allows farmers to purchase machinery without significant upfront investment, which reduces the financial risks associated with investing in new equipment. It also allows companies to upgrade their machinery fleet without having to spend significant money upfront (PrivatBank offers farmers..., 2018).

Oshchadbank also offers leasing of agricultural machinery with favourable terms that allow farmers to lease machinery for up to 5 years with the option to buy it back after the leasing period. Leasing of machinery is an important tool for farmers, as it provides access to modern equipment without the need for significant financial outlays (Purchase of new..., n.d.).

Bank guarantees are another important financing instrument that helps to reduce financial risks for agricultural enterprises. A bank guarantee is an obligation of a bank to pay a certain amount in case of a farmer's failure to fulfil its obligations to counterparties or creditors. This reduces the risk for the bank and increases confidence in the company on the part of other market participants.

Bank guarantees are usually provided through government support programmes, such as the partial guarantee programme for agricultural loans. In the case of loans under the state programme or through special partial guarantee funds, banks can provide guarantees to farmers. This reduces the risk for banks and facilitates access to finance for small and medium-sized enterprises in the agricultural sector. Even if farmers do not have a good credit rating, they can still get loans through partial guarantee programmes. For instance, Oschadbank provides loans under government programmes with a partial guarantee of the fund, which

reduces the bank's risks and allows farmers to obtain the necessary funds on more favourable terms. Such programmes greatly facilitate access to finance for agricultural enterprises, reducing risks and increasing productivity (Lending with the use of..., n.d.).

Thus, bank financing instruments are an important tool for farmers seeking to ensure financial stability and growth of their enterprises. They can be used for efficient management of resources, mitigation of financial risks and adaptation to market changes. The development of Ukrainian agriculture is largely dependent on government programmes to support farmers through banking institutions. These programmes increase the financial accessibility of agricultural enterprises, especially small and medium-sized ones, by enabling them to obtain the necessary financial resources to modernise production, cover seasonal costs, purchase machinery and make other investments. Such programmes include compensation for the cost of machinery, grants, concessional lending and subsidies. They increase the competitiveness of farmers and allow them to reduce financial risks.

Concessional lending is one of the most important forms of state support for farmers. Programmes such as "Affordable Loans 5-7-9%" provide farmers with financing at reduced interest rates. Participation in these programmes allows farmers to significantly reduce their loan servicing costs. This is especially relevant for small and medium-sized enterprises, which often face difficulties in accessing cheap credit. Farmers can obtain financing for needs related to agricultural production, such as the purchase of agricultural machinery, construction and modernisation of infrastructure, labour costs and other operating expenses. These programmes help farmers cover these needs. The programme "Affordable Loans 5-7-9%" allows for a significant reduction in the interest rate on loans, which gives farmers access to cheap resources and enables them to develop their businesses steadily even during the crisis (PrivatBank, n.d.).

State support also includes subsidies and grants, which are important for stimulating agricultural development and stabilising farmers' incomes. For farms to be financially stable, money for keeping livestock and cultivating land is needed. For example, tillage subsidies of up to 4,000 UAH per hectare allow farmers to offset the cost of renting land or cultivating land, which increases profitability and reduces costs. Such actions are particularly important in times of economic challenges or unpredictable events, such as droughts and other natural disasters, which can significantly reduce yields. They provide farmers with additional financial resources, which allows them to withstand seasonal fluctuations in income and maintain stability in their farming operations (Department of Agro-Industrial Development, 2024).

Modernisation of production is an important part of agricultural development, and the government actively promotes this process by compensating part of the cost of machinery. The Ministry of Economy of Ukraine offers compensation of up to 25% of the cost of domestic agricultural machinery for modernisation. This enables farmers to purchase the latest equipment without significant upfront costs, which increases productivity and efficiency. Farmers can reduce the cost of purchasing machinery and use it to increase yields, reduce the cost of cultivating land and perform other technological operations through such programmes. Government compensation allows farmers to modernise their farms, which is an important component for increasing competitiveness in domestic and foreign markets (State support programs..., 2024).

Grant funding is one of the new ways to assist farmers. Programmes such as "eRobota" (eJob, digital job) provide grants for the development of horticulture, berry and wine growing, as well as for the establishment of greenhouses and processing plants. The grants are provided without the need for repayment, making it much easier for farmers to obtain funding for new projects. The development of new areas of agricultural business, such as organic horticulture and processing, is also supported by grant programmes. By doing so, farmers can increase production and add value to their products, which is important for increasing incomes and developing the local economy (Maltseva, 2024). Table 2 compares the main forms of state support for farmers provided through banking institutions, including concessional lending, subsidies and grant funding.

Table 2. Comparison of the main forms of state support for farmers

Program	Objective/Purpose	Amount of funding	Terms and Conditions
"Affordable loans 5-7-9%"	Providing access to cheap loans for farmers	From 200 thousand to 12.5 million UAH	Rate: 5%, 7%, 9% depending on the type of activity
Subsidies for livestock-keeping	Support for farmers to keep livestock and cover land cultivation costs	Up to 4 thousand UAH per hectare	Restrictions on land areas and crop types
Compensation for the cost of equipment	Promoting the renewal of farmers' machinery through compensation for the cost of equipment	Up to 25% of the equipment cost	The equipment must be of domestic production
Grant funding	Support for the development of horticulture, berry growing, viticulture and processing enterprises	Different amounts depending on the programme	Requirements for the type of activity (horticulture, greenhouse farming)

Source: compiled by the authors based on Privatbank – Participants in the program "Affordable loans 5-7-9%" (n.d.), Department of Agro-Industrial Development (2024), State support programs for farmers in effect in 2024 (2024), M. Maltseva (2024)

Thus, state support programmes for farmers are important for the development of Ukrainian agriculture. They provide financial resources to cover costs, modernise machinery and ensure stable incomes for farmers. At the same time, there is a need to improve the procedures for providing support to ensure that it is more accessible to all farmers in the country (Wahab *et al.,* 2023).

The current study and the one by H.E. Bilali & T.B. Hassen (2024) both address the financial security of agricultural enterprises and the role of risk mitigation instruments. Both studies emphasise the importance of financial support through banking institutions and insurance companies to help farmers protect themselves from financial losses due to climate change or price fluctuations. This study focuses on specific financial instruments, such as soft loans, subsidies and grants, that allow farmers to reduce financial risks and increase competitiveness. H.E. Bilali & T.B. Hassen addressed the impact of climate change on the financial operations of agricultural enterprises and the need to adapt to natural disasters. Both studies emphasise the importance of developing new financial instruments to support farmers in minimising risks.

The current study and D. Li *et al.* (2024) examined the importance of financial support to farmers to stimulate innovation and development of the sector, through concessional lending and state aid. The study by D. Li *et al.* addressed the use of digital financial instruments to support farmers, especially through mobile platforms and online banking, which is more relevant for China, where digital financial services are actively developing. Instead, this study focuses on state support programmes in Ukraine, such as soft loans, subsidies and grants, which are the main instruments of agricultural financing in the country. Furthermore, the study by D. Li *et al.* covers microeconomic data of agricultural enterprises in China, while this study focuses on macroeconomic aspects of support to farmers through state institutions in Ukraine.

This study emphasises the impact of state support to farmers through banking instruments on the financial stability of agriculture. The study by E. Mudanya *et al.* (2022), on the other hand, addresses credit risk and its impact on the financial performance of commercial banks in Kenya, specifically through credit risk management practices. This study assesses how credit risk affects the financial performance of banks and how effective management of these risks improves the stability of the banking system. Both studies examine financial risks in the context of specific economic and financial systems, but in one case the focus is on banking instruments to support farmers, and in the other on credit risk management of commercial banks. Therefore, while both studies address financial risks and their impact on the stability of economic systems, one focuses on the agricultural sector and the other on the banking sector.

Impact of insurance services on reducing financial risks of agricultural enterprises

Insurance for farmers in Ukraine is necessary for protecting agricultural enterprises from financial risks associated with adverse weather conditions, natural disasters, plant diseases, and military operations. Ukraine has already developed and introduced various types of insurance products that allow farmers to reduce financial losses in the event of an insured event and receive financial support from the state.

Crop insurance is an important product because it allows farmers to cover losses associated with the total or partial loss of crops due to natural disasters or human actions. For instance, winter crop insurance can cover the entire growing cycle, from germination to harvesting the following year. This may include the wintering period. In addition to traditional crop insurance, farmers can choose to buy insurance based on a yield index, which is based on the average yield of the region over the past few years. Farmers are compensated for losses if the actual yield is below the average (Smakota, 2023).

The government actively supports farmers through subsidies for agricultural insurance. According to the Law of Ukraine No. 4391-VI (2012), farmers are entitled to partial reimbursement of insurance payments. In 2021, a new support system was introduced, which allows farmers to receive compensation of up to 60% of the insurance premium. In case of additional needs for state funding, the reimbursement can reach 80% in the following years (Farmers will receive..., 2020).

Farmers' property insurance is another important method of reducing financial risk. It covers the protection of agricultural enterprises not only against natural disasters, such as fires or floods but also against third-party damage to greenhouses, elevators and storage facilities. Farmers can choose to insure machinery, such as tractors, combines, etc., to protect their property. Business interruption insurance is particularly noteworthy, as it covers not only direct losses from property damage, but also potential losses associated with the cessation of the company's operations (Agricultural Insurance..., 2016).

Farm animal insurance is another important product. It can include insurance for birds, horses, pigs, cattle and other animals, as well as an additional option for protection against infectious diseases. Globally, more than 30 types of dangerous animal diseases have been identified in 102 countries. Most of these diseases have a high mortality rate. Agricultural enterprises that raise animals must be protected against such diseases (Agricultural Insurance..., 2016).

Current offers on the agricultural insurance market also include freight insurance, which is important for companies involved in the export of agricultural products. Such a policy covers not only the value of the cargo but also the cost of transportation, which is especially important when the local currency is unstable. When concluding such contracts, it is possible to incorporate currency risks, which can be critical for farmers engaged in international deliveries. War risk insurance, which has become relevant due to the military conflict in Ukraine, requires special attention. This insurance covers the costs of sowing and growing crops that have been destroyed or damaged as a result of hostilities, the construction of defensive structures or even mine clearance. This allows farmers to remain financially stable despite the negative effects of war. Companies that commercially grow winter crops and insure more than 1,500 hectares can use the war risk insurance offer (Attention Farmers, 2023).

The programmes to support farmers affected by the war include several important initiatives aimed at restoring agricultural activities. The compensation programme for cultivated land provides compensation to farmers from areas where hostilities have ended (e.g., Kyiv region) or where de-occupation has taken place in the amount of 8,000 UAH per 1 ha of cultivated land for owners of up to 120 ha (Nemtseva, 2024). This programme is funded by the state budget of Ukraine. The land demining programme provides compensation for demining services to farmers, enabling them to resume economic activity in the blocked areas (Involving partners in..., 2024). The state budget of Ukraine for 2025 provides 1 billion UAH for this programme. The programme of compensation for agricultural machinery offers compensation in the amount of 25% of the cost of domestically produced agricultural machinery, which farmers can receive through banks that have signed a memorandum

with the Ministry of Economy of Ukraine (Receive compensation for..., n.d.).

Most Ukrainian farmers do not use crop and harvest insurance during their business. According to a survey of agricultural enterprises conducted by the Ukrainian Agribusiness Club (UCAB), only 15% of farmers surveyed use this type of insurance. At the same time, 85% of respondents do not use crop and harvest insurance. Of the 15% of farmers who do use insurance services, only 73% provided information on the share of loss coverage, reporting that, depending on the type of insurance, farmers are covered for 20% to 60% of their losses in the event of an insured event. As for the insurance of agricultural machinery, 33% of farmers use this service, while the rest do not insure their machinery. Among the 33% who use insurance services for machinery, only 49% provide information on the percentage of insured machinery. Of this number, 29% of farmers fully ensure their agricultural machinery, 11% insure most of their machinery (65-80%), and 11% insure only half of their machinery (50%). The remaining 49% of respondents partially use machinery insurance at their enterprises (from 40% to 2%) (Research: 85% of..., 2018). However, Ukrainian farmers often do not ensure their crops due to a lack of trust in insurance companies, which is the reason for their reluctance to use such services. For instance, farmers in the Kirovohrad region did not insure their crops in 2021, despite the high level of risk, such as drought and other threats. The reason for this is the experience of previous years when the insurance company did not compensate for losses, and the mechanism for compensation was too complicated. Only 30-50% of the expected harvest was harvested in different crop areas, which confirms the problems farmers have with covering losses (Ukrainian farmers do..., 2021).

Overall, agricultural insurance can substantially mitigate the risks faced by farmers in their business and ensure financial stability even in difficult conditions. Legislative initiatives and new proposals for war risk insurance are contributing to the development of the agricultural insurance market in Ukraine, allowing farmers to receive support from the state and ensure the protection of their assets.

Agricultural insurance in Ukraine offers various types of insurance products that allow farmers to minimise financial risks. However, each type of insurance has unique advantages and disadvantages, which should be accounted for during the selection of the most suitable for the specific conditions of the agricultural business. Table 3 provides an overview of the advantages and disadvantages of the main types of agricultural insurance used in Ukraine.

Table 3. Advantages and disadvantages of different types of insurance for agricultural enterprises

Type of Insurance	Advantages	Disadvantages
Crop insurance	Protection against adverse weather conditions and natural disasters. Availability of state support.	Limitations on coverage, in particular for risks not included in the policy.
Property insurance	Coverage of losses from fires, floods, robberies. The ability to protect production facilities and equipment.	High cost for large objects requiring detailed analysis.
Farm animal insurance	Coverage of risks from diseases, fires and natural disasters. Increase the stability of the agricultural business.	High cost of insurance policies, restrictions on coverage of certain diseases.
Freight transport insurance	Protection against risks when exporting products. Payments for damage during transport.	Difficulties in registration for one-time transport, and extensive documentation.
War risk insurance	Coverage for losses caused by hostilities. Assistance in case of losses due to military operations.	Limited coverage, provided that the damage is not defined as force majeure.

Source: compiled by the authors based on Agricultural Insurance: Products and Benefits (2016), Attention farmers! A new insurance product for agribusiness – war risk insurance! (2023)

The table shows that each type of insurance has unique strengths and weaknesses, which should be accounted for during the selection of an insurance product suitable for an agricultural

enterprise. Although it has limitations, crop insurance is one of the most popular due to its wide range of risk coverage. Property and livestock insurance can be quite expensive for large enterprises, as they have a much larger volume of assets to cover. The cost of insurance premiums depends on the amount of coverage, and the more property and livestock that need to be insured, the higher the insurance costs will be. In addition, large agricultural enterprises may have more complex infrastructure and technical equipment, which also requires additional insurance, which in turn increases insurance costs. Therefore, insurance may be more financially burdensome for large enterprises, although it reduces the risk of damage or loss of assets. Cargo and war risk insurance helps farmers in the event of external threats, but coverage often depends on the specific terms of the contract.

Insurance companies are important for farmers, especially in the face of climate change and volatile market conditions. They help farmers and agricultural enterprises reduce financial losses due to natural disasters, economic fluctuations and other adverse circumstances. These companies play an important role in ensuring the resilience of the agricultural sector and facilitating adaptation to new challenges posed by climate change and market volatility.

Insurance companies help farmers reduce their financial risks by transferring some of these risks to other market participants through the reinsurance mechanism. It operates as follows: farmers conclude insurance contracts in which the insurance company assumes responsibility for financial losses in the event of certain risks (e.g., natural disasters, animal diseases, fires). However, insurance companies also face the risk of large claims under such policies. This helps to reduce the negative impact of unforeseen events on the company's financial results. Since insured property allows for loans and investments on favourable terms, insurance also facilitates access to external financing. Government support allows farmers to obtain a wider range of insurance services, which can significantly reduce insurance costs. Agricultural insurance is being promoted by programmes to compensate for part of the premiums, making this instrument more affordable for farmers. This is an important component of agricultural sustainability in the face of climate change and market fluctuations.

Despite significant achievements in the field of agricultural insurance, there are still some challenges to be addressed. The main problems with agricultural insurance legislation are the ambiguity of regulations, lack of standardisation of insurance products, which makes it difficult to compare programmes, and limited access for small farmers due to high costs and lack of subsidies. The laws do not always include all risks, such as climate change or new animal diseases. Insufficient control over insurance companies also leads to inefficiencies. Improvements in legislation should ensure clarity, transparency and accessibility for farmers. In addition, unclear conditions for state aid may limit farmers' participation in insurance programmes, which may result in most farmers not having access to such products. It is also crucial that farmers are better informed about insurance options and state support mechanisms (State support mechanism..., n.d.).

Insurance companies are also substantial in the risk management system of farmers, providing financial stability and protection against unforeseen situations. Adaptation to climate change and market conditions are important aspects, and insurance products allow agricultural enterprises to be more resilient to such challenges. With increased government support for agricultural insurance in Ukraine and improved legislation, this mechanism could become even more accessible and effective for farmers.

Comparing the present study with the study by N.D. DeLay *et al.* (2023), it is possible to identify common features and differences. Both studies consider risk management in the agricultural sector through insurance mechanisms. N.D. DeLay *et al.* discussed the impact of agricultural insurance on the financial stability of farms, on credit and liquidity, while this study analyses crop insurance, adaptation to climate change and market conditions. The difference is that N.D. DeLay *et al.* addressed the US market and the practical impact of agricultural insurance on US farmers, while this study focuses on Ukraine, including local laws and government support programmes for agricultural insurance.

Thus, both studies have similar themes but different geographical and regulatory contexts.

This study and the study by Q. Stoeffler *et al.* (2022) both analyse the role of insurance in the agricultural sector, particularly in the context of managing risks such as natural disasters, climate change and market fluctuations. However, the differences lie in the geographical context and the focus of the studies. This study focuses on the role of state support in ensuring farmers' stability. In contrast, Q. Stoeffler *et al.* (2022) examine the European experience, in particular policies and state insurance programmes in EU countries, without focusing on military or political factors.

R.H. Rana *et al.* (2024) examined risk management mechanisms in the agricultural sector, particularly the role of insurance in ensuring the financial stability of agricultural enterprises. The authors emphasised the importance of agricultural insurance in protecting farmers from natural disasters such as droughts, floods and other extreme weather conditions that negatively affect production. The authors also highlight the cost-effectiveness of using agricultural insurance to reduce financial losses and ensure the sustainability of agricultural enterprises in the long term. Both studies emphasise the importance of financial stability of agricultural enterprises, but in the context of their research, considerable attention is paid to different approaches to ensuring this stability: the study by R.H. Rana *et al.* is more focused on international experience and the effectiveness of agricultural insurance at the global level, while this study focuses on the specifics of the implementation of agricultural insurance in Ukraine, in particular through preferential lending and state subsidies.

This study and the study by M.Y. Madaki *et al.* (2023) share several common aspects in the context of using agricultural insurance as risk management in agriculture. Both studies highlight the importance of agricultural insurance for farmers and its role in climate change adaptation. The authors emphasise that climate change, including droughts, storms and other natural disasters, can have a significant impact on agricultural production, making agricultural insurance an important tool for mitigating these risks. Both studies also recognise the importance of government support for agricultural insurance in reducing farmers' costs. State subsidies and insurance programmes in several countries, including Ukraine, play an important role in making agricultural insurance affordable for a wide range of farmers. Both papers point to the importance of creating a favourable legislative environment that supports agricultural insurance, including through subsidies and financing. This study analysed the impact of agricultural insurance on the mental health of farmers, in particular, on how insurance reduces stress and improves the psycho-emotional state of farmers in the event of unforeseen situations. In turn, the study by M.Y. Madaki *et al.* focuses on the role of agricultural insurance in adapting to climate change in developing countries, particularly in Nigeria, where rising temperatures and unstable weather conditions have a significant impact on farm yields and economies.

P. Ruan *et al.* (2024) and this study examined how agricultural insurance can contribute to agricultural production sustainability and food security. Both studies emphasise the importance of supporting sustainability in agriculture using agricultural insurance, which allows farmers to be protected from natural disasters and market fluctuations. However, there are some differences between these studies. This study focuses on the impact of agricultural insurance on food security and explores how agricultural insurance contributes to reducing financial risks and ensuring sustainable agricultural development. At the same time, the study by P. Ruan *et al.* focuses more specifically on the economic effects of agricultural insurance and therefore focuses on reducing financial risks and improving the overall economic stability of agricultural enterprises in China.

Comparing this study with other works, it is possible to identify both common features and differences. All the studies emphasise the importance of agricultural insurance as a risk management in the agricultural sector to protect against natural disasters, climate change and market fluctuations. Most authors note that agricultural insurance is key to ensuring the financial stability of farms, especially in the face of unforeseen situations.

Investment instruments to reduce financial risks of agricultural enterprises

In Ukraine, farmers can use a wide range of investment instruments to diversify risks and achieve sustainable development of their companies. Investment funds are one of the main instruments for agrarians who want to raise funds for the development of their business without having to manage significant amounts of money directly. In Ukraine, many funds focus on the agricultural sector, on investing in agricultural land and agricultural companies.

One of the best-known funds is the First Ukrainian Agrarian Fund, which invests in agricultural companies that lease agricultural land, mainly in the central and western regions of Ukraine. This provides benefits to investors through share price appreciation and regular dividends. This type of investment reduces risks through diversification, as it invests in different sectors of agriculture, which guarantees stable income even in difficult conditions. An important advantage of investment funds is their liquidity: shares in the funds can be bought and sold on stock markets, allowing investors to respond quickly to changes in the market situation. This diversification of assets reduces the impact of negative external factors on investors' income (Increase your wealth..., n.d.). In terms of financial indicators, the fund's land bank is 684.84 hectares, unchanged from the beginning of 2024. The main crop for this year is soybeans, which is strategically important for a stable income. However, by the end of 2024, the fund has a decrease in net assets of 0.6 million UAH (-1.39%), and the value of net assets per share decreased by 11.42 UAH, which also amounted to a decrease of 1.39%. This indicates a slight negative change in the short term but given the stability of the land bank and the opportunities for diversification, these changes may be temporary. The fund's liquidity is also an important advantage, with shares traded on the stock markets, allowing investors to react quickly to changes in the market situation. This opportunity gives investors' confidence that they can quickly buy or sell shares following market conditions, reducing risks from external factors (Monthly report on the..., 2024).

Direct investments involve investing directly in agricultural enterprises or in the development of agricultural business, for example, through the purchase of machinery or land. This allows the investor to directly control their assets, make strategic decisions on business development and manage risks.

Private equity allows farmers to have significant autonomy in managing their assets and to profit directly from operations. Large agricultural companies can profitably invest in new technologies and expansion due to their significant financial resources and scale, which enables efficient innovation. Small and medium-sized enterprises can also benefit from such opportunities but often face constraints due to a lack of financial capacity and limited access to credit, although government support programmes can help them obtain financing. Direct investment can also include investments in land plots that are leased or used for crop production. In this way, farmers receive not only a stable rental income but also benefit from the potential increase in land value. Direct investment also allows farmers to benefit from tax benefits and government support programmes. Several programmes in Ukraine encourage investment in the agricultural sector. For instance, the Cabinet of Ministers of Ukraine Order No. 1437-2015-r "On approval of the Concept of the State Target Programme for the Development of the Agricultural Sector of the Economy for the Period Until 2022" (2015) aims to stimulate capital investment in the livestock sector, in particular through co-financing the construction of livestock facilities and infrastructure in rural areas, which allows for both public and private investment. Another important programme is the production growth subsidy, for dairy farmers, who receive support for the growth of each head of cattle, stimulating investment in this sector. To increase the competitiveness of agricultural enterprises engaged in both livestock and crop production, a special value-added tax (VAT) regime has been established (Kaletnik & Koziar, 2020). However, direct investment is also associated with high risks, as agricultural businesses are often dependent on external factors such as weather conditions or market price fluctuations.

Agricultural bonds can be used as a financial instrument to raise long-term funds for

the development of agribusiness. Agricultural bonds in Ukraine have not yet gained widespread popularity due to several main factors. Firstly, the lack of sufficient liquidity in the bond market reduces investor interest in this instrument. Many investors prefer more traditional financial instruments, such as deposits or government bonds, which are less risky and have guaranteed returns. Secondly, the agricultural sector in Ukraine often faces high financial and operational risks, such as dependence on weather conditions, fluctuations in commodity prices and unpredictable political changes. This creates certain obstacles to attracting investors to agricultural bonds, as investors may not be willing to take on additional risk. A third factor is the lack of awareness among agricultural enterprises about the possibilities of issuing bonds and their advantages compared to other financing options, such as loans or private equity.

Agricultural bonds can be particularly useful for large agricultural companies that need large amounts of funding for the long term, for example, to purchase machinery, modernise production or expand their land bank. They allow farmers to raise funds without having to sell a part of the company, as is the case with a share issue. Bonds provide a way to retain control of the business while raising the necessary capital. For investors, agricultural bonds can be a stable source of income, as they usually have a fixed interest rate and clearly defined maturity dates. However, an important feature of such instruments is the need to carefully assess the financial stability of the issuing company, as this affects the safety of the invested funds.

Farm real estate investment trusts (REITs) allow investors to invest in agricultural real estate, often abroad, without having to buy the land outright. Such funds invest in agricultural land, including land leased to farmers. This can be used for risk diversification as the fund invests in different geographical regions and different types of crops.

One of the main advantages of farm real estate funds is that investors can receive a stable rental income as well as benefit from the growth of land values. This also reduces the risks associated with weather conditions and fluctuations in agricultural prices, as funds usually own land in different parts of the world. REITs can be particularly beneficial for investors who do not wish to purchase land outright due to high initial costs but want to profit from stable rental payments. They are also liquid assets, as their shares can be sold on stock markets (Buyanov, 2021).

Investment products available to farmers in Ukraine provide an opportunity to diversify risks and increase profits. Investment funds, private equity, agricultural bonds and farm real estate funds are the main instruments that allow farmers to raise funds for business development. The choice of an investment product depends on the needs and strategic goals of the farmer, as well as their willingness to take certain risks.

Analysing the effectiveness of investments to stabilise the financial security of agricultural enterprises is an important step in determining the strategy of agribusiness development. Given that the risks in the agricultural sector are largely dependent on market fluctuations, climatic conditions and other factors, investments can be an important tool for maintaining and increasing the financial stability of companies. A SWOT analysis is useful for the identification of the strengths and weaknesses of an investment strategy, as well as opportunities and threats that may affect the effectiveness of investment products. Table 4 presents a SWOT analysis that assesses the impact of investments on stabilising the financial security of agricultural enterprises.

Investments in Ukraine's agricultural sector are an important means of ensuring the financial stability of agricultural companies. They can diversify risks, raise additional funds for development and modernisation, and stabilise revenues when the market changes. Nevertheless, there are some drawbacks, including dependence on external circumstances, high investment costs, and risks associated with legal issues. At the same time, there are significant opportunities for agribusiness development through government support, innovation and integration into international markets. Threats, such as climate change or political instability, can have a significant impact on investment performance, therefore it is necessary to consider these factors in investment decisions.

Table 4. SWOT analysis of investment efficiency to stabilise the financial security of agricultural enterprises

Advantages	Disadvantages
Risk diversification – investments in different sectors (land, machinery, agricultural bonds) reduce financial risks. Raising additional funds – investments attract financing for modernisation, expansion of production and introduction of new technologies. Stability of income – investments in land and agricultural bonds can provide stable rental or interest income. Increasing competitiveness – investments in modern equipment and technologies can improve production efficiency and reduce costs.	Dependence on external factors – high level of dependence on climatic conditions, global agricultural prices and other external factors. High costs of investment – it can be difficult for farmers to attract large investments due to the need for significant upfront capital investment. Uncertainty in the long term – exchange rate fluctuations and changes in government support policies may affect investment performance. Insufficient legal support – lack of clear regulations on investments in the agricultural sector can lead to legal difficulties.
Possibilities	**Threats**
Development of state support programmes – availability of financing programmes, subsidies and soft loans for farmers. Growing interest in agribusiness – growing demand for agricultural products globally opens up new opportunities for farmers and investors. Integration into international markets – the possibility of attracting foreign investment and access to new markets for agricultural products. Innovative technologies – development of new technologies in agribusiness, such as precision farming, can increase efficiency and profitability.	Market volatility – changes in market conditions (agricultural prices, input costs) can reduce the profitability of investments. Political instability – military conflicts and economic instability in a country can significantly affect investment opportunities. Climate change – adverse climate conditions can affect the yields and financial results of agricultural enterprises. Uncertainty in investment regulation – insufficient legal support for investors can create risks for farmers and limit business development.

Source: compiled by the authors based on S. Buyanov (2021), Z. Titenko (2022)

In many countries where the agricultural sector is significant to the economy, the system of financial security of agricultural enterprises includes a set of measures that allow for effective management of financial risks and ensure the stability of their operations. For instance, Canada has implemented several tools to help farmers cope with financial difficulties, including financial risk management programmes such as AgriStability (2024), which provides compensation in case of significant income losses, and AgriInsurance Program (2024), which minimises losses from adverse weather conditions. In addition, the AgriInvest programme (2024) allows farmers to build up savings to cover smaller financial downturns.

Canadian farmers also have access to financing programmes, such as the Advance Payments Programme (2024), which provides money with interest deferral, and loans through the Canadian Agricultural Loans Act Program (2022) with government-guaranteed rates and flexible repayment terms. Specialised measures are in place to ensure data security and protect against cyber threats, including the Durham College Cybersecurity Centre, which provides solutions to protect data and business. In addition, Canadian farmers have access to the Farm Debt Mediation Service (2024), which provides free assistance in resolving debt issues.

Compared to Ukraine, where the farm financial security system still needs to be improved, Canada's experience can be a valuable reference point for the development of new policies and programmes. In Ukraine, the following recommendations based on international experience should be considered: expanding crop insurance programmes and creating more affordable and efficient crop insurance programmes that cover a wide range of risks, including weather conditions, which are among the biggest threats to Ukrainian farmers. It is also necessary to introduce government income compensation programmes, as in Canada, which would compensate farmers for significant losses due to a decline in income. This could help reduce financial risks and ensure the stability of the industry. It is important to improve access to finance, by

expanding access to loans with guaranteed government rates and flexible repayment terms, as is done in Canada through the Canadian Agricultural Loans Act Program (2022). The introduction of free mediation services for farmers in debt traps will help them regain financial stability, as is done through the Debt Mediation Service in Canada. As digital technologies become an important aspect of the agricultural sector, the development of cybersecurity in the agricultural sector is also critical, given the growing role of digital technologies. Implementation of measures to protect farmers' data, as is done in Canada through specialised cybersecurity programmes, will help to reduce risks for farmers in Ukraine.

M. Soliwoda (2020) and the current study address the financial security of agricultural enterprises and recognise the importance of minimising risks through financial instruments such as insurance and banking. However, the study by M. Soliwoda addressed global financial instruments and investment strategies used abroad, while this study focuses on instruments available to Ukrainian farmers, in particular government support programmes and subsidies. An important difference is that this study incorporates the impact of external factors, such as the war, on the Ukrainian agricultural sector, which is not covered by M. Soliwoda. In addition, this study takes a local approach, while the study by M. Soliwoda addressed general and global aspects of farmers' financial stability.

K. Prandecki & W. Wrzaszcz (2023) investigated the impact of agricultural innovation on the sustainable development of the Polish agricultural sector, with their analysis focusing on the environmental and economic aspects of agricultural policy, including adaptation to European requirements related to environmental change and sustainability in agriculture. The authors also analysed the financial instruments used to support farmers, including subsidies and financing through banking institutions to promote sustainable development. Both studies consider financial instruments as an important element to support agriculture in times of economic instability. However, the study by K. Prandecki & W. Wrzaszcz addressed the impact of environmental changes and the adaptation of the Polish agricultural sector to European standards, while this study analysed economic and financial aspects, on state support programmes in Ukraine.

J. Ren & G. Li (2020) addressed the financial risks of agricultural supply chains in China. The authors analysed how the agricultural financial system, through supply chain mechanisms, helps small farmers to access credit and solve financing problems. They emphasise the importance of developing financial risk management mechanisms and establishing a risk assessment system for agricultural enterprises and discuss the need to overcome challenges such as information asymmetry and high credit risk, due to the difficulty of monitoring small farm operations. Although both studies focus on financial instruments to mitigate risks, this study focuses more on local, Ukrainian aspects, on government support programmes for farmers and analysis of crop insurance mechanisms, while the study by J. Ren & G. Li focuses more on global financing and credit mechanisms.

P. Bórawski *et al.* (2020) analysed financial mechanisms and risk management strategies in the agricultural sector, focusing on the impact of state support, lending, and financial instruments that help stabilise agricultural enterprises. The authors addressed how these instruments can reduce financial risks and promote sustainable agricultural development. This study and the study by P. Bórawski *et al.* share a common focus on the importance of financial instruments for risk management in the agricultural sector. However, P. Bórawski *et al.* analysed public financial mechanisms, while this study addressed private investment products, such as agricultural bonds and investment funds, and their role in ensuring financial stability.

Y. Lu *et al.* (2023) analysed investment in China's agriculture, especially on factors that limit the flow of foreign investment, such as economic instability, political risks and infrastructure barriers. It highlighted how important foreign investment is for the development of China's agricultural sector, as well as strategies to improve investment attractiveness. Both studies highlight the importance of investment for the sustainable development of the agricultural sector. They also emphasise the need for strategies to attract investment to improve financial security and reduce risks in the agricultural sector. The

study by Y. Lu *et al.* focuses on foreign investment in China's agricultural sector, while this study analyses instruments for attracting investment in Ukraine's agricultural sector, in the context of financial products and state support.

J. Yang *et al.* (2022) analysed the financial risks of agricultural supply chains in China, including credit and operational risks associated with technical difficulties and legal uncertainty. The authors used a statistical method to identify risk factors in the agricultural sector. The present study, in turn, addressed the financial security of agricultural enterprises in Ukraine, through concessional loans, agricultural insurance and state subsidies. Both studies emphasise the importance of managing risk through financial instruments, but the J. Yang *et al.* study emphasised supply chains, while the Ukrainian study addressed banking instruments and state support.

S. Entenmann (2021) examined investments in the agricultural sector with a focus on social and environmental impacts, as well as strategic approaches to raising finance for sustainable agribusiness development. The author emphasises the importance of developing investments that contribute to the preservation of the environment and social aspects of agricultural development, given the global challenges of climate change and the need for adaptation. The common thread between the studies is the emphasis on the importance of investment for the development of the agricultural sector. Both studies recognise the importance of financial instruments in reducing risks and ensuring the sustainable development of agribusiness. S. Entenmann addressed the environmental and social aspects of investment, while this study analysed financial mechanisms, such as insurance and credit, to reduce financial risks in the agricultural sector.

This study and J.J. García-Machado *et al.* (2024) emphasised the importance of financial risk management for the sustainability of agricultural enterprises. They emphasised the importance of financial instruments to minimise risks, such as insurance and credit, for farmers, improving resilience to external changes and crises. However, J.J. García-Machado *et al.* focused more on analysing the theoretical aspects of risk management through a bibliometric approach, exploring global trends and instruments, while this study addressed the practical aspects of using specific investment instruments in the agricultural sector, such as bonds and funds, to ensure financial security in specific contexts.

Y. Tian & F.H. Tunio (2023) addressed the financial risk assessment of agricultural investment in the countries participating in the Belt and Road Initiative. The authors addressed political, economic, social and environmental risks, using a system of indices to measure risks in these areas. The study is based on the VHSD-EM method and includes spatial analysis, which allows identifying hot and cold spots of investment risks, as well as regional variations in the level of risks. The main similarity between these studies is that they both analyse the financial risks affecting the agricultural sector and the importance of minimising these risks to ensure sustainable development. The differences lie in the fact that the studies. Y. Tian & F.H. Tunio have a global context and address the impact of a wide range of risks on agricultural investment in an international initiative, while this study analyses the national level, analysing local instruments and approaches to risk mitigation in the Ukrainian agricultural sector.

J. Kang & M. Zhao (2022) addressed the financial aspects of farm support in China, in particular the impact of financial instruments such as agricultural credit and government programmes on the development of the agricultural sector. The authors emphasised the importance of stable financial systems but also noted the challenges faced by farmers due to an unstable financial market, high interest rates and difficult access to finance. J. Kang & M. Zhao and their study focused on the role of financial instruments to support agricultural enterprises and reduce financial risks, emphasising the importance of government support. The study by J. Kang & M. Zhao is more focused on the Chinese financial market and its volatility, while this study focuses on financial security instruments for farmers in Ukraine, through banking and insurance services.

Investment instruments, such as investment funds, private equity, agricultural bonds and farm real estate funds, help agricultural

enterprises in Ukraine to reduce financial risks and maintain stable development. They reduce dependence on external sources, diversifying assets and raising capital to modernise and expand their business. The choice of investment instrument depends on the needs of farmers and the desired risk.

CONCLUSIONS

The financial security of Ukrainian agricultural enterprises is a key factor in their sustainable development and competitiveness. In the current environment of instability caused by economic, political and climatic factors, the agricultural sector faces numerous risks that may threaten its financial stability. The study confirmed that one of the main tools for minimising such risks is the effective interaction of agricultural enterprises with banking institutions and insurance companies. Bank loans, leases, guarantees, and insurance programmes are substantial in providing access to the financing needed to develop agricultural production, modernise technologies, and reduce dependence on unpredictable external circumstances.

Lending is an important banking instrument of assistance, as it ensures that farmers can raise money to cover operating costs, purchase machinery, lease land, etc. In particular, PrivatBank's Agraseason loan programme allows farmers to obtain a loan of 200,000 UAH to 5 million UAH with an interest rate of 5% per annum. On the other hand, Oschadbank facilitates access to bank financing for small and medium-sized enterprises up to 12.5 million UAH by providing them with loans secured by a guarantee from the Partial Guarantee Fund for Agricultural Loans. Government support programmes, such as "Affordable Loans 5-7-9%", which provide over 50 billion UAH in financing to the agricultural sector, are substantial in stabilising financial security.

Insurance is also substantial as it helps agricultural enterprises to reduce monetary losses as a result of crop failure, plant and animal diseases, natural disasters and war risks. The availability of government subsidies for insurance payments makes insurance more affordable for farmers, even though the agricultural insurance market in Ukraine is still quite young. By 2025, agricultural producers will receive compensation of up to 60% of their insurance premiums from the state. Crop, machinery, property and livestock insurance are vital to prevent significant financial losses.

An analysis of international experience, including that of Canada, identified key programmes and tools to help farmers manage financial risks, including crop insurance, income compensation, access to finance, and cybersecurity measures. Based on these programmes, recommendations were developed for Ukraine aimed at improving the financial security of farmers through the expansion of insurance programmes, the introduction of state compensation mechanisms, access to finance and mediation to resolve debt issues. This will strengthen the stability of the agricultural sector in Ukraine and increase its resilience to financial risks.

Alongside traditional methods of financing and insurance, the creation of investment vehicles is a promising area for the Ukrainian agricultural sector. Investors can invest in agricultural property through REITs without having to buy land directly. They provide a stable rental income of 5-8% per annum and help to reduce risks as investments are spread across different types of crops and geographical regions.

The limitations of the study are the need for a detailed analysis of the impact of government programmes on the financial sustainability of small and medium-sized agricultural enterprises. Prospects for the introduction of digital technologies in financial management include the use of artificial intelligence and automation to improve the efficiency of financial planning and risk assessment.

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Система фінансової безпеки аграрних підприємств України: роль банківських і страхових послуг у мінімізації фінансових ризиків

Анотація. Метою дослідження було оцінити вплив банківських та страхових послуг на фінансову безпеку аграрних підприємств України. У процесі дослідження застосовувалися методи порівняльного аналізу та SWOT-аналізу. Було проаналізовано механізми фінансування агросектору, зокрема кредитні програми та страхові послуги. Встановлено, що кредитна програма ПриватБанку "Агросезон" дозволяла аграріям отримати від 200 тисяч до 5 мільйонів гривень під 5 % річних, тоді як Ощадбанк надавав кредити малим і середнім підприємствам на суму до 12.5 мільйонів гривень під заставу гарантії Фонду часткового гарантування кредитів. Державна програма "Доступні кредити 5-7-9 %" сприяла фінансуванню агросектору на понад 50 мільярдів гривень, що істотно зменшувало фінансові ризики підприємств. Результати дослідження показали, що банківські кредити є ключовим джерелом фінансування аграрних підприємств, проте висока вартість кредитних ресурсів і складність у доступі до них для малих фермерських господарств залишалися основними проблемами. Страхові послуги забезпечували додатковий захист від ризиків, зокрема погодних катастроф, але низький рівень розвитку агрострахування та обмеженість державної підтримки знижували ефективність цього механізму. Було встановлено, що субсидії на страхування сприяли збільшенню рівня фінансової безпеки підприємств, проте охоплення цієї програми залишалося недостатнім. Було проаналізовано міжнародний досвід фінансової безпеки аграріїв, зокрема Канади, і розроблено рекомендації для України щодо вдосконалення програм страхування, компенсації доходів, фінансування та кібербезпеки для підвищення стабільності аграрного сектору. Висновки підтвердили необхідність розширення доступу до фінансових ресурсів для аграрного сектору через удосконалення механізмів кредитування, стимулювання розвитку агрострахування та збільшення державної підтримки. Оптимізація цих інструментів сприятиме зниженню фінансових ризиків підприємств та забезпеченню їхньої стійкості в умовах економічної нестабільності

Ключові слова: сільське господарство; кредитні програми; управління; платоспроможність; економічні кризи