Crushing Landlords. Good idea?

Jamie Lenney

UCL Macro Reading Group
January 2026

Motivation

- UK BTL market is a big deal with outstanding BTL debt at around 13 percent of GDP and over 90 percent of tenancies through a private landlord.
- Successive UK governments have targeted landlords and the BTL market
  - In October 2024 Rachel Reeves raised stamp duty land tax on additional properties to 5 percent from 3 percent
  - This follows from the reforms of George Osborne that phased in between 2017-2021 that implemented the initial 3 percent surcharge and reduced interest cost deductibility.
- Are these policies of economic merit and consistent with their objectives?

Policy Timeline

- **July 2015**: Chancellor George Osborne announced the Section 24 reforms proposing to restrict mortgage interest tax relief starting from April 2017, phasing in through 2021.
- **April 2016** 3% SDLT surcharge on additional properties (second homes and buy-to-let) was introduced.
- **April 2017**: Section 24 began, landlords could deduct 75% of mortgage interest from rental income, with the remaining 25% available as a 20% tax credit
- **April 2020** Full implementation: all mortgage interest costs given only as a 20% tax credit
- ***October 2024****: Stamp duty increased to 5%. Implemented April 2025.*

Policy Rationale

- **Interest deduction**
  - Leveling the Playing Field: "Buy-to-let landlords have a huge advantage in the market as they can offset their mortgage interest payments against their income, whereas homebuyers cannot"
  - Regressive Tax Relief: "the better-off the landlord, the more tax relief they get"
  - Financial Stability Concerns: "macroprudential concern about rapid buy-to-let growth."
- **Stamp duty surcharge**
  - Competition: "people buying a home to let should not be squeezing out families who can't afford a home to buy"

Today's plan

- Quick literature review
- High level overview of potential economic forces
- Model the two key reforms jointly and separately
  - Quantify price movements
  - Welfare implications (steady state and transition)

Literature

- Papers on housing/rental policy reform
  - Han et al. [2025] [RESTUD], Han et al. [2025] [RESTUD] - find large distortions dead weight loss from property transaction taxes
    - Cho et al. [2024] [QE], Kaas et al. [2020] [JEA] - model removing stamp duty, level of mis-match and counterfactual for revenue key for welfare implications.
  - Sommer and Sullivan [2018] in a very similar exercise examine the repeal of the mortgage interest tax deduction in the US. Reduces house prices and improves welfare.
- Papers on this specific reform
  - Not much, just industry reports
  - CEBR [2024] - estimate policies pushed up rents 4 percent
- Modeling approach
  - Albuquerque et al. [2025] - model adapted for this paper

Reform Channels

1. **Rental Yield increase**: $\frac{p_{r,t}}{p_{h,t}} = \underbrace{\frac{1}{1-\tau}}_{taxrate}(\underbrace{1-\frac{p_{h,t+1}}{p_{h,t}(1+r_{t+1})}}_{Cap.gains} + \underbrace{\tau_{ll}}_{Stampduty} - \underbrace{r\kappa d\tau}_{Int.taxdeduct})$
   - Welfare improving:
     - Lower renter share
   - : Welfare reducing:
     - Higher rents(?) for those that remain
     - Lower housing stock/ lower housing wealth
     - Wealth hit for initial homeowners on the transition
2. **Redistribution**: Raised revenues can be redistributed
3. **Distortions**:
   - Removal of distortion encouraging borrowing
   - Introduction of a distortion in housing market (lower liquidity?)

Model: Overview

- General equilibrium Heterogeneous Agent model with housing tenure choice
- Incomplete markets with secured borrowing on housing
- Tenure taste shocks
- Lumpy housing market with endogenous construction sector
- Private landlords: Households supply rental housing through investment
- Government runs a balanced budget and issues debt

Model: Household I

- **Stage 1**: aggregate state χ; idiosyncratic labour productivity is $z = (z_1, z_2)$; and taste shock $\epsilon(h)$ are realised; housing transition h' is chosen

$$V^{(1)}(\chi, h', z, a) = \max_{\tilde{h}} \left[V^{(2)}(\chi, \tilde{h}, z, a) + \epsilon(\tilde{h}) - \eta(\tilde{h}) \right]$$

$\rightarrow$ if we assume a Gumbel distribution for $\epsilon(h)$, then

$$Prob(\chi, h'|h, z, a) = \exp\left(\frac{V^{(2)}(\chi, h', z, a) - \eta(h')}{\alpha_z} \right) \Big/ \sum_{h'|h} \exp\left(\frac{V^{(2)}(\chi, h', z, a) - \eta(h')}{\alpha_z} \right)$$

- **Stage 2**: choice of consumption/savings

$$V^{(2)}(\chi, h', a, z) = \max_{a'} u(c, h', l) + \beta \mathbf{E}[V^{(1)}(\chi'|\chi, h', z'|z, a')]$$

subject to budget and borrowing constraints, with

$u(c, h, l) = \frac{(c^{1-\phi_h} x(h)^{\phi_h})^{1-\sigma_c}}{1-\sigma_c} - \phi_l \frac{l^{1+\psi_l}}{1+\psi_l}$, $x(h) = H(h)(1 + \omega_{oo} \mathbf{1}_{oo})$

Model: Household II

Household expenditures

$$a_{t+1} + c_t + \mathbf{1}_{rent,t} p_{r,t} H_{i,r,t} + p_{h,t}(H_{i,o,t} - H_{i,o,t-1}) - \mathbf{1}_{\mathbf{H_{i,o,t} \neq H_{i,o,t-1}}} F + p_{h,t}\delta_h H_{i,o,t} + \underbrace{\tau_{ll,t} H_1 p_{h,t} \mathbf{1}_{\mathbf{x \to ll}}}_{LLStampduty}$$

Household resources

$$(1 + r_t + \mathbf{1}_{\mathbf{a<o}}\bar{r})a + (z_{i,t} w_t l_t + \mathbf{1}_{\mathbf{ll,t}} p_{r,t} H_1)(1 - \tau(z_{i,t})) + \Pi(z_{i,t}) + T_{G,t} + \underbrace{\mathbf{1}_{\mathbf{ll,t-1}} T_{ll,i,t}}_{Int.taxcred.}$$

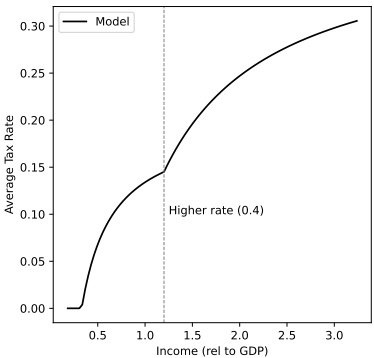
Borrowing constraint

$$a_{t+1} \geqslant \bar{a}(h_t, p_{h,t}, z_{i,t}, w_t, l_t, a_t)$$

Model: Household III

Progressive Taxation:

$$d\tau(z) = \begin{cases} 0 & \text{if } wlz < 0.33 \\ 0.2 & \text{if } 0.33 \leq wlz < 1.2 \\ 0.4 & \text{if } wlz \geq 1.2 \end{cases}$$



Interest tax credit
Landlords gets a government transfer $T_{ll,i}$ as a function of their interest costs.

$$-\min(d\tau(z_i), \bar{\tau_{int}})(r + \bar{r}) \min(0, \max(a_i, -H_1 p_{h,ss} \kappa_{LL}))$$

Borrowing constraints
Borrowing constraints are tenure/transition specific.

e.g. own to own: $\min\left[a_t, \max\left[-\kappa_H p_h H_i, -\kappa_y zwl\right]\right]$
e.g. x to rent: 0

Model: Housing Market

Housing Supply
Housing investment combines value added with land to produce new housing. Profit maximisation pins down investment as function of the house price.

Investment: $I_H = (\alpha_{lh} p_h)^{\frac{\alpha_{lh}}{1-\alpha_{lh}}} \bar{L}$, Stock: $\bar{H_t} = (1 - \delta_h)\bar{H_{t-1}} + I_{H,t}$

Housing Market Clearing

Housing supply must equal housing demand each period.

$$\bar{H_t} = H_1(s_{r,1,t} + s_{o,1,t} + s_{ll,1,t}) + H_2(s_{r,2,t} + s_{o,2,t} + s_{ll,2,t})$$

And marginal changes in rental demand must be met by marginal changes in landlord supply.

$$H_1 s_{r,1,t} + H_2 s_{r,2,t} = H1(s_{ll,1,t} + s_{ll,2,t}) + \bar{HA}$$

Model: Rest of Model I

Fiscal policy: Issues fixed amount of debt B and run a balanced budget by adjusting $T_{G,t}$

Revenues: $\int \left(\tau(z) w_t l_t z_{i,t} + F \mathbf{1}_{\mathbf{H}_{i,o,t} \neq \mathbf{H}_{i,o,t-1}} - \bar{r} a_{i,t} \mathbf{1}_{\mathbf{a<o}} + \tau_{ll,t} H_1 p_{h,t} \mathbf{1}_{\mathbf{x \to ll}}\right) di + (1 - \alpha_{lh}) I H_t p_{h,t} + p_r \bar{H} A$

Expenditure: $G + T_{G,t} + p_h \delta_h \bar{H} A + \int T_{ll,i,t} di$

Production: Value added is produced according a simple production function:

$Y_t = A_t l_t.$

Wages: A union negotiates wages on behalf of households with wages subject to nominal rigidities:

$\pi_{w,t} = \beta E[\pi_{w,t+1}] + \kappa_w(\hat{l_{w,t}}),\ l_w = \frac{\phi_l l_t^{\psi}}{\int u_{c,i} w_t (1-\tau) di}$

Model: Rest of Model II

Model closed with a Taylor Rule, goods market clearing, and asset market clearing condition.

- $i_t = \rho_r i_{t-1} + (1 - \rho_r)(\phi_\pi \pi_t + i_{ss})$
- $Y_t = C_t + G + p_{h,t} \alpha_{Ih} I_{H,t}$
- $B = \int a_{i,t+1} di$

Calibration I

Table Externally calibrated parameters

Parameter	Value	Source
Frisch	0.5	Auclert et al. [2020]
EIS	0.5	
Steady State Markup	1.06	Auclert et al. [2020]
Borrowing wedge $\bar{r}(ann)$	0.0126	(avg 97-19 of 2yr 75pct)
Transaction Cost	$0.02p_{h,ss}$	Halifax
$\frac{p_{h,ss}}{\bar{y}}$	6.3	Avg 97-23 ONS; $\bar{H}$
Loan to value max κ_h	0.90	PSD 90 pctile. FTB
Loan to income max κ_y	4.5	PSD 90 pctile. FTB
Housing Maintenance (ann) δ_h	0.0125	BEA/ONS
Housing supply elast $\frac{\alpha_{lh}}{1-\alpha_{lh}}$	0.25	Levell et al. [2025]
Taste shock scaler α_z	0.15	Iskhakov et al. [2017]

Calibration II

- Estimated labour income process with transitory and persistent components
- Internally calibrated parameters

Targeted Moment	Model	Data	Parameter	Source
Ann. Debt to GDP	0.63	0.65	β	ONS
Share of Renters	0.33	0.33	$\phi_h, \omega_{oo}, p_{r,ss}$	EHS (97-23)
Share of Flat Owners	0.10	0.10	$\phi_h, \omega_{oo}, p_{r,ss}$	EHS (97-23)
Share of Landlords	0.06	0.06	$\phi_h, \omega_{oo}, p_{r,ss}$	WAS (08-20)
Annual rate $oo \rightarrow r$	0.01	0.01	η_m	EHS (97-23)

- Untargeted Moments:

Moment	Model	Data	Source
Top 10 pct. Total Wealth Share	0.34	0.48	WAS (08-20)
Share of Homeowners with Mortgage	0.54	0.53	EHS (97-23)
Share of Landlords with Mortgage	0.49	0.57	WAS (07-20)
Avg Rent to Renter Disposable Income	0.32	0.33	EHS (97-23)
Landlords Borrowing to GDP	0.16	0.13	BoE (2019)

Transition Analysis

- We now analyses under perfect foresight the Osbourne reforms in the model.
- Solving for $\{p_h, p_r, r, l, T_H\}$ along the transition
- We shall consider the reforms separately and together
- Leverage efficient algorithm of Auclert et al. [2021] to compute non-linear transition (leverages linear SSJ's for efficient updates)

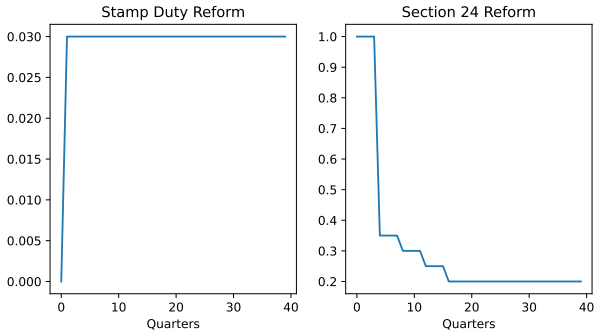


Figure Reform Paths

Model: Transition dynamics

Higher rents, lower house prices, higher renter share, higher labour supply

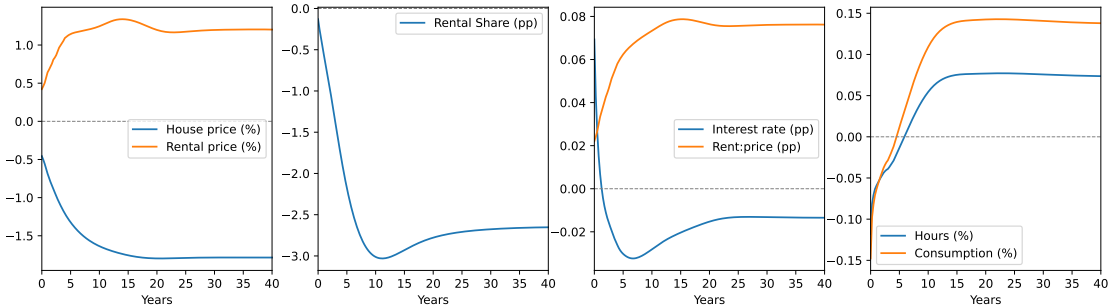


Figure Transition Dynamics (all reforms)

Stamp duty reform enacted in period zero and interest deduction removal implemented over 4 year period. Revenues redistributed as lump sum transfer (0.16% GDP). Close to initial estimates

Model: Transition dynamics (by measure)

Similar effects, higher relative impacts on rents from stamp duty reform.

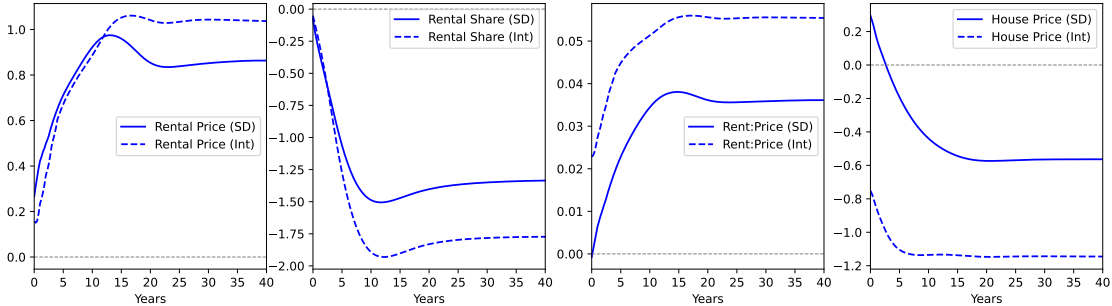


Figure Transition Dynamics (all reforms)

Solid line is stamp duty change only. Dashed line is interest reform only. Both measures separately raise about 0.1% of GDP in revenue

▸ Reform Speed

Welfare

Consider compensation needed to make households indifferent between doing transition or not.

(% GDP)	Interest Deduct.	Stamp Duty	Combined
Comp. All	0.03	0.07	0.1
Renters	0.04	0.14	0.18
Homeowners	0.06	0.03	0.09
Landlords	0.21	0.05	0.27
Comp. All (SS)	-0.09	-0.08	-0.16
Rev raised	0.1	0.1	0.17
Comp. All (% of rev)	0.4	0.8	0.7
Δ Housing stock	-0.3%	-0.15%	-0.45%

Welfare: Slower Transition

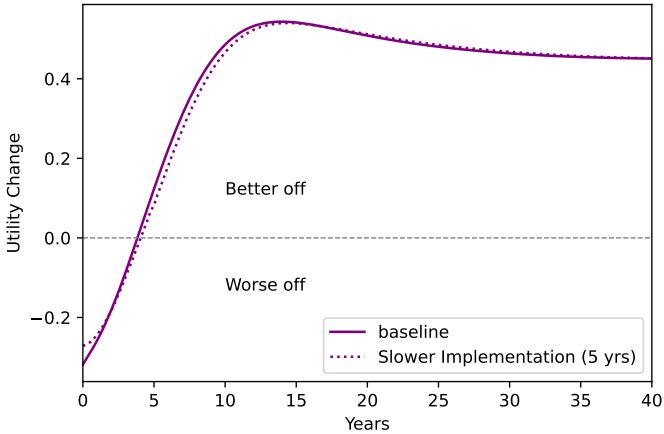


Figure Baseline v 5 year warning

Initial transition costs not helped really helped by forewarning.

Welfare: Alternate revenue distribution

Consider compensation needed to make households indifferent between doing transition or not.

(% GDP)	No Redistribution	Investment Subsidy	Baseline
Comp. All	0.21	0.17	0.1
Renters	0.28	0.23	0.18
Homeowners	0.19	0.18	0.09
Landlords	0.35	0.38	0.27
Comp. All (SS)	-0.10	-0.21	-0.16
Rev raised	0.16	0.16	0.17
Comp. All (% of rev)	1.25	1.0	0.7
Δ Housing stock	-0.4%	-0.30%	-0.45%

Baseline verus alternate use of revenue for government consumption or subsidising housing investment.

▸ No Redistribution

Welfare: Distributional effect

(ΔV)	Distributional	Direct	Total
Combined	0.490	-0.038	0.452
Interest	0.298	-0.037	0.261
Stamp Duty	0.342	-0.112	0.230
No Redistribution	0.561	-0.285	0.275
Investment Subsidy	0.567	0.007	0.574

Decomposing steady state welfare changes into a distributional $V_0(D_1 - D_0)$ and direct effect $D_1(V_1 - V_0)$.

Conclusion

- Assessed landlord focused housing market reforms in a quantitative model
- Model predictions in line with reforms objectives of higher home ownership and indicates a long run welfare improvement driven by changes in the distribution.
- Welfare costs when we consider the whole transition that are difficult to avoid
- Stamp duty implementation more costly over the transition as adjustment fall more on the rental price initially

Adjustment Speed

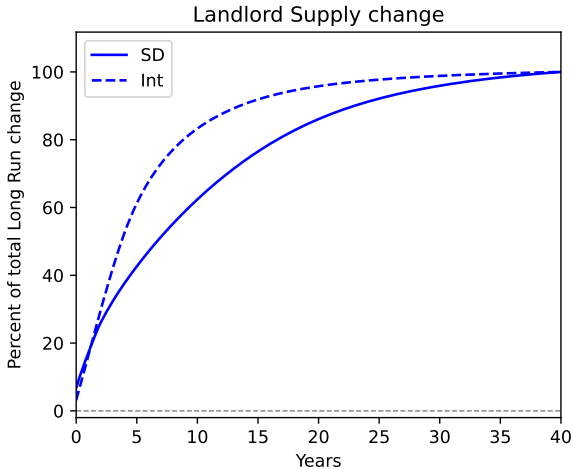


Figure Transition Speed

Partial equilibrium response to reforms by landlord. Back

References

D. Albuquerque, T. Lazarowicz, and J. Lenney. Monetary transmission in a hank model with housing and rental sectors. 2025.

A. Auclert, M. Rognlie, and L. Straub. Micro jumps, macro humps: Monetary policy and business cycles in an estimated hank model. Technical report, National Bureau of Economic Research, 2020.

A. Auclert, B. Bardóczy, M. Rognlie, and L. Straub. Using the sequence-space jacobian to solve and estimate heterogeneous-agent models. *Econometrica*, 89(5):2375–2408, 2021.

CEBR. Rethinking the government's approach to landlords: how policy has driven rents up by 4Technical report, CEBR, 2024.

Y. Cho, S. M. Li, and L. Uren. Stamping out stamp duty: Housing mismatch and welfare. *Quantitative Economics*, 15(2):381–426, 2024.

L. Han, L. R. Ngai, and K. D. Sheedy. To own or to rent? the effects of transaction taxes on housing markets. *The Review of Economic Studies*, page rdaf092, 10 2025. ISSN 0034-6527. doi: 10.1093/restud/rdaf092. URL https://doi.org/10.1093/restud/rdaf092.

F. Iskhakov, T. H. Jørgensen, J. Rust, and B. Schjerning. The endogenous grid method for discrete-continuous dynamic choice models with (or without) taste shocks. *Quantitative Economics*, 8(2):317–365, 2017.

L. Kaas, G. Kocharkov, E. Preugschat, and N. Siassi. Low homeownership in germany—a quantitative exploration. *Journal of the European Economic Association*, 19(1):128–164, 04 2020. ISSN 1542-4766. doi: 10.1093/jeea/jvaa004. URL https://doi.org/10.1093/jeea/jvaa004.

P. Levell, D. Sturrock, and E. Drayton. The determinants of local housing supply in england. *Available at SSRN 5147940*, 2025.

K. Sommer and P. Sullivan. Implications of us tax policy for house prices, rents, and homeownership.

Welfare: No Redistribution

Consider compensation needed to make households indifferent between doing transition or not.

(% GDP)	Interest Deduct.	Stamp Duty	Combined
Comp. All	0.09	0.12	0.21
Renters	0.09	0.19	0.28
Homeowners	0.12	0.0.08	0.20
Landlords	0.26	0.09	0.35
Comp. All (SS)	-0.02	-0.03	-0.10

Back