Mark-ups, Costs, and Land Prices:

Decomposing Housing Price Growth in Czechia

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Housing markets – squaring supply and demand

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The views expressed in this presentation are those of the authors and do not necessarily reflect the views of their affiliated institutions.

Why decompose house prices?

- The same rise in the house price index can reflect higher **construction costs**, **land revaluation**, or a **price–cost wedge**.
- Structure is **reproducible** while land is **scarce and location-specific**.
- The literature finds that land is more volatile than construction costs and accounts for much of housing-price variation:
  - Davis and Heathcote (2007): land is the main source of U.S. house-price fluctuations.
  - Davis and Palumbo (2008): estimate that, across 46 large U.S. metropolitan areas, land's share of total housing value rose from 32% in 1984 to about 50% in 2004.
  - Knoll et al. (2017): across 14 advanced economies since 1870, rising land prices explain about 80% of the post-WWII global house-price boom.
  - Braun and Lee (2021): German land values outpaced structure costs and home values.
- **Our contribution:** adapt the structure–land framework to a European-type housing market (Czechia) $\Rightarrow$ add an implied markup component.

Czech data and measuring land prices

- Quarterly CZSO data: national house prices [014005], construction costs [011041], Structure prices [011041], residential investment [P.51g; AN.111], and vacant plot prices [014006].
- Land inside existing homes is not directly observed. We estimate it residually and use CZSO prices for vacant plots only as an external benchmark.

- Stronger competition may keep construction mark-ups lower in the U.S.; we therefore examine their role in Czech housing prices by separating mark-ups from construction costs.
  - The **construction-cost index** tracks the cost of the physical building, such as materials and labour. It excludes construction markups.
  - The **broad structure-price index** also reflects construction markups.

Two-part decomposition: structures and land

1. Housing value

$$V_t^H = V_t^S + V_t^L \qquad \Longleftrightarrow \qquad p_t^H h_t = p_t^S s_t + p_t^L l_t$$

V denotes value, p price, and h, s, l quality-adjusted quantities.

2. Value shares

$$w_t^L = \frac{V_t^L}{V_t^H} = 1 - \frac{V_t^S}{V_t^H}, \qquad w_t^S = 1 - w_t^L$$

3. Price growth: Under constant quantities between t and $t+1$, house price growth is a weighted average of structure and land price growth

$$\frac{p_{t+1}^H}{p_t^H} = w_t^S \frac{p_{t+1}^S}{p_t^S} + w_t^L \frac{p_{t+1}^L}{p_t^L}$$

4. Recover land-price growth residually

$$\frac{p_{t+1}^L}{p_t^L} = \frac{1}{w_t^L} \left[\frac{p_{t+1}^H}{p_t^H} - w_t^S \frac{p_{t+1}^S}{p_t^S} \right]$$

Land prices are not directly observed consistently with aggregate housing value. Although p_t^H and p_t^S are observed, the shares w_t^S and w_t^L must be estimated ($w_t^S = \frac{V_t^S}{V_t^H}$).

Perpetual-inventory method for the structure value

Quarterly value accumulation (PIM)

$$V_t^S = (1-\delta_t)V_{t-1}^S \frac{P_t^S}{P_{t-1}^S} + \alpha_t I_a^{dw,hh}, \qquad t > t_0$$

V_t^S: nominal structure value; P_t^S: structure-price index; $I_a^{dw,hh}$: annual household investment in dwellings; δ_t: quarterly depreciation rate.

Allocating annual investment across quarters

$$\alpha_t = \frac{GFCF_t^{tot}}{GFCF_a^{tot}} \approx \frac{GFCF_t^{hh}}{GFCF_a^{hh}}$$

$GFCF_t^{tot}$ and $GFCF_a^{tot}$ are quarterly and annual total-economy investment in dwellings. Since the household sector accounts for over 80% of annual dwelling investment, the total-economy quarterly profile approximates its quarterly allocation.

Quarterly depreciation

$$\delta_a = 0.01428, \qquad \delta_t = 1-(1-\delta_a)^{1/4}$$

The annual depreciation rate is 1.428%, based on the expected lifetime of dwelling structures. The recursion starts from the structure-stock value at t_0.

Constructing housing value and time-varying shares

Set the initial housing value Using the first calibration, the initial land and structure shares are 40% and 60 (Davis and Heathcote, 2007)

$$w^L_{t_0} = 0.40, \qquad w^S_{t_0} = 0.60, \qquad V^H_{t_0} = \frac{V^S_{t_0}}{w^S_{t_0}}$$

Update total housing value

$$V^H_t = V^H_{t_0} \frac{P^H_t}{P^H_{t_0}} \frac{Q^H_t}{Q^H_{t_0}}$$

P^H_t is the house price index (HPI). Q^H_t is total usable dwelling floor area, anchored to the 2021 Census and updated with quarterly completions. Adjusting for Q^H_t allows the housing stock to change over time; using the price index alone would hold its quantity fixed.

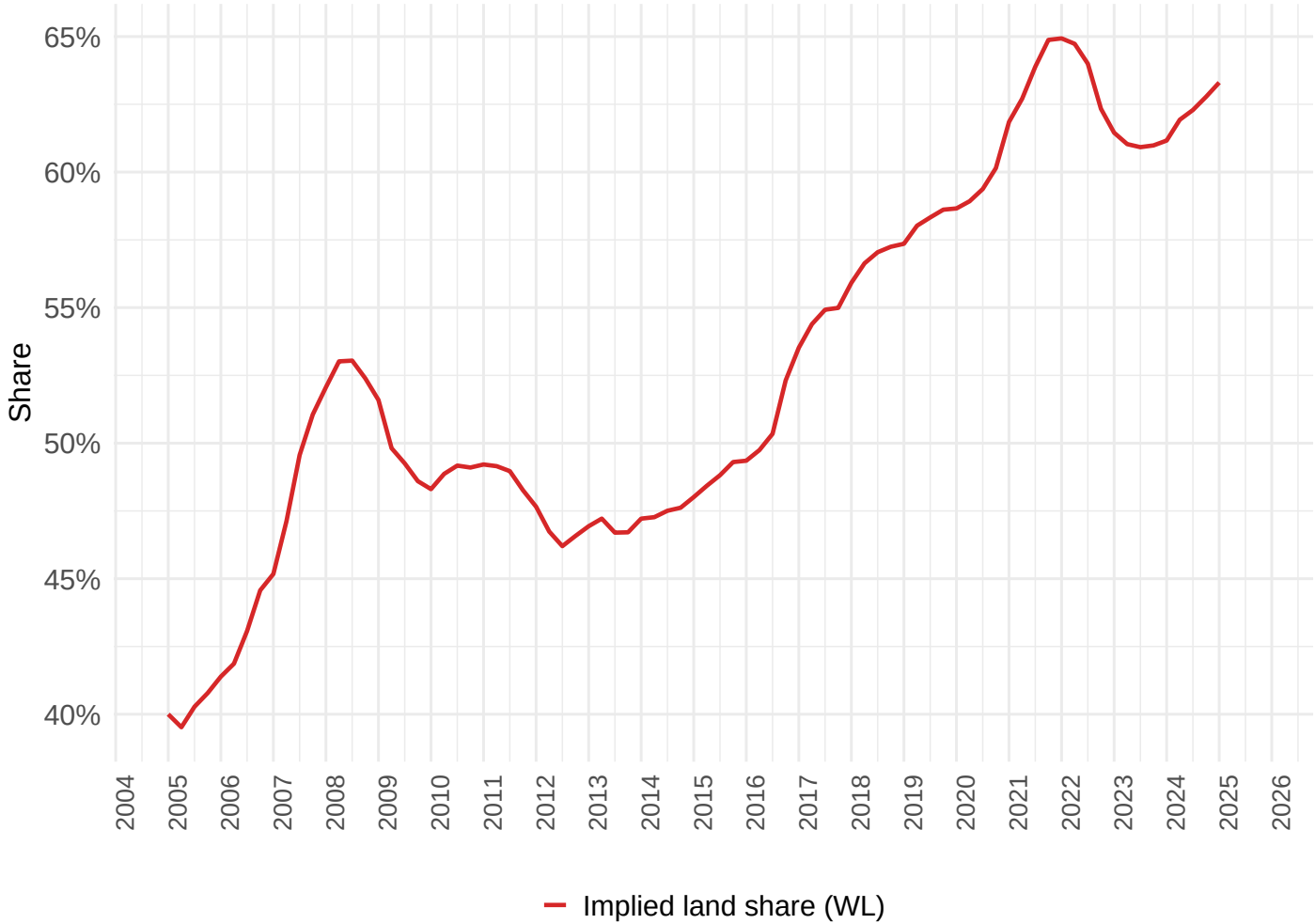
Calculate the time-varying shares Combining total housing value with the structure stock estimated by the PIM gives:

$$w^S_t = \frac{V^S_t}{V^H_t}, \qquad w^L_t = 1 - w^S_t$$

The 40/60 calibration sets the initial shares at t_0; the shares can then vary across quarters.

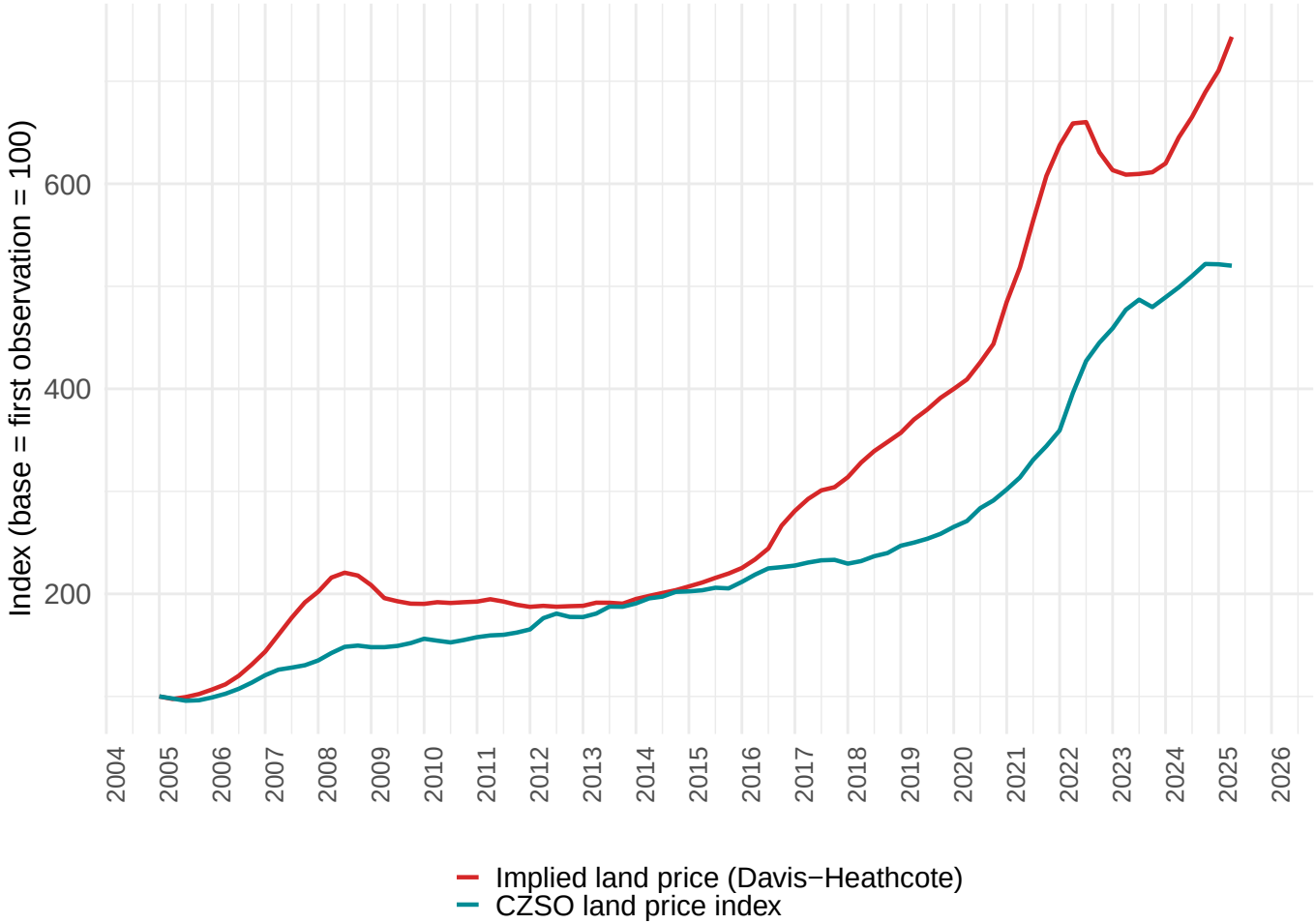
Alternative quantity measure (appendix)

Land share in total housing value

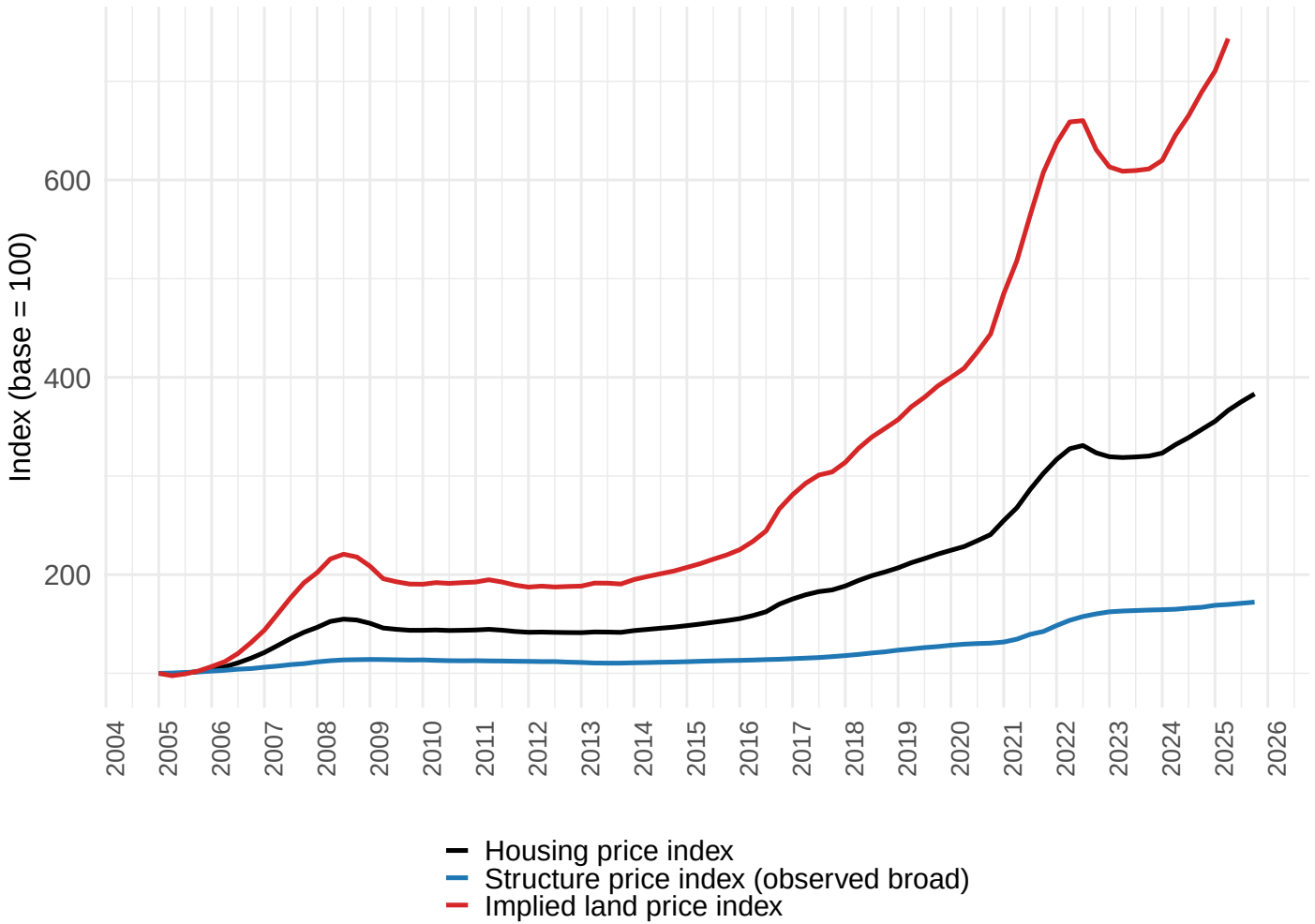


Implied land index and CZSO benchmark

The CZSO series covers vacant plots and is not a direct measure of land value embedded in existing homes.

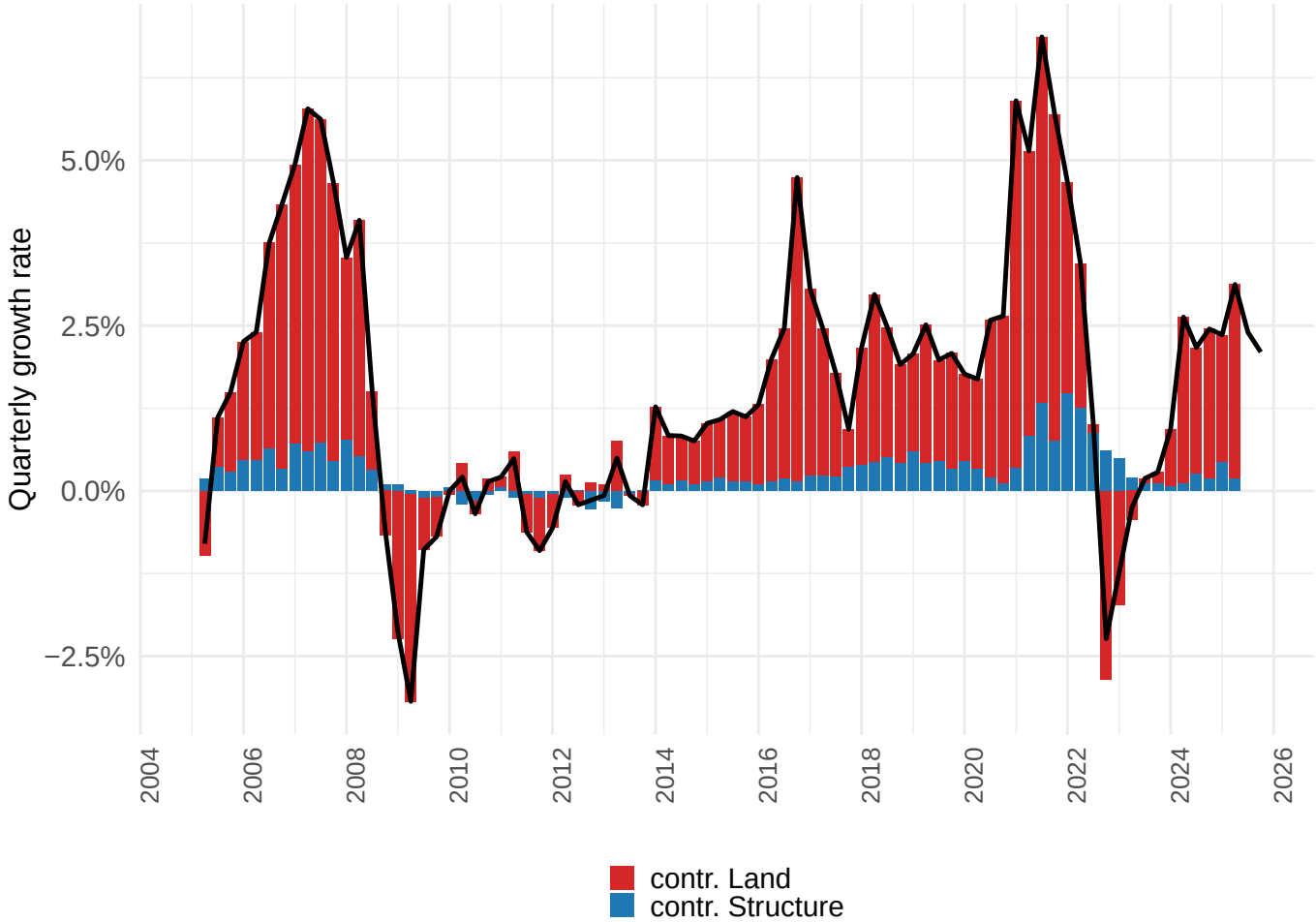


Housing, structure, and implied land price indices



Contributions to housing price growth

Component contributions use price growth and lagged value shares; together they sum to HPI growth.



Why look inside the Structure component?

The two-part decomposition tells us whether HPI growth comes from Structure or Land:

$$\text{HPI growth} = \text{Structure contribution} + \text{Land contribution}$$

But the broad Structure index combines two different forces:

$$\underbrace{\text{Construction costs}}_{\text{narrow observed index}} + \underbrace{\text{Markup}}_{\text{implied wedge over costs}}$$

Our extension separates all three contributions:

$$\text{HPI growth} = \text{Construction} + \text{Markup} + \text{Land}$$

- We keep the Structure–Land approach, so Land is inferred as before.
- We can now distinguish rising construction costs from a widening markup wedge.

Czech and UK evidence suggests that building prices reflect changing markups as well as construction costs (Lux and Sunega, 2010; Roberts and Axon, 2022).

1. Construction and Implied Markup

Observed price indices

$$P_t^S : \text{ broad Structure}, \qquad P_t^C : \text{ Construction costs}$$

Markup calibration and path

$$m_\tau = \frac{\nu_\tau^M}{1-\nu_\tau^M}, \qquad 1+m_t = (1+m_\tau)\frac{P_t^S/P_\tau^S}{P_t^C/P_\tau^C}$$

ν_τ^M: margin share within Structure; τ: calibration quarter.

Shares and additive split

$$\mu_t^C = \frac{1}{1+m_t}, \qquad \mu_t^M = \frac{m_t}{1+m_t}, \qquad \mu_t^C + \mu_t^M = 1$$

$$C_t^* = \mu_t^C P_t^S, \quad M_t^* = \mu_t^M P_t^S, \quad P_t^S = C_t^* + M_t^*$$

Notes:

Component indices (100 in t_0): $P_t^C = 100\frac{C_t^*}{C_{t_0}^*}, \qquad P_t^M = 100\frac{M_t^*}{M_{t_0}^*}$

Markup represents a calibrated price–cost wedge.
Margin anchors: low 8%, baseline (mid) 12%, high 14%(2008Q2), converted to the Structure basis.

2. Value Shares and HPI Contributions

Values and housing shares

$$V_t^S = (1 + m_t)V_t^C, \qquad w_t^S = \frac{V_t^S}{V_t^H}, \qquad w_t^L = 1 - w_t^S$$

$$w_t^C = w_t^S \mu_t^C, \quad w_t^M = w_t^S \mu_t^M, \quad w_t^C + w_t^M + w_t^L = 1$$

PIM gives V_t^C. The initial Land share anchors $V_{t_0}^H$; HPI and housing quantity determine its subsequent path.

Price growth and the Land residual

Define $g_t^X = P_t^X / P_{t-1}^X - 1$.

$$g_t^S = \mu_{t-1}^C g_t^C + \mu_{t-1}^M g_t^M, \qquad g_t^L = \frac{g_t^H - w_{t-1}^S g_t^S}{w_{t-1}^L}$$

Contributions to HPI growth

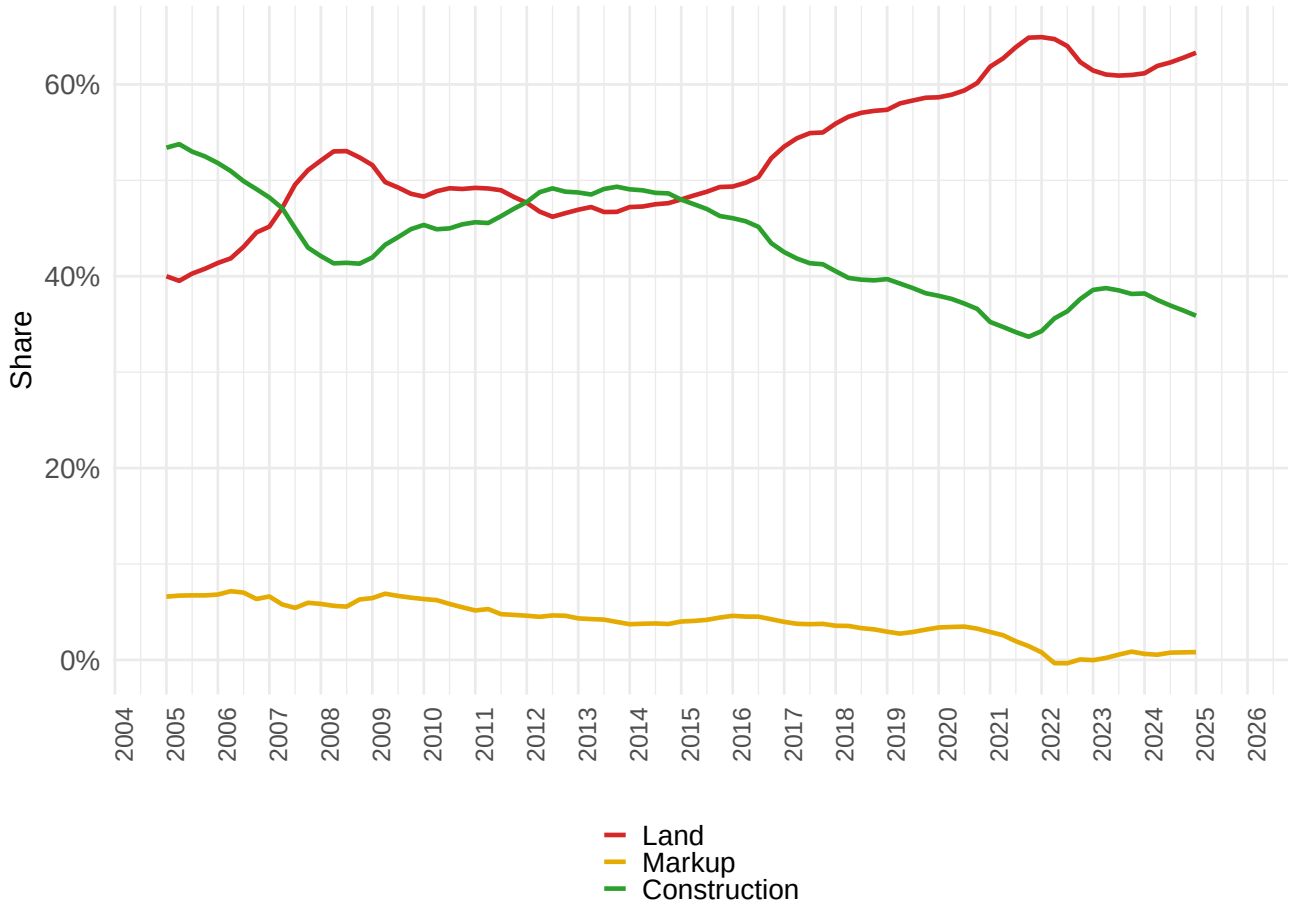
$$c_t^X = w_{t-1}^X g_t^X, \qquad X \in \{C, M, L\}$$

$$g_t^H = c_t^C + c_t^M + c_t^L$$

Across calibrations, fixed V_t^C, Q_t^H and $w_{t_0}^L$ imply unchanged Structure–Land shares. The Construction–Markup split changes.

Three-part decomposition: shares in housing value

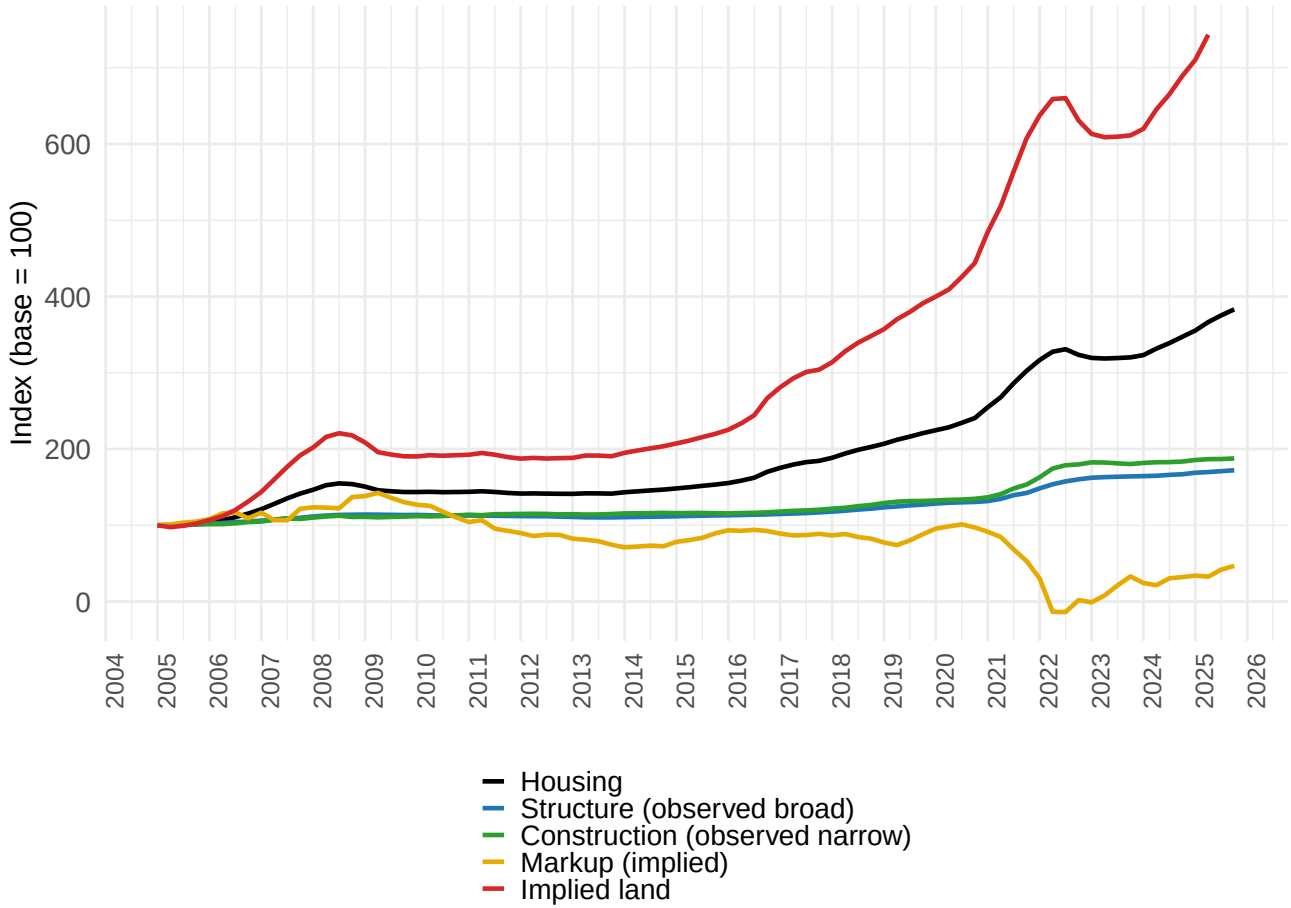
- The Land share is inherited from the two-part Structure–Land decomposition.
- The Structure share is split into Construction and implied Markup.



Mid markup scenario.

Three-part decomposition: component price indices

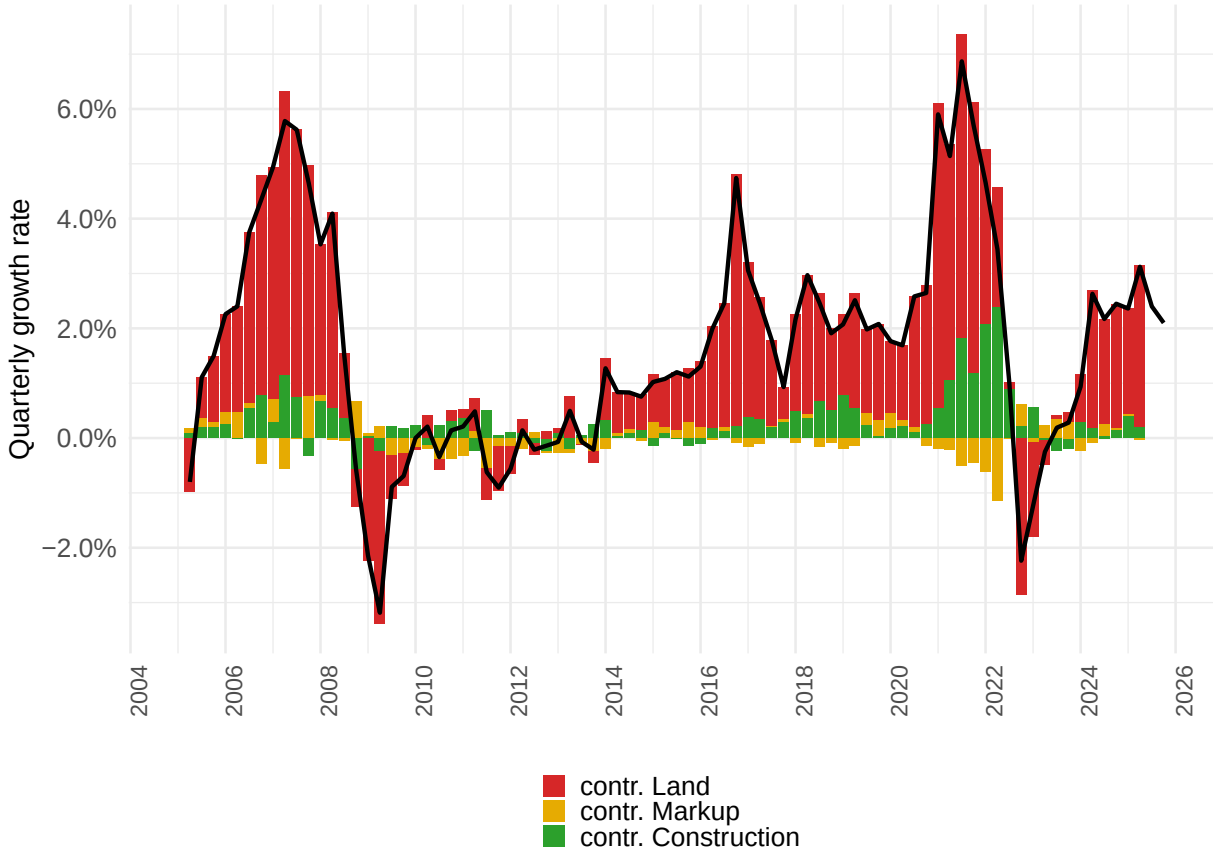
- The observed HPI, broad Structure, and narrow Construction indices are unchanged across markup scenarios.
- The Markup index is derived from the Structure split.



Indices normalized to 100 in the initial period; mid markup scenario.

Three-part decomposition: contributions to HPI growth

- Bars show the quarterly contributions of Construction, Markup, and Land; the black line shows total HPI growth.
- The Structure–Land decomposition is unchanged; the Structure contribution is now split into Construction and Markup.



Mid markup scenario.

Price-growth regressions: y/y, D3, HA – 3M PRIBOR

	HPI	Land	Structure	Construction
Lagged outcome [4]	0.492^{***}	0.389^{***}	0.430^{**}	-0.190
	(0.098)	(0.093)	(0.188)	(0.315)
Working-age pop. growth [1]	2.060^{***}	3.729^{***}	-0.412	-1.760
	(0.734)	(1.155)	(0.499)	(1.141)
Long-run GDP growth [1]	1.365^{***}	2.380^{***}	0.343^{***}	0.388^{**}
	(0.392)	(0.691)	(0.108)	(0.186)
3M PRIBOR [1]	-0.526	-0.803	0.309	1.245
	(0.390)	(0.564)	(0.370)	(0.791)
Constant	3.780^{*}	7.017^{**}	0.143	-0.319
	(1.971)	(3.292)	(0.887)	(1.535)
Observations	75	74	75	75
R^2	0.478	0.487	0.390	0.262
Adjusted R^2	0.424	0.433	0.327	0.185
Quarter-of-year FE	Yes	Yes	Yes	Yes

Dependent variables: y/y price growth (%). Working-age population and long-run GDP growth: y/y (%); PRIBOR: %.
Sample: 2007Q1–2025Q3; Land ends in 2025Q2. [k]: lag in quarters.
HC1 robust standard errors in parentheses. Significance: *** 1%, ** 5%, * 10%.

Price-growth regressions: y/y, D3, HA – 5Y IRS

	HPI	Land	Structure	Construction
Lagged outcome [4]	0.435^{***}	0.412^{***}	0.331^{**}	-0.178
	(0.099)	(0.096)	(0.161)	(0.188)
Working-age pop. growth [1]	2.027^{**}	2.489^{***}	-0.579	-2.023^{**}
	(0.789)	(0.902)	(0.432)	(0.789)
Long-run GDP growth [1]	1.409^{***}	1.650^{***}	0.333^{**}	0.373^{*}
	(0.404)	(0.476)	(0.126)	(0.198)
5Y IRS [1]	-0.105	-0.221	0.885^{**}	2.170^{***}
	(0.661)	(0.753)	(0.390)	(0.648)
Constant	3.134	4.046	-1.044	-2.768^{*}
	(2.500)	(2.898)	(1.031)	(1.641)
Observations	75	74	75	75
R^2	0.464	0.466	0.460	0.409
Adjusted R^2	0.408	0.409	0.403	0.348
Quarter-of-year FE	Yes	Yes	Yes	Yes

Dependent variables: y/y price growth (%). Working-age population and long-run GDP growth: y/y (%); 5Y IRS: %.
Sample: 2007Q1–2025Q3; Land ends in 2025Q2. [k]: lag in quarters.
HC1 robust standard errors in parentheses. Significance: *** 1%, ** 5%, * 10%.

Alternative specifications

- **Main specification.** The main text reports y/y price-growth regressions with quarter-of-year FEs using either 3M PRIBOR or 5Y IRS.
- **Growth horizon and fixed effects.** The appendix reports q/q regressions with quarter-of-year FEs, plus q/q and y/y regressions without FEs, for both interest-rate measures.
- **Same baseline specification.** The outcome enters at lag [4]; macro regressors enter at lag [1]. Working-age population and long-run GDP growth remain y/y.
- **Additional decomposition variants.** D2 separates Structure and Land; D3 separates Construction, Implied Markup and Land. SL and HA denote alternative quantity specifications used in the decomposition.

3M PRIBOR: q/q: with FE | q/q: no FE | y/y: no FE

5Y IRS: q/q: with FE | q/q: no FE | y/y: no FE

Conclusions

- In the baseline, **Land revaluation drives most HPI fluctuations**. The three-part split separates Construction costs from a calibrated price–cost wedge.
- **Working-age population growth** is positively associated with HPI and Land price growth; **long-run GDP growth** with all four price series.
- Interest-rate results depend on the rate measure: 3M PRIBOR is insignificant in the y/y specification, while 5Y IRS is positively associated with **Structure and Construction** price growth and insignificant for HPI and Land.
- **Policy relevance:** distinguishing construction-cost pressures from land revaluation can support central-bank monitoring of housing risks and inform collateral-value stress scenarios.

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Appendix: Alternative housing-quantity measure

Base-period calibration

$$w^S_{t_0} = 0.60, \qquad w^L_{t_0} = 0.40, \qquad V^H_{t_0} = \frac{V^S_{t_0}}{w^S_{t_0}}$$

Construct the quantity proxy

$$Q^S_t = 100\,\frac{V^S_t / P^S_t}{V^S_{t_0} / P^S_{t_0}}, \qquad Q^{L,\mathrm{BL}}_t = 100\,\frac{V^{L,\mathrm{BL}}_t / P^{L,\mathrm{BL}}_t}{V^{L,\mathrm{BL}}_{t_0} / P^{L,\mathrm{BL}}_{t_0}},$$

$$Q^H_t = w^S_{t_0} Q^S_t + w^L_{t_0} Q^{L,\mathrm{BL}}_t.$$

Q^S_t is real structures; $Q^{L,\mathrm{BL}}_t$ is a real building-land proxy, based on CZSO household-sector land values and the CZSO price index for building land without structures. Each quantity index is normalized to 100 at t_0.

Update housing value and calculate shares

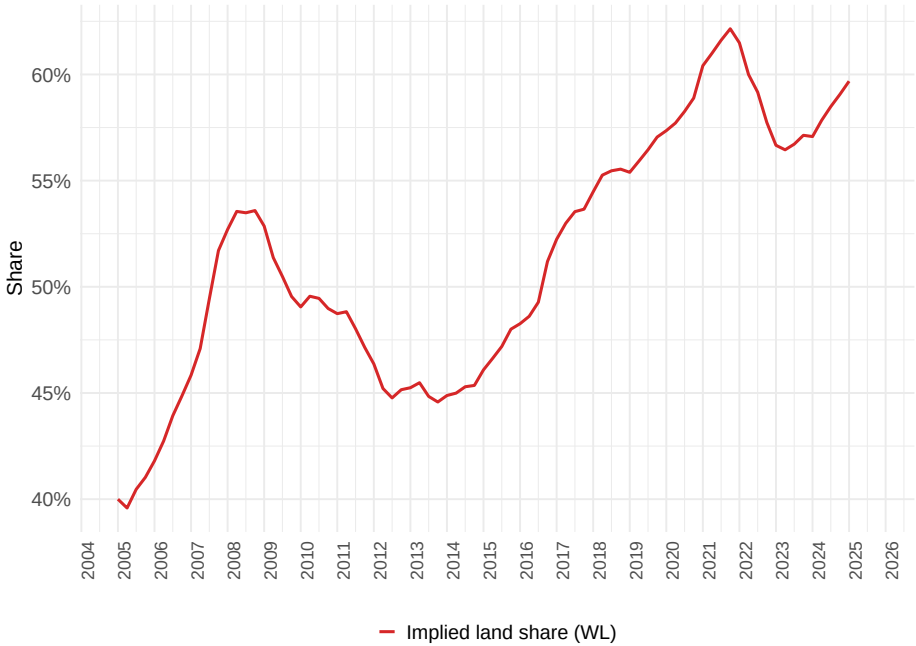
$$V^H_t = V^H_{t_0} \frac{HPI_t}{HPI_{t_0}} \frac{Q^H_t}{Q^H_{t_0}}, \qquad w^S_t = \frac{V^S_t}{V^H_t}, \qquad w^L_t = 1 - w^S_t$$

Fixed base-period weights avoid circularity: the time-varying shares are outcomes of the decomposition. The CZSO building-land series is a quantity proxy, not a direct measure of land embedded in existing homes.

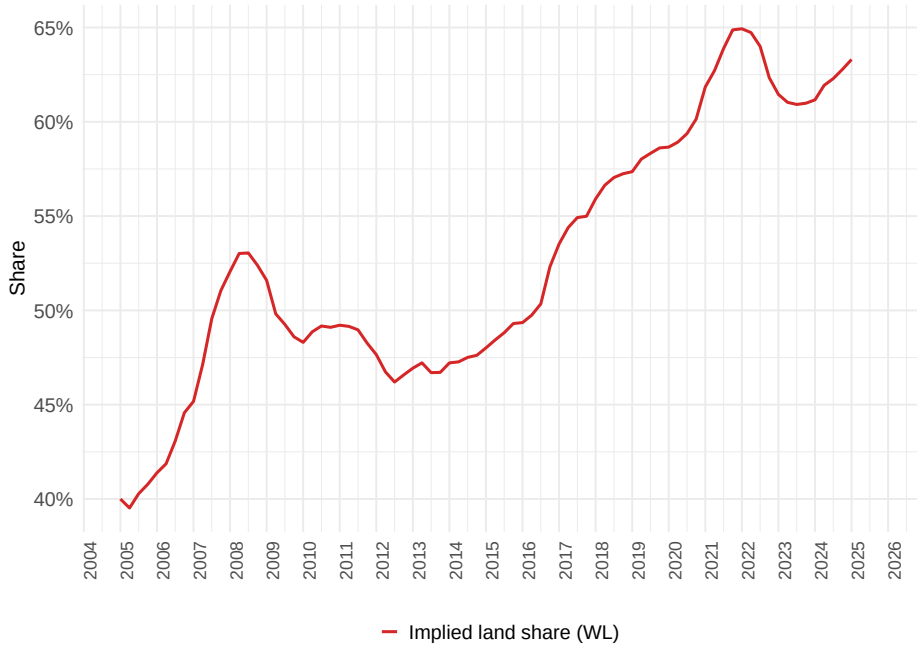
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Land share: narrow and broad definitions

Panel A: Narrow structure index
Excluding margins

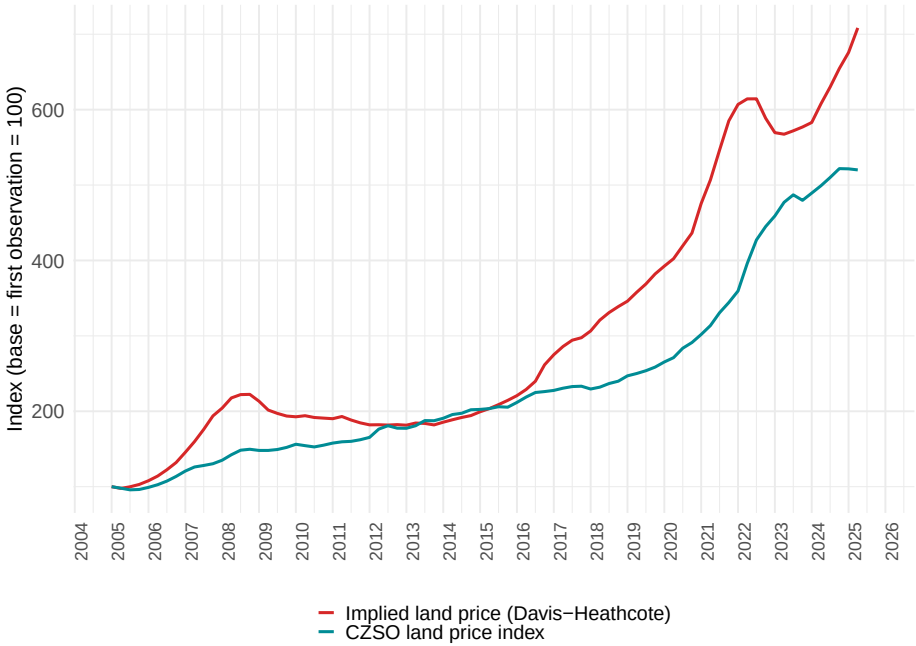


Panel B: Broad structure index
Including margins

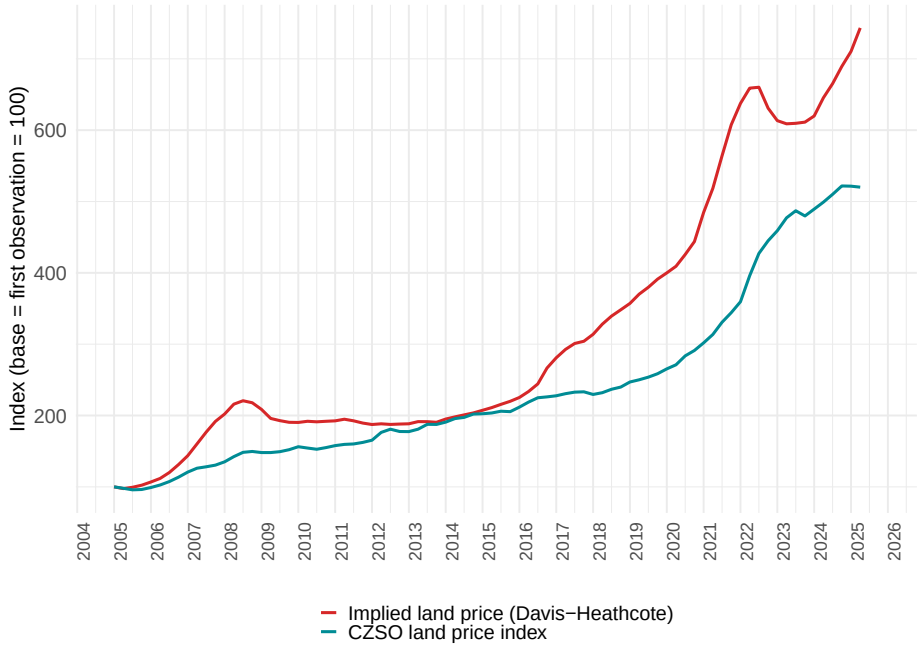


Implied land index and CZSO benchmark

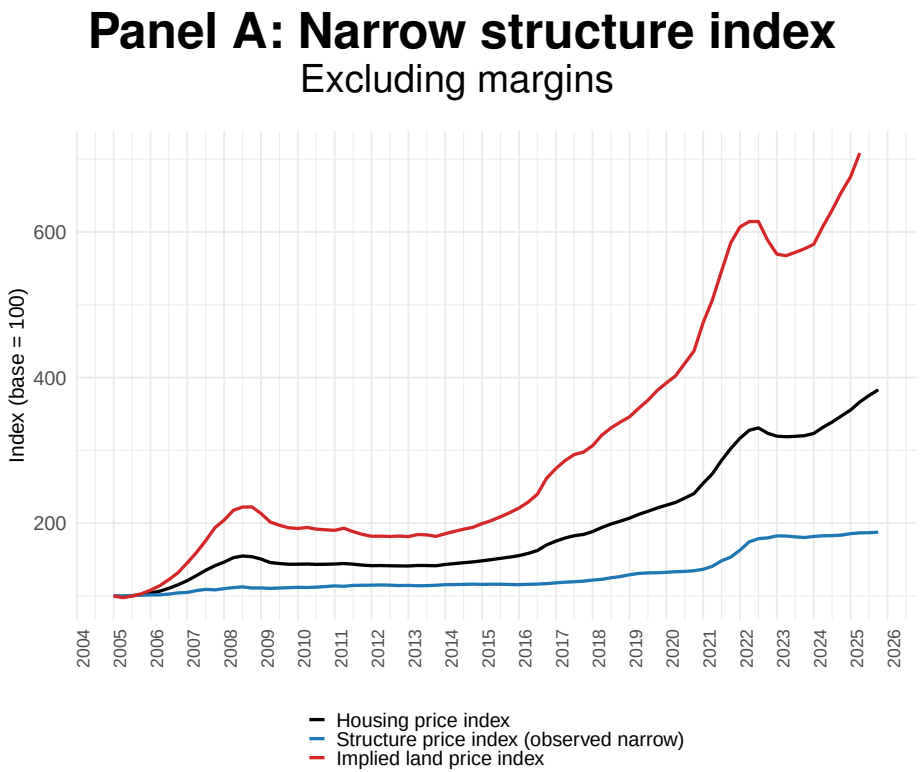
Panel A: Narrow structure index
Excluding margins

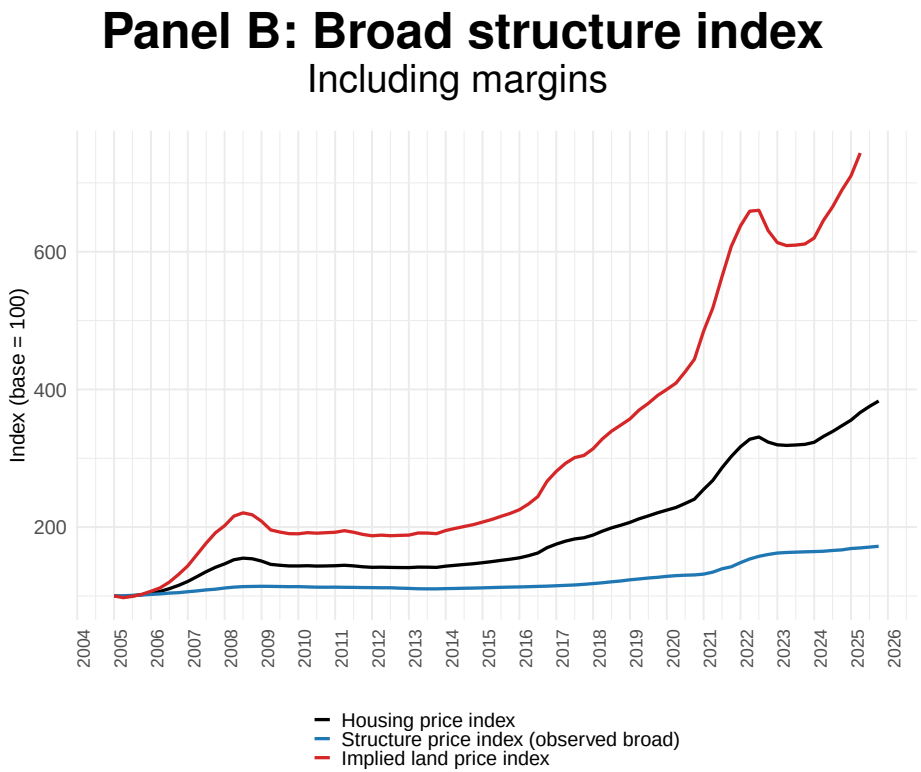


Panel B: Broad structure index
Including margins

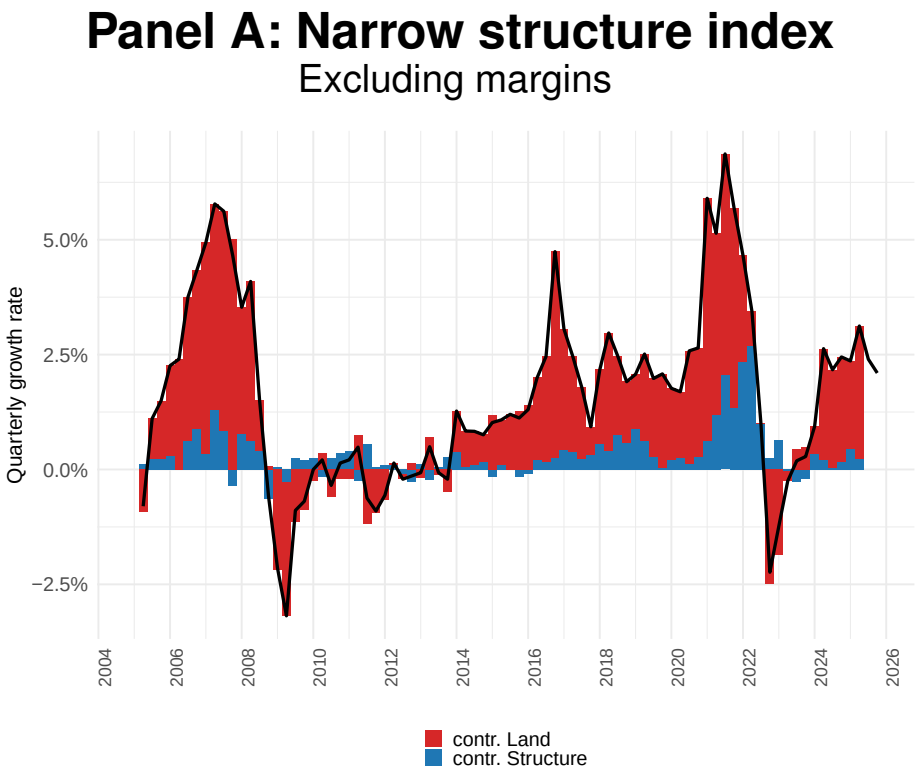


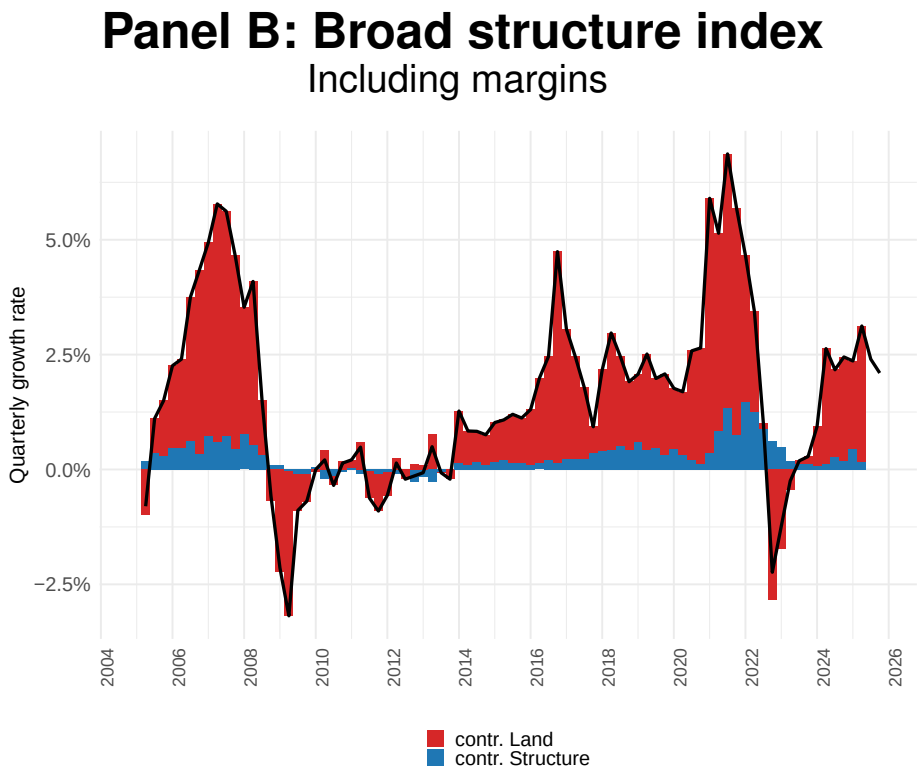
Housing, structure, and implied land price indices



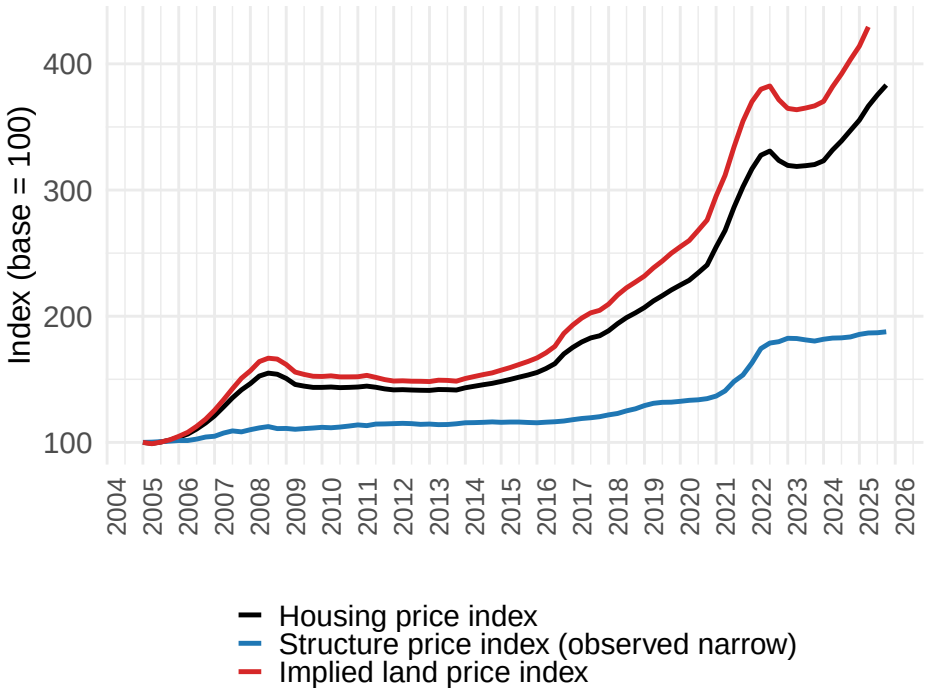


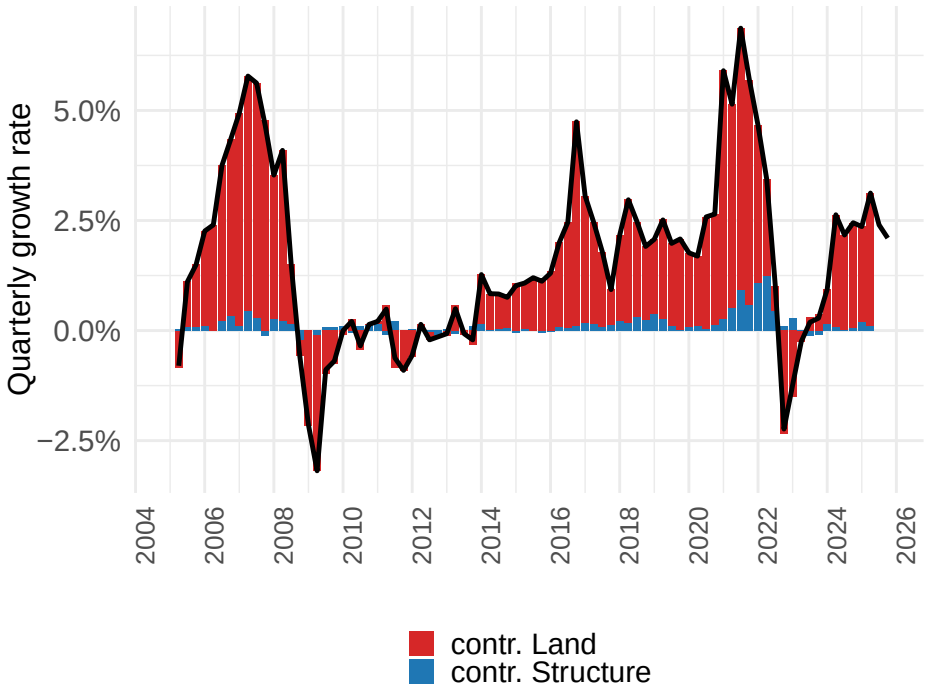
Contributions to housing price growth





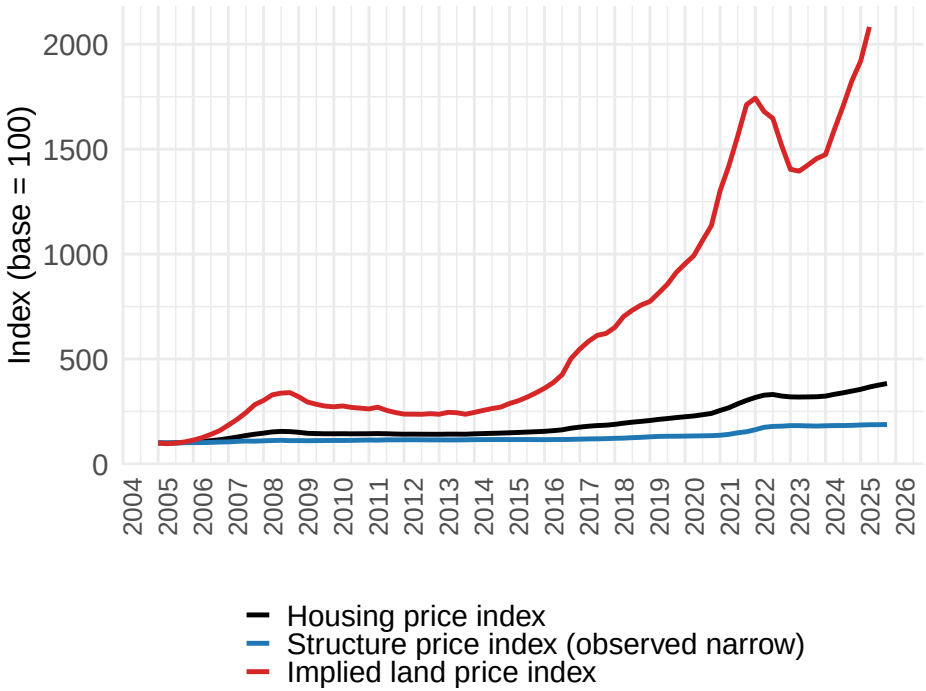
Appendix 1: WL = 0.8 (Big Cities)

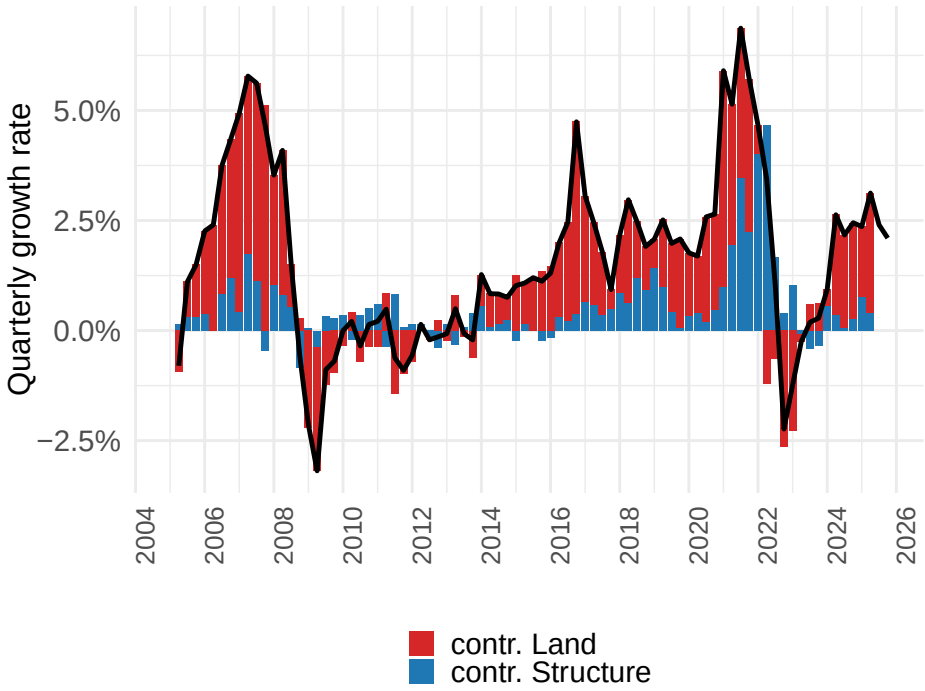




This is a consequence of the assumed shares and common national price data; actual differences between city and countryside Land-price growth would require regional evidence.

Appendix 2: WL = 0.2 (Countryside)





This is a consequence of the assumed shares and common national price data; actual differences between city and countryside Land-price growth would require regional evidence.

Appendix: Data Sources

Observed inputs (CZSO)

P_t^H	Quarterly HPI: transactions in new and existing dwellings, including land.
P_t^S, P_t^C	Construction output-price and cost indices for residential buildings.
PIM inputs	National accounts: annual household and quarterly total-economy GFCF in dwellings.
Q_t^H	2021 Census (dwelling counts and usable area) Czech Statistical Office (2024); quarterly dwelling completions.

Markup anchors (calibration assumptions)

- **Low/baseline:** Stavební fórum Construction Forum (2009) reports margins of 7–8% and 12–14%. Chosen anchors: 8% and 14% in 2008Q2.
- **High:** Deloitte's *White Book* Deloitte Czech Republic et al. (2025): Prague project costs in 2024. Assumed anchor: 13.4% project margin in 2024Q1, converted to the Structure basis.

CZSO building-plot prices (through 2019): external benchmark. The main Land and Markup indices are model outputs.

Appendix: q/q regressions with quarter FE, D3, HA – 3M PRIBOR

	HPI	Land	Structure	Construction
Lagged outcome [4]	0.257^{**}	0.158	0.706^{***}	0.323^{**}
	(0.110)	(0.101)	(0.134)	(0.150)
Working-age pop. growth [1]	0.561^{***}	0.991^{***}	0.103	0.019
	(0.179)	(0.283)	(0.085)	(0.189)
Long-run GDP growth [1]	0.256^{**}	0.452^{**}	0.119^{***}	0.128^{**}
	(0.105)	(0.179)	(0.032)	(0.061)
3M PRIBOR [1]	-0.176^{**}	-0.289^{*}	-0.099^{*}	-0.076
	(0.012)	(0.166)	(0.055)	(0.082)
Constant	1.502^{**}	2.462^{**}	0.344	0.702^{*}
	(0.613)	(1.023)	(0.219)	(0.391)
Observations	78	77	78	78
R^2	0.364	0.368	0.409	0.163
Adjusted R^2	0.300	0.304	0.350	0.079
Quarter-of-year FE	Yes	Yes	Yes	Yes

Dependent variables: q/q price growth (%). Working-age population and long-run GDP growth: y/y (%); PRIBOR: %.
Sample: 2006Q2–2025Q3; Land ends in 2025Q2. [k]: lag in quarters.
HC1 robust standard errors in parentheses. Significance: *** 1%, ** 5%, * 10%.

Back to alternative specifications

Appendix: q/q regressions without quarter FE, D3, HA – 3M PRIBOR

	HPI	Land	Structure	Construction
Lagged outcome [4]	0.260^{**}	0.160	0.720^{***}	0.361^{**}
	(0.107)	(0.099)	(0.128)	(0.146)
Working-age pop. growth [1]	0.564^{***}	0.997^{***}	0.106	0.042
	(0.178)	(0.282)	(0.082)	(0.178)
Long-run GDP growth [1]	0.256^{**}	0.452^{**}	0.119^{***}	0.128^{**}
	(0.102)	(0.172)	(0.032)	(0.060)
3M PRIBOR [1]	-0.176	-0.288^{*}	-0.103^{*}	-0.090
	(0.109)	(0.162)	(0.053)	(0.080)
Constant	1.474^{***}	2.539^{***}	0.267^{**}	0.512^{**}
	(0.409)	(0.676)	(0.118)	(0.222)
Observations	78	77	78	78
R^2	0.360	0.365	0.406	0.150
Adjusted R^2	0.325	0.329	0.373	0.103
Quarter-of-year FE	No	No	No	No

Dependent variables: q/q price growth (%). Working-age population and long-run GDP growth: y/y (%); PRIBOR: %.
Sample: 2006Q2–2025Q3; Land ends in 2025Q2. [k]: lag in quarters.
HC1 robust standard errors in parentheses. Significance: *** 1%, ** 5%, * 10%.

Back to alternative specifications

Appendix: y/y regressions without quarter FE, D3, HA – 3M PRIBOR

	HPI	Land	Structure	Construction
Lagged outcome [4]	0.492^{***}	0.389^{***}	0.430^{**}	-0.189
	(0.096)	(0.091)	(0.186)	(0.310)
Working-age pop. growth [1]	2.062^{***}	3.736^{***}	-0.412	-1.756
	(0.712)	(1.120)	(0.488)	(1.119)
Long-run GDP growth [1]	1.366^{***}	2.382^{***}	0.343^{***}	0.388^{**}
	(0.383)	(0.674)	(0.106)	(0.183)
3M PRIBOR [1]	-0.524	-0.797	0.309	1.241
	(0.381)	(0.552)	(0.364)	(0.781)
Constant	3.708^{**}	6.786^{***}	0.168	-0.167
	(1.447)	(2.424)	(0.620)	(1.166)
Observations	75	74	75	75
R^2	0.478	0.487	0.390	0.262
Adjusted R^2	0.448	0.457	0.355	0.220
Quarter-of-year FE	No	No	No	No

Dependent variables: y/y price growth (%). Working-age population and long-run GDP growth: y/y (%); PRIBOR: %.
Sample: 2007Q1–2025Q3; Land ends in 2025Q2. [k]: lag in quarters.
HC1 robust standard errors in parentheses. Significance: *** 1%, ** 5%, * 10%.

Back to alternative specifications

Appendix: q/q regressions with quarter FE, D3, HA – 5Y IRS

	HPI	Land	Structure	Construction
Lagged outcome [4]	0.249^{**}	0.214^{**}	0.464^{***}	0.110
	(0.108)	(0.106)	(0.123)	(0.146)
Working-age pop. growth [1]	0.586^{***}	0.707^{***}	0.037	-0.134
	(0.186)	(0.217)	(0.096)	(0.222)
Long-run GDP growth [1]	0.270^{**}	0.312^{**}	0.121^{***}	0.132^{**}
	(0.103)	(0.122)	(0.036)	(0.063)
5Y IRS [1]	-0.181	-0.227	0.051	0.170
	(0.151)	(0.174)	(0.081)	(0.154)
Constant	1.533^{**}	1.846^{**}	0.155	0.266
	(0.719)	(0.843)	(0.232)	(0.459)
Observations	78	77	78	78
R^2	0.350	0.346	0.391	0.175
Adjusted R^2	0.285	0.280	0.330	0.093
Quarter-of-year FE	Yes	Yes	Yes	Yes

Dependent variables: q/q price growth (%). Working-age population and long-run GDP growth: y/y (%); 5Y IRS: %.
Sample: 2006Q2–2025Q3; Land ends in 2025Q2. [k]: lag in quarters.
HC1 robust standard errors in parentheses. Significance: *** 1%, ** 5%, * 10%.

Back to alternative specifications

Appendix: q/q regressions without quarter FE, D3, HA – 5Y IRS

	HPI	Land	Structure	Construction
Lagged outcome [4]	0.253^{**}	0.217^{**}	0.484^{***}	0.157
	(0.106)	(0.103)	(0.116)	(0.142)
Working-age pop. growth [1]	0.590^{***}	0.711^{***}	0.042	-0.102
	(0.185)	(0.216)	(0.092)	(0.212)
Long-run GDP growth [1]	0.270^{***}	0.312^{**}	0.122^{***}	0.133^{**}
	(0.101)	(0.118)	(0.035)	(0.062)
5Y IRS [1]	-0.182	-0.229	0.044	0.144
	(0.147)	(0.169)	(0.076)	(0.149)
Constant	1.527^{***}	1.863^{***}	0.059	0.056
	(0.519)	(0.606)	(0.192)	(0.366)
Observations	78	77	78	78
R^2	0.347	0.343	0.384	0.154
Adjusted R^2	0.311	0.306	0.351	0.107
Quarter-of-year FE	No	No	No	No

Dependent variables: q/q price growth (%). Working-age population and long-run GDP growth: y/y (%); 5Y IRS: %.
Sample: 2006Q2–2025Q3; Land ends in 2025Q2. [k]: lag in quarters.
HC1 robust standard errors in parentheses. Significance: *** 1%, ** 5%, * 10%.

Back to alternative specifications

Appendix: y/y regressions without quarter FE, D3, HA – 5Y IRS

	HPI	Land	Structure	Construction
Lagged outcome [4]	0.435^{***}	0.412^{***}	0.332^{**}	-0.177
	(0.096)	(0.094)	(0.157)	(0.183)
Working-age pop. growth [1]	2.028^{**}	2.491^{***}	-0.579	-2.020^{**}
	(0.767)	(0.875)	(0.422)	(0.770)
Long-run GDP growth [1]	1.410^{***}	1.651^{***}	0.333^{***}	0.373^{*}
	(0.395)	(0.463)	(0.123)	(0.191)
5Y IRS [1]	-0.104	-0.221	0.883^{**}	2.164^{***}
	(0.642)	(0.732)	(0.378)	(0.629)
Constant	3.116	3.992^{*}	-1.041	-2.709^{*}
	(2.011)	(2.316)	(0.863)	(1.383)
Observations	75	74	75	75
R^2	0.464	0.466	0.459	0.409
Adjusted R^2	0.433	0.435	0.429	0.375
Quarter-of-year FE	No	No	No	No

Dependent variables: y/y price growth (%). Working-age population and long-run GDP growth: y/y (%); 5Y IRS: %.
Sample: 2007Q1–2025Q3; Land ends in 2025Q2. [k]: lag in quarters.
HC1 robust standard errors in parentheses. Significance: *** 1%, ** 5%, * 10%.

Back to alternative specifications