

Housing Markets, Local Constraints, and Monetary Policy in England

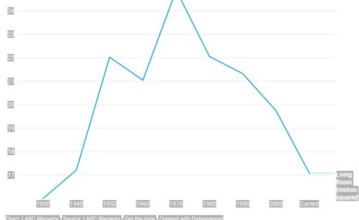
Thomas Lebesmuehlbacher

Xavier University

08/22/2022

The Problem

Average Living Room Size (Metres Squared)



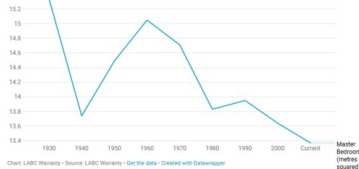
Kitchen

Average Kitchen Size (Metres Squared)

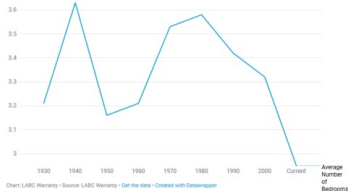


Master Bedroom

Average Master Bedroom Size (Metres Squared)

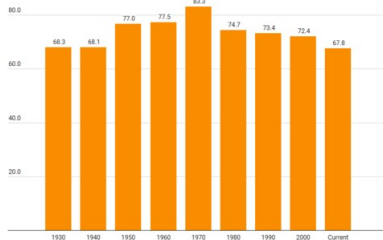


Average Number of Bedrooms



The Problem

Overall House Size (Metres Squared)



Source: LABC Warranty - [Get the data](#) - Created with [Datawrapper](#)

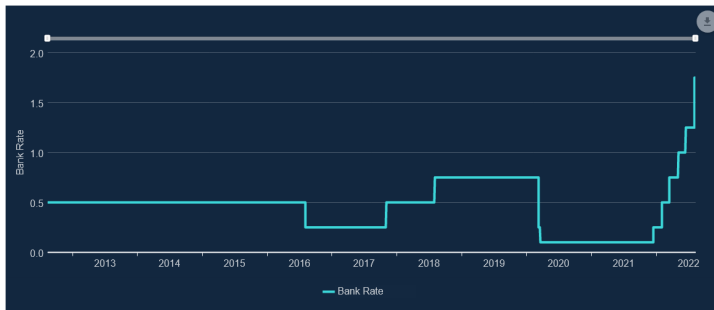
UK House Price Index since 1952



The Problem

”Interest rates rise to 1.75% – the biggest jump in 27 years ”

Official Bank Rate



The Research Question

- 1 I explore the effect of an aggregate monetary policy shock on house prices and sizes (“Shrinkflation”).
- 2 I analyze the role of local regulatory and geographic constraints in the transmission mechanism of a monetary policy shock.

The Research Question

- 1 I explore the effect of an aggregate monetary policy shock on house prices and **sizes** (“Shrinkflation”).
- 2 I analyze the role of local regulatory and geographic constraints in the transmission mechanism of a monetary policy shock.

The Research Question

- 1 I explore the effect of an aggregate monetary policy shock on house prices and **sizes** (“Shrinkflation”).
- 2 I analyze the role of local regulatory and geographic constraints in the transmission mechanism of a monetary policy shock.

Preview of Results

- ▶ Prices and transactions rise following an unanticipated cut in the policy rate, with more pronounced results in supply constraints areas
- ▶ The size response to a monetary policy shock is insignificant **but**:
 - ▶ Difference between New Builds and Re-Sales
 - ▶ Supply constraints matter

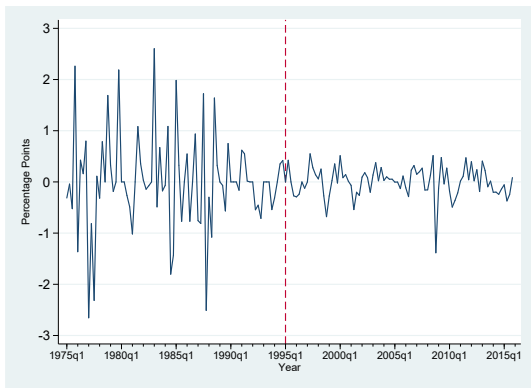
Monetary Policy Shock

- ▶ **Problem:** Monetary Policy is endogenous
- ▶ **Solution:** “Narrative Method” by Romer & Romer (2004)
 - ▶ Isolate unexpected shifts in MP from systematic component in the intended policy rate driven by policymakers’ response to info they have about the economy.

$$\begin{aligned}\Delta i_m &= \alpha + \beta i_{t-14d} + \sum_{j=-1}^2 \gamma_j \hat{y}_{m,j}^F + \sum_{j=-1}^2 \phi_j \pi_{m,j}^F \\ &+ \sum_{j=-1}^2 \delta_j (\hat{y}_{m,j}^F - \hat{y}_{m-1,j}^F) + \sum_{j=-1}^2 \nu_j (\pi_{m,j}^F - \pi_{m-1,j}^F) \\ &+ \sum_{j=1}^3 \rho_j u_{t-j} + \varepsilon_m\end{aligned}$$

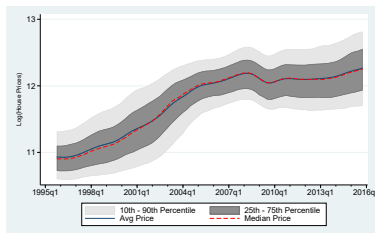
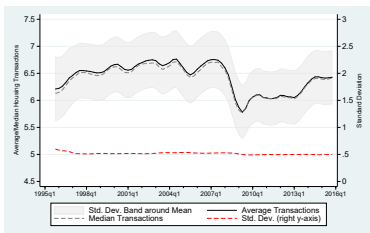
Monetary Policy Shock

Figure: Evolution of MPS



House Prices and Transactions

▶ UK Land Registry in 2015 British Pounds



Property Size

- 1 Download quality adjusted HP from UK Land Registry

$$PI_{it} = \left(\frac{\prod_{j=1}^n p_{jt}^{1/n}}{\prod_{j=1}^n p_{j2015}^{1/n}} \right) \exp \left[\hat{\beta} (\bar{x}_{2015} - \bar{x}_t) \right]$$

- 2 Construct $\left(\frac{\prod_{j=1}^n p_{jt}^{1/n}}{\prod_{j=1}^n p_{j2015}^{1/n}} \right)$ from raw data to get

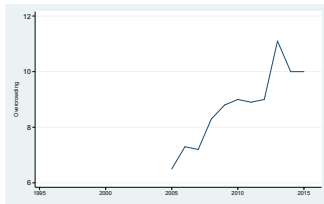
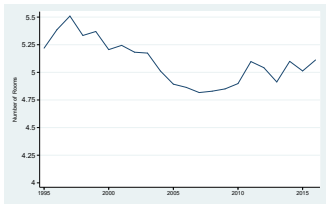
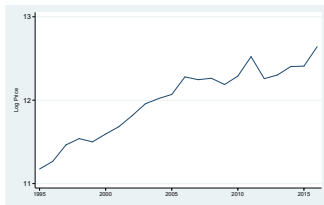
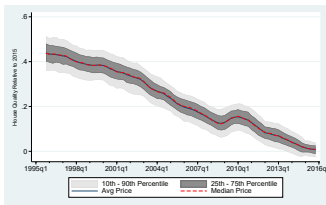
$$\frac{PI_{it}}{\left(\frac{\prod_{j=1}^n p_{jt}^{1/n}}{\prod_{j=1}^n p_{j2015}^{1/n}} \right)} = \exp \left[\hat{\beta} (\bar{x}_{2015} - \bar{x}_t) \right]$$

- 3 Take logs and multiply by -1 to get

$$Quality_{it} = \hat{\beta} (\bar{x}_t - \bar{x}_{2015})$$

Property Size

- ▶ Survey Data from UK Household Longitudinal Study
 - ▶ $\text{Corr}(HP^{LR}, HP^{HLS}) = 0.94$
 - ▶ $\text{Corr}(\text{Quality}, \# \text{Rooms}) = 0.75$
 - ▶ $\text{Corr}(\text{Quality}, \text{Overcrowding}) = -0.87$



Empirical Specification

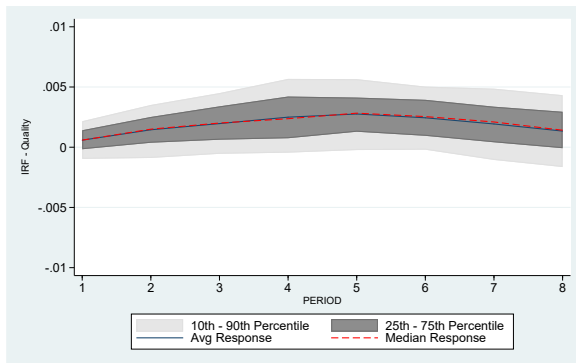
- 1 Estimate 324 local projections (Jorda, 2005) and collect impulse responses β_i^h

$$y_{i,t+h} = \beta_i^h s_{t-1} + b_1' \tilde{s}_t + b_2' \tilde{y}_{it} + t_t + q + v_{i,t+h}$$

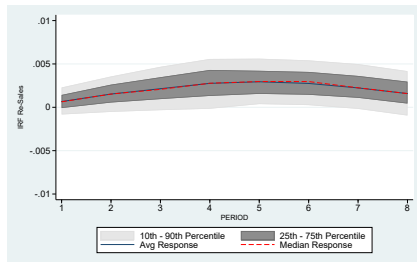
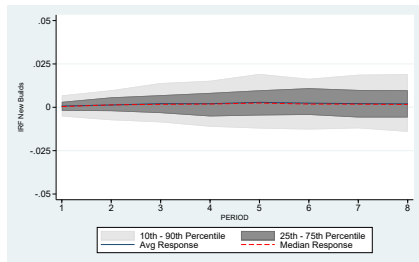
- 2 Run Cross-Sectional Regression separately for each $h = 1 \dots 8$

$$\beta_i^h = \alpha_1 Refusal_i + \alpha_2 PopDensity_i + \alpha_3 Unemp_i + \alpha_4 Dist_i + Region_i + e_i$$

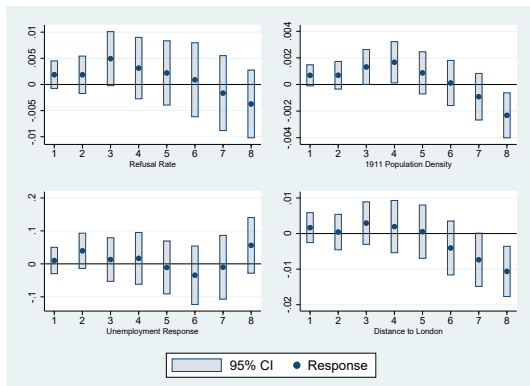
Figure: All Dwellings



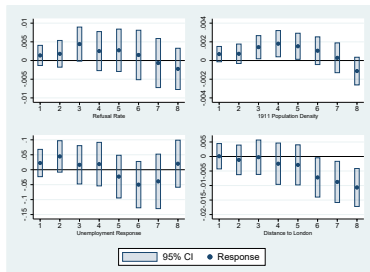
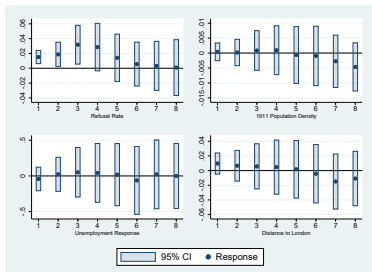
New Builds vs Re-Sales



Effect of Local Factors



New Builds vs Re-Sales



Conclusion

- ▶ Following an unanticipated 25bp cut in the policy rate, transactions increase by 1.5% six quarters after the shock, prices rise by 1% after eight quarters.
- ▶ Local differences in the unemployment response to a monetary policy shock play no role in explaining housing market differences.
- ▶ The property size of re-sales increases following a monetary policy shock.
- ▶ Tighter regulatory constraints increase the price and make housing less affordable (Hilber and Vermeulen, 2016).
- ▶ But, stricter planning regulations transact relatively larger new builds as a result of a monetary policy shock.
 - ▶ planning authorities act as gate-keepers in line with British space standards, limiting the decline in property size.