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FINANCING OF SMALL BUSINESSES THROUGH INVESTMENT LOANS BY COMMERCIAL BANKS

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Abstract: This article provides an in-depth analysis of the current state, existing problems, and prospects for improving the financing of small business entities one of the key drivers of Uzbekistan's economic development—through investment loans issued by commercial banks. The study examines the economic potential of small businesses, their sectoral distribution, the banking methodologies used in financing investment projects, and the credit policies adopted by commercial banks. Furthermore, the experience of «Mikrokreditbank», «Agrobank», «Xalq Bank» and «Ipak Yo'li Bank» in supporting small businesses through investment lending is analyzed comparatively, identifying existing shortcomings in lending mechanisms. The research is based on scientific, statistical, and practical sources and offers recommendations aimed at increasing the effectiveness of investment loans and strengthening the role of commercial banks in financially supporting small business entities.

Key words: small business development, investment loans of commercial banks, financing methodology, credit policy, loan guarantees, economic potential of the banking system, microcredit mechanisms, financial support instruments, efficient use of credit resources, interest rate dynamics, innovative financing approaches.

INTRODUCTION

In the economy of Uzbekistan, small businesses represent a wide range of entities encompassing key sectors such as industry, trade, agriculture, and services. According to recent data, in 2023 small businesses accounted for 51.2 percent of the country's gross domestic product. In the first half of 2025, the share of small businesses was estimated at 49.6 percent. At the same time, their contribution to employment is also significant. According to 2025 data, employment created by small business entities accounts for approximately 75–76 percent of total employment in the country.

However, under the conditions of Uzbekistan, there are serious gaps in financing small businesses. In particular, according to international expert assessments, a financial gap and limited access to investment credit resources remain key challenges. In this regard, this dissertation conducts an in-depth analysis of the current state of financing small businesses through investment loans provided by commercial banks, identifies shortcomings in the existing methodology, and develops scientifically grounded proposals for its improvement.

In theoretical literature, bank loans are considered the leading instrument for financing small businesses. International studies indicate that banks usually adopt a cautious approach when providing loans to small and medium-sized enterprises. Factors such as information asymmetry, the limited volume of assets and capital, and the weakness of collateral bases restrict their access to credit.

For this reason, research recommends mechanisms such as Credit-Guarantee Schemes (CGS), which help reduce the risk faced by creditors and expand access to loans for small business entities. In the practice of Uzbekistan, the Central Bank and other financial institutions are also taking measures to introduce similar guarantee mechanisms as part of policies aimed at supporting small businesses.

In this context, both the theory and practical experience of investment lending demonstrate that preferential investment loans provided by banks should gradually be adapted to market conditions. Interest rates should be aligned with market rates, and credit conditions for small business entities should be improved by easing collateral and guarantee requirements.

This dissertation proposes precisely such an approach: expanding investment lending, developing credit guarantee mechanisms, adapting bank policies to the needs of small businesses, and strengthening financial transparency and information exchange in order to create a stable credit environment that supports the development of small businesses.

REVIEW OF LITERATURE ON THE SUBJECT

Existing scientific and practical sources devoted to studying the mechanisms through which commercial banks finance small businesses with investment loans cover a wide range of theoretical foundations, institutional conditions, and practical experiences in this field.

The credit rationing theory developed by Stiglitz and Weiss (1981) is considered one of the main theoretical foundations for explaining the limited access of small businesses to investment loans. The authors scientifically demonstrate that in market conditions characterized by information asymmetry, banks may restrict lending due to higher perceived risks, which in turn complicates the process of financing small businesses.

Demirgüç-Kunt et al. (2023) examine the financial stability and profitability of banks in emerging markets and analyze the impact of credit policy and investment activities on banking stability. Their research highlights the extent to which the investment lending activity of commercial banks toward small businesses is linked to overall market stability.

The Strategy for Reforming the Banking System of the Republic of Uzbekistan for 2020–2025 (2020) is an important policy document aimed at improving investment lending processes, liberalizing banking activities, and strengthening financial support mechanisms for small businesses. In addition, the statistical bulletins of the Central Bank (2024) provide important practical data on the volume of investment loans, the dynamics of interest rates, and the structure of bank assets.

Reports by the International Finance Corporation (IFC, 2023) and the European Bank for Reconstruction and Development (EBRD, 2024) provide analyses based on international standards regarding the financial gap faced by small businesses in Uzbekistan, the barriers to obtaining credit, and the institutional conditions necessary for investment financing. Meanwhile, the Asian Development Bank (ADB, 2023) emphasizes the importance of modernizing credit infrastructure for the development of the SME sector.

G'aniyev and Raxmatov (2022) study the lending methodologies used by commercial banks and propose measures aimed at expanding small businesses' access to investment loans. Karimov and Abdurahmonov (2023) analyze the relationship between the structure of bank assets and profitability indicators, demonstrating that the quality of the investment loan portfolio has strategic importance for banks. Abdullaeva (2021) integrates banking theory with practical processes and explains the scientific foundations of investment lending mechanisms.

Reports from «Mikrokreditbank» (2023), «Agrobank» (2023), «Xalq Bank» (2023), and «Ipk Yo'li Bank» (2024) reveal the practical approaches used by banks in financing small businesses through investment loans, including the structure of loan portfolios, credit policies, and cooperation with international financial institutions. These reports make it possible to identify the real practice of investment lending in Uzbekistan, as well as its advantages and existing problems.

The analysis of the above literature indicates that the effectiveness of financing small businesses through investment loans provided by commercial banks depends on three main factors:

1. The risk management systems and lending strategies of banks.
2. Institutional and legal conditions created by the state.
3. The modernity and flexibility of credit mechanisms applied in banking practice.

While international studies form the theoretical foundations, national reports and local scientific research make it possible to conduct a deeper analysis of the practical state of investment lending processes in Uzbekistan.

RESEARCH METHODOLOGY

The research methodology is based on the collection and analysis of secondary statistical and analytical data related to small business financing in Uzbekistan. Data were obtained from official reports of commercial banks, publications of the Central Bank, international financial institutions, and national statistical sources. The collected information was examined using comparative, statistical, and analytical methods to identify trends, constraints, and patterns in investment lending to small businesses.

ANALYSIS AND RESULTS

According to statistics in Uzbekistan, at the beginning of 2025 the number of operating small enterprises and microfirms in the country reached 358.1 thousand, which corresponds to 12.1 small business entities per 1,000 inhabitants. In 2024, the establishment of 77.0 thousand new small enterprises indicates a high level of investment demand in the small business sector. At the same time, compared with the highest indicator recorded in 2021 (462.8 thousand enterprises), the decline in the number of active entities during 2022–2024

suggests the presence of factors related to constraints in investment financing, difficulties in obtaining credit, and issues concerning business sustainability.

The sectoral structure of small businesses demonstrates that the demand for investment loans varies across industries. As of the beginning of 2025, the largest share of small business enterprises was concentrated in the trade sector, accounting for 136,352 entities (38 percent). In the industrial sector, 54,692 small enterprises (15 percent) are operating. Due to the high demand for technological modernization and investments in fixed capital, this sector is considered one of the main consumers of investment loans (Figure 1).

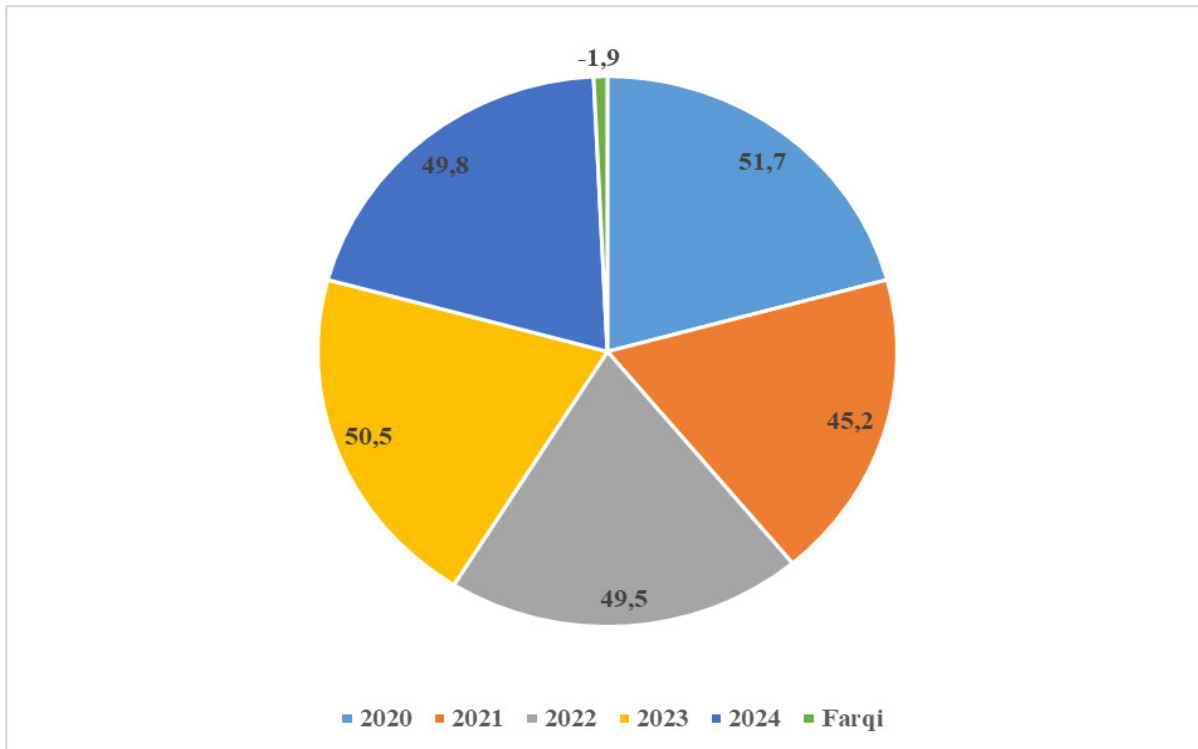


Figure 1. Share of Small Business Entities in the Total Import of Goods, Works, and Services¹

The share of small business entities in the total import of goods, works, and services in the Republic of Uzbekistan experienced noticeable fluctuations during 2020–2024. In 2020, this indicator amounted to 51.7 percent, while in 2021 it declined sharply to 45.2 percent. In the following years, the indicator began to recover: it reached 49.5 percent in 2022 and 50.5 percent in 2023. In 2024, the share of imports slightly decreased again to 49.8 percent. Overall, during the period 2020–2024, the share of small businesses in imports declined by 1.9 percent.

An analysis of this dynamic shows that the import activity of small businesses is directly related to the volume and availability of investment loans provided by commercial banks. The sharp decline in 2021 can be explained by the reduction of investment lending by banks in the post-pandemic period as they sought to reduce credit risks. This significantly limited the ability of small business enterprises to purchase equipment, technologies, and raw materials from abroad.

In 2022–2023, the recovery of the indicator occurred as a result of banks introducing recovery loans, allocating preferential credit lines for the modernization of production equipment, and expanding cooperation with international financial institutions. During this period, investment loans expanded the import capabilities of small businesses, resulting in the share exceeding 50 percent.

In 2024, however, a slight decline was observed. This was associated with rising interest rates, stricter collateral requirements, a more cautious approach by banks toward risky loans in order to improve the quality of their credit portfolios, and the strengthening of import substitution processes by domestic producers for certain goods and equipment.

In general, the analysis shows that investment loans provided by commercial banks are one of the main factors influencing the import activity and technological modernization of small businesses. Easing lending conditions, expanding guarantee mechanisms, and improving preferential investment loans will contribute to

¹ <https://stat.uz/rasmiy-statistika/small-business-and-entrepreneurship> sayti ma'lumotlari asosida tuzildi

stabilizing the import volume of small businesses, supporting production modernization, and increasing the overall competitiveness of the economy.

The existing practice of financing small businesses through investment loans provided by commercial banks in Uzbekistan clearly demonstrates the role of the banking sector in supporting economic activity. Among banks, «Mikrokreditbank», «Agrobank», «Xalq Bank», and «Ipak Yo'li Bank» stand out as leading institutions in terms of the volume and effectiveness of loans directed toward small business investment projects.

In 2023, «Mikrokreditbank» allocated a total of 5.1 trillion UZS in loans and financed 184,427 clients. Through these resources, nearly 100,000 new jobs were created, demonstrating the direct impact of the bank's investment loans on employment. Within the framework of family entrepreneurship programs, 1.7 trillion UZS in loans were issued, creating 91,903 jobs. The establishment of 10,942 new small enterprises through the bank in 2023 confirms that investment loans serve as an important stimulating factor in the business incubation process. At the same time, the recovery of 4.4 trillion UZS in refinancing loans indicates a high level of portfolio discipline within the bank.

According to the results of 2023, the credit portfolio of «Agrobank» consisted of 19 percent microenterprises and 31 percent small and medium-sized businesses. This demonstrates the bank's specialization in providing investment loans across sectors such as agriculture, industry, construction, and trade. «Agrobank»'s investment loans are primarily directed toward the purchase of fixed assets, the creation of processing capacities, and technological modernization processes.

«Ipak Yo'li Bank» has expanded support for small businesses through cooperation with international financial institutions. In 2024, the European Bank for Reconstruction and Development (EBRD) provided the bank with a USD 20 million credit line, of which USD 10 million was directed toward financing small businesses and USD 10 million toward supporting young entrepreneurs. The bank's "Advice for Small Businesses" program also provides free consulting services on business planning, financial management, and market analysis in addition to lending.

The investment loan conditions offered by Kapitalbank provide various opportunities for small businesses. Interest rates for loans in the national currency start from 24 percent per year, while loans financed through foreign sources start from 13 percent. The loan term may reach up to 120 months, with a grace period of up to 3 months, and in some programs up to 6 months. In this case, the interest rate is formed by adding 4 percentage points to the base rate of the Central Bank.

In addition, high interest rates on investment loans, their relatively short maturities, and strict repayment schedules increase the financial burden on small enterprises. Most small businesses possess limited assets that can be used as collateral, and many entities lack an established credit history, which increases the perceived risk for commercial banks.

Banking practice indicates the following specialization among major institutions:

- «Mikrokreditbank» – a leading bank in providing loans for micro and family businesses;
- «Agrobank» – the main bank financing agricultural and industrial investment projects;
- «Xalq Bank» – offers investment loans supporting export-oriented small businesses;
- «Ipak Yo'li Bank» – promotes small business development through preferential credit lines in cooperation with international financial institutions.

Overall, financing small businesses through investment loans provided by commercial banks is accelerating the modernization of the economy. However, making credit policy more flexible, expanding guarantee mechanisms, reducing the interest burden, and improving the system of credit history formation are crucial for the development of small businesses.

CONCLUSIONS AND SUGGESTIONS

In the economy of Uzbekistan, the high sectoral share of small businesses and their decisive role in economic activity make investment lending by commercial banks a strategically important area. The analysis shows that in recent years commercial banks have demonstrated significant activity in financing small businesses. In particular, the allocation of 5.1 trillion UZS in loans by «Mikrokreditbank» in 2023, the financing of more than 184 thousand clients, and the establishment of 10,942 new small enterprises clearly demonstrate the impact of bank investment loans on economic growth and employment. The fact that 31 percent of «Agrobank»'s credit portfolio consists of small and medium-sized business loans, and that «Ipak Yo'li Bank» has attracted USD 20 million in preferential credit lines for small businesses in cooperation with the EBRD and IFC, indicates the expanding practical scope of this process.

At the same time, existing analyses confirm that significant limitations remain in the methodology of investment financing for small businesses. High collateral requirements imposed by banks, expensive interest rates, the absence of credit histories, incomplete financial reporting, and strict loan conditions leave many small

entrepreneurs outside the banking credit system. Although certain concessions have been introduced by the state—such as unsecured loans up to 100 million UZS and a reduction of collateral requirements by up to 50 percent for loans up to 150 million UZS—these measures are often still insufficient for investment projects.

Fluctuations in the structure of imports are also directly linked to investment lending. During 2020–2024, the share of small businesses in total imports declined from 51.7 percent to 49.8 percent, indicating the influence of credit constraints and economic conditions on this dynamic. In particular, the sharp decline in 2021 was associated with the cautious lending policies adopted by banks after the pandemic. This once again confirms that investment loans are a decisive factor in expanding the modernization and import capacity of small businesses.

Based on the above analysis, it can be concluded that improving the system of financing small businesses through investment loans provided by commercial banks is a key factor in ensuring sustainable economic growth in Uzbekistan. In this regard, the following directions are of particular importance:

- expanding credit guarantee schemes (CGS);
- aligning interest rates with market principles;
- easing collateral requirements in accordance with the capabilities of the real sector;
- strengthening consulting support and assistance in business planning alongside credit provision;
- expanding the use of international financing lines;
- developing alternative financing instruments such as leasing, factoring, and crowdfunding.

These measures will strengthen the role of commercial banks, increase the investment activity of small businesses, and accelerate the overall pace of economic modernization. As a result, new jobs will be created, the number of innovative projects will increase, and the economic competitiveness of Uzbekistan will significantly improve.

List of used literature:

1. Small Businesses and Entrepreneurship in Uzbekistan's Economic Landscape: A Macroeconomic Perspective (2019–2024)
2. Demirgüç-Kunt, A., Pedraza, A. va Ruiz, C. (2023). Rivojlanayotgan bozorlar banklarining foydaliligi va moliyaviy barqarorligi. Jahon banki siyosiy tadqiqot ishlari, ishchi hujjat № 10245. Washington, D.C.: Jahon banki.
3. Stiglitz, J.E. va Weiss, A. (1981). «Nomukammal axborotga ega bo'lgan bozorlarda kreditni ratsionallash», *The American Economic Review*, 71(3), 393–410-betlar.
4. O'zbekiston Respublikasi Prezidentining 12.05.2020 yildagi "2020 — 2025-yillarga mo'ljallangan O'zbekiston Respublikasining bank tizimini isloh qilish strategiyasi to'g'risida"gi PF-5992-son // <https://lex.uz/docs/4849996>
5. O'zbekiston Respublikasi Markaziy banki (2024). 2020–2024-yillarga oid yillik statistik byulleten. <https://www.cbu.uz>.
6. Xalqaro moliya korporatsiyasi (IFC) (2023). KOB moliyaviy bo'shlig'i to'g'risidagi hisobot: O'zbekiston profili. <https://www.ifc.org>.
7. G'aniyev, I. va Raxmatov, F. (2022). «Tijorat banklarining kreditlash metodologiyasi va O'zbekistonda KOB subyektlarining kreditga kirish imkoniyati», *Moliyaviy va bank ishi sharhi*, 4(2), 66–81-betlar.
8. Mikrokreditbank (2023). Yillik hisobot – 2023. Toshkent: Mikrokreditbank.
9. Agrobank» (2023). Kredit portfeli bo'yicha choraklik sharh. <https://www.Agrobank.uz>.
10. Ipak Yuli Bank (2024). IFC va YETTB hamkorligi bo'yicha sharh. <https://ipakyulibank.uz>.
11. Xalq Banki (2023). Kichik biznesni qo'llab-quvvatlash dasturlari. Toshkent: Xalq Banki.
12. Yevropa tiklanish va taraqqiyot banki (YETTB) (2024). Markaziy Osiyoda kichik biznesni qo'llab-quvvatlash: O'zbekiston misolida. <https://www.ebrd.com>.
13. Abdullaeva, Sh. (2021). Bank ishi. Toshkent: Iqtisod-Moliya nashriyoti.
14. Karimov, A. va Abdurahmonov, B. (2023). «O'zbekistonda tijorat banklarining aktivlar tuzilmasi va daromadliligi: empirik dalillar», *Qo'llanma moliya jurnali*, 5(1), 34–45-betlar.
15. Osiyo taraqqiyot banki (2023). O'zbekiston mamlakat hamkorlik strategiyasi 2022–2026. Manba: OTB.

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