

The Asymmetric Impact of Rising and Falling Housing Prices on Household Consumption

Haixin Huang

School of Finance, Renmin University of China, Beijing, China
2276035190@qq.com

Abstract. This study revisits the link between housing prices and household consumption under China's recent market correction. It uses quarterly provincial data for 30 provinces from 2015Q1 to 2025Q4 and estimates a panel structural vector autoregression after splitting real house-price growth into upward and downward components. The full-sample evidence does not support a simple housing-wealth story. Aggregate house-price shocks reduce real per capita consumption, indicating that affordability pressure, credit conditions, and precautionary saving dominate the positive valuation effect. The direction of price change matters. Rising prices create a persistent spending squeeze, while falling prices produce a short release effect after the initial shock. The balance-sheet variables explain why this release is limited: income and household loans still support consumption, but deposit accumulation is associated with defensive saving and weaker current expenditure. After 2021, the release effect of lower prices becomes much smaller and the deposit channel becomes more restrictive. These results suggest that consumption policy should focus on income expectations, orderly housing adjustment, and stable but prudent housing finance rather than on one-sided price stimulus.

Keywords: housing price fluctuations, household consumption, asymmetric effects, PSVAR, household balance sheet

1. Introduction

China's transition toward a demand-driven growth pattern depends heavily on household consumption, but the consumption rate has remained lower than policy makers would like [1, 2]. This is why the expansion of domestic demand has become a repeated policy theme [3]. At the household level, spending decisions are tied to life-cycle saving, debt burdens, and expectations about future income [4, 5]. Housing enters this decision in a particularly strong way because it is not only a store of wealth but also a long-term payment obligation for many families [6]. When prices rise, some owners may feel wealthier or obtain more collateral, while renters and potential buyers face higher entry costs and stronger saving pressure. When prices fall, affordability can improve, but households may also read the decline as a warning about asset values and future earnings. For this reason, the same housing-price signal can relax one household's budget and tighten another's.

This ambiguity became more visible after 2021, when China's real-estate market moved away from the long upward cycle and entered a period of adjustment. A large part of the earlier literature

was produced in a setting where prices were rising or at least relatively stable, so downward movements may have been treated as temporary noise rather than as a separate signal [7]. The core question is therefore narrower than whether housing prices matter. It is whether price increases and price declines travel through different household channels, and whether those channels look different before and after the market correction.

The distinction is not only theoretical. If lower prices mainly reduce the amount that households must reserve for future housing purchases, consumption may increase through a liquidity-release channel [8]. Affordability indicators such as price-to-income ratios and overvaluation measures help explain when this channel should be strong [9, 10]. If, however, falling prices are interpreted as collateral losses or as a sign of weaker local income prospects, households may increase saving instead of spending. Previous work also shows that housing-price changes can reshape saving rates and confidence [11]. Policy conclusions differ sharply across these mechanisms: a price correction can be read either as affordability relief or as a balance-sheet shock requiring expectation stabilization [12].

This paper makes three adjustments to the usual empirical setup. First, the sample is extended to 2015Q1-2025Q4, so the estimates cover both the earlier expansion and the later correction. Second, real house-price growth is separated into positive and negative parts rather than forced into a single average effect. Third, income, household deposits, household loans, and consumption are placed in one PSVAR system. This design makes it possible to connect price shocks with the household balance-sheet variables that actually shape spending choices.

The Chinese case also speaks to the broader housing-consumption literature because evidence from other economies shows that households respond differently to booms, busts, and expectation shifts [13, 14]. At the same time, the empirical strategy is rooted in Chinese studies that emphasize asymmetric price movements and the income, credit, and saving channels behind household consumption [15, 16].

The paper keeps the empirical presentation compact. Instead of reproducing every diagnostic table and every impulse-response figure from the source manuscript, it retains the evidence needed to follow the argument: the variable description, the main asymmetric consumption responses, the variance-decomposition results, and the comparison between the expansion and correction periods. This structure reduces repetition while preserving the chain from data construction to policy interpretation.

2. Literature review and research design

Existing studies do not give one uniform prediction for the housing-consumption relationship. One line of research stresses wealth and collateral effects: when housing values increase, owners may borrow more easily and spend more [17, 18]. A second line emphasizes the opposite force, namely the stronger budget constraint faced by renters, young households, and families preparing to buy a home [19, 20]. Chinese evidence also contains both sides of this debate, with studies documenting wealth or collateral effects [21, 23] and others highlighting mortgage pressure, purchase anxiety, and the house-slave effect [24, 27]. Because credit constraints, income position, and asset structure differ across households, an average coefficient can easily combine several opposing responses [28].

The literature on price declines is much smaller. Several studies examine falling house prices and the asymmetry between increases and declines [7, 15, 16], but much of that evidence predates the recent correction. It also tends to discuss consumption without fully tracing the simultaneous movement of income, deposits, loans, and spending. This paper therefore treats asymmetry as a joint issue of price direction and household balance-sheet adjustment.

Several measurement choices follow from this literature. Housing pressure is usually evaluated with sales-price indicators, hedonic adjustments, or price-to-income measures [9, 10]. The consumption response is also shaped by household credit constraints and the composition of assets [28]. Recent policy-oriented reviews further note that the current adjustment is not the same as a short fluctuation inside a continuing upward cycle [12].

The analytical logic is built around these competing forces. For a low-leverage homeowner, appreciation can raise perceived lifetime resources. For a renter, a first-time buyer, or a highly leveraged owner, the same appreciation can mean a tighter intertemporal budget. A price decline is equally mixed: it may lower entry costs, but it may also weaken collateral values and local employment expectations. A symmetric model would hide these differences inside one coefficient, so the empirical design separates positive and negative price movements before tracing their dynamic effects.

The PSVAR framework is used because the variables of interest move together rather than in a one-way sequence. Income affects consumption directly, deposits and loans summarize different sides of the household balance sheet, and housing prices can influence all of them through collateral, affordability, and expectations. A dynamic system therefore helps distinguish the immediate consumption response from the later transmission through saving and credit behavior.

2.1. Data and variables

The empirical sample is a quarterly provincial panel covering 30 Chinese provinces from 2015Q1 to 2025Q4, with Tibet excluded because of data continuity. Residential prices, disposable income, consumption expenditure, household deposits, and household loans are converted into real terms using 2015 as the base year, and per capita transformations are applied where the variable describes household resources or spending. The level series are logged and then first-differenced. Real house-price growth is split into $rhpp = \max(\Delta \ln HP, 0)$ and $rhpn = \min(\Delta \ln HP, 0)$. After these transformations and the loss of lags required by the dynamic model, the PSVAR estimation uses 1,290 observations.

The two house-price components are not intended to create two unrelated markets. They preserve the direction of the same real price-growth series: $rhpp$ records positive growth and is zero otherwise, while $rhpn$ records negative growth and is zero otherwise. This coding lets the model compare the response to an increase with the response to a decline without assuming in advance that the two effects are mirror images. Because the variables enter mainly as real per capita changes, the estimates emphasize short-run adjustment rather than permanent cross-province differences.

Table 1. Descriptive statistics of main variables

Variable	N	Mean	SD	Min	Max
Delta ln(real house price)	1320	0.0075	0.0937	-0.5347	0.4496
Delta ln(disposable income)	1320	0.0109	0.1477	-0.4376	0.4265
Delta ln(consumption)	1320	0.0086	0.1222	-0.4529	0.5164
Delta ln(household deposit)	1320	0.0233	0.0456	-0.9405	0.9988
Delta ln(household loan)	1290	0.0246	0.0353	-0.6767	0.5399
House price rise (rhpp)	1320	0.0371	0.0603	0.0000	0.4496
House price fall (rhpn)	1320	-0.0296	0.0543	-0.5347	0.0000

Notes: Quarterly panel for 30 provinces, Tibet excluded, 2015Q1-2025Q4. Nominal series are deflated to constant 2015 prices and expressed in per capita terms where applicable.

2.2. Model specification

The empirical model is a panel structural vector autoregression. Province fixed effects are removed through Helmert forward orthogonal deviations, and GMM estimation uses lagged endogenous variables as instruments. Structural shocks are recovered with a Cholesky ordering that includes consumption, income, household deposits, household loans, and either aggregate real house-price growth or the two directional price components. The reported panel unit-root tests support the use of differenced variables, and the estimated systems are stable because their eigenvalue moduli remain inside the unit circle.

Two specifications are estimated. The first specification uses total real house-price growth and provides the average response to a housing-price shock. The second replaces the total series with rhpp and rhpn, so the sign, timing, and persistence of upward and downward shocks can be compared within the same provincial panel. The impulse responses are accumulated over eight quarters, while the source analysis obtains confidence bands through Monte Carlo simulation.

The source manuscript contains the detailed unit-root and eigenvalue diagnostics. They are not repeated as separate tables here because they do not change the substantive reading of the results: the variables used in the PSVAR are stationary after differencing, and the dynamic system does not exhibit explosive behavior. The interpretation can therefore focus on the impulse responses and the forecast-error variance decomposition.

3. Empirical results

3.1. Baseline and asymmetric responses

The baseline model shows a negative consumption response to an aggregate house-price shock. The decline is largest at the impact horizon and remains below zero through the eighth quarter. In this provincial panel, the result is difficult to reconcile with a dominant wealth effect. It is more consistent with a setting in which higher prices raise affordability pressure, tighten liquidity, and make households more cautious about future spending.

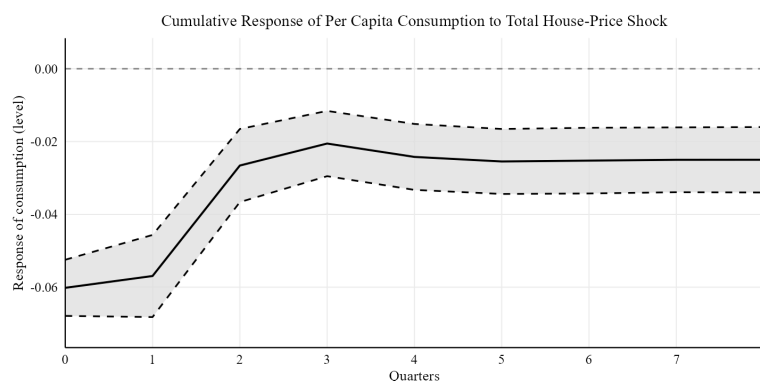


Figure 1. Cumulative consumption response to a total house-price shock

Notes: The solid line reports the cumulative response of real per capita consumption; dashed lines show the confidence band from the source PSVAR estimates.

The magnitude is also meaningful. Consumption falls by -0.0602 on impact and is still negative, at -0.0250, by the eighth quarter. The response therefore does not look like a short-lived statistical disturbance. It suggests a balance-sheet adjustment in which households revise consumption together with income expectations, deposit behavior, and access to credit.

The directional model shows why the aggregate result should not be read as a single homogeneous effect. A price-rise shock depresses consumption at every horizon and is strongest around the first quarter after the shock. A price-fall shock first lowers consumption, but the response turns positive from the first quarter and reaches its high point in the second quarter. This short release effect is consistent with lower purchase pressure for renters and potential buyers. Its later weakening, however, indicates that the relief from lower prices is partly offset by asset-loss concerns and more cautious expectations.

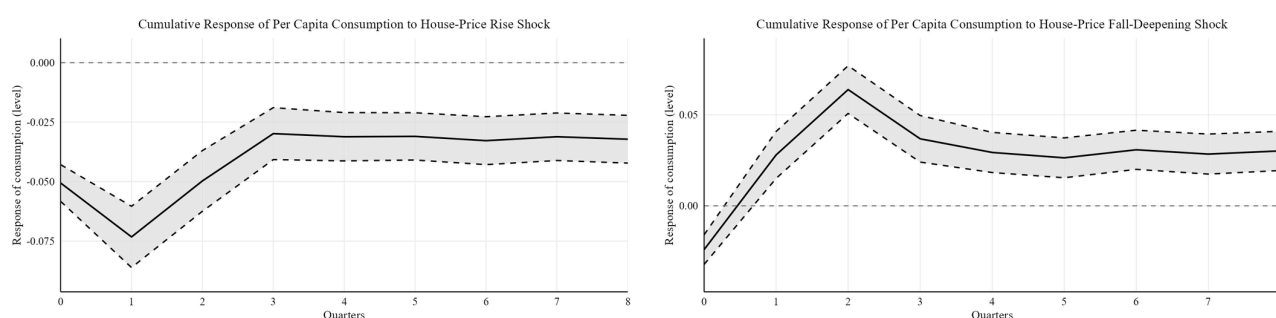


Figure 2. Cumulative consumption responses to house-price rise and fall shocks

Notes: The left panel shows the response to a house-price rise shock; the right panel shows the response to a house-price fall shock.

Table 2. Core evidence on asymmetric consumption responses

Evidence	Key result	Interpretation
Aggregate house-price shock	Consumption responds -0.0602 at $h=0$ and remains negative at $h=8$.	The aggregate price signal suppresses consumption.
Rise shock	The response reaches -0.0732 at $h=1$ and stays negative.	Rising prices crowd out spending through cost and credit pressure.
Fall shock	After an initial -0.0240 response, consumption turns positive at $h=1$ and peaks at 0.0638 at $h=2$.	Lower housing-cost pressure releases some consumption.
Downturn mechanism	In 2021-2025, deposit-to-consumption is -0.0907 and income-to-consumption is nearly zero.	Precautionary saving becomes the stronger drag.

3.2. Balance-sheet transmission

The balance-sheet responses help explain why the aggregate house-price effect is negative even though a price decline can temporarily release consumption. Income shocks raise spending, and household-loan shocks are also positive, which shows that cash flow and credit access still matter for demand. The deposit response points in the opposite direction. When deposits rise in this setting, they appear to capture self-insurance and delayed expenditure rather than relaxed household constraints.

The forecast-error variance decomposition strengthens this interpretation. At horizon eight in the asymmetric model, deposits account for a larger share of consumption variation than either of the direct house-price components. This means that house prices affect consumption not only through

valuation changes, but also through saving behavior, debt willingness, and expectations about future income.

The signs of the within-system responses make the mechanism clearer. By the eighth horizon, an income shock raises consumption by 0.0553 and a household-loan shock raises it by 0.1092, while a household-deposit shock lowers consumption by -0.0802. Deposits should therefore not be interpreted mechanically as evidence of financial comfort. They also reflect defensive saving, particularly when households expect slower income growth or future housing-market losses.

Table 3. Forecast-error variance decomposition of consumption at h=8

Model	Own	Income	Deposit	Loan	House-price factors
M1 total-price model	27.78	15.20	34.71	14.15	8.16
M2 asymmetric model	28.42	13.39	29.34	13.39	HP fall 8.84; HP rise 6.61

Table 3 summarizes the variance-decomposition results at horizon eight. In both specifications, household deposits provide the largest non-own contribution to consumption variance, larger than the direct house-price terms. The asymmetric model also assigns a slightly larger role to fall shocks than to rise shocks. This does not contradict the negative response to rising prices; it shows that price declines are processed as a distinct source of uncertainty and adjustment.

3.3. Stage-wise comparison

The stage split shows that the same price movement can carry different information in different market environments. During 2015-2020, when prices were still broadly rising and credit conditions were more supportive, a temporary price decline produced a stronger release of consumption. During 2021-2025, after the market entered correction, that release became much smaller, while the drag from rising prices became more persistent. A decline that once mainly reduced purchase pressure now also signaled weaker balance sheets and more uncertain income prospects.

The longer set of stage-wise tables and figures in the source manuscript points in the same direction. In the downturn stage, the income-to-consumption response is close to zero, the loan-to-consumption response weakens, and the deposit-to-consumption response becomes strongly negative. Together, these patterns suggest that households respond to real-estate adjustment by rebuilding precautionary buffers instead of converting lower housing costs fully into current consumption.

Table 4. Stage-wise evidence on consumption and balance-sheet channels

Channel	2015Q1-2020Q4	2021Q1-2025Q4	Implication
HP fall -> consumption, h=2	0.1042*	0.0234*	The release effect of falling prices is much weaker during the correction stage.
HP rise -> consumption, h=8	0.0002	-0.0263*	The consumption drag from rising prices becomes persistent after 2021.
Deposit shock -> consumption	-0.0243*	-0.0907*	Precautionary saving becomes the dominant balance-sheet drag.
Income shock -> consumption	0.0514*	0.0003	Income support weakens sharply in the downturn sample.
Loan shock -> consumption	0.1111*	0.0426*	Credit still supports consumption but with a smaller multiplier.

Table 4 condenses the repeated stage-wise evidence. It shows why a house-price decline cannot be treated as a stable consumption stimulus across time. Before 2021, lower prices mainly reduced housing-cost pressure and generated a sizable positive response at $h=2$. After 2021, the positive response remained visible but became much smaller, while the restraining role of deposits deepened. The correction stage therefore changes the meaning of a falling-price shock from affordability relief toward balance-sheet caution.

3.4. Robustness, scope, and interpretation

The source manuscript contains several checks that support the interpretation even though the condensed version does not reproduce every table. The differenced variables pass the reported panel unit-root tests, which lowers the concern that the impulse responses are just common trends in disguise. The eigenvalue results also show that the estimated systems are dynamically stable, so the accumulated responses are not produced by an explosive specification. Finally, the qualitative pattern remains after the sample is split at 2021, which reduces the risk that the asymmetry is only a full-sample artifact.

The interpretation still needs clear limits. Provincial quarterly data are suitable for tracking macro-level adjustment, but they do not directly observe homeownership status, mortgage maturity, liquid wealth, or subjective expectations. Deposits, loans, and income are therefore used as observable balance-sheet channels, not as perfect measures of sentiment. The results should be read as evidence that housing-price movements work through several mechanisms at once, including affordability, collateral, credit, and precautionary saving, and that the weight of each mechanism changes with the market stage.

This scope also explains why the policy reading is not that falling prices automatically expand consumption. A moderate decline may reduce purchase pressure for some households, especially prospective buyers. A prolonged correction, however, can lower collateral values, weaken related balance sheets, and make households more cautious about labor-market and income risk. The same nominal price change may therefore lead to opposite spending responses depending on whether households interpret it as affordability relief or as a sign of broader financial stress.

4. Conclusions and policy recommendations

The main conclusion is that China's housing-price-consumption relationship is directional and stage-dependent. Aggregate price shocks reduce consumption, rising-price shocks are persistently contractionary, and falling-price shocks generate only a short release effect. That release is much weaker once the market is already in correction. The transmission runs through income, deposits, loans, and expectations, with deposit accumulation during downturns acting as a sign of precautionary saving rather than as a simple indicator of financial strength.

The policy implication is that consumption stabilization should not depend on pushing housing prices in either direction. The more relevant goal is to manage an orderly adjustment and prevent abrupt shifts in household expectations. During upswings, policy needs to limit the crowding-out of non-housing consumption by excessive price growth. During downturns, policy should prevent asset-price declines from spilling over into income pessimism, defensive saving, and household deleveraging.

A second implication is that income expectations are the key lever for turning lower housing-cost pressure into actual spending. Employment support, wage stability, and stronger protection for young workers, flexible workers, and middle- and low-income households can reduce the need for

defensive saving. Housing finance should remain available for rigid and improvement-based demand, but it should not return to a leverage-driven stimulus pattern.

Finally, social security and public services remain important because they reduce the need for self-insurance. Improvements in education, medical care, elder care, and housing security can weaken precautionary-saving motives and raise the marginal propensity to consume. Future research can extend this paper by linking provincial macro data with household-level information on tenure status, debt structure, and income uncertainty, or by testing alternative structural-identification schemes.

References

- [1] Ju Fang, Xu Yiling, and Cai Ling. (2020). The impact of population age structure and housing prices on urban household consumption. *The Theory and Practice of Finance and Economics*, 41(05), 104-109.
- [2] Pan Min and Liu Zhiqi. (2018). Can household leverage promote consumption? Evidence from Chinese household micro-survey data. *Journal of Financial Research*, 2018(04), 71-86.
- [3] Sheng Xia, Li Chuan, and Wang Qing. (2022). The real estate market, household leverage, and consumption: A heterogeneous-agent model. *Economic Research Journal*, 2022(11), 151-168.
- [4] Ye Jingjing and Tang Rong. (2021). Rising housing prices, local government debt, and household consumption upgrading. *Finance & Economics*, 2021(03), 83-93.
- [5] Modigliani, F., & Brumberg, R. (1954). Utility analysis and the consumption function: An interpretation of cross-section data. *Post-Keynesian Economics*, 388-436.
- [6] Hu Yingzhi and Yuan Yufei. (2017). The impact of residential sales prices on household consumption in China. *China Economic Quarterly*, 16(03), 1031-1050.
- [7] Kang Jian and Zhang Chao. (2020). How changes in housing wealth affect household saving rates: Micro evidence at the household level. *South China Finance*.
- [8] Attanasio, O. P., Blow, L., Hamilton, R., & Leicester, A. (2009). Booms and busts: Consumption, house prices and expectations. *Economica*, 76(301), 20-50.
- [9] Ludwig, A., & Slok, T. (2002). The impact of changes in stock prices and house prices on consumption in OECD countries. *IMF Working Paper*.
- [10] Windsor, C., Jaaskela, J. P., & Finlay, R. (2015). Housing wealth effects: Evidence from an Australian panel. *Economica*, 82(327), 552-577.
- [11] Du Li, Shen Jianguang, and Pan Chunyang. (2013). The impact of rising housing prices on the average propensity to consume of urban residents: Evidence from a household survey in Shanghai. *Journal of Financial Research*, 2013(03), 44-57.
- [12] Huang Jing and Tu Meizeng. (2009). Real estate wealth and consumption: Evidence from household micro-survey data. *Management World*, 2009(07), 35-45.
- [13] Li Tao and Chen Binkai. (2014). Household fixed assets, the wealth effect, and household consumption: Evidence from urban households in China. *Economic Research Journal*, 2014(03), 62-75.
- [14] 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.
- [15] Case, K. E., Quigley, J. M., & Shiller, R. J. (2005). Comparing wealth effects: The stock market versus the housing market. *Advances in Macroeconomics*, 5(1).
- [16] Chen Binkai and Yang Rudai. (2013). Land supply, housing prices, and urban household saving in China. *Economic Research Journal*, 2013(01), 110-122.
- [17] Fu Dongping. (2017). Rising housing prices, the degree of bubble formation, and consumption crowding-out. *Contemporary Finance & Economics*, 2017(09), 14-23.
- [18] Xie Jieyu, Wu Binzhen, Li Hongbin, and Zheng Siqi. (2012). Urban housing prices and household consumption in China. *Journal of Financial Research*, 2012(06), 13-27.
- [19] Yan Se and Zhu Guozhong. (2013). The house-slave effect or the wealth effect? A theoretical analysis of the impact of rising housing prices on national consumption. *Management World*, 2013(03), 34-47.
- [20] Engelhardt, G. V. (1996). House prices and home owner saving behavior. *Regional Science and Urban Economics*, 26(3-4), 313-336.
- [21] Sheiner, L. (1995). Housing prices and the savings of renters. *Journal of Urban Economics*, 36(1), 95-125.

- [22] Wan Haiyuan, Li Qinghai, and Li Rui. (2019). The consumption shock of falling housing prices. *Studies in Labor Economics*, 7(05), 13-33.
- [23] Zhu Dan and Chen Lishuang. (2016). The transmission channels and effects of housing price fluctuations on household consumption: An empirical study based on an SVAR model. *Consumer Economics*, 32(05), 37-42.
- [24] Zhu Dan and Zhao Xindong. (2016). The asymmetric effects of housing price increases and declines on household consumption: Evidence from Chinese provincial panel data. *Macroeconomics*, 2016(04), 38-47.
- [25] He Xingqiang and Yang Ruifeng. (2019). Housing price-to-income ratio and household consumption: From the perspective of the housing wealth effect. *Economic Research Journal*, 2019(12), 102-117.
- [26] Zhu Zixiang, Deng Xiang, and Du Haitao. (2016). Housing price fluctuations, homeownership rates, and the real estate crowding-out effect. *Economic Review*, 2016(05), 31-43.
- [27] Chen Jian, Chen Jie, and Gao Bo. (2012). Credit constraints, housing prices, and the household consumption rate: A study based on a panel threshold model. *Journal of Financial Research*, 2012(04), 45-57.
- [28] Jia Yanyan. (2025). Housing price fluctuations and macroeconomic policy regulation: A literature review. *Comparative Economic & Social Systems*.