

# The effect of automatic enrolment on employees working for small employers

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## **Abstract:**

We exploit a feature of the introduction of automatic enrolment in the UK to estimate its impact on employees working for small employers. Small employers (employing less than 30 employees in 2012) were obliged to introduce automatic enrolment at different times based on the last two digits of their (randomly assigned) employer's PAYE tax code. By using employer reported data from the Annual Survey of Hours and Earnings from April 2016, matched to employers' PAYE numbers, this allows us to compare small employers that were pseudo-randomly affected by automatic enrolment to ones that were not. We find that automatic enrolment substantially increased workplace pension participation among small employers, but did not lead to pension participation reaching the very high levels seen for the largest employers. While most people were auto enrolled at the minimum contribution levels, there is also evidence of increases in the probability of contributions being well in excess of the minimums. There were also increases in the pension participation rates of people who were not eligible for automatic enrolment.

*Keywords:* automatic enrolment; private pensions; non-wage benefits; small employers

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## **1. Introduction**

## **2. Policy background**

Employees in the UK accrue entitlement to a flat-rate state pension which, in 2016–17, was worth up to £155.65 per week or just under 30% of median full-time earnings. The resulting state pension is received from the state pension age (which in April 2016 was 65 for men and 63 for women) and is not means-tested or subject to any earnings test. It is indexed each year to the greater of growth in earnings, growth in prices or 2½%.

This relatively low level of state pension provision means private pensions play a significant role in providing retirement income in the UK. Contributions to private pensions are made before income tax, and any return from investments held in the pension are re-invested untaxed. On withdrawal one-quarter is tax-free while three-quarters are subject to income tax.

As of 2012 while a large majority (85%) of public sector workers were active members of an employer-provided pension scheme, this was true of a minority of private sector employees (36%). Moreover the proportion of private sector employees in such workplace pensions – that is pensions that are facilitated but not necessarily run by an employer – had been falling over time. This led to concerns that undersaving for retirement was widespread, and automatic enrolment into workplace pensions was introduced as part of a package of reforms implemented to try to boost the adequacy of retirement saving (which also included a move from price to earnings indexation of the state pension to be partially paid for by future increases in the state pension age, see Pensions Commission (2005)).

### *Details of automatic enrolment*

Employees are eligible for automatic enrolment if they are aged at least 22, are aged below the state pension age, have worked for their employer for at least three months, and earn more than a given earnings level. Since April 2014 this level has been set at £10,000 (\$13,000) per year. Once an employer introduces automatic enrolment all eligible employees must be enrolled into a pension scheme, which they are then able to choose to leave at any point, although they will be automatically re-enrolled every three years.

Employers must enrol their employees into a pension with (at least) minimum levels of contributions. Up to and including March 2018, the minimum employer contribution was 1% of qualifying earnings and the minimum total contribution was 2% of qualifying earnings, where the ‘total’ is the sum of employee and employer contributions, including any tax relief. In 2016–17, qualifying earnings were those between £5,824 (\$7,600) and £43,000 per year.<sup>1</sup>

The obligation of employers to enrol their eligible employees automatically has been introduced gradually since October 2012. The way this works is that each employer is given a ‘staging date’ from which they must automatically enrol eligible employees, although they can apply to postpone enrolment by up to 3 months. This means that any employer at least 3 months past their staging date must have introduced automatic enrolment otherwise they will be in breach of their legal obligations.

An employer’s staging date is determined by information on its Pay-As-You-Earn scheme (the scheme by which income and payroll taxes are withheld from employees’ earnings).

Those employing 120,000 or more employees in April 2012 were the first employers to be

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<sup>1</sup> Minimum total contributions rise to 5% of qualifying earnings from April 2018 (with a minimum of 2% from the employer) and to 8% from April 2019 (with a minimum of 3% from the employer). Employers can choose to enrol their employees automatically into schemes with higher (employee and employer) contributions, although they are prevented from setting the employee contribution rate so high as deliberately to encourage a large proportion of employees to opt out.

affected, with a staging date of 1 October 2012. Gradually the obligation to enrol eligible employees automatically was rolled out to affect progressively smaller employers. By 1 April 2015 all employers with more than 50 employees had past their staging date.

For employers with fewer than 30 employees staging dates were allocated – from 1 June 2015 to 1 April 2017– according to the last two digits of the employer’s PAYE code (see Appendix Table A.1 for more details). Staging dates during this period were also given to employers with 30 to 49 employees according to the size of the employer. Finally, staging dates between 1 May 2017 and 1 February 2018 were allocated to those employers who were new since April 2012.

Finally, there are groups of employees who are not enrolled automatically into a pension scheme, but are nonetheless potentially affected by automatic enrolment. Individuals who earn over the earnings threshold, but are aged 16 to 21 or over the state pension age (but under 75), as well as individuals of all ages earning between £5,824 (\$7,600) and £10,000 (\$13,000) per year (in 2015–16) do not have to be enrolled automatically; however, they can opt in to join the scheme, where employers and employees must make minimum contributions. Employees earning below £5,824 (\$7,600) per year (in 2016–17) are also not enrolled automatically but can choose to join a workplace pension scheme, although in these cases their employer does not have to make a contribution.

### **3. Data and empirical methodology**

#### *3.1 Data*

The data used in this study are from the Annual Survey of Hours and Earnings (ASHE). This is a panel survey collected by the UK's Office for National Statistics (ONS). Employees are included in the survey if their National Insurance number ends in a specific pair of digits – therefore it can be used to follow the same individuals over time and contains approximately 1% of employees in Britain. The survey is completed by employers in April of each year and data are available from April 1997 to April 2016. The number of responses to this survey was 181,052 in 2015.<sup>2</sup>

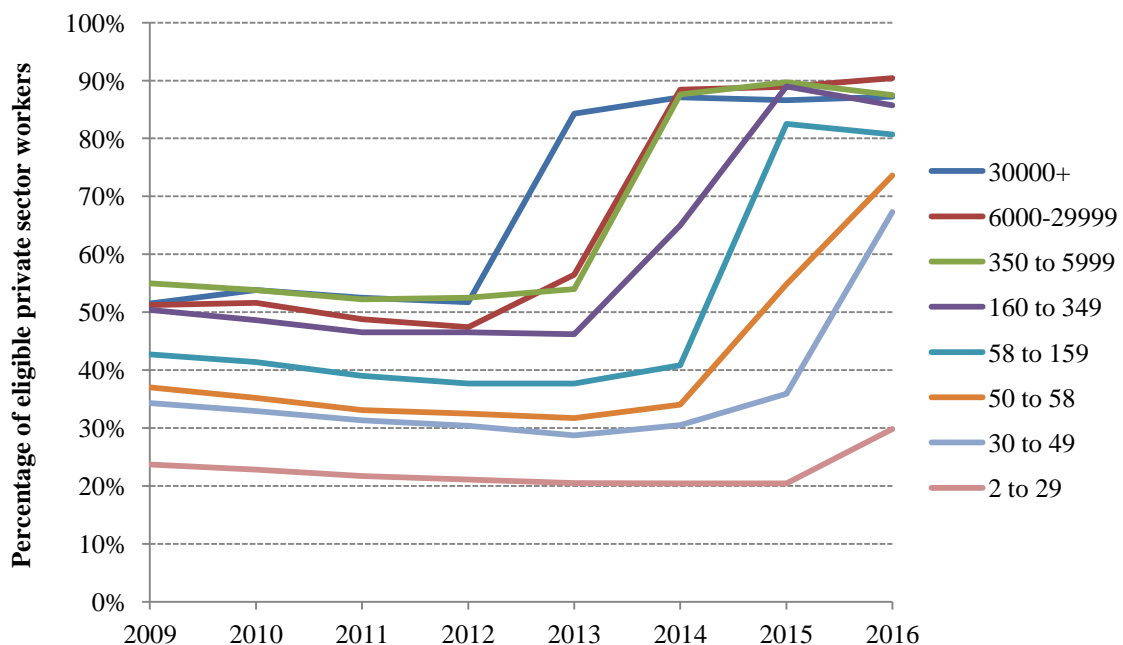
The ASHE data include detailed information on the pay and hours of work of each employee and it asks whether the employee was a member of a workplace pension scheme ('run or facilitated by [the] organisation'). From 2004 onwards, it also asks how much the employer and the employee contributed to the pension. The data contain a number of variables on the employee such as age, sex, occupation and job tenure. It also contains information on the employer, such as industry and sector. Using these data, we can define the set of individuals who are 'eligible' for automatic enrolment: those aged 22 to state pension age, earning more than the automatic enrolment threshold (£10,000 (\$13,000) per year since April 2014) and who have been working for their employer for at least 3 months.

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<sup>2</sup> In 2007 and 2008, the ONS cut the sample size (non-randomly) by approximately 20%. The full sample was restored in 2009. For this reason, with the exception of one descriptive chart (Figure 1), we restrict our use of these data to the period 2009 to 2015.

Trends in workplace pension membership, over time and by size of employer, among private sector employees who would be eligible for automatic enrolment were it in place are shown in Figure 1. Prior to 2012 membership rates were greater among employees working for larger employers than smaller employers, but had generally been declining over time. Then, over the period to April 2015 workplace pension membership jumps around the point where automatic enrolment is introduced. These data – and the variation created by the fact that automatic enrolment was applied gradually from larger to smaller employers – were used by Cribb and Emmerson (2016) who found that automatic enrolment increased workplace pension membership among employees working for large and medium sized employers by 37 percentage points (bringing it up to 88 per cent in 2015).

**Figure 1 Workplace pension participation rates among private sector employees eligible for automatic enrolment, by employer size in 2012**



Source: Authors' calculations using data from ASHE.

The data for 2016

### 3.2 Empirical methodology

We exploit the fact that, for employees of employers of between 2 and 29 employees, they are pseudo-randomly affected by automatic enrolment based on the PAYE number of their employer. We can use these to construct treatment and control groups in which employees are and are not affected by automatic enrolment, and the causal effect of the policy is therefore the difference in the outcomes of those in the treatment and control groups.

Table 1 shows that there are only very small differences between the observable characteristics of those in the treatment and control group.

**Table 1 Comparison of characteristics of employees working for employers with 2-29 employees, by different automatic enrolment staging dates**

	(1)	(2)	(3)
	Treatment group	Control group	Difference
<b>Employee characteristics</b>			
Male	0.584	0.576	0.008
Gross earnings (£ per week)	486.79	480.50	6.29
Total paid hours per week	37.4	37.2	0.1
Job tenure (years with employer)	7.7	6.5	1.3***
Age	42.5	40.9	1.5**
High occupational class	0.368	0.369	-0.001
Mid occupational class	0.402	0.41	-0.008
<b>Employer characteristics</b>			
Number of employees in 2012	13.7	13.3	0.3
Number of employees in 2016	15.8	15.0	0.8
Industry: Manufacturing	0.151	0.116	0.035
Industry: Retail	0.192	0.199	-0.007
Industry: Administrative	0.103	0.066	0.037**
Industry: Health/Social care	0.131	0.106	0.025
<i>Number of observations</i>	291	13,942	N/A



#### 4. Results

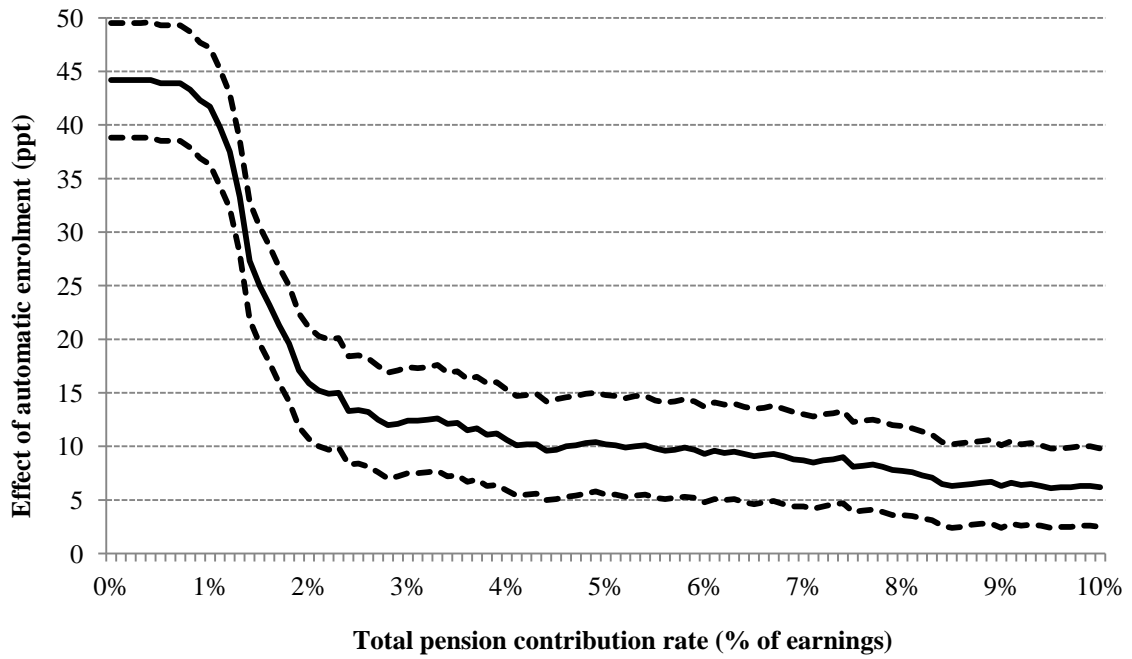
**Table 2 Effect of automatic enrolment on pension participation using different methods (for employees of employers with 2-29 employees)**

Spec number	Description of Specification	Effect of automatic enrolment	Standard error	Sample size	Unadjusted pension participation in:	
					Control group	Treatment group
	<b>Main specification</b>					
(1)	Without controls	0.469***	[0.028]	14,756	23.2%	70.1%
(2)	With controls	0.440***	[0.027]	14,756	23.2%	70.1%
	<b>Alternative specification</b>					
(3)	Without controls	0.503***	[0.028]	17,633	19.8%	70.1%
(4)	With controls	0.476***	[0.027]	17,633	19.8%	70.1%

**Table 3 Effect of automatic enrolment on pension participation of subgroups**

	Effect of auto enrolment	Std. error	Sample size	Unadjusted pension participation rates in:	
				Control group	Treatment group
<b>All</b>	0.440***	[0.027]	14,756	23.2%	70.1%
<b>Sex</b>					
Male	0.444***	[0.036]	8,201	21.2%	68.2%
Female	0.433***	[0.039]	6,032	25.9%	72.7%
<b>Earnings</b>					
<£350 per week	0.457***	[0.047]	4,988	15.8%	65.0%
£350 to 500 per week	0.437***	[0.049]	4,285	20.8%	67.4%
£500+ per week	0.420***	[0.043]	4,960	32.6%	77.8%
<b>Age group</b>					
Age 22-39	0.543***	[0.039]	6,712	19.3%	74.6%
Age 40-state pension age	0.358***	[0.036]	7,521	26.6%	66.7%
<b>Years with employer</b>					
Less than 4 years	0.491***	[0.040]	6,903	18.6%	68.4%
4 years of more	0.396***	[0.036]	7,330	27.5%	71.5%
<b>Ineligible for auto enrolment</b>					
All	0.139***	[0.029]	8,400	6.8%	20.9%

**Figure 2 Effect of automatic enrolment on probability of total contribution rate being greater than certain percentages of earnings, for eligible employees of small employers**



**Table 4: Differences in pension participation for employees eligible for automatic enrolment working for employers who have introduced it, April 2016**

Specification:	(1)		(2)		Pension participation rate:
	Coefficient	Std Error	Coefficient	Std Error	
<i>Number of employees:</i>	Baseline group		Baseline group		88.3%
10,000+	0.025	[0.031]	-0.003	[0.024]	90.8%
5000-9999	-0.014	[0.030]	-0.033	[0.024]	86.9%
1000-4999	-0.006	[0.030]	-0.024	[0.023]	87.8%
500-999	-0.019	[0.029]	-0.034	[0.023]	86.5%
250-499	-0.041	[0.029]	-0.052**	[0.023]	84.2%
100-249	-0.117***	[0.029]	-0.122***	[0.024]	76.7%
50-99	-0.217***	[0.030]	-0.218***	[0.025]	66.7%
25-49	-0.257***	[0.038]	-0.248***	[0.034]	62.6%
2 to 24					
Controls included:	No		Yes		
Number of observations	76,419		76,419		
Number of clusters	21,708		21,708		

## 5. Conclusion

## References

## Appendix

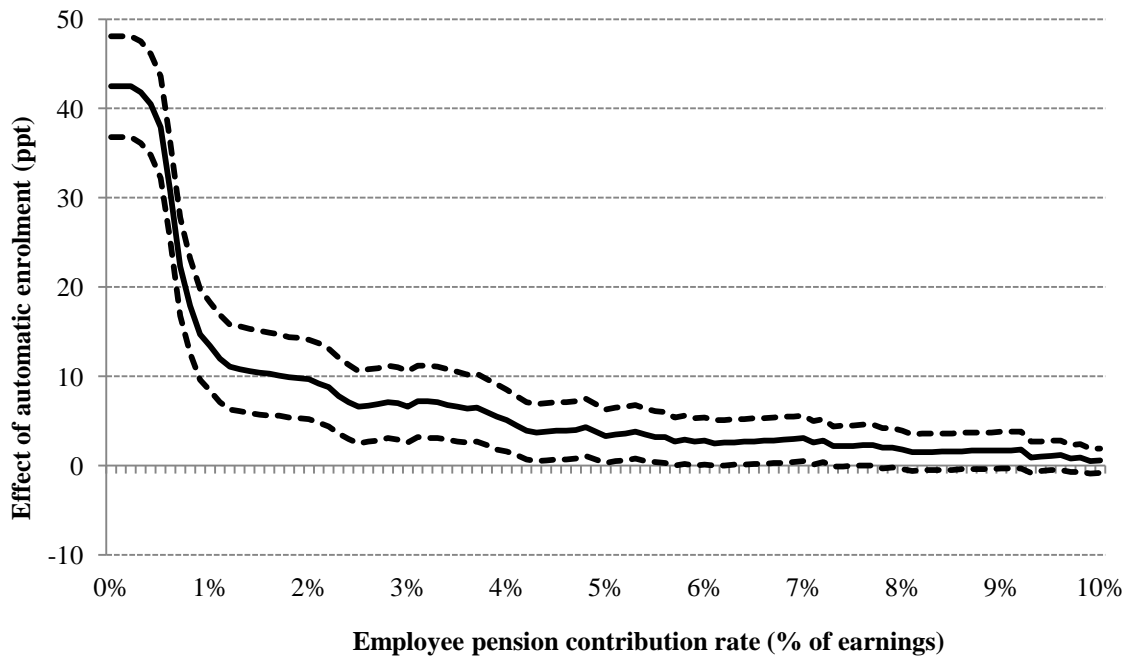
**Table A1 Staging dates for employers of less than 30 employees and whether subject to automatic enrolment in April 2016**

Final two digits of employers' PAYE reference number	Staging date
92, A1-A9, B1-B9, AA-AZ, BA-BW, M1-M9, MA-MZ, Z1-Z9, ZA-ZZ, 0A-0Z, 1A-1Z or 2A-2Z	1 <sup>st</sup> June 2015
BX	1 <sup>st</sup> July 2015
BY	1 <sup>st</sup> September 2015
BZ	1 <sup>st</sup> November 2015
02-04, C1-C9, D1-D9, CA-CZ or DA-DZ	1 <sup>st</sup> January 2016
00 05-07, E1-E9 or EA-EZ	1 <sup>st</sup> February 2016
01, 08-11, F1-F9, G1-G9, FA-FZ or GA-GZ	1 <sup>st</sup> March 2016
12-16, 3A-3Z, H1-H9 or HA-HZ	1 <sup>st</sup> April 2016
All other PAYE reference numbers	1st May 2016 to 1 <sup>st</sup> April 2017

**Table A2 Effect of automatic enrolment on workplace pension participation among eligible employees of small employers: OLS regression results**

Dependent variable: pension participation	Coefficient	Standard error
Affected by auto enrolment	0.440***	[0.027]
Male	-0.001	[0.009]
Gross pay (£ per week)	0.001***	[0.000]
Gross pay squared	0.000***	[0.000]
Hour worked: 16-29	0.059***	[0.014]
Hours worked: 30-39	0.031***	[0.011]
Hours worked: 40-49	-0.050***	[0.011]
Hours worked: 50+	-0.114***	[0.017]
Years with current employer	0.008***	[0.001]
Less than 1 year with current employer	-0.010	[0.010]
1-2 years with current employer	0.004	[0.010]
No information on job tenure	-0.035*	[0.018]
Employer size in 2012	0.004***	[0.001]
Employer size in 2016	0.005***	[0.001]
Age	0.007***	[0.002]
Age squared	0.000***	[0.000]
Industry: Agriculture	-0.050*	[0.026]
Industry: Manufacturing	-0.060***	[0.019]
Industry: Construction	-0.123***	[0.019]
Industry: Retail and Wholesale	-0.072***	[0.018]
Industry: Transport and Storage	-0.087***	[0.024]
Industry: Accommodation and Food Services	-0.095***	[0.020]
Industry: Information and Communications	-0.083***	[0.023]
Industry: Finance or Insurance	0.075**	[0.033]
Industry: Real Estate	-0.083***	[0.028]
Industry: Scientific or Tech professions	-0.067***	[0.019]
Industry: Administration or support	-0.046**	[0.020]
Industry: Education	-0.002	[0.028]
Industry: Health	0.135***	[0.019]
Industry: Arts and Recreation	-0.011	[0.032]
Occupation: Professional	0.041***	[0.016]
Occupation: Associate Professional	0.043***	[0.015]
Occupation: Admin/Secretarial	0.071***	[0.014]
Occupation: Skilled Trades	-0.031**	[0.013]
Occupation: Caring	-0.140***	[0.018]
Occupation: Sales/Customer Service	-0.017	[0.017]
Occupation: Plant and Processing	-0.038**	[0.016]
Occupation: Elementary occupations	-0.011	[0.015]
Constant	-0.257***	[0.049]

**Figure A1 Effect of automatic enrolment on probability of employee contribution rate being greater than certain percentages of earnings, for eligible employees of small employers**



**Figure A2 Effect of automatic enrolment on probability of employer contribution rate being greater than certain percentages of earnings, for eligible employees of small employers**

