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## The curious incidence of rent subsidies: evidence from administrative data

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Joint work with Mike Brewer, James Browne, Carl Emmerson and  
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# Motivation

- Targeted subsidies for housing are an important part of the redistributive programs of modern welfare states
- A key question is over the economic incidence
  - Who benefits from rent subsidies: tenants or landlords?
- Depends on impacts of subsidies on market rents

# What might we expect?

- Incidence should depend on relative elasticities of supply and demand for privately rented housing
  - E.G. supply fixed → rents adjust one-for-one with subsidy changes
- Empirical literature tends to suggest significant proportion of housing subsidies incident on landlords
  - **US:** Susin (2002), Collinson and Ganong (2015), Eriksen and Ross (2015); **Finland:** Viren (2013); **France:** LaFerrere and le Blanc (2004), Fack (2006); **Jerusalem:** Sayag and Zussman (2015); **UK:** Gibbons and Manning (2006)

# Our contribution

- We look at whether cuts to UK Housing Benefit for private sector tenants in 2011 and 2012 reduced rent levels
- All new claimants affected in April 2011
  - Estimate effects on rents by using pre-reform trend as counterfactual
- Existing claimants rolled onto new system over course of 2012, with month of rollover defined by claim start date
  - Estimate effects on rents using those not yet rolled over as controls
- Both strategies give similar estimates – about 90% of the reduction in HB incident on tenants rather than landlords
  - ie. rents fell by 10% of the size of the HB cut

# Policy context

- Housing benefit (HB) is means-tested rebate for rental costs
  - Anyone with income and assets low enough can receive it
- For private sector tenants, amount rebated calculated according to rules known as Local Housing Allowance (LHA)
  - Relevant locality for these purposes is called a Broad Rental Market Area (BRMA) – 192 in Great Britain
- UK spends £10 bn per year (0.5% of GDP) on HB for 1.7m low-income private renters – has grown rapidly
- The natural experiment exploited here is a package of cuts to generosity of LHA rules

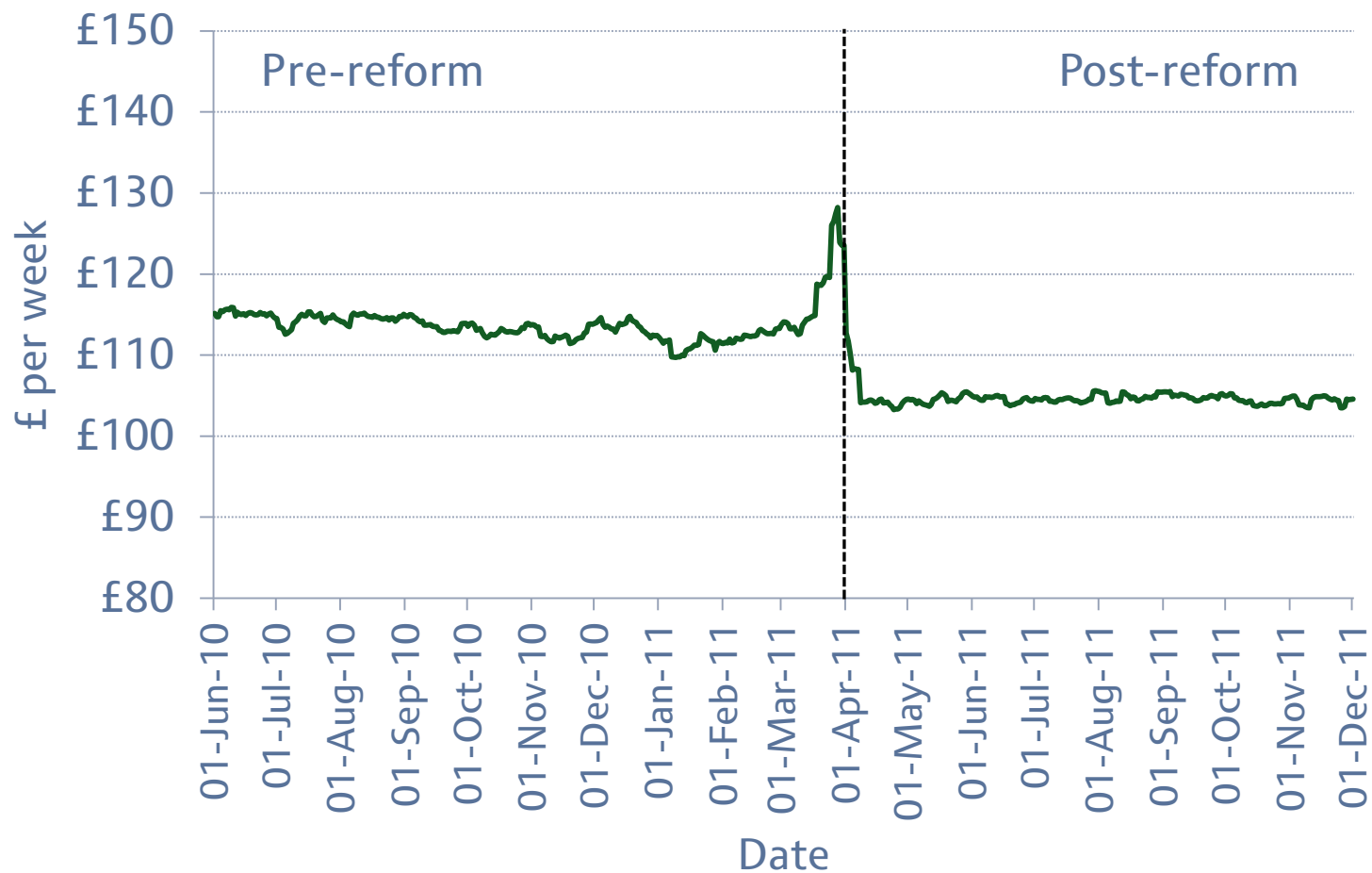
# The reforms

- Previously, formula for entitlement (ignoring means test) was:
  - Weekly HB = min (applicable LHA rate , rent + £15)
- Five cuts to HB awards
  1. LHA rates based on the 30<sup>th</sup> percentile of rents in a (local area x bedrooms) cell, not the median
  2. £15 excess removed
  3. 5-room rate abolished
  4. National caps on room rates: £250, £250, £290, £340, £400 p/w for shared, 1-4 rooms respectively
  5. Shared accommodation rate (SAR) applies if single, childless and under 35 (previously 25)
- Removal of excess affected existing claimants nine months before other reforms (Apr 11 – Mar 12 rather than Jan – Dec 12)

# Data: Single Housing Benefit Extract (SHBE)

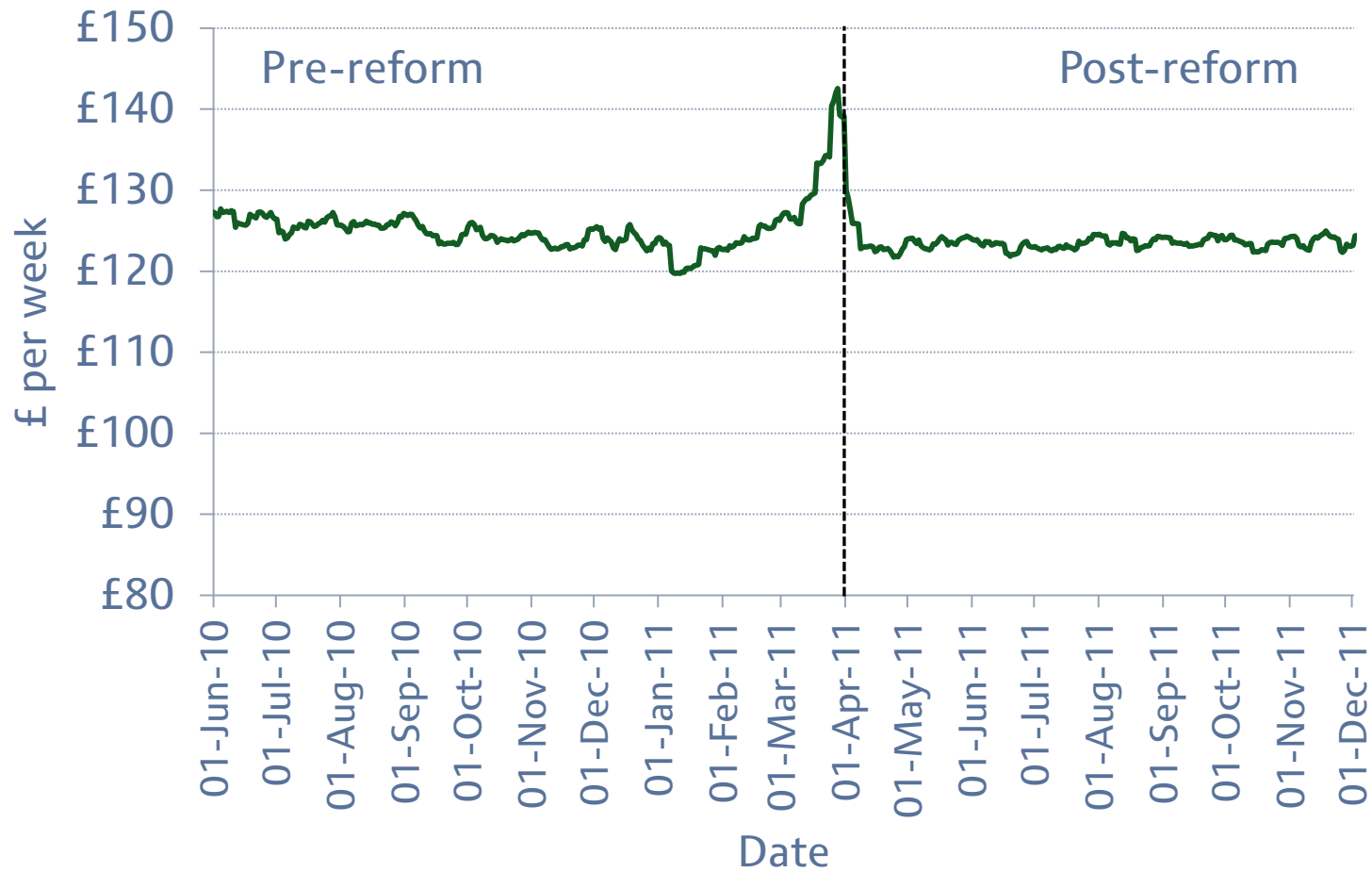
- Administrative panel data on all HB claims in GB
  - Central database of monthly scans of Local Authority systems
  - (Roughly) monthly observations from January 2010 to November 2013
  - Key variables include contractual rents, HB amounts, BRMA, LHA bedroom entitlements, actual number of bedrooms, family type, age
- For new claimants, use first observation for all claims starting between April 2010 and November 2011
  - 50,000 -60,000 observations (ie. new claims) per month
- Analysis of existing claimants based on stock in January 2011
  - Use monthly observations from January 2010 to November 2013
  - 240,000 claimants, observed an average of 28 times (1 in 3 sample)

# Average LHA entitlement of new claimants (7-day moving average)





# Average rent of new claimants (7-day moving average)



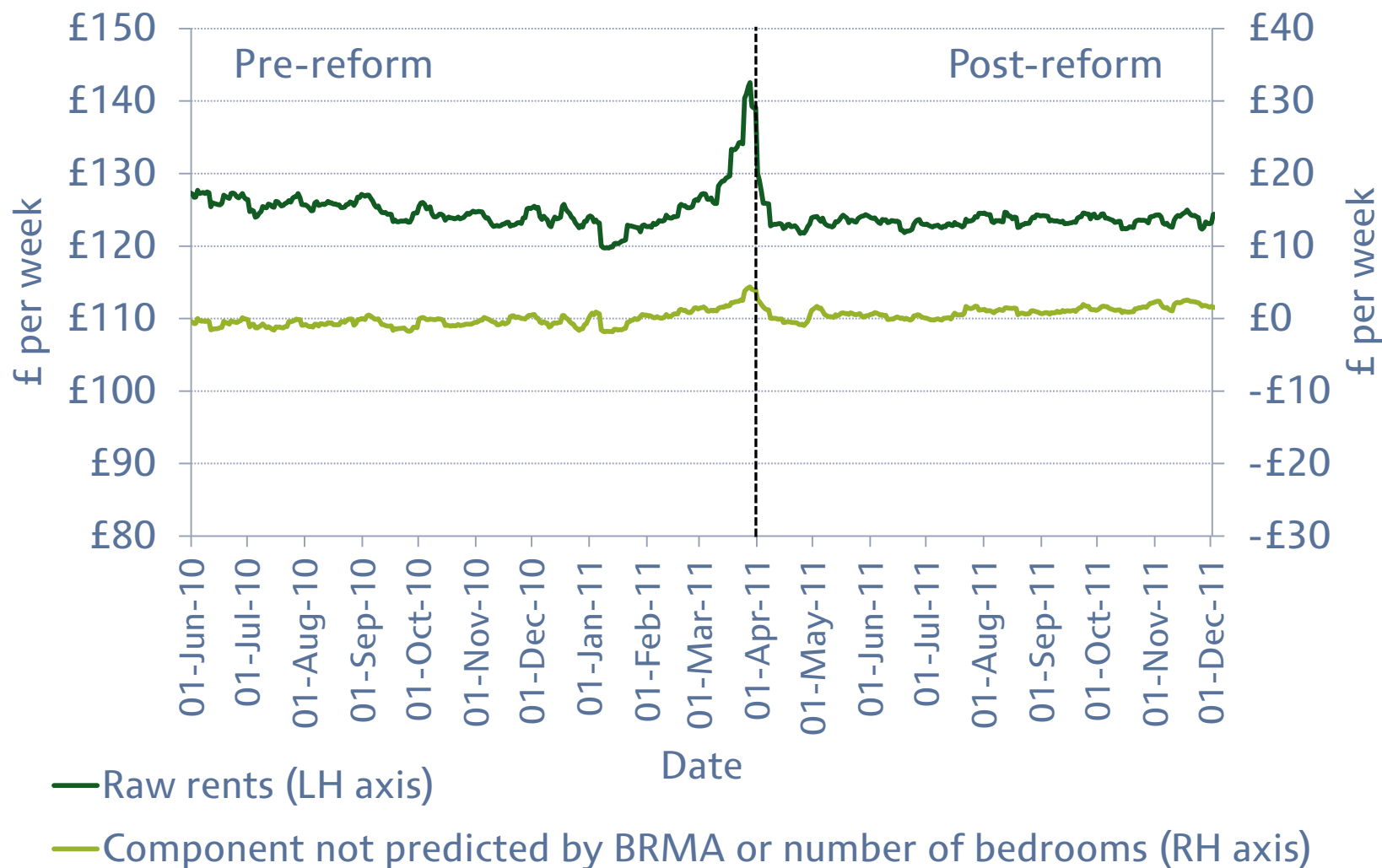
# New claimants: descriptives

- HB entitlements broadly flat pre-reform; clearly settle at a lower level after April 2011
- But little difference in rent levels before and after reforms
- Large spike in both entitlements and rents just before April 2011
  - Consistent with financial incentives created by reform
  - New claims in late March not subject to cuts in full for 21 months while those in early April subject straight away
  - Those most affected (higher rents/entitlements) more likely to respond, by claiming earlier and/or ‘manufacturing’ a new claim

# New claimants: methodology

- Can explain most of the spike with controls for property type, but not all of it

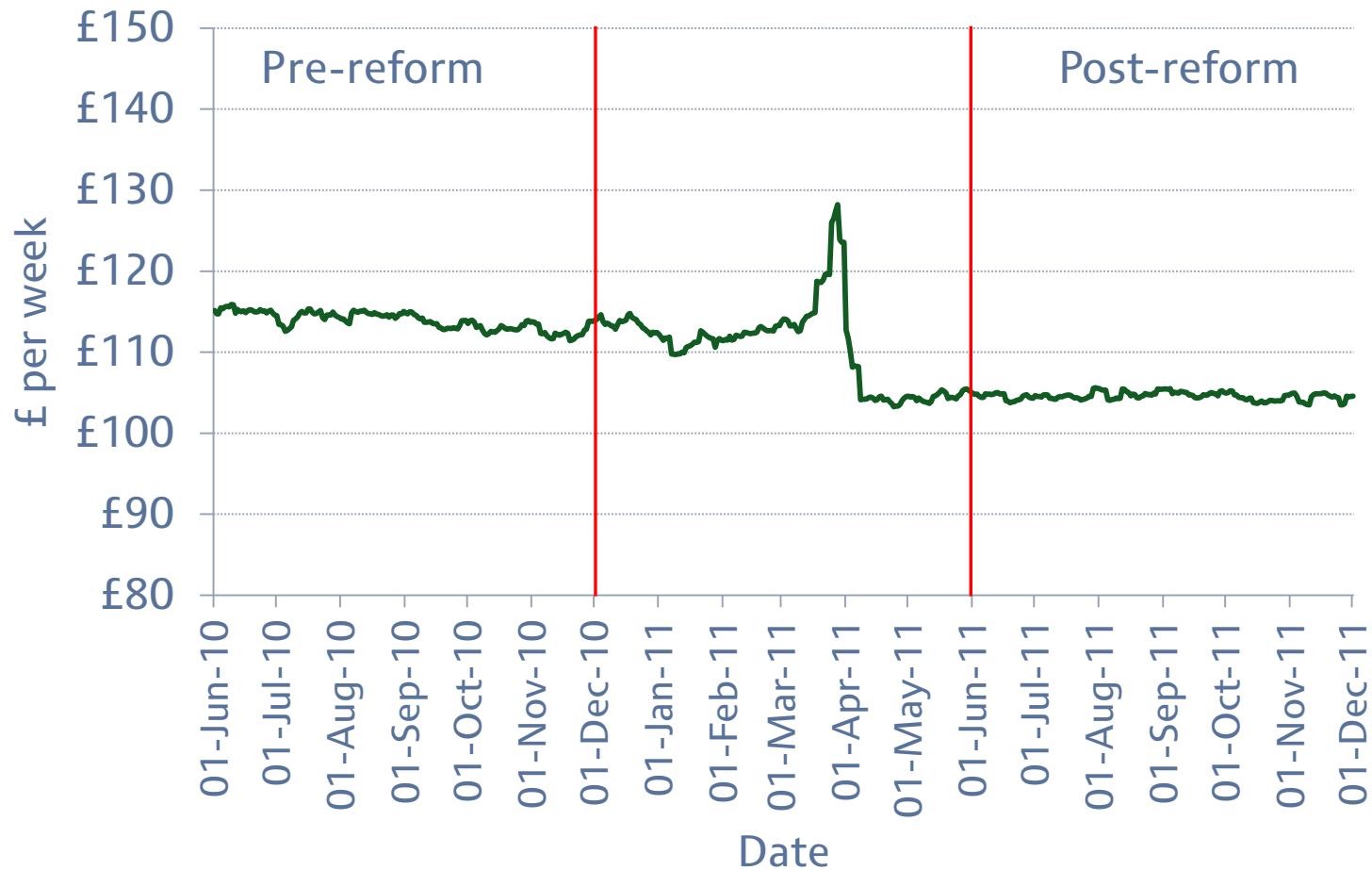
# Average rent of new claimants (7-day moving average)



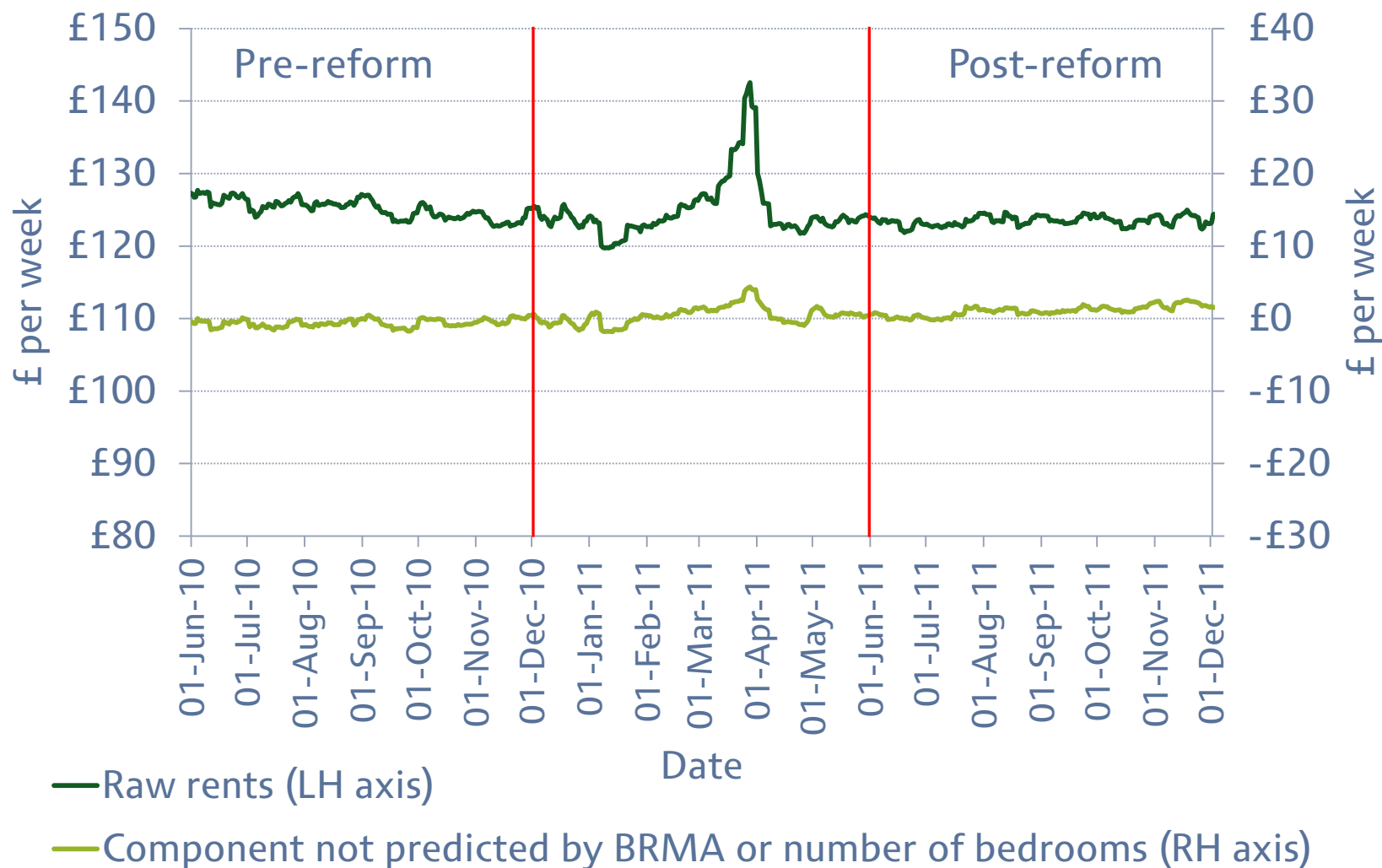
# New claimants: methodology

- Can explain most of the spike with controls for property type, but not all of it
  - So exclude window of data around time of reform (December 2010 to May 2011)

# Average LHA entitlement of new claimants (7-day moving average)



# Average rent of new claimants (7-day moving average)



# New claimants: methodology

- Can explain most of the spike with controls for property type, but not all of it
  - So exclude window of data around time of reform (December 2010 to May 2011)
- Identification of effect comes from extrapolation of time trend from before that window (pre-December 2010 data)
  - provides counterfactual for post-reform observations
- Trade-off: exclude more data and be surer of getting rid of anticipation effects; but time trends have to extrapolate more, and sample size is lost
  - We take very conservative approach because time trends look uncomplicated and sample very large



## New claimants: regression specification

$$y_{iat} = f_a(t) + 1(t \geq \textit{April 2011})\beta + x'_{iat}\alpha + \varepsilon_{iat}$$

- Regress rent (or housing benefit) entitlement on a time trend, post-reform dummy and a vector of control variables
  - Linear time trend allowed to vary by area (and overall trend allowed to be different before and after the reform)
  - Controls include dummies for full set of area x bedrooms interactions, family type and age

# Estimating incidence: results for new claimants

(£ per week)

Rent	Housing benefit	Rent net of HB
-0.46 (0.64)	-8.21*** (0.50)	7.76*** (0.49)

*Note:* \*\*\* Statistically significant at 1% level, \*\* Statistically significant at 5% level, \* Statistically significant at 10% level. Standard errors in brackets are robust to heteroscedasticity and clustering at the BRMA level. Includes controls for BRMA, local authority, number of bedrooms in the property, linear time trends in each BRMA, and family type and age. N = 659,682

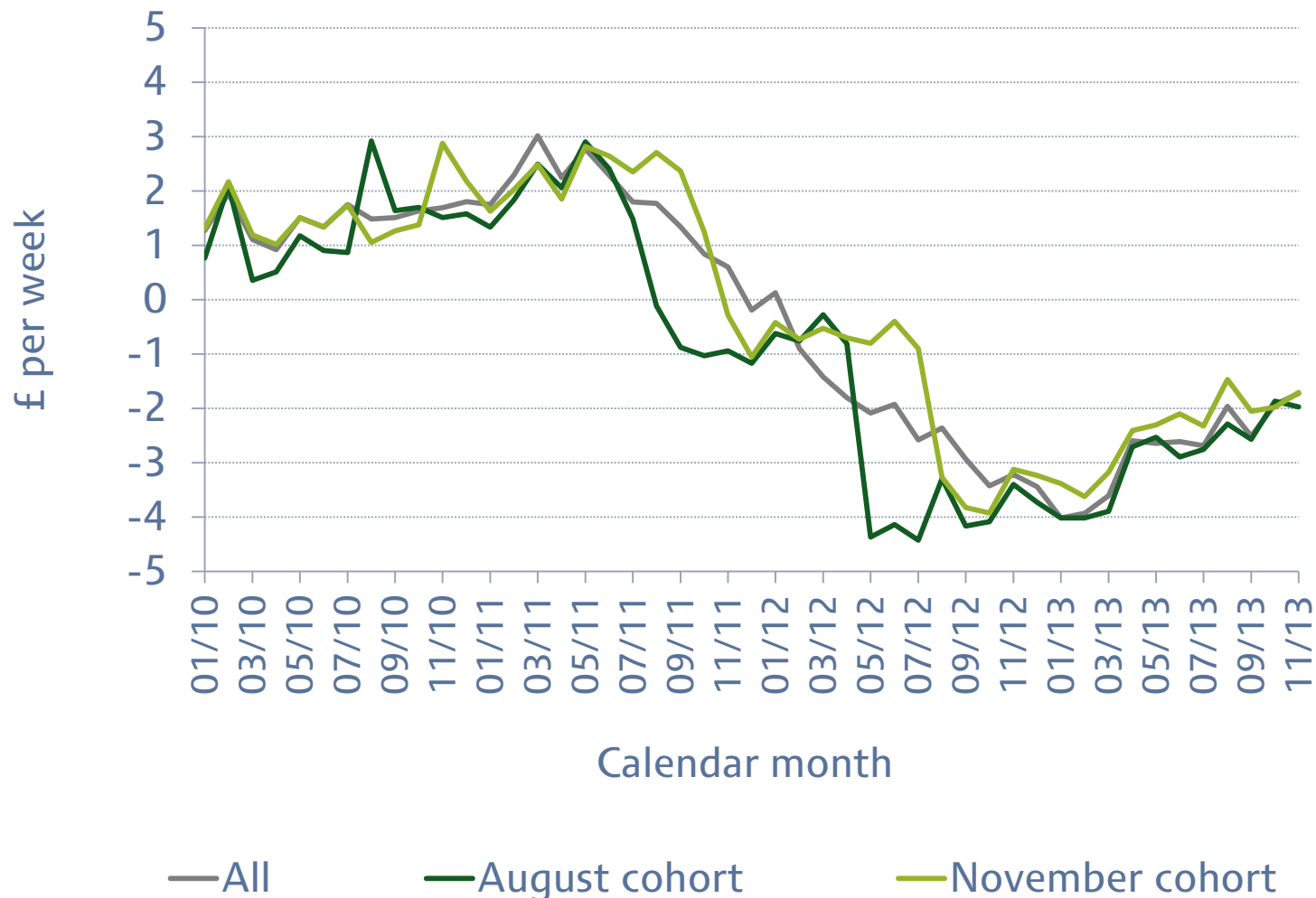
- Estimated 95% of the cut in HB incident on tenants
- Fall in rents not statistically significant

# Existing claimants: overview

- We use as our sample the stock of LHA claimants in January 2011
  - Follow them from January 2010 until November 2013
- Similar claimants affected at different times according to their annual claim anniversary
  - Lose any excess on their first post-April 2011 anniversary
  - Affected by other reforms nine months later (January 2012 to December 2012)

# Average LHA entitlement of existing claimants

(Residual from regression on BRMA and number of bedrooms)

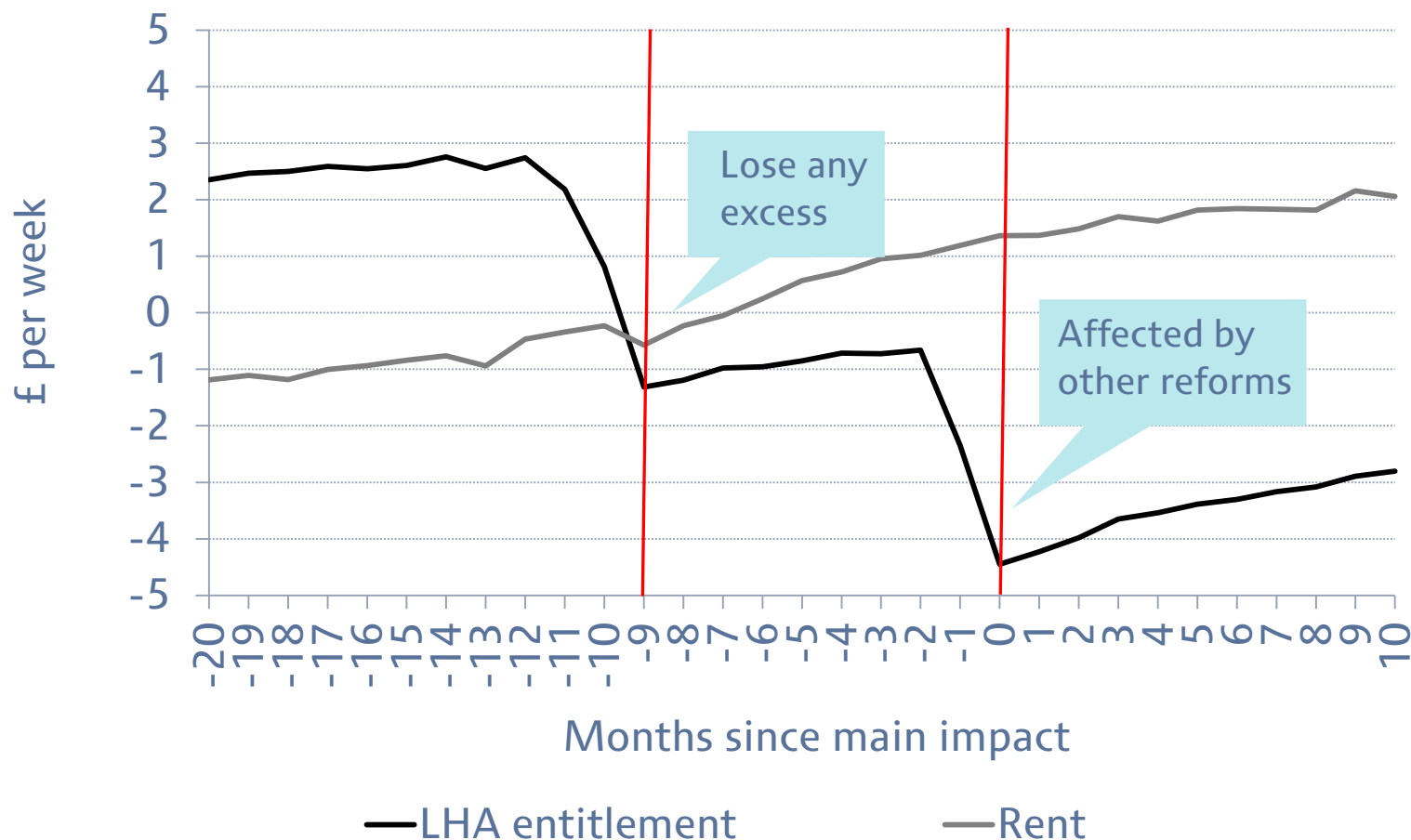


# Existing claimants: descriptives

- Gradual decline in LHA entitlements between April 2011 and December 2012
  - Each (claim anniversary) cohort clearly affected at a different time

# Average LHA entitlements and rents of existing claimants by months since impact

(Residual from regression on BRMA and number of bedrooms)



# Existing claimants: descriptives

- Gradual decline in LHA entitlements between April 2011 and December 2012
  - Each (claim anniversary) cohort clearly affected at a different time
- No visible effect of reform on trend in rents
  - Again indicative of our formal regression results

# Existing claimants: methodology

- Otherwise-identical individuals (with different claim anniversaries) face the old and new systems *at the same point in time*
  - We apply a difference-in-difference design
- Key assumption: rents of individuals in different cohorts affected at different points in time
  - Not true if rental market is perfectly competitive and frictionless
  - But typically rents only change once a year, and there is evidence of limited awareness of reforms before impact
  - Note: we do allow for anticipation effects – rents can be affected in year before being rolled over to new system (as long as timing relates to roll-over dates rather than calendar time)



# Existing claimants: regression specification

$$y_{iact} = f_a(t) + \pi_c + z'_{ct}\beta + x'_{iact}\alpha + \varepsilon_{iact}$$

- Regress rent and housing benefit entitlement on:
  - Area-level linear time trends and national month dummies
  - Claim anniversary – cohort effects
  - Series of binary variables capturing “months since main impact”
  - Control variables (similar to analysis of new claimants)

# Estimating incidence: results for existing claimants (£ per week)

	Housing benefit	Rent	Rent net of HB
Loss of excess	-4.98*** (0.42)	-0.81*** (0.27)	4.17*** (0.34)
Point of main impact	-8.31*** (0.42)	-0.73 (0.68)	7.58*** (0.85)
11 months after main impact	-6.84*** (0.92)	-0.79 (1.09)	6.06*** (0.83)

*Note:* \*\*\* Statistically significant at 1% level, \*\* Statistically significant at 5% level, \* Statistically significant at 10% level. Standard errors in brackets are robust to heteroscedasticity and clustering at the BRMA level. Figures given in UK pounds per week. Includes controls for BRMA, local authority, number of bedrooms in the property, local area deprivation, 'cohort', calendar month, linear time trends in each BRMA, and family type and age. N = 6,607,687

- Estimated 90% of the cut in HB incident on tenants
  - Similar to results for new claimants

# Subgroup analysis

- 3 subgroups of claimants affected by particular elements of the reform package:
  1. Those entitled to 5 bedrooms under old system (large families)
  2. Those affected by national LHA caps (all in central London)
  3. Those affected by the SAR change (25-34 singles without children not currently in shared accommodation)
- We define these groups based on January 2011 characteristics
  - Groups are exogenous (not determined by responses to the reform)
- For each group, consider changes in HB, “quality-adjusted” rent (our usual measure) and unadjusted rent
  - Difference is informative about moves to cheaper accommodation

# Estimating incidence: results for subgroups

(£ per week, 11 months after main impact)

Group (% of claimants)		Housing benefit	Rent	Rent net of HB
Increased scope of SAR rate (6.9%)	Quality-adjusted	-13.05***	-4.80***	8.25***
	Unadjusted	-15.55***	-7.36***	8.18***
Abolition of 5-room rate (0.8%)	Quality-adjusted	-29.21***	-11.69**	17.52***
	Unadjusted	-31.60***	-19.04**	12.56***
National caps on LHA rates (2.4%)	Quality-adjusted	-41.93***	-5.68	36.25***
	Unadjusted	-48.48***	-17.07	31.41***

*Note:* \*\*\* Statistically significant at 1% level, \*\* Statistically significant at 5% level, \* Statistically significant at 10% level. Standard errors in brackets are robust to heteroscedasticity and clustering at the BRMA level. Figures given in UK pounds per week. "Adjusted" figures include controls for BRMA, local authority, number of bedrooms in the property, local area deprivation, 'cohort', calendar month, linear time trends in each BRMA, and family type and age. "Unadjusted" figures do not include controls for contemporaneous BRMA, LA, number of bedrooms and local area deprivation, but do controls for BRMA in January 2011.

# Estimating incidence: evidence of heterogeneity

- About a third of the cut for those affected by extension of SAR rate (25-34 singles) incident on their landlords
- Estimated 40% of cut for those affected by abolition of 5-room rate incident on their landlords
- Also evidence of responses in housing choices in both cases
- But for those affected by national caps on LHA rates (central London), we estimate only small fall in quality-adjusted rents

# Why the variation in incidence?

- Possible explanation is some groups just adjust faster (more to lose)
  - Seems at tension with a number of facts: our findings for new claimants, previous literature, high incidence on national cap claimants
- Another possibility is different elasticities of demand
  - All else equal more elastic demand means higher incidence on landlords
- Reasons to think demand of SAR and 5-room groups is more elastic?
  - Single 25-34s might be relatively indifferent between self-contained and shared accommodation
  - Large families might be relatively indifferent over number of bedrooms (at the 4/5 margin)

# Conclusions

- We looked at whether the cuts to private sector HB in 2011 and 2012 led to a fall in rent levels
  - Was the cut incident on tenants or their landlords?
- Evidence from both new and existing claimants that nearly all of the incidence (around 90%) on tenants, at least initially
  - Little change in rent levels
- Incidence on landlords significantly higher for some subgroups
  - Those affected by extension of SAR rate and abolition of 5-room rate
- Results suggest incidence can vary substantially
  - Less straightforward than one might think given existing literature

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