

# The Impact of Free Childcare Policy on Childcare and Maternal Labour Supply Decisions: Evidence from a Regression Discontinuity Design

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# Layout

- Literature
- Methodology
- Results
- Conclusions

# Labour Supply and Childcare Costs

- How do childcare costs affect labour supply?
- Endogeneity - difficult to pinpoint the causal impact of childcare utilisation on maternal employment decisions
- Natural experiment/Diff-in-diff approach e.g. Haeck et al (2015).
- Instrumental variables approach - (Gelbach, 2002).
- RDD approach – Fitzpatrick (2010).

# Literature

- Results depend on how comprehensive the reforms are:  
Bauernschuster and Schlotter, 2013- entitlement to a place in public childcare for all 3-6 year-olds in Germany  
Nollenberger and Rodriguez-Planas, 2015 - extension of formal childcare to 3 year-olds in Spain  
Brewer et al (2016) – 30 hours pf free preschool care  
  
Lundin *et al.*, 2008 - price cap on already highly subsidised childcare in Sweden  
Brewer et al (2016) - 15 hours free preschool care
- Culture/social norms influences the impact of childcare reforms. Effects of childcare subsidies on maternal labour supply have been found to differ depending on a country's childcare and maternal employment traditions.



# Childcare Reform in Ireland

- Very high childcare costs relative to other OECD countries.
- 2006: Early Childcare Supplement for all children <6, €1k per annum irrespective of childcare use.
- 2010: ECS abolished, ECCE introduced. Free pre-school year (15 hours per week, 38 weeks)
- 2017: Affordable Childcare Scheme. 6 months-15 years – universal and means tested elements.

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# ECCE Eligibility

- Children aged between 3 years 3 months and 4 years 6 months at September 1<sup>st</sup> – eligible for the ECCE scheme.
- Arbitrary nature of the age thresholds  
—————→ RDD Design
- From 2018 on children can be eligible for ECCE for up to 2 years.
- ECCE impact on childcare usage and maternal labour supply?



# Regression Discontinuity Approach

Estimate the following:

$$Y_i = B_0 + B_1 Z_i + B_2 (X_i - X_c) + e_i$$

$Y_i$  - outcome variable (being in centre based care; hours in centre based care; maternal labour supply)

$Z$  – treatment dummy (ECCE eligible)

$X$ -assignment variable;  $X_c$ =cutoff i.e.  $(X_i - X_c)$  = months<sub>i</sub> (centred at 0)

$B_1$  - outcome from assignment

$B_2$  - estimate of treatment effect

$E$  – random error

$$Y_i = \hat{\beta}_0 + \hat{\beta}_1 Z_i + \hat{\beta}_2 (X_i - X_c) + \hat{\beta}_3 (X_i - X_c)^2 + e_i$$

Functional form issue (re months)– linear, quadratic, cubic or/+

Interactions (between assignment+treatment i.e. Ecce elig\*months)

$$Y_i = \hat{\beta}_0 + \hat{\beta}_1 Z_i + \hat{\beta}_2 (X_i - X_c) + \hat{\beta}_3 Z_i (X_i - X_c) + e_i$$

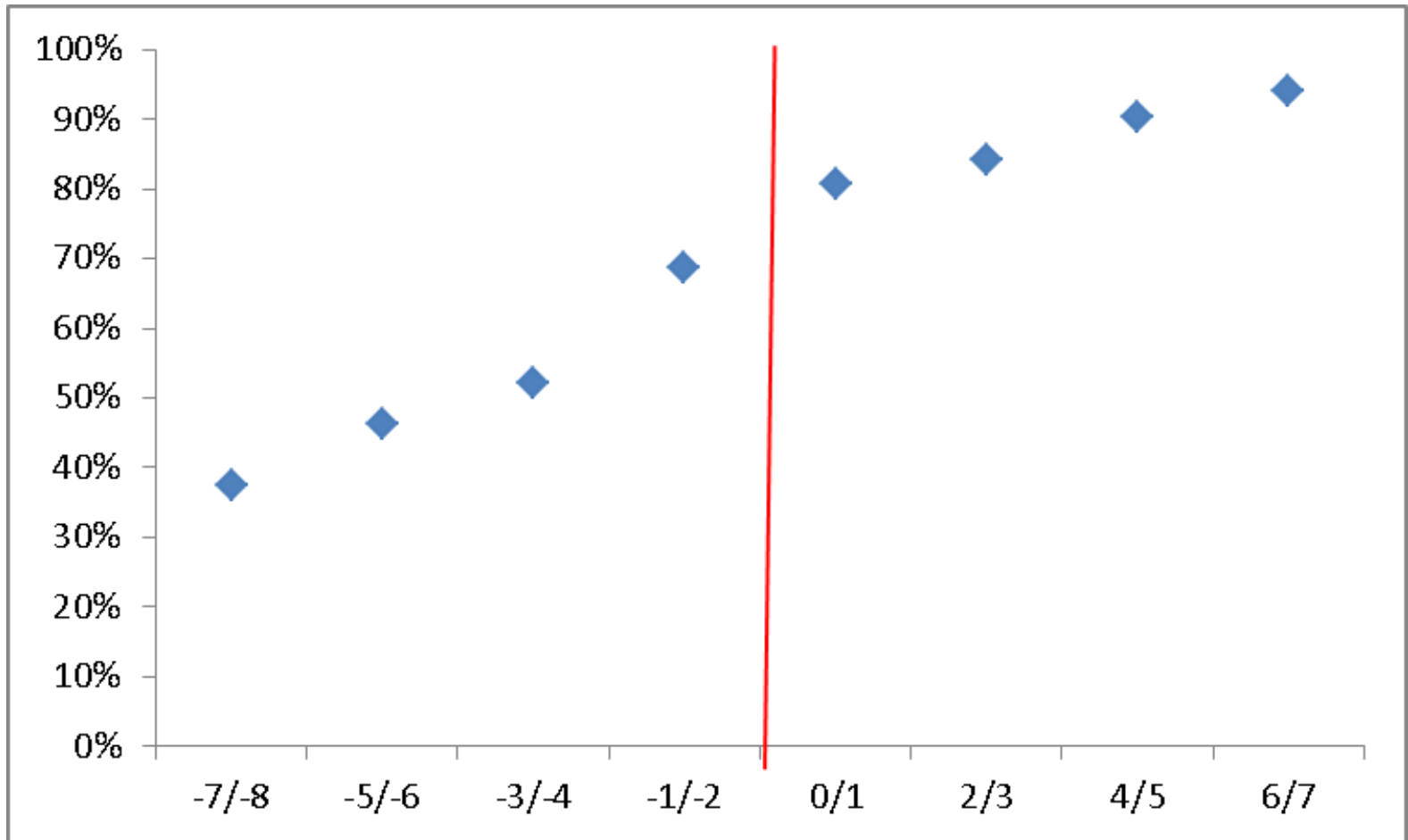
$$Y_i = \hat{\beta}_0 + \hat{\beta}_1 Z_i + \hat{\beta}_2 (X_i - X_c) + \hat{\beta}_3 (X_i - X_c)^2$$

# Data

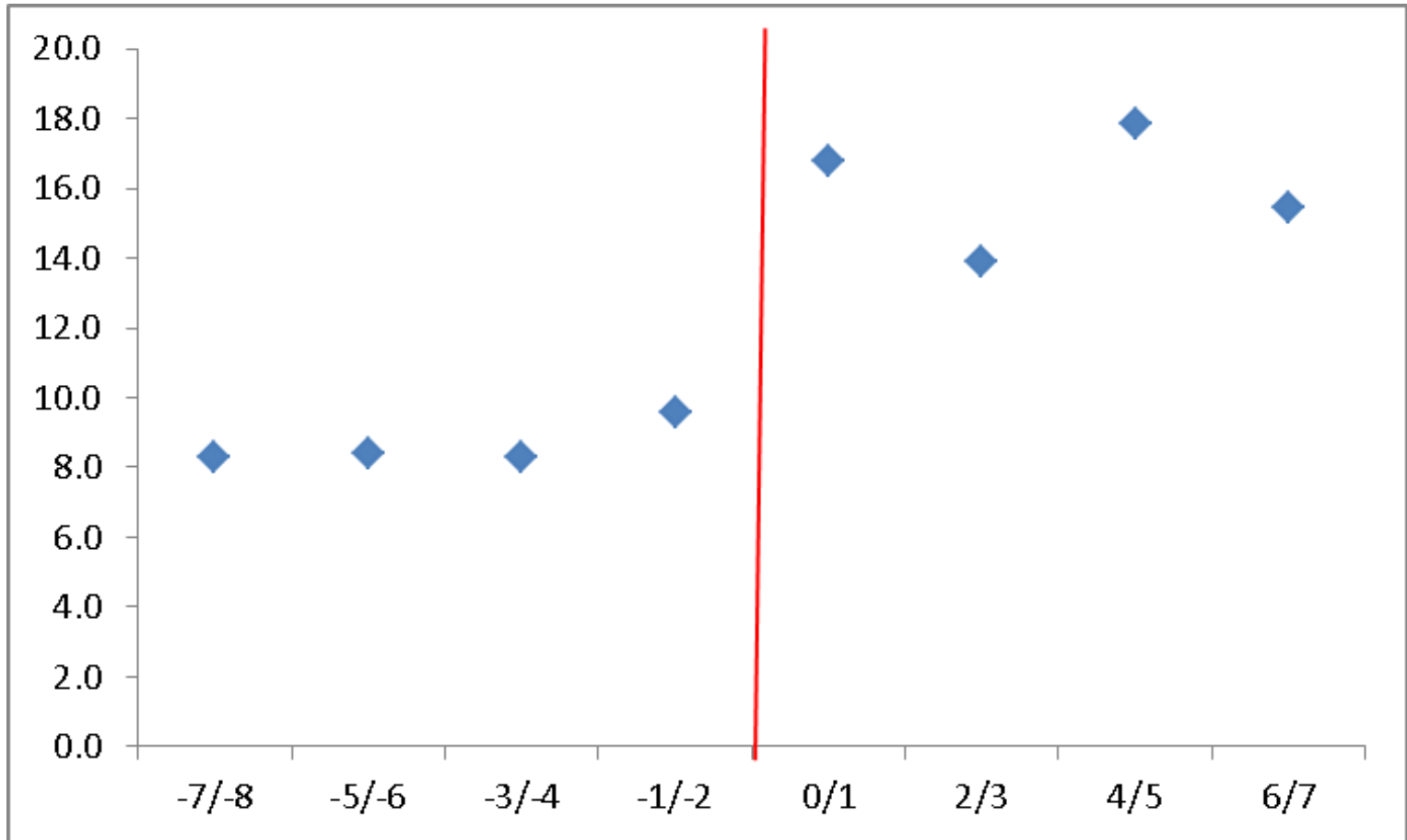
- SILC 2012-2015
- Questions on hours in centre-based care i.e. pre-school/crèche/centre based service
- Question on parental work hours
- Month and year of birth
- Interview month.
- Assigned as being ECCE eligible/not based on age in months at relevant academic year

# Graphical Depiction

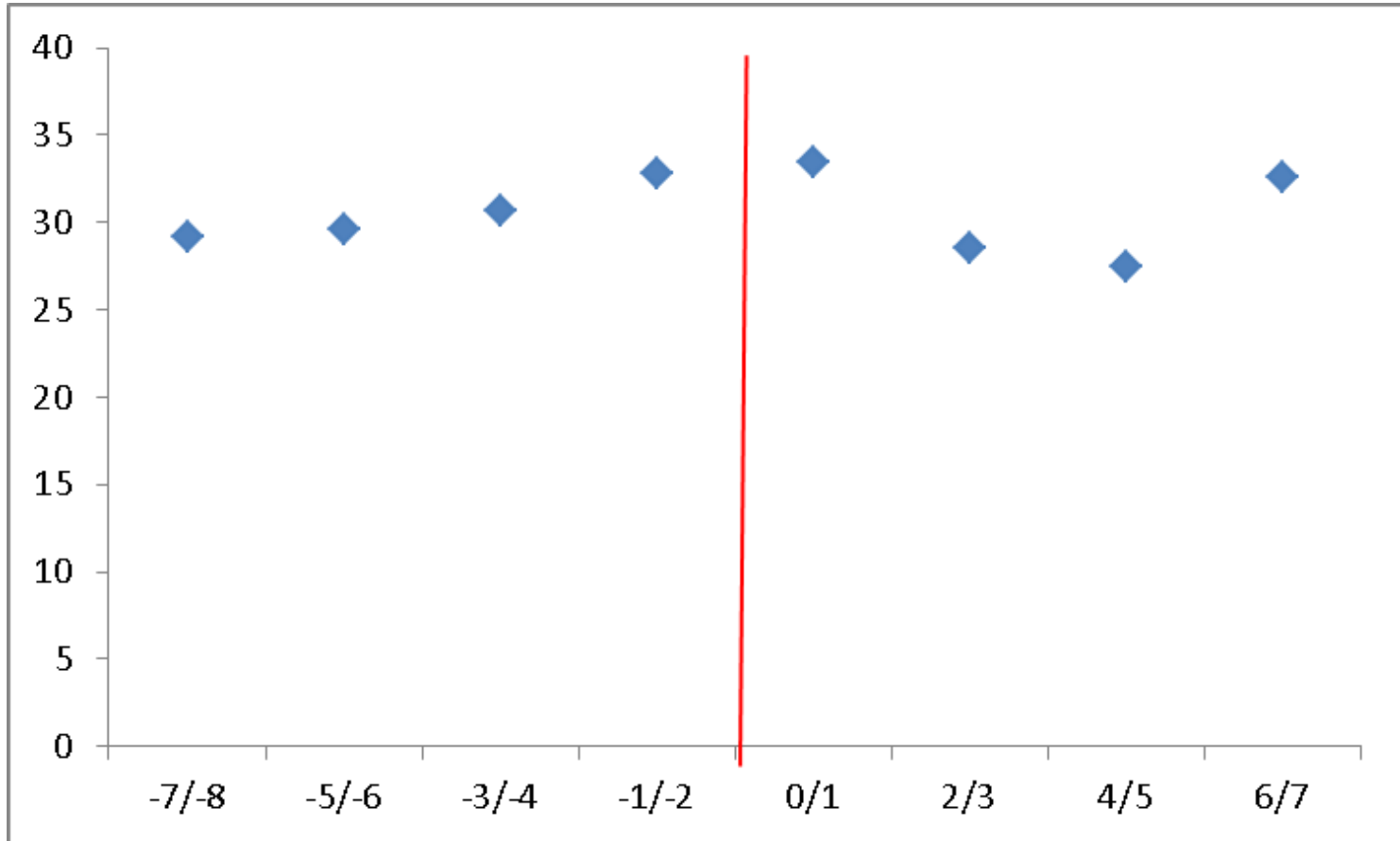
# Proportion In Centre Based Childcare



# Average Centre-Based Childcare Hours



# Maternal Labour Supply



# RDD results

# Proportion In Centre Based Childcare

|                             | linear              |                     |
|-----------------------------|---------------------|---------------------|
|                             | no controls         | with controls       |
| Treated                     | 0.110<br>(1.45)     | 0.129<br>(1.64)     |
| Month                       | 0.0321***<br>(3.33) | 0.0244*<br>(2.40)   |
| Year of survey              |                     | 0.0745***<br>(3.45) |
| Mother's age                |                     | -0.00222<br>(-0.68) |
| Mother's years of education |                     | 0.00478<br>(0.74)   |
| Mother is employed          |                     | 0.0588<br>(1.50)    |
| Child has sibling < 5       |                     | -0.123*<br>(-2.16)  |
| Father present              |                     | -0.103*<br>(-2.01)  |
| Constant                    |                     |                     |
| N                           | 524                 | 491                 |
| Adjusted R <sup>2</sup>     | 0.153               | 0.195               |



# Average Centre-Based Childcare Hours

|                         | Linear            | Quadratic            | Cubic                 |
|-------------------------|-------------------|----------------------|-----------------------|
|                         | no controls       | no controls          | no controls           |
| Treated                 | 6.573**<br>(2.95) | 6.571**<br>(2.93)    | 6.629*<br>(2.26)      |
| Month                   | 0.132<br>(0.47)   | 0.132<br>(0.46)      | 0.112<br>(0.16)       |
| Month <sup>2</sup>      |                   | -0.000261<br>(-0.01) | -0.0000729<br>(-0.00) |
| Month <sup>3</sup>      |                   |                      | 0.000532<br>(0.03)    |
| N                       | 524               | 524                  | 524                   |
| Adjusted R <sup>2</sup> | 0.086             | 0.086                | 0.086                 |

# Maternal Labour Supply

|                             | linear             |                    |
|-----------------------------|--------------------|--------------------|
|                             | no controls        | with controls      |
| Treated                     | 3.789<br>(1.27)    | 2.867<br>(0.97)    |
| Month                       | -0.506<br>(-1.35)  | -0.531<br>(-1.42)  |
| Year of survey              |                    | 1.139<br>(1.61)    |
| Mother's age                |                    | 0.126<br>(1.02)    |
| Mother's years of education |                    | 1.567***<br>(6.61) |
| Child has sibling < 5       |                    | -2.190<br>(-1.02)  |
| Father present              |                    | 3.115<br>(1.60)    |
| Constant                    | 14.26***<br>(8.26) | -2311.2<br>(-1.62) |
| N                           | 570                | 547                |
| Adjusted R <sup>2</sup>     | 0.003              | 0.106              |

# Brewer et al. , 2016

- provision of free part-time childcare has little, if any, causal impact on the labour market outcomes of mothers or fathers.
- increasing the number of hours of free childcare to cover a full school day, however, leads to significant increases in the labour supply of mothers whose youngest child is eligible
- impacts emerging immediately and increasing over the months following entitlement.

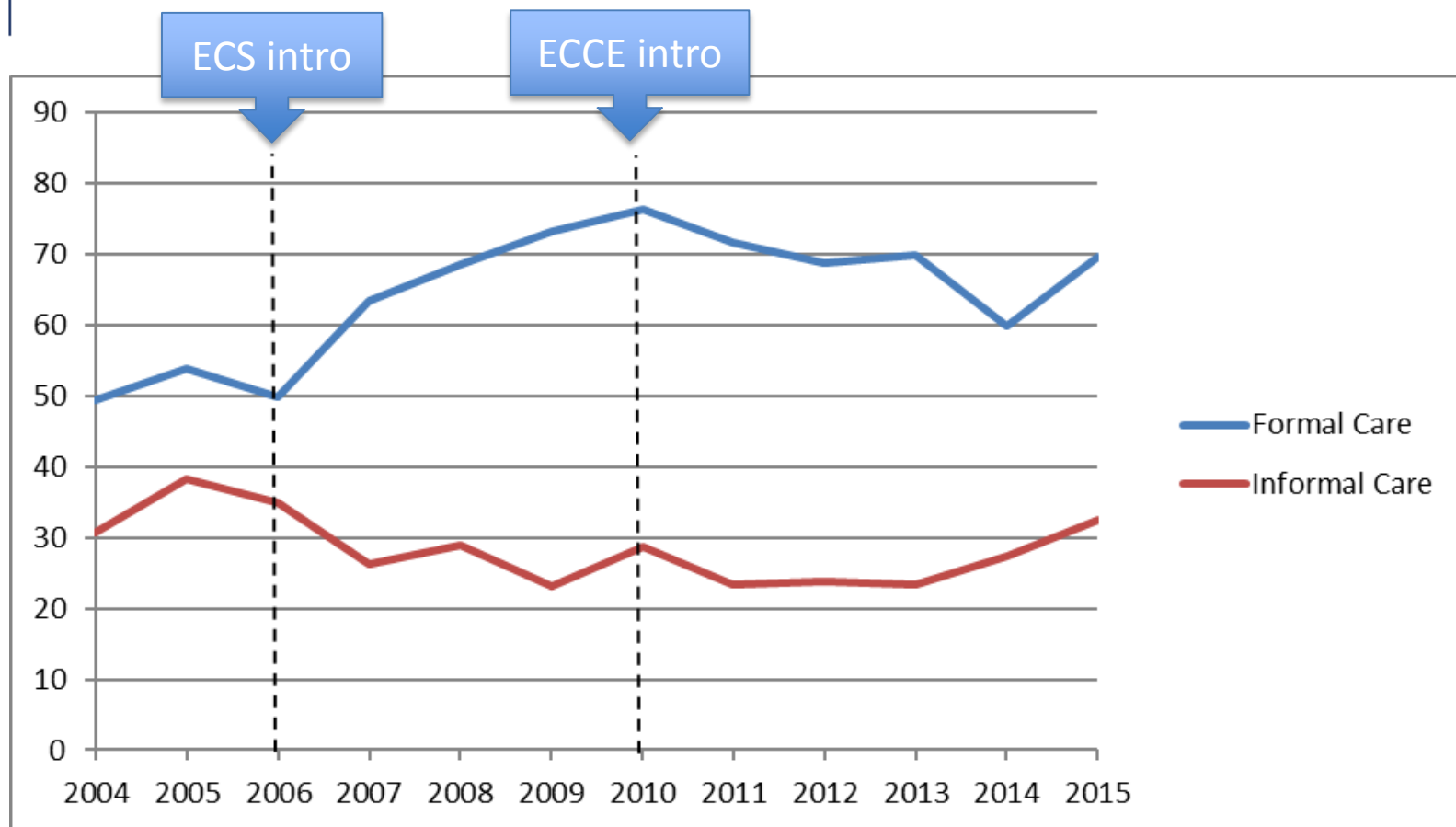
# Conclusions

- No impact found for ECCE on attendance at preschool or maternal labour supply
- Impact found on the number of hours of preschool used

## Future Work:

- Impact of ACS
- Look back at ECS?

# Proportion of 3 and 4 year olds in formal and informal care



# Questions?