

ERES Industry Seminar

A century of tenant protection in Germany: An emergency measure that became permanent

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Motivation

- Economists are skeptical wrt the state intervention in the housing market.
 - ▶ Majority of American economists: rent control → lower quantity and quality of housing (Alston et al. 1992 and Jenkins 2009).
- Policy makers and general public support regulations.
- After WWI:
 - ▶ rent control,
 - ▶ protection of tenants from eviction,
 - ▶ housing rationing,
 - ▶ support of (social) housing construction.
- The macroeconomic consequences of regulations are unknown.

Theory: Prices and rents

- Needleman (1965): If a part of the market is regulated, then the excess demand flows to an unregulated part. The prices and rents there are higher than without restrictions.
- Hubert (1993):
 - ▶ short run: rent control in case of acute housing shortage → higher rents in the unregulated market.
 - ▶ long run: since the old tenants don't move from large dwellings, the redistribution and rent decreases are hindered.
- Basu and Emerson (2000): Removal of rent control → lower rent. Rent control and eviction protection raise the non-payment risks → Landlords set higher rents.

Theory: Housing supply

- Downs (1988): Even if rent control only covers “old housing”, the investors are afraid that control can be extended to the new housing.
- Early and Phelps (1999): The more time elapse since introduction of rent control the less probable the new restrictions. Incentives for new construction resurge, but in a very long run.
- Häckner and Nyberg (2000):
 - ▶ short run: growing real incomes thanks to the rent control → more dwellings built in less attractive areas.
 - ▶ long run: incentives diminish, for low rents in such areas don't cover construction cost.

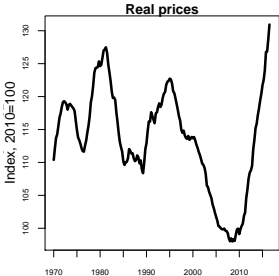
Motivation

- **Aim:** to evaluate the effects of regulations on the housing market.
- Regulation degree is measured by the indices of Kholodilin (2016):
 - ▶ Original data: over 170 legal acts (laws and ordinances).
 - ▶ Level: national and Länder.
 - ▶ Period: 1914–2016.

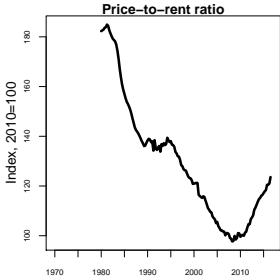
Data

Description	Period	Source
real housing prices	1970q1-2016q3	OECD
price-income ratio	1980q1-2016q3	OECD
price-rent ratio	1970q1-2016q3	OECD
real rents	1962m1-2016m12	Destatis
completed dwellings	1949-2015	Destatis
real GDP per capita	1970q1-2016q3	Destatis, own calculations
real 3-month interest rate	1959m12-2016m12	Bundesbank, own calculations
net migration	1950-2015	Destatis
regulation indices	1914-2015	Kholodilin (2016)

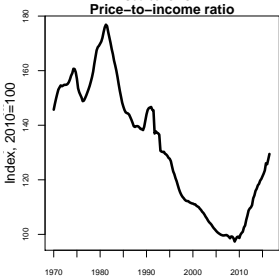
Dependent variables: quarterly



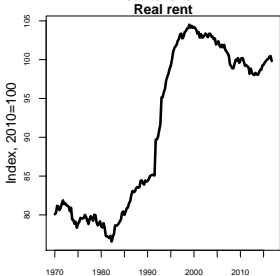
Source: OECD



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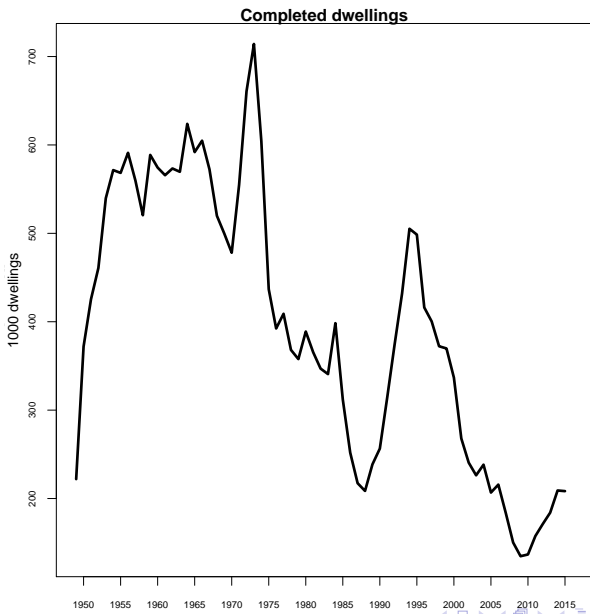


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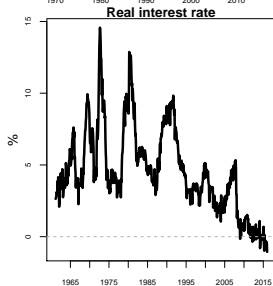
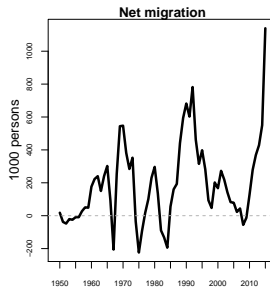
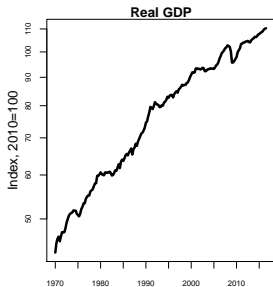


Source: Destatis, own calculations

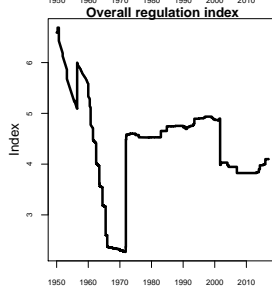
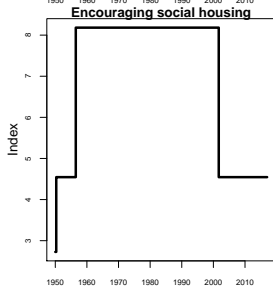
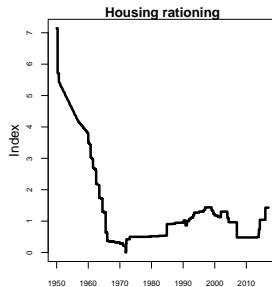
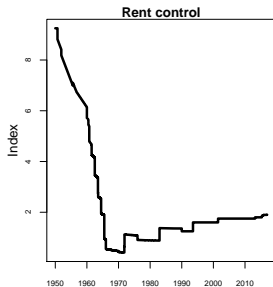
Dependent variables: annual



Control variables



Regulation indices



Data

- Dependent variables:
 - ▶ annual,
 - ▶ quarterly.
- Explanatory variables:
 - ▶ high frequency: aggregated,
 - ▶ low frequency: interpolated using splines.
- Stationarity tests ADF and PP:
 - ▶ most variables are integrated.
- cointegration test of Pesaran et al. (2001):
 - ▶ no cointegration.

Estimation technique

- Autoregressive distributed lag model ARDL:

$$y_t = \sum_{p=1}^P \alpha_p y_{t-p} + \sum_{k=1}^K \sum_{q=\underline{q}_k}^{Q_k} \beta_{qk} x_{k,t-q} + \varepsilon_t$$

- y_t — dependent variable;
- x_{kt} — k -th explanatory variable;
- ε_t — random error;
- α and β — parameter,
- \underline{q}_k — smallest lag (0 or 1).

Method

- To avoid multicollinearity — 1 regulation index per regression.
- To avoid endogeneity — the lag of regulation indices starts at 1.
- Optimal number of lags determined using Akaike criterion:
 - ▶ maximum number of lags: 4.
 - ▶ number of lag permutations: 2000.

Long-run effects

- Based on ARDL long-run effects for each explanatory variable x_k :

$$LRE_{x_k} = \frac{\sum_{q=q_k}^Q \beta_{qk}}{1 - \sum_{p=1}^P \alpha_p} \quad (1)$$

- β_{qk} — k -th element of the parameter vector β_q .
- Confidence interval is computed using bootstrap with 1000 replications.

Short-run effects

Explanatory variable	Real price	Real rent	Price-rent ratio	Price-Income ratio	New construction
Real GDP	+	-			+
Net migration	+	+		+	+
Real interest rate	-	-	-		
Rent control	-				-
Housing rationing		+	+		-
Social housing					+
Overall regulation	-				-

Long-run effects

Explanatory variable	Real price	Real rent	Price-rent ratio	Price-Income ratio	New construction
Real GDP					
Net migration		+			+
Real interest rate					
Rent control	-				
Housing rationing		+			
Social housing	+			-	
Overall regulation			+		

Literature

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