

# Measuring Consumer Inertia in Energy

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# Motivation

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- ❖ Despite considerable monetary savings being available, many residential consumers do not switch energy supplier
- ❖ Concerns about the functioning of the UK's energy market, including 'weak consumer response' have led to many regulatory interventions and a likely referral to the Competition and Markets Authority
- ❖ Does consumer inaction in the markets inform us about likely response to environmental incentives in energy?

# Motivation: A Unique Opportunity

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- ❖ We can observe decisions of consumers offered a choice in a collective auction, May 2012, follow-up survey
- ❖ 110,000 motivated individuals
- ❖ Can identify switching behaviour separately from search
- ❖ first econometric analysis of consumer behaviour in a 'collective switching' exercise in energy market

# Complexity and Uncertainty Matter

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Environmental concerns greater among switchers, and influenced switching

Those offered the choice of 2 rather than 1 offers were less likely to switch (controlling for other factors)

Savings important, but only a third of those offered positive savings switched

# Measuring inertia

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1. Introduction
2. Selective literature
3. Participants
4. Econometric method
5. Results and policy implications

## Five streams of literature....

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- **Empirical investigations of switching costs:** Calem and Mester (1995), Knittel (1997), Kiser (2002), Stango (2002) and Park (2011)
- **Increased choice and decision making:** Samuelson and Zeckhauser (1988), Tversky and Shafir (1992), Dhar (1997), Iyengar and Lepper (2000), Frank and Lamiraud (2009), Bertrand et al (2010), Iyengar and Kamenica (2010), Schiebehenn et al (2010) and Ortoleva (2013)

## ... on energy switching

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- **UK survey based studies:** Waddams Price and Bennett (1999), Waddams Price (2004), Giulietti et al (2005), Flores and Waddams Price (2013) and Waddams Price et al (2013)
- **Other studies of energy switching:** Salies (2005), Ek and Soderholm (2008), Juliusson et al (2007), Gamble et al (2009), Weber et al (2009), Hortascu et al (2012), Kleit et al (2012) and Giulietti et al (2014)

## ...and a little on collective switching

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- Hempling (2000)
- Colton (2006)
- Littlechild (2008)
- Faulkner (2010)
- DECC (2013) and
- Laufer et al (2013)

# The Big Switch (TBS)

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Consumer organisation & social networking lobby group canvassed for participants in collective auction Spring 2012

250,000 expressed interest, 150,000 submitted full energy details (supplier, tariff, consumption/expenditure, post code)

Companies invited to offer tariff (3 payment methods),

## Switching was very easy

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Participants offered winning tariff, or winning tariff plus best deal on market if that was better, and chose to switch or not

Short easy form to complete (contact details and date of birth) – sent many reminders

We contacted half the participants about eight months later to find out more about them and their attitudes:  
24% response

# Participants older, better educated, richer than average

|                                                  | Respondents   | Great Britain <sup>1</sup> |
|--------------------------------------------------|---------------|----------------------------|
| Age group with median age <sup>2</sup>           | 55-64         | 35-39                      |
| % male                                           | 71.63         | 49.16                      |
| % with first degree or higher                    | 60.40         | 27.12                      |
| % own their home (full or part)                  | 93.43         | 67.00                      |
| % receiving a disability benefit                 | 7.58          | 1.56                       |
| Group with median household income (£ per annum) | 35,000-39,999 | 30,000-34,999              |
| <b>Total Number of Observations</b>              | <b>9,747</b>  | -                          |

# Only 1/4 switched, biased response to survey

|                                       | TBS participants | Survey respondents |
|---------------------------------------|------------------|--------------------|
| % Switching                           | 26.83*           | 37.95*             |
| Median bill size (£)                  | 1,170            | 1,159              |
| % Using estimated bill                | 35.21*           | 30.81*             |
| Median best saving (£)                | 112.57           | 105.94             |
| Median saving, % of bill <sup>1</sup> | 10.24            | 9.92               |
| % Shown two offers                    | 46.36*           | 49.29*             |
| <b>Observations</b>                   | <b>109,924</b>   | <b>9,747</b>       |

\* Significantly different at 1%

# Econometric Method: Probit

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The dependent variable,  $Y_i$ , = 1 when an individual switches, otherwise 0

The probability,  $p_i$ , of a switch occurring is modelled as:

$$Y_i = \begin{cases} 1 & \text{with probability } p_i \\ 0 & \text{with probability } 1 - p_i \end{cases}$$

An individual's probability of switching,  $p_i$ , is given by:

$$p_i = \text{Prob}(Y_i = 1 | \mathbf{x}_i) = F(\mathbf{x}_i' \boldsymbol{\beta})$$

where  $\mathbf{x}_i$  is the vector of explanatory values for individual  $i$  and  $\boldsymbol{\beta}$  is the vector of regression coefficients for each variable

# Average marginal effects on probability of switching

*for all **participants**: DD payment*

|                                             |               |
|---------------------------------------------|---------------|
| 1. Bill estimated by Which?                 | -0.117***     |
| 2. Actual energy bill used to make decision | 0.048***      |
| 3. On a dual fuel tariff                    | 0.007**       |
| 4. Exit fee                                 | -0.160***     |
| 5. Saving amount of the best offer          | 0.001***      |
| 6. Saving as a percentage of existing bill  | 0.008***      |
| 7. Two offers                               | -0.074***     |
| <b><i>Number of observations</i></b>        | <b>88,012</b> |

# Average marginal effects (including survey) A

| Variables                               | 1 offer      | 2 offers     |
|-----------------------------------------|--------------|--------------|
| 1. Energy bill estimated by Which?      | -0.089***    | -0.045**     |
| 2. Actual energy bill used              | 0.018        | 0.054***     |
| 3. Faces an exit fee from existing deal | -0.180***    | -0.186***    |
| 4. Saving as % of existing bill         | 0.009***     | 0.008***     |
| 5. Saving of best offer                 | 0.001**      | 0.000        |
| 6. Confidence in accuracy of saving     | 0.170***     | 0.053        |
| 7. Interaction of 5 and 6               | 0.000        | 0.001*       |
| <b># of Obs.</b>                        | <b>4,943</b> | <b>4,804</b> |

# Average marginal effects (including survey) B

| Variables                                                  | 1 offer      | 2 offers     |
|------------------------------------------------------------|--------------|--------------|
| 8. Reason for participating: to save money                 | 0.129***     | 0.082***     |
| <i>Prefers supplier for ethical/environmental reasons:</i> |              |              |
| 9. Existing supplier                                       | -0.115***    | -0.028       |
| 10. Offered supplier                                       | 0.211***     | 0.155***     |
| <i>Reason which would persuade respondent to switch:</i>   |              |              |
| 11. New supplier ethical/envirom' lly friendly             | 0.050***     | 0.031        |
| 12. Sufficiently large savings                             | -0.054***    | -0.030**     |
| <b># of Obs.</b>                                           | <b>4,943</b> | <b>4,804</b> |

# Environmental priorities affected switching for this group

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Both positive preference for new supplier  
and negatively if preferred existing supplier

From both specific and general questions

Differently for those shown one and two offers

## More choice, less action

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- ❖ Those shown two offers on average 5.2 percentage points less likely to switch than those shown only one offer: 33.2% vs 38.4% (difference significant at 1%)
- ❖ and only around one third offered a better deal switched
- ❖ Pure switching costs?
- ❖ Implications for response to environmental incentives?

# How much can we expect from consumer choice?

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Environmental preferences play small part in switching

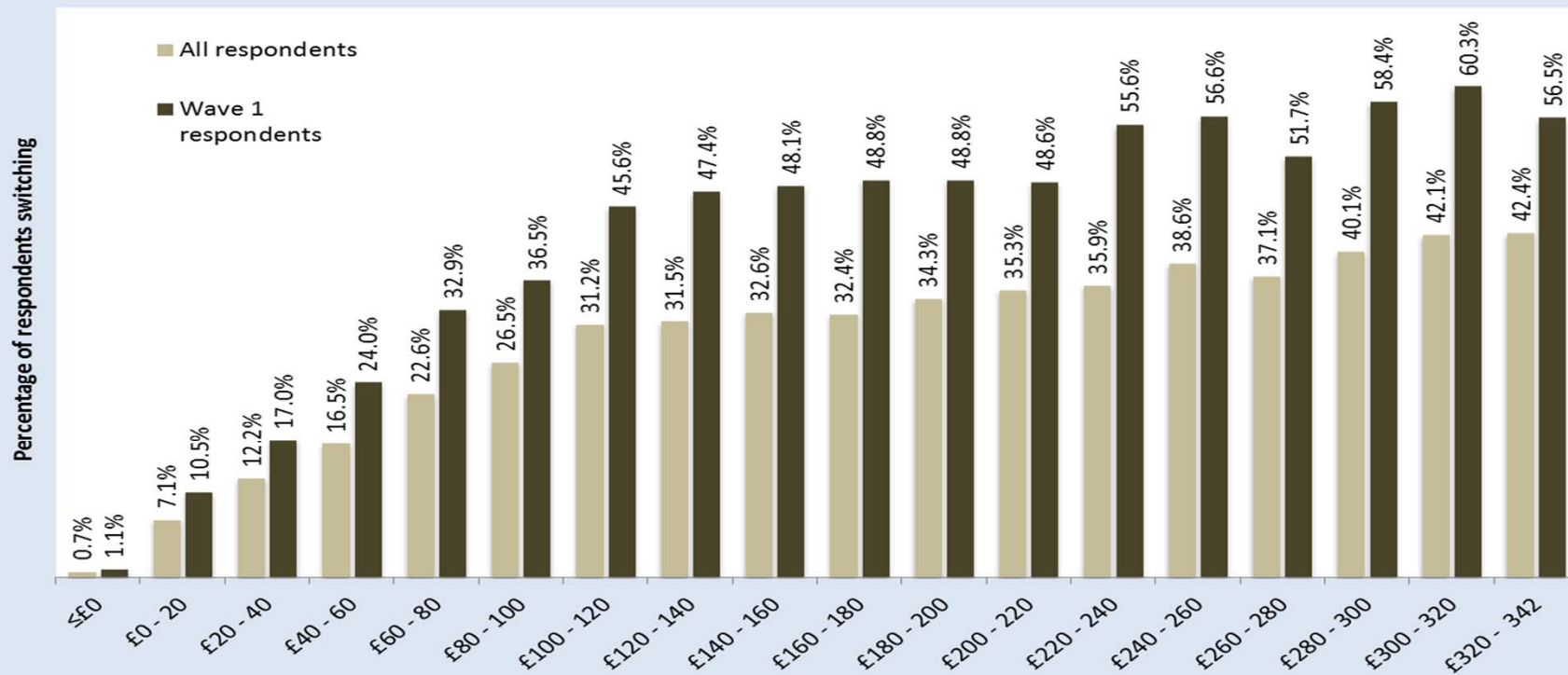
Despite prior commitment (search costs?) and little extra work (switch costs?), low switching rates

Should choice be restricted to encourage action?

Is this finding specific to these participants or more general?

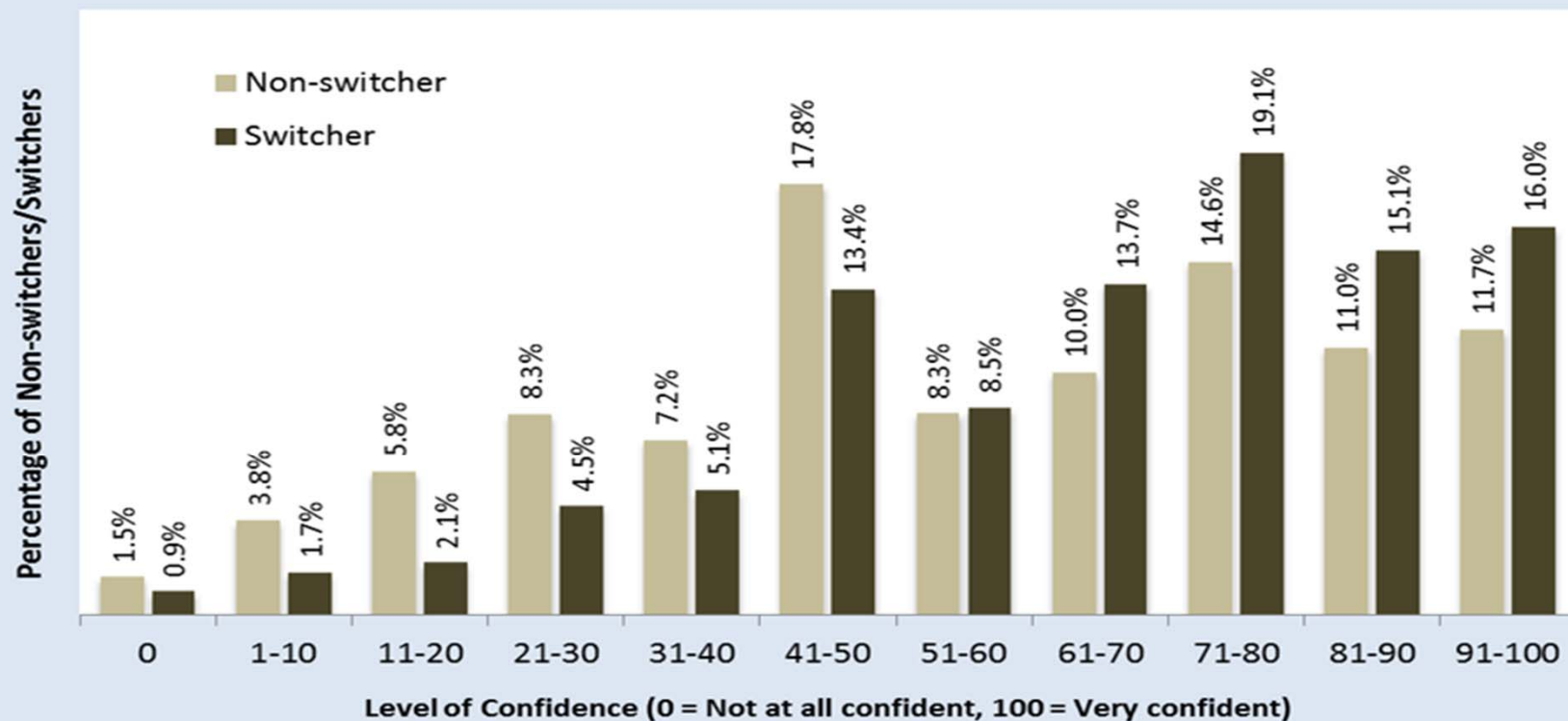
# Monetary Savings are important but not the whole story...

**Switching rates by size of savings (£)**



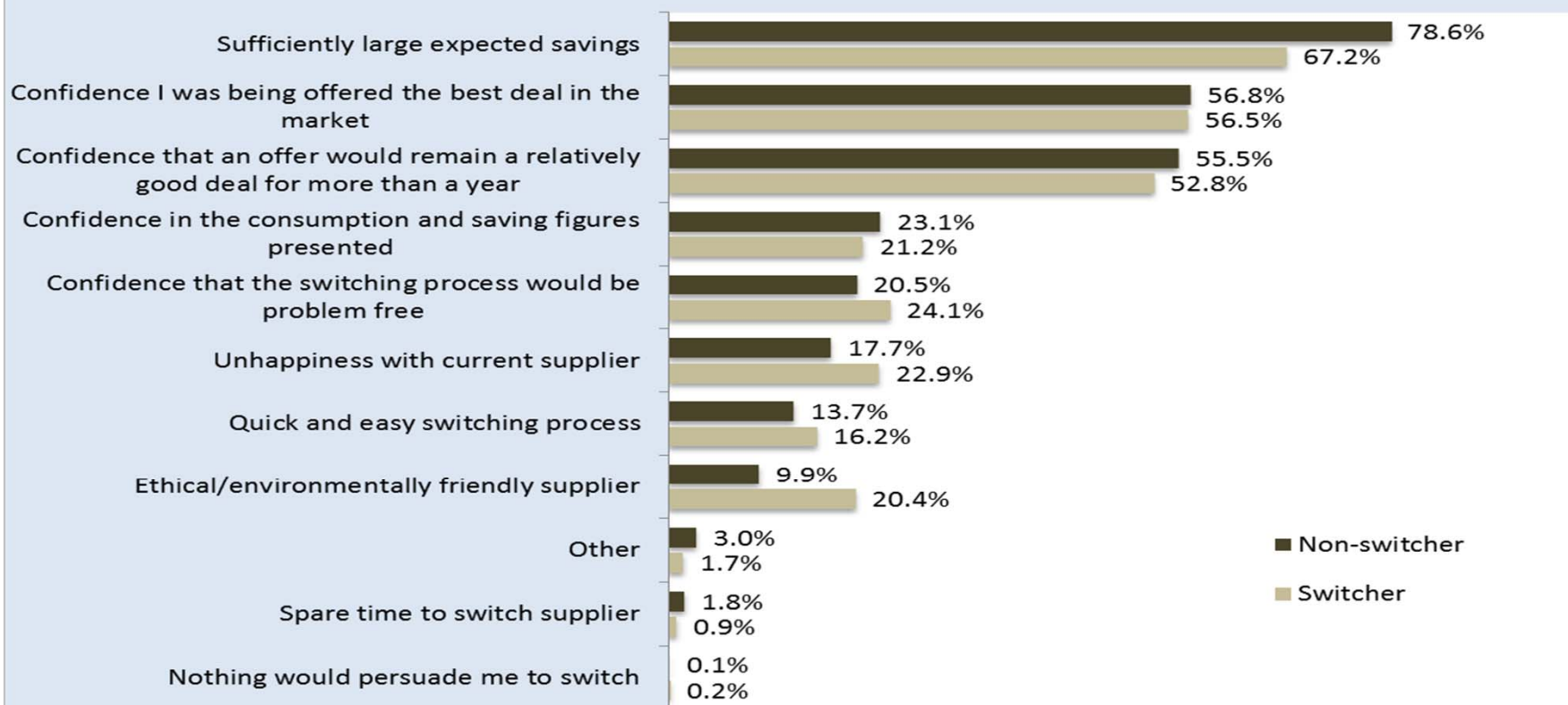
# Confidence is relevant

## Degree of confidence in savings presented at The Big Switch



# Switchers more concerned for the Environment

## What would be most important in persuading you to switch?



Percentage placing statement in top 3 most important factors

# Switching was generally quick, and faster than non-switchers feared

