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Housing Price Expectations and the Macroeconomy: Evidence from Korea's Housing-Centric Economy*

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Using the Bank of Korea's Consumer Tendency Survey, we show that house-price expectations in Korea are volatile, persistent, and lead subsequent growth in house prices. Expectations co-move with contemporaneous macro-financial conditions rather than lagged house prices, suggesting that households update beliefs reflecting current news rather than simply extrapolating past prices. In a monthly VAR, upward revisions to expectations raise house prices, household debt, real activity, and CPI. Expectations also operate as a distinct monetary-policy transmission channel: rate cuts lift expectations, amplifying effects on prices, debt, and activity; this channel is stronger under an accommodative macroprudential stance and muted under a restrictive stance. A counterfactual exercise underscores the stakes: anchoring expectations at their April 2020 level from May 2020 to May 2022 would have left real house prices 11.7 percent lower by May 2025 and the household-debt-to-GDP ratio 2.9 percentage points lower. Three policy implications are: (1) treat house-price expectations as a distinct transmission channel; (2) coordinate interest-rate policy with macroprudential tools; and (3) anchor expectations through clear, consistent communication.

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I. Introduction

Movements in house prices can influence household consumption (Campbell & Cocco, 2007; Iacoviello, 2005; Iacoviello & Neri, 2010) and credit (Gelain et al., 2013), thereby influencing the broader macroeconomy and financial stability. These effects are likely to be even more pronounced in Korea, where housing constitutes a dominant share of household assets: real estate accounts for 71.5 percent of total household assets (Survey of Household Finances and Living Conditions, 2023), and mortgages comprise 58.3 percent of household credit (Bank of Korea, Oct. 2024).

Expectations are central to these dynamics. When households believe housing prices will rise, they pull purchases forward; speculative demand enters; transactions and borrowing increase; and prices move in the anticipated direction, forming a self-fulfilling feedback loop. While this mechanism operates in many markets, it is especially potent in Korea's apartment-dominated housing market: units are relatively standardized, trade frequently, and are widely regarded as a store-of-value financial asset (Seong et al., 2022). These features make prices highly salient and magnify the role of expectations in driving outcomes.

Housing price expectations are also highly relevant for monetary policy. Korea offers a timely case for studying expectations within an Integrated Policy Framework (IPF). Recent episodes of "maxed out loans" (영끌) and "panic buying" illustrate how elevated expectations can fuel rapid price increases and debt accumulation, heightening financial stability risks. The Bank of Korea's dual mandate of price stability and financial stability provides an institutional basis for coordinating monetary and macroprudential tools. Recent policy communications, including the Monetary Policy Board statements of August 2024 and July 2025 and Governor Rhee's speeches in 2025, explicitly cite housing prices and household debt as reasons for holding the policy rate steady, even when inflation and output gap considerations alone might argue for a cut. This underscores how financial stability concerns, often stemming from a heated housing market, can constrain monetary policy.[1]

Against this backdrop, this paper studies how housing price expectations behave, how they matter for the macroeconomy, and what this implies for policy.

We begin by documenting the statistical properties of households' housing price expectations. We use the Bank of Korea's Consumer Tendency Survey, which elicits housing-price and price-level expectations on a common diffusion-index scale. We refer to

[1] This policy decision exemplifies an integrated policy framework in practice. See Rhee, July 2025, ADB-BOK-JIMF Keynote Speech, Available at: https://www.bok.or.kr/eng/bbs/E0002382/view.do?nttId=10092506&menuNo=400074

the housing measure as the HPECSI (Housing Price Expectations Consumer Sentiment Index) and compare it directly with the survey's price-level expectations index (named 'Prospective Prices'). The common wording and scale enable clean, within-survey comparisons at a monthly frequency.[2]

We establish three facts. First, housing price expectations are much more volatile than price-level expectations, yet they display a comparable degree of persistence; the sum of autoregressive coefficients is about 0.90 for the HPECSI versus 0.95 for Prospective Prices. Second, the HPECSI systematically leads realized housing price growth, whereas price-level expectations are largely contemporaneous with CPI inflation, indicating distinct temporal linkages across the two expectation measures. Third, in terms of formation, housing price expectations—despite their persistence—co-move with contemporaneous macro and financial information (industrial production, equity prices, interest rates, and housing starts), while lagged housing price growth is not statistically significant once these controls are included. This pattern suggests a forward-looking component: households appear to adjust their beliefs actively in response to current macro-financial news rather than simply extrapolating last month's housing price change. By contrast, price-level expectations seem more backward-looking, with contemporaneous information playing a smaller role and lagged CPI remaining an important determinant.

After documenting these properties, we quantify the macroeconomic effects using a monthly VAR with a recursive identification that reflects survey timing. Exogenous increases in housing price expectations are expansionary: in the baseline VAR, a one-standard-deviation HPECSI innovation lifts industrial production by about 0.28 percent and raises CPI by just under 0.1 percent, with both responses peaking at three months. Real housing prices and household debt also rise, with effects building more gradually and peaking around six to seven months. Notably, by three to four months after the shock, growth in housing prices and household debt outpaces growth in industrial production, suggesting that overheated expectations can spur credit expansion and financial imbalances.

Next, we examine the macroeconomic implications of *endogenous* movements in expectations—that is, how monetary easing shifts the HPECSI and how much of the macro response operates through expectations. We identify an expansionary monetary policy shock (an unexpected policy-rate cut in the VAR) and trace the sequence of responses. The shock raises the HPECSI, which peaks at about 0.8 percent around three months before fading. The macro responses mirror those following an exogenous expectations shock: industrial production, CPI, and real housing prices rise with short lags as expectations increase. Intuitively, beyond the conventional intertemporal-substitution

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[2] "Prospective Prices" is the Consumer Tendency Survey's diffusion index on the expected price level (responses: rise / unchanged / fall). It serves as a qualitative measure of *inflation expectations* and is *distinct* from the Bank of Korea's numeric one-year-ahead inflation-expectations series reported in percent.

channel, an expectation channel operates: easier policy improves financing conditions and signals a more supportive outlook; households update beliefs and bring purchases forward— amplifying the effects of monetary policy on housing prices, household debt, and real activity.

To visualize the incremental role of expectations, we run a "blocked-expectations-channel counterfactual" in the VAR: we hold housing price expectations fixed along their pre-shock path while leaving all other transmission mechanisms intact. Relative to the baseline, the responses of industrial production and CPI to a monetary policy shock shrink by roughly 20–30 percent, and the house-price response becomes much smaller and, at many horizons, not statistically distinguishable from zero. In other words, a meaningful share of monetary transmission, especially to housing prices, operates through movements in expectations. (Because confidence bands overlap at several horizons, we view these gaps as economically large but measured with uncertainty.)

Finally, we show that this expectations-mediated transmission is state-dependent. Using local projections that split the sample based on the alignment between monetary and macroprudential stance, the effect of a rate cut on housing price expectations is stronger and more persistent when borrower-based constraints are loose (high LTV/DTI/DSR thresholds) and muted, and often insignificant, when they are stringent. This result shows that policy mix matters: macroprudential settings can amplify or dampen the expectations channel of monetary policy.

A counterfactual clarifies the stakes. If expectations had been anchored at its April 2020 level throughout May 2020–May 2022, real house prices would have been 11.7 percent lower by May 2025; the household-debt-to-GDP ratio would have been 2.9 percentage points lower. These magnitudes suggest that managing expectations—and interrupting self-fulfilling run-ups—can materially curb both prices and leverage during overheating episodes.

In a highly leveraged, housing centric economy where monetary policy is at times constrained by financial stability risks, as in Korea, the evidence implies three practical lessons: (1) treat housing price expectations as an explicit transmission channel in projections and risk assessments; (2) use the policy mix by tightening borrower based tools when easing rates to shape expectations and prevent self- fulfilling surges; and (3) anchor expectations through clear, consistent communication and credible guardrails.

Related Literature: Extensive research provides evidence that housing price expectations can influence both actual housing prices and the broader macroeconomy. For instance, Lambertini, Mendicino, and Punzi (2013) employ a VAR framework to show that rising housing price expectations have significant upward effects on GDP, consumption, inflation, housing prices, and credit. Towbin and Weber (2015) find that

housing price expectations are a main driver of US house price boom and also have a significant impact on GDP. This expectation-driven mechanism has been emphasized as a key driver of the U.S. housing boom and bust of the 2000s (Kaplan, Mitman, and Violante, 2020), with subsequent work showing that housing booms arise from the interaction of optimistic price expectations, relaxed credit conditions, and strong housing market segmentation (Greenwald and Guren, 2025). A number of studies examine the implications of housing price expectations for financial stability (see, e.g., Brueckner, Calem and Nakamura, 2016; Armona et al., 2019; Bailey et al., 2019; Chopra et al., 2023; Kuchler et al., 2023; Qian, 2023; De Stefani, 2017).

Turning to the Korean context, relatively few studies have analyzed the impact of housing price expectations—as opposed to realized housing prices—on the broader macroeconomy. Choi and Rhim (2009) show that housing price expectations have positive effects on industrial production and consumer goods sales. Evidence on housing prices, however, remains mixed: Jeon and Kwon (2020) and Lee (2013) report positive effects, whereas Lim and Lim (2017) and Kim (2022) find no such effects.

Relative to the literature on Korea, we make the following contributions. First, to our knowledge, this is the first study to comprehensively analyze housing price expectations in Korea within a macro-financial system that includes industrial production, consumer prices, household debt, and interest rates.[3] Second, we provide the first within-survey comparison (for Korea) of consumer-price and housing-price expectations—covering persistence, volatility, and lead–lag relations—based on identical question wording and an identical five-point diffusion-index scale in the Bank of Korea's Consumer Tendency

[3] Previous studies that have used the HPECSI from the Bank of Korea's Consumer Survey are listed below. These studies differ from our paper in that they either exclude macroeconomic variables beyond the housing market from their models or treat them as exogenous when included.

Author	Model	Key Variables	Key Findings
Lee and Jin (2013)	VAR	Housing price expectations, housing prices * Based primarily on KB's Buyer-Seller Sentiment Index (survey of real estate agencies), Jan. 2000 – Dec. 2012 Also based on BOK data (Aug. 2008 – Dec. 2012)	Housing price expectations—especially those not explained by macroeconomic variables—significantly influence housing price movements.
Lim and Lim (2017)	Panel VAR	Housing price expectations, news coverage, housing prices, housing trading volume * Jul. 2008 – Dec. 2016	Housing price expectations account for 10 percent of housing price variation and 14 percent of transaction volume variation.
Kim (2022)	VAR	Endogenous variables: Housing price expectations, housing prices, housing transaction volume Exogenous variables: Real rents, mortgage interest rates, leading economic index, real M2, inflation rate, change in unsold housing units, housing market regulation dummy * Jan. 2013 – Jan. 2022	Housing price expectations do not predict apartment price changes but show predictive power for transaction volume.

Survey.[4] Third, we quantify the impact of housing price expectations on realized house prices and household debt through counterfactual analysis in a VAR. Fourth, we show that the response of expectations—and hence monetary-policy transmission—is state-dependent with respect to macroprudential stance, complementing prior work on policy interactions that does not study housing price expectations explicitly (e.g., Van der Ghote, 2021; Revelo et al., 2020).

The remainder of the paper proceeds as follows. Section II characterizes housing price expectations and contrasts them with price-level expectations. Section III quantifies macro effects and counterfactuals in a VAR. Section IV studies state dependence using local projections. Section V concludes with policy implications.

II. Characteristics of Housing Price Expectations

We begin by documenting the statistical properties of households' housing price expectations using a diffusion index from the Bank of Korea's monthly Consumer Tendency Survey. Respondents indicate whether they expect 12-month-ahead housing prices to increase, be unchanged, or decrease. We aggregate these responses into the Housing Price Expectations Consumer Sentiment Index (HPECSI), where 100 denotes neutrality—equal shares expecting increases and declines—and values above (below) 100 indicate a net balance expecting increases (declines).[5]

Both the Bank of Korea (BOK) and Kookmin Bank (KB) publish monthly housing-price sentiment series, but their survey universes differ: the BOK samples general households nationwide, whereas KB's "price-outlook" series draws on real-estate brokerages (Table 1). Because general households are the primary decision-makers in housing transactions—and because the BOK survey also elicits price-level expectations ('Prospective Prices') on the same diffusion-index scale, enabling direct comparisons—we use the BOK's HPECSI for our quantitative analysis.[6] That said, the two indices are highly correlated (correlation coefficient = 0.93), and our main conclusions remain unchanged when the KB index is used; these results are available upon request.

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[4] In comparison, the University of Michigan survey elicits inflation and housing expectations on different scales—numeric for inflation versus Likert-type for housing—limiting direct comparability.

[5] The index is calculated based on responses to the question: "Compared to the present, how do you expect housing prices in Korea to change one year from now?" The score is computed as follows: 100 + (percentage responding "increase significantly" + 0.5 × "increase slightly") − (percentage responding "decrease significantly" + 0.5 × "decrease slightly")

[6] Although the survey was launched in July 2008, the question at that time included commercial properties, rendering it inconsistent with the current format. To ensure methodological consistency, the analysis utilizes data from January 2013 onward.

[Table 1] Overview of Housing Price Expectation Indicators

	Housing Price Expectation CSI (HPECSI)	Housing Price Outlook Index
Survey Institution	BOK	KB
Survey Content	Housing price after 1 year	Apartment price after 2–3 months
Survey Target	2,500 households nationwide	Approx. 6,000 real estate agencies nationwide
Survey Period	Monthly, within ±7 days of the 15th	Monthly, the week including the 15th (Mon–Fri)

Note: In practice, the BOK survey is typically conducted for one week and administered in the earlier part of each month, so that many respondents answer at broadly the same pre-determined time.
Sources: BOK, Kookmin Bank

2.1. High Volatility and Persistence

Housing price expectations display pronounced cycles—large amplitudes and long phase durations. Figure 1 shows that the HPECSI (solid line) undergoes sizable directional swings, with multi-month runs in the same direction and sharp reversals when regimes shift. To benchmark magnitudes, we compare the HPECSI with Prospective Prices (dashed line).

[Figure 1] Trends in Housing Price and Price Level Expectations

Note: Price-level expectations measure consumers' expectations for consumer prices one year ahead relative to current levels and are constructed in the same manner as the housing price expectations.
Source: BOK Consumer Survey

[Table 2] Measurement Results for the Volatility and Persistence of Expectations

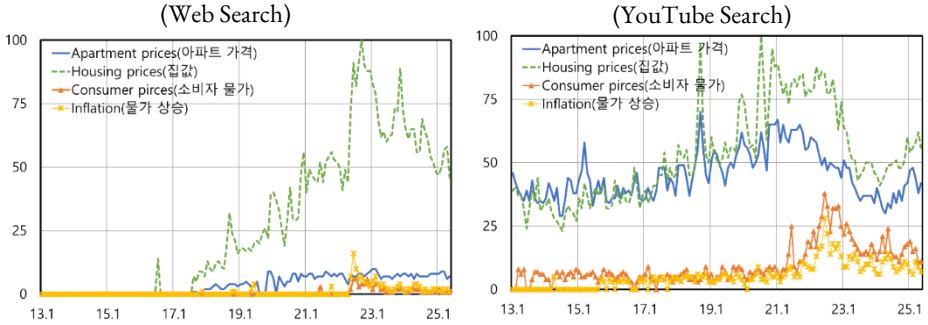
	Housing Price Expectations	Price Level Expectations
Mean	7.00	41.44
Standard Deviation	14.27	7.53
Coefficient of Variation	2.04	0.18
Persistence	0.90	0.95

Note: Mean values are calculated by subtracting 100 from the raw data over the period January 2013–May 2025. Persistence is defined as the sum of coefficients from an AR(3) specification, reflecting short-term dynamics in monthly data.
Sources: BOK, authors' calculations.

Table 2 reports markedly higher volatility for housing price expectations—the standard deviation is 14.27 and the coefficient of variation (CV) is 2.04—relative to price-level expectations (CV = 0.18). Persistence is similar across the two series: the sum of autoregressive coefficients is 0.90 for the HPECSI and 0.95 for Prospective Prices (implying slightly longer persistence for the latter).

Several mechanisms help explain why housing price expectations are more volatile than price-level expectations. First, aggregation: the overall price level reflects a broad consumption basket, so idiosyncratic item shocks offset one another; housing expectations pertain to a single market/asset class, leaving little scope for averaging. Second, institutional anchoring: the growth rate of the price level is explicitly targeted (2%) and communicated by the central bank, which helps anchor beliefs; by contrast, no authority targets house prices, so there is no comparable anchor. Third, framing and attention: households often view housing as an investment rather than a consumption good, updating beliefs more aggressively in response to macro/financial news (interest rates, credit conditions, policy/regulatory headlines), while devoting relatively less attention to the overall price level.[7] Consistent with this, Google search trends (web and YouTube) show persistently higher volumes for "housing prices" than for "consumer prices" and "inflation" (Figure 2). Together, these forces help account for the HPECSI's high volatility.

[Figure 2] Search Trends for Housing Prices and Inflation



Note: The words in parentheses represent the actual Korean terms input
Source: Google Trends

2.2. Leading Relationship

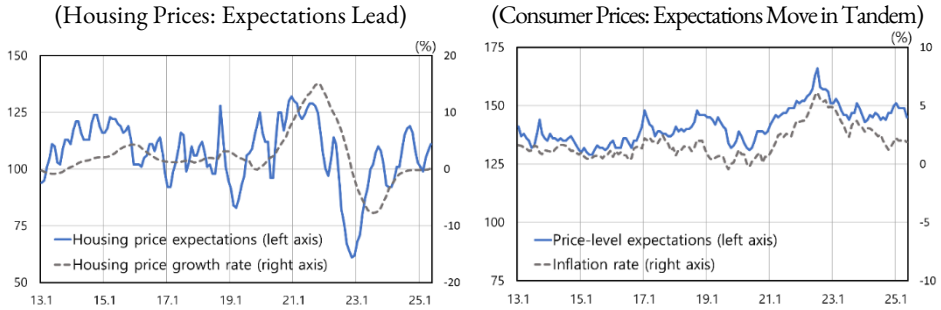
Housing price expectations lead realized house-price growth, whereas price-level expectations generally coincide with or lag observed inflation. Figure 3 juxtaposes each expectations series with the corresponding year-on-year price growth. Both pairs co-move

[7] This will be further explored in Section 2.3.

strongly, but the HPECSI tends to turn earlier than actual housing prices. The same pattern appears with month-on-month growth (Appendix A): changes in the HPECSI precede house-price inflation at the monthly frequency.

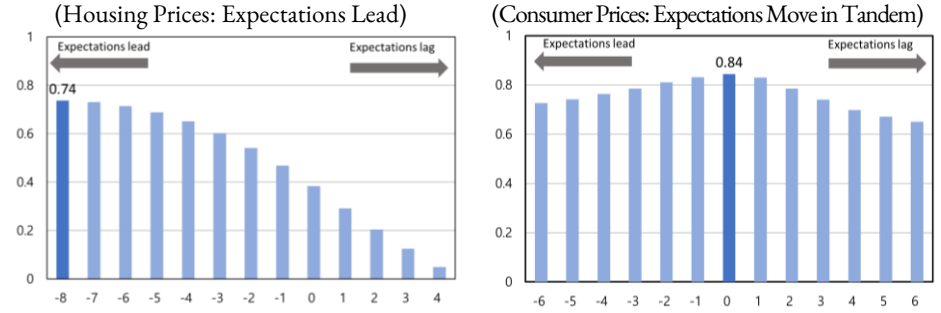
The cross-correlation function (CCF) formalizes this lead–lag relation. Figure 4 shows that the HPECSI leads the house-price growth by about eight months—the CCF peaks around lag −8 (negative lags denote expectations leading prices) with a correlation of 0.74. By contrast, the CCF for Prospective Prices (price-level expectations) peaks at lag 0, indicating a predominantly contemporaneous association with CPI inflation. Taken together, these results point to a forward-looking role for housing price expectations.

[Figure 3] Comparison of Expectations and Actual Price Changes



Note: Year-on-year growth rate
Sources: BOK, KB Land, authors' calculations

[Figure 4] Cross-Correlation Between Price Growth Rates and Expectations



Note: Cross-correlation between the year-on-year price growth rate in month t and the expectation index in month t + i; the x-axis denotes the lead or lag period i.
Sources: BOK, KB Land, authors' calculations

To assess whether expectations contain predictive information for prices, we run Granger-causality tests (Table 3). We reject the null that housing price expectations do not Granger-cause subsequent house-price growth at conventional significance levels for several selected lag lengths, while we generally fail to reject the reverse. This forward-

looking pattern is consistent with Choi et al. (2009), who use the Doctor Apartment Price Outlook Index.

In sharp contrast, we reject the null that realized inflation does not Granger-cause subsequent inflation expectations, while we fail to reject the reverse. This suggests that inflation expectations are more reflective of past price developments than predictive of future inflation. The observation aligns with prior research (e.g., Lee, 2012; Nam et al., 2018), which finds that inflation expectations in Korea tend to be backward-looking. Because year-on-year growth embeds past data, we replicate the CCF and Granger analyses using month-on-month growth; the results overall mirror the baseline (Appendix A).[8]

[Table 3] Granger Causality Test Results Between Price Growth Rates and Expectations

(Housing Prices: Expectations Lead)

	Null Hypothesis	
	Expectations ↛ Prices	Prices ↛ Expectations
Lag=3	10.06***	2.09
Lag=6	5.32***	2.00*
Lag=12	5.05***	1.38

(Consumer Prices: Expectations Lag)

	Null Hypothesis	
	Expectations ↛ Prices	Prices ↛ Expectations
Lag=3	0.80	7.27***
Lag=6	0.60	3.90***
Lag=12	1.22	1.87**

Note: Reported values are F-statistics from Granger causality tests; ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Sources: BOK, KB Land, authors' calculations

2.3. Determinants of Housing Price Expectations

Motivated by the evidence above (in Section 2.1-2.2), we examine whether housing price expectations are driven by macro-financial information available at the survey date. Following the spirit of Lee et al. (2013), we estimate the monthly regression

$$Y_t = \beta_0 + \beta_1 Y_{t-1} + X_t{}'B + \varepsilon_t, \quad t = \text{January 2013, ..., May 2025} \tag{1}$$

where t denotes the survey field window in month t. The vector Y_t serves as the dependent variable, capturing either HPECSI or Prospective Prices, while the lagged term Y_{t-1} captures momentum/persistence in expectations. The vector X_t collects information observable to households at t: (i) released macro indicators for $t-1$ (house-price growth, housing starts, and consumer-price inflation) and (ii) contemporaneous market variables observed during the field window (KOSPI, overnight call rate, and KRW/USD). The full variable list is reported in Table 4.

[8] For the interested readers, Appendix B presents detailed characteristics of housing price expectations by demographic and statistical attributes, while Appendix C reports regional dynamics.

[Table 4] Estimation Results of the Expectation Determination Equation

Variables	Housing Price Expectations (1)	Price-Level Expectations (2)
Lagged dependent variable	0.94***	0.89***
	(18.72)	(29.17)
Real housing price $_{t-1}$	-2.37	0.49**
(MoM, %)	(-1.29)	(2.29)
Housing starts $_{t-1}$	-0.02	0.01*
(MoM, %)	(-1.65)	(1.88)
Consumer Price Index $_{t-1}$	-3.29	3.19***
(MoM, %)	(-1.60)	(4.45)
Industrial production $_{t-1}$	0.92**	0.11
(MoM, %)	(2.35)	(0.83)
KOSPI $_{t}$	0.31**	0.01
(MoM, %)	(2.14)	(0.13)
Call rates $_{t}$	-14.72***	3.64*
(MoM, %p)	(-2.77)	(1.72)
KRW/USD exchange rate $_{t}$	-0.15	0.25**
(MoM, %)	(-0.53)	(2.41)
Number of observations:	148	148
Adj R^2	0.85	0.92

Note: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Parentheses report t-statistics based on Newey–West (HAC) robust standard errors. Re-estimating column (1) with additional controls—housing permits, unsold inventories, and a macroprudential policy index—does not affect the baseline results, and these additional controls are not statistically significant (results available upon request).

Sources: BOK, KB Land, KOSIS, authors' calculations.

Column (1) of Table 4 reports the estimates for HPECSI. The lagged dependent variable is highly significant, confirming persistence in HPECSI, as discussed in Section 2.1. Industrial production and the KOSPI, which serve as proxies for household income and wealth as well as overall economic conditions, enter with positive coefficients. This is consistent with the conventional intuition that stronger fundamentals raise purchasing power and, in turn, support higher housing price expectations. By contrast, higher interest rates and greater housing starts enter with negative coefficients (although the statistical significance of the latter is weak), in line with standard economic theory: tighter financing conditions and anticipated future supply put downward pressure on future housing prices, thereby lowering expected prices.

Past house-price growth (t−1) is not statistically significant. Conditional on the macro-financial information available at the survey date, households do not simply extrapolate

last month's increase into higher expectations. Taken together with the cross-correlation and Granger-causality evidence in Section 2.2, this points to a relatively forward-looking formation of housing price expectations.

This result is in contrast with price-level expectations. Even after controlling for the influence of its own lagged term, inflation expectations remain significantly affected by past inflation (see column (2)).

III. Housing Price Expectations and the Macroeconomy

Building on Section II's evidence that housing price expectations are highly volatile, respond to macro and financial information, and lead realized house-price growth, we hypothesize that both exogenous innovations and endogenous movements in these expectations have meaningful macroeconomic consequences. This section investigates those consequences, quantifying their effects on house prices, household debt (or credit), inflation, and real activity.

3.1. Analysis Overview

The primary goal of this section is to identify structural shocks to housing price expectations and to trace their transmission through endogenous feedback loops. A VAR framework is well suited for capturing such system-wide interactions. As such, we employ a standard vector autoregression with exogenous variables (VARX):

$$\begin{aligned} &Y_t = C + A_1 Y_{t-1} + A_2 Y_{t-2} + \Gamma_1 X_t + u_t, \\ &u_t = B\epsilon_t, \quad \epsilon_t \sim (0,\, I_5), \qquad t = \text{January 2013, ..., May 2025} \end{aligned} \tag{2}$$

Here, the endogenous vector $Y_{(5\times1)}$ consists of housing price expectations, total industrial production, real housing prices,[9] the CPI, and the call rates. The constant vector is $C_{(5\times1)}$. The exogenous vector $X_{(3\times1)}$ includes U.S. industrial production, the U.S. effective federal funds rate, and a commodity-price index, which we treat as external to Korea's small open economy. Accordingly, Γ_1 captures their contemporaneous influence on Y_t. The lag length was set to two based on the Hannan–Quinn (HQ) and Schwarz (SC) information criteria.

All variables except the call rate and the U.S. federal funds rate enter in log levels multiplied by 100; thus, shocks and impulse responses for these series are interpretable in

[9] The variable was constructed by dividing the KB Housing Price Index by the Consumer Price Index.

percentage terms, whereas interest-rate responses are in percentage points. The CPI and industrial production are seasonally adjusted. Since the VARX includes several highly persistent level variables, we conduct a robustness check using a Bayesian VARX with Minnesota priors (Appendix F). The resulting impulse responses are similar to those from the baseline specification, indicating that our main results are not driven by near-unit-root behavior.

Structural shocks are identified via a recursive (Cholesky) scheme. We place housing price expectations first, on the premise that at the time expectations are formed, most macro releases —except for the call rates—are not yet observable due to publication lags, as discussed in Section 2.3.[10] The baseline ordering is: Expectations → Industrial production → Housing prices → CPI → Interest rates.

Because recursive identification can be sensitive to ordering, Appendix D reports results under an alternative ordering; the main findings remain broadly consistent.

3.2. Impulse Responses and Transmission Channels

We study both (i) *exogenous* innovations in housing price expectations and (ii) *endogenous* revisions in expectations induced by monetary policy, and quantify their macroeconomic effects.

3.2.1 Responses to an Identified Housing Price Expectations Shock (Exogenous)

We first assess the effects of exogenous innovations in housing price expectations—fluctuations attributable to factors outside the model. Following Barsky and Sims (2012), we interpret such shocks as reflecting changes in expectations driven by "animal spirits" and, more cautiously, by information arrivals ("news"). While animal spirits capture shifts in sentiment, "news" may include announcements of macroprudential or real-estate–related regulatory measures. The news interpretation relies on a relatively strong assumption, given the recursive identification, that relevant information is not fully incorporated into other variables within the same period. Accordingly, we adopt a conservative interpretation and view the identified expectations shock as not necessarily a clean sentiment shock, but more broadly as a shift in housing price expectations that is orthogonal to contemporaneous macroeconomic realizations in the VAR.

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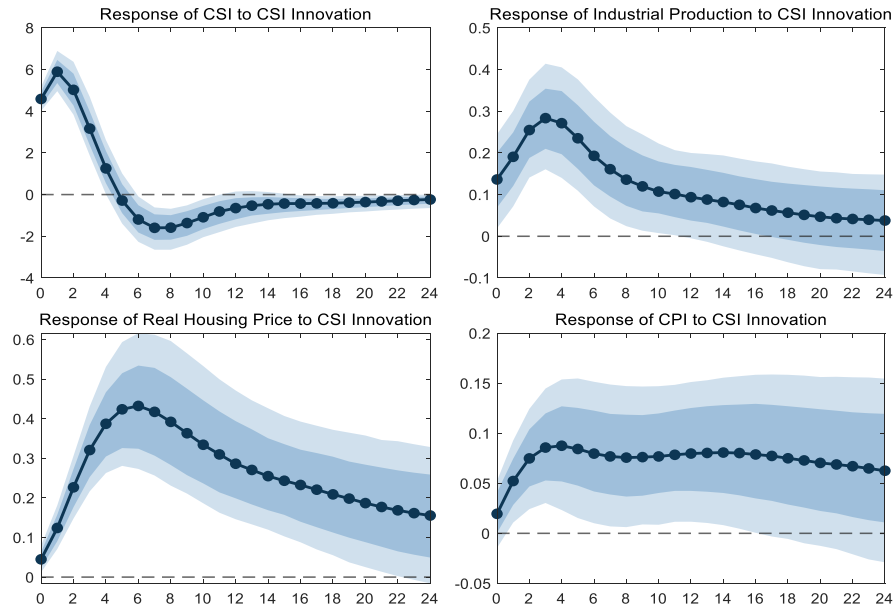
[10] Barsky and Sims (2012) places the consumer confidence index first in their VAR model, thereby identifying its shock as an autonomous fluctuation that is not influenced by the contemporaneous information of the other variables.

[Figure 5] Responses to a 1-SD Expectation Shock: Baseline Model



Note: The solid line represents the 50th percentile (median), while the darker (lighter) shading indicates the 68% (90%) confidence intervals, all derived from 1,000 bootstrap replications. The horizontal axis represents time in months.

A positive expectations shock raises real housing prices, industrial production, and consumer prices (Figure 5). The response of industrial production peaks at 0.28 percent after three months (median IRF) before gradually dissipating. Several mechanisms can account for this: (i) a wealth effect as households perceive expected—and subsequently realized—gains in housing asset values and raise consumption[11]; (ii) anticipatory demand associated with home purchases and related expenditures (moving, renovations, durables)—consistent with Choi (2009), who finds that rising housing price expectations lift retail sales; and (iii) higher collateral values that relax credit constraints for households and firms, supporting consumption and investment. Optimism about housing may also spur construction investment. While rising prices can burden non-homeowning households, our estimates indicate that the aggregate demand impulse dominates, resulting in a net increase in production.

Real housing prices rise quickly following the expectations shock, peaking at 0.44 percent after six months (0.51 percent in nominal terms). Quantitatively, this is similar to Jeon et al. (2020). Notably, by three months the increase in real housing prices (0.32

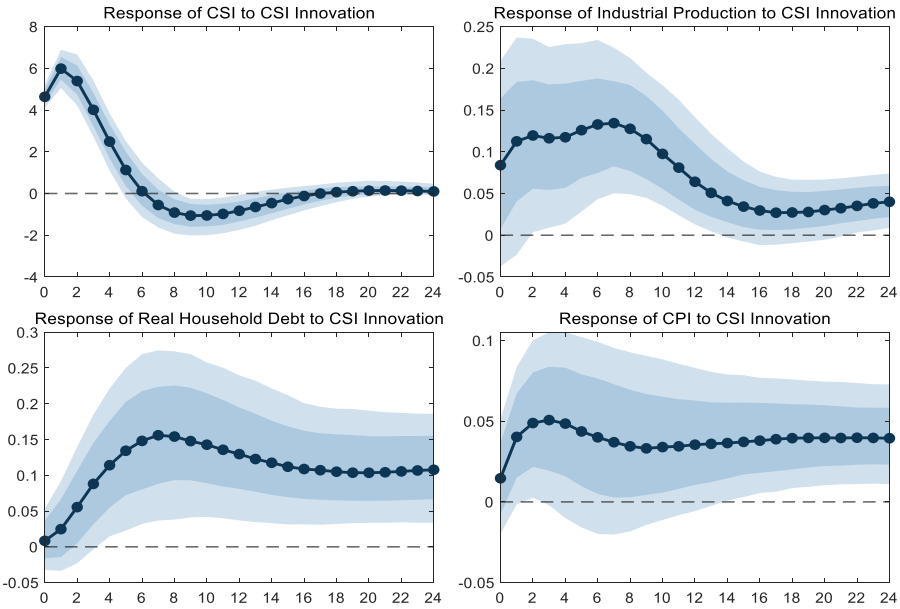
[11] Kim, Lee, and Lee (2021) find a positive relationship between house prices and consumption using Korean credit card transaction data.

percent) already exceeds the contemporaneous rise in industrial production (0.28 percent) and this gap persists thereafter, suggesting that elevated expectations can drive housing demand growth ahead of income.

The CPI also increases in response to the shock. This is consistent with the demand expansion above as well as with the CPI's inclusion of rental components (e.g., *jeonse*), underscoring the policy relevance for a central bank whose primary mandate is price stability.

Because adding another endogenous variable would reduce degrees of freedom, household debt is excluded from the baseline VAR.[12,13] To probe its behavior, we re-estimate the model substituting real housing prices with real household debt. The results (Figure 6) show that an expectations shock significantly raises real household debt, and—

[Figure 6] Responses to a 1-SD Expectation Shock: Household Debt Model



Note: The solid line represents the 50th percentile (median), while the darker (lighter) shading indicates the 68% (90%) confidence intervals, all derived from 1,000 bootstrap replications. The horizontal axis represents time in months.

[12] Including both housing prices and household debt in the model yields similar results, consistent with the strong positive correlation between the two variables. These results are available upon request.

[13] Appendix E reports impulse responses when housing transaction volumes are included as a key outcome variable. An expectations shock leads to increases in both house prices and housing transaction volumes, with volumes responding in the same direction as prices. This pattern is consistent with housing price expectations actiong as a demand amplifier in the housing market. Importantly, incorporating transaction volumes leaves the responses of other variables largely unchanged.

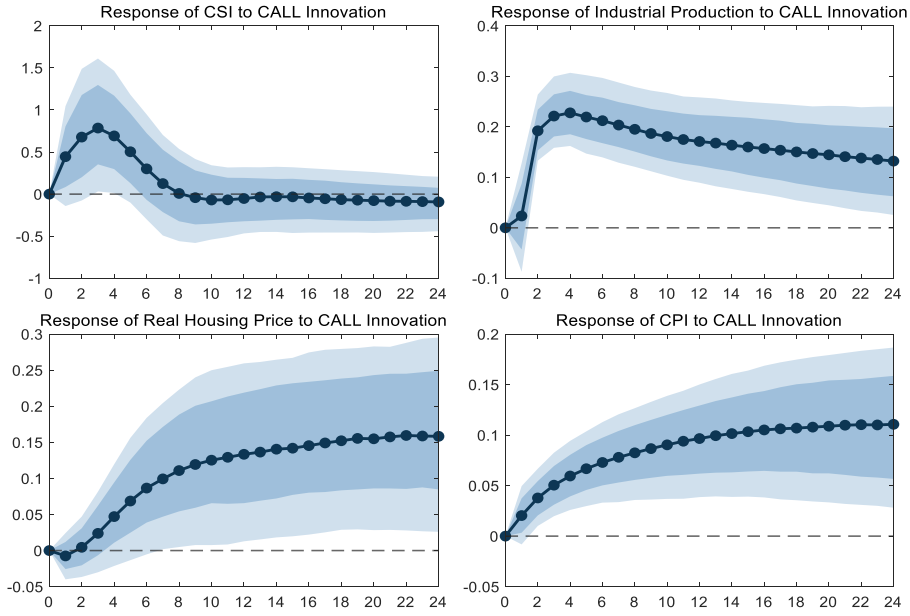
mirroring the house-price response—debt begins to outpace industrial production about five months after the shock. This pattern suggests that rising expectations can amplify leverage via increased borrowing.

3.2.2 Role of Housing Price Expectations in Monetary Policy Transmission (Endogenous)

The previous subsection examined how macroeconomic variables respond to exogenous shocks to expectations. Expectations can also change endogenously, including in response to monetary policy. We therefore ask how housing price expectations react to an expansionary monetary policy shock and what role this plays in transmission.

An expansionary monetary policy shock raises industrial production, CPI, and housing prices through conventional channels. In addition, transmission may be amplified as housing price expectations rise endogenously with macro-financial conditions (Figure 7): the expectations index peaks at 0.79% about three months after the shock (median IRF) and then gradually dissipates. We refer to this incremental pathway as the *housing price expectations channel*.

[Figure 7] Responses to a 1-SD Expansionary Monetary Policy Shock: Baseline Model

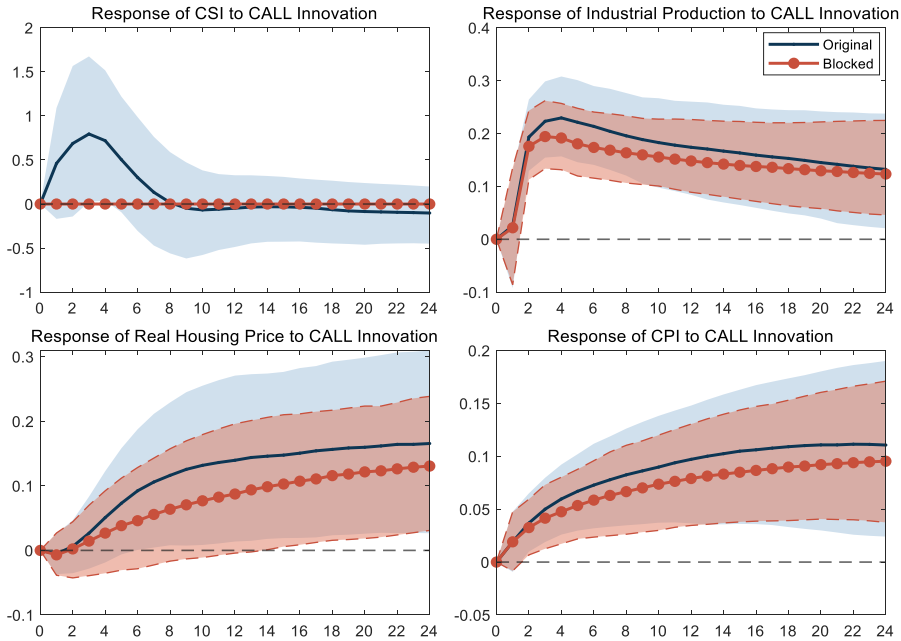


Note: The solid line represents the 50th percentile (median), while the darker (lighter) shading indicates the 68% (90%) confidence intervals, all derived from 1,000 bootstrap replications. The horizontal axis represents time in months.

To gauge the contribution of this channel, Figure 8 reports impulse responses from a counterfactual that shuts down feedback from monetary policy and other macro conditions to expectations —i.e., expectations are held fixed (the "blocked expectations channel") while all other transmission mechanisms remain intact. This isolates outcomes absent both endogenous and exogenous movements in expectations.

With the expectations channel blocked (solid line with circle markers in Figure 8), the responses of industrial production and CPI to an interest-rate cut are smaller than in the baseline (solid line)—by roughly 20–30 percent at the median—although the confidence intervals overlap. This pattern suggests that monetary policy operates not only through traditional channels but also through an indirect amplification via elevated expectations. Notably, when the expectations channel is blocked, the stimulative effect of an interest-rate cut on housing prices is substantially smaller and, in the first 12 months, not statistically distinguishable from zero (90% level). This implies that, even amid rate reductions, effective management of expectations can materially stabilize housing prices.

[Figure 8] Responses to a 1-SD Expansionary Monetary Policy Shock: When the Expectation Channel Is Inactive



Note: The solid line represents the baseline 50th percentile (median) impulse response, while the solid line with circle markers represents the 50th percentile (median) impulse response when the expectation channel is inactive. The shading indicates the 90% confidence intervals, derived from 1,000 bootstrap replications. The horizontal axis represents time in months.

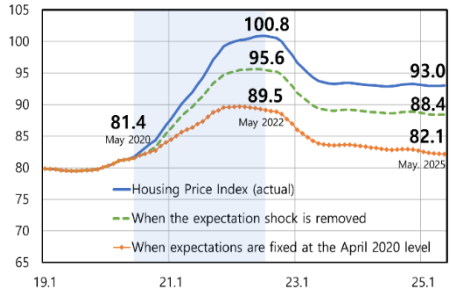
3.3 Counterfactual Analysis

Having established the role of housing price expectations in Sections 3.1–3.2, we now quantify their contribution during the recent episode of housing market overheating. To this end, we trace counterfactual paths for housing prices and household debt under scenarios in which expectations are well anchored between May 2020 and May 2022. We consider two scenarios, ordered by increasing restrictiveness.

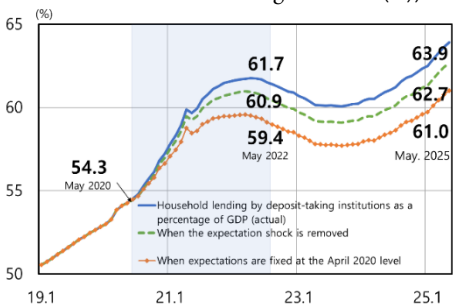
- Scenario 1 (no exogenous expectations shocks). Using the estimated VAR, we generate a counterfactual by setting the exogenous shocks to housing price expectations to zero over May 2020–May 2022, while leaving all other shocks as identified.[14]
- Scenario 2 (anchored expectations). Building on Scenario 1, we *additionally* shut down endogenous movements in expectations: the HPECSI is held fixed at its April 2020 level throughout May 2020–May 2022. From June 2022 onward (i.e., after the anchoring window), the system reverts to the baseline VAR with all channels restored. In practice, such anchoring could reflect forceful and consistent policy communication about macroprudential stance or housing supply—though these mechanisms are not explicitly modeled here.

[Figure 9] Counterfactual Scenario Analysis Results

(Housing Prices)



(Household debt by Deposit-Taking Institutions as a Percentage of GDP (%))



Note: The left panel reports results from the baseline model, while the right panel reports results from the household debt model. Household debt excludes credit from non-deposit-taking institutions—such as insurance companies and credit card companies—and therefore differs from the actual household debt ratio. GDP is measured using annual data, and changes in GDP across scenarios are not reflected in the results.

Sources: BOK, authors' calculations.

[14] We follow Sims and Zha (2006) and Finck and Tillmann (2022). While this procedure resembles a historical decomposition, its purpose differs in that it generates counterfactual paths rather than attributing observed fluctuations to individual shocks.

Figure 9 shows that, had expectations been managed more effectively, both housing prices and household debt would have followed lower and more stable paths. The left panel shows that the actual path, shown by the solid line, of housing prices steepened from May 2020. Under Scenario 1, shown by the dashed line, the increase is noticeably more moderate, with prices 5.0 percent lower by May 2025. Under Scenario 2, shown by the solid line with circle markers and reflecting anchored expectations, the rise is further subdued, leaving prices 11.7 percent lower than realized by May 2025 and 6.7 percent lower than under Scenario 1.

The right panel shows a similar pattern for household debt (deposit-taking institutions). The household-debt-to-GDP ratio would have been 1.2 percentage points lower under Scenario 1 and 2.9 percentage points lower under Scenario 2, relative to the actual 63.9 percent in May 2025. These findings highlight the quantitative importance of expectations for both housing-market outcomes and household debt dynamics.

IV. State-dependent Analysis

Building on the previous section's finding that stabilizing housing price expectations helps moderate house prices and household leverage during periods of overheating, we now ask *how* policy can achieve this when monetary easing is warranted. In such circumstances, managing expectations becomes especially important to limit adverse spillovers to the housing market and, by extension, to financial stability.

A natural instrument is macroprudential regulation.[15] For example, Rooj et al. (2025), using consumer survey data from the Reserve Bank of India, find that tighter macroprudential measures can dampen housing market expectations. Motivated by this insight, this section examines how the macroprudential stance interacts with monetary policy in shaping the dynamics of housing price expectations.

To analyze this interaction, we employ the Local Projections (LP) method of Jordà (2005). LPs are well suited to investigating state-dependent heterogeneity, as they offer greater flexibility in estimating nonlinear and regime-specific responses without imposing strong structural assumptions or encountering the parameter proliferation that would arise in a regime-switching VAR. Our baseline specification is:

[15] Kim, Kim, and Mehrotra (2019), Kim and Shim (2022), and Seok (2022) have reported that macroprudential policy exerts a significant impact on household debt and housing prices.

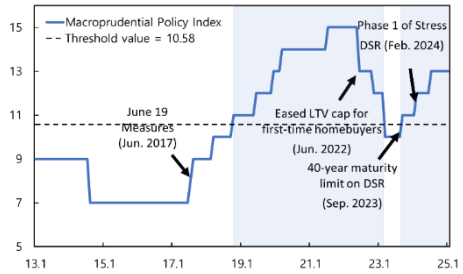
$$HPECSI_{t+h} = D_t^A(\alpha^A + \beta_k^A shock_t^{MP} + \sum_{i=1}^{p} \Pi_{i,h}^A Y_{t-i}) + D_t^B(\alpha^B + \beta_k^B shock_t^{MP} + \sum_{i=1}^{p} \Pi_{i,h}^B Y_{t-i}) + \sum_{j=0}^{h} \Gamma_j X_{t+j} + v_{t+h}, \quad h = 0,1,\dots,15 \tag{3}$$

In the LP equation, the variables included in vectors Y and X, as well as the lag length (p = 2), follow the baseline VAR specification. The monetary policy (MP) shock ($shock^{MP}$) is the identified MP innovation extracted from the baseline VAR.[16] Results with alternative identification schemes for the MP shock are presented in Appendix G.

We define state dummies based on the alignment between macroprudential stance and the MP shock. Let $D_t^A = 1$ when the two are aligned—that is, the macroprudential stance is restrictive and the MP shock is contractionary, or the stance is accommodative and the MP shock is expansionary—and 0 otherwise. Conversely, $D_t^B = 1$ when they are misaligned and 0 otherwise.[17] This binary classification allows us to compare the effects of monetary shocks under distinct macroprudential environments. (We limit our analysis to the two regimes of macroprudential environments given the relatively small sample size.)

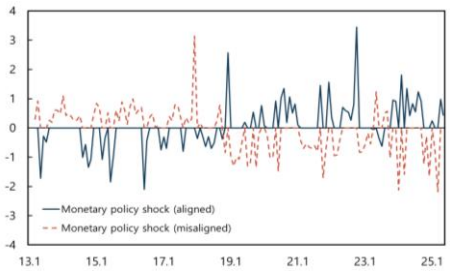
Under this definition, β_k^A measures the impact of a monetary policy tightening (interest rate hike) on expectations under a restrictive macroprudential stance, whereas β_k^B captures the corresponding effect under an accommodative stance. Symmetrically, $-\beta_k^A$ reflects the effect of a monetary policy easing (interest rate cut) on expectations under an accommodative stance, while $-\beta_k^B$ captures the effect under a restrictive stance.

[Figure 10] Macroprudential Policy (MPP) Index



Sources: IMF, authors' calculations.

[Figure 11] Monetary Policy Shocks by Macroprudential Policy (MPP) Regimes



Source: Author's calculations.

[16] Ma and Lee (2020), as well as Kang (2024), similarly extracted shocks by imposing recursive restrictions in a VAR model and estimated impulse responses using a state-dependent local projections method.

[17] See the table below for a summary.

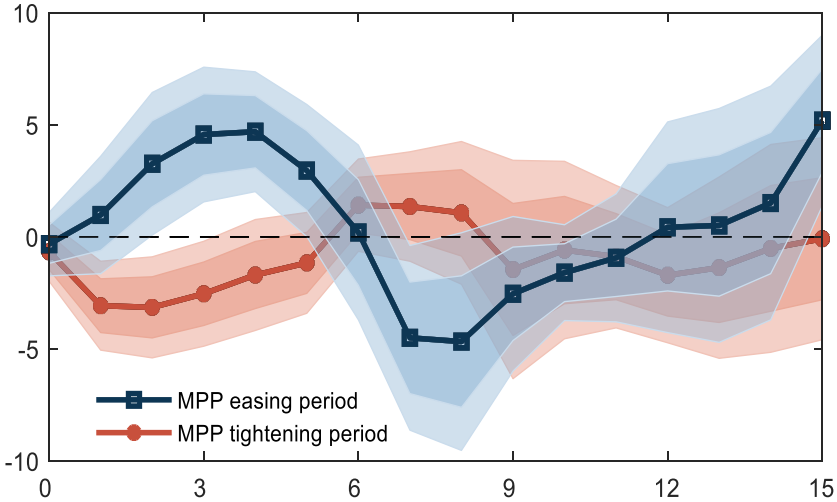
	Macroprudential policy tightening period	Macroprudential policy easing period
$shock^{MP}>0$	$D_t^A = 1, D_t^B = 0$	$D_t^A = 0\ D_t^B = 1$
$shock^{MP} < 0$	$D_t^A = 0, D_t^B = 1$	$D_t^A = 1, D_t^B = 0$

We measure the macroprudential stance with a borrower-targeted index following Kim and Shim (2022). Through 2021, we use IMF-coded dummies for loan-to-value (LTV) and debt-service-to-income (DSTI). From 2021 onward, we hand-code monthly dummies for changes in LTV, debt-to-income (DTI), and debt-service ratio (DSR)—assigning +1 for tightening, −1 for easing, and 0 for no change—reflecting both ratio adjustments and coverage/scope changes. We then construct a monthly macroprudential index as the cumulative (running) sum of these dummies.

We then split the sample into two regimes based on this index. Our baseline (and simplest) approach classifies months with an index value above the mean (10.58) as a restrictive macroprudential regime and all other months as accommodative. The shaded region in Figure 10 indicates the restrictive regime.[18] Figure 11 reports the identified MP shocks by regime.

The local-projection results show that the positive effect of interest-rate cuts on housing price expectations is stronger in the short run under an accommodative macroprudential stance (Figure 12). This pattern reflects heightened expectations of a larger housing-market upswing when borrower-based constraints are loose, which amplifies the credit-expansion channel activated by monetary easing and strengthens the signal conveyed by rate cuts. By contrast, under a restrictive stance, the effect of rate cuts on expectations is weaker. More

[Figure 12] Responses of HPECSI to a 1-SD Expansionary Monetary Policy Shock by Macroprudential Policy (MPP) Regimes (Baseline)



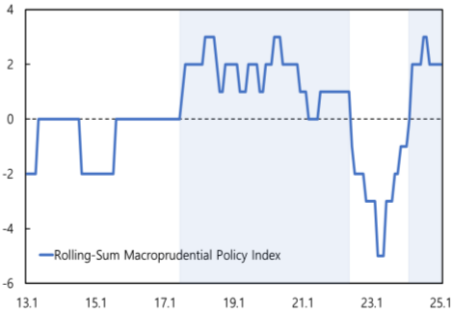
Note: Darker (lighter) shading indicates the 68% (90%) confidence intervals, based on Newey–West standard errors. The horizontal axis represents time in months after the shock.

[18] Ramey and Zubairy (2018) employ several alternative criteria to distinguish between economic expansion regimes, one of which was whether the unemployment rate exceeded its sample mean.

specifically, over the first three to four months following the shock, a 1-SD(7.33bp) policy rate cut raises housing price expectations by about 4.6 percent during periods of macroprudential easing. Given that the long-run average level of the expectations index is approximately 107, this corresponds to an increase of roughly 5 index points. By contrast, during periods of macroprudential tightening, the same expansionary monetary policy shock leads to a decline in housing price expectations of about 1.6 to 2.5 percent. These patterns remain robust when monetary policy shocks are identified using high-frequency data (see Appendix G).

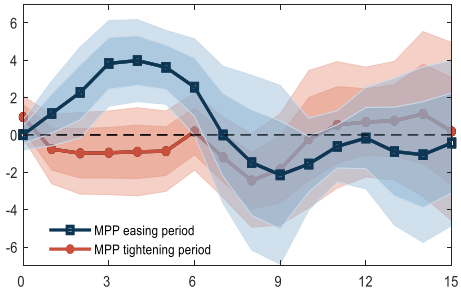
For robustness, we complement our baseline level-style (or stock-style) macroprudential stance measure with a directional (momentum) index following Coman and Lloyd (2022), defined as the 12-month rolling sum of monthly policy dummies (the current month plus the previous 11). Whereas the level index captures the stock of borrower constraints in place (stance), the rolling-sum index captures recent net tightening versus easing pressure (direction). We classify months with a positive rolling-sum value as periods of restrictive momentum (Figure 13), define states based on the alignment of monetary and macroprudential policies, and re-estimate the impulse responses. The results remain broadly consistent with the baseline: rate cuts raise house-price expectations more when the stance is accommodative (or momentum points to easing) and less when the stance is restrictive (or momentum points to tightening) (Figure 14). Moreover, the findings are similar when we shorten the rolling window, which further sharpens the focus on the direction of macroprudential policy.

[Figure 13] Rolling-Sum Macroprudential Policy (MPP) Index



Sources: IMF, authors' calculations.

[Figure 14] Responses of HPECSI to a 1-SD Expansionary Monetary Policy Shock by Macroprudential Policy (MPP) Regimes



Note: Darker (lighter) shading indicates the 68% (90%) confidence intervals, based on Newey–West standard errors. The horizontal axis represents time in months after the shock.

Taken together, these findings underscore the need for an appropriate policy mix between monetary and macroprudential policy to manage housing price expectations. In particular, tightening borrower-based tools can serve as a complementary instrument to prevent monetary easing from fueling excessive increases in house-price expectations.

V. Conclusion

We show that households' housing price expectations in Korea are volatile, persistent, and lead realized house-price growth. Expectations adjust actively to contemporaneous macro-financial information and display a forward-looking component. Movements in expectations have material macro-financial consequences: they lift house prices and household debt more than they raise output, elevating financial-stability risks.

In a highly leveraged, housing-centric economy—where the household-debt-to-GDP ratio is already elevated and monetary policy has at times been constrained by financial-stability concerns, as is currently the case in Korea[19]—three policy lessons follow. First, policymakers should treat housing price expectations as an explicit transmission channel, incorporating their effects into forecasts and risk assessments whenever monetary easing is under consideration. Second, policymakers should use the policy mix to shape expectations by tightening macroprudential tools when cutting policy rates, since easing these tools alongside rate cuts risks amplifying expectations and leverage. Third, policymakers should anchor expectations with clear, consistent communication and guardrails—including guidance on macroprudential stance and credit standards—because our counterfactuals show even temporary anchoring during surge periods can have lasting effects on prices and debt.

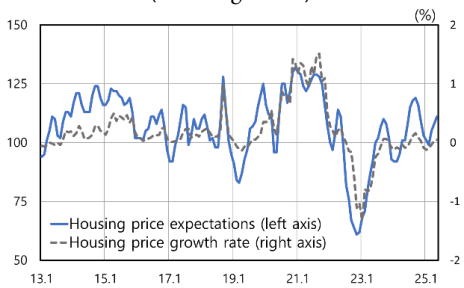
[19] Beyond financial-stability risks, an overconcentration of resources in real estate can undermine medium- to long-term growth prospects (Chu et al., 2025).

Appendix A

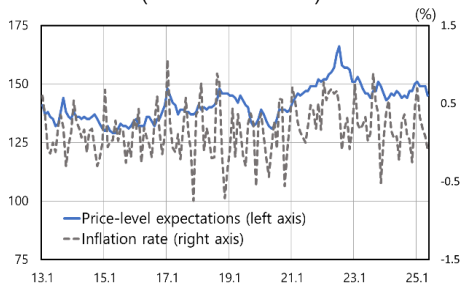
Comparison Between Expectations and Actual Month-on-month Price Growth

[Figure A.1] Trends in Expectations and Actual Month-on-month Price Growth

(Housing Prices)



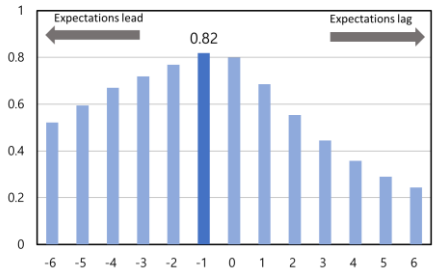
(Consumer Prices)



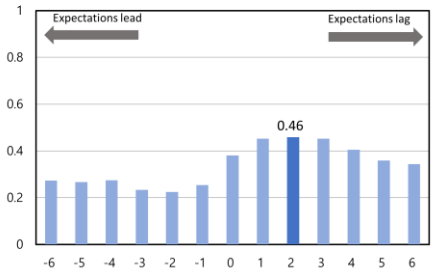
Sources: BOK, KB Land, authors' calculations

[Figure A.2] Cross-correlation Between Expectations and Month-on-month Price Growth

(Housing Prices)



(Consumer Prices)



Note: Cross-correlation coefficients are between the month-on-month price growth rate in month t and the expectation index in month t + i; the x-axis denotes the lead or lag period i.

Sources: BOK, KB Land, authors' calculations

[Table A.1] Granger Causality Test Results Between Price Growth Rates (MoM) and Expectations

(Housing Prices: Expectations Lead)

	Null Hypothesis	
	Expectations ↛ Prices	Prices ↛ Expectations
Lag=3	22.05***	0.17
Lag=6	11.93***	0.06
Lag=12	5.42***	0.46

(Consumer Prices: Expectations Lag)

	Null Hypothesis	
	Expectations ↛ Prices	Prices ↛ Expectations
Lag=3	2.18*	4.97***
Lag=6	1.05	2.69**
Lag=12	1.33	1.44

Note: Reported values are F-statistics from Granger causality tests; ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Sources: BOK, KB Land, authors' calculations

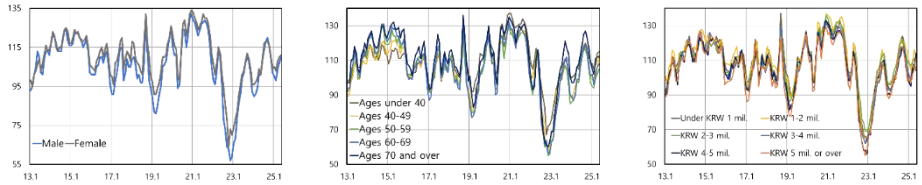
Appendix B

Demographic and Statistical Characteristics: Directional Accuracy by Financial-Literacy Proxies

While the graphs below reveal no stark visual gaps in housing price expectations across demographic groups, interesting patterns emerge once we summarize levels and directional accuracy.

[Figure B.1] Trends in the CSI by Respondent Characteristics

(Gender) (Age) (Income)



Sources: BOK

First, groups commonly associated with lower financial literacy show higher housing price expectation levels. In Table B1, the diffusion indices for women, older adults, and lower-income respondents are above those of other groups, implying a larger net share anticipating price increases. This pattern—higher expected price growth among lower-literacy groups—echoes the inflation-expectations literature, where women and respondents with less education, lower income, or fewer assets tend to report higher expected inflation (e.g., D'Acunto et al., 2024; Arioli et al., 2017). Prior work suggests these respondents rely more on salient day-to-day prices (e.g., groceries) and heuristic judgment rather than formal statistics.

Second, these same groups also display higher directional hit rates in predicting subsequent housing-price movements. Taken together, the results imply that women, older adults, and lower-income respondents not only expected increases more often, but those increases materialized more frequently ex post. In this sense, the stronger upward expectations among groups with lower measured financial literacy appear to be closer to realized market direction over the sample.

[Table B.1] Expectation Levels and Prediction Accuracy by Group

		Expectation index (mean)	Std. Dev.	Prediction accuracy[1)]	Financial literacy
Gender	Male	106.2	14.8	77.4%	66
	Female	109.9	12.9	80.6%	65.3
Age	Ages under 40	109.3	12.4	76.2%	66.2
	Ages 40-49	105.5	13.9	76.9%	67.9
	Ages 50-59	105.2	15.9	78.7%	67.9
	Ages 60-69	106.1	16.4	76.7%	64.7
	Ages 70 and over	111.1	15.8	80.9%	59.3
Monthly income	Less than KRW 1 mil.	108.9	14.1	82.7%	Low income
	KRW 1-2 mil.	111.0	14.5	82.1%	59.7
	KRW 2-3 mil.	108.7	13.0	76.5%	Mid income
	KRW 3-4 mil.	106.6	14.4	75.9%	66.8
	KRW 4-5 mil.	106.2	14.8	77.2%	High income
	KRW 5 mil. or over	104.6	15.2	70.6%	68.8
Housing tenure	Owner	107.4	14.5	78.5%	
	Renter	106.1	14.1	76.9%	

Note: Prediction accuracy is calculated as (number of successful directional predictions / total observations) x 100. A directional prediction is considered successful when the expectation index is above (below) 100 and the actual year-on-year housing price growth one year later is also positive (negative). Cases where the expectation index equals 100 are excluded from the analysis. Higher values of the financial literacy index indicate greater financial literacy.

Sources: BOK (Consumer Survey, 2024 National Financial Literacy Survey), KB Land, authors' calculations

[Table B.2] Detailed Prediction Frequencies by Group

Housing prices 1 year later		Increase (n=105)		Decrease (n=32)	
Expectations		Increase>100	Decrease<100	Increase>100	Decrease<100
Gender	Male	86	19	12	20
	Female	93	9	17	15
Age	Ages under 40	88	11	20	11
	Ages 40-49	83	20	11	20
	Ages 50-59	84	20	9	23
	Ages 60-69	80	21	10	22
	Ages 70 and over	94	11	15	16
Income	Less than KRW 1 mil.	92	10	13	18
	KRW 1-2 mil.	94	9	15	16
	KRW 2-3 mil.	88	16	16	16
	KRW 3-4 mil.	83	20	12	18
	KRW 4-5 mil.	83	20	10	19
	KRW 5 mil. or over	76	29	11	20
Housing tenure	Owner	87	16	13	19
	Renter	82	20	13	18

Note: Cases where the expectation index equals 100 are excluded.

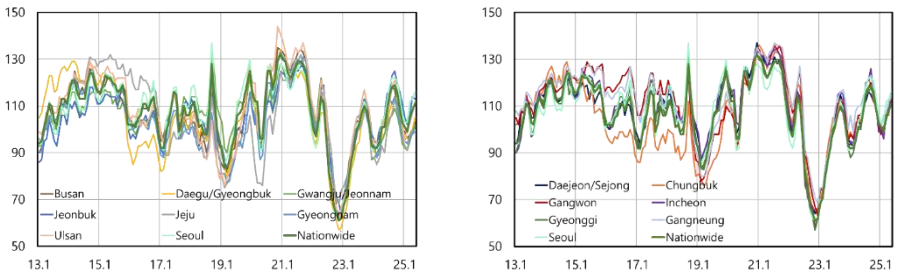
Sources: BOK, KB Land, authors' calculations

Appendix C

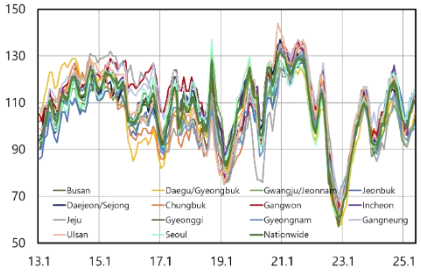
Trends in the Regional Housing Price Expectations CSI

[Figure C.1] Trends in the Regional Housing Price Expectations CSI

(Southern Region, Seoul, and Nationwide) (Central and Northern Region and Nationwide)



(Overall)



Source: BOK

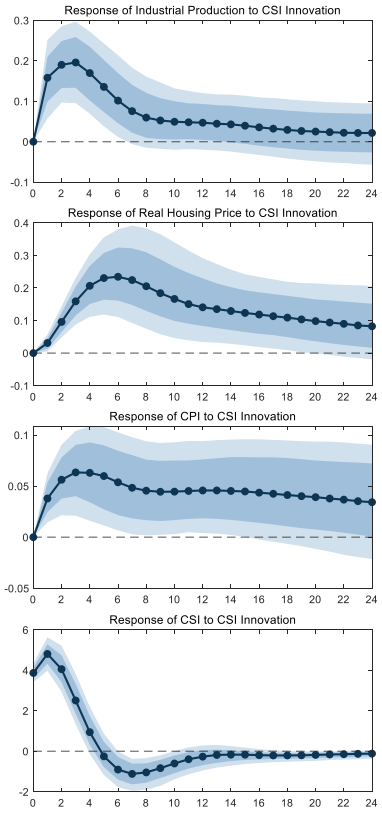
Appendix D

VAR Analysis Robustness Check (1)

The ordering of endogenous variables is specified as follows:[20]

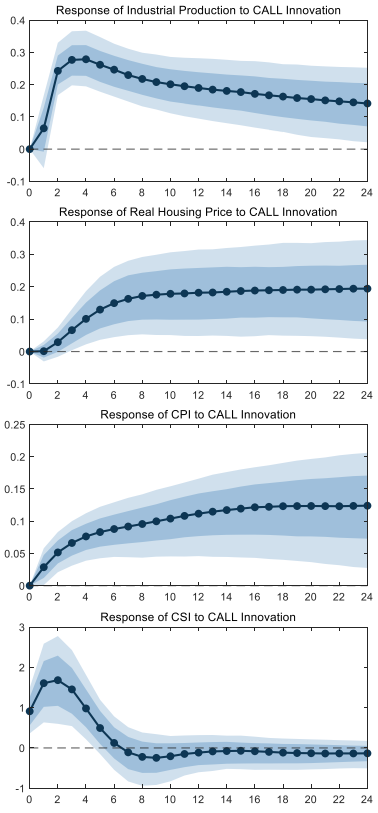
Industrial production → Housing prices → Consumer prices → Interest rate → Expectations

[Figure D.1] Responses to an Expectation Shock



Note: The solid line represents the 50th percentile (median), while the darker (lighter) shading indicates the 68% (90%) confidence intervals, all derived from 1,000 bootstrap replications. The horizontal axis represents time in months.

[Figure D.2] Responses to a Monetary Policy Shock



Note: The solid line represents the 50th percentile (median), while the darker (lighter) shading indicates the 68% (90%) confidence intervals, all derived from 1,000 bootstrap replications. The horizontal axis represents time in months.

[20] Similar results are obtained even when the ordering is set as: Industrial production → Housing prices → Consumer prices → Expectations → Interest rate.

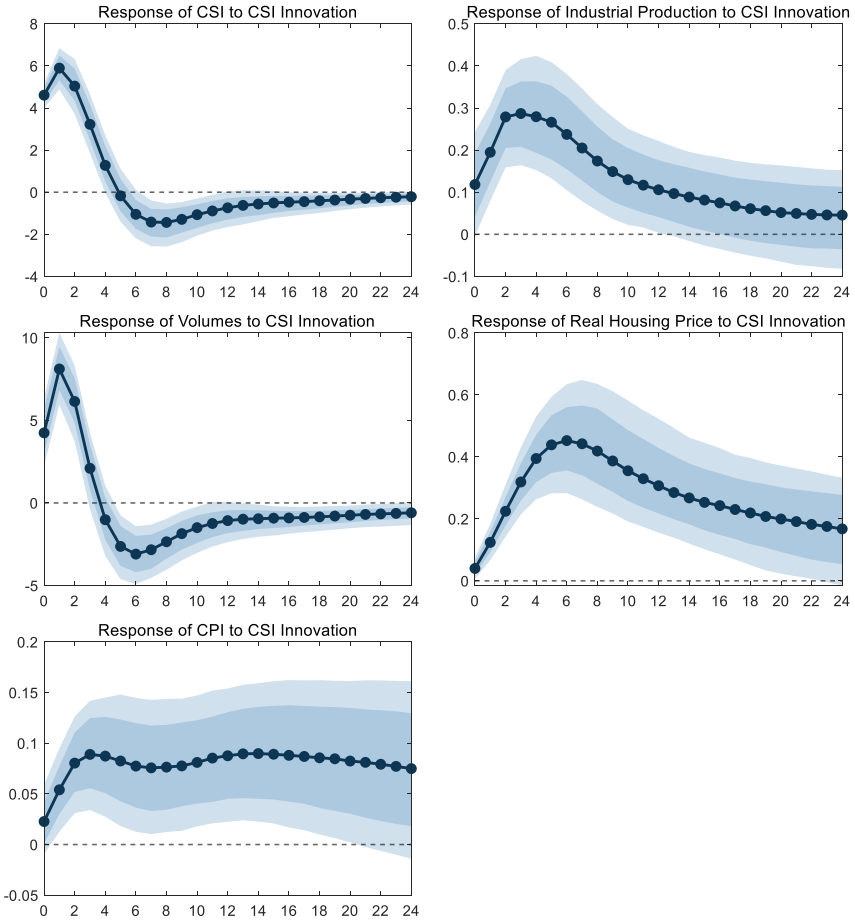
Appendix E

VAR Analysis Robustness Check (2)

Both housing prices and housing transaction volumes are included, with the ordering of endogenous variables specified as follows:

Expectations → Industrial production → Transaction volumes → Housing prices → Consumer prices → Interest rate

[Figure E.1] Responses to a 1-SD Expectation Shock



Note: The solid line represents the 50th percentile (median), while the darker (lighter) shading indicates the 68% (90%) confidence intervals, all derived from 1,000 bootstrap replications. The horizontal axis represents time in months. Housing transaction volumes are measured using transactions between individual households; results are similar when total transaction volumes are used.

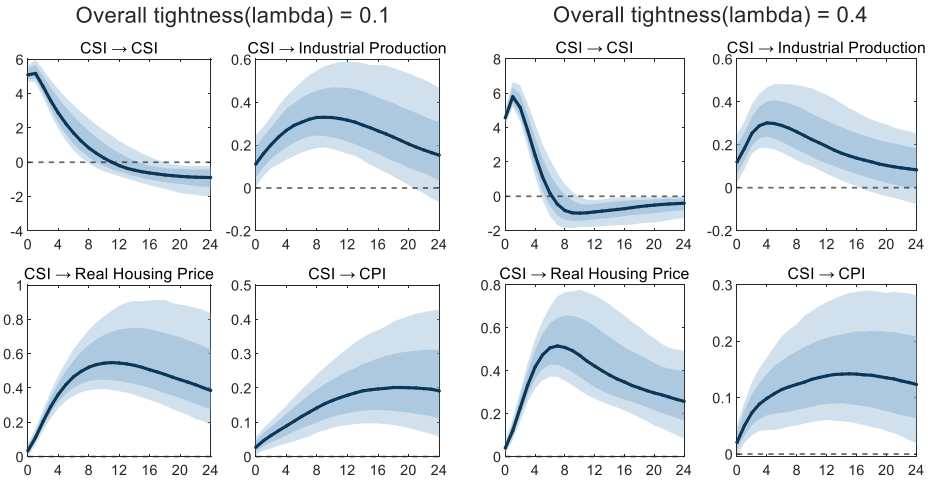
Appendix F

VAR Analysis Robustness Check (3)

To ensure the robustness of our primary VARX results, we conduct a Bayesian VAR (BVAR) analysis. A key motivation for this exercise is to assess whether the baseline estimates, which are based on variables in levels, may be affected by near-unit-root properties. By employing the Minnesota prior, we mitigate the risk of overfitting and obtain more reliable structural inferences in the presence of highly persistent data. For consistency and comparability, the set of endogenous variables and their recursive ordering are kept identical to those used in the baseline VARX model.

We use Minnesota priors centered on a random-walk benchmark for endogenous variables, with diffuse priors for exogenous controls and the constant. Priors are implemented via dummy observations following the standard Minnesota prior framework (Doan, Litterman, and Sims, 1984; Sims and Zha, 1998). We do not impose sum-of-coefficients or dummy-initial-observation priors; instead, persistence is governed solely by the overall Minnesota tightness parameter, which we vary over $\lambda = 0.1$ and 0.4, with the lag-decay parameter set to one.

[Figure F.1] Responses to a 1-SD Expectation Shock



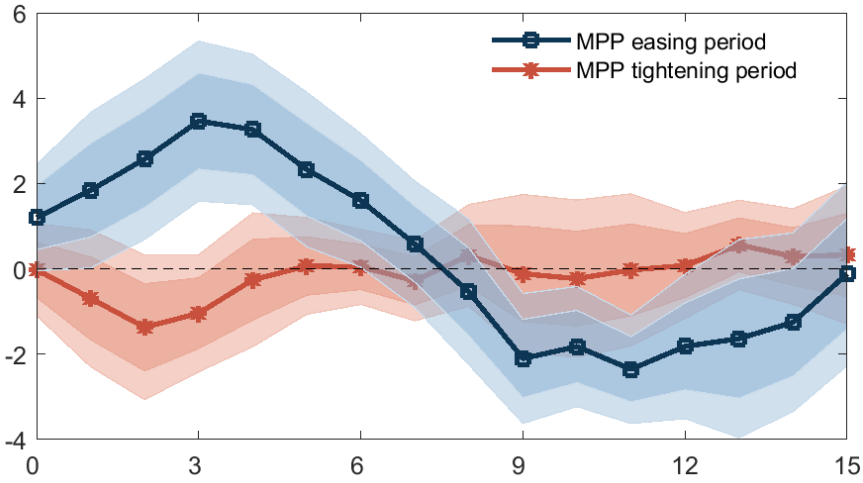
Note: The solid line represents the 50th percentile (median), while the heavier (lighter) shading indicates the 68% (90%) posterior credible intervals, computed from 1,000 posterior draws. The horizontal axis represents time in months.

Appendix G

LP Analysis Robustness Check

This section shows that the findings in Section IV remain robust to an alternative identification scheme for the MP shock. Specifically, monetary policy surprises are identified using high-frequency data as one-basis-point changes in the three-year government bond futures yield measured between 10 minutes before and 20 minutes after the policy announcement, following Ahn, Kim, and Lee (2021), and are then aggregated to the monthly frequency using calendar-day weights. The response of HPECSI is similar to the main results reported in Figure 12.

[Figure G.1] Responses of HPECSI to an Expansionary Monetary Policy Surprise by Macroprudential Policy (MPP) Regimes



Note: Monetary policy surprises are measured in basis points (bp) using high-frequency changes in the 3-year Treasury bond futures yield. Darker (lighter) shading indicates the 68% (90%) confidence intervals, based on Newey–West standard errors. The horizontal axis represents time in months after the shock.

Appendix H

Data Sources and Seasonality Test Results

Based on the results of seasonality tests, we use seasonally adjusted series for all variables that exhibit seasonality. Seasonality test results are reported below.

[Table H.1] Data Sources and Seasonality Test Results

Variable	Database series name	Source	QS statistic for seasonality	p-value
Housing Price Expectations (CSI)	Expectations of Housing Prices	ECOS(BOK)	0.53	0.77
Consumer Price Index	Consumer Price Indices (Total item)	ECOS(BOK)	40.25	0.00
Housing Prices	House Price Index (KB)	KB land	0.58	0.75
Household debt	Loans to Household of Depository Corporations (Monthly, total)	ECOS(BOK)	15.18	0.00
Industrial production	Industrial Production indices (S.A., Korea)	ECOS(BOK)	-	-
Call rates	Call rate (Overnight-All Trades, daily)	ECOS(BOK)	2.05	0.36
U.S. industrial production index	Industrial Production indices (S.A., United States)	ECOS(BOK)	-	-
Commodity price index	CRY Index (Thomson Reuters/CoreCommodity CRB Commodity Index, daily)	Bloomberg	0.00	1.00
U.S. effective federal funds rate	Federal Funds Effective Rate	FRED	2.06	0.36

References

Ahn, J., Kim, J., & Lee, B. (2021). Identifying Monetary Policy Shocks Using High Frequency Data: Evidence from Korea -Focusing on the Central Bank Information Effect Contained in Monetary Policy-. *The Korean Journal of Economic Studies, 69*(4), 45-116.

Arioli, R., Bates, C., Dieden, H., Duca, I., Friz, R., Gayer, C., Kenny, G., Meyler, A., & Pavlova, I. (2017). *EU Consumers' Quantitative Inflation Perceptions and Expectations: An Evaluation* (No. 186). ECB Occasional Paper.

Armona, L., Fuster, A., & Zafar, B. (2019). Home Price Expectations and Behaviour: Evidence from a Randomized Information Experiment. *The Review of Economic Studies, 86*(4), 1371-1410.

Bailey, M., Dávila, E., Kuchler, T., & Stroebel, J. (2019). House Price Beliefs and Mortgage Leverage Choice. *The Review of Economic Studies, 86*(6), 2403-2452.

Barsky, R. B., & Sims, E. R. (2012). Information, Animal Spirits, and the Meaning of Innovations in Consumer Confidence. *American Economic Review, 102*(4), 1343-1377.

Brueckner, J. K., Calem, P. S., & Nakamura, L. I. (2016). House-Price Expectations, Alternative Mortgage Products, and Default. *Journal of Money, Credit and Banking, 48*(1), 81-112.

Burnside, C., Eichenbaum, M., & Rebelo, S. (2016). Understanding Booms and Busts in Housing Markets. *Journal of Political Economy, 124*(4), 1088-1147.

Campbell, J. Y., & Cocco, J. F. (2007). How Do House Prices Affect Consumption? Evidence from Micro data. *Journal of Monetary Economics, 54*(3), 591-621.

Choi, H., & Rhim, B. (2009). Role of the Housing Price Forecast in Housing Price and Business Cycle. *The Korea Spatial Planning Review*, Vol. 63.

Choi, S., & Yoon, C. (2022). Uncertainty, Financial Markets, and Monetary Policy over the Last Century. *The BE Journal of Macroeconomics, 22*(2), 397-434.

Chopra, F., Roth, C., & Wohlfart, J. (2023). *Home Price Expectations and Spending: Evidence from a Field Experiment* (No. 10450). CESifo Working Paper.

Chu, M., Harm, K., Lee, Y., Yun, J. (2025). *Credit Concentration in the Real Estate Sector: Structural Drivers and Risks*. Bank of Korea, BOK Issue Note, No. 2025-9, April 25, 2025.

Coman, A., & Lloyd, S. P. (2022). In the face of spillovers: Prudential policies in emerging economies. *Journal of International Money and Finance, 122*, 102554.

D'Acunto, F., Charalambakis, E., Georgarakos, D., Kenny, G., Meyer, J., & Weber, M. (2024). *Household Inflation Expectations: An Overview of Recent Insights for Monetary Policy* (No. 24). ECB Discussion Paper Series.

De Stefani, A. (2017). Waves of optimism: House Price History, Biased Expectations and Credit Cycles. *Edinburgh School of Economics, University of Edinburgh*.

Doan, T., Litterman, R., & Sims, C. (1984). Forecasting and Conditional Projection Using Realistic Prior Distributions. *Econometric Reviews, 3*(1), 1-100.

Finck, D., & Tillmann, P. (2022). The Role of Global and Domestic Shocks for Inflation Dynamics: Evidence from Asia. *Oxford Bulletin of Economics and Statistics, 84*(5), 1181-1208.

Gelain, P., Lansing, K. J., & Mendicino, C. (2013). House Prices, Credit Growth, and Excess Volatility: Implications for Monetary and Macroprudential Policy. *International Journal of Central Banking, 9*(2), 219-276.

Greenwald, D. L., & Guren, A. (2025). Do Credit Conditions Move House Prices?. *American Economic Review, 115*(10), 3559-3596.

Iacoviello, M. (2005). House Prices, Borrowing Constraints, and Monetary Policy in the Business Cycle. *American Economic Review, 95*(3), 739-764.

Iacoviello, M., & Neri, S. (2010). Housing Market Spillovers: Evidence from an Estimated DSGE Model. *American Economic Journal: Macroeconomics, 2*(2), 125-164.

Jeon, H., Kwon, S. (2020). Analysis of the Effect of Expected Housing Prices and Liquidity on the Housing Market. *Journal of Digital Convergence*, Vol. 18, No. 11.

Jordà, Ò. (2005). Estimation and Inference of Impulse Responses by Local Projections. *American Economic Review, 95*(1), 161-182.

Kang, S. (2024). Empirical Investigation of Wage-Price Spiral Using Long-time Series Wage Data. *The Korean Journal of Economic Studies*, Vol. 72, No. 1.

Kaplan, G., Mitman, K., & Violante, G. L. (2020). The Housing Boom and Bust: Model Meets Evidence. *Journal of Political Economy, 128*(9), 3285-3345.

Kim, G. (2022). Housing Market Dynamics Using Non-fundamentals-based Market Sentiment Measures. *Journal of Industrial Economics and Business*, Vol. 35, No. 3.

Kim, J., Kim, S., & Mehrotra, A. (2019). Macroprudential policy in Asia. *Journal of Asian Economics, 65*, 101149.

Kim, S., Shim, S. (2022). *Measuring the effects of LTV and DTI limits: A heterogeneous Panel VAR approach with sign restrictions* (No. 2022-3). Bank of Korea Working Paper, 2022.1.

Kim, W., Lee, S., & Lee, Y. (2021). How Do House Prices Affect Consumption Patterns Across Categories?. *Korean Economic Review, 37*(2), 367-398.

Kuchler, T., Piazzesi, M., & Stroebel, J. (2023). Housing Market Expectations. *In Handbook of economic expectations* (pp. 163-191). Academic Press.

Lambertini, L., Mendicino, C., & Punzi, M. T. (2013). Expectation-Driven Cycles in the Housing Market: Evidence from Survey Data. *Journal of Financial Stability, 9*(4), 518-529.

Lee, J. (2012). *Characteristics of Inflation Expectations in Korea*. Bank of Korea. BOK Economic Review, No. 2012-1, April 2012.

Lee, S., Jin, C. (2013). The Study on the Relationship between Investor Sentiment and Home Prices. *The Korea Spatial Planning Review*, Vol. 78.

Lim, J., Lim, M. (2017). Relationship Among News Coverage, Consumers' Sentiment, Prices, and Trading Volume in Housing Markets. *Journal of the Korean Association for Housing Policy Studies*, Vol. 25, No. 3.

Ma, E., Lee, W. (2020). Asymmetric Effects of the Fiscal Policy in Korea. *Korea Review of Applied Economics*, Vol. 22, No. 2.

Nam, M., Go, M. (2018). *Characteristics and Implications of Inflation Expectation Formation*. Bank of Korea, Monthly Statistical Bulletin, Vol. 71, No. 12.

Qian, W. (2023). House Price Expectations and Household Consumption. *Journal of Economic Dynamics and Control, 151*, 104652.

Ramey, V. A., & Zubairy, S. (2018). Government Spending Multipliers in Good Times and in Bad: Evidence from US Historical Data. *Journal of Political Economy, 126*(2), 850-901.

Revelo, J. D. G., Lucotte, Y., & Pradines-Jobet, F. (2020). Macroprudential and Monetary Policies: The need to dance the Tango in harmony. *Journal of International Money and Finance, 108*, 102156.

Rooj, D., Saha, A., Sengupta, R., & Banerjee, A. (2025). The Impact of Financial Stress on House Price Expectations: evidence from survey data. *International Journal of Housing Markets and Analysis*.

Seok, B. (2022). Monetary Policy in the Presence of Household Loan Regulation. *The Korean Economic Forum*, Vol. 15, No. 1, pp.35-59

Seong, B., Kim, C., & Hwang, N. (2022). *Characteristics and Implications of Housing as an Asset in Korea*. Bank of Korea. BOK Issue Note, No. 2022-19, May 23, 2022.

Sims, C. A., & Zha, T. (1998). Bayesian Methods for Dynamic Multivariate Models. *International Economic Review*, 949-968.

Sims, C. A., & Zha, T. (2006). Were There Regime Switches in US Monetary Policy?. *American Economic Review, 96*(1), 54-81.

Towbin, P., & Weber, M. S. (2015). *Price expectations and the US housing boom*. International Monetary Fund Working Paper.

Van der Ghote, A. 2021. Interactions and Coordination between Monetary and Macroprudential Policies. *American Economic Journal: Macroeconomics, 13*(1), 1–34.

주택가격 기대와 거시경제: 주택 중심적 경제인 한국의 사례*

김 우 석† · 황 인 도‡ · 이 재 원§

초 록 본 연구는 한국은행 소비자동향조사(CSI)를 활용해 한국의 주택가격 기대심리가 높은 변동성과 지속성을 지니며, 실제 주택가격 상승에 선행함을 보인다. 기대심리는 과거 가격의 단순 추세보다 당기의 거시·금융 여건과 경제 뉴스에 반응하는 것으로 나타났다. VAR 분석 결과, 기대심리 상승은 주택가격, 가계부채, 산업생산, 소비자물가를 유의하게 높이며, 통화정책의 독립적인 파급경로로도 작동한다. 이 효과는 거시건전성 정책이 완화적일 때 강화되며 긴축적일 때 약화되는 비대칭성을 보였다. 반사실적 분석 결과, 기대심리가 2020년 4월 수준에 머물렀다면 2025년 5월 실질 주택가격은 11.7%, 가계부채의 GDP 대비 비율은 2.9%p 낮았을 것으로 추정된다. 이는 주택가격 기대를 통화정책의 파급경로로 인식하고, 통화정책과 거시건전성 정책 간 공조 및 명확한 커뮤니케이션을 통해 기대심리를 안정화할 필요가 있음을 시사한다.

핵심 주제어: 주택가격 기대심리, 가계부채, 주택가격, 통화정책, 거시건전성 정책
경제학문헌목록 주제분류: E44, E52, E58, G28

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