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Rental market underdevelopment in Central Europe: Micro (Survey) I and Macro (DSGE) perspective

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Motivation

Housing important for macroeconomic outcome

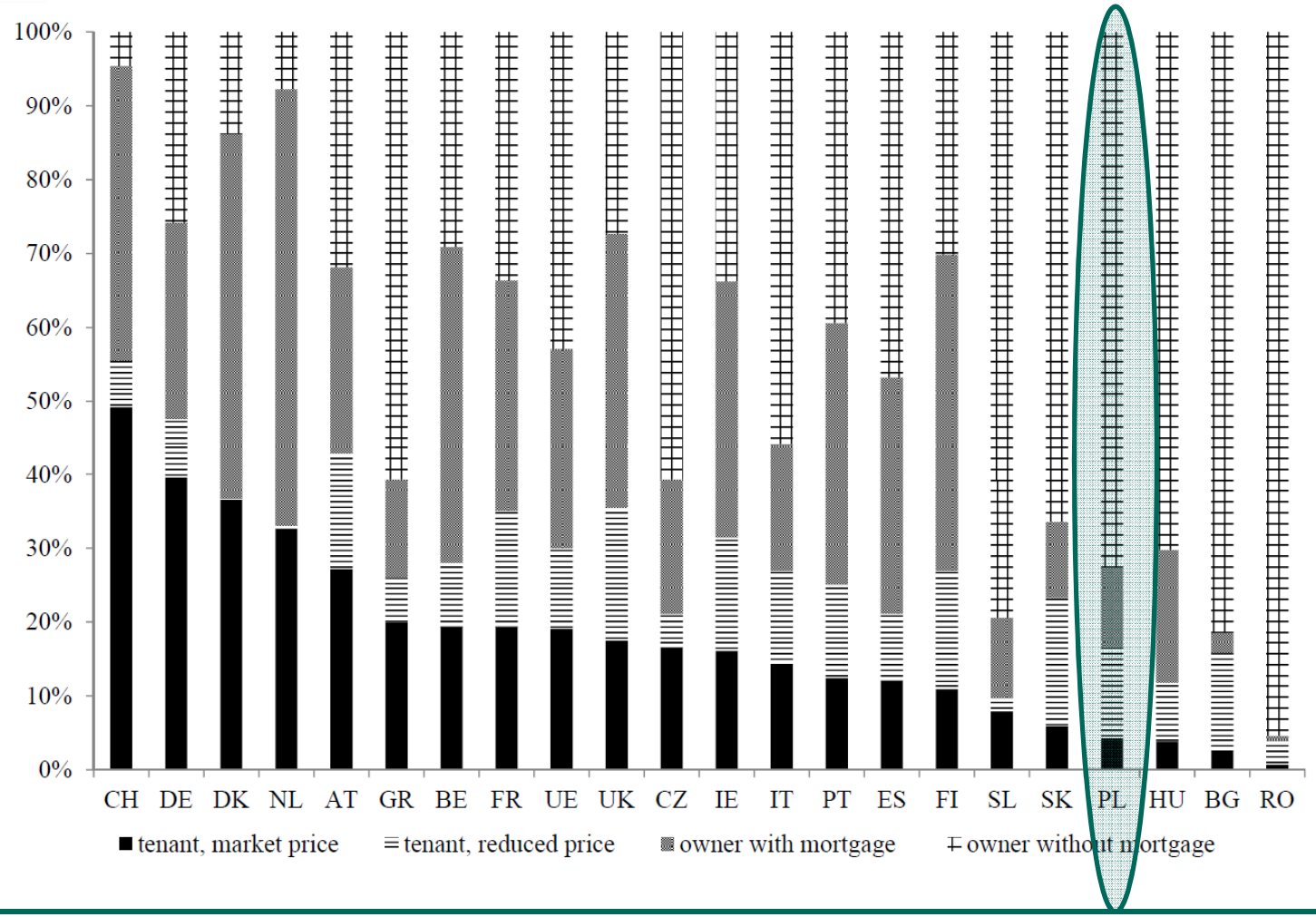
1. **„Housing is the cycle”** (Leamer 2007)
2. **Housing important for the transmission of MP shocks** (Iacovello 2005)
3. **Housing important for stability in monetary union** (Maclennan et al. 1998)

We claim that (1)-(3) depends on the tenure structure of the housing market:

- renting allows to separate the dual role of housing (investment good and provision of housing services)

Tenure structure in 2014:

very low share of the private rental market in Poland



Studies on the role of the tenure structure

What we know:

Arce and López-Salido (2008): theoretical model in which the availability of rental housing reduces the risk of a house price bubble

Cuerpo et al. (2014), Czerniak and Rubaszek (2017): panel regressions in which rental market size influence how the hosuing sector reacts to macroeconomic shocks

Rubio (2014): the size of the rental market affects monetary policy transmission in DSGE model

Barceló (2006) and Caldera Sánchez and Andrews (2011): the availability of rental housing leads to higher residential and labor mobility

Our questions and methods

Questions:

1. What are the reasons of underdeveloped rental market in Poland?
2. What are the business cycle consequences?
3. How to reform the rental market?

Methods:

1. Survey
2. DSGE model simulations

The survey:

What are the reasons of underdeveloped rental market in Poland?

The survey

- **Method:**
  survey on the representative sample of 1005 persons
  (9-13 July 2016 r., IPSOS omnibus survey)

- **Aim:**
  analyze the reasons of low share of the rental market at household level
  psychological vs. economic factors

Poles prefer to own

A sentence closer to your opinion:	
Buying a house makes more sense than renting it (good investment)	**80.7**
Renting makes more sense (enables flexibility and financial liquidity)	**19.3**
Do you prefer (in case of no own funds to buy home):	
Buying despite the burden of a mortgage	**52.6**
Renting	**29.7**
I prefer to buy even if it is more expensive than renting	
No	**24.9**
Yes	**47.2**

Economic factors

	owning	no opinion	renting
Monthly costs (mortgage vs. rent)	64.0	23.4	12.6
Risk (price fluctuations vs. rent fluctuations)	65.6	22.8	11.6
Transaction / intermediation costs	62.1	26.1	11.8
Taxes	61.0	25.3	13.7

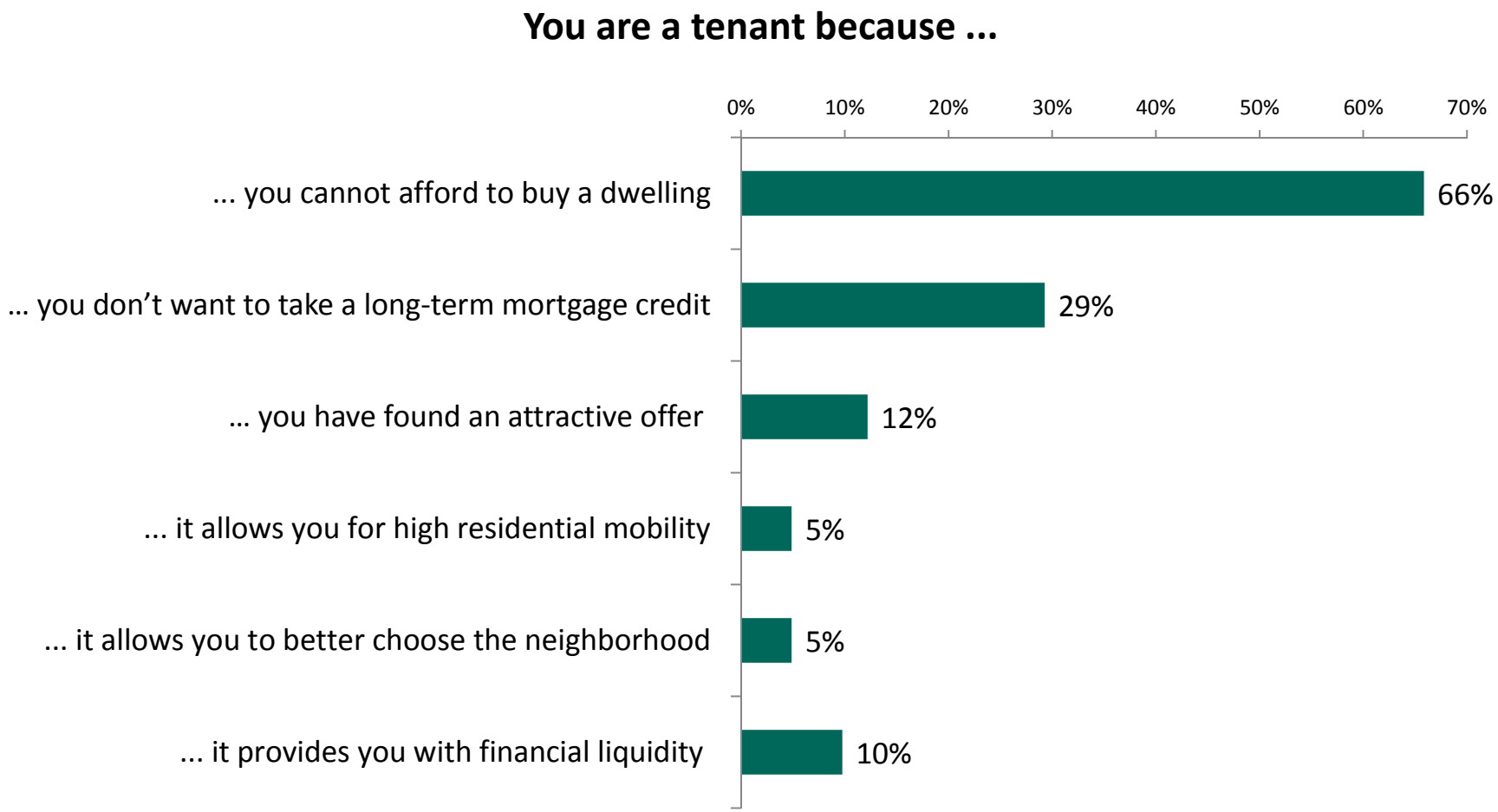
Psychological factors

	owning	no opinion	renting
Social status	70.8	19.5	9.7
Freedom	71.1	16.5	12.3
Comfort	71.6	17.0	11.3
Peace of mind	70.9	17.8	11.2
Attachment to housing unit	70.1	18.5	11.3
Family	**72.6**	**18.0**	**9.4**
Happiness	68.8	21.1	10.1

Factors decreasing the attractiveness of investing in rental housing

	Agree	No opinion	Don't Agree
Low culture of tenants	**62.6**	**28.9**	**8.6**
Excessive rent control	50.3	37.2	12.4
Excessive protection of tenants against eviction	40.3	43.6	16.1
Low rate of return	39.4	47.3	13.3
Low demand	44.0	41.6	14.4

So why 5% of Poles are tenants?



Key findings from the survey

1. Poles **prefer to own due to both psychological and economic** factors

2. **Renting treated as a temporary method of satisfying housing needs**

3. **Tenants are** usually **young** (below 30), whereas rented units are usually **small flats**

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DSGE model

Aim

1. Build a theoretical framework that allows to quantify how the proportion of owner-occupied versus rented dwellings affects **business cycle characteristics**
   - **DSGE setup** as a perfect candidate

2. Calibrate the model to the **Polish data**

3. Conduct **counterfactual simulations** to assess how the economy operates in few scenarios:
   - no reform (baseline)
   - partial reform of the rental market
   - full reform of the rental market

DSGE model overview

- Two types of goods: **consumption good and housing services**
- Housing can be **purchased or rented**
- Two types of households: **borrowers and savers**
- Collateral constraints
- One factor of production: labor
- **Fiscal incentives to own/rent**
- Monetary policy in the form of the Taylor rule
- Closed economy setup

References:

Iacoviello (2005), Ortega, Rubio and Thomas (2011), and Rubio (2014).

Key equations

Utility of savers depends on owned housing:

$$\max E_0 \sum_{t=0}^{\infty} \beta_s^t \left(\log C_{s,t} + j \log H_{s,t} - \frac{(N_{s,t})^{1+\eta}}{1+\eta} \right)$$

Utility of borrowers depends on housing bundle:

$$\max E_0 \sum_{t=0}^{\infty} \beta_b^t \left(\log C_{b,t} + j \log \tilde{H}_{b,t} - \frac{(N_{b,t})^{1+\eta}}{1+\eta} \right)$$

that consists of owned (H_b) and rented (H_z) housing:

$$\tilde{H}_{b,t} = \left[\omega_h^{1/\varepsilon_h} \left(H_{b,t}\right)^{(\varepsilon_h - 1)/\varepsilon_h} + (1-\omega_h)^{1/\varepsilon_h} \left(H_{z,t}\right)^{(\varepsilon_h - 1)/\varepsilon_h} \right]^{\varepsilon_h/(\varepsilon_h - 1)}$$

KEY PARAMETER: ω_h that measures „psychological factors”

Key equations

Law of motion for housing stock:

$$IH_t \equiv (H_{s,t} - (1-\delta_h) H_{s,t-1}) + (H_{b,t} - (1-\delta_h) H_{b,t-1}) + (H_{z,t} - (1-\delta_z) H_{z,t-1})$$

KEY PARAMETER: $\delta_z - \delta_h$ that measures „bad tenant risk"

Balanced budget for the government:

$$T_t = \tau_z q_{z,t} H_{z,t} + \tau_h q_{h,t} \left[(H_{s,t} - (1-\delta_h) H_{s,t-1}) + (H_{b,t} - (1-\delta_h) H_{b,t-1}) \right]$$

KEY PARAMETERS: τ_z and τ_h that measure fiscal incentives to own/rent

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Calibration

Parameter	Value	Description
β_s	0.995	Discount factor of savers
β_b	0.985	Discount factor of borrowers
j	0.06	Relative weight on utility from housing services
ω_l	0.14	Weight parameter in labor services aggregator
ω_h	2/3	Weight parameter in housing services aggregator
ε_l	1	Elasticity of substitution between labor types
ε_h	2	Elasticity of subst btw. home ownership and rent
η	1	Inverse elasticity of labor supply
ε_p	6	Elasticity of substitution among final goods
γ	2/3	Savers labor-income share
δ_h	0.75%	Depreciation rate of the housing stock
δ_z	1.00%	Depreciation rate of the rental stock
$\overline{k}$	0.8	Makimum LTV ratio (steady-state)
θ	0.75	Calvo parameter
τ_h	0	Subsidy rate house purchases for owner occupation
τ_z	-0.085	Subsidy rate on rent payments (here taxes)
ϕ_R	0.9	Coefficient on lagged nominal interest rate in Taylor rule
ϕ_Π	0.5	Coefficient on inflation in the Taylor rule
ϕ_Y	0.5	Coefficient on output in the Taylor rule

Calibration

	Data	Model	Data Sources
Housing rental Share, H_z/H	0.069	0.068	Survey data
Share of housing w/ mortgage, H_b/H	0.104	0.172	Survey data
Rent over housing price, q_z/q_h	0.015	0.015	National Bank of Poland, 2007-2015
Residential investment / GDP, $q_h IH/GDP$	0.033	0.034	OECD, 2007-2015
Construction labor share, $L_{h/}(L_c + L_h)$	0.076	0.077	OECD, 2007-2015

Reforming the rental market

Reforms

Three kinds of reforms that might affect housing tenure decision:

Reform 1: Neutral taxes:

tax on renting τ_z goes to 0

Reform 2: Better protection of landlords against bad tenants:

depreciation rate δ_z declines to δ_h

Reform 3: Professionalization of renting services:

ownership bias ω_h in housing aggregator declines from 0.67 to 0.5

The effect of reform on steady state

	Benchmark	Neutral taxes $\tau_z = 0$	Lower bad tenant risk $\delta_z = 0.75\%$	Professional rental services $\omega_h = 0.5$	Combined
Housing rental Share	0.068	0.077	0.091	0.104	0.150
Share of housing w/ mortgage	0.172	0.167	0.160	0.132	0.113
Rent over housing price	0.015	0.015	0.0125	0.015	0.0125
Residential investment / GDP	0.034	0.034	0.034	0.034	0.034
Construction labor share	0.077	0.077	0.076	0.077	0.077
Mortgage debt / GDP	0.609	0.594	0.574	0.466	0.409

Important:

- developed rental market as a substitute of macroprudential policy
- „additive effects" of reforms

The effect of „full" reform on cyclical fluctuations

The reform is **not changing the aggregate effect of the monetary and productivity shocks.** The reason is that both shocks do not have a sizeable impact on the relative costs of owning vs. renting.

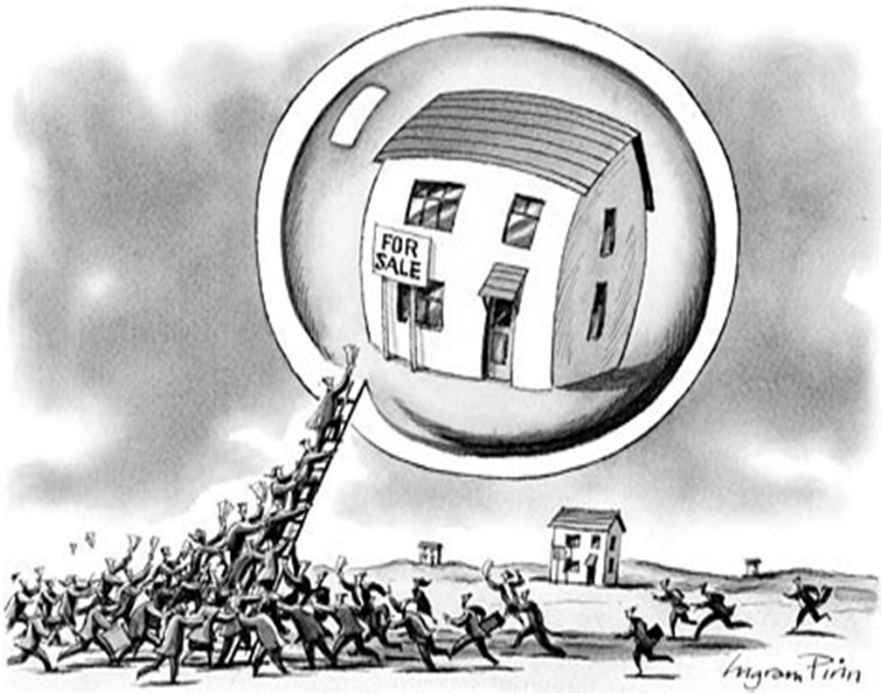
The reform is **changing the effect of the LTV shock on the economy.** The impact of credit loosening on mortgage demand is attenuated by rental sector services.

	IR Shock		Technology Shock		LTV Shock	
	Benchmark	Reform	Benchmark	Reform	Benchmark	Reform
GDP	1.5722	1.5505	1.8121	1.8071	1.0934	0.7935
Inflation	0.8037	0.7902	0.3655	0.3751	0.4310	0.3092
House Prices	0.8427	0.8248	1.9734	2.0049	0.7124	0.5548

Notes: The figures present the standard deviation of a given variable that can be attributed to a given shock.

Why rental market limits cyclical fluctuations?

The lack of rental market forces a large fraction of households **to limit the size of occupied house or cohabit. Improved access to housing credit (LTV shock)** makes many **households rush simultaneously** to the housing market, boosting demand, which fuels large price increases



Conclusions

Conclusions

1. Poles prefer ownerhip due to psychological and economic factors

2. It is **possible to increase the rental market share** by:
   - Reducing the „ownership bias" (ω_h)
   - Changing taxation
   - Changing regulations (bad tenant risk)

3. The reform of the housing market allows to reduce private sector debt (**substitute for macroprudential policy**)

4. The reform of the housing market allows to **reduce macroeconomic volatility**:
   1. Lower responsiveness to LTV shocks
   2. No effect on the responsiveness to productivity and mon. pol. shocks

Further research

Rental market reform in heterogeneous agent, life cycle model

Reform 1: Professionalization of renting services

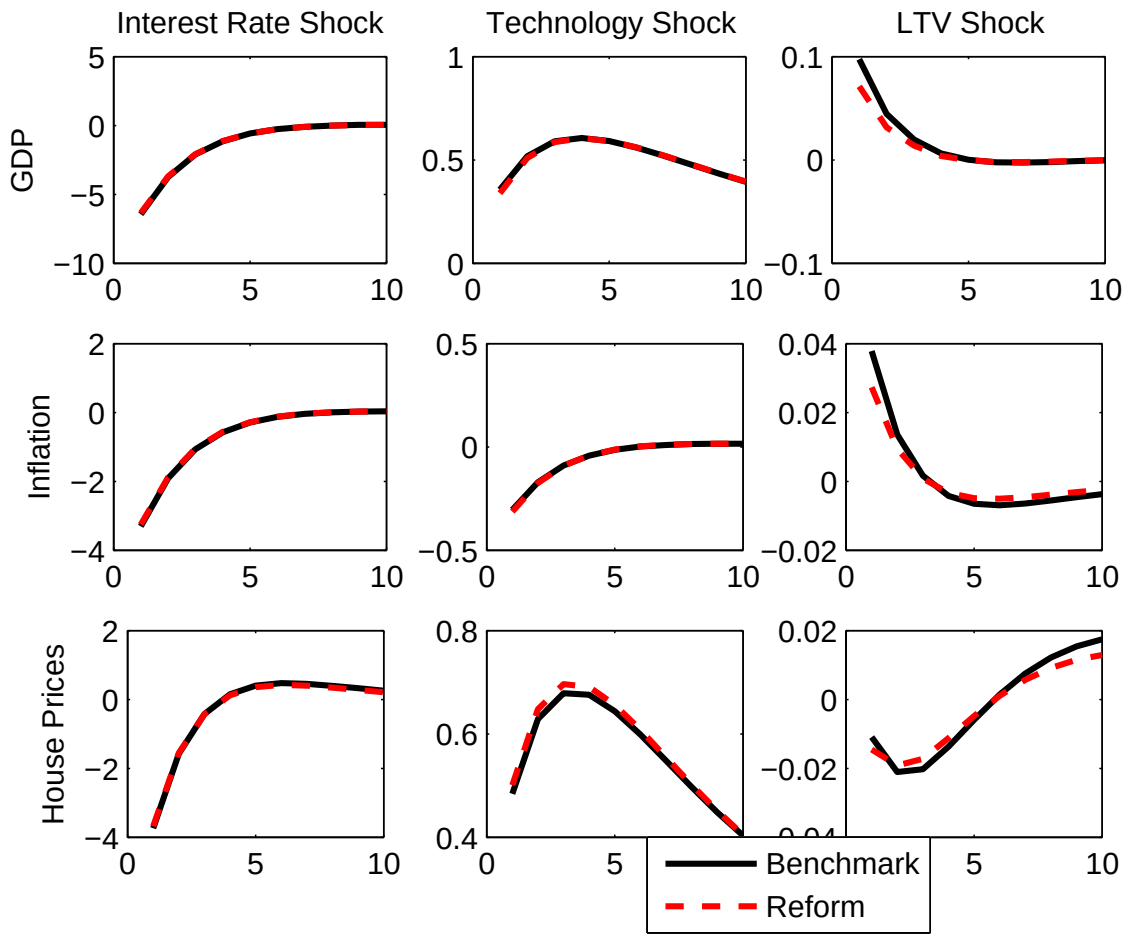
Reform 2: Better protection of landlords against bad tenants

Reform 3: Neutral taxes:

	Beseline	Reform 1	Reform 2	Reform 3	All reforms
Fraction of households with debt (%)	20.0	17.8	16.4	16.0	4.6
Fraction of homeowners (%)	**84.3**	**80.7**	**77.8**	**79.6**	**60.4**
Fraction of tenants (%)	**9.6**	**12.7**	**17.4**	**14.2**	**35.4**
Average age of first house purchase	28.0	29.1	30.6	30.1	37.9

Thank you for attention

The effect of „full” reform on IRFs



Institutional reasons behind rental sector underdevelopment in Poland

1. **Fire sale** (privatization) of social housing by the government (Lux i Suenga 2014)

2. The **development of mortgage markets** after EU accession

3. Programs **promoting ownership** (Rodzina na Swoim, Mieszkanie dla Młodych)

4. Bad **regulations** (e.g. excessive protection of bad tenants)

5. The **lack of active housing policy** by the government (Priemus i Mandic 2000: *rental market as no man's land*)