

Project management of innovation and investment activities to ensure agricultural entities economic security in Ukraine

Gestión de proyectos de actividad inversora de innovación para garantizar la seguridad económica de entidades agrícolas en Ucrania

MAKOVOZ, Oksana S.¹

MASHCHENKO, Maryna A.²

LESNAYA, Iryna F.³

PONOMARENKO, Oleksandr O.⁴

SAVYTSKA, Larysa V.⁵

Abstract

The purpose of this article is to justify the project management of innovation and investment activities to ensure economic security of agribusiness entities based on increasing the efficiency of innovation and increasing competitiveness in the Ukrainian economy. It is proved that investment and innovation policy to ensure economic security involves implementing state investment priorities capital and growth of investments in rural development. Factors influencing the growth of equity of agro-industrial enterprises are identified with factor analysis. It allows increasing the socio-economic efficiency of agricultural production.

Key words: economy, innovation and investment activities, economic security, agribusiness entities

Resumen

El propósito de este artículo es justificar la gestión de proyectos de actividades de innovación e inversión para garantizar la seguridad económica de las entidades agroindustriales basadas en el aumento de la eficiencia de la innovación y el aumento de la competitividad en la economía ucraniana. Está comprobado que la política de inversión e innovación para garantizar la seguridad económica pasa por implementar las prioridades de inversión del Estado en capital y el crecimiento de las inversiones en desarrollo rural. Los factores que influyen en el crecimiento de la equidad de las empresas agroindustriales se identifican con el análisis factorial. Permite incrementar la eficiencia socioeconómica de la producción agrícola.

Palabras clave: economía, actividad inversora de innovación, seguridad económica, entidades agroindustriales

¹Doctor of Economic Sciences, associate professor of the department management and taxation. Department of management and taxation. National technical university «Kharkiv polytechnic institute». Oksana.Makovoz@khi.edu.ua

²Doctor of Economic Sciences, associate professor, head of the department of Economic theory and Economic policy. Department of Economic theory and Economic policy. Simon Kuznets Kharkiv National University of Economics. mmashchenko@ukr.net

³PhD in Economics, associate professor of the Department of Economic Theory and Economic Policy. Department of Economic theory and Economic policy. Simon Kuznets Kharkiv National University of Economics. lisnair@ukr.net

⁴PhD in Economics, associate professor of the Department of Economic Theory and Economic Policy. Department of Economic theory and Economic policy. Simon Kuznets Kharkiv National University of Economics. alex.ponomarenko.tsk@gmail.com

⁵PhD in Philology, associate professor, head of the department of foreign languages and cross-cultural communication. Department of foreign languages and cross-cultural communication. Simon Kuznets Kharkiv National University of Economics. larisa-savickaya@hotmail.com

1. Introduction

A necessary prerequisite for sufficient sustainable development of the state is to ensure the level of its economic security of enterprises. The permanent transformation of the factors of the national economy development largely actualizes researches aimed at ensuring the economic security of Ukraine. One of the important factors in ensuring the economic security of agro-industrial enterprises is their innovation and investment activities. This problem has found its place in the researches of many economists, but the project management of innovation and investment activities to ensure the economic security of agribusiness entities has not been sufficiently developed. It determines the relevance of this article.

The tasks facing the agro-industrial production (AIP) of Ukraine are to stimulate the processes of accumulating and effective use investment resources under the priorities of economic growth, the prospects of innovative development. The precondition for this is macroeconomic stability which contributes to the accumulation of internal and external factors and the resources by increasing investor confidence in economic regulatory policy and reducing the level of risk of investment activities. The relevant program documents calculate the general need for investment and credit resources necessary for sustainable development of the Ukrainian agro-industrial complex.

Since 2015, the arrangement of the economic security of the state is characterized as the key condition for the modern quality of economic development, concurring to the National Security Strategy of Ukraine (Official Web-Portal of the Parliament of Ukraine, 2015).

A number of measures are aimed at maintaining the stable functioning of the system of state economic security, in particular, the deoligarchization, demonopolization and deregulation of the economy, the protection of economic competition, simplification and optimization of the tax system, establishment of a favorable business climate and conditions for accelerated innovation development. The Strategy identifies the need to attract foreign investments in key sectors of the economy, including energy and transport sectors, as tools needed to ensure national security. (Zakharkin, Basantsov, Myroshnychenko & Shcherbachenko, 2019, p.16)

Business owners must prepare the documents mentioned above to work both in modern conditions and in terms of industrial investment policy. Clearly formed authorized capital and professional management of the enterprise allow obtaining profits, credit resources, attracting investors to create a joint venture based on new technologies (Vorobienko, Lozova & Oliynyk, 2018).

Today, the state of innovation activity in Ukraine is defined by most scientific experts as a crisis and one that does not correspond to the current level of innovation processes in countries for which innovation development is a priority of economic strategy. The problem of protection is faced by each company, especially in the strategic aspect, if it seeks to continue to operate with acceptable financial and economic results in crisis or post-crisis period, when the level of market uncertainty is maximum by imposing and prolonging for the future unknown most risks, which comprehensively burden all business activities. Even in a stable economic environment of the food industry there is a necessity for its safety, and, to a lesser extent, holistic protection, and mainly in the narrower aspects (Prokopenko, Shkola & Shchierbachenko, 2017).

The essence of sustainable investment, business models for sustainable financing and evaluation of a sustainable investment project takes place in the works of Ari and Koc (2018), La Torre, Trotta, Chiappini and Rizzello (2019), Tseng et al. (2019), Grzeszczyk and Waszkiewicz (2020). The role of innovation and the relationship between internal and external environment in agribusiness is considered by Alston and Pardey (2014), Ayodele, Innocent

and Garba (2019). Innovative management approaches and their impact on agribusiness efficiency are discussed in the work of Jankelová, Remeňová, Skorková and Némethová (2019).

The above studies consider the essence of investment and innovation policy and its impact on the competitiveness of agribusiness. The process of project management of innovation and investment activities to ensure the economic security of agribusiness entities based on increasing the efficiency of innovation and increasing competitiveness isn't investigated by economists. This determines the purpose of the article.

2. Methodology

Forming a typical structure and content of the project of real investment in AIP, a systematic approach and methods of structural-logical and semantic analysis were used. It allows forming a comprehensive approach to development, analysis, evaluation and implementation of innovation-investment project of management of innovation and investment activities to ensure the economic security of agribusiness entities. Formulas for the calculation of net profit for investments, size of depreciation fund and amount of investment were used (Makovoz, 2018).

The amount of net profit that will be used for investment purposes was calculated by the formula:

$$A_{ni.inv.} = \frac{A_{rev.} \times EL_p \times (100 - L_t)}{100 \times 100} - A_{ni.et.}, \quad (1)$$

where

$A_{ni.inv.}$ – is the amount of net income for investment;

$A_{rev.}$ – is the amount of revenue from sales in the forecast period;

EL_p – is the estimated level of profitability of production, interest;

L_t – is the level of taxation of the company's profit, as a percentage of its total volume;

$A_{ni.et.}$ – is the required amount of net profit in other areas of its use.

The amount of financial resources of depreciation funds that can be used to finance the project will depend on the value of fixed assets and intangible assets of enterprises, the degree of depreciation, the current rate of depreciation, and balances of depreciation funds at the beginning of investment projects.

The total amount of depreciation fund that can be used for investment purposes was calculated according to the following formula:

$$DF_{inv} = B_d + \sum_{i=1}^n \frac{(A_{a.} - A_{dis.} + A_{in.})}{100} \times R_{dep.a.i.}, \quad (2)$$

where

DF_{inv} – is depreciation fund for investments;

B_d – is the balance of the depreciation fund at the beginning of the investment;

$A_{a.}$, $A_{dis.}$, $A_{in.}$ – is respectively, the value of available assets of the enterprise, the volume of their disposal and acquisition (fixed assets and intangible assets);

$R_{dep.a.i.}$ – is the average rate of depreciation of assets used in the i month;

n – the number of months in the period for which the amount of investment resources is calculated.

Profit from the property sale, will be disposed and not used, is calculated as the difference between the price of its sale and the costs associated with the dismantling, transportation and direct sale, with tax payable.

Calculations of the size of these sources of investment resources of enterprises were carried out according to the formula:

$$S_{inv.} = P_{sale} - C_{sale} - VAT - T_{pr.} \quad , (3)$$

where

$S_{inv.}$ – is the source of investment from disposal;

P_{sale} – is the sale price of the outgoing property;

C_{sale} – is costs associated with the sale of property;

VAT – is value added tax on the difference between the sale price and purchase of disposable property;

$T_{pr.}$ – is tax on the company's profit from the sale of disposable property .

The total amount of own investment resources was calculated as the sum of possible financial resources for individual sources of formation.

In order to determine the amount of cash flow, the following formula must be used:

$$CF = AI - ACC \text{ or } CF = EANP + IDF \quad , (4)$$

where

CF – cash flow;

AI – additional income from investment;

ACC – additional current costs due to investment;

$EANP$ – estimated additional net profit from the project implementation;

IDF – an increase in depreciation funds obtained through investment activities.

To calculate the influence of factors on the change in the growth rate of equity, we use the model proposed by Sheremet and Saiifulin (1996):

$$GR \uparrow E = \frac{P_c}{E} = \frac{NP}{R} \times \frac{R}{P_t} \times \frac{P_t}{E} \times \frac{P_c}{NP}, (5)$$

where

$GR \uparrow E$ – the growth rate of equity

P_c – the amount of capitalized profit

E – equity

NP – net profit

R – revenue

P_t – the total amount of profit.

The analysis was conducted on the basis of financial statements, using performance indicators of agro-industrial enterprises for 2018-2019: Limited Liability Company (LLC) Enterprise Vidrodzhennya, Agricultural Private Rent Enterprise Royakivka, LLC Agrofirma Gagarina, Farm Shans. These enterprises, according to expert assessment, occupy leading positions among agro-industrial enterprises of Ukraine (Makovoz, 2018).

A factor analysis of the growth rates of equity and the method of chain substitutions was carried out in this research. The method of chain substitutions is that the degree of influence of each factor on the overall result is set sequentially, by gradually replacing each indicator with another, and one of them is considered variable with constant others. This method is used to analyze the change in the generalized economic indicator under the influence of many production factors. To determine the general change in the equity growth rate of involves the formation of conditional equity growth rates (CEGR).

3. Results

The necessity for scientific and technological implementations and innovative developments was due to the need to determine economically safe and sustainable development of the country's agro-industrial production in conditions of growing demand of the social economy in competitive types of goods that require modernization, reconstruction, restructuring of all AIP.

Scientific justification of innovative investments was carried out based on business planning. In the process of analysis of the existing standard structures of investment projects in the enterprises development, the stages of development, their characteristics and proposed the typical structure and content of the project of real investment in AIP were identified. Six stages of development and presenting project results are shown in Table 1.

At the stage of investment object characterization and the conditions of its implementation, a general description of the essence, purpose and results of investment activities was given. The essence of investment activity is new construction, purchase of technical means and equipment, the purpose of their implementation to increase the level of intensification of AIP, the object of investment and its characteristics are terms of reference and projects of new construction or reconstruction. The type and brand of purchased machinery and equipment, its technical characteristics, the method of investment are terms of investment by contract (on the basis of a contract with a specialized contractor or intermediary organization) or terms of investment by economic means (by the enterprise itself).

At the stage of need for investment, the calculations of the company's need for capital investment required for the implementation of the investment project were made. In particular, the needs of enterprises in capital investments for new construction or reconstruction of enterprises are determined in the form of cost estimates (investment plans). They reflect the cost of construction materials, payment for construction work, reimbursement of overhead costs of construction companies, profits of construction companies, value added taxes which are included in the cost of construction and more.

The needs of enterprises in capital investments to purchase new equipment were calculated based on the amount of machinery and equipment planned for purchase, estimated purchase prices, delivery costs and installation work on the equipment, payment for commissioning. The need for capital investment was calculated both in general for projects for the entire period of their implementation, and for periods.

Table 1

A typical project structure of investments in the development of agricultural enterprise

Stages of development and presenting project results	Characteristics of the stage development
1. Characteristics of the investment object and the conditions of its implementation	The essence of investing – the purpose of investing – the technical characteristics of the investment object – ways of carrying out investment activities – the term of investment – the expected result
2. The need for investment	Determining the amount of investment costs in individual areas of costs and in general for projects with redistribution for the period of their implementation
3. Planning project funding sources	Determining the amount of investment sources and funding for some of them with a redistribution for the period of involvement
4. Optimization of project financing structures	Estimation of the additional income of the enterprise from realization of projects – estimation of additional expenses in connection with realization of projects – estimation of cash flows from realization of projects
5. Investment project threat assessment	Determining the lists of investment risks and assessing the level of some of them – justification of the form of risk insurance
6. Evaluation of the effectiveness of the investment project	Calculation of efficiency indicators: – net present value of the project – profitability of the project – payback period – internal rate of return

Source: compiled by the authors based on works of polish researchers (Grzeszczyk & Waszkiewicz, 2020).

At the stage of planning the source of project financing, the source of financing of investment projects was planned, the amount of funding by individual sources for the entire duration of the projects and for different periods. The tasks of developing this section of business plans are: ensuring a balance between the calculated need for investment and the possible amount of investment resources from different sources; optimizing the financing structure by sources of capital, volumes, terms; the most efficient use of resources aimed at financing the project; reducing the cost of investment resources and project financing costs.

To solve this problem at the stage of developing business plans for investment projects we should work with:

1. Determining the needs of enterprises in investment resources at certain stages of project implementation.
2. Forming the source of projects financing and defining possible volumes of means on separate of them.

The amount of net profit of the enterprise, which can be used for investment activities, depends on such indicators as the volume of economic activity of the enterprise (revenue from sales of products, services); profitability of production; the level of corporate income taxation; the company's need for other uses of profits (material incentives for employees, social development, increase in working capital, payment of dividends to business owners, etc.).

The amount of financial resources of depreciation funds that can be used to finance the project will depend on the value of fixed assets and intangible assets of enterprises, the degree of depreciation, the current rate of depreciation, and balances of depreciation funds at the beginning of investment projects.

The gain on the sale of real estate that will be sold but not used was calculated as the difference between its sale price and the costs associated with its dismantling, transportation and direct sale, with tax payable.

The difference between additional income and expenses will be the cash flow from investing activities. The amount of cash flows from the possible implementation of projects will reflect the return on invested capital (investment) and will characterize the growth of own financial assets of enterprises (net profit + depreciation).

Having explored the possible sources of investment resources, calculating the amount and timing of receipt of funds for some of them, we moved on to the next stage of work, namely, the optimization of structures of project financing. We consider the optimal structure of project financing, which ensures the continued solvency of the project; minimizes the risk associated with obtaining funds from various sources; minimizes the total cost of project financing; and increases the profitability of the enterprise's equity.

To form optimal project funding structures, we implemented the following steps based on the recommendations of researchers (Davidenko, Skrypnyk, Titenko, and Zhovnireno, 2019, Kirieva, Prishliak, Shamanska, Salkova, and Kucher, 2019):

1. Investigate the degree of self-financing of the project. To do this, we calculated and analyzed the project self-financing ratio (R_{sf}) which characterized the share an own source of project financing in the total investment resources. The higher the self-financing rate of projects, the greater the risks associated with self-financing but the greater the return on projects that will remain in the enterprise.

2. Assess the feasibility of raising equity capital to finance investment projects. The solution of this problem involved studying of the alternative possibility of using own investment resources and comparing the planned rates of return on invested equity as a result of attracting investment (R_{pl}) with the profit rates of these enterprises ($R_{fact.}$) or other alternative possibilities of their use ($R_{alt.}$).

In the case of $R_{pl} < R_{fact.}$, or $R_{pl} < R_{alt.}$, it is necessary to provide the possibility of minimizing the use of own investment resources to finance projects.

3. Study the possibility of using the planned amounts of borrowed funds and the timeliness of fulfilment of obligations for their further maintenance (payment of interest and repayment of debt). For this, such a system of indicators as profitability of loans (PI) and the rate of multiple use of interest ($R_{m.i.}$) was calculated.

The calculated level of profitability of loans should be compared with the prices of credit resources. The excess of the level of profitability of loans over their prices indicates the effectiveness of the policy of attracting loans. If the prices of the credit resource are higher than the calculated level of profitability of the project loan, then these are signals of unfavourable ratios in the financing structures – the projects will give more returns to creditors than to the initiators of the investment project.

Positive values of interest rates in certain periods of project implementation indicate the ability of enterprises to pay for loans in a timely manner. The higher the value of the ratios, the higher the solvency levels of the projects under the planned funding structures, and accordingly the lower the risks associated with borrowing.

At a lower value per unit of multiplicity of interest rates, companies cannot be able to pay on time for liabilities that require the use of borrowed investment resources. In this case, it is necessary to replace the financing structures of the projects or to introduce replacements in the terms of payment of debt obligations.

4. Assess the cost of financing investment projects and compare them according to the calculated indicator of the internal rate of return of projects. If the cost of financing projects exceeds the internal rate of return, it is necessary to reject projects as inefficient or adjust their funding structures to reduce the cost of investment capital. If there is an alternative opportunity to finance investment projects, then select those financing options that have the lowest cost.

The implementation of the above analytical work made it possible to develop sound recommendations to improve the structure of project financing in order to increase the effectiveness of their implementation as a whole.

As a result of the project implementation, investment return is expected. The sources of investment income from implementing real investment projects are the differences between additional income and additional current costs of enterprises caused by implementing projects. Unlike existing investment costs, which arose directly at the time of investment, additional income and expenses from the implementation of projects will arise during the period of useful and permanent use of fixed assets gained in the process of project implementation.

Additional income from the project includes additional income received as a result of investing by increasing production and sales; saving (reducing) the current costs of the enterprise due to investment by increasing the level of mechanization of labour-intensive processes and other productive factors of intensification; proceeds from the sale of unnecessary fixed assets released as a result of investment; increase in the depreciation fund as a result of introducing new fixed assets; tax benefits that the company can receive through investment activities.

The additional mass of current costs that will arise with the implementation of investment projects include: growth of current (operating) costs due to the materialization of investments associated with the growth of depreciation through the attraction of new fixed assets, maintenance costs of the updated fixed assets, repair fund, costs on wages and mandatory deductions due to the increase in the number of employees; reduction of the depreciation fund due to disposal of fixed assets released in the process of investment projects; payment of taxes on income from sales of fixed assets to be released; increase in the cost of property rights insurance through the attraction of new fixed assets; increase in the tax burden due to the growth of activity volumes and profits related to investment activities.

The specific composition of obtaining additional income and incurring costs will depend on the nature and content of the investment project (Vorobienko et al., 2018). When raising loans to finance projects as part of the costs that will be associated with the investment, it is necessary to considering the payment of interest on loans in accordance with the terms of the loan agreement.

The next stage of the business plan, the threat assessment of the investment project, gives a description of the risks inherent in this investment project, and provides possible measures to reduce or finance it.

A distinction should be made between threats that will arise directly during the investment of financial resources and the attraction (acquisition) of fixed assets. These include: threats of temporary delay during project implementation; threats of default by an individual project participant (contractors, creditors, etc.); threats to increase the cost of the project (necessary investment costs or schedule of their financing); threats to increase the price of capital and so on; threats that arise during the useful life of investment results. Threats to the economic security of the agricultural sector also include: threats of non-fulfilment of the expected performance indicator and reduction of results from the introduction of investment activities; threats to increase the payback period of investments; threats to the obsolescence of investment objects, their accidental death or damage, etc.

On these bases, the overall levels of economic security of projects, the level of possible losses (the criteria are taken by the industry average or regional average risk) are determined.

According to the assessment of the levels of individual threats, the business plans determine the most effective form of prevention, minimization and insurance: appropriate preventive measures are developed, risk responsibility is distributed among all project participants, reserve funds and allowances are created, documentary guarantees are obtained, external insurance is provided.

The final and most responsible section of the business plan is to assess the effectiveness of the investment project. It determines the feasibility of the project, develops the effect of its implementation for the company (project initiator), payback period and return on investment.

According to Ari and Koc (2018), the main principles of evaluating the effectiveness of project implementation are:

- evaluation based on the expected financial result of project implementation;
- additional cash flows that companies will receive from its implementation;
- taking into account time factors when estimating the cost indicators of projects. This can be achieved by bringing to the present value the flows of investment costs (according to project financing schedules) and financial flows from attracting investments (which will be received in a separate period of useful life of investment objects);
- differentiation of discount rates used in estimating the present value of the financial result of an individual investment project, taking into account different degrees of risk and liquidity of projects. When comparing individual investment projects with different degrees of risk, higher discount rates (risk premiums) should be used for projects with higher levels of risk. It is similar when comparing individual investment projects with different investment periods and opportunities for early exit from projects, the lower discount rate will be used in illiquid projects (allowances for low liquidity);
- variation of interest rates used for discounting depending on the purpose of evaluation and the specifics of the investment project. When creating the basic size of the discount rate, you can use the following indicators: the expected inflation rate, the average market deposit or loan rate, the alternative rate of return on other types of investments, the rate of return on current economic activity.

Evaluation of the effectiveness of real investment projects in agricultural production can be carried out based on calculations and analysis of the following project performance indicators: net present value of the project (*NPV*) which is equal to the difference between the present value of cash flow from project implementation and investment costs; project profitability (profitability index) which characterizes the relative effect of investing in the form of cash flow per unit of investment in the project; payback periods of investments; internal rate of return (discount), which will be defined as the discount rate, which will ensure uniformity between the current cost of cash flow from projects and the cost of investment (La Torre et al., 2019).

Thus, a comprehensive approach to the development, analysis, evaluation and implementation of innovation and investment project in AIP contributes to economic security at the levels of both the agricultural sector and agricultural enterprises based on increasing the efficiency of innovation and competitiveness.

These problems determine the priority areas of development of the domestic agricultural economy and the level of innovation in certain areas of the national AIP. First of all, it is necessary to significantly accelerate systematic research on the development of concepts of state regulation and the real direction of supporting the formation of national AIP in market realities based on innovation and investment models and concepts of sustainable development. Secondly, great attention should be paid to the validity of the effective system, methods and ways of state support and regulation of the development of AIP, taking into account the country's accession to the WTO, as well as integration with EU countries. Thirdly, from the point of view of economics, the development of urgent and urgent directions of development to prevent further negative trends in socio-economic decline of villages and natural and environmental degradation in the spatial base of the national AIP, especially agricultural production.

In general, the implementation of investment and innovation policies to ensure the economic security of the country will involve the implementation of state investment priority of the agricultural sector, creating conditions for opportunities for free capital creation and increasing investment for rural development.

Nowadays, the state investment priorities include: implementing targeted program to support varietal testing and breeding in the fields of crop production, animal husbandry and fish farming; anti-epizootic measure, provision of radical soil improvements, protecting lands and the external environment; reforestation, protecting forest and water resources; carrying out reconstructions, improvements, maintenance and repairs of the existing reclamation system in the inter-economic sense; constructing new facilities and structures that will prevent the negative consequences of natural disasters; supporting the development of small and medium enterprises, especially in rural areas in the direction defined by law; supporting the development and renewal of the material base of agricultural production; developing material and technical base in the social sphere and forming road economy in the countryside.

State investment priorities for the development of the Ukrainian countryside are implemented by financing the costs for these purposes at the expense of state and local budgets; directing one third of revenues to road funds to the development of the road network in rural areas; forming resources for investment support of farms in accordance with the requirements of the legislation; use budget funds for investment needs of socio-economic development of the village based on special targeted investment, sectoral and other programs on a competitive basis; improvement of statistical reporting and research on investment activities on individual farms and other small and medium enterprises in rural areas.

In order to prevent investment threats to the economic security of the agricultural sector of the state, firstly, it is necessary to develop an appropriate stable innovation policy. Innovation policy can be implemented by implementing a set of measures for the development and implementation of strategic programs using high technology in the production and processing of agricultural products, primarily in breeding in crop, livestock and poultry, energy conservation, irrigation, drainage and radical improvement of land, producing biodiesel, ethanol and other types of energy resources, deep processing of agricultural products, genetic engineering.

Measures include improving standardization and certification systems, bringing them closer to world standards; forming legal and regulatory framework for the spread of organic farming; financing of basic research, applied research, research and development, primarily to create and disseminate new high-yielding varieties and hybrids of crops as well as breeds of farm animals and poultry, developing and implementing organic farming technologies, ecologically safe means of protection of plants and animals, energy-saving technologies of production and processing of agricultural products, alternative energy sources in rural areas, economic models of agro-industrial integrated formations and inter-sectoral and domestic economic relations and computerization of agricultural production. In addition, measures to improve the system of state procurement for innovative products are aimed at preventing investment threats; deepening international cooperation in the field of innovation; increasing the level of commercialization of research and innovation results; supporting formation and development of the infrastructure of advisory activities as well as implementing measures to improve the quality of its operation.

In order to ensure the free movement of capital, measures are taken to promote and develop investment-attractive forms of management in rural areas and increase the investment potential of agricultural cooperatives; reducing the duration of procedures for registration of land ownership and other real estate; strengthening the legislative provision of property rights of peasants to their property and land in the process of bankruptcy proceedings of tenant enterprises; legal settlement of the lessee's liability for preserving the value of the leased property and property share in the amount at the time of concluding the relevant agreement, considering the annual inflation; inclusion of agricultural land in economic turnover. In the last decade, the approach to form new environmental management ethic has become increasingly relevant.

A very important factor that will contribute to the social responsibility of business is that the environmental responsibility of agricultural production from a strategic point of view does not contradict the receipt of

economic benefits by the producer. However, the choice of a producer in favour of environmental protection and environmental safety does not always result in adequate financial benefits, which may lead to a conflict between profitability and competitive advantages of the manufacturer, on the one hand, and its environmentally responsible behaviour – on the other. Environmental responsibility of economic entities, the implementation of which does not provide an automatic increase in profits, can be analyzed through the formation of a new management system under the influence of environmental principles (Katan, Dobrovolska & Espejo, 2018).

An important area of work of the economic entities in agriculture is the financial support of the reproduction process at the expense of their own financial resources. It is necessary to determine the factors influencing the growth of equity (Table 2).

Table 2
Data for factor analysis of equity growth rates

Indicators (in Ukrainian hryvnia (UAH), %, etc)	LLC Enterprise Vidrodzhennya		Agricultural Private Rent Enterprise Royakivka		LLC Agrofirma Gagarina		Farm Shans	
	2018yr	2019 yr	2018 yr	2019 yr	2018 yr	2019 yr	2018 yr	2019 yr
1. Capitalized profit, thousand UAH	265	21816	21020	9359	225	207	162	153
2. Net profit, thousand UAH	509	34087	38219	14855	1188	1078	225	207
3. Revenue (net) from products sales, thousand UAH	57985	80772	64178	43524	852	1018	1188	1078
4. Average annual amount of capital, thousand UAH	103155	131443	74165	96731	623	839	852	1018
5. Including equity	84807	108868	73421	94958	25.98	18.23	623	839
6. The growth rate of equity due to capitalized profit, %	0.31	20.04	28.63	9.86	18.93	19.17	25.98	18.23
7. Profitability of turnover	0.88	42.2	59.55	34.13	1.39	1,06	18.93	19.17
8. Capital turnover	0.56	0.61	0.87	0.45	1.37	1.21	1.39	1.06
9. Capital multiplier	1.22	1.21	1.01	1.02	0.72	0.74	1.37	1.21
10. The share of capitalized profit in total net income	0.52	0.64	0.55	0.63	162	153	0.72	0.74

Source: compiled by the authors based on work of Katan et al. (2018)

The change in equity growth rates (ratio of the amount of profit for the reporting year to equity) is influenced by the following factors of tactical action: return on turnover (ratio of net profit to revenue), capital turnover (ratio of revenue to average annual capital) and strategic financial policy factors: capital multiplier (the ratio of the average annual amount of assets on the balance sheet to the average annual amount of equity and characterizes the financial activity of the enterprise to raise loans), the share of net profit for production development (the ratio of reinvested earnings to net income).

These data (Table 3) show that the growth rate of equity is higher than last year in the first and third companies due to increased profitability and increased share of capitalized profit in total net profit. The decrease in equity of the second and fourth enterprises studied above was due to reduced profitability, capital turnover and capital

multiplier, which is a reserve to improve the financial condition of the enterprise. Financial condition and efficiency of the enterprise financial security is impossible only within the company's own resources.

Table 3
Change in the growth rate of equity due to the influence of the tacticaction factors
(by the method of chain substitution)

Indicators	LLC Enterprise Vidrodzhennya	Agricultural Private Rent Enterprise Royakivka	LLC Agrofirma Gagarina	Farm Shans
Equity growth rate (EGR)	0.31	28.63	24.89	25.98
CEGR 1	15	16.41	27.14	26.31
CEGR2	16.4	8.53	21.18	20
CEGR 3	16.28	8.6	22.49	17.74
CEGR 4	20.04	9.86	26.62	18.23
General change in the growth rate of equity	19.73	-18.77	1.73	-7.75
<i>Including the tacticaction factors</i>				
Profitability of turnover	14.69	-12.22	2.25	0.33
Capital turnover	1.4	-7.88	-5.96	-6.31
Capital multiplier	-0.12	0.07	1.31	-2.26
The share of capitalized profit in total net income	3.76	1.25	4.12	0.49

Source: compiled by the authors based on work of Davidenko et al. (2019)

To expand its financial capabilities, it is necessary to attract additional borrowed funds in order to increase investment in the production process in terms of expanded innovation development, to obtain greater profits. In this regard, the management of debt capital is one of the most important functional areas of financial regulation of the enterprise. The major indicator of the impact of the use of borrowed funds on the performance of an agricultural enterprise is the effect of financial leverage.

The implementation of investment activities, especially in terms of real investment, directly affects the implementation of specific projects, leads to an aim increase in capitalization and, accordingly, the value of the business of agricultural enterprises and associations. The performed formalization of the process of forming and growth of the market value of the enterprise allows creating a methodological basis to assess the investment attractiveness of agricultural businesses. The proposed approach allows considering the results of an analysis of industry and product specialization, size and scale of production, financial and economic stability of agricultural enterprises and associations as well as product and market orientation of investment projects.

Studies shows that the most rational approach to long-term maintenance of the protected state of investment results of agricultural enterprises and associations is the integration of organizational, economic and organizational and legal means of their economic protection. The criterion for the rationality of such a combination is considering the results of a comprehensive diagnosis of economic security of agribusiness entities and their financial and economic stability.

Determining the influence patterns of the level of protection of the investor's economic interests on stabilizing of the agricultural enterprises and associations development allows to establish that the investment activities of half of the domestic agribusiness are in an unprotected, but safe state. This result allows considering the impact

of the level of protection on stabilizing the development through the prism of ensuring the appropriate level of economic efficiency of the main activity of the investment object during and after the investment project, which allows developing ways and procedures to improve the systems of economic protection of investment results.

4. Conclusions

It is scientifically justified that innovative investments are made on basis of business planning. A typical structure and content of the project of real investments in agro-industrial production is proposed. It consists of six stages: characterizing the investment object and conditions of its implementation, calculating the company's needs in capital investments required to implement the investment project; planning the source of project financing; optimizing project financing structures, investment project threat assessment; evaluating the effectiveness of the investment project.

At the stage of characterizing the investment object and the conditions of its implementation, a general description of the nature, purpose and results of investment activities are provided. At the stage of calculating the company's needs in capital investments required to implement the investment project, the need for investment was calculated. At the third stage of planning the source of project financing, the source of financing of investment projects, the amount of funding by individual sources for the entire duration of the projects and for different periods was planned. The optimal structure of project financing can be considered that ensures constant solvency of the project, minimizes the risk associated with receiving funds from various sources, the total cost of project financing is minimized, the return on equity of the enterprise increases. At the next stage, determining the lists of investment risks and assessing the level of some of them, justifying the form of risk insurance was done. Evaluation of the investment project effectiveness determines the calculation of efficiency indicators.

Bibliographic references

- Alston, J. M., & Pardey, P. G. (2014). Agriculture in the Global Economy. *Journal of Economic Perspectives*, 28(1), 121–146. <https://doi.org/10.1257/jep.28.1.121>
- Ari, I., & Koc, M. (2018). Sustainable Financing for Sustainable Development: Understanding the Interrelations between Public Investment and Sovereign Debt. *Sustainability*, 10(11), Article 3901. <https://doi.org/10.3390/su10113901>
- Ayodele, O. J., Innocent, I. O., & Garba, S. J. (2019). Innovation as a Mediating of Relationship Between Internal and External Environment in Agribusiness Performance. *Marketing and Management of Innovations*, 1(1), 196–207. <https://doi.org/10.21272/mmi.2019.1-16>
- Davidenko, N., Skrypnyk, H., Titenko, Z., & Zhovnirenko, O. (2019). Modeling of the optimum level of financial provision of Ukrainian enterprises' innovative activities. *Global Journal of Environmental Science and Management*, 5(Special Issue), 197–205. <https://doi.org/10.22034/gjesm.2019.05.SI.22>
- Grzeszczyk, T. A., & Waszkiewicz, M. (2020). Sustainable Investment Project Evaluation. *Entrepreneurship and Sustainability Issues*, 7(3), 2363–2381. [https://doi.org/10.9770/jesi.2020.7.3\(60\)](https://doi.org/10.9770/jesi.2020.7.3(60))
- Jankelová, N., Remeňová, K., Skorková, Z., & Némethová, I. (2019). Innovative approaches to management with emphasis on soft factors and their impact on the efficiency of agribusiness companies. *Agricultural Economics (Zemědělská ekonomika)*, 65(5), 203–211. <https://doi.org/10.17221/202/2018-agricecon>

- Katan, L., Dobrovolska, O., & Espejo, J. (2018). Economic growth and environmental health: a dual interaction. *Problems and Perspectives in Management*, 16(3), 219–228. [https://doi.org/10.21511/ppm.16\(3\).2018.18](https://doi.org/10.21511/ppm.16(3).2018.18)
- Kirieleva, E. A., Pryshliak, N. V., Shamanska, O. I., Salkova, I. Y., & Kucher, A. V. (2019). Strategic priorities and financial support of Ukrainian agricultural sector development. *International Journal of Ecological Economics & Statistics*, 40(2), 25–37.
- La Torre, M., Trotta, A., Chiappini, H., & Rizzello, A. (2019). Business Models for Sustainable Finance: The Case Study of Social Impact Bonds. *Sustainability*, 11(7), Article 1887. <https://doi.org/10.3390/su11071887>
- Makovoz, O. S. (2018). *Ekonomichniy zakhyst rezultativ investytsiinoi diialnosti pidpriemstv ta obiednan ahrarnoi sfery: stratehii, mekhanizmy ta instrumentarii* [Economic protection of results of investment activities of the enterprises and associations of agrarian sphere: strategies, mechanisms and tool]. Smuhasta typohrafiia. <http://repository.kpi.kharkov.ua/handle/KhPI-Press/46950>
- Official Web-Portal of the Parliament of Ukraine. (2015, May 6). *UKAZ PREZYDENTA UKRAINY #287/2015 “Pro Stratehiiu natsionalnoi bezpeky Ukrainy”* [National Security Strategy of Ukraine, Decree of the President of Ukraine #287/2015]. <https://zakon.rada.gov.ua/laws/show/287/2015?lang=en#Text>
- Prokopenko, O. V., Shkola, V. Y., & Shchierbachenko, V. O. (2017). *Upravlinnya innovatsiynoyu skladovoyu ekonomichnoyi bezpeky* [Management of the innovative component of economic security]. Trytoriia. <http://essuir.sumdu.edu.ua/handle/123456789/66704>
- Sheremet, A. D., & Saiifulin, R. S. (1996). *Metodika finansovogo analiza* [The technique of financial analysis]. Infra-M.
- Tseng, M.-L., Tan, P., Jeng, S.-Y., Lin, C.-W., Negash, Y., & Darsono, S. (2019). Sustainable Investment: Interrelated among Corporate Governance, Economic Performance and Market Risks Using Investor Preference Approach. *Sustainability*, 11(7), Article 2108. <https://doi.org/10.3390/su11072108>
- Vorobienko, P. P., Lozova, T. I., & Oliynyk, G. Y. (2018). *Perekhidna ekonomika: teoriia i praktyka: monohrafiia* [Transition Economics: Theory and Practice]. ONAZ O.S. Popov.
- Zakharkin, O. O., Basantsov, I. V., Myroshnychenko, I. O., & Shcherbachenko, V. O. (2019). Analysis of the innovative development directions for industrial enterprises. *RevistaEspacios*, 40(27), 16. <http://www.revistaespacios.com/a19v40n27/19402716.html>

Esta obra está bajo una Licencia Creative Commons
 Atribución-NoCommercial 4.0 International

