NICOLAUS COPERNICUS UNIVERSITY IN TORUŃ

Bulletin of Geography. Socio-economic Series, No. 71 (2026): 91-110
http://doi.org/10.12775/bgss-2026-0006

BULLETIN OF GEOGRAPHY. SOCIO–ECONOMIC SERIES

journal homepages:
https://apcz.umk.pl/BGSS/index
https://www.bulletinofgeography.umk.pl/

Central bank influence and housing financialisation: an empirical analysis on the case of Chile

Francisco Vergara-Perucich

University of the Americas, Space Production Research Center, Santiago, Chile, e-mail: jvergara@udla.cl, https://orcid.org/0000-0002-1930-4691

How to cite:
Vergara-Perucich, F. (2026). Central bank influence and housing financialisation: an empirical analysis on the case of Chile. *Bulletin of Geography. Socio-economic Series*, 71(71): 91-110. DOI: http://doi.org/10.12775/bgss-2026-0006

Abstract. This article examines the role of Chile's Central Bank in the financialisation of housing through an empirical analysis of the dynamic relationships between monetary policy, mortgage rates and real housing prices from 2004 to 2023. Employing a Vector Error Correction Model (VECM), the study identifies a long-run cointegrating relationship (HPI = −53.63 × Mortgage Rate + 16.23 × Policy Rate) in which housing prices are inversely related to mortgage rates but, counterintuitively, positively associated with the policy rate, suggesting speculative dynamics that complicate the central bank's stabilising role. The model reveals that monetary policy transmits through mortgage markets with delayed and non-monotonic effects: contractionary shocks induce price declines peaking at 6 months, before reversing after 18 months. Crucially, forecast error variance decomposition shows that 98.9% of housing price fluctuations are driven by endogenous market dynamics, with monetary policy explaining only 0.4% of long-term variance. These findings demonstrate that Chile's housing market operates as a self-sustaining financial asset, largely insulated from direct policy intervention. The study concludes that monetary tools alone cannot ensure affordability, highlighting the need for structural reforms – including capital controls, expanded non-market housing and integration of social metrics into economic policy.

Article details:
Received: 03 February 2025
Revised: 08 January 2026
Accepted: 19 January 2026

Key words:
geography of services,
monetary policy rate,
financialisation of housing,
housing market,
mortgage,
Chile

Contents:

1. Introduction

Chile is currently experiencing a major housing problem, marked by rising prices and growing inequality in access to housing. In recent years, the cost of living has gone through the roof, especially in cities. This has put a lot of financial stress on middle- and low-income families. These changes have made it harder for more people to buy homes and even to rent apartments, which has made the gap between rich and poor even bigger. As a result of global capital flows and monetary policy decisions, housing markets have become more like stock markets, and the housing problem in Chile is not an isolated event: it is part of a larger pattern that can be seen in many countries. Acquiring a mortgage loan or other type of debt has become an important part of getting a home. This connects the housing market directly to changes in the economy, such as the interest rates set by the Central Bank. The question this paper tries to answer is "How do Central Bank decisions affect how much houses cost in Chile?" The study wants to show how these factors interact over time to affect home prices by using a Vector Error Correction Model (VECM). This study is especially important now that housing affordability is becoming a major social problem. It shows how housing costs are affected by money issues and provides facts that could help make housing policies fairer. It also shows that the government needs to step in to fix market problems that make housing harder to acquire.

Chile offers an analytically distinctive case for studying housing financialisation and the potential role of central banking in ensuring housing affordability. Not only has the country been at the forefront of neoliberal reforms in Latin America, but its housing sector has undergone rapid marketisation and integration with global financial circuits, serving as an influential model for emerging economies (Fernandez & Aalbers, 2016; Aalbers, 2020; Vergara-Perucich et al., 2023). The Chilean mortgage market is notable for its high degree of financial innovation and for the depth of household indebtedness, which is among the highest in the region and has significant implications for macroeconomic stability (Banco Central de Chile, 2021; Okuda, 2025). The Central Bank's monetary policy has usually been indicated as playing a central role in shaping credit conditions and, together with successive governments, has encouraged the commodification of housing through deregulation, privatisation and targeted subsidies (Micco et al., 2012; Sánchez, 2012). Moreover, Chile's policies on housing finance and subsidies have been widely exported and debated as paradigmatic; yet, critical literature notes persistent deficits in affordability and growing risks for financial stability (Salvi del Pero, 2016; Okuda, 2025). Analysing Chile thus offers valuable insights not only for the region but also for international debates on housing financialisation and central banking's actual impact on controlling everyday living costs.

1.1. Literature review

This literature review explores the role of central banks in shaping housing markets and the risks posed by the financialisation of housing. It examines how monetary policies, particularly interest rate decisions, influence housing prices and affordability, highlighting the central bank's growing role in managing housing markets. The review also delves into the concept of housing financialisation, where homes are increasingly treated as financial assets, leading to rising debt levels, reduced affordability and increased housing insecurity. Drawing on international examples, the review considers the various ways in which financialisation manifests and its socio-economic impacts, while also discussing resistance movements and policy alternatives.

Central banks play a crucial role in free market economies by managing monetary policy and ensuring financial stability. They aim to maintain price stability (Kerimov et al., 2023) and can intervene in asset markets to reduce price volatility (Chang et al., 2021). The concept of central bank independence has gained importance, with different national patterns influencing its effectiveness in controlling inflation (Kerimov et al., 2023). Central banks have also adapted their approaches to address emerging challenges like climate change (Thiemann et al., 2023) and oil price shocks (Mwange & Meyiwa, 2022). Transparency in communication has become a key aspect of central banking, with institutions like the European Central Bank relying on media to convey their policies (Velthuis, 2015). However, the role of central banks in managing repo markets and government bond liquidity has faced challenges, particularly in the context of shadow banking (Gabor, 2016). Additionally, debates persist regarding the extent to which free market fiduciary media can exist without central bank intervention (Hansen, 2021). The relationship between central bank policies and housing affordability is complex and context-dependent. Several studies indicate that monetary policies, particularly interest rates, significantly impact house prices and affordability (Yiu, 2023a, 2023b). Lower interest rates tend to

increase house prices, potentially worsening affordability (Yiu, 2023a, 2023b). However, the effect of mortgage rates on affordability can vary across regions and time periods (Squires & Webber, 2019). Supply-side solutions alone may be insufficient to address affordability issues, as demand-side factors, including investment demand and credit availability, also contribute significantly to housing crises (Gallent et al., 2017). Policy approaches differ between countries, with Germany's regulated rental market and stable house prices contrasting sharply with the UK's volatile housing market (Muellbauer, 2018).

As the role of Central Banks ensuring the health of housing market increases, the risks of financialisation arise. Financialisation of housing refers to the increasing dominance of financial markets in the housing sector, which transforms homes into financial assets (Aalbers, 2017; Wu et al., 2020). This process involves various digital and material aspects (Nic Lochlainn, 2021) and has led to increased debt levels in social housing (Smyth, 2019). It has manifested differently across countries, with China focusing on assetisation (Wu et al., 2020) and the UK emphasising asset-based welfare (Montgomerie & Büdenbender, 2015). The financialisation of rental housing, particularly social housing, has emerged as a new frontier (Belotti & Arbaci, 2020). This trend has contributed to reduced affordability, increased housing insecurity and rising homelessness (Lima et al., 2022). While some scholars argue for de-financialisation strategies (Wijburg, 2020), others note that the global financial crisis has not significantly reversed these trends (Aalbers, 2017). The state plays a crucial role in facilitating and shaping housing financialisation processes (Belotti & Arbaci, 2020; Lima et al., 2022). Housing financialisation poses significant risks to affordability, stability and social equity. It has led to rising housing insecurity, displacement and homelessness (Fields & Uffer, 2016; Lima et al., 2022). The process is often facilitated by state actions, including policy reforms and deregulation (Gil García & Martínez López, 2021; Stellinga, 2022). Financialisation has proven resilient and self-sustaining, adapting to changing market conditions and resisting de-financialisation efforts (Wijburg, 2020; Stellinga, 2022). Its impacts are evident in major cities like London, where house prices are causally linked to financial instruments (Vergara-Perucich, 2023b). The phenomenon has also transformed rental markets, with institutional landlords playing a significant role (Fields & Uffer, 2016; Lima et al., 2022). Resistance to financialisation has emerged through digital/material activism (Nic Lochlainn, 2021) and calls for strengthening public and affordable housing sectors (Jacobs & Manzi, 2019; Wijburg, 2020).

Between 2000 and 2025, Chile's housing sector underwent a profound transformation, evolving from a predominantly state-driven model to a hybrid system that balances public subsidy frameworks with extensive financial innovation and deep private-sector involvement (Micco et al., 2012; Morande et al., 2010). The introduction of inflation-indexed financial instruments such as the Unidad de Fomento (UF), together with mortgage bonds and the securitisation of housing debt, enabled banks to expand the provision of long-term, inflation-protected loans – primarily benefiting middle- and upper-income groups while raising barriers for lower-income and informal workers due to stringent risk controls (Calani, 2018; Freitas et al., 2013; Matus et al., 2010).

The Central Bank of Chile played a pivotal role, implementing macroprudential regulation – such as loan-to-value limits and loan-loss provisions – that fostered system stability but also tightened credit standards, particularly following warnings delivered via its *Financial Stability Report* (Alegría et al., 2017). The regulatory environment prioritised the prevention of speculative bubbles and systemic risk, yet such caution had the side effect of curbing access for more vulnerable populations (Hidalgo Dattwyler et al., 2022; Simian, 2010; Simian & Niklitschek, 2017).

Recent studies document the emergence of institutional investors and corporate landlords, especially in Santiago, as well as the rapid expansion of the private rental sector and a marked increase in household indebtedness (Vergara-Perucich & Boano, 2019; Santana-Rivas, 2020; Vergara-Perucich, 2022; Urbina Julio, 2024; Vergara-Perucich, 2024). While targeted subsidies facilitated access for some, affordability crises and social segregation have intensified, challenging the notion that financial innovation and macroprudential oversight alone can ensure broad, equitable access to decent housing (Boano & Perucich, 2016; Lopez-Morales, 2016; Dattwyler et al., 2021; Gil & Celhay, 2022; Sabatini et al., 2020; Vergara-Perucich, 2023a).

The literature highlights the complex relationship between central banks and housing affordability, particularly under the threat of financialisation. Central banks, through their control of monetary policy and interest rates, significantly influence housing markets, often driving up prices and exacerbating affordability issues. Financialisation, which transforms homes into financial assets, intensifies this problem by increasing debt levels, housing insecurity and inequality. The contradiction lies in central banks' role: while their policies aim for economic stability, they can inadvertently fuel housing

crises by favouring financial markets over social housing needs. Addressing these contradictions requires careful balancing of financial and housing policy priorities.

2. Research materials and methods

This research adopts a quantitative and inductive approach to examine the dynamic interrelationships between key macro-economic variables and housing price formation in Chile, with a specific focus on the influence of the Central Bank's monetary policy. The study is grounded in monthly secondary data collected from financial and housing markets spanning from January 2004 to December 2023, with 240 observations for each time series. The core of the analysis centres on a three-variable system comprising: (i) The Real Housing Price Index (hpi_cchc), which measures the evolution of housing prices; (ii) The Average Mortgage Rate (average_mortgage_rate), which reflects the cost of borrowing for housing; and (iii) The Central Bank Monetary Policy Rate (monetary_policy_rate), which is the key instrument of monetary policy in Chile.

Table 1 presents the descriptive statistics for the variables, and Figure 1 provides a visual representation of their evolution over time.

The descriptive statistics and time series plots offer preliminary insights. The Real Housing Price Index exhibits a clear and persistent upward trend, suggesting non-stationary behaviour. Similarly, both the Monetary Policy Rate and the Average Mortgage Rate display considerable volatility and sharp regime-shifts without apparent reversion to a constant mean. These visual characteristics support the assessment that all three series are likely non-stationary in their levels, making the application of formal unit root tests essential before proceeding with the econometric model specification. To appropriately model the dynamic interactions among these variables, a multi-stage econometric strategy was employed.

2.1. Stationarity and unit root tests

The initial step involved assessing the order of integration for each variable. To formally assess their stochastic properties, we employed both the Augmented Dickey–Fuller (ADF) test, with the null hypothesis of a unit root, and the Kwiatkowski–Phillips–Schmidt–Shin (KPSS) test, with the null hypothesis of stationarity. The results are summarised in Table 2.

The unit root testing protocol confirms that all three variables are non-stationary in their levels but become stationary after first differencing. This unambiguous I(1) classification solidifies the econometric foundation for cointegration analysis.

2.2. VAR lag order selection

The next step was to determine the optimal lag length (k) for the underlying Vector Autoregression (VAR) model. As shown in Table 3, standard information criteria were evaluated for up to 14 lags.

The Akaike Information Criterion (AIC) and Final Prediction Error (FPE) criterion, which are efficient in selecting models that minimise prediction error, both indicate an optimal length of k=7 lags. In contrast, the more parsimonious BIC/SC criterion suggests k=2.

Table 1. Descriptive statistics of variables in use

	Real Housing Price Index (Indexed value by Chilean Chamber of Construction)	Average Mortgage Rate (Percentage)	Central Bank Monetary Policy Rate (Percentage)
Mean	101.191	3.997	4.029
Std. Dev.	31.309	0.772	2.611
Variance	980.282	0.596	6.815
Skewness	0.187	-0.295	2.691
Kurtosis	-1.293	-0.005	0.931
Range	93.307	3.93	10.75
Min	64.775	1.99	0.5
Max	158.082	5.92	11.25
N	240	240	240

Source: author

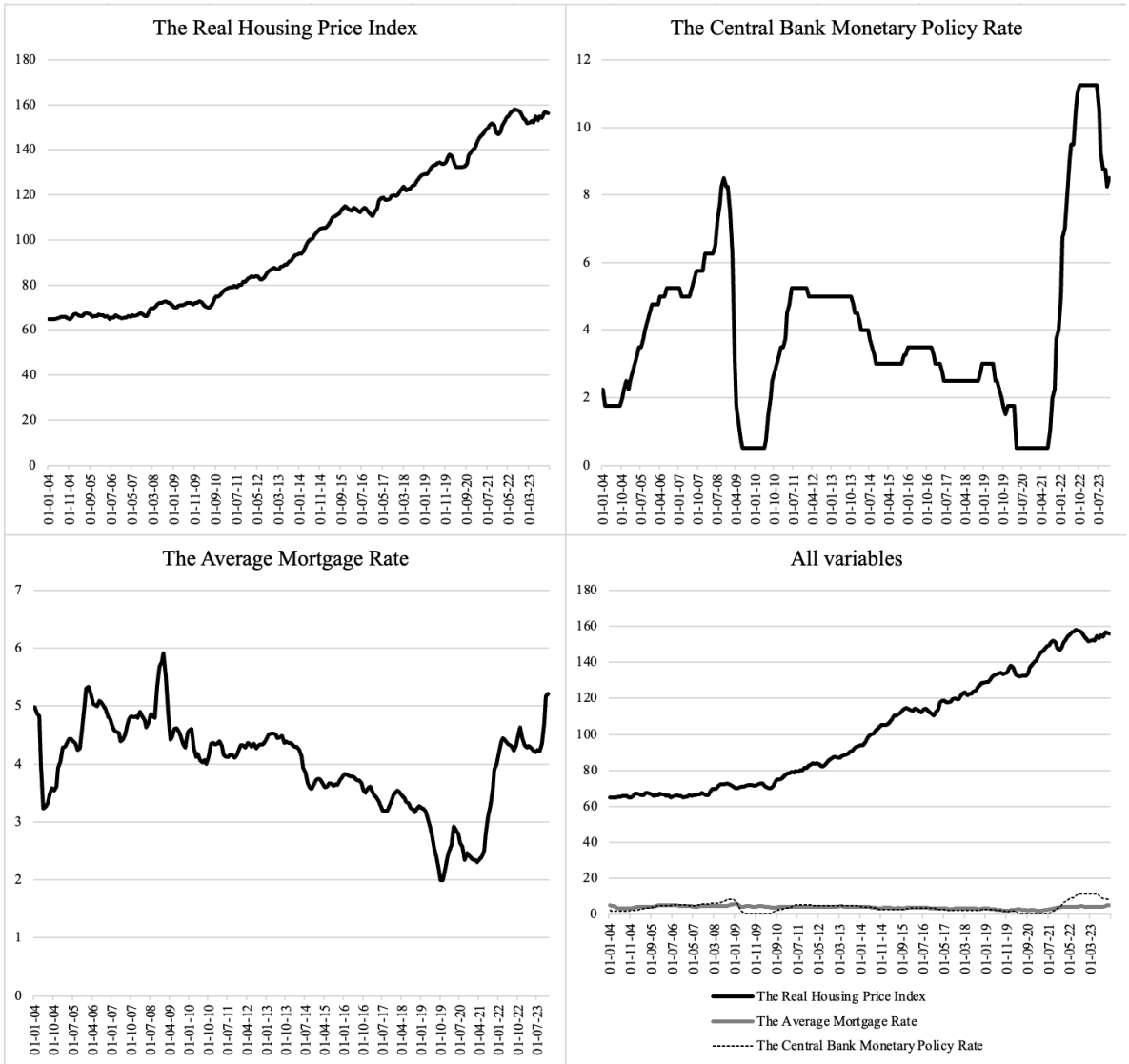


Fig. 1. Variables in time
Source: author

Table 2. Summary of stationarity and unit root test results

Variable	Test	Level Statistic	Level Result (5%)	1st Diff. Statistic	1st Diff. Result (5%)
Real Housing Price Index	ADF	1.675	Non-stationary	-6.650	Stationary
	KPSS	0.220	Non-stationary	0.014	Stationary
Average Mortgage Rate	ADF	-2.201	Non-stationary	-11.682	Stationary
	KPSS	0.153	Non-stationary	0.010	Stationary
Monetary Policy Rate	ADF	-0.555	Non-stationary	-11.656	Stationary
	KPSS	0.096	Non-stationary	0.021	Stationary

Source: author

Table 3. VAR lag order selection criteria

AIC	HQ	BIC/SC	FPE
1.68	1.74	1.83	5.38
1.48	1.6	1.77*	4.41
1.48	1.65	1.91	4.39
1.45	1.58*	1.92	4.26
1.46	1.64	2.06	4.29
1.43	1.67	2.18	4.19
1.40*	1.7	2.3	4.06*
1.42	1.78	2.46	4.15
1.44	1.86	2.63	4.21
1.47	1.95	2.8	4.36
1.51	2.05	2.99	4.54
1.54	2.14	3.16	4.65
1.57	2.23	3.34	4.82
1.61	2.33	3.52	5.00

Note: * indicates the optimal lag length selected by the criterion.
Source: author

Given that a primary goal of this study is to analyse dynamic transmission mechanisms, prioritising the capture of complex dynamics is essential. Therefore, we select k=7, which is also theoretically sound for modelling monetary policy transmission lags in housing markets. This implies the subsequent VECM will include six lagged difference terms (k-1).

2.3. Cointegration Analysis

Given that all variables are I(1), the Johansen cointegration test was conducted (Table 4) to determine the number of long-run equilibrium relationships. A range of models was evaluated using both the trace and maximum eigenvalue statistics (results in Table 3).

In reconciling the outcomes, we follow the approach suggested by Hjelm and Johansson (2005), which emphasises weighing statistical outcomes against theoretical plausibility. The evidence consistently points towards the selection of Model 1 (No intercepts or trends) with one cointegrating vector (r=1). This choice is supported by its statistical consistency and its theoretical interpretability in the context of a financialised housing market, where speculative forces dominate over deterministic trends. The selected model yields the normalised cointegrating vector:

$$HPI = -53.63 \times Mortgage\ Rate + \\ +16.23 \times Policy\ Rate.$$

To further assess this relationship, we formally tested whether it could be restricted to the spread between the mortgage and policy rates. A likelihood ratio (LR) test produced a chi-squared statistic of 425.29 (p-value < 0.0001), decisively rejecting the restriction. This indicates that mortgage and policy rates exert distinct long-run influences on housing prices.

2.4. Vector Error Correction Model specification

The finding of one cointegrating relationship led to the specification and estimation of a Vector Error Correction Model (VECM), which allows for the modelling of both short-run dynamics and the long-run equilibrium. The general form of the VECM used is:

$$\Delta Y_t = c_0 + \alpha\beta' Y_{t-1} + \sum_{i=1}^{k-1} \Gamma_i \Delta Y_{t-i} + \varepsilon_t$$

where ΔY is the vector of first differences of the endogenous variables (d_hpi_cchc, d_average_mortgage_rate, d_monetary_policy_rate), c_0 is a vector of constants, α is the vector of adjustment coefficients (speed of adjustment to equilibrium), β is the cointegrating vector defining the long-run relationship, Y_{t-1} is the vector of lagged levels of the variables, Γ_i are matrices of short-run coefficients, and k is the lag length of the underlying VAR model.

Based on information criteria (AIC, BIC, HQC) from the VAR lag selection process and confirmed for the VECM, a lag length of k=7 was chosen for the underlying VAR in levels, meaning k−1=6 lags

Table 4. Johansen cointegration test results using trace statistic

Model specification	H_0	Test statistic	95% c.v.	Conclusion
1. No Intercepts or Trends	r = 0	0.20	8.18	Fail to reject
1. No Intercepts or Trends	r ≤ 1	8.06	14.90	Fail to reject
1. No Intercepts or Trends	r ≤ 2	25.45	21.07	Reject H_0
2. Restricted Intercepts, No Trends	r = 0	2.81	9.24	Fail to reject
2. Restricted Intercepts, No Trends	r ≤ 1	21.85	15.67	Reject H_0
2. Restricted Intercepts, No Trends	r ≤ 2	25.46	22.00	Reject H_0
4. Unrestricted Intercepts, Restricted Trends	r = 0	6.84	12.25	Fail to reject
4. Unrestricted Intercepts, Restricted Trends	r ≤ 1	13.62	18.96	Fail to reject
4. Unrestricted Intercepts, Restricted Trends	r ≤ 2	25.79	25.54	Reject H_0
5. Unrestricted Intercepts, Unrestricted Trends	r = 0	6.26	12.25	Fail to reject
5. Unrestricted Intercepts, Unrestricted Trends	r ≤ 1	11.03	18.96	Fail to reject
5. Unrestricted Intercepts, Unrestricted Trends	r ≤ 2	25.78	25.54	Reject H_0

Source: author

for the differenced terms in the VECM. The VECM was estimated incorporating the single cointegrating vector (Rank=1). The estimated VECM was subjected to diagnostic checks.

3. Research results

This section presents the results of the econometric examination of the model. It begins with the assessment of residual diagnostics, followed by the re-estimation of the VECM with heteroskedasticity-robust standard errors to ensure the validity of inference. Finally, an advanced dynamic analysis is presented using impulse-response functions and forecast error variance decomposition to explore the structural interdependence of the system.

To ensure the model's robustness, a suite of multivariate diagnostic tests was applied to the VECM residuals. The results, reported in Table 5, are central to the interpretation and validation of the findings.

The results highlight three stylised features. First, the Breusch–Godfrey LM test indicates residual autocorrelation at longer horizons (12 months), suggesting that while the model with six lags captures most dynamics, some dependence persists. Second, the ARCH–LM test strongly rejects homoskedasticity, confirming the presence of autoregressive conditional heteroskedasticity – common in financial and macroeconomic time series. Third, residuals deviate from normality, another stylised property of housing and interest rate dynamics.

3.1. Robust Inference

Because heteroskedasticity undermines the efficiency of OLS-based standard errors, the VECM was re-estimated with heteroskedasticity-robust covariance estimators using the Bollerslev–Wooldridge quasi-maximum likelihood (QML) approach. In practice, coefficients were obtained via OLS, while the variance–covariance matrix was recalculated with a heteroskedasticity-consistent estimator (White's HC0). This leaves coefficient estimates unchanged but provides valid standard errors and p-values in the presence of ARCH effects.

The correction of inference yields two key insights. First, the adjustment of housing prices (ΔHPI) to long-run disequilibria is highly significant once robust errors are considered (Table 6)($p < 0.001$), reinforcing the central role of the error-correction mechanism. Second,

Table 5. VECM residual diagnostic tests

Test type	Specific test	Statistic	Degrees of freedom	p-value	Outcome
Serial Correlation	Breusch–Godfrey LM (12 lags)	Chi-squared = 139.98	108	0.0209	H_0 rejected
Heteroskedasticity	Multivariate ARCH–LM	Chi-squared = 689.63	432	< 0.001	H_0 rejected
Normality	Multivariate Jarque–Bera	Chi-squared = 1660.9	6	< 0.001	H_0 rejected

Note: H_0 for Serial Correlation is "no serial correlation up to the 12th order". H_0 for Heteroskedasticity is "no ARCH effects (homoskedasticity)". H_0 for Normality is "residuals are normally distributed".
Source: author

the significance of most short-run coefficients disappears under robust estimation, particularly those linking interest rates to subsequent dynamics. This indicates that short-run transmission is weaker and noisier than initially suggested, while the long-run error-correction remains the dominant channel.

3.2. Error-correction mechanism

Table 7 reports the adjustment coefficients (α) associated with the error-correction term across the three equations.

The mortgage rate equation shows a significant negative coefficient, consistent with the theory: when housing prices lie above equilibrium (ECT>0), mortgage rates fall, facilitating adjustment. The policy rate equation is also significant but with a positive sign, inconsistent with an error-correction role; this suggests that policy rates reflect exogenous dynamics rather than endogenous adjustment. By contrast, housing prices do not adjust directly in the short run, consistent with their rigidity.

3.3. Short-run Granger causality

Granger causality tests (Table 8) shed light on short-run interactions. The results reveal three patterns. First, mortgage rates are highly endogenous, responding to both housing prices and policy rates – which is consistent with banks adjusting borrowing costs quickly to market and policy conditions. Second, housing prices show no short-run response to interest rates, reinforcing their rigidity. Third, mortgage and policy rates exhibit bidirectional causality. While this points to feedback between monetary policy and credit conditions, the apparent influence of mortgage rates on policy rates should be treated cautiously given the theoretical exogeneity of Central Bank decisions.

3.4. Impulse–Response Functions

Impulse–Response Functions (IRFs) trace the effect of shocks over a 25-month horizon (Fig. 2; Appendix Table A1).

Table 6. VECM estimates with original and robust p-values

Dependent equation	Independent variable	Coefficient	Original p-value	Robust p-value	Change in signif.
Δ HPI	Error Correction Term (ect1)	0.0074	0.015 *	<0.001 ***	Signif. increases
	ΔHPI t-1	-0.0677	<0.001 ***	0.343	Loses Signif.
	ΔHPI t-4	-0.1575	<0.001 ***	0.027 *	Maintains Signif.
Δ Mortgage Rate	Error Correction Term (ect1)	0.000057	0.050 .	0.593	Loses Signif.
	Δ Policy Rate t-1	0.0707	<0.001 ***	0.104	Loses Signif.
	ΔHPI t-3	-0.017	0.035 *	0.034 *	Maintains Signif.
Δ Policy Rate	Error Correction Term (ect1)	-0.00033	<0.001 ***	0.057 .	Signif. decreases
	Δ Mortgage Rate t-1	-0.0272	0.014 *	0.785	Loses Signif.

Note: The most relevant coefficients for the discussion are reported. Signif. codes: *** p<0.001, ** p<0.01, * p<0.05, . p<0.1
Source: author

Table 7. Coefficients of the Error-Correction Term (ECT)

Dependent variable	Estimate	Std. error	t value	p-value
ΔHPI (hpi_cchc.d)	0.00186	0.0034	0.547	0.585
ΔAverage Mortgage Rate	–0.00117	0.00049	-2.402	0.017 **
ΔMonetary Policy Rate	0.00316	0.0011	2.869	0.0045 **

** significance at 5%
Source: author

Table 8. Granger causality test results (p-values by lag)

Null Hypothesis	Lag 1	Lag 2	Lag 3	Lag 4	Lag 5	Lag 6	Lag 7
	p-value (F-statistic)	p-value (F-statistic)	p-value (F-statistic)	p-value (F-statistic)	p-value (F-statistic)	p-value (F-statistic)	p-value (F-statistic)
MORTGAGE does not Granger Cause HOUSING_PRICE	0.1446 (2.14248)	0.0509 (3.01702)	0.0171 (3.46142)	0.0195 (2.99678)	0.0498 (2.2565)	0.056 (2.08554)	0.0443 (2.10392)
HOUSING_PRICE does not Granger Cause MORTGAGE	0.7643 (0.09011)	0.9719 (0.02846)	0.9943 (0.02594)	0.9206 (0.23135)	0.5826 (0.75579)	0.533 (0.84956)	0.8179 (0.52146)
MPR does not Granger Cause HOUSING_PRICE	0.4418 (0.59366)	0.5811 (0.54408)	0.4295 (0.92477)	0.08 (2.1137)	0.1033 (1.85503)	0.0759 (1.93792)	0.0583 (1.98535)
HOUSING_PRICE does not Granger Cause MPR	0.7172 (0.13154)	0.9542 (0.04688)	0.8806 (0.22264)	0.9418 (0.19315)	0.2587 (1.31472)	0.2293 (1.36624)	0.2758 (1.25179)
MPR does not Granger Cause MORTGAGE	0.0304 (4.74287)	0.0233 (3.82225)	0.0361 (2.89243)	0.0419 (2.52282)	0.0373 (2.41226)	0.0127 (2.7773)	0.0131 (2.61262)
MORTGAGE does not Granger Cause MPR	0.0021 (9.6699)	0.0153 (4.25317)	0.0326 (2.97167)	0.0516 (2.39179)	0.0506 (2.24811)	0.0326 (2.34174)	0.0574 (1.99208)

Source: author

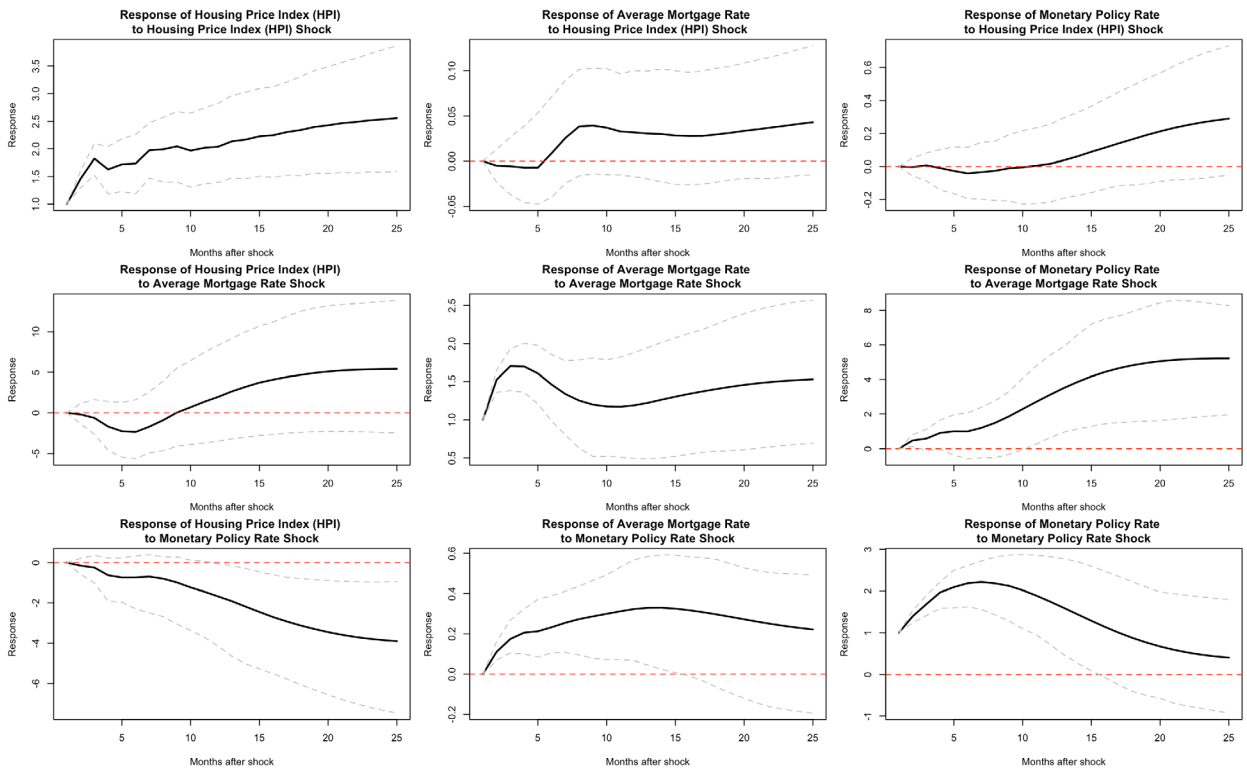


Fig. 2. Generalised Impulse–response functions of housing prices, mortgage rates and policy rates (25-month horizon)
Source: author

Housing Price Shocks: A one-standard-deviation increase in housing prices produces a strong and persistent self-response (up to 2.56 by month 25). Mortgage rates respond modestly, turning positive after month 6, while policy rates initially decline then increase persistently after month 11 – consistent with the Central Bank reacting to overheating.

Mortgage Rate Shocks: A positive shock to mortgage rates depresses housing prices (–0.20 at month 2, –2.36 at month 6). Mortgage rates display strong persistence, while policy rates rise in response, indicating interaction between credit and monetary policy.

Policy Rate Shocks: Monetary policy tightening exerts the most pronounced effect, lowering housing prices persistently (–0.15 at month 2, nearly –3.9 by month 25). Mortgage rates increase moderately, confirming the credit channel, while policy rates mean-revert after peaking at month 6–7.

In Appendix 2, a Forecast Error Variance Decomposition is presented as a complement to this forecasting analysis. These findings highlight that Central Bank policy shocks exert a strong and persistent negative influence on housing prices in Chile, primarily through the mortgage credit channel. At the same time, housing price shocks feed back into policy rates, suggesting that asset prices are also considered in monetary policy decisions.

4. Discussion

The findings show that Central Bank decisions shape Chilean housing prices, not by directly shifting them in the short run, but by anchoring long-run equilibria through the mortgage credit channel. Housing prices exhibit strong inertia, adjusting only indirectly to monetary conditions, while mortgage rates emerge as the main vehicle of transmission. This result is consistent with the literature stressing the indirect and often limited role of monetary policy in highly financialised housing markets (Muellbauer, 2018; Yiu, 2023).

The estimated long-run cointegrating relationship confirms this paradoxical structure: housing prices are inversely related to mortgage rates, as theory predicts, but positively associated with the policy rate. This counterintuitive result echoes financialisation logics highlighted in international research, where monetary tightening can be reinterpreted by market actors as a signal of macro-economic resilience or as a validation of real estate as a hedge against inflation (Fernandez & Aalbers, 2016; Aalbers, 2017). In Chile's hybrid state–market system, this dynamic underscores how speculative expectations may counteract the intended stabilising role of monetary policy.

Yet, the broader dynamic analysis complicates this picture. Forecast Error Variance Decomposition shows that nearly 87% of housing price fluctuations over a two-year horizon are explained by their own shocks, with monetary policy innovations accounting for only about 12%. This finding revises earlier interpretations of monetary dominance and instead corroborates the financialisation literature's emphasis on market endogeneity and self-reinforcing dynamics (Wijburg, 2020; Stellinga, 2022). Put differently, the Central Bank is statistically present in the system but structurally subordinate to the market's internal momentum. Therefore, housing prices in Chile are primarily shaped by the strategies and expectations of those who set them, rather than being disciplined by Central Bank interventions or mortgage rates. This reinforces the argument that housing operates as a financial asset class, whose valuation is determined by speculative practices rather than by conventional affordability constraints.

Impulse–response functions further reveal the asymmetry of transmission. A contractionary policy shock lowers housing prices persistently – reaching a 3.9% decline after 25 months – yet the effect is gradual and non-monotonic, peaking only after half a year before slowly reversing. This lagged response illustrates the speculative adaptation of market actors, who absorb monetary shocks as calculable risks rather than fundamental shifts, as theorised in studies of housing as a financial asset class (Wu et al., 2020; Nic Lochlainn, 2021).

The error–correction mechanism clarifies the institutional asymmetry of adjustment. Mortgage rates, not housing prices, carry the burden of returning the system to equilibrium, consistent with banks' responsiveness to policy signals and market conditions. The positive adjustment coefficient on the policy rate suggests that it reflects exogenous pressures rather than endogenously correcting imbalances, which resonates with López-Morales' (2016) argument about the "treadmill of financialisation", where public policy lags behind speculative market dynamics.

Short-run Granger causality tests confirm this asymmetry. Mortgage rates are highly endogenous, shaped simultaneously by house price conditions and Central Bank actions. Housing prices, by contrast, show no evidence of immediate adjustment to monetary conditions, underscoring their rigidity. Bidirectional causality between mortgage and policy rates further illustrates the feedback loop between credit conditions and monetary decisions, although the apparent influence of mortgages on policy should be interpreted cautiously given the theoretical exogeneity of Central Bank rate-setting.

These findings advance the literature by providing robust empirical support for two central claims. First, they substantiate the view that Chile's housing market operates as a financial asset, characterised by volatility clustering, endogenous momentum and speculative adaptation (Aalbers, 2020; Vergara-Perucich et al., 2023). Second, they confirm the "macroprudential paradox" (Wijburg, 2020): despite increasingly sophisticated regulation and Central Bank oversight, conventional monetary tools prove largely ineffective at curbing speculative pressures in the housing market.

The policy implications are stark. As observed in both international and Chilean scholarship, monetary policy alone is insufficient to address housing affordability (Gallent et al., 2017; Lima et al., 2022). Instead, structural interventions – such as capital controls to mitigate speculative inflows (Vergara-Perucich, 2023a), the expansion of non-market housing (Jacobs & Manzi, 2019), and a reassessment of the UF indexation system – are better equipped to realign housing with social rather than financial priorities. This study therefore reinforces the call for policies that move beyond macro-economic stabilisation to directly confront the entrenched financialisation of housing.

5. Conclusions

This study empirically confirms the profound financialisation of Chile's housing market, exposing a system where Central Bank decisions and mortgage rates play only an indirect and structurally subordinate role in price formation. While the econometric evidence identifies a long-run relationship between housing prices, mortgage rates and the policy rate, the market's overwhelming endogeneity – where nearly all variance in future housing prices is explained by their own past dynamics – makes clear that conventional financial levers do not discipline housing costs in any substantial way.

The VECM results highlight this paradox. Housing prices are inversely related to mortgage rates, as expected, but move positively with the policy rate. Such counterintuitive linkages suggest that monetary tightening is not transmitted through affordability constraints but is instead interpreted as a signal that attracts speculative capital into housing, thereby counteracting its intended effects. More fundamentally, however, the dominance of endogenous shocks (close to 99% of variance) reveals that housing prices in Chile are driven less by policy instruments than by the strategic practices of market actors who produce, value and circulate housing as a financial asset.

From this perspective, the core mechanism of price formation lies not in monetary policy but in the agency of developers and intermediaries who set prices in anticipation of speculative returns. Central Bank interventions may nudge credit conditions, but it is developers – through the management of land pipelines, control over supply rhythms and manipulation of price expectations – who effectively determine the trajectory of housing costs. The econometric evidence supports this interpretation: housing prices do not adjust directly to monetary shocks, and their rigidity underscores how market actors impose price levels largely insulated from affordability or policy constraints. In practice, this means that the very producers of housing function as price-makers, pushing costs beyond the reach of lower- and middle-income groups, while public monetary institutions remain reactive at best.

The impulse–response analysis further presents the weakness of policy transmission. A contractionary monetary shock produces only a modest and temporary price decline that peaks at six months, before reversing after a year as speculative expectations reassert themselves. This dynamic underscores a treadmill of financialisation: policy lags behind market momentum, and speculative actors adapt monetary signals into calculable risks rather than binding constraints. The significant presence of volatility clustering (ARCH effects) and residual non-normality in the model are not merely econometric artefacts but empirical signatures of a market operating under financial-asset logic, where clustering of risk and speculative cycles are constitutive features.

These findings deepen and sharpen the international debate on financialised housing markets (Aalbers, 2020; Wijburg, 2020; López-Morales, 2016). Chile's case demonstrates that housing prices are set less by aggregate financial conditions than by those who control the production and valorisation of housing stock. Developers emerge as central agents of financialisation, embedding speculative expectations into the very structure of price-setting and thereby displacing affordability considerations. This is consistent with comparative evidence that identifies real-estate capital as an autonomous driver of housing dynamics, only loosely constrained by macroprudential policy.

The policy implications are unequivocal. Monetary instruments – whether policy rate adjustments or mortgage market regulation – are inadequate to restore affordability in such a system. The Central Bank is not a price-setter but an embedded actor whose interventions are rapidly neutralised by speculative adaptation. To address the housing crisis, policies must instead target the structural mechanisms of price formation. This entails regulating developer behaviour, expanding the non-market housing sector and reconsidering insti-

tutional arrangements (such as the UF indexation) that anchor debt to inflationary dynamics. Without such reforms, affordability will continue to deteriorate as long as housing remains governed by the imperatives of developers and investors rather than social need.

Chile's housing market illustrates the limits of conventional monetary governance in a financialised context. Housing prices are not primarily disciplined by policy rates or mortgage costs but by the strategies of those who produce and valorise housing as a speculative asset. Correcting this imbalance requires subordinating financial and developer logics to social priorities, a task that extends beyond Chile to any economy grappling with the consequences of housing financialisation.

References

Aalbers, M.B. (2017). The variegated financialization of housing. *International Journal of Urban and Regional Research*, 41(4): 542–554. DOI: https://doi.org/10.1111/1468-2427.12522.

Aalbers, M.B. (2020). Financial geography III: The financialization of the city. Progress in Human Geography, 44(3): 3. DOI: https://doi.org/10.1177/0309132519853922.

Alegría, A., Alfaro, R., & Córdova, F. (2017). The impact of warnings published in a financial stability report on the loan to value ratio. *Working Papers Central Bank of Chile*, Article 798. Available at: https://ideas.repec.org//p/chb/bcchwp/798.html.

Banco Central de Chile. (2021). Encuesta Financiera de Hogares (EFH) (Household Financial Survey (HFS) – in Spanish). Available at: https://www.bcentral.cl/en/areas/encuestas-economicas/encuesta-financiera-de-hogares.

Belotti, E., & Arbaci, S. (2020). From right to good, and to asset: The state-led financialisation of the social rented housing in Italy. *Environment and Planning C: Politics and Space*, 39(2): 414–433. DOI: https://doi.org/10.1177/2399654420941517.

Bentley, R.J., Pevalin, D., Baker, E., Mason, K., Reeves, A., & Beer, A. (2016). Housing affordability, tenure and mental health in Australia and the United Kingdom: A comparative panel analysis. *Housing Studies*, *31*(2): 208–222. DOI: https://doi.org/10.1080/02673037.2015.1070796.

Boano, C., & Perucich, F. Vergara (2016). Bajo escasez.¿ Media casa basta? Reflexiones sobre el Pritzker de Alejandro Aravena (Under scarcity. Is half a house enough? Reflections on Alejandro Aravena's Pritzker Prize – in Spanish). *Revista de Arquitectura*, 31(21): 21. DOI: https://doi.org/10.5354/0719-5427.2016.42516.

Calani, M. (2018). Can Regulation on Loan-Loss-Provisions for Credit Risk Affect the Mortgage Market? Evidence from Administrative Data in Chile (SSRN Scholarly Paper 3374633). Social Science Research Network. Available at: https://papers.ssrn.com/abstract=3374633.

Chang, C.-L., Ilomäki, J., & Laurila, H. (2021). Leaning against the bubble: Central bank intervention in walrasian asset markets. *Risks*, 9(12): 214. DOI: https://doi.org/10.3390/risks9120214.

Dattwyler, R. Hidalgo, Martínez, M.C., Peterson, V. Alvarado, & Arreourtua, L.S. (2021). La organización del mercado del suelo y los subsidios a la localización de vivienda como soluciones desde la política neoliberal en Chile y México. Urbe (The organization of the land market and housing location subsidies as solutions under neoliberal policies in Chile and Mexico. City – in SPANISH). *Revista Brasileira de Gestão Urbana*, 13: 1–17. DOI: https://doi.org/10.1590/2175-3369.013.e20190170.

Fernandez, R., & Aalbers, M.B. (2016). Financialization and housing: Between globalization and varieties of capitalism. *Competition & change*, 20(2): 71-88. DOI: https://doi.org/10.1177/1024529415623916.

Fields, D., & Uffer, S. (2014). The financialisation of rental housing: A comparative analysis of New York City and Berlin. *Urban Studies*, *53*(7): 1486–1502. DOI: https://doi.org/10.1177/0042098014543704.

Freitas, F.G.D., Magnabosco, A.L., & Cunha, P.H.F. (2013). Chile: Subsidios, crédito y déficit habitacional (Chile: Subsidies, credit, and the housing deficit – in Spanish). *Revista CEPAL*, 1: 110. Available at: https://repositorio.cepal.org/server/api/core/bitstreams/d80c28d4-8932-4c9f-a44a-904694527a69/content.

Gabor, D. (2016). The (impossible) repo trinity: The political economy of repo markets. *Review of International Political Economy*, 23(6): 967–1000. DOI: https://doi.org/10.1080/09692290.2016.1207699.

Gallent, N., Durrant, D., & May, N. (2017). Housing supply, investment demand and money creation: A comment on the drivers of London's housing crisis. *Urban Studies*, 54(10): 2204–2216. DOI: https://doi.org/10.1177/0042098017705828.

Gil García, J., & Martínez López, M.A. (2021). State-led actions reigniting the financialization of housing in Spain. *Housing, Theory and Society*, 40(1): 1–21. DOI: https://doi.org/10.1080/14036096.2021.2013316.

Gil, D., & Celhay, P. A. (2022). Property rights and market behavior in the low-income housing sector: Evidence from Chile. *Journal of Empirical Legal Studies*, 19(4), 1148-1178. DOI: https://doi.org/10.1111/jels.12330.

Hansen, K. (2021). Are free market fiduciary media possible? On the nature of money, banking, and money production in the free market order. *Quarterly Journal of Austrian Economics*, 24(2): 286–316. DOI: https://doi.org/10.35297/qjae.010100.

Hidalgo Dattwyler, R., Vergara Constela, C.D., Gutiérrez Aguilera, D., Capetillo Constela, C., & Alvarado Peterson, V. (2022). Su casa, su deuda. La política de vivienda chilena entre la financiarización, la subsidiariedad y la integración social (Your home, your debt. Chilean housing policy between financialization, subsidiarity, and social integration – in Spanish). *Revista INVI*, 37(105): 1-44. DOI: https://doi.org/10.5354/0718-8358.2022.63809.

Jacobs, K., & Manzi, T. (2019). Conceptualising 'financialisation': Governance, organisational behavio ur and social interaction in UK housing. *International Journal of Housing Policy*, 20(2): 184–202. DOI: https://doi.org/10.1080/19491247.2018.1540737.

Kerimov, A., Babayev, A., Dudchenko, V., Samusevych, Y., & Podmanicka, M. (2023). Central bank independence as a prerequisite for ensuring price stability: Modeling the role of the national pattern. *Banks and Bank Systems*, 18(4): 307–319. DOI: https://doi.org/10.21511/bbs.18(4).2023.25.

Lima, V., Hearne, R., & Murphy, M.P. (2022). Housing financialisation and the creation of homelessness in Ireland. *Housing Studies*, 38(9): 1695–1718. DOI: https://doi.org/10.1080/02673037.2022.2042493.

Lopez-Morales, E. (2016). Assessing exclusionary displacement through rent gap analysis in the high-rise redevelopment of Santiago, Chile. *Housing Studies*, 31(5): 5. DOI: https://doi.org/10.1080/02673037.2015.1100281.

Matus, J.M., Silva, N., Marinovic, A., & Flores, K. (2010). Una visión global de la deuda financiera de los hogares chilenos en la última década (An overview of chilean household financial debt over the last decade – in Spanish). *Economic Statistics Series*, Article 81. Available at: https://ideas.repec.org//p/chb/bcchee/81.html.

Micco, A., Piedrabuena, B., Parrado, E., & Rebucci, A. (2012). Housing finance in Chile: Instruments, actors, and policies. Inter-american development bank. DOI: https://doi.org/10.18235/0011380.

Montgomerie, J., & Büdenbender, M. (2015). Round the houses: Homeownership and failures of asset-based welfare in the United Kingdom. *New Political Economy*, 20(3): 386–405. DOI: https://doi.org/10.1080/13563467.2014.951429.

Morande, F., Petermann, A., & Vargas, M. (2010). Determinants of urban vacant land. *Journal of Real Estate Finance and Economics*, 40(2): 188-202. DOI: https://doi.org/10.1007/s11146-008-9123-5.

Muellbauer, J. (2018). Housing, debt and the economy: A tale of two countries. *National Institute Economic Review*, 245: R20–R33. DOI: https://doi.org/10.1177/002795011824500112.

Mwange, A., & Meyiwa, A. (2022). Monetary policy responses to crude oil-price shocks: The case of selected central banks. *Journal of Economics and Business*, 5(3): 102-112. DOI: https://doi.org/10.31014/aior.1992.05.03.440.

Nic Lochlainn, M. (2021). Digital/material housing financialisation and activism in post-crash Dublin. *Housing Studies*, 39(6): 1537–1554. DOI: https://doi.org/10.1080/02673037.2021.2004092.

Okuda, T. (2025). Real estate sector and financial stability risks in Chile. Selected Issues Papers, 2025(011): 1. DOI: https://doi.org/10.5089/9798229002462.018.

Phelps, C., Harris, M.N., Ong, R., Rowley, S., & Wood, G.A. (2021). Within-city dwelling price growth and convergence: Trends from Australia's large cities. *International Journal of Housing Policy*, 21(1): 103–126. DOI: https://doi.org/10.1080/19491247.2020.1851635.

Sabatini, F., Rasse, A., Trebilcock, M.P., & Greene, R. (2020). Ciudad y segregación vapuleadas por el capitalismo. Crítica de los enfoques idealistas (Cities and segregation battered by capitalism. Critique of idealistic approaches – in Spanish). *Urbano*, 23(42): 8-17. DOI: https://doi.org/10.22320/07183607.2020.23.42.01.

Salvi del Pero, A. (2016). *Housing policy in Chile: A case study on two housing programmes for low-income households*. OECD Social, Employment and Migration Working Papers 173. DOI: https://doi.org/10.1787/5jm2hzbnqq33-en.

Sánchez, A.C. (2012). Building blocks for a better functioning housing market in Chile. OECD Social, Employment and Migration Working Papers 943. DOI: https://doi.org/10.1787/5k9fj3hgsnvh-en.

Santana-Rivas, D. (2020). Metropolitan and Regional Geographies of the Financialization of Housing in Chile (1982-2015). The Dream of Housing, the Nightmare of the Debt? *Eure-Revista Latinoamericana De Estudios Urbano Regionales*, 46(139): 162-187. DOI: https://doi.org/10.4067/S0250-71612020000300163.

Simian, J.M. (2010). Logros e Desafíos de La Política Habitacional en Chile (Achievements and challenges of housing policy in Chile – in Spanish). *Estudios Públicos*, 117. Available at: https://www.estudiospublicos.cl/index.php/cep/article/view/414.

Simian, J.M., & Niklitschek, V. (2017). La Industria Inmobiliaria en Chile. Evolución, desafíos y mejores prácticas (The Real Estate Industry in Chile. Evolution, challenges, and best practices – in Spanish). Pearson - ESE Business School Universidad de Los Andes.

Squires, G., & Webber, D.J. (2019). House price affordability, the global financial crisis and the (ir) relevance of mortgage rates. *Regional Studies, Regional Science*, 6(1): 405–420. DOI: https://doi.org/10.1080/21681376.2019.1643777.

Stellinga, B. (2022). Housing financialization as a self-sustaining process. Political obsta cles to the de-financialization of the Dutch housing market. *Housing Studies*, 39(4): 877–900. DOI: https://doi.org/10.1080/02673037.2022.2091117.

Urbina Julio, A. (2024). 'In-betweenness': Migrants experience accessing rental housing in the inner-burbs neighborhoods of Santiago, Chile. *Housing Studies*, 40(4): 867-891. DOI: https://doi.org/10.1080/02673037.2024.2322124.

Velthuis, O. (2015). Making monetary markets transparent: The European Central Bank's communication policy and its interactions with the media. *Economy and Society*, 44(2): 316–340. DOI: https://doi.org/10.1080/03085147.2015.1013355.

Vergara-Perucich, F. (2022). Socio-economic drivers of increasing number of slums in Chile. *GeoScape*, 16(1): 55–64. DOI: https://doi.org/10.2478/geosc-2022-0005.

Vergara-Perucich, F., Aguirre-Nuñez, C., Encinas, F., Hidalgo-Dattwyler, R., Truffello, R., & de Guevara, F.L.(2023). *Political economy of housing in Chile.* Taylor and Francis. London. Routledge. DOI: https://doi.org/10.4324/9781003348771.

Vergara-Perucich, J.F. (2023a). Contribución a la medición de la eficiencia del sistema habitacional subsidiario en Chile (Contribution to measuring the efficiency of the subsidized housing system in Chile – Spanish). *ACE: Architecture, City and Environment*, 18(52). DOI: https://doi.org/10.5821/ace.18.52.11682.

Vergara-Perucich, J.F. (2023b). Financialisation of housing in London: Empirical evidence on housing prices. *Urban Science*, 7(2): 45. DOI: https://doi.org/10.3390/urbansci7020045.

Vergara-Perucich, J.F. (2024). Does land price affect housing prices? Evidence from Santiago, Chile 2008–2019. *GeoScape*, 18(2): 150–161. DOI: https://doi.org/10.2478/geosc-2024-0011.

Vergara-Perucich, J.F., & Boano, C. (2019). Vida urbana neoliberal: Estudio de factores de jerarquización y fragmentación contra el derecho a la ciudad en Chile (Neoliberal urban life: Study of factors of hierarchization and fragmentation against the right to the city in Chile – in SPanish). *Revista de Direito Da Cidade*, 11(3): 426-452. DOI: https://doi.org/10.12957/rdc.2019.38541.

Wijburg, G. (2021). The de-financialization of housing: towards a research agenda. *Housing Studies*, 36(8): 1276-1293. DOI: https://doi.org/10.1080/02673037.2020.1762847.

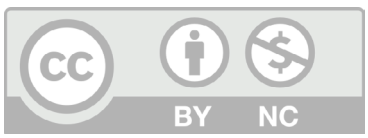
Wu, F., Chen, J., Pan, F., Gallent, N., & Zhang, F. (2020). Assetization: The chinese path to housing financialization. *Annals of the American Association of Geographers*, 110(5): 1483–1499. DOI: https://doi.org/10.1080/24694452.2020.1715195.

Yazdani, M., & Nikzad, M. (2021). Output Losses from Currency Crises and the Role of Central Bank. *Journal of Central Banking Theory and Practice*, 10(3): 79–97. DOI: https://doi.org/10.2478/jcbtp-2021-0025.

Yiu, C.Y. (2023a). A Natural Quasi-Experiment of the Monetary Policy Shocks on the Housing Markets of New Zealand during COVID-19. *Journal of Risk and Financial Management*, *16*(2): 73. DOI: https://doi.org/10.3390/jrfm16020073.

Yiu, C.Y. (2023b). Are Central Banks' Monetary Policies the Future of Housing Affordability Solutions. *Urban Science*, 7(1): 18. DOI: https://doi.org/10.3390/urbansci7010018.

.



Appendix I

Table A1. Variables used for model estimation

Variable of Shock	months	Housing Price Index	Mortgage Rate	Monetary Policy Rate
Housing Price Index	1	1	0	0
Housing Price Index	2	1.461	-0.005	-0.003
Housing Price Index	3	1.824	-0.006	0.007
Housing Price Index	4	1.629	-0.007	-0.009
Housing Price Index	5	1.721	-0.007	-0.027
Housing Price Index	6	1.736	0.009	-0.041
Housing Price Index	7	1.975	0.026	-0.034
Housing Price Index	8	1.992	0.038	-0.026
Housing Price Index	9	2.045	0.039	-0.011
Housing Price Index	10	1.968	0.037	-0.005
Housing Price Index	11	2.018	0.033	0.005
Housing Price Index	12	2.039	0.032	0.016
Housing Price Index	13	2.136	0.030	0.038
Housing Price Index	14	2.167	0.030	0.061
Housing Price Index	15	2.227	0.028	0.089
Housing Price Index	16	2.247	0.028	0.114
Housing Price Index	17	2.304	0.028	0.140
Housing Price Index	18	2.341	0.030	0.165
Housing Price Index	19	2.397	0.031	0.190
Housing Price Index	20	2.427	0.033	0.213
Housing Price Index	21	2.465	0.035	0.234
Housing Price Index	22	2.487	0.037	0.251
Housing Price Index	23	2.517	0.039	0.267
Housing Price Index	24	2.535	0.041	0.279
Housing Price Index	25	2.558	0.043	0.290
Mortgage Rate	1	-	1.000	-
Mortgage Rate	2	-0.199	1.526	0.467
Mortgage Rate	3	-0.629	1.704	0.578
Mortgage Rate	4	-1.699	1.699	0.903
Mortgage Rate	5	-2.274	1.608	0.997
Mortgage Rate	6	-2.363	1.462	0.992
Mortgage Rate	7	-1.708	1.338	1.198
Mortgage Rate	8	-0.910	1.253	1.488
Mortgage Rate	9	0.031	1.199	1.863
Mortgage Rate	10	0.692	1.175	2.286
Mortgage Rate	11	1.370	1.171	2.708
Mortgage Rate	12	1.969	1.190	3.116
Mortgage Rate	13	2.646	1.223	3.506
Mortgage Rate	14	3.212	1.264	3.857
Mortgage Rate	15	3.724	1.304	4.170
Mortgage Rate	16	4.090	1.340	4.432
Mortgage Rate	17	4.420	1.373	4.646
Mortgage Rate	18	4.677	1.405	4.815
Mortgage Rate	19	4.918	1.433	4.948
Mortgage Rate	20	5.091	1.458	5.048
Mortgage Rate	21	5.229	1.479	5.120
Mortgage Rate	22	5.308	1.497	5.168
Mortgage Rate	23	5.368	1.511	5.197
Mortgage Rate	24	5.398	1.522	5.209
Mortgage Rate	25	5.421	1.531	5.211

continuation on the next page

Monetary Policy Rate	1	-	-	1.000
Monetary Policy Rate	2	-0.151	0.111	1.393
Monetary Policy Rate	3	-0.246	0.174	1.686
Monetary Policy Rate	4	-0.628	0.206	1.968
Monetary Policy Rate	5	-0.739	0.213	2.093
Monetary Policy Rate	6	-0.736	0.233	2.185
Monetary Policy Rate	7	-0.695	0.255	2.217
Monetary Policy Rate	8	-0.799	0.273	2.182
Monetary Policy Rate	9	-0.986	0.287	2.123
Monetary Policy Rate	10	-1.232	0.300	2.019
Monetary Policy Rate	11	-1.445	0.312	1.890
Monetary Policy Rate	12	-1.677	0.323	1.747
Monetary Policy Rate	13	-1.913	0.329	1.596
Monetary Policy Rate	14	-2.184	0.330	1.441
Monetary Policy Rate	15	-2.449	0.325	1.287
Monetary Policy Rate	16	-2.704	0.317	1.137
Monetary Policy Rate	17	-2.925	0.308	0.998
Monetary Policy Rate	18	-3.125	0.297	0.873
Monetary Policy Rate	19	-3.298	0.285	0.763
Monetary Policy Rate	20	-3.455	0.272	0.669
Monetary Policy Rate	21	-3.587	0.260	0.589
Monetary Policy Rate	22	-3.699	0.249	0.523
Monetary Policy Rate	23	-3.785	0.239	0.470
Monetary Policy Rate	24	-3.854	0.230	0.430
Monetary Policy Rate	25	-3.906	0.222	0.400

Appendix II

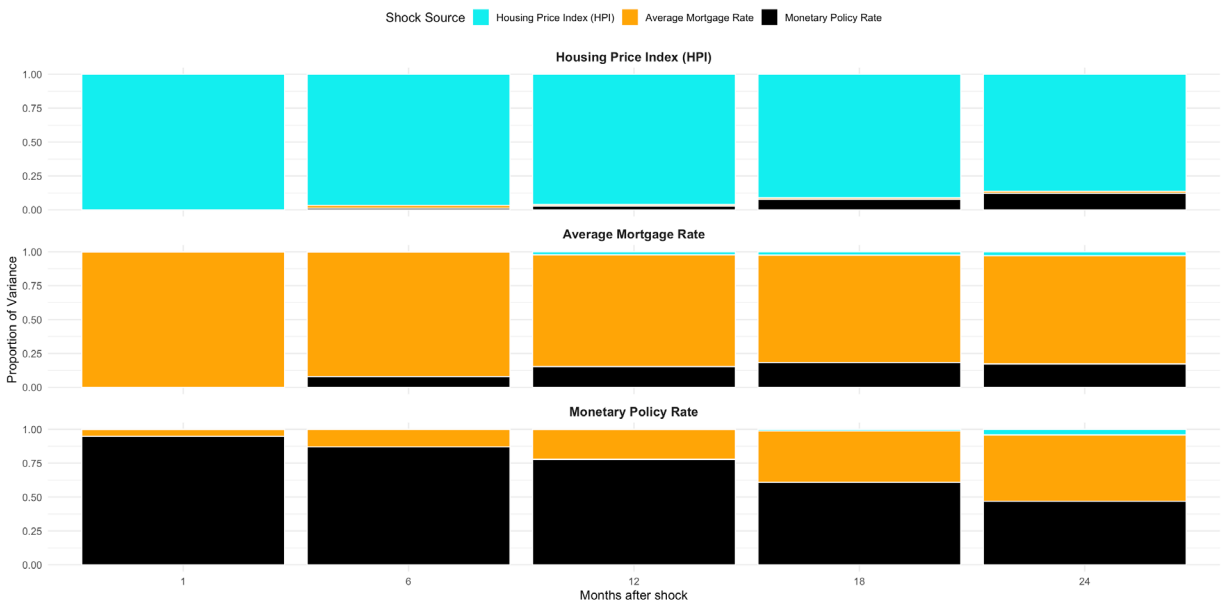


Fig. Appendix. Forecast Error Variance Decomposition (FEVD)
Source: author

The Forecast Error Variance Decomposition (FEVD) provides a quantitative assessment of the dynamic interplay within the system, revealing three key insights. First, the Housing Price Index (HPI) exhibits profound endogeneity. As shown in Figure 3 and Table A2, at a 24-month horizon, 86.3% of its forecast error variance is explained by its own past shocks. This underscores a market with strong in-

ertia, characteristic of a financialised asset. The influence of external factors is limited; shocks to the Monetary Policy Rate explain a growing but modest 12.2% of HPI variance, quantifying the Central Bank's indirect role in steering prices.

Second, the transmission of monetary policy is evident in the Average Mortgage Rate. Policy shocks account for a significant 17.3% of the mortgage rate's variance at 24 months, confirming the credit channel as a key mechanism of influence.

Finally, and most strikingly, the Monetary Policy Rate itself appears highly endogenous. Nearly half (48.9%) of its long-term variance is explained by shocks originating in the mortgage market. This suggests a strong feedback loop where the Central Bank is not merely an exogenous actor but also reacts substantially to credit conditions, complicating a simple cause-and-effect interpretation of its influence.

Table A2. The impact of an impulse-response effect on variables after a standard deviation of shock

Response	Horizon	Shock	Proportion
Housing Price Index (HPI)	1	Housing Price Index (HPI)	1
Housing Price Index (HPI)	1	Average Mortgage Rate	0
Housing Price Index (HPI)	1	Monetary Policy Rate	0
Housing Price Index (HPI)	2	Housing Price Index (HPI)	0.99874
Housing Price Index (HPI)	2	Average Mortgage Rate	0.00043
Housing Price Index (HPI)	2	Monetary Policy Rate	0.000831
Housing Price Index (HPI)	3	Housing Price Index (HPI)	0.996832
Housing Price Index (HPI)	3	Average Mortgage Rate	0.001694
Housing Price Index (HPI)	3	Monetary Policy Rate	0.001474
Housing Price Index (HPI)	4	Housing Price Index (HPI)	0.985365
Housing Price Index (HPI)	4	Average Mortgage Rate	0.00866
Housing Price Index (HPI)	4	Monetary Policy Rate	0.005976
Housing Price Index (HPI)	5	Housing Price Index (HPI)	0.974363
Housing Price Index (HPI)	5	Average Mortgage Rate	0.016049
Housing Price Index (HPI)	5	Monetary Policy Rate	0.009588
Housing Price Index (HPI)	6	Housing Price Index (HPI)	0.967441
Housing Price Index (HPI)	6	Average Mortgage Rate	0.020885
Housing Price Index (HPI)	6	Monetary Policy Rate	0.011673
Housing Price Index (HPI)	7	Housing Price Index (HPI)	0.967528
Housing Price Index (HPI)	7	Average Mortgage Rate	0.020323
Housing Price Index (HPI)	7	Monetary Policy Rate	0.012149
Housing Price Index (HPI)	8	Housing Price Index (HPI)	0.96864
Housing Price Index (HPI)	8	Average Mortgage Rate	0.018163
Housing Price Index (HPI)	8	Monetary Policy Rate	0.013196
Housing Price Index (HPI)	9	Housing Price Index (HPI)	0.969231
Housing Price Index (HPI)	9	Average Mortgage Rate	0.015566
Housing Price Index (HPI)	9	Monetary Policy Rate	0.015203
Housing Price Index (HPI)	10	Housing Price Index (HPI)	0.967611
Housing Price Index (HPI)	10	Average Mortgage Rate	0.013601
Housing Price Index (HPI)	10	Monetary Policy Rate	0.018788
Housing Price Index (HPI)	11	Housing Price Index (HPI)	0.964693
Housing Price Index (HPI)	11	Average Mortgage Rate	0.012076
Housing Price Index (HPI)	11	Monetary Policy Rate	0.023231
Housing Price Index (HPI)	12	Housing Price Index (HPI)	0.960254
Housing Price Index (HPI)	12	Average Mortgage Rate	0.01107
Housing Price Index (HPI)	12	Monetary Policy Rate	0.028676
Housing Price Index (HPI)	13	Housing Price Index (HPI)	0.954611
Housing Price Index (HPI)	13	Average Mortgage Rate	0.010576
Housing Price Index (HPI)	13	Monetary Policy Rate	0.034813
Housing Price Index (HPI)	14	Housing Price Index (HPI)	0.947432
Housing Price Index (HPI)	14	Average Mortgage Rate	0.010524
Housing Price Index (HPI)	14	Monetary Policy Rate	0.042044
Housing Price Index (HPI)	15	Housing Price Index (HPI)	0.939144
Housing Price Index (HPI)	15	Average Mortgage Rate	0.01079
Housing Price Index (HPI)	15	Monetary Policy Rate	0.050066
Housing Price Index (HPI)	16	Housing Price Index (HPI)	0.92997
Housing Price Index (HPI)	16	Average Mortgage Rate	0.011201
Housing Price Index (HPI)	16	Monetary Policy Rate	0.05883
Housing Price Index (HPI)	17	Housing Price Index (HPI)	0.920556
Housing Price Index (HPI)	17	Average Mortgage Rate	0.011688
Housing Price Index (HPI)	17	Monetary Policy Rate	0.067756
Housing Price Index (HPI)	18	Housing Price Index (HPI)	0.911101
Housing Price Index (HPI)	18	Average Mortgage Rate	0.012187
Housing Price Index (HPI)	18	Monetary Policy Rate	0.076712
Housing Price Index (HPI)	19	Housing Price Index (HPI)	0.901951
Housing Price Index (HPI)	19	Average Mortgage Rate	0.012684

continuation on the next three pages

Housing Price Index (HPI)	19	Monetary Policy Rate	0.085364
Housing Price Index (HPI)	20	Housing Price Index (HPI)	0.893119
Housing Price Index (HPI)	20	Average Mortgage Rate	0.013137
Housing Price Index (HPI)	20	Monetary Policy Rate	0.093743
Housing Price Index (HPI)	21	Housing Price Index (HPI)	0.884811
Housing Price Index (HPI)	21	Average Mortgage Rate	0.013534
Housing Price Index (HPI)	21	Monetary Policy Rate	0.101655
Housing Price Index (HPI)	22	Housing Price Index (HPI)	0.877036
Housing Price Index (HPI)	22	Average Mortgage Rate	0.013855
Housing Price Index (HPI)	22	Monetary Policy Rate	0.109108
Housing Price Index (HPI)	23	Housing Price Index (HPI)	0.869926
Housing Price Index (HPI)	23	Average Mortgage Rate	0.01411
Housing Price Index (HPI)	23	Monetary Policy Rate	0.115964
Housing Price Index (HPI)	24	Housing Price Index (HPI)	0.863434
Housing Price Index (HPI)	24	Average Mortgage Rate	0.014303
Housing Price Index (HPI)	24	Monetary Policy Rate	0.122263
Average Mortgage Rate	1	Housing Price Index (HPI)	0.001108
Average Mortgage Rate	1	Average Mortgage Rate	0.998892
Average Mortgage Rate	1	Monetary Policy Rate	0
Average Mortgage Rate	2	Housing Price Index (HPI)	0.000428
Average Mortgage Rate	2	Average Mortgage Rate	0.974893
Average Mortgage Rate	2	Monetary Policy Rate	0.024679
Average Mortgage Rate	3	Housing Price Index (HPI)	0.000339
Average Mortgage Rate	3	Average Mortgage Rate	0.955864
Average Mortgage Rate	3	Monetary Policy Rate	0.043798
Average Mortgage Rate	4	Housing Price Index (HPI)	0.000261
Average Mortgage Rate	4	Average Mortgage Rate	0.94199
Average Mortgage Rate	4	Monetary Policy Rate	0.057749
Average Mortgage Rate	5	Housing Price Index (HPI)	0.000221
Average Mortgage Rate	5	Average Mortgage Rate	0.932324
Average Mortgage Rate	5	Monetary Policy Rate	0.067454
Average Mortgage Rate	6	Housing Price Index (HPI)	0.001348
Average Mortgage Rate	6	Average Mortgage Rate	0.91985
Average Mortgage Rate	6	Monetary Policy Rate	0.078802
Average Mortgage Rate	7	Housing Price Index (HPI)	0.004938
Average Mortgage Rate	7	Average Mortgage Rate	0.903388
Average Mortgage Rate	7	Monetary Policy Rate	0.091673
Average Mortgage Rate	8	Housing Price Index (HPI)	0.010574
Average Mortgage Rate	8	Average Mortgage Rate	0.884569
Average Mortgage Rate	8	Monetary Policy Rate	0.104857
Average Mortgage Rate	9	Housing Price Index (HPI)	0.015268
Average Mortgage Rate	9	Average Mortgage Rate	0.867033
Average Mortgage Rate	9	Monetary Policy Rate	0.117699
Average Mortgage Rate	10	Housing Price Index (HPI)	0.018585
Average Mortgage Rate	10	Average Mortgage Rate	0.851322
Average Mortgage Rate	10	Monetary Policy Rate	0.130093
Average Mortgage Rate	11	Housing Price Index (HPI)	0.020555
Average Mortgage Rate	11	Average Mortgage Rate	0.837467
Average Mortgage Rate	11	Monetary Policy Rate	0.141978
Average Mortgage Rate	12	Housing Price Index (HPI)	0.022004
Average Mortgage Rate	12	Average Mortgage Rate	0.825029
Average Mortgage Rate	12	Monetary Policy Rate	0.152966
Average Mortgage Rate	13	Housing Price Index (HPI)	0.023001
Average Mortgage Rate	13	Average Mortgage Rate	0.814525
Average Mortgage Rate	13	Monetary Policy Rate	0.162474
Average Mortgage Rate	14	Housing Price Index (HPI)	0.023731
Average Mortgage Rate	14	Average Mortgage Rate	0.806173
Average Mortgage Rate	14	Monetary Policy Rate	0.170096
Average Mortgage Rate	15	Housing Price Index (HPI)	0.024127
Average Mortgage Rate	15	Average Mortgage Rate	0.800102
Average Mortgage Rate	15	Monetary Policy Rate	0.17577
Average Mortgage Rate	16	Housing Price Index (HPI)	0.024393
Average Mortgage Rate	16	Average Mortgage Rate	0.795968
Average Mortgage Rate	16	Monetary Policy Rate	0.179639
Average Mortgage Rate	17	Housing Price Index (HPI)	0.024614
Average Mortgage Rate	17	Average Mortgage Rate	0.793445
Average Mortgage Rate	17	Monetary Policy Rate	0.181941
Average Mortgage Rate	18	Housing Price Index (HPI)	0.024945
Average Mortgage Rate	18	Average Mortgage Rate	0.792156
Average Mortgage Rate	18	Monetary Policy Rate	0.182899
Average Mortgage Rate	19	Housing Price Index (HPI)	0.025384
Average Mortgage Rate	19	Average Mortgage Rate	0.791873
Average Mortgage Rate	19	Monetary Policy Rate	0.182742
Average Mortgage Rate	20	Housing Price Index (HPI)	0.025957
Average Mortgage Rate	20	Average Mortgage Rate	0.79235
Average Mortgage Rate	20	Monetary Policy Rate	0.181693

Average Mortgage Rate	21	Housing Price Index (HPI)	0.026619
Average Mortgage Rate	21	Average Mortgage Rate	0.793407
Average Mortgage Rate	21	Monetary Policy Rate	0.179974
Average Mortgage Rate	22	Housing Price Index (HPI)	0.027386
Average Mortgage Rate	22	Average Mortgage Rate	0.794838
Average Mortgage Rate	22	Monetary Policy Rate	0.177776
Average Mortgage Rate	23	Housing Price Index (HPI)	0.028239
Average Mortgage Rate	23	Average Mortgage Rate	0.7965
Average Mortgage Rate	23	Monetary Policy Rate	0.17526
Average Mortgage Rate	24	Housing Price Index (HPI)	0.029189
Average Mortgage Rate	24	Average Mortgage Rate	0.798264
Average Mortgage Rate	24	Monetary Policy Rate	0.172547
Monetary Policy Rate	1	Housing Price Index (HPI)	0.001323
Monetary Policy Rate	1	Average Mortgage Rate	0.05105
Monetary Policy Rate	1	Monetary Policy Rate	0.947627
Monetary Policy Rate	2	Housing Price Index (HPI)	0.001132
Monetary Policy Rate	2	Average Mortgage Rate	0.092333
Monetary Policy Rate	2	Monetary Policy Rate	0.906535
Monetary Policy Rate	3	Housing Price Index (HPI)	0.001872
Monetary Policy Rate	3	Average Mortgage Rate	0.102954
Monetary Policy Rate	3	Monetary Policy Rate	0.895174
Monetary Policy Rate	4	Housing Price Index (HPI)	0.001402
Monetary Policy Rate	4	Average Mortgage Rate	0.117609
Monetary Policy Rate	4	Monetary Policy Rate	0.880989
Monetary Policy Rate	5	Housing Price Index (HPI)	0.000965
Monetary Policy Rate	5	Average Mortgage Rate	0.125568
Monetary Policy Rate	5	Monetary Policy Rate	0.873467
Monetary Policy Rate	6	Housing Price Index (HPI)	0.000755
Monetary Policy Rate	6	Average Mortgage Rate	0.128678
Monetary Policy Rate	6	Monetary Policy Rate	0.870566
Monetary Policy Rate	7	Housing Price Index (HPI)	0.000595
Monetary Policy Rate	7	Average Mortgage Rate	0.134679
Monetary Policy Rate	7	Monetary Policy Rate	0.864726
Monetary Policy Rate	8	Housing Price Index (HPI)	0.000506
Monetary Policy Rate	8	Average Mortgage Rate	0.144352
Monetary Policy Rate	8	Monetary Policy Rate	0.855142
Monetary Policy Rate	9	Housing Price Index (HPI)	0.000559
Monetary Policy Rate	9	Average Mortgage Rate	0.158119
Monetary Policy Rate	9	Monetary Policy Rate	0.841323
Monetary Policy Rate	10	Housing Price Index (HPI)	0.000665
Monetary Policy Rate	10	Average Mortgage Rate	0.175966
Monetary Policy Rate	10	Monetary Policy Rate	0.823369
Monetary Policy Rate	11	Housing Price Index (HPI)	0.000868
Monetary Policy Rate	11	Average Mortgage Rate	0.19713
Monetary Policy Rate	11	Monetary Policy Rate	0.802002
Monetary Policy Rate	12	Housing Price Index (HPI)	0.001193
Monetary Policy Rate	12	Average Mortgage Rate	0.220905
Monetary Policy Rate	12	Monetary Policy Rate	0.777902
Monetary Policy Rate	13	Housing Price Index (HPI)	0.001834
Monetary Policy Rate	13	Average Mortgage Rate	0.246647
Monetary Policy Rate	13	Monetary Policy Rate	0.751519
Monetary Policy Rate	14	Housing Price Index (HPI)	0.002885
Monetary Policy Rate	14	Average Mortgage Rate	0.273525
Monetary Policy Rate	14	Monetary Policy Rate	0.72359
Monetary Policy Rate	15	Housing Price Index (HPI)	0.004495
Monetary Policy Rate	15	Average Mortgage Rate	0.300813
Monetary Policy Rate	15	Monetary Policy Rate	0.694692
Monetary Policy Rate	16	Housing Price Index (HPI)	0.006638
Monetary Policy Rate	16	Average Mortgage Rate	0.327761
Monetary Policy Rate	16	Monetary Policy Rate	0.665601
Monetary Policy Rate	17	Housing Price Index (HPI)	0.009383
Monetary Policy Rate	17	Average Mortgage Rate	0.35376
Monetary Policy Rate	17	Monetary Policy Rate	0.636857
Monetary Policy Rate	18	Housing Price Index (HPI)	0.012695
Monetary Policy Rate	18	Average Mortgage Rate	0.378369
Monetary Policy Rate	18	Monetary Policy Rate	0.608936
Monetary Policy Rate	19	Housing Price Index (HPI)	0.016607
Monetary Policy Rate	19	Average Mortgage Rate	0.401304
Monetary Policy Rate	19	Monetary Policy Rate	0.582089
Monetary Policy Rate	20	Housing Price Index (HPI)	0.021019
Monetary Policy Rate	20	Average Mortgage Rate	0.422431
Monetary Policy Rate	20	Monetary Policy Rate	0.55655
Monetary Policy Rate	21	Housing Price Index (HPI)	0.025858
Monetary Policy Rate	21	Average Mortgage Rate	0.441711
Monetary Policy Rate	21	Monetary Policy Rate	0.532431
Monetary Policy Rate	22	Housing Price Index (HPI)	0.030977

Monetary Policy Rate	22	Average Mortgage Rate	0.459195
Monetary Policy Rate	22	Monetary Policy Rate	0.509827
Monetary Policy Rate	23	Housing Price Index (HPI)	0.036291
Monetary Policy Rate	23	Average Mortgage Rate	0.474977
Monetary Policy Rate	23	Monetary Policy Rate	0.488732
Monetary Policy Rate	24	Housing Price Index (HPI)	0.041686
Monetary Policy Rate	24	Average Mortgage Rate	0.489195
Monetary Policy Rate	24	Monetary Policy Rate	0.469119