

Housing policy and the distribution of wealth: A comparative perspective on public and private wealth

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Comparative research suggests wealth inequality does not necessarily follow patterns of income inequality. Recent accounts highlight role of housing policy. But:

- ▶ What is the role of public housing wealth? - We compute augmented wealth measure for housing
- ▶ How does the housing-hypothesis perform on the regional level? - We compare Vienna with the other federal states in Austria
- ▶ To what extent do such findings depend on methodological choices? - We benchmark our results for augmented wealth with decomposition methodology

We find that:

- ▶ Novel augmented wealth measure has explanatory power for cross-regional variation
- ▶ Comparable results for augmented wealth and decomposition approach

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Starting point: What determines cross-national differences in wealth inequality?

- ▶ Substantial share of variation driven by institutional factors unrelated to household structure, employment characteristics, education or age (Cowell, Karagiannaki, and Mcknight 2018; Bover 2010)
- ▶ Particularly puzzling: wealth distributions do not mirror income distributions (Cowell, Karagiannaki, and Mcknight 2018; Pfeffer and Waitkus 2021)
- ▶ Some argue that welfare state institutions shape wealth inequality, but not in the way they shape income distributions
More generous and encompassing systems might not lead to lower wealth inequality.

Old age income security:

- ▶ Policies traditionally considered redistributive (over the lifecycle) might crowd out private accumulation - higher wealth inequality (Feldstein 1976; Fessler and Schürz 2018; Domeij and Klein 2002).
- ▶ Many studies use imputation methods, eliciting distributions of "augmented wealth" (Feldstein 1976; Sabelhaus and Volz 2020). They point at diminishing cross-national differences (Bönke et al. 2020).

Recently, housing related to international variation:

- ▶ Fourth pillar of social policy more important than traditional social insurance (Pfeffer and Waitkus 2021)
- ▶ Popular approach: decomposition methodology (Kaas, Kocharkov, and Preugschat 2015; Christelis, Georgarakos, and Haliassos 2013; Pfeffer and Waitkus 2021)

Given the prominence of the housing hypothesis in current studies, we contribute to the wealth inequality-puzzle literature by:

- ▶ Providing a more nuanced take:
 - ▶ Focusing particularly on the role of non-private housing provision as an aspect of housing policy
 - ▶ Appraise whether the housing hypothesis can also explain sub-national differences in wealth inequality (Fessler, Mooslechner, and Schürz 2012), where pension institutions do not confound
- ▶ Studying the role of the "augmented wealth" approach vis-à-vis the decomposition perspective in shaping the results

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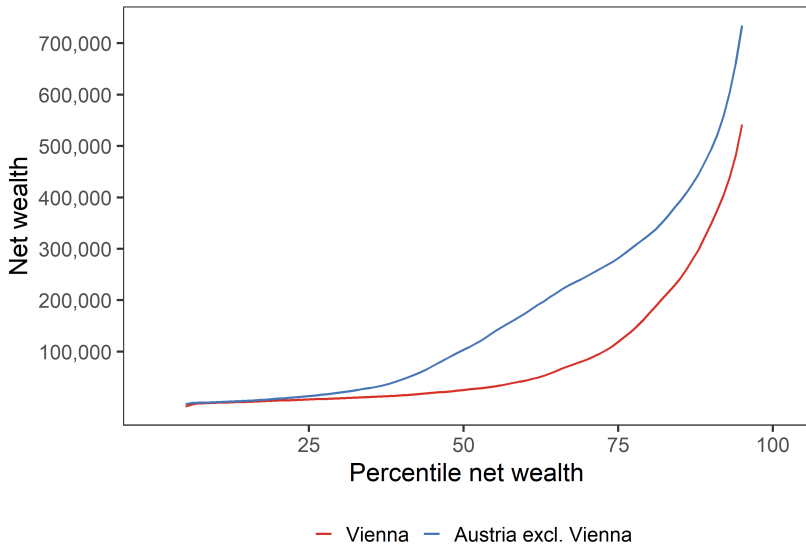
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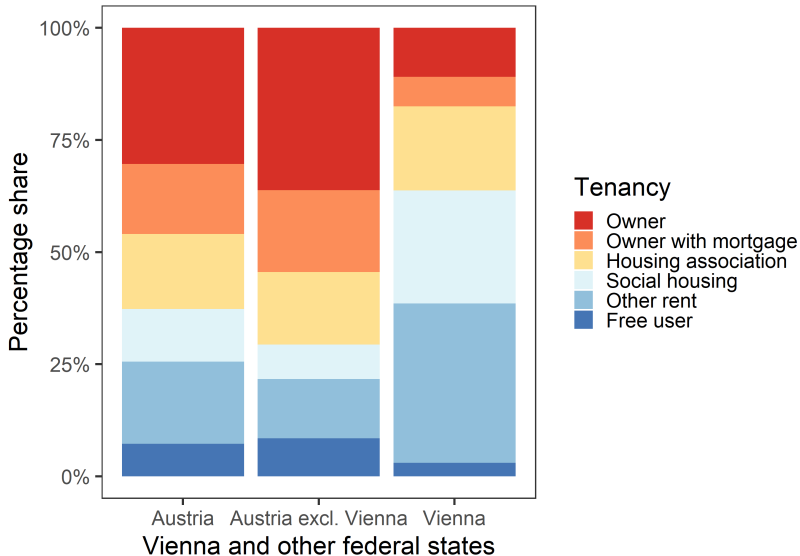
Conclusion

- ▶ HFCS 2017
- ▶ Regional stratification, separate indicators
- ▶ Complex survey design: all implicates used, (replicate) weights taken into account where appropriate



| Component | Indicator | Vienna | Austria excl. Vienna |
|--------------|---------------|--------|----------------------|
| Real assets | Top 20% share | 0.91% | 0.70% |
| Real assets | Ratio p90/p50 | 57.60 | 4.48 |
| Real assets | Gini | 0.85 | 0.71 |
| Gross wealth | Top 20% share | 0.83% | 0.68% |
| Gross wealth | Ratio p90/p50 | 15.37 | 3.98 |
| Gross wealth | Gini | 0.79 | 0.68 |
| Net wealth | Top 20% share | 0.84% | 0.70% |
| Net wealth | Ratio p90/p50 | 14.52 | 4.74 |
| Net wealth | Gini | 0.81 | 0.70 |

Inequality indicators for different wealth concepts by regions. *Source:* HFCS, own calculations



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Idea: Capitalising households' (in-kind) government transfer income stream, arising from below-market price rental values of social and cooperative housing tenancy.

- ▶ Present value of perpetual annuity
- ▶ Capitalisation of difference between social housing/housing association and market rent, rather than full rent
- ▶ Imputation of social housing wealth by first estimating market rent for tenants in social housing and housing associations by hedonic regression (OLS)

where $s_i = \{1, 2, \dots, 6\}$ refers to tenure type, h_i to living space, X to a set of further property characteristics and r_i to the market rent net of utilities and s_i :

1 = outright owner

2 = mortgaged owner

3 = rent cooperative

4 = rent council

5 = rent market

6 = free user

$$\ln(r_i) = \alpha + \ln(h_i)\beta + X\gamma + \epsilon_i \quad \forall s_i = 5 \quad (1)$$

regression coefficients from equation 1 for $s_i = 5$ are used to impute for $s_i = \{3, 4\}$ the equivalent market rental values

The rental subsidy arising from lower market prices follows from the imputations as:

$$e_i = (\hat{r}_i - r_i) \quad \forall s_i = 3, 4 \quad (2)$$

Subsequently, we arrive at our measure of augmented wealth including imputed social housing wealth by computing the perpetuity due which we add to net wealth:

$$a_i = e_i * \frac{1 + r}{r} \quad \forall s_i = 3, 4 \quad (3)$$

Interest rate: 3% (Boenke and Grabka 2016)

Parallel approach: RIF regression. Explaining by how much a function of the marginal outcome distribution is affected by changes in the covariate distribution

IF gives the relative change in a distributional statistic of interest if there is a marginal increase in the probability mass of one specific element in the distribution

The influence function of the Gini Coefficient is given by (Choe and Van Kerm 2018):

$$\begin{aligned} IF(y, Gini, F) = & - \frac{\mu(F) + y}{\mu(F)} Gini(F) + 1 \\ & - \frac{y}{\mu(F)} + \frac{2}{\mu(F)} \int_0^y F(x) dx \end{aligned} \quad (4)$$

Regress RIF^G on an indicator $K = \mathbb{1}[s_i \in \{3; 4\}]$ using OLS and employ Oaxaca-Blinder decomposition methodology to arrive at counterfactual distributions "net of" social or cooperative housing status

The OLS specification is a linear model estimated for each region separately, where

$$\mathbb{E}[IF(y, Gini, F)|K = k] = \delta + \eta k \quad (5)$$

In a next step, we decompose the difference in inequality between Vienna and the other Austrian federal states using a twofold Oaxaca-Blinder decomposition:

$$\overline{RIF_V^G} - \overline{RIF_{nV}^G} = (\bar{k}_V - \bar{k}_{nV}) * \hat{\eta}_R + \bar{k}_V (\hat{\eta}_V - \hat{\eta}_R) + \bar{k}_{nV} (\hat{\eta}_R - \hat{\eta}_{nV}) \quad (6)$$

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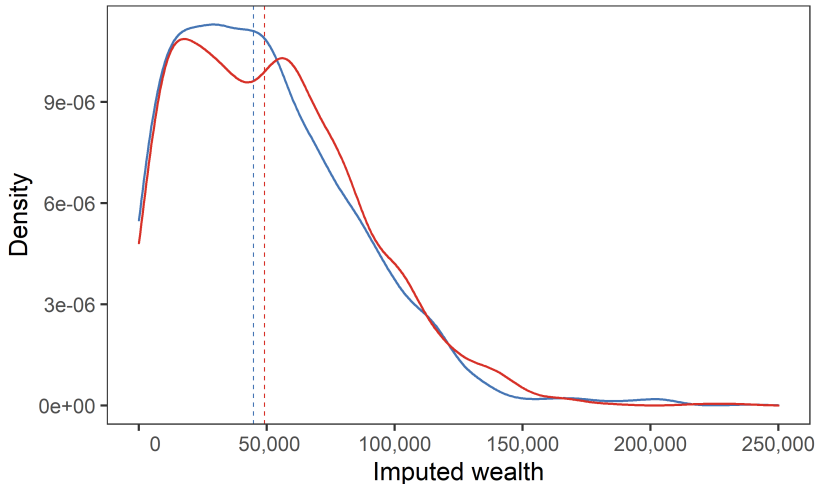
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| Tenure type | Region | Population share |
|---------------------|----------------------|------------------|
| Social housing | Vienna | 81% |
| Housing association | Vienna | 60% |
| Social housing | Austria excl. Vienna | 63% |
| Housing association | Austria excl. Vienna | 64% |

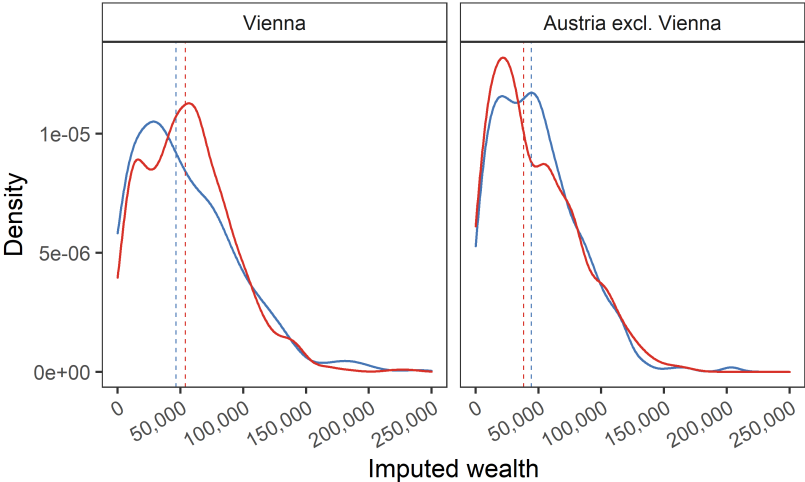
Population share refers to the share of households in each group (by region and tenure status), who see their wealth increase as a result of the imputation. For the other households, our model predicts a market rent equivalent lower than the actual rent paid. *Source:* HFCS, own calculations



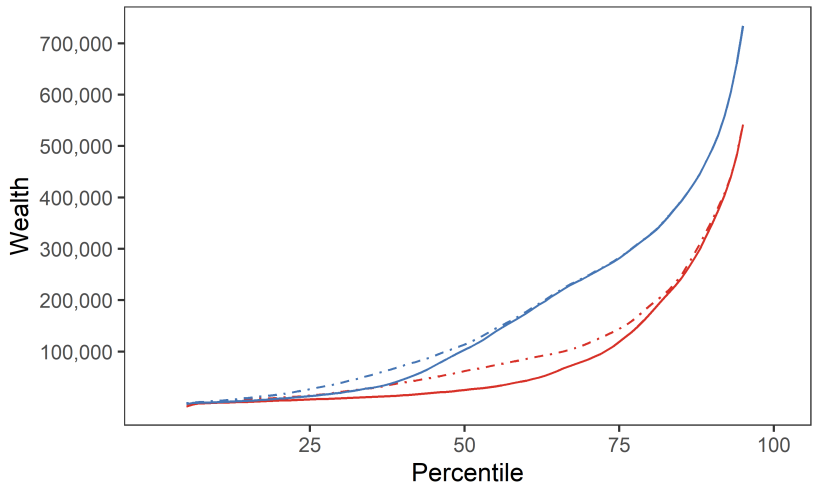
Median + Renters cooperative + Renters council

Imputed wealth distribution

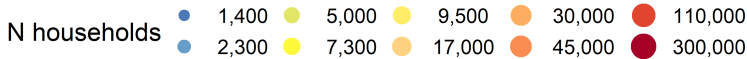
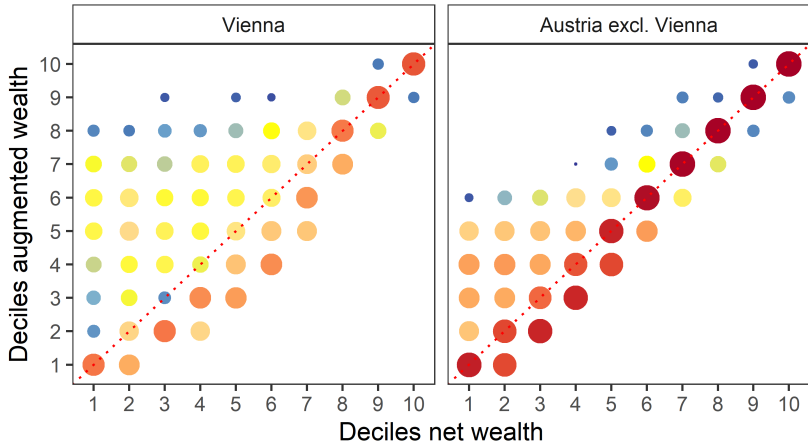
Augmented wealth



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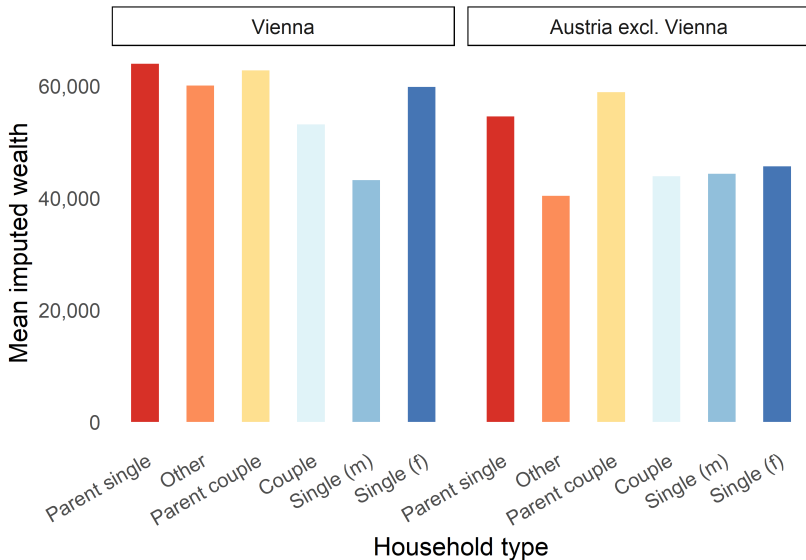
— Vienna — Austria excl. Vienna — Net wealth - - Aug. net wealth



| Component | Indicator | Vienna | AT excl. Vienna |
|-------------|---------------|--------|-----------------|
| Net wealth | Gini | 0.81 | 0.70 |
| Aug. wealth | Gini | 0.74 | 0.68 |
| Net wealth | Ratio p90/p50 | 14.52 | 4.74 |
| Aug. wealth | Ratio p90/p50 | 6.13 | 4.39 |
| Net wealth | Top 20% share | 0.84% | 0.70% |
| Aug. wealth | Top 20% share | 0.76% | 0.68% |

Different inequality indicators for both net wealth and augmented wealth (net wealth incl. imputed components). *Source:* HFCS, own calculations

Horizontal inequality Augmented wealth



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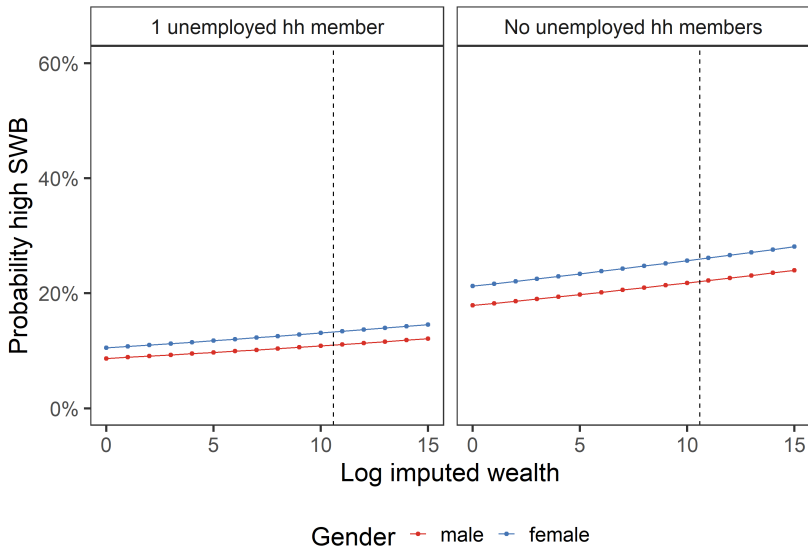
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| Region | Gini 1.4% | Gini 3.0% | Gini 4.1% | Gini 3.8%/5.5% |
|-----------------|--------------|--------------|--------------|-------------------|
| Vienna | 0.70 | 0.74 | 0.75 | 0.75 |
| AT excl. Vienna | 0.66 | 0.68 | 0.68 | 0.69 |
| AT | 0.67 | 0.69 | 0.70 | 0.71 |

Table gives estimates of augmented wealth Gini coefficients by region and for the entire country for various interest rates. The final column applies different interest rates to Vienna (3.8%) and to the other states (5.5%). *Source:* HFCS, own calculations



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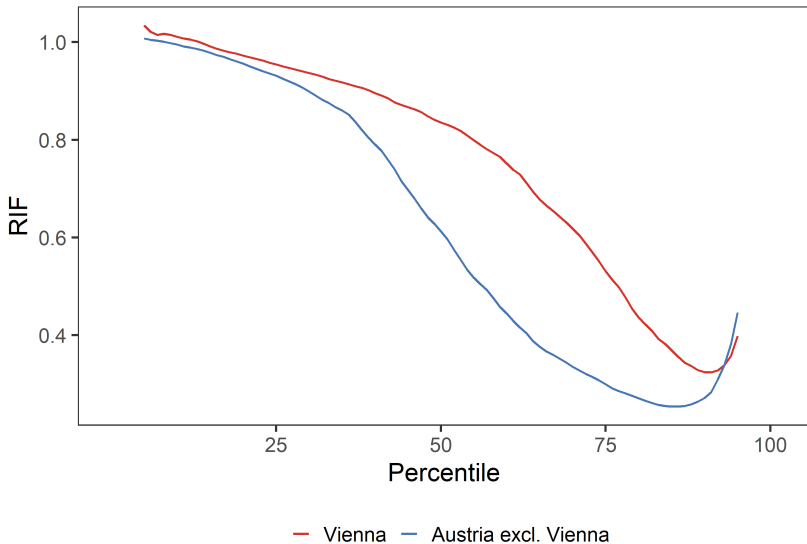
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| region | estimate | se |
|-----------------|----------|-------|
| Vienna | 0.096 | 0.04 |
| AT excl. Vienna | 0.26 | 0.006 |

Table provides coefficients and standard errors for the relationship between a dummy variable indicating social housing or housing association tenure and the RIF. Estimates are provided for both regions separately. *Source:* HFCS, own calculations

| Procedure | Gini Vienna | Gini AT excl. Vienna | Explained |
|-------------|-------------|----------------------|-----------|
| Ref=nV | 0.809 | 0.703 | 53.1% |
| Ref=V | 0.809 | 0.703 | 20.7% |
| Ref=Pool | 0.809 | 0.703 | 45.7% |
| Aug. wealth | 0.738 | 0.677 | 46.8% |

Ref refers to the reference coefficient for the OB-decomposition. Coefficients stem from group-wise regressions for Vienna (V) and the other federal states (nV) separately. Pool is a Neumark-style decomposition. Decompositions are performed for each implicate, point estimates mean the average explained variation across groups. *Source: HFCS, own calculations*

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Regional differences in public housing infrastructure - social housing and housing associations - can explain some of the differences in regional wealth inequality

We develop an imputation strategy for housing-augmented wealth. Comparing the differences between augmented wealth distributions and net wealth distributions suggests that tenure structure explains 0.47% of regional variation

This result is roughly in line with findings from applying a Gini decomposition approach popular in the literature on housing and wealth inequality

Limitations:

- ▶ Descriptive approach rather than causal design
- ▶ Measurement choices with both approaches can generate different results (Interest rate, reference coefficient in OB-decomposition)

Advantages of augmented wealth perspective

- ▶ If wealth is considered as a measure of well-being, augmented wealth perspective might be desirable for comparative purposes (Bönke et al. 2020)
- ▶ When it comes to distributing national wealth on a personal level, imputing public asset components into household wealth according to some distributive principle might be required (Alvaredo et al. 2021)

However, conceptual differences exist between public (housing) wealth and private wealth



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