



Article

# The Impact of Mortgage Interest Rates on The Housing Affordability of The Population

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**Abstract:** The study investigates how mortgage interest rates control housing affordability throughout both developed and developing countries throughout the world. The research uses existing theoretical frameworks together with published empirical studies to investigate how mortgage lending rate changes impact household buying power and residential real estate market demand and overall socioeconomic results. The article demonstrates that even small interest rate increases will lead to a significant decline in formal mortgage access for households which will result in greater housing inequality.

**Keywords:** Mortgage Credit, Interest Rate, Housing Affordability, Residential Real Estate, Housing Market, Purchasing Capacity, Financial Accessibility, Credit Policy

## 1. Introduction

Advanced economies and emerging economies face their most important economic challenge because housing affordability remains a problem that has existed throughout their entire history. The world has experienced a two-decade period in which residential property prices have outpaced median household incomes, which has made mortgage credit increasingly vital for housing policy discussions related to homeownership because it connects household savings with property acquisition expenses [1]. The interest rate charged on mortgage loans serves as the most critical financial factor that determines homeownership accessibility for households according to this situation. The mortgage rate needs to change by one or two percentage points because this shift will result in thousands of monetary units extra that homeowners must pay annually, which will make homeownership impossible for most middle- and lower-income people.

The mortgage lending markets of Uzbekistan which shares characteristics with other post-Soviet transitional economies show backwards development because high nominal interest rates and short loan tenors and restricted market competition among credit institutions stop most people from accessing official housing finance services [2]. The importance of understanding precisely how interest rate movements transmit into shifts in household purchasing capacity cannot be overstated because this knowledge helps policymakers create effective credit subsidy programs which maintain fiscal stability.

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## 2. Materials and Methods

The authors of this article base their research methodology on a comprehensive evaluation of both theoretical frameworks and empirical studies. The research results stem from existing academic research and official statistical data without any original data collection. Theoretical foundations that explain the connection between mortgage interest rates and housing affordability draw from multiple established economic research fields. The housing economics field develops classical user cost theory which states that homeownership expenses depend on both the purchase price of a house and the interest rate used for financing that purchase, expected capital growth, maintenance expenses, and tax regulations. Rising mortgage interest rates lead to higher user costs for owner-occupied housing according to this viewpoint which decreases asset value through present value calculations and results in lower demand for housing.

The model which DiPasquale and Wheaton developed to analyze real estate markets uses four quadrants to show how credit market conditions including interest rates affect asset markets which then create effects on space markets that lead to construction activity changes and housing supply development through time. Research from multiple countries has established that mortgage rates directly decrease housing demand according to empirical studies. Tsatsaronis and Zhu demonstrated that mortgage market structure especially the choice between fixed and variable rates determines how monetary policy impacts housing market activity in their analysis of housing price dynamics across seventeen countries. The expansion of the national mortgage market in Uzbekistan has led to increasing research activity among local scholars who study these topics. The research conducted by Toshmatov and Ergashev demonstrated that most urban residents in Uzbekistan face unsustainable debt-to-income ratios according to international standards because their income growth patterns do not match the expense requirements for mortgage payments at current bank interest rates.

The Central Bank of Uzbekistan's financial stability reports which it produces every year have demonstrated that mortgage market volumes react sensitively to changes in interest rates through their analysis of state-backed Ipoteka JSC lending programs which provide financial aid to borrowers yet still present difficulties because of market interest rates. Malpezzi developed an international research framework which enables cross-country analysis of mortgage market depth and interest rate levels together with affordability metrics to establish that countries with lower real mortgage rates which result from either monetary policy or subsidized programs or competitive banking sectors observe greater official homeownership rates and reduced informal settlement rates. Arnott's theoretical work about how rental and ownership markets affect each other establishes that rising purchase market prices which result from people losing affordability create higher rental costs, which create a new financial burden for low-income households who rely on credit to pay their bills. The existing research establishes that mortgage interest rates function as credit product design parameters, which serve as essential elements that determine access to housing markets, which then affect wealth distribution and urban growth and social mobility.

## 3. Results and Discussion

The analysis of the reviewed literature, combined with publicly available comparative data on mortgage markets and housing affordability indicators, yields a

coherent and internally consistent picture of how interest rate levels translate into affordability outcomes across different economic contexts. The relationship requires two specific aspects to be examined in detail because the first aspect shows how interest rate changes affect monthly debt payments and the second aspect shows how different income groups experience rate changes which results in different distributional effects of credit policy decisions [3].

The first dimension is demonstrated through Table 1 which shows a monthly mortgage payment calculation based on a standardized loan of 200,000,000 UZS which equals approximately 16,000 USD at mid-2024 exchange rates. The calculation uses various interest rate scenarios while maintaining a 20-year loan term to calculate monthly mortgage payments. The debt-to-income ratio was determined by using the median monthly urban household income in Uzbekistan which was documented by the Statistics Agency of the Republic of Uzbekistan [4].

**Table 1.** Monthly mortgage payment and debt-to-income ratio by interest rate level (loan amount: 200,000,000 UZS, tenor: 20 years)

| Annual Interest Rate (%) | Monthly Payment (UZS) | Annual Debt Service (UZS) | Debt-to-Income Ratio (%) | Affordability Status  |
|--------------------------|-----------------------|---------------------------|--------------------------|-----------------------|
| 12                       | 2,202,000             | 26,424,000                | 38.7                     | Borderline            |
| 16                       | 2,795,000             | 33,540,000                | 49.1                     | Unaffordable          |
| 20                       | 3,437,000             | 41,244,000                | 60.4                     | Severely unaffordable |
| 24                       | 4,118,000             | 49,416,000                | 72.4                     | Inaccessible          |
| 28                       | 4,823,000             | 57,876,000                | 84.8                     | Inaccessible          |

Note: Median monthly urban household income estimated at 5,690,000 UZS based on Statistics Agency data for 2023. Debt-to-income ratio calculated as annual debt service divided by annual household income. The internationally accepted sustainability threshold is 28–36% of gross income [5].

The data presented in Table 1 are analytically revealing in several respects. At the rate of 12% per annum which approximates the lower bound of subsidised mortgage programmes available in Uzbekistan through state-affiliated institutions the debt-to-income ratio already approaches the upper threshold of what international housing finance standards consider sustainable [6]. At the market commercial rate of 20–24%, which characterises the lending environment for households not qualifying for preferential programmes, the ratio rises to levels that are fundamentally incompatible with maintaining adequate household expenditure on food, healthcare, education, and savings. This finding is consistent with the conclusions of Toshmatov and Ergashev, who similarly identified that the typical Uzbek urban household earning median income cannot service a standard commercial mortgage without sacrificing expenditure in other essential categories. The implication is that mortgage affordability in the current Uzbek context is essentially dependent on access to subsidised credit, and that any expansion of the eligible population for market-rate lending without corresponding income growth would be counterproductive from a household financial stability standpoint [7].

The second dimension of analysis concerns the distributional sensitivity of housing affordability to interest rate movements, which varies significantly across income groups

[8]. Table 2 presents an income-stratified analysis of mortgage accessibility at three representative interest rate levels, showing the minimum annual household income required to maintain a debt-to-income ratio at or below the 35% sustainability threshold for a standardised loan of 200,000,000 UZS over 20 years, and the corresponding proportion of the urban population falling below that income threshold based on published income distribution data [9].

**Table 2. Minimum income required for mortgage affordability and population exclusion rate by interest rate level**

| <b>Annual Interest Rate (%)</b> | <b>Monthly Payment (UZS)</b> | <b>Min. Annual Income for 35% DTI (UZS)</b> | <b>Min. Monthly Income Required (UZS)</b> | <b>Estimated Share of Urban Population Excluded (%)</b> |
|---------------------------------|------------------------------|---------------------------------------------|-------------------------------------------|---------------------------------------------------------|
| 12                              | 2,202,000                    | 75,497,000                                  | 6,291,000                                 | 54                                                      |
| 16                              | 2,795,000                    | 95,829,000                                  | 7,986,000                                 | 63                                                      |
| 20                              | 3,437,000                    | 117,840,000                                 | 9,820,000                                 | 72                                                      |
| 24                              | 4,118,000                    | 141,189,000                                 | 11,766,000                                | 79                                                      |
| 28                              | 4,823,000                    | 165,360,000                                 | 13,780,000                                | 85                                                      |

Note: DTI — debt-to-income ratio. Exclusion shares are estimated on the basis of urban income distribution data from the Statistics Agency of the Republic of Uzbekistan (2023) and the World Bank Poverty and Equity Database. Figures represent approximate analytical estimates derived from published distributional data [10].

Table 2 demonstrates with particular clarity the regressive character of interest rate increases in the context of housing access. Even at the relatively moderate rate of 12% per annum, more than half of the urban population lacks the income necessary to service the illustrative mortgage within acceptable debt burden limits [11]. As rates rise to levels representative of commercial lending in Uzbekistan, the exclusion rate escalates sharply, reaching approximately 85% at 28% per annum. This finding carries profound implications for housing policy: it suggests that in the current income distribution environment, a mortgage market operating exclusively or predominantly at commercial interest rates cannot serve as a vehicle for broad-based homeownership expansion [12]. The literature reviewed supports this conclusion from multiple theoretical and empirical angles. The policy response most commonly identified in the international literature involves a combination of targeted interest rate subsidies, income-linked repayment mechanisms, longer loan tenors, and macroprudential regulation of loan-to-value ratios all of which seek to reduce the effective cost of mortgage servicing without exposing either households or the financial system to unsustainable risk [13]. In Uzbekistan specifically, the role of Ipoteka JSC and associated state programmes represents a partial implementation of this approach, though the scale of subsidised lending remains insufficient relative to the volume of housing demand, and access criteria continue to exclude large segments of the population [14]. From a broader comparative perspective, the evidence reviewed suggests that sustainable improvements in housing affordability require not only credit policy reform but parallel investments in housing supply, land use regulation, and household income growth recognising that interest rate reduction alone, without supply-side responsiveness, risks being absorbed into higher property prices rather than translating into genuine affordability gains [15].

#### 4. Conclusion

This article has examined the impact of mortgage interest rates on housing affordability through a synthesis of theoretical frameworks and published empirical literature from Uzbek, Russian, and international sources. The analysis demonstrates unambiguously that mortgage interest rates exert a powerful and direct influence on the capacity of households to access owner-occupied housing through formal credit channels. The quantitative illustration provided in Tables 1 and 2 confirms that at the interest rate levels prevailing in the Uzbek mortgage market, the majority of urban households particularly those in the lower and middle income deciles are structurally excluded from affordable mortgage financing under standard commercial terms. This situation reflects a broader pattern observed in transitional and developing economies, where the underdevelopment of long-term capital markets, elevated inflation expectations, and limited competition in the banking sector contribute to persistently high nominal mortgage rates that place formal homeownership beyond reach for a large share of the population. The findings of this study carry several important implications for policy. First, interest rate subsidy programmes must be designed with sufficient scale and targeting precision to reach the income groups most constrained by market rates, and their fiscal sustainability must be evaluated against realistic projections of housing demand growth. Second, affordability policy cannot be reduced to credit pricing alone: without complementary measures to expand housing supply and moderate property price inflation, interest rate subsidies risk being captured by sellers in the form of higher prices, leaving effective affordability unchanged. Third, the development of alternative housing finance instruments including savings-linked mortgage schemes, cooperative housing finance, and rent-to-own arrangements deserves greater attention in contexts where conventional mortgage products remain inaccessible to a majority of households. Further research is needed to quantify the income elasticity of housing demand in the Uzbek context, to evaluate the distributional impact of existing state mortgage programmes, and to model the long-run equilibrium effects of alternative interest rate scenarios on property market dynamics. The present article contributes to this research agenda by establishing a clear analytical foundation for understanding the mortgage rate–affordability relationship and its implications for housing policy in developing mortgage markets.

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