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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

**PROBLEMS OF ASSESSING THE INVESTMENT
EFFICIENCY IN THE CONSTRUCTION SECTOR IN THE
MODERN PERIOD**

Speciality: 5312.01 – Field Economy

Field of science: 53 - Economic Sciences

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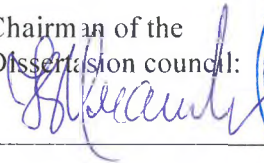
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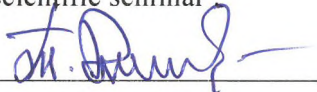
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GENERAL CHARACTERISTICS OF DISSERTATION

Relevance and degree of development of the topic. Ensuring the sustained and sustainable growth in modern globalisation conditions of Azerbaijan national economy is the main direction of state regulatory economic policy. Solving this problem is one of the important and necessary issues of the state according to national and society's social-economic interests. The efficiency development of national economy creates financial opportunities for the broadly participation of government in the international distribution of labour and integration into the international economic system. The scientific and practical research conducted on the priority directions of the economy and proposals and recommendations prepared based on this research is of special importance in ensuring the sustainable and resilient development of the economy. The implementation of fundamental institutional, legal, and economic reforms in the sustainable development of Azerbaijan's economy, the formation of a corresponding regulatory mechanism, and the effective application of this mechanism in economic activities play a crucial role in achieving sustainable economic growth. The reforms and multidimensional development measures undertaken by the state are of great significance in this process. The sustainable development of Azerbaijan's economy relies on the implementation of fundamental institutional, legal, and economic reforms, the establishment of a corresponding regulatory mechanism, and the effective application of this mechanism in economic activities. The reforms and multifaceted developmental measures undertaken by the state play a crucial role in ensuring sustainable economic growth. So, the first is the existence of a legal and regulatory framework formed and constantly improved by the government, and the second is the formation of a highly efficient structure of the national economy through the implementation of a well-grounded investment-innovation policy.

It is of great importance to further increase the existing potential of investment in all sectors of the Azerbaijani economy, including the construction sector, in line with the requirements of national interests, diversify investment processes, and effectively use investments.

In all fields of Azerbaijan economy, as well as in construction sector it's very important to increase the existing investment potential, diversification and to use investments efficiently in accordance with the requirements of national interests. The step-by-step efficient solution of this problem is an important factor in the development of the country's economy and the improvement of the social-economic status of the population in the modern time and perspective. These include the process of forming investment investments, the creation of a legal regulation mechanism in the field of evaluating and increasing their efficiency, the regular updating of their implementation mechanism, and systematization. The noted points have been reflected in the development concept "Azerbaijan2020: Look into the Future", the "Strategic Road Maps on the national economy and key sectors of the economy in the Republic of Azerbaijan", the "Azerbaijan 2030: National Priorities for Socio-Economic Development" and the "Socio-economic development strategy for 2022-2026 of the Republic of Azerbaijan". Some Azerbaijani economists such as Z.A. Samadzada, N.M. Muzaffarli (İmanov), T.N. Aliyev, M.A. Mammadov, T.T. Eyniyev, Q.R. Qeybullayev, İ.A. Aslanzadə, T.H. Huseynov, A.B. Aliyev, İ.C. Hasanov, A.M.Asadov, J.A.Badalov, V.M. Shiraliyev, A.M. Aliyev, S.Z. Isayev, and others researched some fields related to determination the nature of investment activity in the sectors of the national economy, including investments in the construction sector, the factors affecting the increase in the efficiency of investment, their evaluation, and the research on investment in the direction of the perspectives of the construction and investment problems in our country. Foreign scientists such as A.E. Leybman, R.M. Merkin, Y.P. Aniskin, A.H. Asaul, İ.S. Stepanov, J.M. Keynes, V.E.Cherkasov, P. Samuelson, E.D. Dolan, D.E.Lindsey, V.V. Sheremet, and others have conducted scientific research on the theoretical and methodological foundations of investment activity, the efficiency of investment in the construction sector, and the research on improving its structure. It should be noted that complexity of investment processes, the continuous development of investment relations, and due to the regular changes in the perspective development of the construction sector, it is necessary and important to conduct these studies in a systematic and

step-by-step manner, improving them in accordance with the requirements of the modern era. In particular, at the current stage of economic development, the evaluation of the investment efficiency, financial sources and their expansion, the organization of dynamic development of the researched area, management, and the regulation and improvement of the normative-legal framework of the investment attraction process have always been relevant issues, requiring continuous scientific research. Therefore, it is particularly important to emphasize the investment, its effective directions, and the objective necessity of continuing the scientific investigation of problems on a regular basis.

Research facility is the construction sector of the Republic of Azerbaijan.

Research subject is the organization and management of investment processes in the construction sector, and the issues related to the evaluation of investment efficiency

The purpose of the research: The main goal of the research is to develop the dynamic progress of efficient organization and implementation of investment processes in Azerbaijan's construction sector, attraction of investment resources from both internal and external sources into the national economy, and the preparation of practical proposals and recommendations based on the study of the conceptual foundations of the legal mechanism for regulation of using. To achieve these goals, the following tasks have been set in the research work:

- A thorough investigation of the essence of the investment category, clarifying its place and role in a market economy;
- Studying of the methodological approaches to evaluating the efficiency of investments;
- Research into the formation process of the normative and legal framework for regulating investments in the construction sector;
- Review of the development-oriented measures for creating a favorable organizational, economic-legal environment that the government implements for the effective realization of investments in the country, and determining the significance of the results of the work carried out;

- Analysis of the current situation regarding the use of investments in the modern stage of the country's economic development.

- Assessment of the current situation of investment in construction sector;

- Research of methodological approaches to the evaluation of investment projects, and preparation of proposals for improvement;

- Defining of development directions for investment processes, preparation of proposals for further development of investment potential, and directing this potential towards the development of the construction sector's economy.

Research Methods The methods such as statistical grouping, scientific, comparative and analytical analysis, economic-mathematical modeling, synthesis, and a comprehensive approach etc., were used in the process of conducting the research. The information base of the research consists of the provisions of scientific studies by national and foreign researchers on the efficient management of investment processes, legal norms of normative-legal acts related to investments adopted in the Republic of Azerbaijan, relevant state programs, development concepts and strategies, reports from relevant state authorities, statistical data, and materials from the calculations and analyses conducted by the author.

Key Provisions Submitted for Defense

- In the modern era, there is a need to clarify and study the content and essence of the investment concept, justify investment projects, and determine and calculate the efficiency of investments and their indicators.

- The effective organization, management, and implementation of investment processes in the construction sector, as well as the identification of factors determining the importance of attracting investments, will ensure an increase in investment in the researched field and contribute to its innovative and sustainable development.

- Identifying the conditions and factors that ensure the continuous improvement of the investment process and legal regulatory mechanisms in the construction sector will enhance the investment environment and facilitate the implementation of effective

investment processes within the framework of state, entrepreneurship, and public-private partnerships.

- The evaluation of factors affecting investment activity in the context of ensuring and deepening diversification across economic sectors, as well as the systematization of their interrelations, will ensure the sustainable and resilient development of the economy, enhance the efficiency of investment activities, and support balanced inter-sectoral development.

- The study of the impact of investments directed toward fixed capital on GDP growth, along with the development and implementation of relevant proposals, will lead to the effective provision of the national economy with investment resources.

- Identifying the problems that negatively impact the sustainable economic development process of the studied sector is of great importance. Addressing these issues requires a comprehensive approach to problem-solving, which, in turn, will accelerate the sustainable and resilient economic development of the construction sector, improving the quality and efficiency of projects.

Scientific novelty of the research The scientific novelty of the research lies in the comprehensive study of the interrelation between the development of investment processes in the country and the implementation of investment projects in the construction sector, which is considered a leading production structure. The study evaluates the impact of construction sector development on the sustainable growth of the national economy. The key scientific innovations obtained from the research are as follows:

- The dynamics and indicators of investment volume in the construction sector in Azerbaijan in the modern era have been analyzed and evaluated.
- The diversification coefficient of domestic and foreign investments directed toward fixed capital has been determined.
- The impact of investments allocated to product manufacturing, service sectors, and residential construction on GDP growth rates has been econometrically assessed, and the multiplicative effect has been calculated.

- The elasticity coefficient has been calculated to characterize the influence of investments on the GDP volume in the country.
- Existing problems in assessing the efficiency of investment allocation in the construction sector have been identified, and proposals have been provided for their resolution.
- Proposals and recommendations have been developed for improving the legal mechanisms of investment regulation, ensuring the dynamic development and effective operation of the construction sector as a key organizational and economic area in investment implementation.
- The factors ensuring the development of investment allocation in construction have been identified, their impact on investment processes has been examined, and well-grounded proposals for their application have been provided.

Theoretical and Practical Significance of the Research. The theoretical significance of the research lies in the fact that the scientific findings obtained during the study, along with the substantiated recommendations proposed, can be utilized to improve the legal mechanism of state regulation of the sustainable and resilient development process of the national economy through the most efficient and rational use of the country's investment potential. The practical significance of the research is that the proposals presented in the conclusion of the study may play a significant role in the development and formulation of state investment policy, as well as in the preparation and implementation of sectoral state programs.

Approval and Application. Articles related to the topic of the dissertation - 10 journal articles (including 3 of them were published in abroad) and 13 conference thesis (6 of them were published internationally) have been published. The research findings have been presented at various national and international scientific-practical conferences, so Republican scientific-practical conference on *"Current Problems of Economic Reforms in Azerbaijan"* in 2018, International scientific conference on *"Infrastructure Support for a Diversified Economy: Key Trends and Development Directions"* in 2019, XXIII Republican scientific conference of PhD students and young researchers in 2019, Scientific conference on *"Heydar Aliyev*

and Azerbaijan's National Economic Development Model" in 2020, International scientific-practical conference dedicated to the 100th anniversary of Heydar Aliyev on "Reintegration of Liberated Territories into the National Economy: Goals and Directions in 2023, 21st International Turkish World Social Sciences Scientific Conference at Gazi University, Ankara, Turkey in 2023. Additionally, the research has been presented at various other national and international scientific-practical conferences.

The name of the organization where the research work was performed. The research work was carried out at Azerbaijan University of Architecture and Construction.

The total volume of the dissertation with a sign indicating the volume of the structural sections of the dissertation separately. The dissertation consists of an introduction, three chapters, nine sections, a conclusion, a list of references, and a list of abbreviations. The total volume of the dissertation is 271,160 characters, including, Title page and table of contents – 2,475 characters, Introduction – 12,810 characters, Chapter I – 58,813 characters, Chapter II – 69,220 characters, Chapter III – 63,500 characters, Conclusion – 16,383 characters, List of references – 18,545 characters, List of abbreviations – 363 characters. Excluding tables, graphs, diagrams, the list of references, and abbreviations, the main body of the dissertation contains 223,201 characters.

STRUCTURE OF THE DISSERTATION

INTRODUCTION

CHAPTER I THEORETICAL AND METHODOLOGICAL ASPECTS OF INVESTMENT EFFICIENCY IN A MARKET ECONOMY

- 1.1. Economic Essence of Investments and Their Financing Mechanism
- 1.2. Methodological Aspects of Evaluating Investment Efficiency in the Modern Era
- 1.3. Methodological Aspects of Investment Regulation in the Construction sector

CHAPTER II. COMPREHENSIVE ANALYSIS OF INVESTMENT PROCESSES IN AZERBAIJAN'S CONSTRUCTION SECTOR

- 2.1. Analysis of the Current State of Investment in the National Economy
- 2.2. Evaluation of Investment Efficiency in the Construction Sector
- 2.3. Assessment of the Current State of Investments in Azerbaijan's Construction sector

CHAPTER III. IMPROVING THE MECHANISM FOR EVALUATING THE EFFICIENCY OF INVESTMENT PROCESSES IN THE CONSTRUCTION SECTOR

- 3.1. Directions for Improving the Investment climate in Azerbaijan
- 3.2. Strategies for Increasing Investment Efficiency in the Construction sector
- 3.3. Improving the investment project evaluation system

CONCLUSION

REFERENCES

ABBREVIATION

MAIN CONTENT OF THE DISSERTATION

The Introduction of the dissertation substantiates the relevance of the topic, the degree of development are justified, the facility and subject of the research, goals and objectives, research methods, the main provisions put forward for defense are determined, information is provided about its scientific novelty, theoretical and practical significance, approval and application, the name of the organization where the work was performed, its structure and volume.

The first chapter of the dissertation, titled "**Theoretical-Methodological Aspects of Investment Efficiency in a Market Economy**," covers the economic essence of investments and their financing mechanism, the methodological aspects of evaluating investment efficiency, and the methodological aspects of investment regulation.

In the context of modern economic relations, it is appropriate to review various approaches to the concept of "investment" to understand its essence and ensure its efficient use across economic sectors.

Azerbaijani economist S.Z. Isayev states that investment characterizes the use of existing resources to acquire new material, intangible, and financial assets.¹ Russian economist V. Cherkasov defines investment as "the allocation of financial resources to generate income or profit."² English economists E. Dolan and D. Lindsey describe investment as "an increase in the amount of capital operating within an economic system, in other words, the supply of production means created by people."³ English economist J.M. Keynes highlights several key factors in his economic approach to investment:⁴

¹ Isayev, S.Z. *Legal Regulation of Investment Activity* / S.Z. Isayev. - Baku: University of Economics. -2011, p.7

² Cherkasov, V.E. *International Investments* / Moscow: Delo., -2009. -135 p

³ Dolan, E.J. *Microeconomics*. / E.J. Dolan, D. Lindsey. Translated from English by V. Lukashovich et al.; General editorship by B. Lisovik and V. Lukashovich. St. Petersburg., -1994. -448 p.

⁴ Keynes, J.M. *The General Theory of Employment, Interest, and Money* / J.M. Keynes. Baku: Qanun., -2001. – 478 p

1. Interest rates on loans should be low when this happens, the marginal efficiency of capital investments will increase, leading to a rise in investment inflows.
2. Government expenditures should be increased this will boost national savings, which will later be converted into investments.
3. The government should enhance capital investments and expand public procurement of goods.
4. It is essential to improve the efficiency of capital investments.

J.M. Keynes asserts that implementing these measures will ultimately result in expanded production, reduced unemployment rate, and the recruitment of additional workers into production sectors.

It is well known that in Keynesian theory, the approach related to the multiplier plays a crucial role. According to this concept, an increase in investment spending generates a multiplier effect, creating a demand that surpasses the initial investment.

The multiplier coefficient represents the relationship between investment growth and the increase in Gross Domestic Product (GDP). This relationship can be expressed as follows:

$$\Delta Y = \frac{1}{1 - b} \Delta I$$

Here, Y represents the increase in GDP, I denotes the increase in investment, and b refers to the marginal propensity to consume, $\frac{1}{1 - b}$

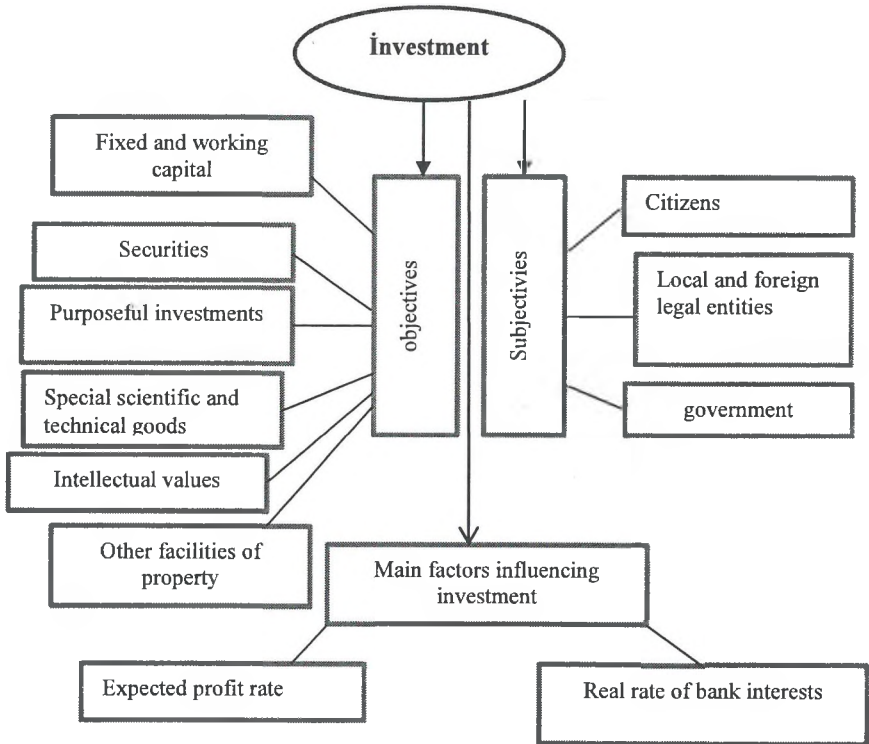
is relationship is known as the investment multiplier. The multiplier coefficient expresses the relationship between the growth of investment volume and the increase in GDP.

In any theoretical approach concerning economic growth, investment remains at the core. The most general perspective in these theories, in our view, is as follows: The profit factor stimulates the investment process and serves as the primary source of investment financing. Investment is not only discussed in economic literature but is also reflected in legal regulatory documents. For example, let's examine

how it is defined in the Law of the Republic of Azerbaijan "On Investment Activity"⁵:

Investment is characterized as funds, securities, property rights, intellectual property—essentially, material or intellectual assets—allocated to entrepreneurial activities or objects to generate profit (income) or achieve social benefits.

Based on the scientific-theoretical approaches and legal principles mentioned above, we can illustrate the investment process in Scheme 1 as follows:



Scheme 1. Classification of investments based on objects, subjects, and factors influencing investment allocation.

Source: Compiled and prepared by the author.

⁵ Law of the Republic of Azerbaijan on Investment // Baku. 22 June 2022.

From an economic perspective, state institutions, entrepreneurs, private entities, and associations engaged in investment activities implement the investment process to achieve predefined socio-economic objectives. Essentially, the investment process, in our opinion, is based on 4 main principles. These principles include: security, transparency, liquidity, efficiency. These principles are applicable to all investment entities. The rationale behind these principles has been substantiated and reflected in the dissertation.

Investments are reflected in the stabilization of the economy and the determination of prospects for the future, as well as in the formation of a competitive economy. From a macroeconomic point of view, an increase or decrease in investment has a serious impact on the aggregate output in the country, which is reflected in the level of employment. We believe that the volume of investment is formed depending on the interest rate, the expected rate of return on investment in fixed capital, the state of the conjuncture, the tax rate and other factors.

Investments play a crucial role in stabilizing the economy, determining future prospects, and shaping a competitive economic environment. From a macroeconomic perspective, an increase or decrease in investment allocations significantly impacts the total output of a country, which in turn affects employment levels. We believe that the volume of investment is formed depending on the interest rate, the expected profit rate of the investment in fixed capital, the state of the economy, the tax rate, and other factors.

Investment spending is considered the most volatile component of aggregate demand. Empirical studies confirm that changes in investment spending become a driving force for economic cycles. Thus, decreases in investment spending create certain fluctuations and fluctuations in the volume of GDP. It should be borne in mind that since investments in macroeconomics are related to fixed capital and act as one of the factors of production in capital, its usefulness always remains relevant. In international practice, aggregate investment costs are considered beneficial when they are divided into the following areas. They are followings:

1. Fixed capital 70%-75% (roads, infrastructure, creation of fixed

assets, modernization of production)

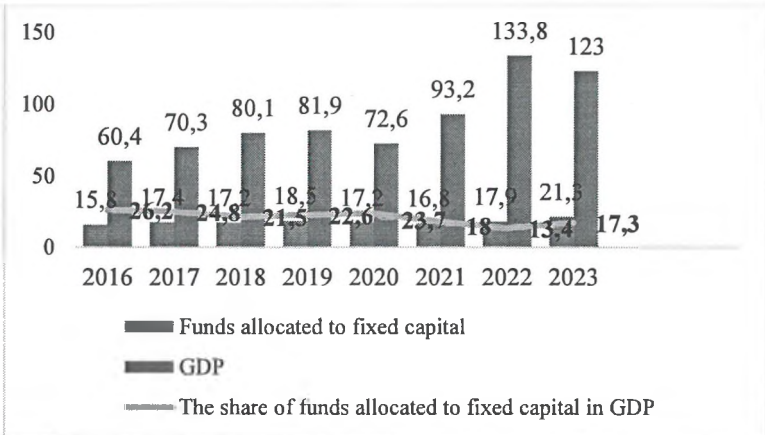
2. Housing construction 15% - 20%

3. Increase in reserves 3%

4. For think tanks 1%-2% (staff development, scientific research, expenses for branding the product)

An increase in investments leads to GDP growth, while a decrease in investments causes a certain decline in GDP. From a scientific perspective, in order to track the trend of these ideas in practice, let us examine the total investments directed towards fixed capital, GDP, and the dynamics of the share of funds allocated to fixed capital in GDP.

An increase in investments leads to GDP growth, while a decrease in investments results in a certain decline in GDP. From a scientific perspective, to observe the trend of these ideas in practice, let us analyze the total investments directed towards fixed capital, GDP, and the dynamics of the share of funds allocated to fixed capital in GDP.



Graph 1. GDP, total investments directed to fixed capital, and the share of funds allocated to fixed capital in GDP (in billion manats, percentage).

Source: Compiled by the author based on materials from <https://stat.gov.az/>

Graph 1 data shows that investments directed to fixed capital increased by 34.8% in 2023 compared to 2016, while GDP grew by 103.6%. Although the share of funds allocated to fixed capital in GDP decreased from 26.2% in 2016 to 17.3% in 2023, this decline did not create negative fluctuations in GDP. The reason for this is the dynamic development of investments directed to fixed capital and the fact that their total amount did not decrease.

The main goal of investment allocation is to achieve economic and social benefits. Economic efficiency is measured by the costs incurred, while social efficiency is characterized by social parameters such as effective employment, environmental impact, and social rights. As a result, these two indicators combine to form the concept of "socio-economic efficiency."

The main issue in investment is to achieve economic and social efficiency. The cost incurred as a measure of economic efficiency is expressed in terms of social parameters (effective employment, environment, social rights, etc.). As a result, these two indicators have combined to form the concept of "socio-economic efficiency". The efficiency of investment is mainly assessed in the form of a project before investment. The efficiency of investment projects is assessed from various aspects. Here, efficiency from an economic, budgetary, commercial, and social point of view can be noted. Several indicators are widely used when assessing the efficiency of projects. The most commonly used indicators are net present value; internal rate of return; profit index; payback period. The most commonly applied indicators include net present value (NPV), internal rate of return (IRR), profitability index, and payback period. These indicators are used both in the preparation and selection of investment projects, and in the preparation and implementation of investment strategies. Calculations were made in the work using the mentioned indicators.

It should be noted that the regulation of investments in the construction sector is based on a comprehensive methodology. This includes aspects such as legal regulation, effective management of risks and financial resources, and thorough strategic planning to ensure efficient investment management. The effective regulation of these processes plays a crucial role in the successful implementation of

construction projects and contributes significantly to economic development stimulation.

In the **second chapter** of the dissertation, titled **“Comprehensive Analysis of Investment Processes in Azerbaijan’s Construction Sector,”** the current state of investment in the national economy has been analyzed, emphasizing the significance of allocated funds. The efficiency of investment utilization in the construction sector has been assessed. Additionally, the development level of the sector, the distribution of investments across economic fields, and the role of state policy in this direction have been evaluated.

The socio-economic development and technological progress of a country significantly depend on the volume and priority directions of investment. The efficient application of investment in the construction sector is of particular importance in ensuring the sustainable and sustainable development of the country's economy. The implemented investments determine the economic-technical level of national production and the structure of the economy. In recent years, Azerbaijan’s investment policy has ensured the restructuring and development of the national economy, as well as the improvement of its structure. The efficient application of investments in the construction sector plays a crucial role in ensuring the sustainable and stable development of the country's economy. When analyzing investments in the construction sector within the national economy, it is essential to approach the issue from four key perspectives:

1. Investments in the volume and value of commissioned fixed assets to ensure the sustainability and development of aggregate output;
2. Investments in housing construction to improve the social well-being of the population;
3. Investments directed toward material and commodity reserves;
4. Investments in infrastructure sectors.

When examining the structural composition of investments in fixed capital in the country, it becomes evident that in recent years, a significant portion of investments in fixed capital has been allocated to construction and installation works.

Table 1
Structural Composition of Investments in Fixed Capital (million manats)

	Total invest-ments	Construc-tion and Installation Works	Weight %	Machinery , Equipment ,Tools, and Inventory	Weig ht %	And other	weig ht %
2016	15772,8	11531,9	73,1	1866,1	11,8	2374,7	15,1
2017	17430,3	12447,1	71,4	2161,9	12,4	2821,3	16,2
2018	17244,9	11737,6	68,1	2032,3	11,8	3474,9	20,1
2019	18539,5	11974,8	64,6	2301,3	12,4	4263,3	23,0
2020	17226,1	11021,9	63,9	2893,1	16,8	3311,1	19,3
2021	16815,5	11200,1	66,6	3289,0	19,5	2326,3	13,9
2022	17878,2	13142,9	73,5	3094,2	17,3	1641,0	9,2
2023	21310,7	15028,3	70,5	3382,1	15,9	2900,4	13,6
Compari-son of 2023 with 2016: +Increase - decrease	+35,1	+30,3		+81,2		+22,1	

Source: Summarized based on data from Azerbaijan State Statistics Committee.

During the analyzed period, an average of 11,758.4 million manats, or 66.6%, was invested in production sectors, 4,889.3 million manats, or 27.1%, in service sectors, and 1,129.5 million manats, or 6.4%, in residential housing construction. Compared to 2016, the 0.4% increase in investments directed toward production sectors in 2023 contributed to the growth of local production and the expansion of access to foreign markets. The 1.8-fold increase in investments in the service sector supported the development of the non-oil sector in the country. Additionally, the 73.4% increase in investments directed toward residential housing construction improved living conditions, accelerated urban development, and positively impacted the production of construction materials, employment opportunities, and the advancement of various projects.

One of the key issues in the distribution of investments directed toward fixed capital is the distinction between domestic and foreign

investments. To determine the efficiency of these investments, it is essential to analyze the dynamics of both domestic and foreign investments in various sectors of the economy and assess the level of diversification within these sectors. In our opinion, calculating the degree of diversification is crucial for implementing more effective measures in this sector. To calculate the degree of investment diversification, we use the following formula:

$$D = \frac{S^2}{S_1^2 + S_2^2 + S_3^2 \dots + S_n^2} \quad 1 \leq D \leq N$$

Here, **D** represents the diversification coefficient, while S_1, S_2, \dots, S_n denote different sectors of the economy.⁶ When calculating the diversification coefficient for any economic sector, it is also important to highlight what constitutes its optimal threshold or coefficient.

It should be noted that the diversification coefficient varies between **1** and **n** for all countries. If the coefficient is close to **1**, it indicates a lack of diversification. However, if it is close to or greater than the sector's average value, it signifies effective diversification.

$$D < \frac{n+1}{2} \quad D > \frac{n+1}{2}$$

Table 3
Diversification Coefficient of Investments Directed to Economic Sectors

Years	2019	2020	2021	2022	2023
The efficient coefficient for foreign investments	17.5	17.5	17.5	17.5	17.5
The coefficient obtained for foreign investments	0.71	0.62	0.61	0.53	0.7
Efficient coefficient for domestic investments	31	31	31	31	31
Coefficient obtained for domestic investments	2.96	2.43	2.53	2.11	3.6

Source: The table is compiled based on the author's calculations.

⁶ <https://arastirmax.com/tr/system/files/dergiler/25825/makaleler/6/arastirmax-mk-bazari-gostricilrinin-iqtisadi-sektorlar-v-regionlar-uzr-diversifikasiyasinin-qiymtlndirilmsi.pdf>

It should be noted that domestic investments directed toward fixed capital have been diversified across 61 sectors, including sub-sectors within the national economy, while foreign investments have been spread across 34 sectors. The data from Table 3 indicate that calculations were conducted based on statistical figures from 2019-2023, and an efficiency coefficient was determined. The analyses show that, according to the calculated coefficients, foreign investments are concentrated in more limited sectors, meaning the level of diversification is quite restricted. On the other hand, domestic investments exhibit relatively broader diversification but are still not fully efficient. Thus, the conducted research suggests that the interconnected and comprehensive development of all sectors of the economy is essential.

One of the key criteria for assessing the efficiency of investment utilization in the construction sector is the investment multiplier. The investment multiplier serves as a general indicator of economic efficiency, reflecting the final productivity of investment processes. To calculate the multiplier effect for the construction sector in Azerbaijan, it is essential to first analyze the correlation relationships between investments directed toward product manufacturing, service sectors, and residential construction, and GDP. These relationships are used to evaluate how allocated investments impact GDP growth. To calculate the multiplicative effect on the construction sector in Azerbaijan, first of all, the correlation between the volume of investments directed to product production, service sectors, and residential construction and GDP should be studied. For this purpose, a linear regression model was constructed using the least squares method in the Eviews software package, based on statistical data from 2000-2023⁷, to determine the extent to which the multiplier contributes to GDP efficiency.

$$\text{IN}=3719.8+0.1600x\text{ÜDM}, (R^2=0.81); (DW=0.53); (b=0.16).$$

It should be noted that the methodology for calculating the multiplier, as proposed by J.M. Keynes, is designed for a closed economy. From this perspective, in an open economy, the factor of capital "flight" from the country must also be considered. In such conditions, it is essential to account for the net export function. In this

⁷ The State Statistical Committee of the Republic of Azerbaijan- www.stat.gov.az

regard, a model was constructed in the Eviews software package based on statistical data from 2000-2023 in Azerbaijan to establish the relationship between net exports and GDP.

$NET = -4034.7 + 0.3521 \times \dot{U}DM$, ($R^2 = 0.59$); ($DW = 2.07$); ($b = 0.35$).

Let's evaluate the multiplier based on the given coefficients as follows:

$$\Delta Y = \frac{1}{1 - 0.2 + 0.4} = 0.83$$

Based on the given data, a 1% increase in investments in the construction sector results in a 0.83% increase in GDP. This means that the elasticity coefficient is $E = 0.83E = 0.83E = 0.83$.

This result indicates that investments in the construction sector have a significant impact on GDP growth. In other words, any changes in investments create a positive multiplier effect on the economy.

$$\bar{E}_{yx} = a_1 \frac{\bar{x}}{\bar{y}}$$

$$\bar{E}_{yx} = \frac{0.16 * 50146.6}{11744} = 0.68$$

The fact that $\bar{E}_{yx} = 0.68\%$ indicates that the elasticity coefficient between the volume of investments directed toward product manufacturing, service sectors, and residential construction and the volume of GDP is 0.68. This means that a 1% increase in the average volume of these investments could lead to a 0.68% increase in the average GDP.

It should be noted that the multiplier effect is more effective in the short term. Every country strives to efficiently balance current demand (national consumption) with future demand (capital investment, savings, and overall investment). Increasing current demand, according to the expenditure multiplier, will positively impact GDP growth by several percentage points. However, a full-scale increase in

the multiplier effect or consumer demand growth may come at the expense of reduced future savings.

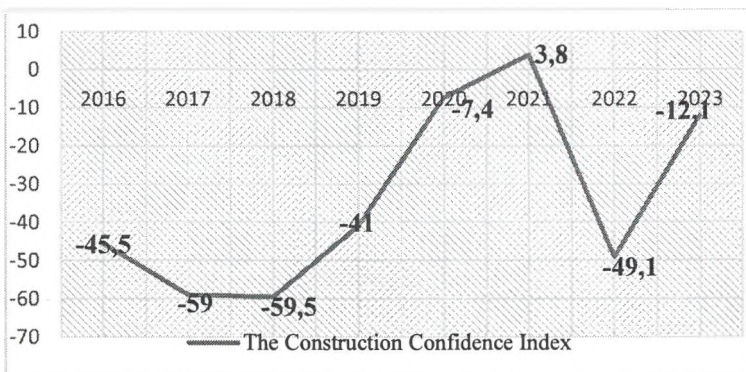
The **third chapter** of the dissertation, titled "**Improving the Mechanism for Assessing the Efficiency of Investment Processes in the Construction Sector,**" presents directions for enhancing the investment environment in Azerbaijan. It outlines ways to improve the efficiency of investment allocations in the construction sector and examines improvements to the investment project evaluation system. These measures aim to ensure the sustainable and stable development of the economy while achieving higher profitability levels in the construction sector.

To achieve sustainable and stable economic development in Azerbaijan and enhance economic activity, an investment mechanism has been developed and has yielded successful results. Nevertheless, the task of creating a favorable investment climate for attracting investment in the country is a long-term priority. The more conducive and well-structured the investment climate in a country, the stronger the government's capacity to encourage investment activities. However, establishing an attractive investment environment to draw investors remains a long-term strategic priority. A more stable and high-quality investment ecosystem enhances the state's ability to drive and sustain investment processes. The more favorable and qualitative the investment climate in any country is, the higher the state's ability to stimulate investment processes in those countries. However, creating a favorable investment environment to attract investments remains a long-term priority. The more favorable and high-quality the investment environment in a country, the greater the state's ability to stimulate investment processes. The factors influencing the formation of the investment environment include political and economic stability, the level of infrastructure development, the legislative framework, tax and customs incentives, and more. To improve the investment environment in the country, we consider the following directions to be essential:

- Regular improvement of the legislative framework aimed at protecting the rights of entrepreneurs and investors;

- Expansion of partnership models between the state and private sectors;
- Continuous updating of state support mechanisms, taking into account both domestic and international best practices;
- Development and implementation of relevant programs and strategies to effectively realize investment-innovation policies;
- Formulation of measures to promote the development of digital technologies;
- Training highly qualified specialists capable of managing modern technologies and equipment for the production of high-quality products;
- Ensuring the use of advanced international experience in the development of sector-specific programs and projects.

One of the important indicators in the construction sector is the construction confidence index. This index reflects how optimistic consumers are in this sector, taking into account the current state of the construction sector and their expectations for the near future. The following graph regarding the construction confidence index shows the situation in the construction sector in Azerbaijan.



Graph 2: Construction Confidence Index in Azerbaijan

Source: Compiled by the author based on materials from <https://www.cbar.az>.

Graph 2 analyzes the construction confidence index for the years 2016-2023. Observations from the graph indicate that consumer confidence in the construction sector remained negative in most years, except for 2021. This trend can be attributed to various economic and social factors. In our opinion, the revival of economic activities after the COVID-19 pandemic and the restoration of a certain level of freedom for the population contributed to the positive sentiment in 2021.

In other years, the negative trend in construction sector confidence was primarily due to economic uncertainty, poor-quality work, inflation, the limited purchasing power of the population, non-compliance of buildings with standards, and, in some cases, the presence of legally unsubstantiated payments in the construction sector.

We believe that addressing several key issues is essential to enhancing the sustainable economic development of enterprises operating in the construction sector. Some of the critical challenges include:

- Limited financial resources for investment in various activity areas,
- Infrastructure that does not meet modern requirements,
- Insufficient consideration of environmental standards,
- Inadequate availability of skilled professionals in enterprises,
- Deficiencies in creating a favorable competitive environment,
- Lengthy processes for obtaining licenses required for construction and installation works.

Summarizing these factors, we conclude that one of the key ways to achieve efficiency in the construction sector is the establishment of an effective management system. To ensure the efficient management, implementation, and execution of projects within the allocated budget, it is advisable to consider the following directions:

- Researching progressive planning methods;
- Ensuring the use of innovative technologies;
- Prioritizing the use of high-quality materials;
- Improving the legislative framework in accordance with modern requirements;
- Attracting and utilizing financial resources efficiently;

- Recruiting highly skilled workers or enhancing the knowledge and skills of existing employees.

In the modern era, for improving the evaluation system of investment projects in the construction sector, we believe it is essential to utilize modern economic-mathematical modeling methods to accurately forecast the movement of goods, financial resources, and cash flows. Additionally, conducting a detailed analysis of financial and economic activities, considering economic, social, and environmental criteria in project assessments, and accounting for the impact of inflation during aggregate demand expansion and increased investment costs are crucial.

In order to improve the system for evaluating investment projects in the construction sector in the modern era, in our opinion, it is necessary to correctly forecast the flow of goods, financial resources and cash flows using modern economic-mathematical modeling methods; conduct a detailed analysis of financial and economic activity; take into account the economic, social and environmental criteria of the project; consider and predict the impact of the inflation factor during the expansion of aggregate demand and the increase in investment costs; create databases; ensure compliance with international standards; conduct regular monitoring; increase transparency in the project evaluation process; develop partnerships between the public and private sectors for project financing; promote renewable energy projects; apply special incentives for green investments; model project risks in more detail; give importance to green investment-based projects; and ensure the use of digital technology.

Furthermore, establishing comprehensive databases, ensuring compliance with international standards, conducting regular monitoring, enhancing transparency in project evaluation, and fostering partnerships between the public and private sectors for project financing are necessary steps. Encouraging renewable energy projects, implementing special incentives for green investments, conducting more detailed risk modeling, prioritizing green investment-based projects, and integrating digital technologies are also essential.

We think that forming a system that ensures the complete transparency of investors' activities is a highly important requirement. Ultimately, these efforts will contribute to the efficient allocation of investment resources in the construction sector and the national economy while ensuring that investment project evaluations align with national interests.

Conclusion

- Investments, as an economic and legal category, form the "base-superstructure" system of the economic organism in the classical approach and serve as a means for establishing the material and technical foundation of the extensive reproduction process in society. In this regard, investment resources hold significant economic importance in ensuring economic development, increasing the effectiveness of economic reforms, and achieving balanced regional development.

- The sustainable and stable development of the national economy largely depends on attracting substantial investment resources into the construction sector, which is considered its leading sphere, and ensuring the most efficient utilization of these resources. Investments in the construction sector create a favorable foundation for the development of its material and technical base through modern scientific and technological advancements. Consequently, the construction sector will expand its operational capabilities, playing a crucial role in accelerating investment processes in the national economy and ensuring their effective implementation.

- To create favorable opportunities for economic development in the construction sector, it is essential to implement policies that focus on knowledge-intensive products based on extensive use of scientific achievements. Ensuring the efficient utilization of innovations and executing a well-thought-out system of measures within the state's investment-innovation policy, while continuously improving these measures in line with modern requirements, will contribute to the modernization of the construction sector, making it more sustainable and competitive in the long-term perspective.

- The calculation of the diversification coefficient of domestic and foreign investments directed toward fixed capital has revealed that the diversification level of foreign investments is limited, while domestic investments are relatively more diversified but still not efficient enough. The conducted research suggests that the interconnected and comprehensive development of the national economy is essential.

- One of the key criteria for evaluating the efficiency of investment utilization in the construction sector is the investment multiplier. In this regard, the multiplicative effect has been calculated, revealing that a 1% increase in investments directed towards production, service sectors, and residential construction, assuming other factors (inflation, interest rates, etc.) remain constant, could result in approximately a 0.83% increase in GDP.

- Several challenges arise in assessing the efficiency of investment allocations in the construction sector, affecting both project effectiveness and investor interests. The main issues include the lack of complete and transparent information about projects, planning deficiencies (i.e., failure to consider all necessary indicators), limited financial resources, the impact of inflation, weak technological development, rising prices of construction materials, and the failure to incorporate environmental requirements and social responsibility considerations into relevant programs and strategies.

Recommendations and Suggestions

- To enhance the efficiency of investment in the construction sector, it is essential to ensure diversified development, implement green building standards, restore outdated infrastructure, increase export potential, produce high-quality import-substituting goods, reconstruct production infrastructure, establish new industrial production modules, promote clustering, offer tax incentives and financial support to attract investments, recruit specialized labor or improve the knowledge and skills of existing workers, and stimulate

the activities of industrial enterprises. These measures will ultimately contribute to the sustainable development of the sector.

- We believe that to improve the quality of construction products, regular and enhanced quality control monitoring should be conducted; national standards should be aligned with international standards; all construction materials should undergo strict quality checks and obtain certification before use; innovative construction materials should be utilized; subsidies and tax incentives should be implemented; domestic production of construction materials should be increased; innovation centers should be established to test new materials and improve existing technologies.

- To accelerate the expansion of the construction sector in the regions, preferential customs duties should be applied to imported machinery and technology intended for construction purposes. Additionally, an advantageous credit-tax mechanism should be expanded to ensure the efficient use of investments in natural resource-based construction enterprises.

- There is a need to establish a Real Estate Investment Trust (REIT) in Azerbaijan, similar to international practices. We believe that through this fund, it will be possible to attract the necessary capital from various investor groups for financing large-scale construction and infrastructure projects. This initiative can serve as an additional financial source for both the public and private sectors. Its implementation will contribute to increasing transparency and efficiency in the real estate market, modernizing the investment environment, expanding financial opportunities, attracting more investors, enhancing liquidity, diversifying the existing market, and aligning with international best practices.

- Ensuring the sustainable and resilient development of the construction sector and increasing its competitiveness in the international market requires the continuous improvement of the "Urban Planning and Construction Code of the Republic of Azerbaijan" and other relevant regulatory legal acts. Considering their significance, it is essential to align quality requirements and safety standards with international demands. Additionally, incorporating evolving technologies, new construction methodologies, and green

building standards will create opportunities for the implementation of innovative approaches within the sector.

- The investment project evaluation system plays a crucial role in enhancing the efficiency of economic decision-making. Through this system, the economic, social, and environmental impacts of projects are analyzed, determining their feasibility for implementation. In this regard, improving this system has become essential in the modern era, as rapid technological advancements, climate change, and the digital economy demand new approaches.

The main content of the dissertation work was published in the following scientific works of the author:

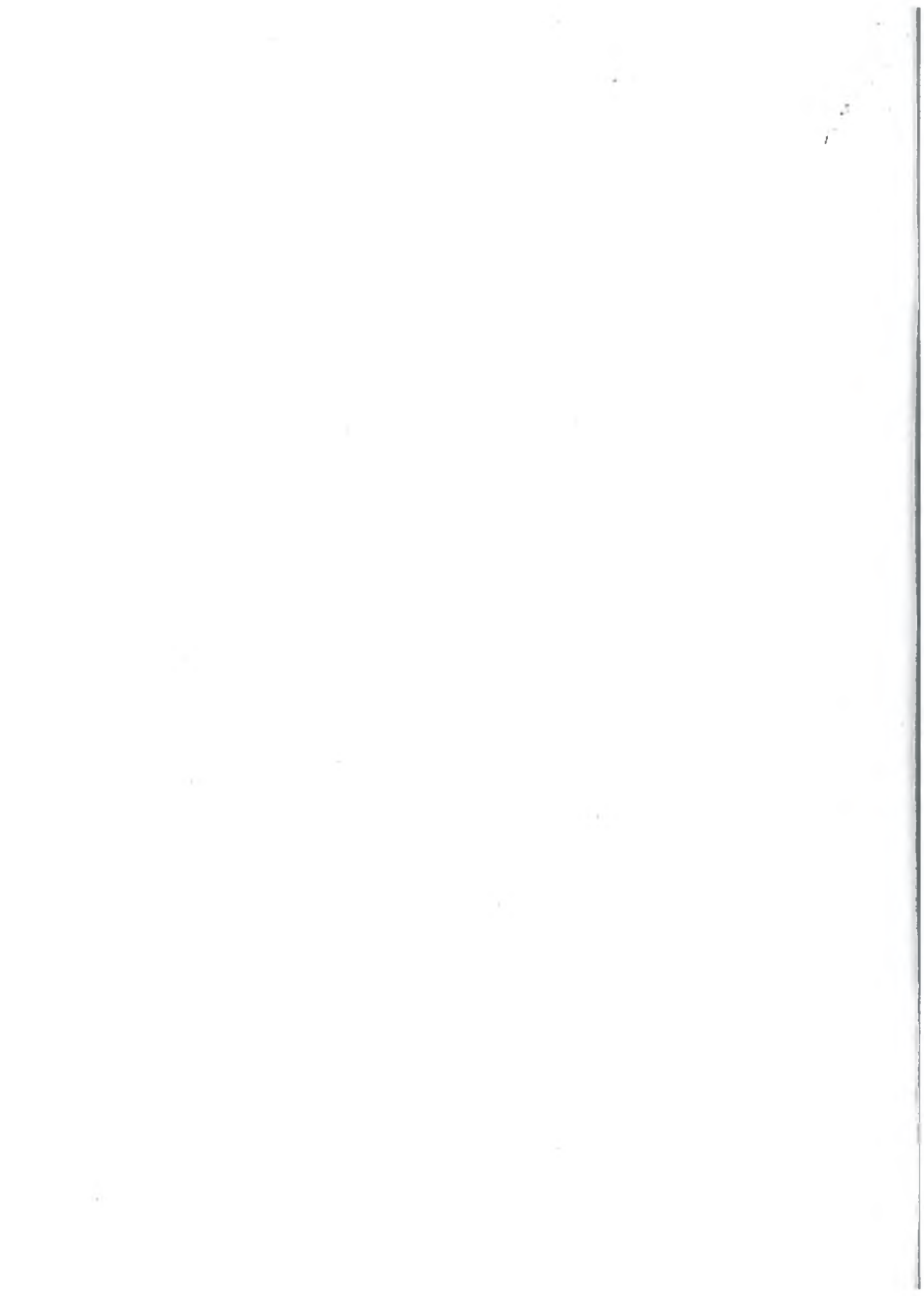
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