

# Tenure Discounts and Rent Dynamics in the Austrian Rental Market, 2005–2024

Markus Knell

Oesterreichische Nationalbank

Congress of the EEA,  
Bordeaux School of Economics, 27 August 2025

\*The content of these slides reflects the views of the authors and not necessarily those of the OeNB.

# Motivation

- Distinguishing old vs. new rental contracts is important:
  - Levels & dynamics differ: old leases are stickier; new leases track current market conditions.
  - Macro measurement:
    - CPI debate (new-tenant vs. all-tenant)
    - Owner-occupied housing (rental equivalence vs. net acquisition).
  - Housing affordability: insider vs. outsider (sitting vs. new) tenants; equity and fairness
- Focus on [Austria](#) (MircoCensus data, 2005–2024)
  - Interesting case: ~50% renters; segmented market (private/municipal/cooperative); stable regulation; gradual shifts (more fixed-term, fewer municipal).
- [References](#): Krugman (2023); Adams et al. (2024); Eurostat (2023); Eiglsperger (2024, ECB); Olsen (1972); Marks (1984); Autor et al. (2014); Chen et al. (2023)

# Research Questions

- How large are **tenure discounts** in Austria?
- How do old vs. new rents evolve **over time**?
- What **mechanisms** explain the observed patterns?
- What are the **policy implications**?

# Data

- **Austrian Microcensus**, 22,500 households/quarter, mandatory participation (high response rate)
- Rental module (“Wohnen”), **2005–2024**
- Define **new contracts**: duration < 3 months

# Rental Markets in Austria: A Snapshot

- Nearly 50% of households rent
  - renting is often a *long-term choice*
  - large **social housing** sector
  - **highly regulated**: strong tenant protections, indefinite leases, indexed adjustments (Baumgartner 2013, Klien 2023).
- Three segments:
  - **Private** (Hauptmietverträge; limited/unlimited; regulation varies),
  - **Cooperative** (Genossenschaftswohnungen; upfront contribution; below-market rents),
  - **Municipal** (Gemeindewohnungen; subsidized; eligibility rules).
- Regional heterogeneity:
  - **Vienna**: large social housing; tight market
  - **Salzburg & Innsbruck**: land scarcity/tourism
  - **West**: higher prices
  - More ownership in rural areas
  - **Regions used below**: Vienna; Center/East; West; South.

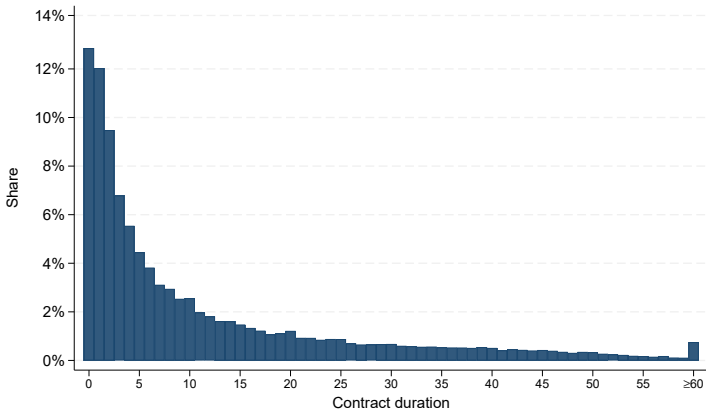
# Method

- Hedonic regression:

$$\ln(Rentsqm_i) = \alpha + \mathbf{X}'_i\beta + \gamma Dur_i + \sum_t \delta_t TD_t + \varepsilon_i$$

- **Dependent variable:** logarithm of the monthly rent (net of operating costs) per square meter ( $Rentsqm_i$ )
- $Dur_i$ : **contract duration** with  $\gamma$  measuring the tenure discount
- $TD_t$ : vector of quarterly **time dummies**
- $\mathbf{X}_i$ : additional **quality controls** (building age, total size, heating, quality category, urbanization, contract type, region).

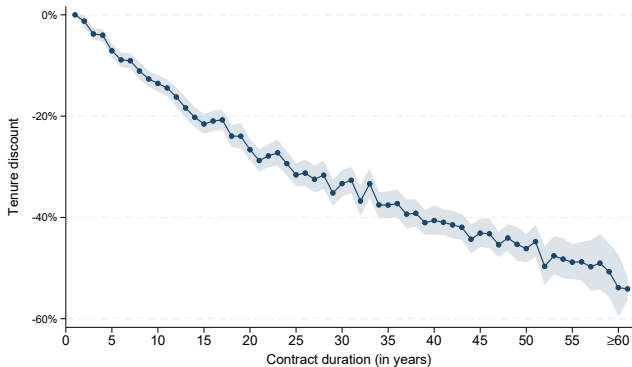
# Contract Duration



**Fact 1:** The average duration is 11.8 years.

**Fact 2:** Each year there are 12.9% new contracts.

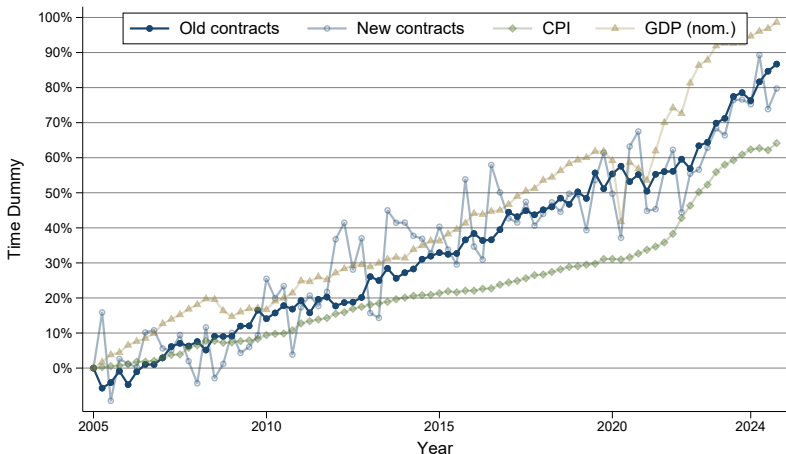
# Tenure Discounts



**Fact 3:** Rents decrease by 1.3% per year of contract duration (annual tenure discounts).

**Fact 4:** Old contracts are on average 13.9% cheaper than new contracts (average tenure discounts).

## Growth of Old vs. New Rents



**Fact 5:** Old and new rents grow at a similar rate ( $\approx 3.1\%$  per year).

## Additional Results

- Heterogeneity:
  - Contract Types:
    - Private: higher growth, larger discounts ( $\sim 2\%$ )
    - Cooperative: smaller discounts ( $\sim 0.7\%$ )
    - Municipal: long durations (17 years), modest discounts ( $\sim 1.1\%$ )
  - Regions: Different combination of types in the four main regions
- Explanatory variables: [◀ Coefficients plot](#) [◀ Dominance statistic](#)
  - *Contract duration* has the largest explanatory power (followed by the *time dummies* and *fixed-term contracts*).
  - Cooperative and municipal housing is by 17% and 28% cheaper than private rents.
- Changes over time: Both the relative frequencies and the coefficients of some variables changed from 2005-2010 to 2020-2024. [◀ Table](#)

## A Simple Model — Setup

- Continuum of flats inhabited by “old” or “new” renters
- Contracts **dissolve** randomly (probability  $s$ )
- **New rents** grow at  $g + \pi$  (income growth + inflation)  $\rightarrow$  constant expenditure share for new rents
- **Old rents** are indexed at  $\omega = \pi$
- The model **explains** all stylized facts:
  - **Geometric distribution** of contract duration
  - **Tenure discounts**  $\approx$  real growth rate  $g$
  - **Equal long-run growth rates** of old and new rents

## Geometric Distribution, Average Duration

- Constant separation probability  $s$  implies:

$$\Pr(\text{Duration} = k) \equiv \Psi_k = s(1-s)^k \quad \text{for } 0 \leq k \leq t-1$$

**Implication 1:** The logarithms of the **relative frequencies** are a linear function of the contract duration  $k$ :  
 $\ln(\Psi_k) = \ln s + k \ln(1-s)$ .

**Implication 2:** The **share of new rental contracts** is identical to the separation probability  $s$ . The **average contract duration** is given by  $\frac{1-s}{s}$ .

## Tenure Discounts

$$\frac{v_{kt}^{old}}{v_t^{new}} = \frac{v_{t-k}^* (1 + \omega)^k}{v_t^*} = \frac{v_t^* \left( \frac{1 + \omega}{(1 + g)(1 + \pi)} \right)^k}{v_t^*} = \frac{v_t^* \left( \frac{1}{1 + g} \right)^k}{v_t^*} = (1 + g)^{-k}$$

**Implication 3:** The logarithm of the **annual tenure discount** is linear in the contract duration  $k$ :

$$\ln \left( \frac{v_{kt}^{old}}{v_t^{new}} \right) = \ln(v_{kt}^{old}) - \ln(v_t^{new}) = -k \times \ln(1 + g) \approx -k \times g$$

**Implication 4:** In the long-run equilibrium, the **average tenure discount** (i.e. rent of the average new contract to the average old contract) is given by:

$$\rho_{new/old}^* \equiv \lim_{t \rightarrow \infty} \frac{\bar{v}_t^{new}}{\bar{v}_t^{old}} = 1 + \frac{g}{s}$$

## Growth Rates

**Implication 5:** Average new and average old rents grow with the same rate:

$$g^{old} = g^{new} = \bar{g} = (1 + g)(1 + \pi) - 1 \approx g + \pi$$

- “Structural effect: Low separation prob.  $s \rightarrow$  few old rents are reset. But the ones that *are* reset are on average lower  $\rightarrow$  the gap to  $v_t^*$  is larger.
- In the simple model the relative frequencies and the size of the structural effect **exactly offset**  $\rightarrow$  the growth of the average old rent remains at  $g + \pi$  (independent of  $s$ ).

# Stylized Facts vs. Model Implications 1

- Distribution and duration:
  - Average contact duration: 11.8 years would imply  $s = 0.08$  (in the data 12.8% new contracts).
  - Explanation: Fixed-term contracts increase share of new contracts and separation probability decreases with duration.
  - Logarithm of relative frequencies close to linear.

- Annual tenure discount:

Model suggests:  $\ln(v_{kt}^{old}) = \bar{\alpha} + \bar{\gamma}k + \bar{\delta}t$

- In the data  $\bar{\gamma} = -0.0126 \rightarrow g \approx 1.3\%$
- In the data  $\bar{\delta} = 0.031 \rightarrow (g + \pi) \approx 3.1\%$
- Negative relation between  $\bar{\gamma}$  and  $\bar{\delta}$  also across 12 or 27 submarkets. [◀ Graph](#)

## Stylized Facts vs. Model Implications 2

- **Average tenure discount:**  $\rho_{new/old}^* = 1 + \frac{g}{s}$ .  
Insert  $g = 1.3\%$  and  $s = 0.08 \rightarrow$   
 $\rho_{new/old}^* = 1 + \frac{0.013}{0.08} = 1.1625 \rightarrow \rho_{old/new}^* = 0.86$   
 $\rightarrow$  average discount 14% (model) vs. 13.9% (data)
- **Growth rates:** Annual time variables in the hedonic regressions imply an average (unexplained) growth rate of:
  - 3.1% (old contracts)
  - 2.9% (new contracts)
  - The difference is not statistically significant
  - 2005-2024: +83% (old) vs. +80% (new).
  - **Quality-unadjusted:** 3.8% (old) and 3.4% (new).

## Policy Implications

- Tenure discounts follow from long-term contracts together with indexation rules (“2nd order rent control”)
- Tenure discounts are on average of similar importance as social housing: -14% vs. -17% (cooperative) or -28% (municipal)
- CPI measurement:
  - Share of new contracts is much smaller than in the US (12.9% vs. 25%-50%).
  - Would be problematic to base rental inflation on this small segment
  - For precise measurement one would also need a much larger sample than in the current microcensus old vs. new rents matter
- Market segmentation is important and critical for policy design

# Conclusion

- **Austrian rental market**: highly regulated; segmented; longer contract durations than in other countries
- **Tenure discounts** are sizeable and the most important element (together with regional disparities) to understand rent differences
- A **simple model** matches all of the empirical stylized facts
- Paper **provides a framework** that might be useful to understand the patterns and dynamics of **other rental markets**

# Appendix

## Changes Over Time

**Table:** Coefficients and relative frequencies for two time periods

Variable	Relative Frequencies		Coefficients	
	2005-2010	2020-2024	2005-2010	2020-2024
<b>Duration</b>	13.1	11.2	-0.012	-0.013
<b>Built after 1981</b>	29.1%	38.8%	0.227	0.226
<b>Fixed-term</b>	13.5%	24.4%	0.197	0.143
<b>Municipal</b>	19.7%	16.1%	-0.253	-0.364
<b>Cooperative</b>	35.8%	38.9%	-0.137	-0.220
<b>Center/East</b>	34.7%	36.7%	0.057	-0.043

## Dominance Statistic

Table: Dominance statistic for different contract types

Variable	Benchmark	Priv.	Coop.	Mun.
Cont. Dur.	<b>32.5% (1)</b>	<b>39.6% (1)</b>	<b>24.3% (2)</b>	<b>44.6% (1)</b>
Fixed Term	<b>15.5% (3)</b>	<b>14.4% (3)</b>	5.3% (5)	<b>3.3% (4)</b>
Municipal	7.9% (5)	—	—	—
Cooperative	1.9% (8)	—	—	—
Cat. B/C/D	<b>9.5% (4)</b>	<b>12.8% (4)</b>	<b>9.6% (3)</b>	<b>9.5% (3)</b>
Time Dummies	<b>25.2% (2)</b>	<b>22.9% (2)</b>	<b>42.5% (1)</b>	<b>33.5% (2)</b>
Flat Size	1.1% (11)	1.4% (7)	2.5% (9)	1.6% (8)
Constr. Year	1.2% (10)	1.4% (8)	2.7% (6)	1.7% (7)
Heating	1.2% (9)	2.0% (6)	2.5% (8)	2.1% (6)
Urbanisation	1.9% (7)	4.6% (5)	2.5% (7)	1.5% (9)
Regions	2.2% (6)	1.1% (9)	<b>8.0% (4)</b>	2.3% (5)

# Coefficients Plot

Figure: Coefficients of the hedonic regression (split by contract type)

