The Economic Impacts of Help to Buy

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➤ **Explore the economic impacts of Help to Buy: Equity Loan Scheme**

- Using spatial and price discontinuities in the scheme as well as differences in the timing of implementation across UK countries

➤ **Preliminary results:**

- HtB increases prices of newly built homes by between 3.2% and 3.9%

- More housing construction only in (less desirable) areas with more elastic supply

- Substantive bunching for properties with prices below the threshold

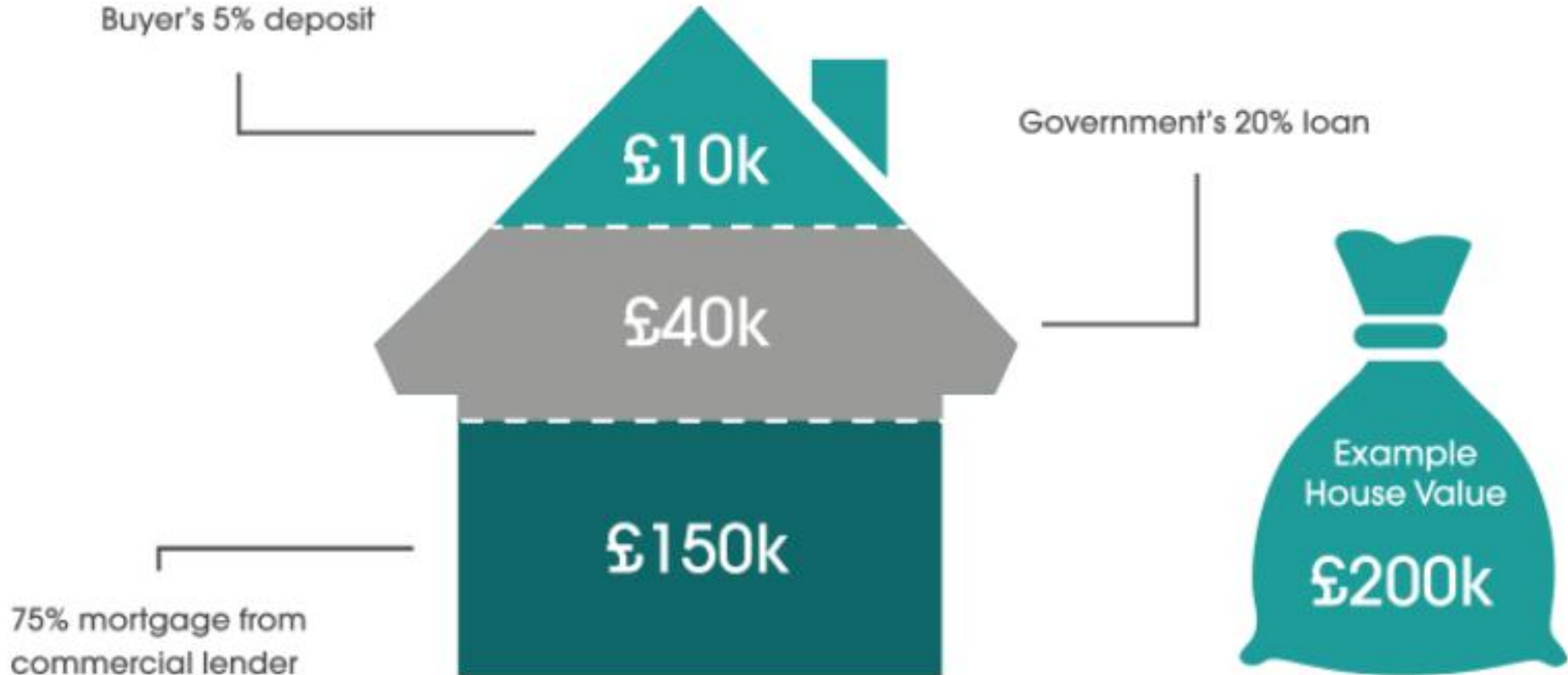| Introduction | Literature Rev | Data | Identification Strategy | Results |

Real HP growth 1970-2015, selected OECD countries
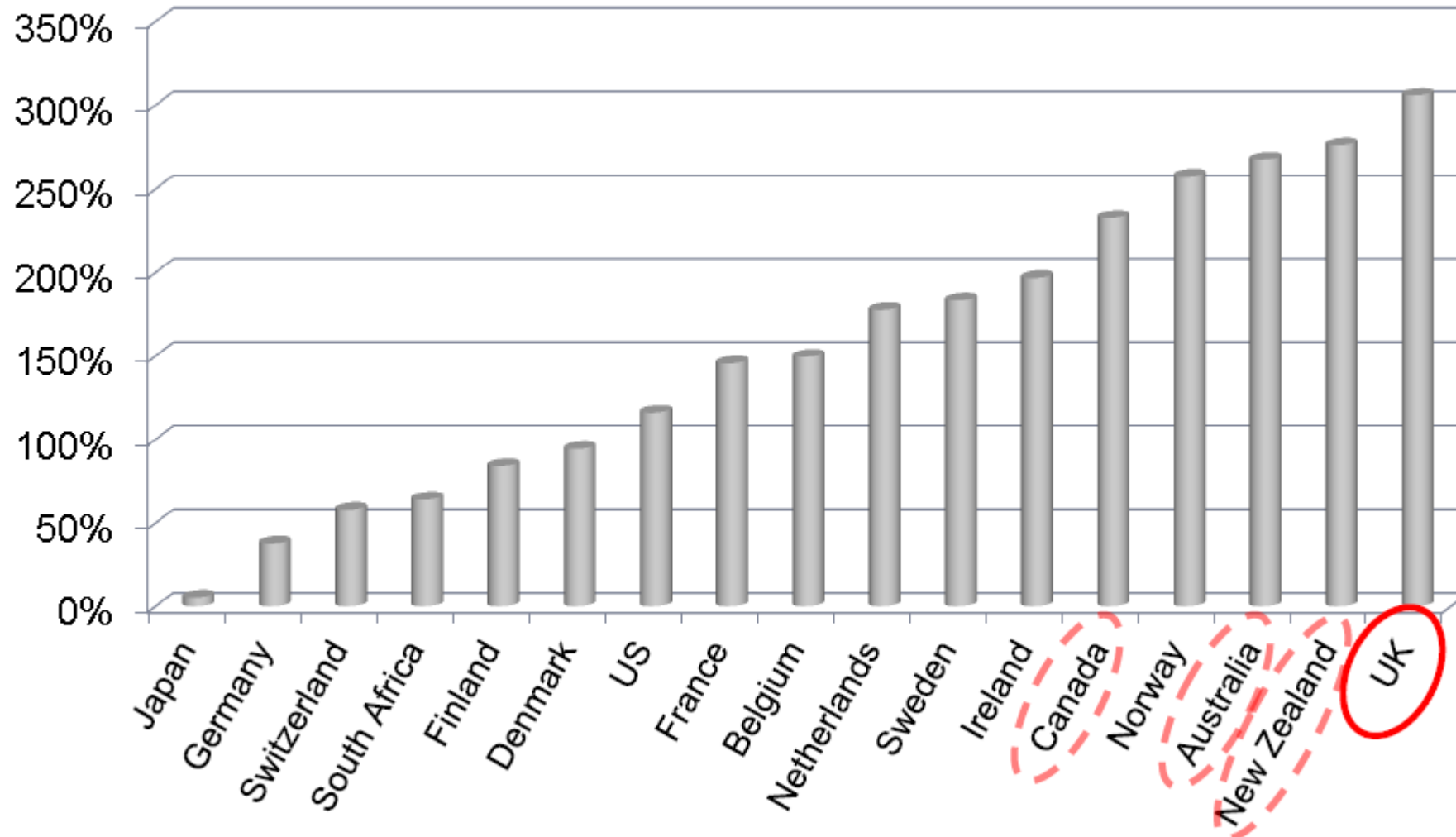
Sources: BIS, World Bank, Bank of England

- Aims to support first time buyers and home-movers

- First announced in 2013 budget speech

- "The biggest government intervention in the housing market since the Right to Buy scheme" (George Osborne, former Chancellor of the Exchequer)

- Four different schemes:

  - ❑ **Equity Loan Scheme (£9.7 billion, 194,000)**
  - ❑ Mortgage Guarantees Scheme
  - ❑ Shared Ownership Scheme
  - ❑ Help to Buy ISA

Buyer's 5% deposit

£10k

Government's 20% loan

£40k

£150k

75% mortgage from commercial lender

Example House Value

£200k

Source: HtB official website

➢ What are the economic impacts of HtB on housing construction and prices?

➢ Does HtB succeed in its two main objectives: increasing construction volumes and homeownership attainment?

➢ Who are the main beneficiaries of HtB: first-time buyers or existing homeowners?

➢ **Background Theories**

- US mortgage interest deduction and homeownership attainment (Hilber and Turner, 2014)

- Supply constraints in the UK (Hilber and Vermeulen, 2016); Credit and homeownership (Carozzi, 2015)

➢ **Empirical Approaches**

- Boundary spatial discontinuity: Gibbons, Machin and Silva (2013), Tang (2017)

- Bunching approach: Kleven (2016), Saez (2010), Best and Kleven (2017)

➢ **Help to Buy**

- Currently no rigorous estimation of the economic impacts of HtB on housing constructions and prices

➢ **Housing transactions data**

- Land Registry database

- Energy Performance Certificates (EPC) database

- **Merge two databases** to control for a wide range of housing characteristics

- HtB and homeownership attainment

➢ **Demographic characteristics**

- Census 2011

➢ **Locational characteristics**

- ONS

➢ **Price Effect**

- Greater London Authority

- England-Wales Border

➢ **Housing Construction**

- Greater London Authority

- England-Wales Border

➢ **Bunching**

Help to Buy: Equity Loan Scheme

| Region	Introduction Date	House value up to	Loan from government	Application
England	April 2013	£600,000	Up to 20%	Applies only to newly-built homes
London	February 2016	£600,000	Up to 40%	Applies only to newly-built homes
Wales	January 2014	£300,000	Up to 20%	Applies only to newly-built homes

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➢ Higher equity loan-threshold in Greater London Authority

➢ Later implementation of HtB in Wales

➢ Cutoffs of £600,000 and £300,000 thresholds

➢ **New builds transactions near to the Greater London Authority boundary**
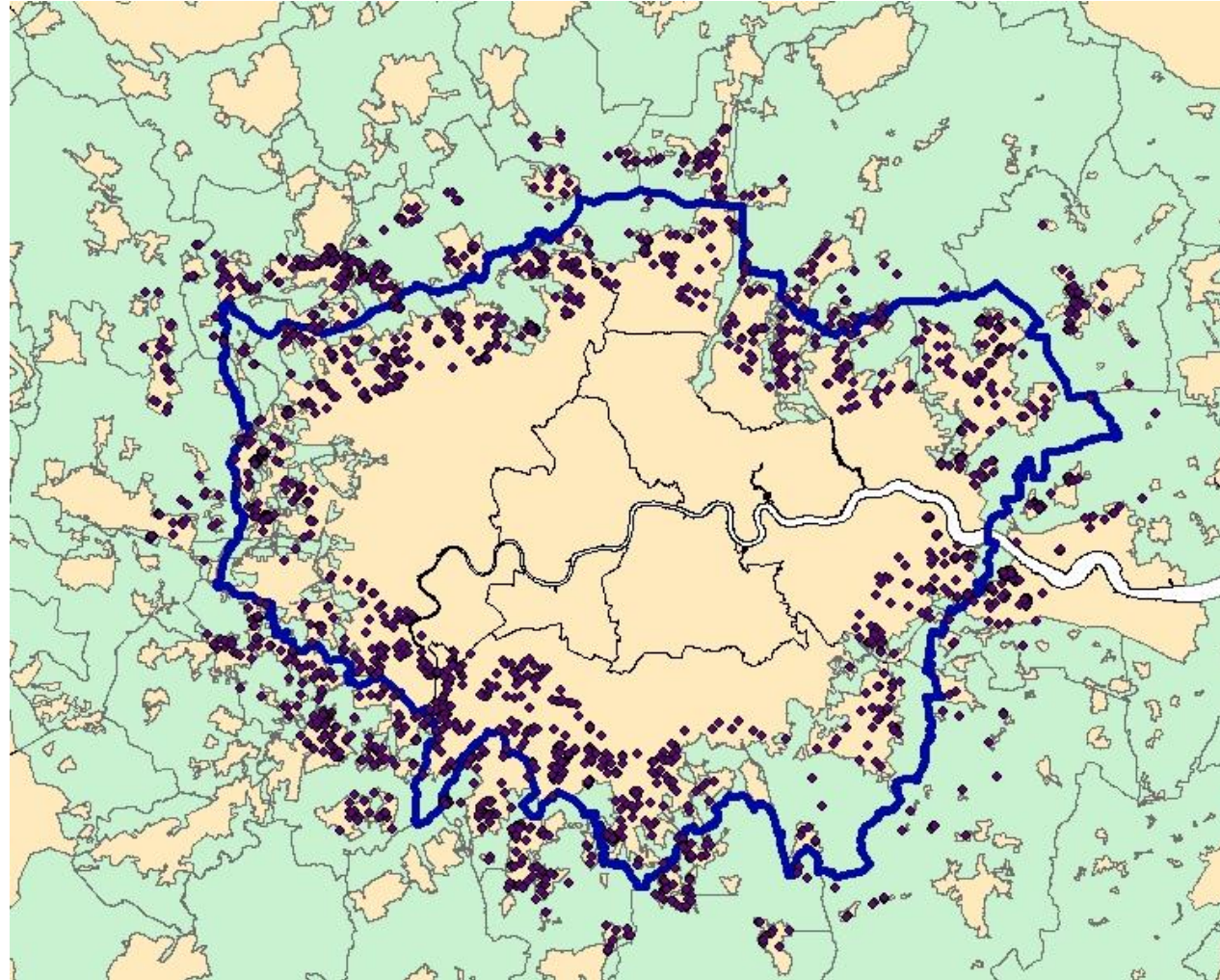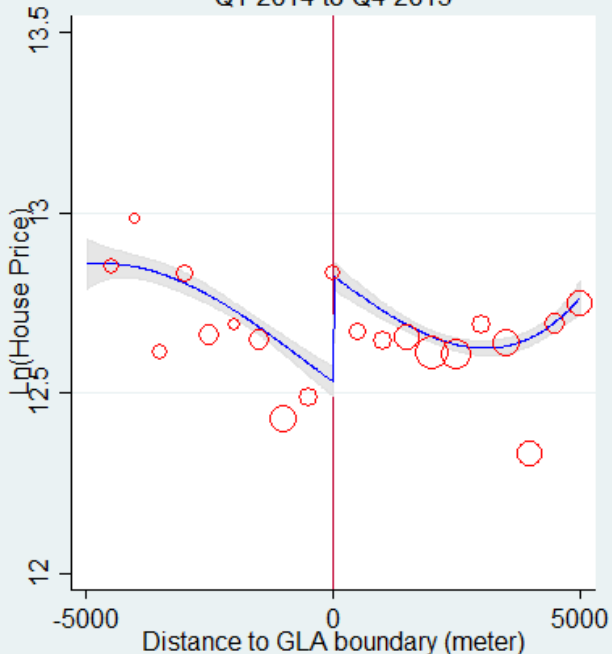
$$Ln(Price)_i = \beta_0 + \beta_1 * Treat_i + f(Distance_i) + u_i$$

- The treatment variable takes the value one if the property transaction is inside GLA and zero otherwise

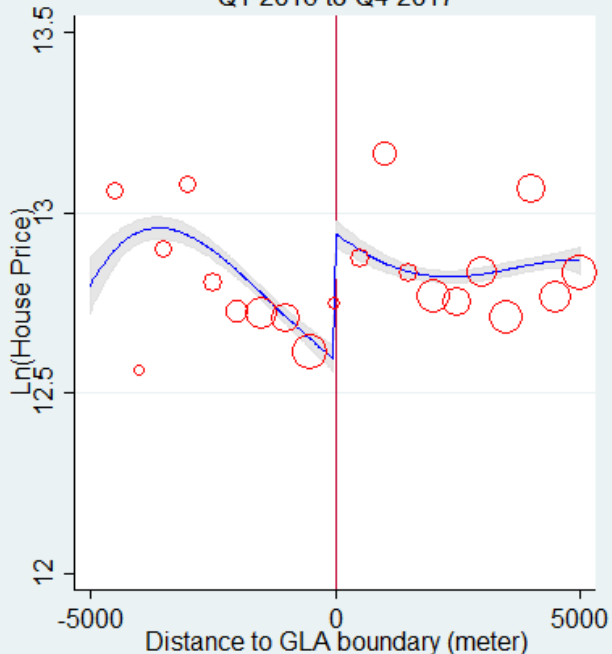- The function $f(Distance_i)$ is a 1st to 4th order polynomial of the distance of property to the GLA boundary

House Price and London Help to Buy
New Builds

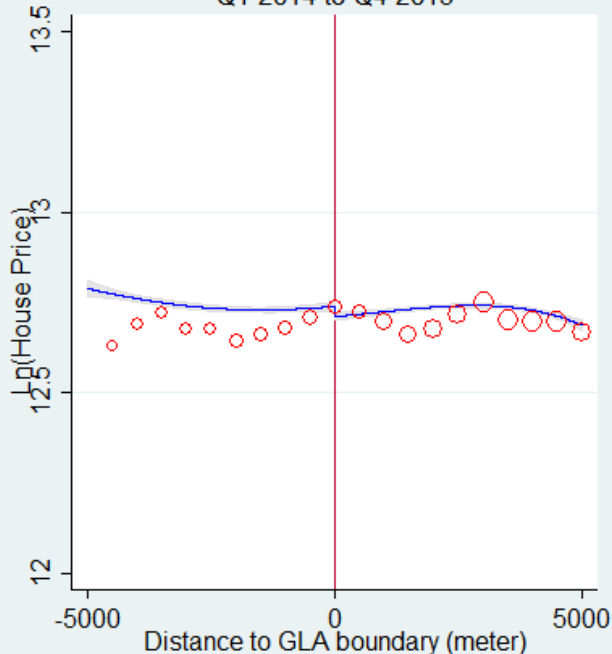Panel A: Before London Help to Buy
Q1 2014 to Q4 2015

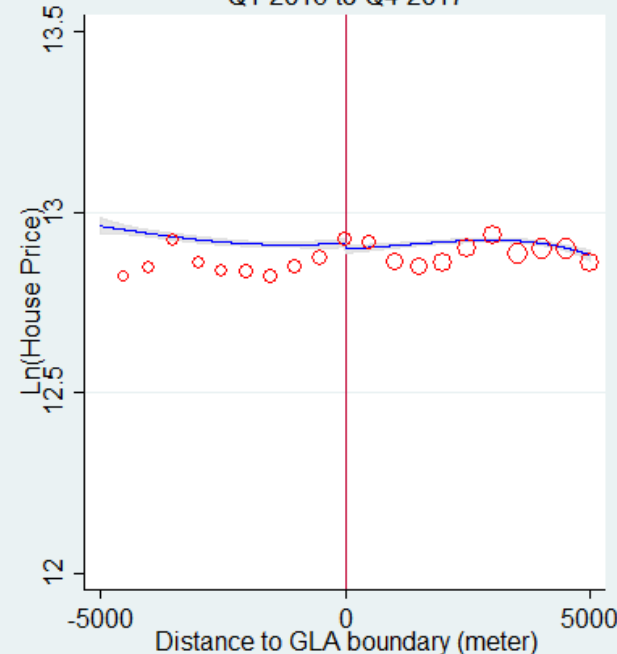Panel B: After London Help to Buy
Q1 2016 to Q4 2017

Positive distance = transactions inside GLA ; Negative distance = transactions outside GLA

House Price and London Help to Buy
Existing Homes

Panel C: Before London Help to Buy
Q1 2014 to Q4 2015

Panel D: After London Help to Buy
Q1 2016 to Q4 2017

Positive distance = transactions inside GLA ; Negative distance = transactions outside GLA

Introduction   Literature Rev   Data   Identification Strategy   Results

$$Ln(Price_{ijtm}) = P_j + \mathbf{\beta_1} * \mathbf{HTB_{itm}} + D_i * Year_t + \beta_2 * X_i + N_j * Year_t + (Year_t * Month_m) + u_{ijtm}$$

- $\mathbf{HTB_{itm}}$ is treatment indicator
- P_j are postcode fixed effects
- D_i are location fixed effects
- X_i is a set of housing characteristics
- N_j is a vector of time-invariant neighborhood characteristics
- $Year_t * Month_m$ are year-month fixed effects

Specifications	New builds					Existing homes				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
HtB	0.0879***	0.0327*	0.0412*	0.0464**	0.0391***	0.0035	-0.0005	-0.0005	-0.0019	-0.0031
	(0.0156)	(0.0192)	(0.0241)	(0.0173)	(0.0120)	(0.0050)	(0.0026)	(0.0072)	(0.0073)	(0.0068)
Year-Month Effect	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Postcode Effect		✓	✓	✓	✓		✓	✓	✓	✓
Housing Controls			✓	✓	✓			✓	✓	✓
Census Vars. By Year				✓	✓				✓	✓
Location Effect					✓					✓
N	18,484	18,484	15,562	15,562	15,562	208,979	208,979	200,871	200,871	200,871
R^2	0.0371	0.8638	0.9195	0.9206	0.9206	0.0427	0.8532	0.9184	0.9205	0.9206

➢ **New builds transactions near to the England-Wales Border**
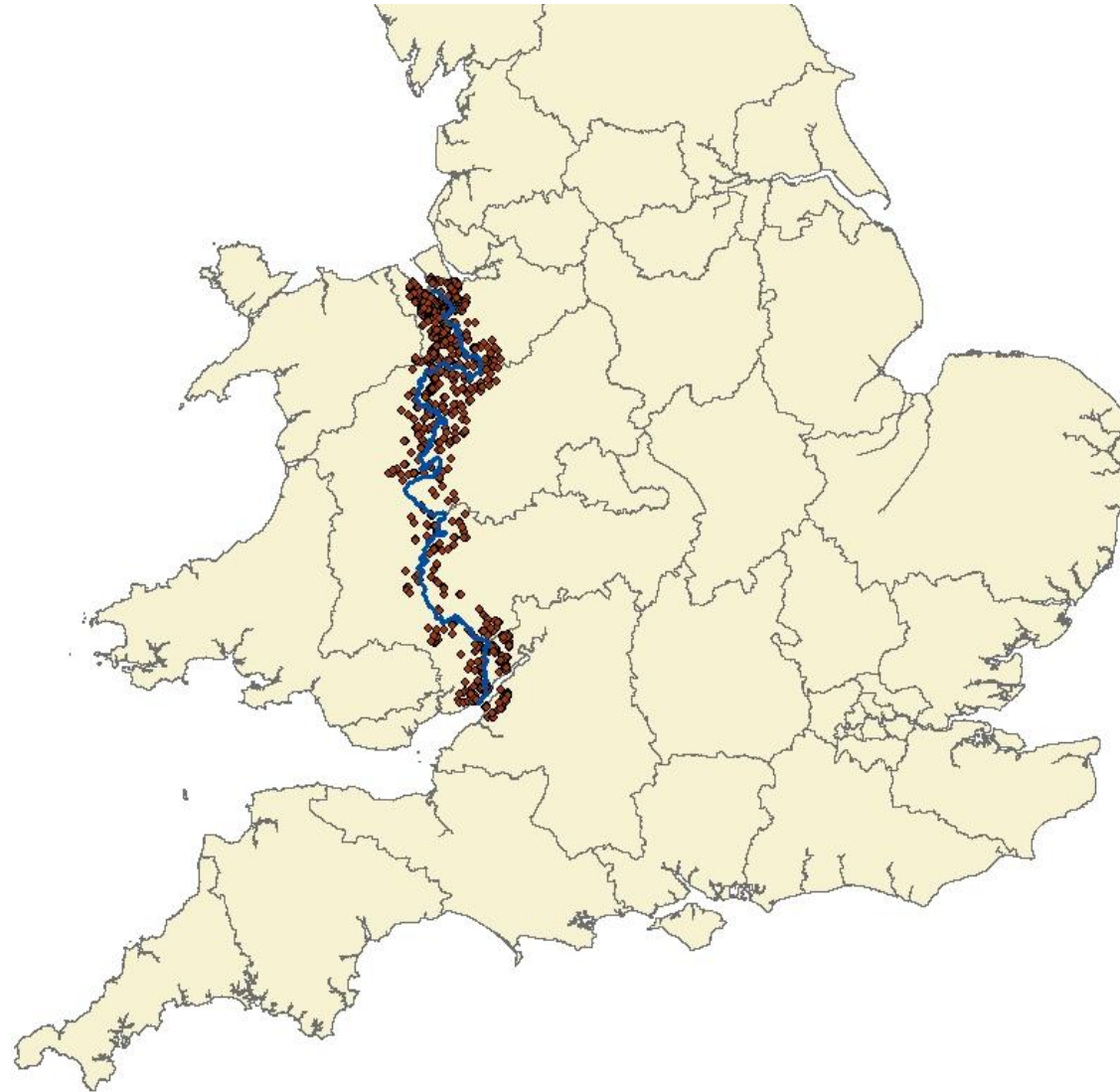
➢ **We estimate properties transactions near to the England-Wales border**

➢ **Preliminary results suggest that HtB:**

- increases newly-built house prices by 3.2%

- has an insignificant price effect on existing homes

- estimations are robust across a variety of specifications

➢ **Help to Buy Policy:**

- leads to a significant increase of newly built house prices by between 3.2% and 3.9%

- has an insignificant price effect on existing homes

- has a larger price effect in GLA (less supply elastic area) than in areas near to the England-Wales Border (more supply elastic area)

- has a larger price effect compared with back-of-the-envelope calculation (between 1.22% to 1.96%), meaning that HtB is not only an interest rate subsidy, but also a policy pushing up demand through enabling buyers to get access to credit

HtB and Housing Constructions

$$\#Newbuilds_{itq} = LSOA_i + \beta_1 * HTB_{itq} + (Year_t * Quarter_q) + u_{itq}$$

- **HTB_{itq}** is treatment indicator
- $\#Newbuilds_{itq}$ is the number of new builds transactions in LSOA i at quarter q of year t
- $Year_t * Quarter_q$ are year-quarter fixed effects
- $LSOA_i$ are LSOA fixed effects

Preliminary Results: HtB & Housing Constructions

Regions	GLA				England-Wales Border			
Periods	Q3 2013 to Q4 2015		Q4 2015 to Q1 2018		Q2 2008 to Q1 2013		Q3 2011 to Q2 2016	
Dependent Variable	#New builds	Dummy	#New builds	Dummy	#New builds	Dummy	#New builds	Dummy
HtB	0.0257	0.0033	0.1202	0.0067	0.0000	0.0030	0.0854***	0.0158**
	(0.0783)	(0.0074)	(0.0958)	(0.0057)	(0.0117)	(0.0058)	(0.0198)	(0.0064)
N	21,724	21,724	21,337	21,337	9,001	9,001	9,836	9,836
`R^2	0.4055	0.3377	0.3075	0.4112	0.2934	0.2547	0.4271	0.3070

Bunching Effect

Pre Help to Buy

N=6894

Post Help to Buy

N=11360
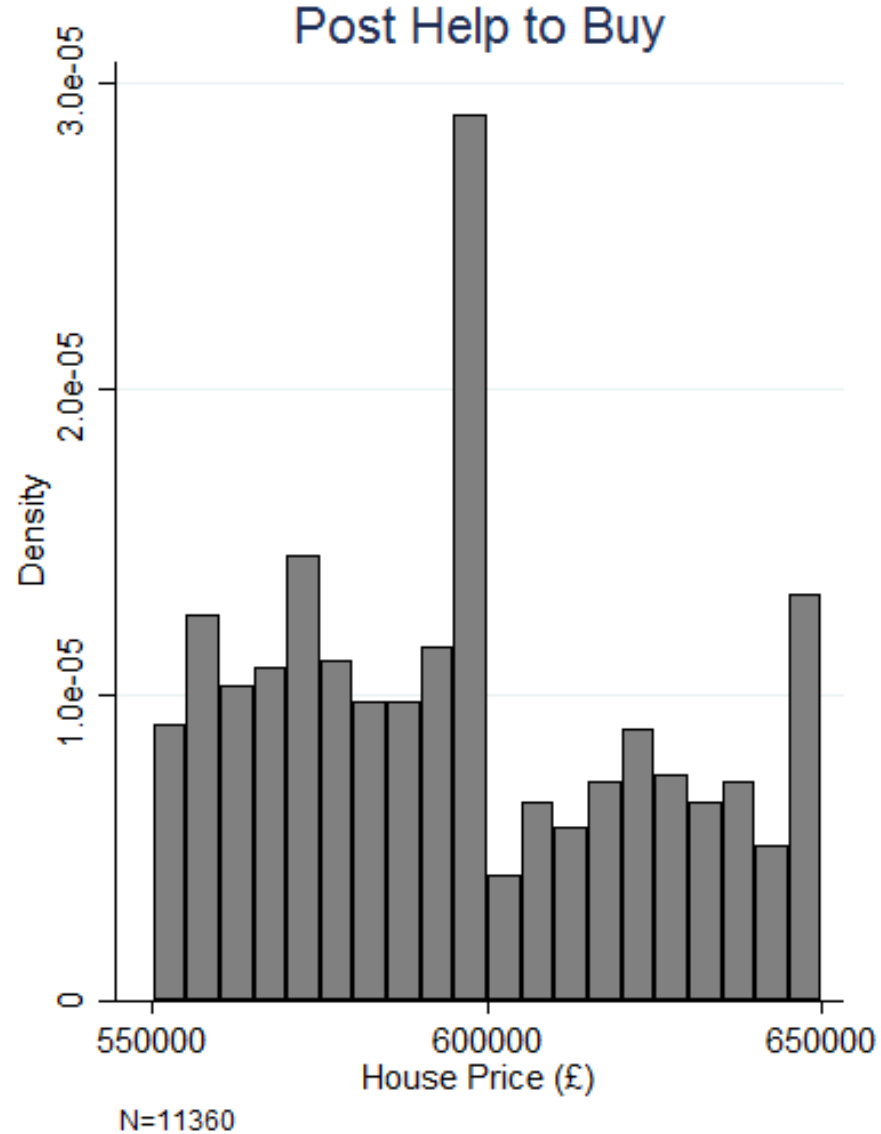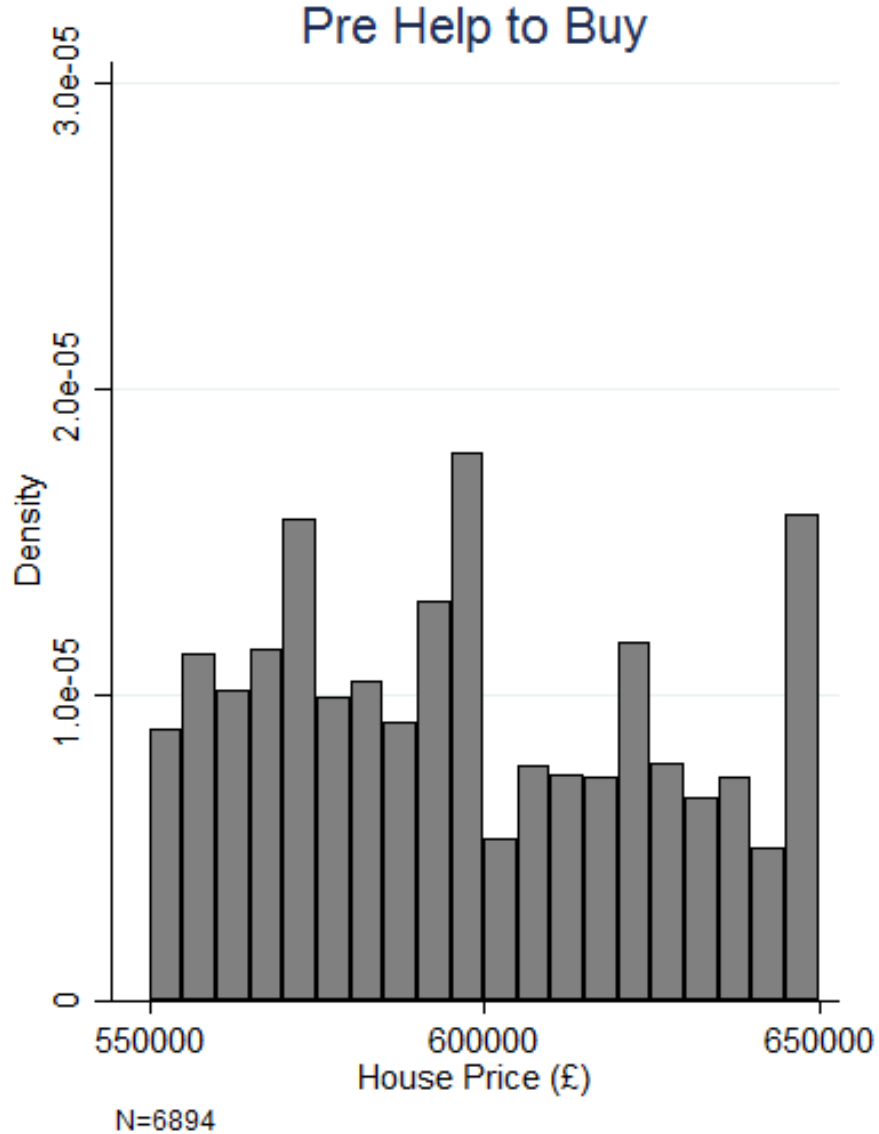
Sales by Price Bins

England, Year 2016 to 2017
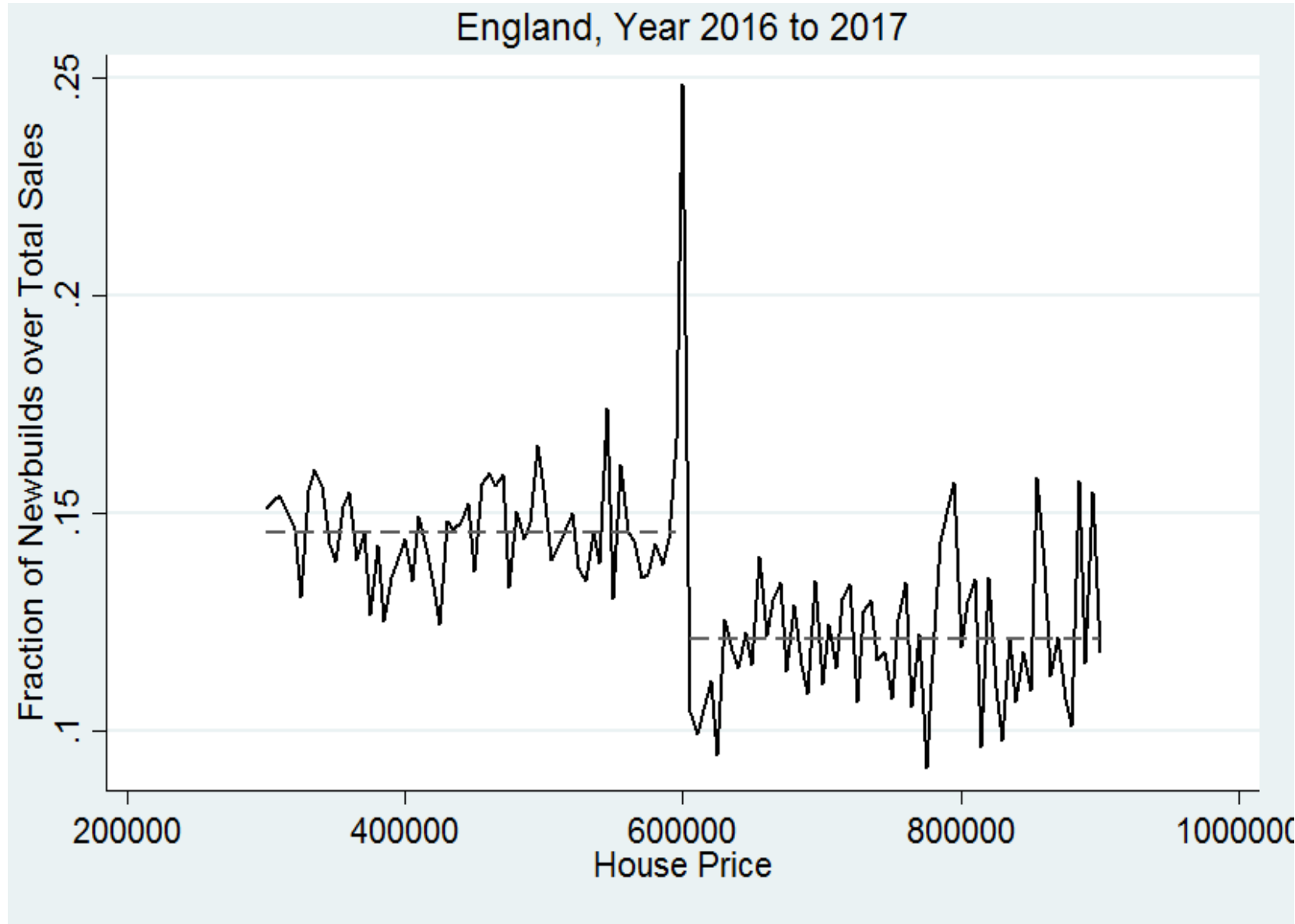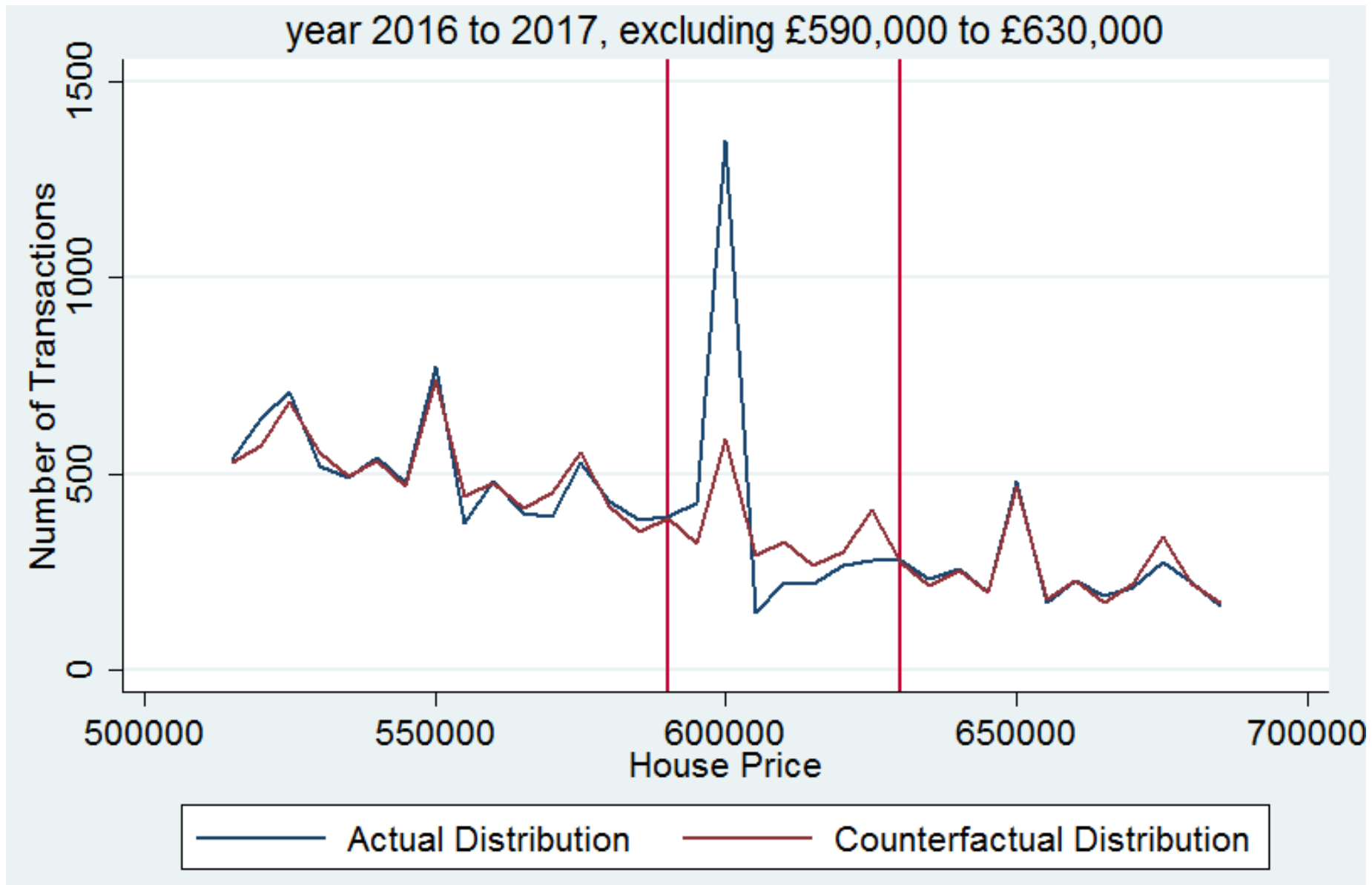
$$S_{jt} = \sum_{i=0}^{q} \beta_i \ (p_{jt})^i + \sum_{r \in R} \rho_r \ 1\left\{\frac{p_j}{r} \in \mathbb{N}\right\} + \sum_{i=p_-}^{p_+} \gamma_i 1\{p_j = i\} + \delta_t + \nu_j$$

- We follow Chetty et al. (2011) and Best & Kleven (2016)'s methods
- S_{jt} is the number of transactions taking place in bin j in period t
- P_{jt} captures the price level in each bin
- δ_t corresponds to a set of time effects
- The first sum estimates Q degree polynomials over the price histogram
- The second sum account for round number bunching
- **Our variables of interest are the γ_s, which estimate the amount of bunching around the HtB price threshold**

Notch at £600,000

year 2016 to 2017, excluding £590,000 to £630,000

Legend: Actual Distribution — Counterfactual Distribution

➢ **Estimate the economic impacts of HtB equity loan scheme using spatial and price discontinuities**

➢ **Preliminary results:**

- HtB increases prices of newly built homes by between 3.2% and 3.9%

- More housing construction only in (less desirable) areas with more elastic supply

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➢ **Identify whether the observed bunching is driven by changes in the type of units or by changes in the relative prices of those units**

➢ **Measure the impact of HtB on homeownership attainment, which is this policy's main objective**

Thank you!