Diversification Models of Investment Portfolio:Regional Aspect

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Abstract---The development of investment processes in all areas is the most necessary condition for the effective organization of farming in a transitive economy. Investment analysis provides an information base for making important decisions on the inclusion of projects in investment portfolio, analysis of the structure of sources and its financing, the feasibility of investing in various conditions, thereby ensuring an increase in the efficiency of investment activities of business entities. The main goal of the work is to systematize the classifications of investment portfolios, substantiate the choice of models for diversifying the investment portfolio, analyze the methodological and practical approaches of the strategic directions of interregional interaction and integration, economic and statistical assessment of investment activity at the regional level.

Keywords: biodiesel, esterification, pyrolysis, emulsification, blends..

I. INTRODUCTION

The methodology for designing an investment program, which takes into account the previous state of the economic system in order to efficiently distribute available investment resources, has clear advantages over an algorithm that allows the status quo to be ascertained and the indicators to be reached by a certain date.

Portfolio theory assumes a wider scope of application:
 making investment decisions;
 actually investment portfolios of firms;
  securities portfolios;

Analysis of household behavior on the "wealth-portfolio" trajectory (consists of points of change in the wealth of an individual or household, in

depending on the reliability and riskiness of assets, the elasticity of demand for wealth for a given type of asset, price levels, insurance, expected utility from investments, consumption plans, taxation system, etc.).

The main goals of forming an investment portfolio in a company are as follows:
 ensuring the growth rate of income from the implementation of the portfolio;
 ensuring minimal risks or total portfolio risk;
 ensuring acceptable growth rates of fixed capital of the company;
 achieving the necessary portfolio liquidity.

Classification of investment portfolios is made for the purpose of investment, which sets itself the company and its management. Portfolios are classified in three main areas: by investment objects, by investment objectives, and by achieving goals. We systematize the generally accepted classification of investment portfolios in table 1.

Classification of investment portfolios

Classification feature	Type of portfolio
1. By investment objectives	➢ Growth Portfolio ➢ Income Portfolio ➢ Conservative portfolio
2. To achieve the goals	➢ Balanced portfolio ➢ Unbalanced portfolio
3. By types of investment objects	➢ Real investment portfolio ➢ Securities portfolio ➢ Deposit portfolio ➢ Mortgage Portfolio ➢ Loan portfolio ➢ Combined portfolio
4. By type of investment	➢ Portfolio of profitability ➢ Growth Portfolio ➢ Venture Portfolio ➢ Balanced portfolio ➢ Warranty portfolio ➢ Unbalanced portfolio ➢ Portfolio requiring diversification
	➢ Conservative ➢ Moderately aggressive ➢ Aggressive ➢ Irrational

5. By level of risk	
6. By timing	➢ Short term ➢ Mid-term ➢ Long term
7. By specialization	➢ Sectoral ➢ Regional ➢ Foreign investment

The application of portfolio analysis occurs when an investor invests his financial assets in more than two objects.

The set of real investment objects. Portfolio analysis makes it possible in accordance with the criterion (profitability, risk, liquidity) to distribute funds between existing projects.

There is a concept as an unbalanced portfolio, which means an optimized portfolio that the investor will no longer be able to satisfy due to the fact that the market situation has changed or other circumstances have arisen (changing the tax system, the timing of projects, interest rates on loans and others ...), contrary to its implementation. The use of portfolio analysis is the main element in the design of the distribution of investment resources allocated to enterprise restructuring processes and their conversion, we will formulate a methodology that enables portfolio analysis to be used to solve these problems. This will be the technique of "portfolio" diversification of investment programs for industrial restructuring.

There are three main areas of diversification of products of industrial organizations:

1) concentric diversification - consists in replenishing the assortment with new products related to previous activities and its technological capabilities;

2) horizontal diversification - consists in replenishing the manufactured assortment with products that are not similar to already manufactured goods and interesting to the existing clientele;

3) conglomerate diversification - associated with the emergence of new products, which cannot be attributed to the traditional activities of the enterprise and do not fit into its previous technological capabilities and markets.

Taking into account the relevance of the tasks of managing state programs for the restructuring and conversion of the defense industry, we will propose a new model of diversification, which has advantages over the above. We single it out into a separate block portfolio model of diversification. It is based on the portfolio method of analysis of investment programs of individual enterprises, populations and economies of the region.

Portfolio diversification - investments in the development, production, implementation of a certain set of products (or

some modifications of existing products or similar products) in the market, which maximizes the return on dispersion of the total amount of investment resources with little risk of losses in alternative options for using these funds, are neighboring objects portfolio.

China is one of the main investors in the Republic of Uzbekistan. In order to diversify the investment portfolio of China in the economy of Uzbekistan, we first need to analyze existing trends.

Dynamics of China's investment in fixed assets of the Uzbek economy
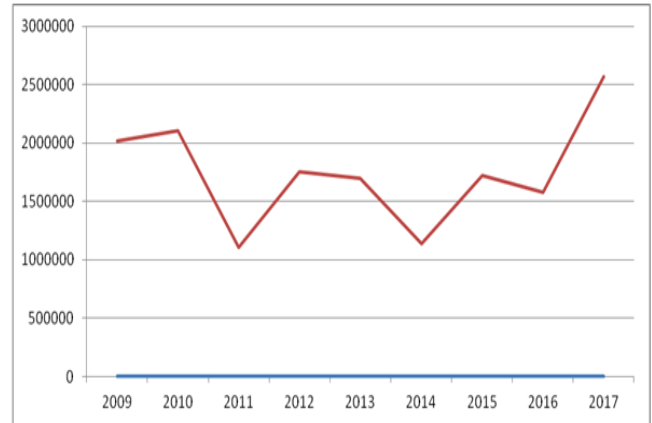
The volume of investment in fixed assets of the economy of Uzbekistan from the PRC has a tendency to change. However, the total volume of investments in 2017 (2569276 million soums) increased 1.27 times compared with 2009

(2020.610 million soums). The lowest level was recorded in 2011 and amounted to 1106200 million soums. The existence of changing dynamics can be explained:

- The global financial and economic crisis and its impact on China

As a result of the global financial and economic crisis that began in 2008, the People's Republic of China sought to mitigate the impact of the crisis by focusing its attention on its domestic market. As a result, in 2009-2011, the volume of investment in fixed assets of the economy of Uzbekistan decreased by almost 2 times.

-Simultaneous launch and completion of several investment projects

Most investment projects that are invested in fixed assets of our economy coincide with the implementation period. In this case, most investment projects begin and end at the same time, until some new investment projects are spent. As a result, China's investment in fixed assets in our economy will increase during the year and is likely to decline next year. For example, Uzbekneftegaz JSC will complete the development of 15 investment projects out of 37 investment projects with China by 2018 (at the same time). In 2017, all (37) of these investment projects were valid.

Total investment in fixed assets shows a general trend, but does not indicate diversification of investment. To see the state of diversification of investments, it is necessary to analyze the sectoral and intersectoral distribution of investments.

By analyzing the sectoral and intersectoral distribution of investments, one can not only assess the state of diversification, but also find out the investment attractiveness of sectors and the interests of investors.

Distribution of investments in fixed assets of the economy of Uzbekistan in China (2010)
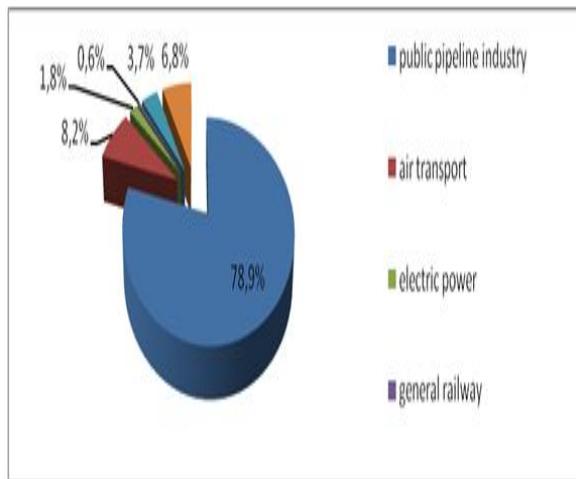
Distribution of investments in fixed assets of the economy of Uzbekistan in China (2017)
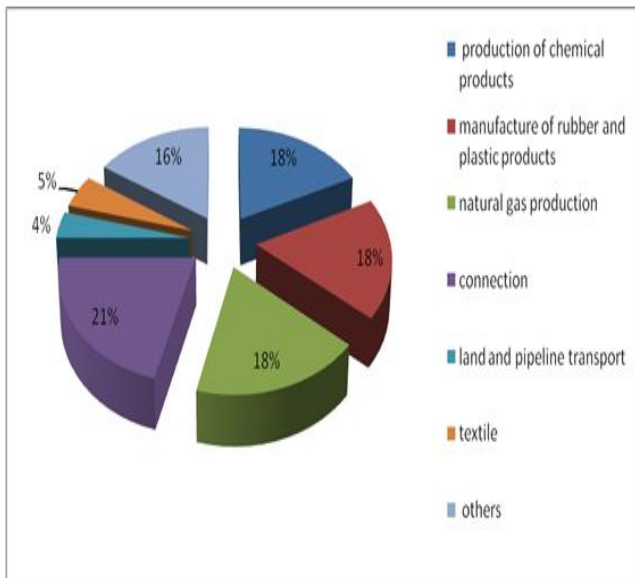
The diagrams above show that China's investment in the economy of Uzbekistan is very unevenly distributed by type of economic activity. In 2010, about 78.9% of the total investment of the People's Republic of China in the fixed capital of the Uzbek economy was directed to the general pipeline industry. The bulk of Chinese investment in public pipelines comes from Bukhara (59%) and Navoi Oblast (22%). In 2017, significant changes took place in the distribution of investments of the People's Republic of China in the economy of Uzbekistan by type of economic activity compared to 2010.

In 2010, the People's Republic of China allocated 77,985.1 million soums for geological exploration (exploration of land and underground resources) in the republic, most of which was in Bukhara (44513.1) and Fergana (32647.1) regions. These funds were used to explore new gas fields in the Bukhara region and oil fields in the Ferghana region.

The main reasons for the significant differences in the distribution of investments by type of economic activity in 2017 compared to 2010 are:

-The exploration of new deposits as a result of exploration for 2010-2017 contributes to the volatility of investment flows.

- As a result of measures aimed at improving the investment climate in the national economy for 2010-2017, the influx of investments is subject to change

Changes in investment flow as a result of the emphasis on manufacturing as a locomotive sector for 2010-2017.

-The impact of investment flows of free economic zones on the territory of the republic.

It requires an assessment of the diversification of investments of the People's Republic of China in the economy of Uzbekistan, an analysis of inter-regional investments in order to identify existing problems and solve them

Comparative chart of the share of regions in Chinese investment
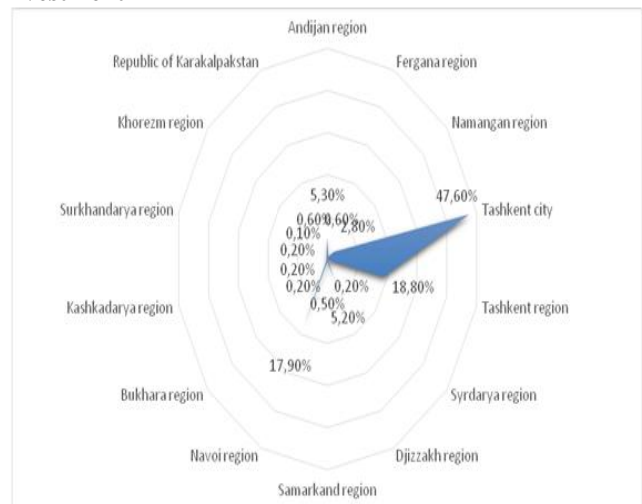
According to statistics, in 2017, China invested 256927.6 million soums in the economy of Uzbekistan. The largest investment regions are Tashkent (47.6%), Tashkent region (18.8%) and Navoi region (17.9%). By region, the Tashkent region has absolute dominance in attracting Chinese investment (66.4%).

To identify the reasons for the uneven distribution of investments among regions, it is necessary to determine the patterns of correlation between China's investments in the economy of Uzbekistan and the economic indicators of the regions. Then we can answer the questions about why investments are unevenly distributed across regions and how to eliminate this inequality.

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Regional structure Chinese investments are included in the economy of Uzbekistan and the relationship with macroeconomic indicators

Economic Regions	Provinces	FDI of China	To the area included in investments in relation to general share (in%)	Share of gross regional product in gross interior product (at %)	Gross regional product per capita of the population (in thousands of soums)	Gross income on per capita (in thousands of soums)
Ferghana valley	Andijan	135328,0	5,3	6,3	6429,7	5268,7
	Ferghana	16637,3	0,6	6,5	5521,9	4520,2
	Namangan	71222,4	2,8	4,8	5419,0	4273,8
Tashkent	Tashkent (capital)	1222563,3	47,6	13,5	16658,0	12646,2
	Tashkent (province)	484125,5	18,8	9,2	9787,6	6049,8
Mirzachul	Syrdarya	5025,4	0,2	2,1	7945,8	5095,9
	Djizzakh	134680,3	5,2	3,0	6967,3	4169,3
Zarafshan	Samarkand	12737,9	0,5	8,4	6937,2	4808,1
	Navoi	459571,1	17,9	4,7	14975,0	9036,3
	Bukhara	5360,2 (2016y)	0,2	5,4	8888,1	6631,6
South	Kashkadarya	5083,7	0,2	7,5	7257,6	4693,5
	Surkhandarya	4005,6	0,2	4,5	5506,7	4488,4
Below Amudarya	Khorezm	3800,0	0,1	3,8	6397,8	5440,9
	Karakalpakstan	14495,5	0,6	3,4	5597,6	4185,9
TOTAL		2569276.0	100	100		

Our studies have shown that the Chinese government and Chinese investors are most interested in investing in the Uzbek economy:

- Natural and resource potential and opportunities of the region (Navoi, Tashkent, Jizzakh regions)
- The level of development of the regional economic infrastructure (Tashkent, Tashkent region)
- The presence of special economic and industrial zones in the region (Tashkent region, Navoi region, Jizzakh region)
- The standard of living in the region (Tashkent, Tashkent region, Navoi region)

- The presence in the region of new markets that are not yet fully developed, but are in high demand

Found correlations between economic indicators presented in the table above. For example, there is a correlation between the share of the region's gross regional product in the country's GDP and China's foreign investment in the regions. More precisely, if the share of gross regional product in the country's GDP increases by "1%", the People's Republic of China will invest an additional 84,320.9 million soums.

The growth of gross regional product per capita in the region by 1 thousand soums indicates an additional 85.1 million soums invested by China in the region, which is a strong correlation.

Along with the foregoing, there is a strong correlation between per capita income in the regions and investments made by the PRC in the regions. An increase in gross domestic product per capita by 1 thousand soums means that China is investing 131.4958 million soums in the region.

The correlations identified during the study show that the following problems exist:

- The investment attractiveness of the regions varies greatly

- The existing infrastructure for attracting investors varies by region

- Lack of stability in attracting investments

- Insufficient impact of investments on the development of the human factor

To ensure diversification of investments, it is necessary to create a system of measures aimed at preventing sharp imbalances in the economic potential of the regions.

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