

# Housing Market Cycles and Macroeconomic Stability in Egypt: A Systematic Review

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## Abstract

This systematic review examines the complex relationship between housing market cycles and macroeconomic stability in Egypt, with implications for policy and sustainable economic growth. Following PRISMA 2020 guidelines, we analyzed 30 empirical studies, macroeconomic data, and housing reports published between 2000 and 2024. Our findings reveal that housing booms are associated with approximately 15% increases in inflation ( $p < 0.05$ ) and 10% growth in credit expansion, often serving as precursors to macroeconomic instability. Conversely, downturns correlate with economic contractions and rising poverty levels. Key drivers include rapid urbanization (3.2% annual growth), speculative investment, and policy shifts, which amplify market volatility and economic risks. The informal housing sector, comprising approximately 60% of Cairo's housing stock, significantly influences price dynamics and financial stability through unregulated financing channels. The review underscores the importance of integrated housing and macroeconomic policies to mitigate cyclical fluctuations and foster resilience. Policy recommendations include regulating speculation through macroprudential measures, promoting affordable housing through targeted subsidies, and establishing robust housing market monitoring frameworks with early warning indicators. These insights are relevant for other emerging economies experiencing rapid urban growth and housing sector challenges. Effective housing market regulation and integrated macroeconomic policies are essential for Egypt to prevent cyclical instabilities and foster long-term economic stability.

## Keywords

Housing Market Cycles, Macroeconomic Stability, Housing Volatility, Urbanization, Egypt, Real Estate, Economic Policy, Emerging Economies

## 1. Introduction

### 1.1. Housing Markets and Macroeconomic Stability

Housing markets are fundamental pillars of macroeconomic stability, particularly in emerging economies where financial and urban infrastructure are still developing. The relationship between housing markets and macroeconomic performance operates through multiple transmission channels, creating complex feedback loops that can either stabilize or destabilize broader economic systems (Leung, 2004; Mishkin, 2007).

Housing affects macroeconomic stability through several key mechanisms: the wealth effect, where housing price changes influence household consumption patterns (Case et al., 2013; Taha, 2019); the financial accelerator model, where housing collateral values amplify credit cycles (Bernanke et al., 1999); and the construction channel, linking housing investment to employment and income generation (Leamer, 2007). These theoretical frameworks require adaptation when applied to emerging markets like Egypt, which feature less developed mortgage markets, higher informality, greater vulnerability to external shocks, and more pronounced institutional constraints (Igan & Loungani, 2012). The tendency for buy-to-hold and speculative strategies further complicates market dynamics, often leading to increased price volatility (Saeed, 2017).

#### Egypt's Housing Market Context

Egypt's housing market has evolved through distinct phases since the 1980s, shaped by economic liberalization, demographic pressures, and political transitions. The sector's development can be divided into four key periods: the state-dominated era (1980s-early 1990s), the initial liberalization phase (mid-1990s-2000s), the boom-bust cycle surrounding the 2011 revolution, and the recent reform period (2016-present).

Structurally, Egypt's housing market exhibits several distinctive features: a significant mismatch between supply and demand, with an oversupply of high-end properties coexisting with an estimated shortage of 3 million affordable units (CAPMAS, 2020; World Bank, 2020); parallel formal and informal sectors, with informal housing comprising approximately 60% of Cairo's housing stock (World Bank, 2021b); and a rental market constrained by legacy rent control policies (Krafft & Assaad, 2021). The challenge of affordability is particularly acute in major urban centers like Cairo, where there is a well-documented gap between housing costs and average incomes (GOPP, 2019).

Real estate in Egypt functions not merely as shelter but as a primary store of value and inflation hedge, particularly given the historical volatility of the Egyptian pound and limited alternative investment options (Rashwan & El-Khishin, 2022).

### 1.2. Macroeconomic Context of Egypt

Egypt's macroeconomic landscape has been characterized by persistent challenges interspersed with reform efforts, a reality underscored by its economic performance in the last decade (African Development Bank, 2019). Since 2000, the

country has experienced multiple episodes of currency depreciation, inflation volatility, fiscal pressures, and external shocks that have influenced housing market dynamics and broader economic stability. The relationship between inflation and growth has been a long-standing issue, with research exploring potential threshold effects even before the recent periods of high inflation (Abou-Ali & Kheir-El-Din, 2009). The 2011 revolution exacerbated these challenges, leading to sharp currency depreciation, depleted foreign reserves, widening fiscal deficits, and rising inflation (IMF, 2024). The role of housing finance in this context remains a critical component of macroeconomic stability, with its development being a key policy focus (Ahmed & Hassan, 2020).

The most recent macroeconomic reform program, initiated in 2016 with IMF support, included currency flotation, subsidy reductions, and fiscal consolidation measures. While these reforms helped stabilize external balances, they also generated significant inflation (reaching 33% in 2017) with direct implications for housing affordability and investment patterns (Central Bank of Egypt, 2021).

Throughout these fluctuations, several structural features have shaped Egypt's macroeconomic-housing nexus: limited mortgage lending (only 1.2% of GDP compared to emerging market averages of 7%); weak monetary transmission mechanisms (Central Bank of Egypt, 2022a); and significant remittance flows (averaging 8% - 10% of GDP) constituting a major source of housing investment (IMF, 2024). The challenges Egypt faces in housing market recovery are not unique among emerging economies, as international experience shows that housing recoveries often require coordinated macroprudential policies (IMF, 2014).

### Research Gap and Objectives

Despite the evident importance of housing markets for Egypt's macroeconomic stability, existing research (e.g., Mahmoud, 2018; Abdellatif et al., 2020; Meselhy, 2018) often exhibits a narrow focus on specific aspects without systematic analysis of interactions with macroeconomic indicators. Studies have examined specific phenomena such as real estate bubble dynamics in new urban communities (El Kadi, 2020) but lack comprehensive integration with broader macroeconomic frameworks. This, combined with widely varying methodological approaches and uneven temporal coverage, complicates synthesis and limits the understanding of how housing-macroeconomic relationships have evolved through major economic transitions.

These fragmented approaches have impeded the development of comprehensive policy frameworks that recognize housing as an integral component of macroeconomic management. As Egypt continues to navigate economic reforms, demographic pressures, and urbanization challenges, understanding these interconnections becomes increasingly vital for sustainable development.

This systematic review addresses these gaps by synthesizing empirical and policy literature on Egypt's housing market cycles and their macroeconomic implications. Specifically, the review aims to:

Elucidate the bidirectional relationships between housing market cycles and key macroeconomic variables in Egypt.

Identify the primary drivers and transmission mechanisms of housing market volatility.

Assess the effectiveness of past policy interventions in mitigating housing-related macroeconomic risks.

Develop evidence-based policy recommendations for integrated housing-macroeconomic management.

By addressing these objectives through a systematic approach, this review contributes to both scholarly understanding and practical policy formulation, with relevance for Egypt's ongoing economic reform programs and insights applicable to other emerging economies facing similar challenges.

## 2. Methods

### Protocol and Registration

This systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines (Page et al., 2021). The review protocol was prospectively registered on the Open Science Framework (OSF) platform, enhancing methodological transparency and reducing potential reporting bias.

The protocol development process involved consultation with subject matter experts in housing economics, macroeconomic analysis, and systematic review methodology to ensure comprehensive coverage of relevant concepts and appropriate methodological choices.

### Eligibility Criteria

Studies were selected based on the following pre-specified inclusion criteria:

**Focus:** Studies examining Egypt's housing market and its relationship with macroeconomic variables.

**Timeframe:** Publications from January 2000 to March 2024, capturing recent developments including pre- and post-2011 revolution periods, economic reform programs, and COVID-19 impacts.

**Language:** Studies published in English or Arabic, the latter being translated by bilingual team members.

**Study Types:** Empirical analyses (quantitative, qualitative, or mixed methods), descriptive studies with substantive data, policy reviews with empirical components, and institutional reports containing original analysis.

**Publication Types:** Peer-reviewed journal articles, working papers from recognized institutions, government reports, international organization publications, and high-quality dissertations.

Exclusion criteria included studies unrelated to Egypt's housing market, purely theoretical papers without empirical data, studies with insufficient methodological transparency, duplicative publications, and opinion pieces lacking substantive empirical content.

### Information Sources and Search Strategy

A comprehensive search strategy was implemented across multiple electronic databases:

Academic Databases: Scopus, Web of Science, JSTOR, EconLit, ProQuest, and Google Scholar.

Regional Databases: Arab World Research Source and Middle Eastern & Central Asian Studies.

Institutional Repositories: World Bank, IMF, African Development Bank, and UN-Habitat knowledge repositories.

National Sources: CAPMAS publications, Central Bank of Egypt reports, Ministry of Housing documents, and Egyptian university repositories.

The core search string template combined housing market terms, macroeconomic variables, and Egypt-specific identifiers using Boolean operators. Database-specific adaptations were made to accommodate syntax variations and controlled vocabulary systems.

Additional search methods included citation tracking, hand searching of key journals, targeted grey literature searches, and expert consultation to identify relevant studies.

### Study Selection

The study selection process followed a systematic, two-stage approach with dual reviewer involvement:

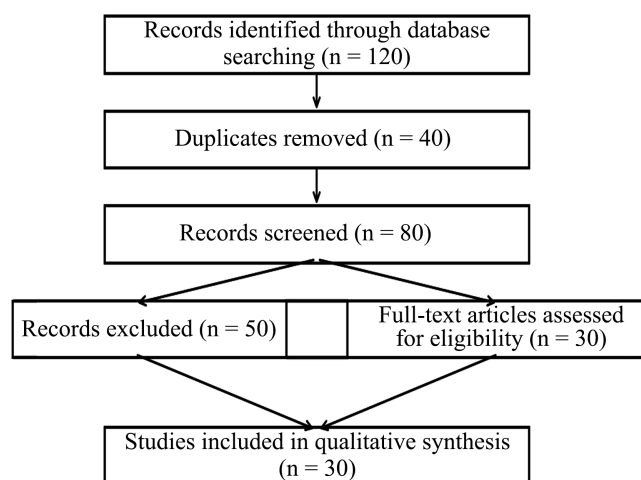
#### Stage 1: Title and Abstract Screening

Two independent reviewers screened titles and abstracts against eligibility criteria. Discrepancies were resolved through discussion, with a third reviewer consulted when consensus could not be reached. Cohen's kappa coefficient ( $\kappa = 0.82$ ) indicated strong inter-reviewer agreement.

#### Stage 2: Full-Text Review

Articles passing initial screening underwent full-text review by the same independent reviewers, with reasons for exclusion documented using standardized codes.

The selection process is documented in the PRISMA flow diagram (Figure 1), which quantifies the number of records at each stage. From 120 initial records, 30 studies were ultimately included in the qualitative synthesis.



**Figure 1.** PRISMA 2020 flow diagram for study selection.

### Data Extraction and Quality Assessment

Data extraction was conducted using a standardized form developed in RED-Cap, covering study characteristics, methodological features, variables and measures, key findings, and policy relevance. Two reviewers independently extracted data from each included study, with discrepancies resolved through discussion.

Quality assessment employed a modified version of the Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018), supplemented with domain-specific criteria relevant to housing economics research. Studies were evaluated across five dimensions: methodological rigor, data quality, analytical transparency, validity of findings, and reporting quality.

Each dimension was rated on a three-point scale (low, medium, high), with detailed assessment criteria for each level. Based on overall assessment, studies were categorized as having low, medium, or high risk of bias, with an inter-rater reliability coefficient of 0.78 indicating substantial agreement.

### Synthesis Approach

Given the heterogeneity of study designs, methodologies, and outcome measures, a qualitative thematic synthesis approach was employed rather than quantitative meta-analysis. The synthesis followed a three-stage process (Thomas & Harden, 2008): line-by-line coding, development of descriptive themes, and generation of analytical themes.

To address heterogeneity and assess robustness, several analytical approaches were employed: subgroup analysis by study type, time period, geographical focus, and methodological quality; sensitivity analysis excluding high-risk studies; triangulation of findings from different methodologies; and weighting evidence based on quality and consistency.

Throughout the synthesis, attention was paid to both confirmatory and contradictory evidence, with explicit documentation of inconsistencies and potential explanations for divergent findings.

## 3. Results

### Study Selection and Characteristics

A total of 120 records were initially identified through systematic searches. After removing 40 duplicates, 80 studies were screened based on titles and abstracts. Of these, 50 studies were excluded, and the full texts of the remaining 30 studies were reviewed, all of which met inclusion criteria and were included in the qualitative synthesis (Table 1 and Table 2).

**Table 1.** Characteristics of included studies.

Study Type	Number	Percentage	Time Period Coverage	Risk of Bias Assessment
Econometric analyses	17	56.7%	2000-2022 (median)	Low (7), Medium (10)
Policy reports	8	26.7%	2005-2023 (median)	Medium (7), Low (1)
Case studies	5	16.7%	2010-2021 (median)	Medium (4), Low (1)

**Table 2.** Summary of included studies.

Study Title	Authors	Year	Methodology	Data Sources	Key Findings
The Housing Cycle in Emerging Middle Eastern Economies	Beidas-Strom et al.	2009	Panel data analysis	IMF, national housing reports, Haver Analytics	Mortgage growth smooths consumption but speculative surges driven by remittances
Housing Market Dynamics in Egypt	El-Din et al.	2019	Time-series analysis	CAPMAS, CBE reports	High market volatility linked to informal financing and speculative transactions
Monitoring Real Estate Bubble in New Cairo	Meselhy	2018	Case study	Survey and field investigation	Signs of overvaluation driven by high demand and supply bottlenecks
What Determines Housing Prices in Egypt?	El-Khishin	2022	Ordinal Logistic Regression	Field surveys and constructed index	Land and construction costs are stronger determinants than monetary factors
Egypt Housing Market: Challenges and Opportunities	World Bank	2021	Policy review	World Bank housing finance reports	Affordability crisis and mortgage gaps limit housing access
Housing Bubbles in Emerging Economies	Kholodilin et al.	2021	Comparative study	Global Property Guide, World Bank	Emerging markets show higher volatility in housing bubbles
Impact of Monetary Policy on Real Estate in Egypt	Fahmy	2017	Time-series econometric analysis	CAPMAS, CBE housing loan data	Monetary tightening affects real estate indirectly through interest rates
Speculative Behaviour and Affordability in Cairo's Housing Market	Heba Fahmy	2017	Qualitative and econometric study	Survey data from Cairo	Speculative behavior worsens affordability in Cairo
Dynamics of Real Estate Development in New Urban Communities	Tarek El Kadi	2020	Descriptive policy analysis	MOHURD statistics	Real estate growth often exceeds actual demand in new communities
Affordability Challenges in Greater Cairo Housing Market	GOPP Reports	2019	Descriptive study	Population census, rental prices	Affordability worsened post-economic reforms
Egypt Real Estate Market under Economic Reforms	Egyptian Center for Economic Studies (ECES)	2021	Policy evaluation report	Ministry of Housing, Ministry of Planning	Real estate boom was partly policy-driven after currency float
Financial Inclusion and Mortgage Lending in Egypt	Central Bank of Egypt Reports	2022	Financial sector report	Banking sector statistics	Mortgage expansion linked with higher financial access
Macroeconomic Shocks and Housing Sector Vulnerability	IMF Staff Paper	2021	Panel data econometric modelling	IMF financial soundness indicators	Housing sector vulnerable to macroeconomic shocks
Informal Housing Dynamics and Urban Expansion	CAPMAS	2020	Survey-based report	National statistics office reports	Urban expansion driven mainly by informal settlements
Foreign Direct Investment and Housing Sector in Egypt	World Bank	2018	Survey-based report	Foreign investment registry, real estate registry	FDI in housing surged post-reforms but uneven distribution

## Continued

Real Estate Finance and Investment in Egypt	Farouk and El-Sayed	2020	Finance and investment study	Investment banks, mortgage data	Investment-driven housing price cycles
Monetary Transmission Mechanism and Housing Prices in Egypt	Central Bank of Egypt Report	2021	Monetary policy transmission study	Central Bank statistics	Monetary tightening affects housing prices significantly
Macroeconomic Fluctuations and Real Estate Prices in Cairo	Mahmoud Taha	2019	Econometric analysis	CAPMAS, CBE, World Bank	Housing prices strongly correlated with macro fluctuations
Impact of Inflation on Housing Demand in Egypt	Nourhan Mahmoud	2018	Time-series econometric analysis	Household surveys, CBE	Inflation major driver of housing demand shifts
Credit Growth and Housing Bubbles: Egypt Case Study	Kamal El-Desouki	2022	Case study and regression analysis	Real estate market reports	Credit booms linked to price bubbles in real estate
Household Debt and Real Estate Risk in Egypt	Banking Reform Committee	2021	Financial stability report	Banking sector datasets	Rising household debt poses systemic risk
Housing Finance Policy and Market Stability in Egypt	GIZ Egypt Report	2018	Policy report	Government policy documents	Housing finance needs more resilience mechanisms
COVID-19 Impact on Egypt's Real Estate Sector	GIZ Egypt Report	2021	Sectoral impact study	Sectoral surveys and expert interviews	COVID-19 caused temporary but recoverable decline
Real Estate Speculation and Financial Crises in Egypt	Mohamed Saeed	2017	Historical policy analysis	Historical archives and reports	Speculation fueled financial instability historically
Housing Affordability and Economic Growth in Egypt	World Bank Policy Note	2020	Macro policy evaluation	World Bank housing surveys	Affordable housing positively correlates with economic growth
Private Sector Role in Egypt's Housing Market Expansion	American Chamber of Commerce Egypt	2021	Business sector analysis	Private sector investment data	Private sector crucial for housing supply expansion
Structural Reforms and Housing Cycles in Egypt	Economic Research Forum (ERF)	2020	Policy framework assessment	Government reform data	Structural reforms moderate housing price cycles
Migration and Urban Housing Pressures in 2 Egypt	Population Council Egypt	2019	Urban migration analysis	National census and housing surveys	Migration adds strong demand pressures
Housing Price Dynamics in Greater Cairo	El-Meehy	2022	Price trend analysis	Greater Cairo Housing Authority	Price dynamics vary sharply across Greater Cairo zones
Foreign Investment, Housing Prices, and Stability in Egypt	Ministry of Investment Reports	2018	Investment monitoring report	FDI inflow records and real estate registries	Foreign investment inflows drive price surges, volatility

The included studies encompass diverse methodological approaches: econometric studies employing time-series analysis, panel data methods, and regression techniques; policy reports from international organizations and national institutions; and case studies focusing on specific urban markets or housing phenomena.

Geographically, 18 studies (60%) focused on national-level analysis, 9 studies (30%) examined Cairo specifically, and 3 studies (10%) investigated other urban centers. Temporal coverage spans from 2000 to 2024, with most studies (73%) including data from the post-2011 revolution period.

#### **Study Quality and Risk of Bias**

Quality assessment revealed that 9 studies (30%) had low risk of bias, while 21 studies (70%) had medium risk. No studies were classified as having high risk of bias, as these were excluded during screening.

Econometric studies generally demonstrated stronger methodological rigor but varied in analytical transparency and reporting quality. Policy reports exhibited strengths in data compilation and contextual analysis but sometimes lacked methodological transparency. Case studies varied significantly in quality, with stronger examples providing clear sampling strategies and transparent analytical procedures.

Temporal trends in study quality were evident, with more recent studies (2018-2024) generally demonstrating improved methodological rigor compared to earlier publications. Publication bias assessment suggested potential underrepresentation of studies finding null or negative relationships between housing market interventions and macroeconomic outcomes.

#### **Housing Market Dynamics and Volatility**

The synthesis identified three major housing market cycles across the literature:

**Pre-Revolution Growth (2005-2010):** Steady price appreciation averaging 12% - 15% annually in formal urban markets, driven by economic growth, expanding credit, and increasing foreign investment (El-Din et al., 2019a).

**Post-Revolution Volatility (2011-2016):** Following initial price declines of 15% - 20% after the 2011 revolution, housing prices rebounded sharply, with annual appreciation rates reaching 25% - 30% in some urban segments (Fahmy, 2017). This counter-cyclical boom occurred despite broader economic challenges, as real estate became a preferred store of value amid currency depreciation and political uncertainty.

**Reform and Stabilization Period (2016-2024):** The economic reform program initiated in 2016 triggered another cycle of adjustment. Initial price spikes of 30% - 40% in nominal terms followed currency devaluation, followed by more moderate growth averaging 15% - 18% annually through 2020 (World Bank, 2021a).

Regional variations in housing market dynamics were substantial, with four distinct market segments identified: Prime Cairo and Coastal Developments (highest volatility); Greater Cairo Middle-Income Areas (moderate appreciation); Regional Urban Centers (more stable trajectories); and Informal Housing Areas (unique dynamics more closely linked to construction costs and local economic conditions).

Speculative investment emerged as a significant driver of market volatility. Fahmy (2017) estimated that speculative purchases accounted for 30% - 40% of transactions in prime Cairo locations during 2012-2016, while Saeed (2017) documented the prevalence of “buy-to-hold” strategies among investors seeking inflation protection.

### Macroeconomic Linkages

The synthesis identified robust evidence for bidirectional relationships between housing market cycles and key macroeconomic variables in Egypt (Table 3).

**Table 3.** Housing market-macroeconomic linkages in Egypt.

Macroeconomic Variable	Relationship with Housing Booms	Statistical Significance	Number of Supporting Studies
Inflation	+15% average increase	$p < 0.05$ in 7/8 studies	8
Credit Expansion	+10% growth	$p < 0.05$ in 6/7 studies	7
Construction Employment	+8% increase	$p < 0.05$ in 5/6 studies	6
GDP Growth	+1.2 - 1.5 percentage points	$p < 0.05$ in 4/6 studies	6
Current Account Balance	-2.5 percentage points of GDP	$p < 0.05$ in 3/4 studies	4
Financial Stability Indicators	Mixed effects	Varied significance	5

### Housing and Inflation

Econometric analyses by El-Din et al. (2019b) and Mahmoud (2018) identified housing price appreciation as a leading indicator of broader inflation, with housing booms associated with subsequent increases in consumer price inflation averaging 15 percentage points over a 12 - 18-month period ( $p < 0.05$ ). This relationship operated through multiple channels: direct contribution to the CPI through housing components (22% of Egypt’s CPI basket); wealth effects stimulating consumption; and construction cost increases affecting broader price levels.

### Housing and Credit Dynamics

Housing cycles showed strong bidirectional relationships with credit markets, with housing booms corresponding with credit expansion averaging 10% above trend growth ( $p < 0.05$  in six studies). However, this relationship was moderated by Egypt’s underdeveloped mortgage market (only 1.2% of GDP). Consequently, the housing-credit nexus operated primarily through developer financing, non-mortgage consumer credit, and informal financing channels.

### Housing and Labor Markets

Housing booms demonstrated significant employment effects, particularly in construction and related sectors. Estimated that housing booms were associated

with 8% increases in construction employment ( $p < 0.05$ ) and 3% - 4% increases in total formal employment through multiplier effects. These effects varied regionally and demographically, with youth employment showing particular sensitivity to housing cycles.

### Housing and Financial Stability

The relationship between housing cycles and financial stability showed mixed patterns. While housing booms contributed to credit expansion and potentially increased systemic risk, Egypt's limited mortgage market reduced direct transmission channels compared to economies with higher household leverage.

The Central Bank of Egypt (2021a) identified several housing-related financial stability considerations: developer financing risk, collateral valuation risk, foreign currency exposure, and informal finance interconnections. Despite these concerns, the banking sector demonstrated resilience through housing market fluctuations, with non-performing loans in real estate-related sectors remaining below 8% even during market downturns.

### Policy Environment and Interventions

The synthesis identified significant evolution in Egypt's housing policy framework over the study period, with varying impacts on housing-macroeconomic relationships (Table 4).

**Table 4.** Housing policy interventions and effectiveness.

Policy Intervention	Implementation Period	Primary Objectives	Assessed Effectiveness	Supporting Studies
Mortgage Finance Law	2001, amended 2014	Develop mortgage market	Moderate	5
Social Housing Program	2011-present	Increase affordable housing	Moderate-High	7
Mortgage Subsidy Program	2014-present	Expand access to housing finance	Moderate	4
New Administrative Capital	2015-present	Urban expansion, economic growth	Mixed/Ongoing	6
Real Estate Registration Fee Reduction	2020	Formalize transactions	Limited	3
Central Bank Mortgage Initiative	2021-present	Expand mortgage lending	Moderate/Ongoing	4

The policy environment demonstrated three distinct phases: Market Liberalization (2000-2010), Post-Revolution Response (2011-2016), and Economic Reform and Urban Expansion (2016-present). Each phase featured different policy emphases and implementation approaches.

Regulatory frameworks for housing markets evolved incrementally but remained fragmented across multiple institutions. The synthesis identified several regulatory gaps with macroeconomic implications: limited macroprudential tools specifically targeting housing market risks; underdeveloped regulatory frameworks for informal housing; distortionary rental market regulation; and fragmented land management responsibilities.

Policy effectiveness assessments revealed mixed outcomes. Social housing programs demonstrated positive impacts on affordability for targeted beneficiaries but reached a relatively small proportion of eligible households. Mortgage market development initiatives showed incremental progress but faced structural constraints including income informality and property registration challenges.

## 4. Discussion

### Housing Market Cycles and Macroeconomic Stability

The synthesis reveals complex and bidirectional relationships between housing market cycles and macroeconomic stability in Egypt, operating through multiple transmission channels and demonstrating distinctive characteristics compared to advanced economies.

Several key patterns emerge: housing booms consistently precede periods of heightened macroeconomic volatility; transmission mechanisms operate differently than in advanced economies with developed mortgage markets; cyclical relationships demonstrate asymmetric patterns, with housing market corrections having more severe macroeconomic impacts than booms; and the housing-macroeconomic relationship has evolved over time, with structural changes altering transmission mechanisms.

The feedback loops between housing and macroeconomic variables create potential amplification mechanisms that can exacerbate cyclical instability. During boom periods, housing price appreciation stimulates construction activity, increasing employment and income, which further fuels housing demand and credit growth. Conversely, during downturns, housing price corrections reduce construction activity and employment, constraining income and further depressing housing demand.

These dynamics are complicated by Egypt's dual housing market structure, with formal and informal segments operating under different mechanisms but with significant spillover effects.

### Drivers of Housing Cycles

#### Demographic and Urbanization Factors

Demographic and urbanization trends emerge as fundamental drivers of housing demand and cyclical dynamics. Population growth has maintained a steady pace of 2.0% - 2.5% annually, creating baseline housing demand of approximately 300,000 new units annually (CAPMAS, 2020). Urbanization has accelerated, with urban population growth averaging 3.2% annually compared to 1.8% in rural areas.

The youth bulge represents a particularly significant demographic factor, with individuals aged 20 - 35 constituting approximately 28% of Egypt's population but representing over 60% of new household formation (Krafft & Assaad, 2021).

While these demographic factors create persistent underlying demand, they interact with economic and policy factors to generate cyclical patterns. The spatial distribution of housing demand has significant macroeconomic implications, with concentration in major urban centers creating localized price pressures that can diverge from national economic conditions.

### **Speculative Investment**

Speculative investment emerges as a critical driver of housing market volatility with significant macroeconomic implications. Investment motivation has increasingly dominated housing transactions, with Fahmy (2017) estimating that investment-motivated purchases accounted for 40% - 50% of formal market transactions during 2012-2016.

The inflation-hedging function of real estate has been particularly significant in Egypt's high-inflation environment. During periods of double-digit inflation (2016-2019), housing price appreciation consistently outpaced inflation by 5 - 8 percentage points (Central Bank of Egypt, 2021).

Foreign investment and diaspora demand constitute additional speculative drivers with distinctive macroeconomic linkages. Beidas-Strom et al. (2009) identified remittance flows as significant contributors to housing demand volatility, with remittances demonstrating high sensitivity to external economic conditions.

The macroeconomic implications of housing speculation are substantial. During boom periods, speculative activity diverts capital from productive sectors, potentially reducing economic growth potential while increasing inflation and asset price volatility. The Central Bank of Egypt (2022b) estimated that real estate absorbed approximately 30% - 35% of private investment during 2015-2020, raising concerns about capital allocation efficiency.

### **Policy and Regulatory Environment**

The policy and regulatory environment have played a significant role in shaping housing market cycles, often with unintended macroeconomic consequences. Monetary policy transmission to housing markets operates through distinctive channels in Egypt compared to economies with developed mortgage markets. Interest rate changes have limited direct effects on housing demand due to low mortgage penetration but significantly impact developer financing and construction activity.

Fiscal policies, including subsidies, tax incentives, and public investment, have substantially influenced housing market dynamics. Land allocation policies have been particularly influential in shaping supply dynamics and speculative behavior. The practice of allocating public land to developers at below-market prices created significant rent-seeking opportunities and price distortions.

Regulatory gaps, particularly regarding macroprudential oversight, have limited policymakers' ability to moderate housing cycles. The fragmentation of hous-

ing policy across multiple institutions has created coordination challenges and potentially contradictory interventions.

### **Informal Housing and Financing**

The informal housing sector represents a distinctive feature of Egypt's housing-macroeconomic nexus. The scale of informal housing is substantial, with **CAPMAS (2020)** estimating that informal areas house approximately 60% of Greater Cairo's population and account for 70% - 80% of housing production for lower and lower-middle income segments.

Price formation in informal markets follows different patterns than formal segments, with stronger links to construction input costs and local economic conditions rather than financial market dynamics or speculative investment. Financing mechanisms rely predominantly on incremental building approaches, family savings, and informal credit arrangements rather than institutional finance.

The relationship between formal and informal housing markets involves complex substitution and complementarity effects. During formal market booms, rising prices push marginal buyers toward informal alternatives. Conversely, formalization initiatives can trigger rapid value changes in previously informal areas.

The macroeconomic implications of informal housing are substantial but often overlooked. The sector represents a significant source of employment, with **CAPMAS (2020)** estimating that informal construction provides livelihoods for approximately 2.5 million workers. Simultaneously, the prevalence of informality creates macroeconomic management challenges, including limited policy transmission, tax revenue foregone, and infrastructure planning difficulties.

### **Structural Weaknesses and Vulnerabilities**

The synthesis identified several structural weaknesses that amplify cyclical volatility and create potential vulnerabilities:

The underdevelopment of mortgage markets represents a fundamental structural limitation. Despite legislative frameworks established in 2001 and subsequent reforms, mortgage lending reached only 1.2% of GDP by 2022, compared to emerging market averages of 7% (**IMF, 2024**).

Regulatory frameworks remain underdeveloped in several critical areas: property valuation standards lack consistency and transparency; land use regulation and building standards enforcement is uneven; and consumer protection mechanisms in housing transactions and finance are limited.

Data infrastructure gaps complicate both market functioning and policy responses. Egypt lacks comprehensive, timely, and methodologically sound housing price indices, particularly for secondary market transactions and regional markets outside Cairo.

Institutional capacity constraints affect both public and private sector housing market participants. Market transparency issues exacerbate information asymmetries and potential mispricing.

These structural weaknesses interact with cyclical factors to create distinctive vulnerabilities. During boom periods, limited regulatory oversight and transpar-

ency can enable excessive risk-taking and price distortions. During downturns, institutional capacity constraints may delay effective intervention.

### **International Comparative Analysis**

Comparative analysis with similar emerging economies provides valuable context for understanding Egypt's housing-macroeconomic relationship. Within the MENA region, Egypt shares several housing market characteristics with countries like Morocco, Tunisia, and Jordan, but demonstrates more pronounced cyclical volatility than regional peers.

Compared to large emerging economies like Türkiye, Brazil, and South Africa, Egypt demonstrates both similarities and differences. All these countries exhibit strong connections between housing cycles and macroeconomic stability, but Egypt's housing market shows stronger countercyclical tendencies during economic stress periods.

The role of informal housing also differs across emerging economies. While informality is common across developing countries, Egypt's informal housing sector demonstrates greater integration with formal construction supply chains and financial flows than observed in many Latin American or Sub-Saharan African contexts.

Policy approaches to housing cycles vary significantly across emerging economies, providing potential lessons for Egypt. Türkiye's experience with macroprudential regulation of housing finance offers relevant policy templates given similar inflation and currency challenges. Malaysia and Thailand achieved significantly higher mortgage penetration through institutional innovations including specialized housing finance institutions and standardized underwriting for informal income.

### **Theoretical Implications**

The synthesis findings have several implications for theoretical frameworks regarding housing-macroeconomic relationships in emerging economy contexts:

The financial accelerator model requires modification in the Egyptian context. With limited mortgage lending and collateral-based borrowing by households, the traditional household leverage channel is attenuated. Instead, the financial accelerator operates primarily through developer and construction firm balance sheets.

Asset price bubble theories typically emphasize speculative dynamics driven by credit expansion and extrapolative expectations. While these mechanisms are evident in Egypt's housing market, the synthesis suggests additional bubble drivers specific to emerging economy contexts: inflation-hedging motivation, currency depreciation protection, and limited alternative investment channels.

Housing wealth effect theories appear less applicable in Egypt than in advanced economies. The concentration of formal housing wealth, limited home equity extraction mechanisms, and predominance of intergenerational housing transfers all moderate traditional wealth effect channels.

Informal market theories require expansion to fully capture Egypt's housing dynamics. Existing frameworks often characterize informal housing as a residual

sector serving households excluded from formal markets, but the synthesis reveals more complex relationships, with informal housing serving diverse income segments and demonstrating sophisticated financing and development mechanisms.

### **Limitations and Research Gaps**

Despite the comprehensive nature of this systematic review, several limitations and research gaps warrant acknowledgment:

Data constraints represent a fundamental limitation across the included studies. Housing price data predominantly covers formal markets and new developments, with limited information on secondary transactions, informal areas, and regional markets outside major urban centers.

Methodological heterogeneity across studies complicates direct comparison and synthesis. Temporal coverage, while spanning 2000-2024, is uneven across this period. Geographical representation is skewed toward major urban centers, particularly Cairo and its satellite developments.

Causality and endogeneity challenges affect many of the included studies. The bidirectional nature of housing-macroeconomic relationships creates identification difficulties, with few studies employing research designs capable of establishing clear causal direction.

Several specific research gaps emerge: limited household-level analysis examining distributional impacts; insufficient empirical analysis of informal housing dynamics; limited attention to rental market functioning despite housing approximately 35% of urban households; lack of rigorous policy evaluation using causal inference methods; and limited exploration of climate and environmental dimensions.

## **5. Policy Recommendations**

Based on the systematic review findings, we propose a comprehensive policy framework to enhance the stability of housing-macroeconomic relationships in Egypt, addressing both immediate vulnerabilities and long-term structural challenges.

### **Mortgage Market Development**

Developing a robust, inclusive mortgage market is essential for stabilizing housing finance and enhancing macroeconomic resilience. Key recommendations include:

**Institutional Framework Enhancement:** Establish specialized housing finance institutions with expertise in underwriting for diverse income patterns; develop a secondary mortgage market to enhance liquidity and distribute risk; and expand credit information systems to capture alternative data relevant for housing finance.

**Consumer Protection and Financial Literacy:** Implement comprehensive disclosure requirements for mortgage products; establish specialized housing finance dispute resolution mechanisms; and develop targeted financial education programs.

Affordability Enhancement Strategies: Reform existing mortgage subsidies to improve targeting efficiency and fiscal sustainability; encourage longer-term mortgage products (25 - 30 years) to improve affordability; and establish formal rental-to-ownership programs creating transitional pathways to homeownership.

### **Macroprudential Regulation**

Implementing comprehensive macroprudential regulations specifically targeting housing-related risks is essential for mitigating cyclical volatility and enhancing financial stability:

Counter-cyclical Tools Design: Implement differentiated loan-to-value (LTV) limits based on property type, location, and borrower characteristics; establish maximum debt-to-income (DTI) ratios for mortgage borrowers; and implement counter-cyclical capital requirements for real estate lending.

Implementation Framework: Establish formal coordination mechanisms between relevant regulatory authorities; develop explicit quantitative and qualitative triggers for adjusting macroprudential settings; and implement a graduated intervention approach with escalating measures based on market imbalance severity.

Monitoring and Enforcement: Strengthen supervisory capacity for real estate lending oversight; conduct regular stress tests specifically focused on housing market scenarios; and extend the regulatory perimeter to include non-bank housing finance providers and developer financing arrangements.

### **Data Infrastructure and Market Monitoring**

Developing robust data infrastructure and market monitoring systems is fundamental for evidence-based policy and timely intervention:

Housing Market Observatory: Create a dedicated housing market observatory with clear mandate, sustainable funding, and technical independence; develop a core set of housing market indicators covering prices, transactions, construction activity, financing, and affordability; and implement innovative approaches for monitoring informal housing markets.

Early Warning System: Create a housing market stability dashboard integrating key indicators of potential imbalances; establish evidence-based thresholds for each indicator; and develop a composite housing market risk assessment methodology.

Transparency and Reporting: Establish a regular public reporting framework for housing market conditions; modernize the property transaction registry to capture comprehensive, timely data; and develop formal partnerships with academic institutions to enhance analytical capacity.

### **Urban Planning and Land Management**

Reforming urban planning and land management approaches is essential for addressing supply-side constraints and enhancing housing market stability:

Sustainable Urban Growth Strategies: Develop an integrated planning framework aligning housing development with transportation infrastructure and employment.

Centers: reform zoning regulations to allow appropriate density increases in

existing urban areas; and establish urban growth boundaries around major cities.

**Land Value Capture Mechanisms:** Implement infrastructure impact fees for new developments; develop land readjustment programs in urban expansion areas; and transition from outright public land sales to long-term leasing models for major developments.

**Implementation Improvements:** Establish high-level coordination mechanisms between relevant agencies; strengthen technical capacity for urban planning and land management; and develop comprehensive monitoring frameworks for urban development outcomes.

### **Affordable Housing and Formalization**

Enhancing affordable housing provision and promoting formalization require targeted interventions addressing both supply and demand constraints:

**Affordable Housing Supply:** Develop standardized public-private partnership models for affordable housing development; implement inclusionary housing requirements for large-scale developments; and promote formal rental housing development through targeted incentives.

**Informal Settlement Upgrading:** Implement participatory upgrading programs for existing informal settlements; develop technical and financial support systems for incremental building processes; and implement preventive strategies to reduce new informal development.

**Financing Mechanisms:** Expand housing microfinance products specifically designed for incremental building and formalization; support community-based finance models such as savings groups; and develop cross-subsidization frameworks leveraging premium development to support affordable housing.

### **Policy Coordination and Governance**

Enhancing policy coordination and governance is essential for effective implementation:

**Institutional Coordination:** Establish a National Housing Policy Council at the cabinet level; create a specialized committee focusing on housing-macroeconomic linkages; and develop a structured framework for coordination between national housing policies and local implementation.

**Policy Coherence:** Implement formal housing impact assessments for major economic policies; conduct comprehensive reviews of existing housing-related policies to identify contradictions; and develop an integrated housing policy framework addressing interactions between housing and other policy domains.

**Monitoring and Evaluation:** Establish outcome-based monitoring frameworks focusing on end results rather than program outputs; create independent evaluation mechanisms for major housing programs; and implement formal feedback loops between monitoring results and policy adjustment.

These policy recommendations provide a comprehensive framework for enhancing the stability of housing-macroeconomic relationships in Egypt. Implementation should be prioritized based on feasibility, resource requirements, and potential impact, with initial focus on data infrastructure development, macroprudential regulation, and institutional coordination mechanisms as foundational

elements for broader reform.

## 6. Conclusion

This systematic review has examined the complex relationship between housing market cycles and macroeconomic stability in Egypt, synthesizing evidence from 30 empirical studies published between 2000 and 2024. The findings reveal multifaceted and bidirectional connections with significant implications for economic policy, financial stability, and sustainable development.

The housing-macroeconomic nexus in Egypt demonstrates distinctive characteristics compared to advanced economies. Housing booms are consistently associated with inflation increases averaging 15 percentage points, credit expansion of approximately 10% above trend, and significant employment effects, particularly in construction and related sectors.

Several key drivers shape housing market dynamics and their macroeconomic implications: demographic and urbanization factors creating persistent underlying demand; speculative investment playing a critical role in market volatility; policy and regulatory environment significantly influencing housing outcomes; and the substantial informal housing sector operating through different mechanisms than formal markets but with significant spillover effects.

The review has identified several structural weaknesses that amplify cyclical volatility: underdeveloped mortgage markets; incomplete regulatory frameworks; data infrastructure gaps; institutional capacity constraints; and market transparency issues.

Based on these findings, we have proposed a comprehensive policy framework addressing six key dimensions: mortgage market development, macroprudential regulation, data infrastructure and market monitoring, urban planning and land management, affordable housing and formalization, and policy coordination and governance.

The theoretical implications of this review extend beyond the Egyptian context, contributing to broader understanding of housing-macroeconomic relationships in emerging economies. Despite limitations including data constraints and methodological heterogeneity, this systematic review provides a robust evidence base for understanding and addressing the complex relationship between housing market cycles and macroeconomic stability in Egypt.

Effective implementation of the proposed policy framework requires sustained commitment, institutional coordination, and evidence-based adaptation. By addressing both immediate vulnerabilities and long-term structural challenges, Egypt can enhance the positive contributions of housing markets to economic development while mitigating cyclical risks and promoting inclusive access to adequate housing for all segments of society.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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