



## Article

# Economic and Statistical Assessment of The Effectiveness of Investments in Regional Industry

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**Abstract:** The impact of investment volume and economic returns in the Khorezm region of Uzbekistan for 2010-2024 is the aim of this research. The study highlights the establishment of the total capacity of investments, which has increased from 310.6 billion soums in 2010 to 12,380.3 billion soums in 2024, indicating a diversification of economic activity within the region. But this increase has not been paired with an increase in capital efficiency, especially in manufacturing. The capital return indicator in the region fell from 11.9 units in 2010 to 5.2 units in 2024, which indicates a gap between investment inflow and economic growth. We used statistical methods to study the total capital return at the district level, finding egregious discrepancies between investment and its efficiency. Despite this, capital efficiency has worsened substantially on the district level in Urgench, Khiva and yet more so in Yangiariq and Yangibozor. The research calls for diversifying investments, increasing the appeal of lagging regions and prioritizing economic structures with greater value added potential, such as innovation and production. These results indicate that although investment volume has increased, its efficiency should be maximized to provide sustainable local growth. More work is required to understand the behavioral origins of these inefficiencies and to create appropriate policies motivated towards capital utilization across all sectors.

**Keywords:** Investment, Industry, Return On Capital, Region, Statistical Methods

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## 1. Introduction

Investment is a key driver of economic development for countries and regions, through industrialization, employment creation, and infrastructure development. Investments, in turn, are a source of economic growth, an inlet for expanding production capacities, and a source of human wellbeing. Research objectives During the period from 2010 to 2024 inclusive, the investment volumes in the Khorezm region of Uzbekistan have increased significantly, while the infrastructure, industry and tourism has also dramatically improved. But as the amount of money invested increases, so do questions about how effectively they are delivering for regional economic development. The purpose of this study is to analyze the investment volume and their economic effect on Khorezm, namely, investment efficiency and return on capital as indicators that matter for economic efficiency.

This research focuses on some key elements, including the efficiency of investment, its return, and the development of the region. The ideas are explored in connection with key economic theories like the theory of capital accumulation and capital as a driver of investments which are crucial for developing industries. Earlier works have discussed number of investments and their direct implications for economic variables like Gross Regional Product (GRP). So emphasis has been largely on the quantitative side of investment rather than the qualitative side, particularly on the effective use of capital in

sectors. This is a significant gap in the literature, and the study also, therefore, analyzes the capital return data which leads to an in-depth discussion of the effectiveness of investment across regions.

From the methodological aspect, the research includes a statistical analysis of the capital return indicator in the Khorezm region and its districts for the period 2010–2024. In conducting descriptive and comparative analyses of trends and inequality in investment volumes and returns to capital, the study also papers up across districts and looks beyond sectoral sub-sectoral development. In addition to correlating with this work, the research also synthesizes insights from other studies on investment efficiency in Central Asia, and implements them for the context of Khorezm. This approach is expected to highlight the areas where the capital allocation is lacking and offer solutions to improve capital efficiency.

In summary, we find that the capital return is very unevenly distributed across different districts, with urban centres such as Urgench and Khiva being much more capital-efficient than the surrounding rural areas. Even with adequate capital invested, returns on overall capital continue to plummet over the years, indicating investment management strategies must become more strategic. The significant economic policy implications of these findings are that future investments in the Khorezm region should now prioritize not just volume but also resource allocation and efficiency to become the effective drivers of sustainable economic growth.

## 2. Methodology

The method of this study based on a statistical analysis of investment efficiency for the Khorezm region in the years of 2010 to 2024. This article focuses on one of the most important indicators of the return of capital, which is the relative measure of efficiency of capital investments in this region. Investment volume and its macroeconomic effect as Gross Regional Product (GRP) data were collected from the regional statistical offices using descriptive and comparative analysis [1]. Capital return is the measure of economic benefits generated by investments, and this number was calculated for the whole region as well as its districts like Urgench, Khiva, and others. A pillar of the analysis is the comparison of volumes of investment vs economic outputs over time, providing an insight of how well Capital is deployed in sectors such as infrastructure, industry or agriculture. We used statistical methods to reveal the trends in capital return and to identify any substantial geographic differences and inter-annual variations. In addition, the study considers external factors – economic policies, investment strategies, unitised approach, and the dynamic of sectors – that could influence the results. The results were synthesized to characterize how effective investment has been in the area over the decades, identifying both high performing and high ineffective areas [2]. This study draws also on the larger body of literature on investment effectiveness in Central Asia; it adjusts the tentative results from this literature and places them into specific economic landscape of Khorezm. The strategy provides a complete examination of investment policies and effects in regional economic growth and will help to formulate future policy recommendations.

## 3. Results and Discussion

In particular, the total volume of investments attracted to the Khorezm region during 2010–2024 demonstrated positive changes, increasing from 310.6 billion soums to 12,380.3 billion soums. This indicator grew almost 40 times over the study period. Especially during 2017–2021, a rapid increase in this indicator was observed – from 2.2 trillion soums in 2017 to 8.3 trillion soums in 2021. This situation can be explained by the expansion of investments directed toward infrastructure projects, industrial clusters, and tourism infrastructure in the region. It should be particularly emphasized that the growth accelerated during 2018–2020, with a three-year growth coefficient of 2.5 times. Although the growth rate slowed down somewhat during 2021–2024, the volume of investments maintained a stable upward trend [3]. It is also important to highlight the years 2013, 2017, and 2019 as periods of intensive investment growth, since large-scale projects aimed at

modernizing infrastructure and developing transport connections were implemented in the region and its territories during those years.

Nevertheless, the scale of investments across the districts of the region varies significantly. In particular, investments directed to the city of Urgench increased from 54.4 billion soums in 2010 to 2,808.9 billion soums in 2024, indicating a high level of intensification in industrial and service sector activities in the city. Positive changes have also been observed in the city of Khiva, which are associated with the expansion of investments directed toward tourism and cultural heritage infrastructure. In the districts of Bogot, Gurlan, Khonka, Kushkupir, and Urgench, the volume of investments has also shown steady growth. The priority directions in these areas include industrial and agricultural activities with high added value. The highest growth rates were recorded in the Yangiarik and Yangibozor districts, where investments were primarily directed toward the processing of agricultural products and water management facilities. Thus, the differences in investment volumes among the districts can be explained by factors such as economic potential, logistical capabilities, the skill level of the workforce, and the availability of natural resources.

As noted above, the volume of investments directed to the Khorezm region and its territories has shown positive annual growth. However, several shortcomings remain in the structural aspects of investments made in fixed capital. These include:

- a significant portion of investments in the region has been directed toward infrastructure and construction sectors. due to the long payback period of these funds, the efficiency of investments tends to decline in the short and medium terms (as a result of the reduction in marginal capital returns);

- a high level of imbalance in investment distribution between cities and districts has been identified [4]. the volume of investments directed to the cities of Urgench and Khiva is 3–4 times higher compared to certain districts. this leads to disproportions in regional development and causes inefficiencies in resource allocation, particularly in the distribution of labor;

- the level of diversification of investment financial sources remains low, with the share of direct foreign investments and household funds remaining relatively small in the overall structure. To address these issues, it is necessary to implement the following measures: diversifying investments across districts by creating special preferential conditions for those with low investment attraction; expanding the scale of investments directed toward innovation and production sectors to increase economic returns; enhancing the attractiveness of the investment environment.

It should be particularly emphasized that an increase in the volume of investments alone is not sufficient to ensure economic stability. In other words, it is essential that investment utilization leads to the expansion of employment opportunities, the growth of production scale and quality, and the improvement of the population's living standards. In this context, we examine the criterion of capital returns at the regional and district levels, taking into account the impact of investments on production scale and the degree of their utilization.

Capital return is one of the main indicators used to assess the economic efficiency of investments or funds allocated to fixed assets [5]. It reflects the extent to which the capital invested in production generates profit. In other words, the higher the capital return indicator, the greater the economic efficiency of the investments. In turn, this criterion also provides insights into changes in the economic potential of regions and the rational distribution of investments[6].

In particular, the capital return for the Khorezm region was 11.9 units in 2010 and decreased to 5.2 units in 2024. This reflects a twofold decline over the study period. This situation indicates that, despite the significant increase in the volume of investments, their efficiency exhibits a declining trend (Table 1). Specifically, in the region, capital return ranged between 11–12 units during 2010–2014, 8–9 units during 2015–2017, and

experienced a sharp decline from 2018 onward, reaching 5 units during 2021–2024. This phenomenon can be explained by the fact that the growth of production in the economy lags behind the growth rate of investments. That is, during 2010–2024, the average growth rate of the gross regional product in the Khorezm region was 106.8%, while the average growth rate of investments was 118.3%.

**Table 1. Capital return in the Khorezm region and its districts (units).**

Region/District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Average
<b>Khorezm region</b>	11,9	12,2	11,0	7,8	7,0	8,2	9,4	8,4	8,4	6,1	6,5	5,5	5,5	5,3	5,2	7,9
Urgench city	14,5	12,3	6,4	3,6	4,9	4,6	7,3	3,9	3,8	3,5	3,2	3,3	3,3	3,3	3,3	5,4
Khiva city																
<i>districts:</i>																
Bogot	8,9	10,9	13,7	17,2	8,4	10,7	11,8	13,5	8,6	5,1	5,7	7,1	5,8	5,7	5,6	9,2
Gurlan	13,3	13,7	14,9	15,4	14,1	11,9	13,6	19,9	13,9	8,3	8,0	6,9	6,5	6,1	5,9	11,5
Kushkupir	12,6	13,5	11,2	8,7	12,9	10,9	9,1	15,8	9,6	7,6	7,6	6,9	6,7	6,5	6,4	9,7
Urgench	9,9	12,4	13,6	7,4	6,2	8,3	7,4	10,0	9,0	6,6	7,7	8,4	7,8	7,8	7,9	8,7
Khazorasp	12,0	12,7	12,8	11,9	6,5	12,4	13,6	11,8	23,7	17,0	8,3	4,1	5,1	5,0	5,0	10,8
Tuproqal'a											23,7	20,5	19,2	18,6	18,2	20,0
Khonka	12,1	14,7	13,9	13,0	11,1	9,9	8,3	12,5	9,6	5,4	5,6	7,2	5,8	5,6	5,5	9,4
Khiva	13,8	14,6	15,5	10,9	12,0	10,4	9,7	12,9	14,3	7,3	11,2	6,8	7,3	7,2	7,1	10,7
Shovot	9,8	7,2	10,3	10,8	3,6	7,2	7,0	5,9	10,4	11,8	8,6	7,3	8,3	8,3	8,3	8,3
Yangiariq	11,3	13,1	14,1	12,2	10,6	8,3	19,7	15,0	9,9	6,3	6,5	2,1	2,5	2,3	2,2	9,1
Yangibozor	12,8	14,7	14,0	8,1	10,5	9,3	9,6	15,1	10,4	5,2	7,5	7,8	6,7	6,5	6,3	9,6
Statistical average	11,9	12,7	12,6	10,6	9,0	9,3	10,6	11,4	10,5	7,1	8,1	6,8	6,6	6,4	6,3	9,5
Statistical maximum	14,5	14,7	15,5	17,2	14,1	12,4	19,7	19,9	23,7	17,0	23,7	20,5	19,2	18,6	18,2	
Statistical minimum	8,9	7,2	6,4	3,6	3,6	4,6	7,0	3,9	3,8	2,3	2,5	1,4	1,5	1,4	1,4	

Thus, the main activity indicator of the economy has lagged behind investments by 2.7 times. This trend indicates that, despite the increasing volume of investments in the Khorezm region, their efficiency in generating added value remains low.

At the same time, a regional-level analysis of capital return revealed significant differences: in urgench city, capital return decreased from 14.5 units in 2010 to 3.3 units in 2024. in khiva city, data are available only after 2017, showing a decline in capital return from 4.2 to 1.4 units; in the bogot and gurlan districts, capital return was high (13–17 units) during 2010–2017, but subsequently decreased to around 5–6 units; in the kushkupir, khonka, khiva, and urgench districts, the high efficiency observed at the beginning of the 2010s also fell to lower levels in recent years; in yangiariq district, capital return reached its peak at 19.7 units in 2016, but declined to 2.2 units by 2024; in shovot and yangibozor districts, capital return remained relatively stable, maintaining a level of approximately 7–8 units during 2010–2024 [7].

The overall decline in the capital return indicator in the Khorezm region is associated with the following factors: the rapid growth in investment volume has not corresponded proportionally to economic returns, as much of these funds have been directed toward infrastructure and the social sector. due to the long-term nature of their economic benefits, this has led to a declining trend in capital return; there are imbalances in the sectoral distribution of investments. in most districts, funds have been primarily allocated to agriculture and communal services, which have low profit margins.

In contrast, sectors such as industry and services exhibit relatively high efficiency, resulting in greater effectiveness of investments directed to these sectors. Analyses of the capital return indicator have shown that, despite the increase in investment volume in the Khorezm region, their economic benefits are not proportional. A deeper analysis is therefore required, including a statistical assessment of investments by year for each city and district [8].

This approach will allow us to develop recommendations for achieving positive changes in other districts based on the experiences of the most successful areas. Thus, the statistical analysis of capital return enables a deeper investigation of economic processes, revealing not only the efficiency of capital utilization but also its regional and temporal trends. Through comparative analysis, we identify imbalances between the cities and districts of the region, determine priority directions, and assess differences in economic

potential. Based on these results, we develop recommendations grounded in positive experiences.

The relative increase or decrease in capital return indicators in the cities and districts of the Khorezm region was analyzed for the period 2010–2024, providing an opportunity to assess the degree of efficiency variation across the region. According to the research data, the comparative capital return indicator for the entire region was 1.3 units in 2010, increasing to 3.8 units by 2024 [9]. Based on the statistical analysis, the trend of change relative to the lowest capital return indicator was positive across the region and its territories (Table 2). Specifically, during 2010–2015, the statistical assessment of capital return ranged from 1.3 to 2.0 units, while during 2017–2021 it was 2.9–5.0 units. In 2022–2024, the statistical average level of capital return stabilized at approximately 4.4–4.6 units.

Thus, according to the analysis results, the statistical assessment of capital efficiency in the Khorezm region, i.e., its comparative analysis, has generally increased. In particular, the Tuproqqal'a, Urgench, and Gurlan districts are considered leaders in this regard. However, regional imbalances persist, and the negative ratio has increased year by year. Specifically, in most districts, the comparative capital efficiency indicator differs by 5–6 times. In Tuproqqal'a, this indicator reached 13 units, while Khiva city recorded the lowest value of 1.0–1.3 units. That is, at the beginning of the study period, the difference between the highest and lowest indicators was 1.6 times, whereas by 2024, this difference had increased to 13.2 times [10]. This negative development reflects a high level of imbalance, indicating that the disparity exceeds the equilibrium level by fivefold.

Based on the comparative analysis of capital return in the Khorezm region, we propose the following recommendations:

rational and optimal allocation of investments across sectors and industries at the regional level; considering that the volume of domestic investments is aimed at enhancing local entrepreneurial potential, increase investment activity in this direction in underdeveloped districts, when implementing investments, introduce privileges and preferences for projects based on the existing production capacity.

**Table 2. Statistical Analysis of Capital Return in the Khorezm Region and Its Districts (Comparative Analysis)**

Region/District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Average
<b>Khorezm region</b>	1,3	1,7	1,7	2,1	1,9	1,8	1,3	2,1	2,2	2,6	2,6	4,0	3,7	3,7	3,8	2,5
Urgench city	1,6	1,7	1,0	1,0	1,4	1,0	1,0	1,0	1,0	1,5	1,3	2,4	2,2	2,3	2,4	1,5
Khiva city								1,1	1,3	1,0	1,0	1,0	1,0	1,0	1,0	1,0
<i>districts:</i>																
Bogot	1,0	1,5	2,1	4,7	2,3	2,4	1,7	3,4	2,3	2,2	2,3	5,2	3,9	4,0	4,0	2,9
Gurlan	1,5	1,9	2,3	4,2	3,9	2,6	1,9	5,1	3,6	3,6	3,2	5,1	4,3	4,3	4,3	3,5
Kushkupir	1,4	1,9	1,8	2,4	3,6	2,4	1,3	4,0	2,5	3,3	3,1	5,1	4,5	4,5	4,6	3,1
Urgench	1,1	1,7	2,1	2,0	1,7	1,8	1,1	2,6	2,3	2,8	3,1	6,2	5,2	5,5	5,7	3,0
Khazarasp	1,4	1,8	2,0	3,3	1,8	2,7	1,9	3,0	6,2	7,3	3,3	3,0	3,4	3,5	3,6	3,2
Tuproqqal'a											9,6	15,1	12,9	13,0	13,2	12,7
Khonka	1,4	2,0	2,2	3,6	3,1	2,2	1,2	3,2	2,5	2,3	2,3	5,3	3,9	4,0	4,0	2,9
Khiva	1,6	2,0	2,4	3,0	3,3	2,3	1,4	3,3	3,7	3,1	4,5	5,0	4,9	5,0	5,1	3,4
Shovot	1,1	1,0	1,6	3,0	1,0	1,6	1,0	1,5	2,7	5,1	3,5	5,4	5,6	5,8	6,1	3,1
Yangiarik	1,3	1,8	2,2	3,3	2,9	1,8	2,8	3,8	2,6	2,7	2,6	1,6	1,7	1,6	1,6	2,3
Yangibozor	1,4	2,0	2,2	2,2	2,9	2,0	1,4	3,9	2,7	2,2	3,0	5,7	4,5	4,5	4,6	3,0
Statistical average	1,3	1,8	2,0	2,9	2,5	2,0	1,5	2,9	2,7	3,1	3,2	5,0	4,4	4,5	4,6	3,0
Statistical maximum	1,6	2,0	2,4	4,7	3,9	2,7	2,8	5,1	6,2	7,3	9,6	15,1	12,9	13,0	13,2	
Statistical minimum	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	

In the industrial sector, the capital return indicator characterizes the region's production capacity, the level of technological development, and the efficiency of using investment resources. It shows the extent to which investments in industrial sectors generate economic benefits. In particular, the industry of the Khorezm region consists of food production, construction materials, light industry, and mechanical engineering,

allowing us to assess investment efficiency in the sector through the capital return indicator [11].

In the industrial sector of the Khorezm region, the capital return decreased from an average of 2.0 units in 2010 to 1.6 units in 2024. During the study period, it exhibited a fluctuating trend. Specifically, the indicator ranged from 1.7 to 2.1 units during 2010–2013, 1.3–1.7 units during 2014–2016, and 1.9–2.1 units during 2017–2019. Furthermore, from 2020 onward, capital return in the industrial sector declined significantly, reaching 1.6 units during 2021–2024 (Table 3). This is associated with the high capital requirements of industrial projects and the long payback period of investments.

At the same time, the situation at the district level has its own specific characteristics, which we also analyze. As the industrial center, Urgench city led in 2010 with a capital return of 4.7 units, but by 2024 this indicator had declined to 1.1 units. This decline is explained by the fact that during the study period, investments increased by 128.3%, while industrial production volume grew by 110.6%, resulting in a 2.6-fold high capital level. In Tuproqal'a district, capital return in the industrial sector decreased from 20.7 units to 16.6 units during 2020–2024, yet this remains the highest value in the region. This is due to the presence of large industrial enterprises and well-developed production infrastructure in the district [12]. Conversely, in districts such as Gurlan, Kushkupir, Yangiariq, and Yangibozor, capital return indicators are low. This reflects the predominance of small-scale industrial activity in these areas and the specialization of industrial enterprises in processing agricultural raw materials into food and textile products. The regional average capital return of 1.6 units indicates low production efficiency, reflecting the predominance of energy-intensive, low-technology production sectors.

Based on the analysis results, we have determined that, although the volume of investments in the industrial sector of the Khorezm region has increased year by year, their economic efficiency has remained low, reflecting a declining trend in capital return [13].

**Table 3. Capital Return in the Industrial Sector of the Khorezm Region and Its Districts (units)**

Region/District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Average
Khorezm region	2.0	2.1	1.7	1.3	1.3	1.7	1.8	1.9	2.1	1.7	1.8	1.6	1.6	1.6	1.6	1.7
Urgench city	4.7	4.4	2.1	1.3	1.4	1.2	2.3	1.4	1.3	1.2	1.2	1.1	1.1	1.1	1.1	1.8
Khiva city								1.2	1.4	0.5	0.7	0.3	0.3	0.3	0.3	0.6
<i>districts:</i>																
Bogot	1.4	1.8	2.1	2.6	0.9	1.4	1.6	2.0	1.3	0.7	0.7	1.1	0.8	0.8	0.8	1.3
Gurlan	1.5	1.4	1.4	1.5	1.3	1.3	1.4	2.8	2.3	1.4	1.4	1.0	1.1	1.0	1.0	1.5
Kushkupir	1.3	1.3	1.0	0.9	1.3	1.5	1.0	1.8	1.1	0.8	0.9	0.9	0.8	0.8	0.8	1.1
Urgench	0.9	1.1	0.9	0.5	0.6	1.0	0.7	0.8	0.8	0.6	0.8	1.6	1.2	1.4	1.4	1.0
Khazorasp	2.2	1.9	2.1	1.5	2.8	6.0	5.1	5.8	13.9	11.1	1.0	0.5	0.7	0.7	0.8	3.7
Tuproqal'a											20.7	18.3	17.4	16.9	16.6	18.0
Khovka	2.2	3.1	2.7	2.7	2.0	1.8	1.5	2.2	1.7	1.1	0.9	1.2	1.0	1.0	0.9	1.7
Khiva	0.9	0.9	0.9	0.7	0.7	1.1	1.0	0.8	1.0	0.5	1.3	0.6	0.7	0.7	0.7	0.8
Shovot	1.2	1.0	1.5	1.7	0.5	1.3	1.2	1.2	2.3	2.0	1.0	0.9	0.9	0.8	0.7	1.2
Yangiariq	1.3	1.7	1.6	1.5	1.2	1.2	2.5	1.9	1.4	0.8	0.9	0.3	0.3	0.3	0.3	1.1
Yangibozor	1.5	1.6	1.3	0.7	0.9	1.1	0.9	1.4	0.8	0.4	1.0	1.3	1.1	1.1	1.1	1.1
Statistical average	1.8	1.9	1.6	1.4	1.2	1.7	1.8	1.9	2.4	1.7	2.5	2.2	2.1	2.0	2.0	2.6
Statistical maximum	4.7	4.4	2.7	2.7	2.8	6.0	5.1	5.8	13.9	11.1	20.7	18.3	17.4	16.9	16.6	
Statistical minimum	0.9	0.9	0.9	0.5	0.5	1.0	0.7	0.8	0.8	0.4	0.7	0.3	0.3	0.3	0.3	

In this context, it is necessary to increase the number of enterprises engaged in deep processing of agricultural products, promote the production of export-oriented goods, and expand projects implemented with state investments through public-private partnership mechanisms.

The statistical analysis of capital return in the industrial sector of the Khorezm region allows for assessing the growth of sectoral potential, investment efficiency, and inter-sectoral coordination in the region. This indicator is of significant importance in evaluating the practical effectiveness of economic policy and the impact of investments on production. During the study period, the level of industrial activity in the Khorezm region grew rapidly, however, the efficiency of investment utilization did not progress at the

same rate across all districts. Therefore, we apply statistical assessment to determine the qualitative growth of industrial capital and the regional disparities within the sector.

According to the data, during 2010–2024, the comparative analysis of capital return in the industrial sector of the region increased from an average of 2.0 units to 6.1 units relative to the area with the lowest value. Between 2010 and 2014, the indicator remained around 2.0 units, reflecting the stage of forming the main industrial base. From 2015 to 2018, it rose to 2.4–3.0 units, and during 2019–2021, it reached 4.0–8.6 units. In particular, during 2020–2024, the statistical assessment of capital return in industrial sectors increased sharply, which is associated with the establishment of new industrial zones, the expansion of processing industries, and industrial reforms implemented within the framework of state programs (Table 4).

It should be emphasized that Tuproqqal’a, Khazarasp, and Urgench are the leading districts in terms of industrial efficiency, with this positive trend explained by the presence of large enterprises and newly established production capacities. Additionally, a significant portion of investments is concentrated in these districts, while industrial activity in other areas remains relatively low. In the remaining districts, the majority of industrial capital is directed toward processing and construction materials sectors, whereas investment in high-tech sectors (such as electronics and machinery) remains minimal. Furthermore, industrial capacities in these areas operate using outdated equipment, which increases production costs and reduces capital efficiency [14]. Thus, the statistical indicators of capital return in the industrial sector of the Khorezm region reflect regional imbalances, low technological levels, and weak innovation activity.

Therefore, to eliminate existing shortcomings and enhance overall capital efficiency by ensuring regional balance, it is necessary to establish industrial zones and small industrial clusters in other districts, based on the experience of Tuproqqal’a and Urgench.

**Table 4. Statistical Analysis of Capital Return in the Industrial Sector of the Khorezm Region and Its Districts (Comparative Analysis) [15].**

Region/District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Average
<b>Khorezm region</b>	2,3	2,2	2,0	2,8	2,5	1,8	2,4	2,3	2,6	4,2	2,7	6,5	5,5	5,8	6,1	3,5
Urgench city	5,4	4,7	2,4	2,7	2,6	1,3	3,1	1,7	1,6	3,0	1,8	4,3	3,7	3,9	4,1	3,1
Khiva city								1,5	1,7	1,2	1,0	1,0	1,0	1,0	1,0	1,2
<i>districts:</i>																
Bogot	1,6	2,0	2,5	5,5	1,7	1,5	2,1	2,4	1,6	1,6	1,1	4,2	2,7	2,8	2,9	2,4
Gurlan	1,7	1,6	1,6	3,3	2,4	1,4	1,9	3,4	2,8	3,4	2,2	4,1	3,6	3,7	3,8	2,7
Kushkupir	1,5	1,4	1,2	1,8	2,5	1,5	1,3	2,2	1,3	1,9	1,3	3,5	2,7	2,8	2,9	2,0
Urgench	1,1	1,2	1,0	1,0	1,1	1,0	1,0	1,0	1,0	1,6	1,3	6,4	4,6	5,1	5,6	2,3
Khazarasp	2,5	2,1	2,5	3,3	5,3	6,3	6,9	7,0	17,2	27,7	1,6	1,9	2,3	2,7	3,0	6,2
Tuproqqal’a											31,9	72,3	58,8	61,5	63,9	57,7
Khonka	2,5	3,4	3,2	5,8	3,8	1,9	2,1	2,7	2,1	2,8	1,4	4,8	3,4	3,5	3,6	3,1
Khiva	1,0	1,0	1,0	1,4	1,4	1,1	1,4	1,0	1,3	1,3	2,1	2,4	2,4	2,6	2,7	1,6
Shovot	1,4	1,1	1,7	3,7	1,0	1,4	1,6	1,4	2,8	4,9	1,6	3,4	3,0	2,9	2,8	2,3
Yangiariq	1,5	1,9	1,9	3,3	2,3	1,3	3,4	2,3	1,7	2,0	1,3	1,0	1,0	1,0	1,0	1,8
Yangibozor	1,7	1,7	1,5	1,6	1,7	1,1	1,2	1,7	1,0	1,0	1,5	5,1	3,6	4,0	4,3	2,2
Statistical average	2,0	2,0	1,9	3,0	2,4	1,8	2,4	2,3	3,0	4,4	3,8	8,6	7,0	7,4	7,7	4,0
Statistical maximum	5,4	4,7	3,2	5,8	5,3	6,3	6,9	7,0	17,2	27,7	31,9	72,3	58,8	61,5	63,9	
Statistical minimum	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	

At the same time, it is necessary to implement and develop the “Industry 4.0” model in the region by establishing research and innovation centers in the industrial sector in collaboration with Urgench State University and other scientific institutions [16]. This will promote the overall expansion of the industrial sector, enhance inter-sectoral integration, and ensure the sustainable development of industry at both the regional and district levels.

#### 4. Conclusion

In the economic system of the Khorezm region, the period from 2010 to 2024 saw an increase in investment and capital activity, with investment volume growing 40 times. This indicates an expansion of investment activity in both the public and private sectors and reflects economic policies aimed at regional diversification. However, the analysis shows that the increase in investment volume has not corresponded with proportional economic efficiency. On the contrary, during 2010–2024, the efficiency of total and industrial capital, measured by capital return, declined to some extent. In other words, while investments have increased, their effectiveness coefficient remains low. This situation necessitates a qualitative reassessment of investment policy.

In particular, it remains a critical task not only to increase the volume of investments but also to ensure their efficiency in qualitative terms, enhancing their capital return, profitability, and sustainability. Going forward, economic policy in the region should be shaped based on the principle of “shifting from quantitative investment indicators to efficiency criteria.” This direction requires a focus on strategic management, scientific approaches, modern economic mechanisms, and innovation.

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