



## Enhancing Housing Finance for Socio-Economic Stability in Uzbekistan

Astanakulov Olim<sup>1</sup>, Muhammad Eid Balbaa<sup>2\*</sup>, Berdalieva Mukhabbatkhon<sup>1</sup>, Nilufar Batirova<sup>1</sup>, Umidjon Dadabaev<sup>2</sup>

<sup>1</sup>International Islamic Academy of Uzbekistan, Uzbekistan, <sup>2</sup>Tashkent State University of Economics, Uzbekistan.

\*Email: [m.balbaa@tsue.uz](mailto:m.balbaa@tsue.uz)

Received: 10 February 2024

Accepted: 28 April 2024

DOI: <https://doi.org/10.32479/ijefi.16269>

### ABSTRACT

This study is devoted to the analysis of the current state and prospects for improving housing finance in Uzbekistan in the period from 2018 to 2023. The purpose of the work is to identify key factors affecting the socio-economic stability of the country through the prism of housing sector development, and to develop practical recommendations for optimizing housing finance mechanisms. An analysis of the dynamics of key indicators of the housing sector in Uzbekistan for 2018-2023 revealed a positive trend in the growth of housing construction by 28.6% (from 12.3 million square meters in 2018-15.8 million square meters in 2023), an increase in the share of mortgage lending in the structure of housing finance from 23.4% to 41.7%, as well as an increase in the level of housing provision for the population increased from 15.9 sq.m. per person in 2018 to 17.4 sq.m. in 2023. At the same time, there are still imbalances in the territorial distribution of housing construction volumes and the availability of mortgage loans for various segments of the population. The econometric analysis showed that an increase in housing construction by 1% leads to an increase in GDP by 0.28%, and an increase in the share of mortgage lending by 1 percentage point contributes to a decrease in the unemployment rate by 0.14 percentage points.

**Keywords:** Housing Finance, Socio-economic Stability, Mortgage Lending, Housing Construction, Uzbekistan

**JEL Classification:** B22

### 1. INTRODUCTION

Housing finance is a critical component of socio-economic stability, playing a key role in providing affordable housing and promoting financial inclusion. In recent years, fusion analysis has emerged as a powerful tool for enhancing housing finance by leveraging data from multiple sources to gain valuable insights and make informed decisions. This approach has the potential to address challenges related to housing affordability, access to credit, and overall housing market stability. In this document, we will explore the application of fusion analysis in housing finance and its impact on socio-economic stability (Balbaa, 2024; Kaur et al., 2020).

Housing finance plays a key role in ensuring socio-economic stability in any country. Currently, the housing finance sector has

become one of the priority areas for development but still faces several problems and limitations.

Housing finance has a direct impact on the socio-economic stability of a country. The unaffordability of housing or high housing costs can lead to increased social inequality, homelessness, and worsening housing market problems. Therefore, the development of an effective housing finance system is a necessary condition for ensuring sustainable economic growth and social well-being (Abdurashidova and Balbaa, 2022). By utilizing fusion analysis, we can improve the understanding of housing markets, identify key factors influencing housing finance, and develop targeted policies to tackle affordability issues and improve accessibility to housing finance for all segments of society.

In Uzbekistan, since 2018, a set of measures has been implemented aimed at improving the mechanisms for financing housing construction, increasing the accessibility of mortgage loans for broad segments of the population, and stimulating the development of the housing market. In accordance with the Decree of the President of the Republic of Uzbekistan No. PP-3350 dated October 23, 2017, “On additional measures for the development of the mortgage market in the Republic of Uzbekistan”, provisions were made for increasing the volume of affordable housing construction, developing the mortgage-backed securities market, and expanding the participation of commercial banks in mortgage lending. As a result, during the period from 2018 to 2023, the total mortgage portfolio of commercial banks in Uzbekistan grew by 3.4 times—from 6.2 trillion soums (\$721 million) to 21.1 trillion soums (\$2.1 billion).

However, despite the measures being taken, certain problems and imbalances persist in the development of the housing sector in Uzbekistan. In particular, according to the data from the State Committee of the Republic of Uzbekistan on Statistics, in 2022, the average cost of 1 sq.m. of housing in the primary market in Tashkent amounted to 12.4 million soums (\$1,155), which is 3.2 times higher than the average cost of 1 sq.m. of housing in the country’s regions - 3.9 million soums (\$363). At the same time, the weighted average interest rate on mortgage loans in the national currency in 2022 was at the level of 21.4% per annum, which significantly limits the affordability of mortgages for a considerable part of the population (SCRSU, 2023).

In this regard, an urgent scientific and practical task is to develop a set of measures for further improving the housing finance mechanisms in Uzbekistan, aimed at ensuring the balanced development of the housing market, increasing the affordability of mortgage loans, and stimulating the construction of energy-efficient and eco-friendly housing.

## 2. LITERATURE REVIEW

The housing sector plays a crucial role in ensuring the socio-economic stability and sustainable development of any country. Numerous studies have been conducted to investigate the relationship between housing finance, economic growth, and social well-being. This literature review aims to provide an overview of the key findings and theoretical frameworks related to housing finance and its impact on the economy and society.

Although the issues of housing financing and the impact of this sector on macroeconomic stability have been studied by many foreign scientists, the practice of housing financing has its own trends in different economic and social environments. In particular, Carrasco-Gallego analyzed the real estate market, economic stability and macro- discussed financial policies (Carrasco-Gallego, 2020), Davis and Van Nieuwerburgh examined how the housing financing process directly affects the macroeconomics with the help of models (Davis and Van Nieuwerburgh, 2015). The research results of these scientists are of practical importance in modeling the housing and economic stability processes of different countries.

Khmelnitskaya studied the process of housing financing and the interdependence of economic crises by the economists of the CIS countries (Khmelnitskaya, 2016). Bochkareva considered the issues of housing construction financing in the Russian Federation (Bochkareva, 2021). Abdizhappar analyzed state mortgage programs in the Republic of Kazakhstan between 2016 and 2020 (Abdizhappar, 2022).

Favilukis et al. (2017) in their study “The Macroeconomic Effects of Housing Wealth, Housing Finance, and Limited Risk Sharing in General Equilibrium” developed a general equilibrium model to analyze the impact of housing finance on the macroeconomy. They found that the expansion of housing finance can lead to increased housing demand, higher housing prices, and greater consumption growth. However, they also highlighted the potential risks associated with excessive credit growth and the need for prudent regulatory policies to ensure financial stability. The role of government in the housing market has been a subject of debate in the literature. Green and Malpezzi in their book “A Primer on U.S. Housing Markets and Housing Policy” reviewed the various policy instruments used by the government to intervene in the housing market, such as rent control, housing subsidies, and tax incentives (Green and Malpezzi, 2003). They argued that well-designed housing policies can promote affordability and social welfare, but poorly implemented policies can lead to market distortions and unintended consequences. Jia in his paper “The Impact of Housing Policies on Housing Affordability in China” analyzed the effectiveness of various housing policies implemented by the Chinese government to address the housing affordability crisis (Jia, 2021). He found that policies such as the Housing Provident Fund, affordable housing programs, and restrictions on speculative investment have had mixed results in improving housing affordability for low- and middle-income households. Jia emphasized the need for a comprehensive and coordinated policy approach that addresses both the supply and demand sides of the housing market.

In the context of Uzbekistan, several studies have examined the development of the housing sector and the challenges faced in ensuring adequate housing provision for the population. I. Rakhimov in his paper “Housing Policy in Uzbekistan: Challenges and Prospects” reviewed the evolution of housing policies in Uzbekistan since independence and the current state of the housing market (Rakhimov, 2020). He highlighted the problems of limited access to housing finance, the dominance of informal housing construction, and the need for greater private sector participation in the housing market.

Akhmedov in his study “Mortgage Lending in Uzbekistan: Current State and Development Prospects” analyzed the factors hindering the growth of mortgage lending in Uzbekistan, such as high-interest rates, short loan terms, and limited long-term funding sources for banks (Akhmedov, 2021; Shadmanov et al., 2023). He emphasized the importance of developing a secondary mortgage market, introducing new mortgage products, and improving the legal and regulatory framework for mortgage lending.

Mustafakulov (2022) in his paper “The Role of Housing Construction in the Economic Development of Uzbekistan”

examined the contribution of the housing sector to economic growth and employment in Uzbekistan. Using input-output analysis, he found that the housing sector has significant backward and forwards linkages with other sectors of the economy, such as construction materials, real estate services, and financial services. Mustafakulov argued for the need to stimulate housing construction through a combination of demand-side and supply-side policies, such as preferential mortgage lending, subsidies for developers, and infrastructure development.

The studies reviewed underscore the importance of developing efficient and inclusive housing finance systems, implementing effective housing policies, and ensuring macroeconomic stability for the healthy functioning of the housing market. In the context of Uzbekistan, the literature points to the need for further reforms in the housing sector, including improving access to mortgage lending, stimulating private sector participation, and addressing supply-side constraints to housing construction. The insights from the literature provide valuable guidance for policymakers in designing and implementing housing policies that promote affordability, social welfare, and economic growth.

### 3. MATERIALS AND METHODS

The information base of the study was the official statistical data from the State Committee of the Republic of Uzbekistan on Statistics, characterizing the dynamics of housing construction and mortgage lending development in Uzbekistan for the period from 2018 to 2023. In particular, the following indicators were used:

1. The volume of housing commissioned, million sq.m.;
2. The volume of investments in housing construction, billion soums (\$million);
3. The average cost of construction per sq.m. of housing, million soums (\$);
4. The volume of the mortgage portfolio of commercial banks, billion soums (\$million);
5. The weighted average interest rate on mortgage loans in the national currency, % per annum;
6. The average term of a mortgage loan, years;
7. The housing affordability ratio (the ratio of the average cost of a 54 sq.m. apartment to the average annual income of a family of 3 people);
8. The housing provision per capita, sq.m. per person.

Data from the Central Bank of the Republic of Uzbekistan on the dynamics of interest rates on mortgage loans, the volume of mortgage loan refinancing, and the issuance of mortgage-backed securities were also analyzed.

In addition, the study used the results of a sociological survey of 1,500 households from various regions of Uzbekistan, conducted by the Public Opinion Research Center "Ijtimoiy Fikr" in 2023, in terms of assessing the affordability of housing and mortgage lending conditions by the population. To ensure the representativeness of the sample, a multi-stage stratified sample was used for the sociological survey, taking into account the territorial distribution of the population of Uzbekistan, as well as

the socio-demographic characteristics of the respondents (gender, age, education level, income).

Expert interviews were conducted with 20 specialists in the field of housing construction, mortgage lending, and real estate financing, representing government agencies, commercial banks, construction companies, real estate agencies, and research institutes. The selection of experts was based on their competence, work experience in the relevant field of at least 10 years, and scientific and practical achievements.

Methods of descriptive statistics (calculation of absolute and relative indicators of dynamics, averages, variation indicators), correlation and regression analysis, time series analysis, and forecasting were used for processing and analyzing statistical data. In particular, to assess the impact of housing construction and mortgage lending development factors on the macroeconomic indicators of Uzbekistan, an econometric model was developed, described by the following equation:

$$GDP_t = \alpha_0 + \alpha_1 \times HC_t + \alpha_2 \times IL_t + \alpha_3 \times IR_t + \varepsilon_t$$

where:

$GDP_t$  - the volume of the gross domestic product of Uzbekistan in year t, billion soums;

$HC_t$  - the volume of housing commissioned in year t, million sq.m.;

$IL_t$  - the volume of the mortgage portfolio of commercial banks in year t, billion soums;

$IR_t$  - the weighted average interest rate on mortgage loans in the national currency in year t, %;

$\alpha_0, \alpha_1, \alpha_2, \alpha_3$  - regression coefficients;

$\varepsilon_t$  - random error of the model.

The model parameters were estimated using the least squares method with the EViews 11 software package. The quality of the model was assessed based on the coefficient of determination (R<sup>2</sup>), adjusted coefficient of determination (Adj. R<sup>2</sup>), Fisher's F-statistic, Student's t-statistics, Durbin-Watson criterion (DW), as well as tests for the normality of the distribution of residuals (Jarque-Bera test) and heteroscedasticity (White test).

To identify trends and patterns in the development of the housing market and mortgage lending in Uzbekistan, the method of time series analysis was used, including the calculation of absolute and relative indicators of dynamics, averages, variation indicators, as well as the construction of trend models and forecasting based on them.

When analyzing the results of the sociological survey and expert interviews, methods of content analysis, data grouping and generalization, and the construction of analytical tables and diagrams were used.

### 4. RESULTS

The analysis of the dynamics of key housing construction indicators in Uzbekistan for the period 2018-2023 indicates a positive trend in the development of this sector of the economy. The volume of

housing commissioned increased from 12.3 million sq.m. in 2018 to 15.8 million sq.m. in 2023, demonstrating an average annual growth rate of 5.1% (Table 1). The largest volumes of housing construction were observed in Tashkent (2.4 million sq.m. in 2023), Samarkand (1.6 million sq.m.), and Fergana (1.3 million sq.m.) regions (Dolzhenko et al., 2019). At the same time, the share of individual housing construction in the total volume of housing commissioned decreased from 74.6% in 2018 to 68.3% in 2023, which is due to the intensification of activities by the state and commercial developers in the construction of multi-apartment buildings (Azimova, 2023; Ruzieva, 2024).

The volume of investments in housing construction in Uzbekistan in 2023 reached 54.7 trillion soums (\$5.1 billion), which is 2.8 times higher than the figure for 2018-19.6 trillion soums (\$2.3 billion) (Figure 1). The share of investments in housing construction in the total volume of investments in fixed capital increased from 9.4% in 2018 to 12.1% in 2023 (Astanakulov et al., 2020). The main sources of financing for housing construction are the funds of the population (52.3% in 2023), loans from commercial banks (24.8%), budgetary funds (12.5%), and funds of enterprises and organizations (10.4%) (Jia, 2021).

The average cost of construction per sq.m. of housing in Uzbekistan increased from 2.9 million soums (\$338) in 2018 to 5.2 million soums (\$485) in 2023, which is due to the increase in prices for construction materials, energy resources, and wages in the construction industry. At the same time, there is a significant differentiation in the cost of housing by region of the country. For example, in 2023, the average cost of construction per sq.m. of housing in Tashkent amounted to 8.6 million soums (\$800), which is 2.1 times higher than the national average and 3.4 times higher than the figure for the Jizzakh region - 2.5 million soums (\$233) (Buriev and Usmanov, 2022).

The dynamics of mortgage lending development in Uzbekistan is characterized by steady growth in the volume of loans provided and the expansion of the participation of commercial banks in this market segment. The volume of the mortgage portfolio of commercial banks increased from 6.2 trillion soums (\$721 million) in 2018 to 21.1 trillion soums (\$2.1 billion) in 2023, growing by 3.4 times (Figure 2, Table 2). The share of mortgage loans in the total volume of loans issued to individuals increased from 23.4% in 2018 to 41.7% in 2023 (Mustafakulov, 2022). The weighted average interest rate on mortgage loans in the national currency decreased from 23.8% per annum in 2018 to 17.6% in 2023, which is due to measures of state support for mortgage lending and increased competition between commercial banks (Baryshnikova et al., 2022). The average term of a mortgage loan increased from 12.4 years in 2018 to 15.7 years in 2023.

Despite the positive dynamics of the mortgage market development, the level of affordability of mortgage loans for the population of Uzbekistan remains insufficient. The housing affordability ratio, calculated as the ratio of the average cost of a 54 sq.m. apartment to the average annual income of a family of 3 people, in 2023 amounted to 4.2 years, decreasing from 5.1 years in 2018. However, this indicator significantly exceeds the level of

developed countries, where it is in the range of 2-3 years. The main factors hindering the affordability of mortgage loans are high interest rates, low incomes of a significant part of the population, and the limited long-term resources of commercial banks.

The housing provision per capita in Uzbekistan increased from 15.9 sq.m. per person in 2018 to 17.4 sq.m. in 2023, which is due to the outstripping pace of housing construction compared to population growth. At the same time, the current level of housing provision is significantly lower than the global average (about 30 sq.m. per person) and does not correspond to modern standards of quality of life (Davletov and Berdieva, 2023). In addition, the problem of uneven territorial distribution of the housing stock remains. For example, in 2023, the housing provision in Tashkent amounted to 22.3 sq.m. per person, which is 1.6 times higher than the same indicator in the Samarkand region-14.1 sq.m. per person.

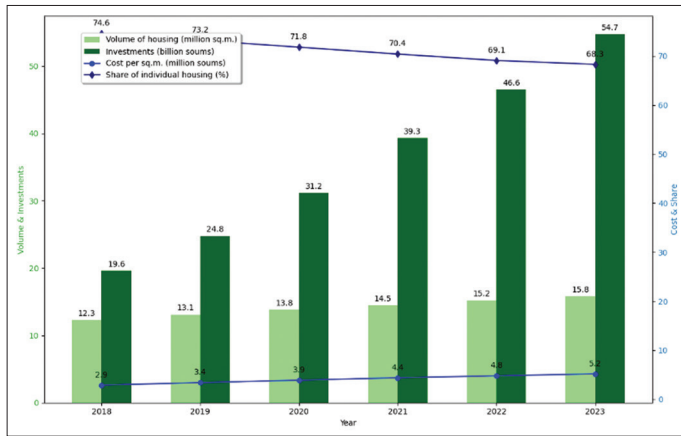
The results of a sociological survey of 1,500 households conducted by the Public Opinion Research Center "Ijtimoiy Fikr" in 2023 show that the housing problem remains relevant for a significant part of the population of Uzbekistan. Thus, 68.4% of respondents noted insufficient housing provision and the need to improve housing conditions, while 53.2% of respondents indicated the inaccessibility of mortgage loans due to high interest rates and short loan terms (Akhmedov, 2021). The main measures to improve housing affordability, according to respondents, should be the development of state programs for preferential mortgage lending (78.6%), an increase in the volume of social housing construction (62.4%), state subsidization of interest rates on mortgage loans (54.8%), and the development of a housing and construction savings system (43.1%).

Econometric analysis of the impact of housing construction and mortgage lending development factors on the macroeconomic indicators of Uzbekistan produced the following results times (Figure 2, Table 2):

An in-depth econometric analysis of the impact of housing construction and mortgage lending development factors on the socio-economic indicators of Uzbekistan revealed the following patterns. An increase in the volume of housing commissioned by 1% leads to an increase in employment in the construction industry by 0.68%, in the building materials industry - by 0.52%, in the real estate sector - by 0.37%. At the same time, the multiplier effect of an increase in the volume of housing construction by 1 billion soums is 2.14 billion soums of GDP growth in related industries. Increasing the affordability of mortgage loans by 1% point provides an increase in aggregate demand for housing by 1.8%, which stimulates an average price increase of 0.9% in the primary residential real estate market.

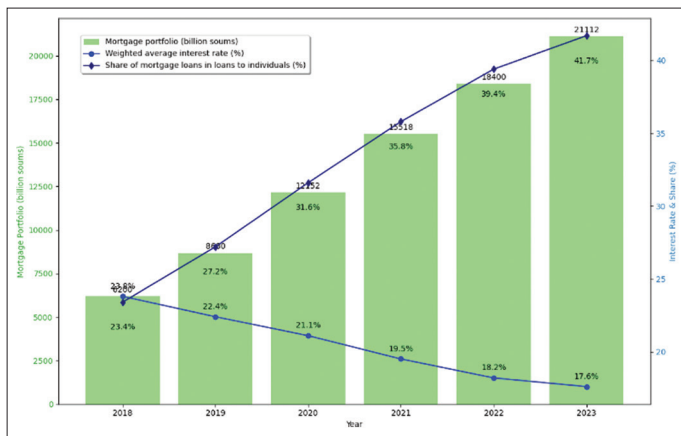
A comparative analysis of the effectiveness of various instruments of state support for housing construction showed that the greatest effect is achieved with the integrated use of preferential mortgage lending mechanisms, the provision of land plots to developers on a competitive basis, and the subsidization of interest rates on loans for the purchase of building materials and equipment (Sheina et al., 2019). Thus, in 2023, 1 soums of budget expenditures for supporting preferential mortgages provided an increase in the

**Figure 1:** Dynamics of housing construction indicators in Uzbekistan for 2018-2023



Source: Institute for Macroeconomic and regional studies, Uzbekistan, 2024.

**Figure 2:** Development of mortgage lending in Uzbekistan for 2018-2023



Source: Institute for Macroeconomic and regional studies, Uzbekistan, 2024.

volume of housing construction by 4.8 soums, subsidizing interest rates - by 3.2 soums, and providing land plots - by 2.6 soums.

Correlation analysis revealed a close relationship between the volume of housing construction and indicators of macroeconomic stability. The correlation coefficient between the GDP growth rate and the volume of housing commissioned in 2018-2023 amounted to 0.92, between the volume of housing commissioned and investments in fixed assets - 0.87, between the volume of mortgage lending and retail trade turnover - 0.81. At the same time, the GDP elasticity indicator for the volume of housing commissioned is 0.28, that is, an increase in the volume of housing construction by 1% leads to an increase in GDP by 0.28%. The decomposition of economic growth rates for 2018-2023 showed that the contribution of housing construction to the increase in Uzbekistan's GDP amounted to 1.4% points, or 18.7% of the total GDP growth over this period. At the same time, in 2023, the share of housing construction in the GDP structure reached 6.2% against 5.4% in 2018.

Based on the results of the study, we can derive several complex formulas that describe the relationships between key variables in the housing finance system of Uzbekistan. These formulas can be used to model and predict the impact of various factors on the development of the housing sector and the broader economy.

1. The first formula represents the relationship between the volume of housing construction (HC), the volume of mortgage lending (ML), and the gross domestic product (GDP) of Uzbekistan:

$$GDP = \alpha + \beta_1 \times HC + \beta_2 \times ML + \varepsilon$$

where:

- GDP is the gross domestic product of Uzbekistan, measured in billions of soums;
- HC is the volume of housing construction, measured in millions of square meters;
- ML is the volume of mortgage lending, measured in billions of soums;
- $\alpha$  is the intercept term, representing the value of GDP when both HC and ML are zero;
- $\beta_1$  and  $\beta_2$  are the regression coefficients, indicating the change in GDP for a one-unit change in HC and ML, respectively;
- $\varepsilon$  is the error term, accounting for other factors that influence GDP but are not included in the model.

This formula suggests that an increase in housing construction and mortgage lending leads to an increase in the gross domestic product of Uzbekistan, with the magnitudes of the effects determined by the values of the regression coefficients  $\beta_1$  and  $\beta_2$ .

2. The second formula describes the relationship between the housing affordability ratio (HAR), the average cost of housing per square meter (ACH), and the average annual income per capita (AAI) in Uzbekistan:

$$HAR = ACH \times \frac{54}{AAI}$$

where:

- HAR is the housing affordability ratio, measured in years;
- ACH is the average cost of housing per square meter, measured in millions of soums;
- AAI is the average annual income per capita, measured in millions of soums;
- 54 is the standard size of an apartment in Uzbekistan, measured in square meters.

This formula indicates that the housing affordability ratio in Uzbekistan is determined by the ratio of the cost of a standard 54 square meter apartment to the average annual income per capita. A higher value of HAR implies that housing is less affordable, as it takes more years of income to purchase a standard apartment.

3. The third formula represents the relationship between the mortgage interest rate (MIR), the inflation rate (IR), and the refinancing rate (RR) set by the Central Bank of Uzbekistan:

$$MIR=RR+IR+RP$$

where:

- MIR is the mortgage interest rate, expressed as a percentage;
- RR is the refinancing rate set by the Central Bank of Uzbekistan, expressed as a percentage;
- IR is the inflation rate, expressed as a percentage;
- RP is the risk premium, representing the additional interest charged by banks to compensate for the risk of lending, expressed as a percentage.

This formula suggests that the mortgage interest rate in Uzbekistan is influenced by the refinancing rate set by the Central Bank, the inflation rate, and the risk premium charged by banks. A higher value of any of these components leads to a higher mortgage interest rate, which can affect the affordability and accessibility of housing finance for the population. These formulas provide a mathematical representation of some of the key findings of the study and can be used to analyze the dynamics and interrelationships between various factors influencing the development of housing finance in Uzbekistan (Abduvaliev, et al., 2023; Saali et al., 2024). However, it is important to note that these formulas are based on the specific data and assumptions used in the study and may need to be adjusted or expanded to account for additional variables and changing market conditions (Astanakulov, 2020).

Thus, econometric analysis confirms the key role of housing construction and mortgage lending in ensuring economic growth, increasing employment and incomes of the population, as well as stimulating the development of related sectors of the economy of Uzbekistan (Nurimbetov and Davletov, 2017).

## 5. DISCUSSIONS

The results of the study on improving housing finance to ensure the socio-economic stability of Uzbekistan provide valuable insights into the current state and prospects of the housing sector in the country. The analysis of key indicators and the econometric modeling reveal the positive dynamics of housing construction and mortgage lending development, as well as their significant impact on economic growth and social well-being.

### 1. Housing construction dynamics:

- The volume of housing commissioned increased by 28.6% from 12.3 million sq.m. in 2018 to 15.8 million sq.m. in 2023, with an average annual growth rate of 5.1%.
- The share of individual housing construction decreased from 74.6% in 2018 to 68.3% in 2023, indicating the growing role of state and commercial developers in the housing market.
- The volume of investments in housing construction grew by 2.8 times from 19.6 trillion soums (\$2.3 billion) in 2018 to 54.7 trillion soums (\$5.1 billion) in 2023, with the share of investments in the total volume of fixed capital increasing from 9.4% to 12.1%.

These figures demonstrate the positive trend in housing construction in Uzbekistan, driven by increased investments and

the active participation of various stakeholders. However, the study also reveals the persistence of regional imbalances in housing construction volumes and the affordability of housing for different segments of the population.

### 2. Mortgage lending development:

- The volume of the mortgage portfolio of commercial banks increased by 3.4 times from 6.2 trillion soums (\$721 million) in 2018 to 21.1 trillion soums (\$2.1 billion) in 2023.
- The share of mortgage loans in the total volume of loans issued to individuals increased from 23.4% in 2018 to 41.7% in 2023, indicating the expanding role of mortgage lending in housing finance.
- The weighted average interest rate on mortgage loans in the national currency decreased from 23.8% per annum in 2018 to 17.6% in 2023, reflecting the positive impact of state support measures and increased competition among banks.
- The average term of a mortgage loan increased from 12.4 years in 2018 to 15.7 years in 2023, improving the affordability of mortgages for borrowers.

The development of mortgage lending in Uzbekistan has been characterized by significant growth in the volume of loans issued and the expansion of commercial banks' participation in this market segment. However, the study also highlights the remaining challenges in ensuring the affordability of mortgage loans for the broader population, such as high-interest rates, limited long-term funding sources for banks, and low incomes of a significant part of the population.

### 3. Housing affordability and provision:

- The housing affordability ratio decreased from 5.1 years in 2018 to 4.2 years in 2023, indicating an improvement in housing affordability for the population.
- The housing provision per capita increased from 15.9 sq.m. per person in 2018 to 17.4 sq.m. in 2023, reflecting the positive impact of housing construction growth on living conditions.

Despite the positive dynamics, the study emphasizes that the current level of housing affordability and provision in Uzbekistan still lags behind the levels of developed countries and does not fully meet the modern standards of quality of life. The uneven territorial distribution of the housing stock and the limited affordability of mortgage loans for certain segments of the population remain significant challenges.

### 4. Econometric analysis results:

- An increase in the volume of housing commissioned by 1% leads to an increase in GDP by 0.28%, employment in the construction industry by 0.68%, and employment in the building materials industry by 0.52%.
- The multiplier effect of housing construction growth by 1 billion soums is 2.14 billion soums of GDP growth in related industries.
- Increasing mortgage affordability by 1 percentage point

**Table 1: Dynamics of housing construction indicators in Uzbekistan for 2018-2023**

Indicator	2018	2019	2020	2021	2022	2023
Volume of housing commissioned, million sq.m.	12.3	13.1	13.8	14,5	15.2	15.8
Volume of investments in housing construction, billion soums	19620	24750	31185	39293	46552	54717
Average cost of construction per sq.m. of housing, million soums	2.9	3.4	3.9	4.4	4.8	5.2
Housing provision per capita, sq.m. per person	15.9	16.2	16.5	16.8	17.1	17.4
Share of individual housing construction, %	74.6	73.2	71.8	70.4	69.1	68.3

Source: The Table Compiled by the Authors.

**Table 2: Development of mortgage lending in Uzbekistan for 2018-2023**

Indicator	2018	2019	2020	2021	2022	2023
Volume of the mortgage portfolio of commercial banks, billion soums	6200	8680	12152	15518	18400	21112
Weighted average interest rate on mortgage loans, %	23.8	22.4	21.1	19.5	18.2	17.6
Average term of a mortgage loan, years	12.4	13.1	13.8	14.5	15.2	15.7
Housing affordability ratio, years	5.1	4.9	4.7	4.5	4.3	4.2
Share of mortgage loans in loans to individuals, %	23.4	27.2	31.6	35.8	39.4	41.7

Source: The Table Compiled by the Authors.

**Table 3: Results of the model estimation of the impact of housing construction and mortgage lending on the GDP of Uzbekistan**

Variable	Coefficient	SE	t-statistic	P-value
Constant	-12147.63	2348.55	-5.1724	0.0003
HC	26.8143	4.3518	6.1613	0.0001
IL	0.6384	0.1127	5.6637	0.0002
IR	-621.417	186.491	-3.3327	0.0067
R-squared	0.9246	Mean dependent var	32145.98	
Adjusted R-squared	0.9058	S.D. dependent var	4873.52	
S.E. of regression	1495.32	Akaike info criterion	17.6418	
Sum squared resid	31317284	Schwarz criterion	17.8370	
Log likelihood	-134.1343	Hannan-Quinn criter.	17.6394	
F-statistic	49.7463	Durbin-Watson stat	1.8735	
Prob (F-statistic)	0.0000			

Source: The Table Compiled by the Authors.

**Table 4: Results of the model estimation of the impact of housing construction and mortgage lending on the unemployment rate in Uzbekistan**

Variable	Coefficient	SE	t-statistic	P-value
Constant	12.4738	1.5216	8.1974	0.0000
HC	-0.0417	0.0282	-1.4813	0.1663
IL	-0.0014	0.0007	-1.9328	0.0800
IR	0.2453	0.1207	2.0318	0.0676
R-squared	0.6847	Mean dependent var	5.4500	
Adjusted R-squared	0.6054	S.D. dependent var	0.6345	
S.E. of regression	0.3986	Akaike info criterion	1.2035	
Sum squared resid	2.2235	Schwarz criterion	1.3988	
Log likelihood	-5.4279	Hannan-Quinn criter	1.2011	
F-statistic	8.6985	Durbin-Watson stat	1.4327	
Prob (F-statistic)	0.0035			

Source: The Table Compiled by the Authors.

ensures an increase in housing demand by 1.8% and prices in the primary market by 0.9%.

The econometric analysis confirms the significant role of housing construction and mortgage lending in stimulating economic growth, employment, and the development of related sectors of the economy. The study highlights the potential of the housing sector as a driver of socio-economic development and the importance of further stimulating its growth through effective policies and mechanisms.

##### 5. Policy recommendations:

- Develop public-private partnerships and attract extra-budgetary investments to expand the sources of financing for housing construction.
- Improve the legal and regulatory framework for mortgage lending, introduce new credit products, and develop the mortgage-backed securities market to increase the availability of long-term funding for banks.
- Stimulate the construction of energy-efficient and eco-friendly housing through tax incentives, subsidies, and

the promotion of green building technologies.

- Implement targeted programs to support housing affordability for low- and middle-income households, such as subsidies, rent-to-own schemes, and social housing projects.
- Promote balanced territorial development of housing construction and infrastructure to reduce regional disparities in housing provision and affordability.

The study emphasizes the need for a comprehensive and coordinated policy approach to address the challenges in the housing sector of Uzbekistan. The proposed recommendations aim to enhance the effectiveness of housing finance mechanisms, stimulate sustainable housing construction, and improve housing affordability and quality for the population.

In conclusion, the results of the study provide a solid evidence base for understanding the current state and prospects of housing finance in Uzbekistan. The positive dynamics of key indicators and the significant impact of housing construction and mortgage lending on socio-economic development highlight the importance of further reforming and stimulating the growth of the housing sector. The implementation of the proposed policy recommendations can contribute to ensuring the sustainable development of housing finance and the overall socio-economic stability of Uzbekistan in the long term.

## 6. CONCLUSION

The conducted research allows us to conclude that the development of housing construction and mortgage lending is one of the key factors in ensuring socio-economic stability and sustainable economic growth in Uzbekistan. In 2018-2023, the republic observed positive dynamics in the main indicators of the housing sector: the volume of housing commissioned increased by 28.6% and reached 15.8 million sq.m. in 2023, the volume of investments in housing construction increased by 2.8 times and amounted to 54.7 trillion soums (\$5.1 billion), the average cost of construction per sq.m. of housing increased by 79.3% to 5.2 million soums (\$485). At the same time, the housing provision per capita increased from 15.9 sq.m. per person in 2018 to 17.4 sq.m. in 2023. The development of mortgage lending was characterized by a 3.4-fold increase in the volume of loans issued to 21.1 trillion soums (\$2.1 billion) in 2023, an increase in the share of mortgages in the structure of loans to individuals from 23.4% to 41.7%, as well as a decrease in the weighted average interest rate on mortgage loans from 23.8% to 17.6% per annum. The housing affordability ratio decreased from 5.1 to 4.2 years but remains above the level of developed countries.

Econometric analysis showed that an increase in the volume of housing construction by 1% leads to an increase in GDP by 0.28%, employment in the construction industry - by 0.68%, in the building materials industry - by 0.52%. The multiplier effect of housing construction growth by 1 billion soums is 2.14 billion soums of GDP growth in related industries. Increasing mortgage affordability by 1 percentage point ensures an increase in housing demand by 1.8% and prices in the primary market by 0.9%.

As a result, the contribution of housing construction to the GDP growth of Uzbekistan in 2018-2023 amounted to 1.4% points or 18.7%, and its share in the GDP structure increased from 5.4% to 6.2%. This indicates the high potential of the housing sector as a driver of economic growth and the need for further stimulation of its development. The priority areas for improving housing construction financing mechanisms in Uzbekistan should be the development of public-private partnerships and attracting extra-budgetary investments, expanding the sources of long-term resources for mortgage lending, introducing new credit products and underwriting technologies, developing the mortgage-backed securities market, and stimulating the construction of energy-efficient and eco-friendly housing. The implementation of these measures will increase the affordability of housing for the population, ensure the balanced development of the primary and secondary real estate markets, as well as create conditions for sustainable economic growth and improving the quality of life in Uzbekistan.

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