



What happens when employers are obliged to nudge? Automatic enrolment and pension saving in the UK

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Motivation

- Concerns about under-saving for retirement across the developed world
- One instrument proposed to increase saving is “automatic enrolment”
 - Highlighted as success story of behavioural economics (Chetty 2015; Thaler 2016)
 - So far, evidence of its effectiveness comes from voluntary introduction by large firms in United States
- Our paper studies the effect of the first nationwide roll out of automatic enrolment on pension saving
 - Exploit the phased roll out of obligation to automatically enrol employees in the UK since 2012

Automatic enrolment: policy details

- Automatic enrolment: process by which employees are enrolled in a workplace pension scheme unless they actively opt out
- Eligibility: aged 22 to “state pension age”, earn over a threshold (£10,000 in 15/16), worked for employer for at least 3 months
- Minimum contributions:
 - Total: 2% of “qualifying earnings” (£5,824 to £42,385 in 15/16)
 - Employer: 1% of “qualifying earnings”
 - Minimum contributions increase in 2018 and 2019
- Each employer is given “staging date”
 - Employers have to enrol all eligible employees, employees can then choose to leave scheme
 - Employers can postpone automatic enrolment by up to 3 months

Policy context: pension provision in the UK

- Public pension provides relatively low replacement rates for retiring individuals
 - Maximum of £8,112 per year in 2016/17; equivalent to 30% of median full-time pay
 - Public pension claimable from 63 for women, 65 for men; rising to 27 by 2028
- Falling proportion of private sector employees members of a workplace pension
 - Fallen from 50% in 1997 to 36% in 2012
- Automatic enrolment rare prior to October 2012
 - McKay (2006) finds 4% of private sector employers (representing 16% of employees) automatically enrolled workers in 2005

Why might automatic enrolment increase pension membership?

- **Financial incentive** of the employer contribution (for those not offered an employer contribution before)
- **Procrastination** prevents joining a pension scheme pre-reform, prevents leaving pension scheme under automatic enrolment (O'Donoghue and Rabin 1999)
- Reduced **complexity** of the decision under automatic enrolment (Tversky and Shafir 1982; Beshears et al 2013)
- Employees see membership and default contributions as an **endorsement** by employer and/or government (Beshears et al 2009)

Data

- Annual Survey of Hours and Earnings (ASHE)
 - Panel survey of 1% of employees in the UK (ca. 180,000 per year)
 - Survey completed by employer each April
- Includes employer reported information on:
 - Workplace pension membership and contributions
 - Age, earnings, job tenure, sector and employer size
- Use ASHE data on private sector employees from 2011 to 2015
 - By April 2015, all employers with 58 or more employees (in 2012) were obliged to introduce automatic enrolment
 - Represents three quarters of eligible private sector employees
 - Sample size of 457,443 jobs

Empirical Methodology

- Over time, progressively more employers are obliged to introduce automatic enrolment

Roll out of automatic enrolment by employer size

Employer size	April 2012	April 2013	April 2014	April 2015
30,000+	No	Yes	Yes	Yes
6,00 to 29,999	No	Partially	Yes	Yes
350 to 5,999	No	No	Yes	Yes
160 to 349	No	No	Partially	Yes
58 to 159	No	No	No	Yes
50 to 57	No	No	No	Partially
5 to 49	No	No	No	No

Empirical Methodology

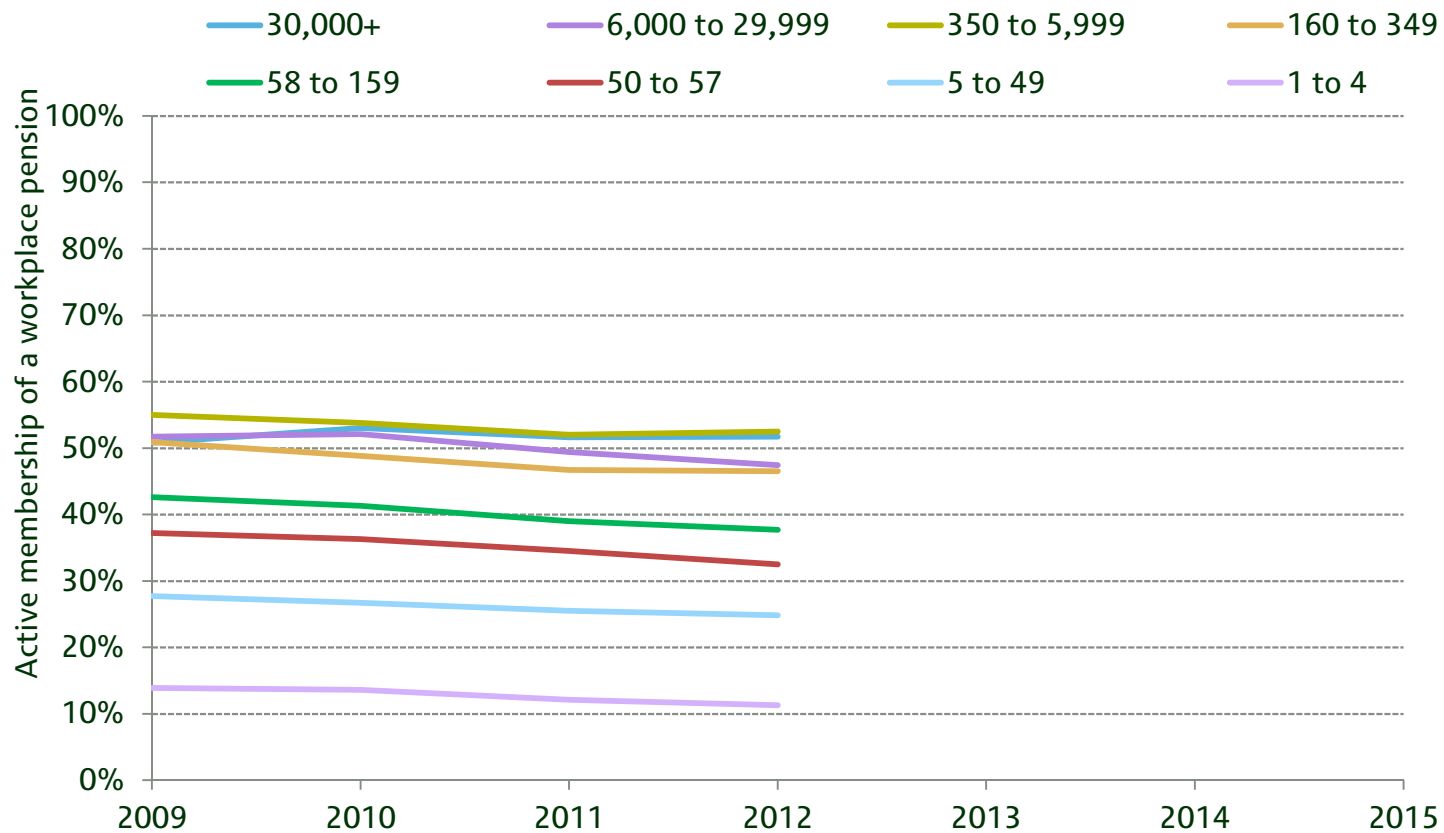
- Difference in differences methodology to identify effect of automatic enrolment on pension saving of eligible employees

$$y_{ift} = \alpha + \beta(\text{autoenrol}_{ift}) + \sum_{a=2013}^{2015} \gamma_a[\text{partial}_a = 1] + \theta_f + \mu_t + \delta X'_{ift} + \epsilon_{ift} \quad (1)$$

- y is the outcome (e.g. Workplace pension participation) of individual i , with employer of size f , in year t
- (autoenrol_{ift}) indicates that automatic enrolment has been introduced
- We include dummies for being “partially affected” in each year
- Employer size (θ_f) and year fixed (μ_t) effects
- Identification of the causal impact beta requires “common trends” assumption

Trends in pension membership by employer size

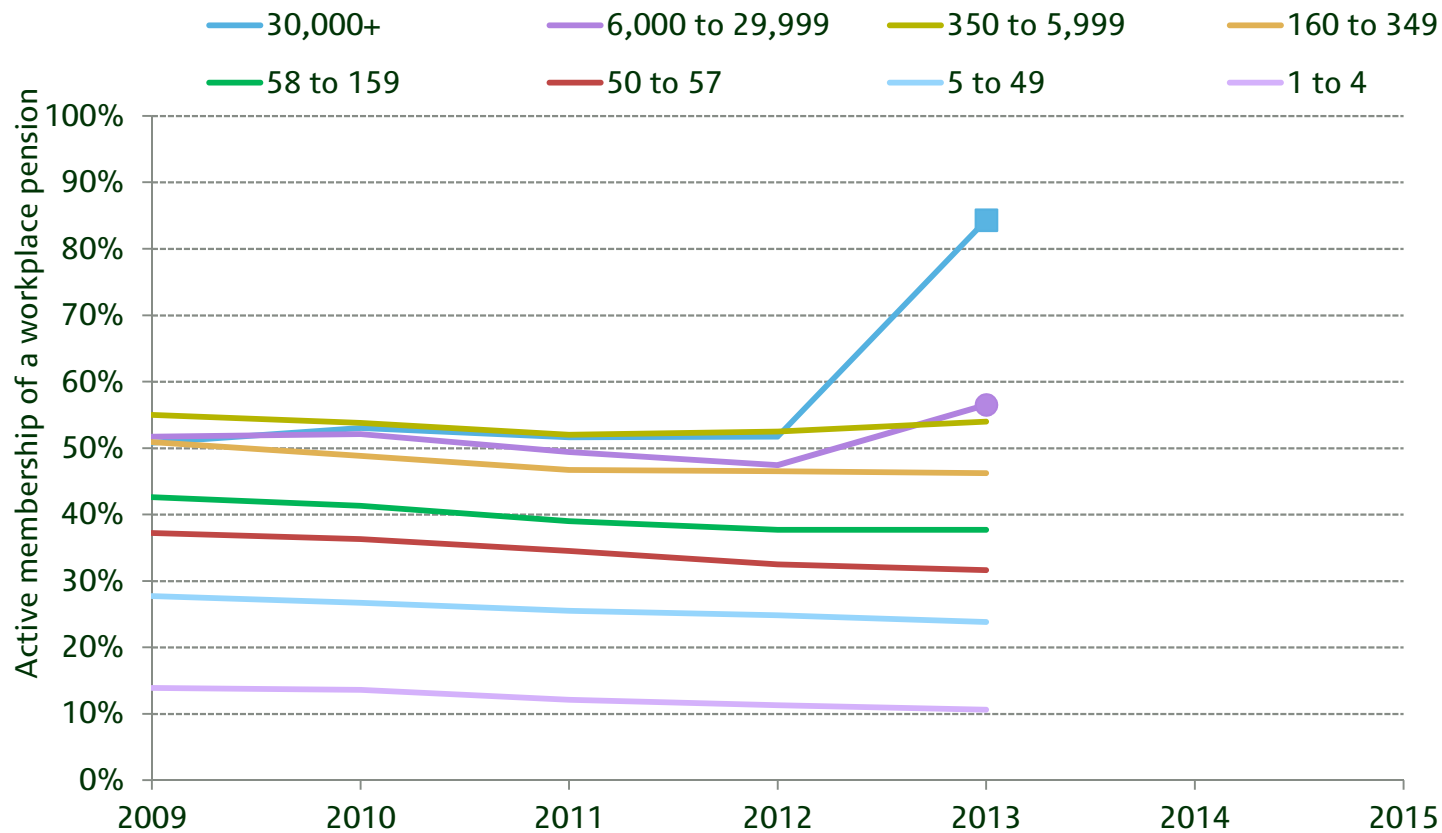
Eligible private sector employees 2009 to 2015



Source: Figure 2 of Cribb and Emmerson (2016).

Trends in pension membership by employer size

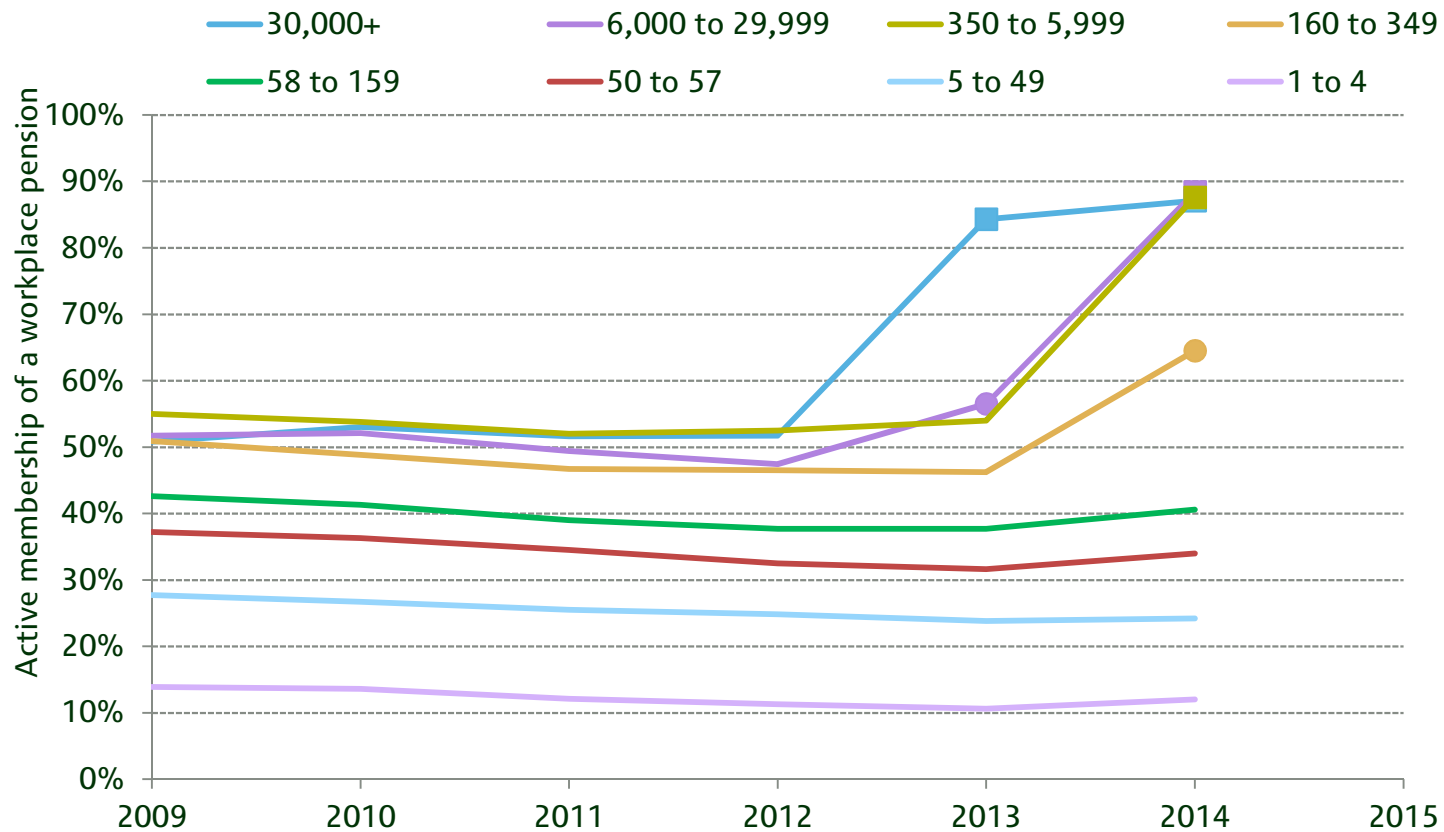
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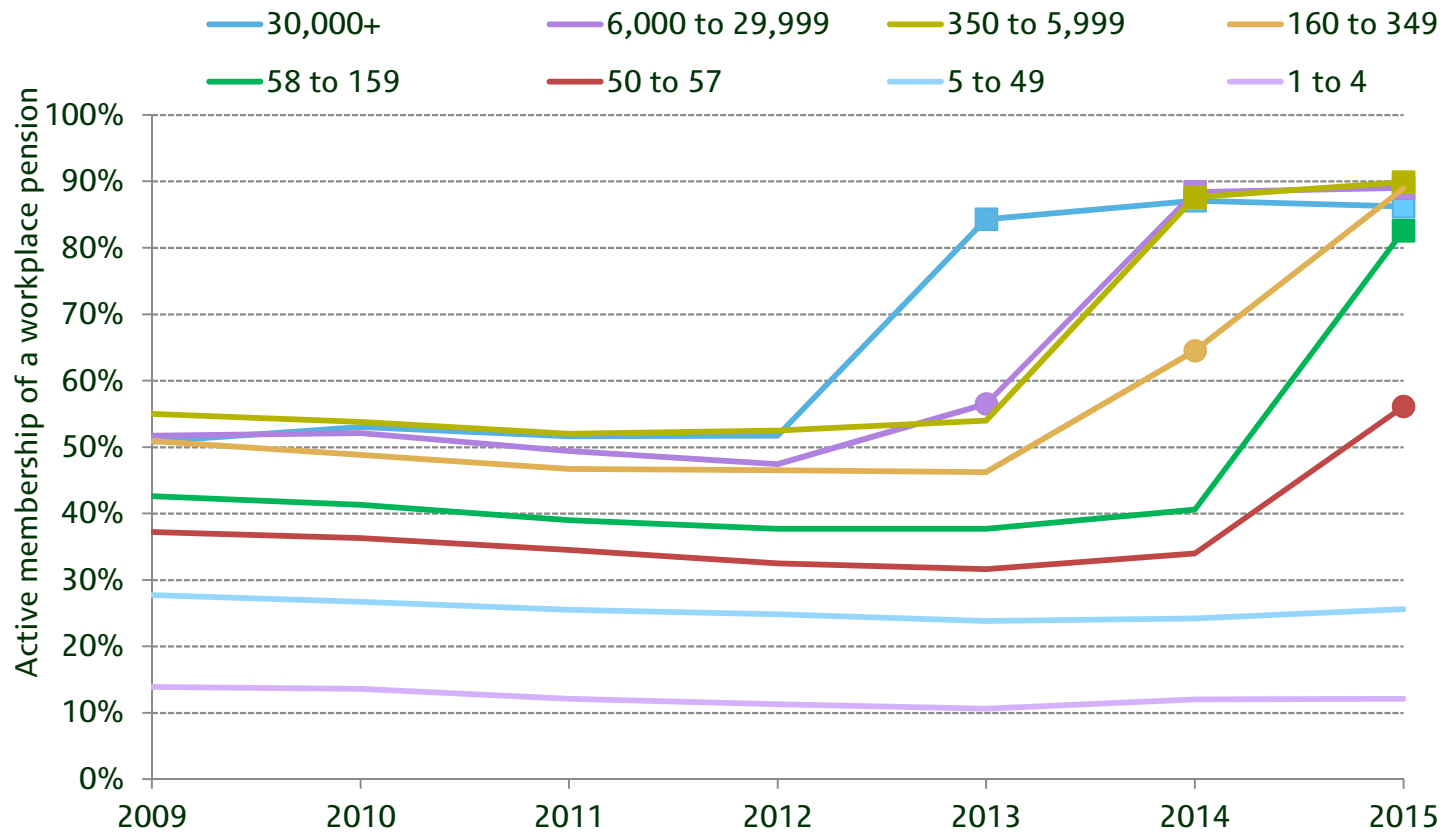
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Trends in pension membership by employer size

Eligible private sector employees 2009 to 2015



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Effect on pension participation (I)

Table: Effect of automatic enrolment on pension participation rates of eligible private sector employees

	(1)	(2)	(3)	(4)	(5)
Effect of automatic enrolment	0.365***	0.361***	0.376***	0.368***	0.368***
Standard Error	[0.016]	[0.016]	[0.018]	[0.017]	[0.002]
Number of observations	457,443	457,443	457,443	457,443	457,443
Number of clusters	64,849	64,849	64,849	64,849	159,842
Estimated by:	OLS	OLS	Probit	Probit	Probit
Clustering level	Employer	Employer	Employer	Employer	Indiv.
Control vars (X) included?	No	Yes	No	Yes	Yes

Notes: *** denotes that the effect is significantly different from zero at the 1% level, ** at the 5% level, * at the 10% level. Probit models are estimated using Maximum Likelihood. Standard errors for specifications 3 to 5 are estimated by bootstrapping the average marginal effect of automatic enrolment on pension membership 250 times. Source: Authors calculations using the Annual Survey of Hours and Earnings.

Effect on pension participation (II)

- Average pension participation rate of eligible employees in 2015: 88%
- Essentially all the increase in participation was in Defined Contribution schemes (35 ppt increase)
- Effect of automatic enrolment on pension participation is heterogeneous across groups
 - Larger for younger people, lower job tenure, and lower earnings
 - Largest effects for those with lower participation rates prior to automatic enrolment

Effect on workplace pension contribution rates

	Contribution rate from:		
	Employee	Employer	Total
Effect of auto enrolment	0.45***	0.60***	1.05***
Std error	[0.06]	[0.11]	[0.13]
Number of observations	452,212	452,212	452,212
Number of clusters	64,428	64,428	64,428
Mean contribution rate in 2012	2.10%	4.90%	7.00%

Notes: *** denotes that the effect is significantly different from zero at the 1% level, ** at the 5% level, * at the 10% level. Estimated by OLS, standard errors clustered at the employer level. Contribution rate is the weekly amount contributed by the employee/employer to the pension, as a fraction of gross weekly earnings. Total contribution rate is the sum of the employee and employer contribution rate. Source: Authors calculations using the Annual Survey of Hours and Earnings.

Effect on distribution of pension contributions

<i>Contribution rate</i>	<i>Employee</i>		<i>Employer</i>	
	<i>Effect</i>	<i>Std error</i>	<i>Effect</i>	<i>Std error</i>
0%	-0.333***	[0.019]	-0.373***	[0.016]
0% to 1%	0.200***	[0.018]	0.206***	[0.016]
1% to 2%	0.060***	[0.010]	0.060***	[0.007]
2% to 5%	0.056***	[0.009]	0.065***	[0.008]
5%+	0.016*	[0.009]	0.041***	[0.008]

<i>Contribution rate</i>	<i>Total</i>	
	<i>Effect</i>	<i>Std error</i>
0%	-0.390***	[0.015]
0% to 2%	0.237***	[0.016]
2% to 5%	0.082***	[0.009]
5% to 10	0.051***	[0.006]
10%+	0.020***	[0.007]

Notes: For the bands with upper and lower contribution rates (e.g. 1% to 2%) the contributions are strictly greater than the lower value and weakly less than the higher amount. *** denotes that the effect is significantly different from zero at the 1% level, ** at the 5% level, * at the 10% level. Estimated using a multinomial logit model by Maximum Likelihood. Standard errors are estimated by bootstrapping the average marginal effect of automatic enrolment 250 times, while clustering at the employer level. Number of observations: 452,212. Number of clusters

Effects on employee not automatically eligible

Table: Effect of automatic enrolment on pension membership rates of private sector employees who are not eligible for automatic enrolment

<i>Non-eligible group</i>	<i>Effect</i>	<i>Std error</i>	<i>N</i>	<i>Membership rate in 2012</i>
0 to 2 months job tenure	0.203***	[0.017]	9,478	10.50%
Aged under 22	0.059***	[0.013]	18,476	11.10%
Aged over "state pension age"	0.087***	[0.016]	11,567	29.20%
Under earnings threshold (but over LEL)	0.281***	[0.022]	51,059	18.40%
All not eligible (but over LEL)	0.178***	[0.013]	110,554	14.70%

Notes: *** denotes that the effect is significantly different from zero at the 1% level, ** at the 5% level, * at the 10% level. All models estimated by Ordinary Least Squares. Standard errors clustered at the employer level.
Source: Authors calculations using the Annual Survey of Hours and Earnings.

- Three reasons why there might be an impact on their membership:
 1. Those earning over the £5,824 per year can ask to be enrolled in a pension (with at least min. employer contributions)
 2. Employers could enrol workers when they are eligible and they do not leave the scheme once they have become “ineligible”
 3. Employers can decide to enrol employees who were not eligible

Conclusion

- We study the first nationwide roll-out of automatic enrolment for private sector workers
- Automatic enrolment increased workplace pension membership among eligible private sector employees by 37ppt
 - Participation rate among this group reached 88% in 2015
 - Larger impacts for groups with lower pre-reform membership rates
- Increased mean pension saving rate by 1% of earnings from 7.0% of earnings baseline in 2012
- Increased proportion with employee and employer contributions above the minimum levels
 - Employer response has been to enhance, rather than mitigate impact on pension saving